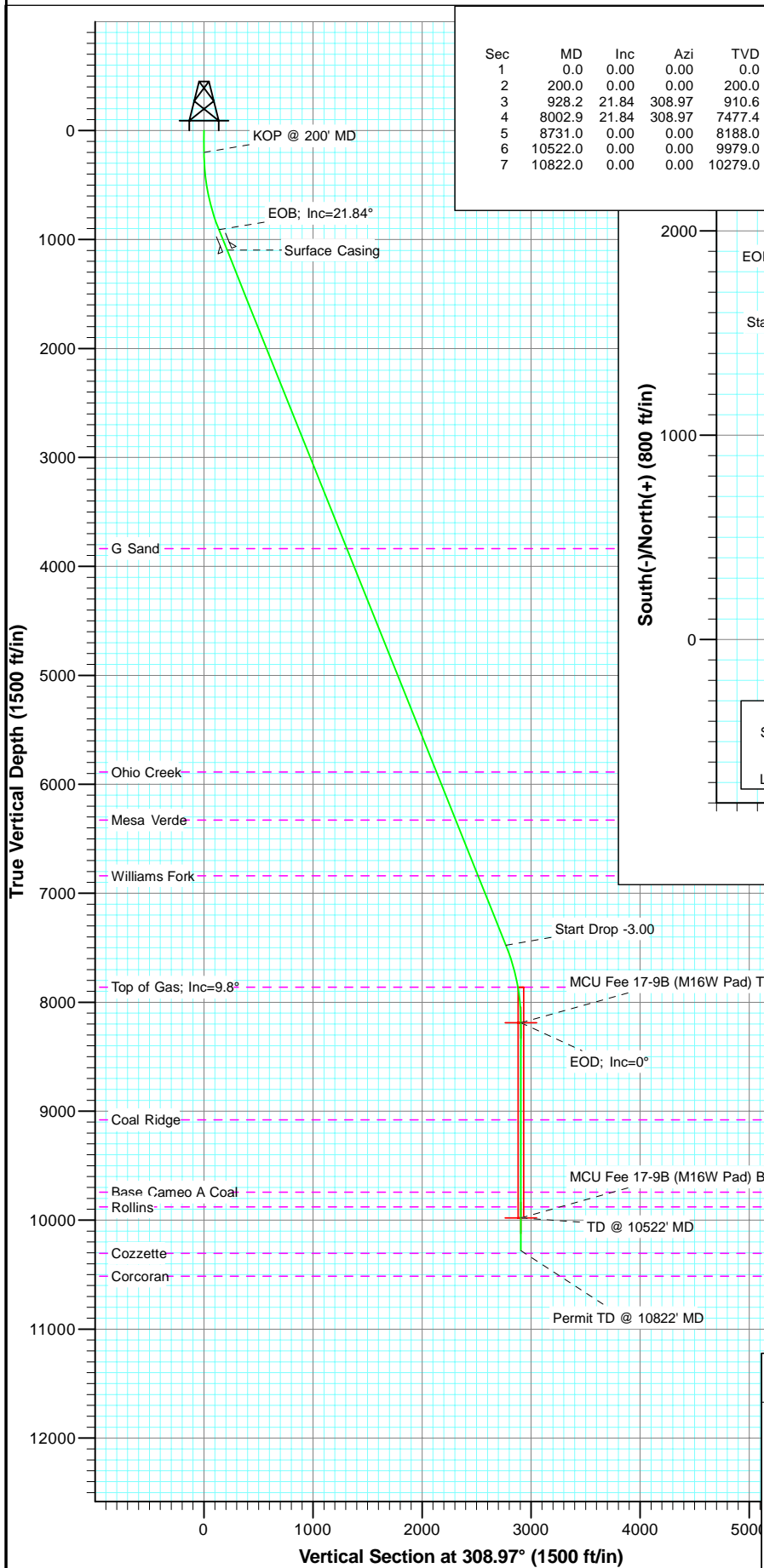
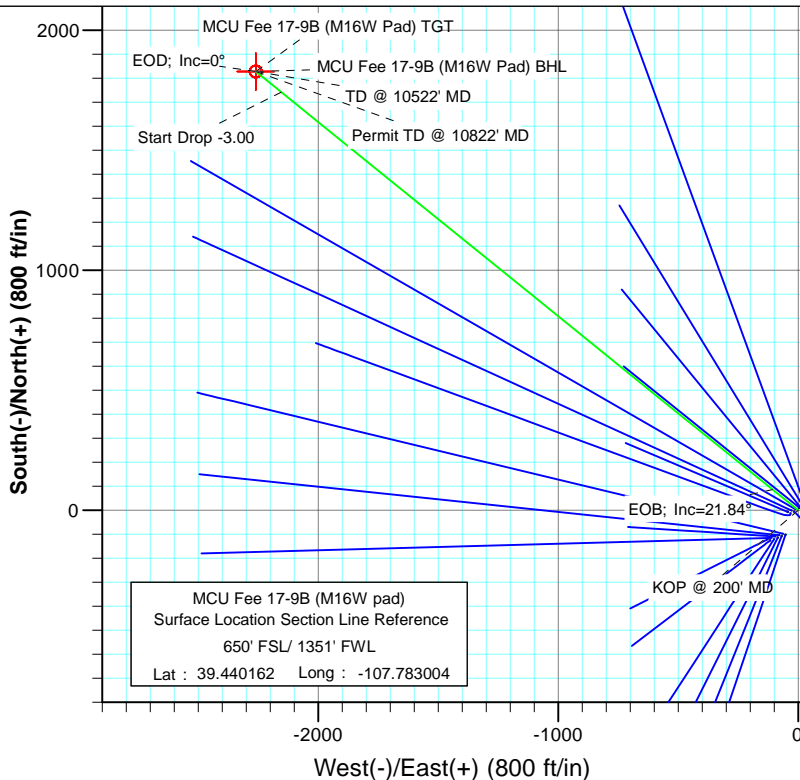




Project: Mamm Creek
 Site: SWSW S16-T7S-R93W (M16W Pad)
 Well: MCU Fee 17-9B (M16W pad)
 Wellbore: DD
 Plan: Plan #1



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	928.2	21.84	308.97	910.6	86.3	-106.6	3.00	308.97	137.1	
4	8002.9	21.84	308.97	7477.4	1742.0	-2153.2	0.00	0.00	2769.6	
5	8731.0	0.00	0.00	8188.0	1828.2	-2259.8	3.00	180.00	2906.7	MCU Fee 17-9B (M16W Pad) TGT
6	10522.0	0.00	0.00	9979.0	1828.2	-2259.8	0.00	0.00	2906.7	MCU Fee 17-9B (M16W Pad) BHL
7	10822.0	0.00	0.00	10279.0	1828.2	-2259.8	0.00	0.00	2906.7	



FORMATION TOP DETAILS		
TVDPath	MDPath	Formation
3837.0	4080.9	G Sand
5887.0	6289.5	Ohio Creek
6328.0	6764.6	Mesa Verde
6840.0	7316.2	Williams Fork
7863.0	8404.4	Top of Gas; Inc=9.8°
9079.0	9622.0	Coal Ridge
9743.0	10286.0	Base Cameo A Coal
9879.0	10422.0	Rollins

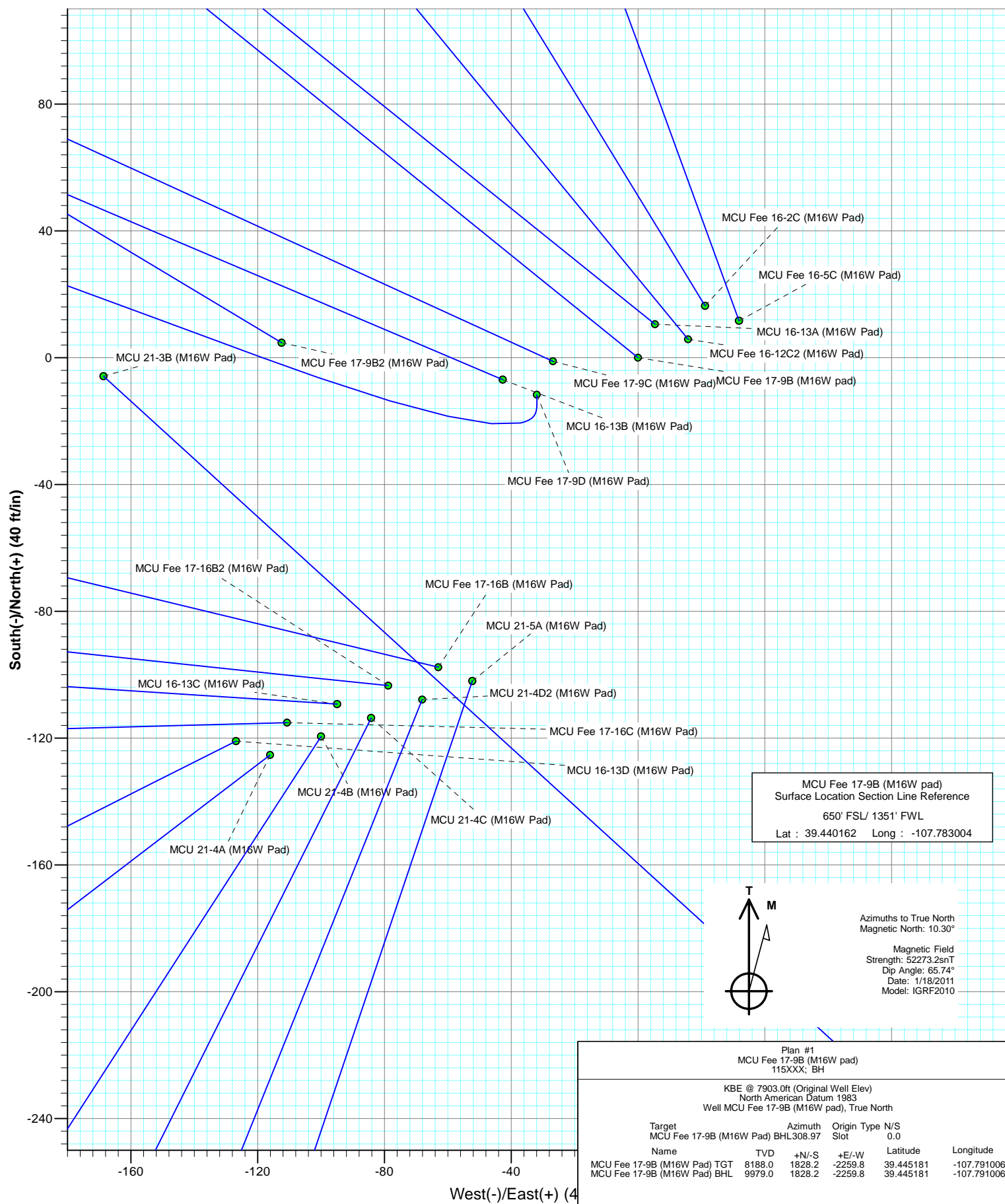


Azimuths to True North
 Magnetic North: 10.30°
 Magnetic Field
 Strength: 52273.2snT
 Dip Angle: 65.74°
 Date: 1/18/2011
 Model: IGRF2010

Plan #1 MCU Fee 17-9B (M16W pad) 115XXX; BH					
KBE @ 7903.0ft (Original Well Elev) North American Datum 1983 Well MCU Fee 17-9B (M16W pad), True North					
Target	Azimuth	Origin	Type	N/S	
MCU Fee 17-9B (M16W Pad) BHL	308.97	Slot		0.0	
Name	TVD	+N/-S	+E/-W	Latitude	Longitude
MCU Fee 17-9B (M16W Pad) TGT	8188.0	1828.2	-2259.8	39.445181	-107.791006
MCU Fee 17-9B (M16W Pad) BHL	9979.0	1828.2	-2259.8	39.445181	-107.791006



Project: Mamm Creek
Site: SWSW S16-T7S-R93W (M16W Pad)
Well: MCU Fee 17-9B (M16W pad)
Wellbore: DD
Plan: Plan #1



Cathedral Energy Services

Planning Report

Database:	EDM 5000.1 US Multi Users DB	Local Co-ordinate Reference:	Well MCU Fee 17-9B (M16W pad)
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	KBE @ 7903.0ft (Original Well Elev)
Project:	Mamm Creek	MD Reference:	KBE @ 7903.0ft (Original Well Elev)
Site:	SWSW S16-T7S-R93W (M16W Pad)	North Reference:	True
Well:	MCU Fee 17-9B (M16W pad)	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		SWSW S16-T7S-R93W (M16W Pad)			
Site Position:		Northing:	1,593,196.17 ft	Latitude:	39.439834
From:	Lat/Long	Easting:	2,355,193.71 ft	Longitude:	-107.783358
Position Uncertainty:	0.0 ft	Slot Radius:	13.200 in	Grid Convergence:	-1.44 °

Well	MCU Fee 17-9B (M16W pad)					
Well Position	+N/-S	0.0 ft	Northing:	1,593,313.07 ft	Latitude:	39.440162
	+E/-W	0.0 ft	Easting:	2,355,296.66 ft	Longitude:	-107.783004
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	7,881.0 ft

Wellbore	DD				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	1/18/2011	10.30	65.74	52,273

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	308.97

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	
928.2	21.84	308.97	910.6	86.3	-106.6	3.00	3.00	0.00	308.97	
8,002.9	21.84	308.97	7,477.4	1,742.0	-2,153.2	0.00	0.00	0.00	0.00	
8,731.0	0.00	0.00	8,188.0	1,828.2	-2,259.8	3.00	-3.00	0.00	180.00	MCU Fee 17-9B (M16W pad)
10,522.0	0.00	0.00	9,979.0	1,828.2	-2,259.8	0.00	0.00	0.00	0.00	MCU Fee 17-9B (M16W pad)
10,822.0	0.00	0.00	10,279.0	1,828.2	-2,259.8	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 MCU Fee 17-9B (M16W pad)
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	KBE @ 7903.0ft (Original Well Elev)
Project:	Mamm Creek	MD Reference:	KBE @ 7903.0ft (Original Well Elev)
Site:	SWSW S16-T7S-R93W (M16W Pad)	North Reference:	True
Well:	MCU Fee 17-9B (M16W pad)	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' MD
300.0	3.00	308.97	300.0	1.6	-2.0	2.6	3.00	3.00	
400.0	6.00	308.97	399.6	6.6	-8.1	10.5	3.00	3.00	
500.0	9.00	308.97	498.8	14.8	-18.3	23.5	3.00	3.00	
600.0	12.00	308.97	597.1	26.2	-32.4	41.7	3.00	3.00	
700.0	15.00	308.97	694.3	40.9	-50.6	65.1	3.00	3.00	
800.0	18.00	308.97	790.2	58.8	-72.7	93.5	3.00	3.00	
900.0	21.00	308.97	884.4	79.8	-98.6	126.9	3.00	3.00	
928.2	21.84	308.97	910.6	86.3	-106.6	137.1	3.00	3.00	EOB; Inc=21.84°
1,000.0	21.84	308.97	977.3	103.1	-127.4	163.9	0.00	0.00	
1,100.0	21.84	308.97	1,070.1	126.5	-156.3	201.1	0.00	0.00	
1,130.0	21.84	308.97	1,098.0	133.5	-165.0	212.2	0.00	0.00	Surface Casing
1,200.0	21.84	308.97	1,163.0	149.9	-185.3	238.3	0.00	0.00	
1,300.0	21.84	308.97	1,255.8	173.3	-214.2	275.5	0.00	0.00	
1,400.0	21.84	308.97	1,348.6	196.7	-243.1	312.7	0.00	0.00	
1,500.0	21.84	308.97	1,441.4	220.1	-272.0	349.9	0.00	0.00	
1,600.0	21.84	308.97	1,534.2	243.5	-301.0	387.1	0.00	0.00	
1,700.0	21.84	308.97	1,627.1	266.9	-329.9	424.3	0.00	0.00	
1,800.0	21.84	308.97	1,719.9	290.3	-358.8	461.5	0.00	0.00	
1,900.0	21.84	308.97	1,812.7	313.7	-387.7	498.8	0.00	0.00	
2,000.0	21.84	308.97	1,905.5	337.1	-416.7	536.0	0.00	0.00	
2,100.0	21.84	308.97	1,998.3	360.5	-445.6	573.2	0.00	0.00	
2,200.0	21.84	308.97	2,091.2	383.9	-474.5	610.4	0.00	0.00	
2,300.0	21.84	308.97	2,184.0	407.3	-503.5	647.6	0.00	0.00	
2,400.0	21.84	308.97	2,276.8	430.7	-532.4	684.8	0.00	0.00	
2,500.0	21.84	308.97	2,369.6	454.1	-561.3	722.0	0.00	0.00	
2,600.0	21.84	308.97	2,462.4	477.5	-590.2	759.2	0.00	0.00	
2,700.0	21.84	308.97	2,555.3	500.9	-619.2	796.4	0.00	0.00	
2,800.0	21.84	308.97	2,648.1	524.3	-648.1	833.6	0.00	0.00	
2,900.0	21.84	308.97	2,740.9	547.7	-677.0	870.8	0.00	0.00	
3,000.0	21.84	308.97	2,833.7	571.1	-706.0	908.1	0.00	0.00	
3,100.0	21.84	308.97	2,926.5	594.5	-734.9	945.3	0.00	0.00	
3,200.0	21.84	308.97	3,019.4	617.9	-763.8	982.5	0.00	0.00	
3,300.0	21.84	308.97	3,112.2	641.3	-792.7	1,019.7	0.00	0.00	
3,400.0	21.84	308.97	3,205.0	664.7	-821.7	1,056.9	0.00	0.00	
3,500.0	21.84	308.97	3,297.8	688.1	-850.6	1,094.1	0.00	0.00	
3,600.0	21.84	308.97	3,390.6	711.5	-879.5	1,131.3	0.00	0.00	
3,700.0	21.84	308.97	3,483.5	735.0	-908.5	1,168.5	0.00	0.00	
3,800.0	21.84	308.97	3,576.3	758.4	-937.4	1,205.7	0.00	0.00	
3,900.0	21.84	308.97	3,669.1	781.8	-966.3	1,242.9	0.00	0.00	
4,000.0	21.84	308.97	3,761.9	805.2	-995.2	1,280.1	0.00	0.00	
4,080.9	21.84	308.97	3,837.0	824.1	-1,018.6	1,310.2	0.00	0.00	G Sand
4,100.0	21.84	308.97	3,854.7	828.6	-1,024.2	1,317.4	0.00	0.00	
4,200.0	21.84	308.97	3,947.6	852.0	-1,053.1	1,354.6	0.00	0.00	
4,300.0	21.84	308.97	4,040.4	875.4	-1,082.0	1,391.8	0.00	0.00	
4,400.0	21.84	308.97	4,133.2	898.8	-1,111.0	1,429.0	0.00	0.00	
4,500.0	21.84	308.97	4,226.0	922.2	-1,139.9	1,466.2	0.00	0.00	
4,600.0	21.84	308.97	4,318.8	945.6	-1,168.8	1,503.4	0.00	0.00	
4,700.0	21.84	308.97	4,411.7	969.0	-1,197.7	1,540.6	0.00	0.00	
4,800.0	21.84	308.97	4,504.5	992.4	-1,226.7	1,577.8	0.00	0.00	

Cathedral Energy Services

Planning Report

Database:	EDM 5000.1 US Multi Users DB	Local Co-ordinate Reference:	Well MCU Fee 17-9B (M16W pad)
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	KBE @ 7903.0ft (Original Well Elev)
Project:	Mamm Creek	MD Reference:	KBE @ 7903.0ft (Original Well Elev)
Site:	SWSW S16-T7S-R93W (M16W Pad)	North Reference:	True
Well:	MCU Fee 17-9B (M16W pad)	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
4,900.0	21.84	308.97	4,597.3	1,015.8	-1,255.6	1,615.0	0.00	0.00	
5,000.0	21.84	308.97	4,690.1	1,039.2	-1,284.5	1,652.2	0.00	0.00	
5,100.0	21.84	308.97	4,782.9	1,062.6	-1,313.4	1,689.5	0.00	0.00	
5,200.0	21.84	308.97	4,875.7	1,086.0	-1,342.4	1,726.7	0.00	0.00	
5,300.0	21.84	308.97	4,968.6	1,109.4	-1,371.3	1,763.9	0.00	0.00	
5,400.0	21.84	308.97	5,061.4	1,132.8	-1,400.2	1,801.1	0.00	0.00	
5,500.0	21.84	308.97	5,154.2	1,156.2	-1,429.2	1,838.3	0.00	0.00	
5,600.0	21.84	308.97	5,247.0	1,179.6	-1,458.1	1,875.5	0.00	0.00	
5,700.0	21.84	308.97	5,339.8	1,203.0	-1,487.0	1,912.7	0.00	0.00	
5,800.0	21.84	308.97	5,432.7	1,226.4	-1,515.9	1,949.9	0.00	0.00	
5,900.0	21.84	308.97	5,525.5	1,249.8	-1,544.9	1,987.1	0.00	0.00	
6,000.0	21.84	308.97	5,618.3	1,273.2	-1,573.8	2,024.3	0.00	0.00	
6,100.0	21.84	308.97	5,711.1	1,296.6	-1,602.7	2,061.5	0.00	0.00	
6,200.0	21.84	308.97	5,803.9	1,320.0	-1,631.7	2,098.8	0.00	0.00	
6,289.5	21.84	308.97	5,887.0	1,341.0	-1,657.5	2,132.1	0.00	0.00	Ohio Creek
6,300.0	21.84	308.97	5,896.8	1,343.4	-1,660.6	2,136.0	0.00	0.00	
6,400.0	21.84	308.97	5,989.6	1,366.8	-1,689.5	2,173.2	0.00	0.00	
6,500.0	21.84	308.97	6,082.4	1,390.2	-1,718.4	2,210.4	0.00	0.00	
6,600.0	21.84	308.97	6,175.2	1,413.6	-1,747.4	2,247.6	0.00	0.00	
6,700.0	21.84	308.97	6,268.0	1,437.0	-1,776.3	2,284.8	0.00	0.00	
6,764.6	21.84	308.97	6,328.0	1,452.2	-1,795.0	2,308.8	0.00	0.00	Mesa Verde
6,800.0	21.84	308.97	6,360.9	1,460.4	-1,805.2	2,322.0	0.00	0.00	
6,900.0	21.84	308.97	6,453.7	1,483.8	-1,834.2	2,359.2	0.00	0.00	
7,000.0	21.84	308.97	6,546.5	1,507.3	-1,863.1	2,396.4	0.00	0.00	
7,100.0	21.84	308.97	6,639.3	1,530.7	-1,892.0	2,433.6	0.00	0.00	
7,200.0	21.84	308.97	6,732.1	1,554.1	-1,920.9	2,470.8	0.00	0.00	
7,300.0	21.84	308.97	6,825.0	1,577.5	-1,949.9	2,508.1	0.00	0.00	
7,316.2	21.84	308.97	6,840.0	1,581.3	-1,954.6	2,514.1	0.00	0.00	Williams Fork
7,400.0	21.84	308.97	6,917.8	1,600.9	-1,978.8	2,545.3	0.00	0.00	
7,500.0	21.84	308.97	7,010.6	1,624.3	-2,007.7	2,582.5	0.00	0.00	
7,600.0	21.84	308.97	7,103.4	1,647.7	-2,036.6	2,619.7	0.00	0.00	
7,700.0	21.84	308.97	7,196.2	1,671.1	-2,065.6	2,656.9	0.00	0.00	
7,800.0	21.84	308.97	7,289.1	1,694.5	-2,094.5	2,694.1	0.00	0.00	
7,900.0	21.84	308.97	7,381.9	1,717.9	-2,123.4	2,731.3	0.00	0.00	
8,000.0	21.84	308.97	7,474.7	1,741.3	-2,152.4	2,768.5	0.00	0.00	
8,002.9	21.84	308.97	7,477.4	1,742.0	-2,153.2	2,769.6	0.00	0.00	Start Drop -3.00
8,100.0	18.93	308.97	7,568.4	1,763.2	-2,179.5	2,803.4	3.00	-3.00	
8,200.0	15.93	308.97	7,663.8	1,782.1	-2,202.8	2,833.4	3.00	-3.00	
8,300.0	12.93	308.97	7,760.6	1,797.7	-2,222.2	2,858.3	3.00	-3.00	
8,400.0	9.93	308.97	7,858.6	1,810.2	-2,237.6	2,878.1	3.00	-3.00	
8,404.4	9.80	308.97	7,863.0	1,810.7	-2,238.1	2,878.9	3.00	-3.00	Top of Gas; Inc=9.8°
8,500.0	6.93	308.97	7,957.5	1,819.4	-2,249.0	2,892.8	3.00	-3.00	
8,600.0	3.93	308.97	8,057.1	1,825.4	-2,256.3	2,902.2	3.00	-3.00	
8,700.0	0.93	308.97	8,157.0	1,828.0	-2,259.6	2,906.5	3.00	-3.00	
8,731.0	0.00	0.00	8,188.0	1,828.2	-2,259.8	2,906.7	3.00	-3.00	EOD; Inc=0° - MCU Fee 17-9B (M16W Pad) TC
8,800.0	0.00	0.00	8,257.0	1,828.2	-2,259.8	2,906.7	0.00	0.00	
8,900.0	0.00	0.00	8,357.0	1,828.2	-2,259.8	2,906.7	0.00	0.00	
9,000.0	0.00	0.00	8,457.0	1,828.2	-2,259.8	2,906.7	0.00	0.00	
9,100.0	0.00	0.00	8,557.0	1,828.2	-2,259.8	2,906.7	0.00	0.00	
9,200.0	0.00	0.00	8,657.0	1,828.2	-2,259.8	2,906.7	0.00	0.00	
9,300.0	0.00	0.00	8,757.0	1,828.2	-2,259.8	2,906.7	0.00	0.00	
9,400.0	0.00	0.00	8,857.0	1,828.2	-2,259.8	2,906.7	0.00	0.00	

Cathedral Energy Services

Planning Report

Database:	EDM 5000.1 US Multi Users DB	Local Co-ordinate Reference:	Well MCU Fee 17-9B (M16W pad)
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	KBE @ 7903.0ft (Original Well Elev)
Project:	Mamm Creek	MD Reference:	KBE @ 7903.0ft (Original Well Elev)
Site:	SWSW S16-T7S-R93W (M16W Pad)	North Reference:	True
Well:	MCU Fee 17-9B (M16W pad)	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
9,500.0	0.00	0.00	8,957.0	1,828.2	-2,259.8	2,906.7	0.00	0.00	
9,600.0	0.00	0.00	9,057.0	1,828.2	-2,259.8	2,906.7	0.00	0.00	
9,622.0	0.00	0.00	9,079.0	1,828.2	-2,259.8	2,906.7	0.00	0.00	Coal Ridge
9,700.0	0.00	0.00	9,157.0	1,828.2	-2,259.8	2,906.7	0.00	0.00	
9,800.0	0.00	0.00	9,257.0	1,828.2	-2,259.8	2,906.7	0.00	0.00	
9,900.0	0.00	0.00	9,357.0	1,828.2	-2,259.8	2,906.7	0.00	0.00	
10,000.0	0.00	0.00	9,457.0	1,828.2	-2,259.8	2,906.7	0.00	0.00	
10,100.0	0.00	0.00	9,557.0	1,828.2	-2,259.8	2,906.7	0.00	0.00	
10,200.0	0.00	0.00	9,657.0	1,828.2	-2,259.8	2,906.7	0.00	0.00	
10,286.0	0.00	0.00	9,743.0	1,828.2	-2,259.8	2,906.7	0.00	0.00	Base Cameo A Coal
10,300.0	0.00	0.00	9,757.0	1,828.2	-2,259.8	2,906.7	0.00	0.00	
10,400.0	0.00	0.00	9,857.0	1,828.2	-2,259.8	2,906.7	0.00	0.00	
10,422.0	0.00	0.00	9,879.0	1,828.2	-2,259.8	2,906.7	0.00	0.00	Rollins
10,500.0	0.00	0.00	9,957.0	1,828.2	-2,259.8	2,906.7	0.00	0.00	
10,522.0	0.00	0.00	9,979.0	1,828.2	-2,259.8	2,906.7	0.00	0.00	TD @ 10522' MD - MCU Fee 17-9B (M16W Pad)
10,600.0	0.00	0.00	10,057.0	1,828.2	-2,259.8	2,906.7	0.00	0.00	
10,700.0	0.00	0.00	10,157.0	1,828.2	-2,259.8	2,906.7	0.00	0.00	
10,800.0	0.00	0.00	10,257.0	1,828.2	-2,259.8	2,906.7	0.00	0.00	
10,822.0	0.00	0.00	10,279.0	1,828.2	-2,259.8	2,906.7	0.00	0.00	Permit TD @ 10822' MD

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
MCU Fee 17-9B (M16W - plan hits target center - Circle (radius 25.0)	0.00	0.00	8,188.0	1,828.2	-2,259.8	1,595,197.49	2,353,083.51	39.445181	-107.791006
MCU Fee 17-9B (M16W - plan hits target center - Circle (radius 25.0)	0.00	0.00	9,979.0	1,828.2	-2,259.8	1,595,197.49	2,353,083.51	39.445181	-107.791006

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)	
1,130.0	1,098.0	Surface Casing	0.000	0.000	

Cathedral Energy Services

Planning Report

Database:	EDM 5000.1 US Multi Users DB	Local Co-ordinate Reference:	Well MCU Fee 17-9B (M16W pad)
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	KBE @ 7903.0ft (Original Well Elev)
Project:	Mamm Creek	MD Reference:	KBE @ 7903.0ft (Original Well Elev)
Site:	SWSW S16-T7S-R93W (M16W Pad)	North Reference:	True
Well:	MCU Fee 17-9B (M16W pad)	Survey Calculation Method:	Minimum Curvature
Wellbore:	DD		
Design:	Plan #1		

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
4,080.9	3,837.0	G Sand		0.00		
6,289.5	5,887.0	Ohio Creek		0.00		
6,764.6	6,328.0	Mesa Verde		0.00		
7,316.2	6,840.0	Williams Fork		0.00		
8,404.4	7,863.0	Top of Gas; Inc=9.8°		0.00		
9,622.0	9,079.0	Coal Ridge		0.00		
10,286.0	9,743.0	Base Cameo A Coal		0.00		
10,422.0	9,879.0	Rollins		0.00		

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' MD	
928.2	910.6	86.3	-106.6	EOB; Inc=21.84°	
8,002.9	7,477.4	1,742.0	-2,153.2	Start Drop -3.00	
8,731.0	8,188.0	1,828.2	-2,259.8	EOD; Inc=0°	
10,522.0	9,979.0	1,828.2	-2,259.8	TD @ 10522' MD	
10,822.0	10,279.0	1,828.2	-2,259.8	Permit TD @ 10822' MD	

EnCana Oil & Gas (USA) Inc

Mamm Creek

SWSW S16-T7S-R93W (M16W Pad)

MCU Fee 17-9B (M16W pad)

DD

Plan #1

Anticollision Report

27 January, 2011

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well MCU Fee 17-9B (M16W pad)
Project:	Mamm Creek	TVD Reference:	KBE @ 7903.0ft (Original Well Elev)
Reference Site:	SWSW S16-T7S-R93W (M16W Pad)	MD Reference:	KBE @ 7903.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	MCU Fee 17-9B (M16W pad)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	EDM 5000.1 US Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Reference	Plan #1		
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	MD Interval 100.0ft	Error Model:	Systematic Ellipse
Depth Range:	Unlimited	Scan Method:	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 500.0ft	Error Surface:	Elliptical Conic
Warning Levels Evaluated at:	2.00 Sigma		

Survey Tool Program	Date	1/27/2011		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.0	10,822.0	Plan #1 (DD)	MWD	Geolink MWD

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well MCU Fee 17-9B (M16W pad)
Project:	Mamm Creek	TVD Reference:	KBE @ 7903.0ft (Original Well Elev)
Reference Site:	SWSW S16-T7S-R93W (M16W Pad)	MD Reference:	KBE @ 7903.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	MCU Fee 17-9B (M16W pad)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	EDM 5000.1 US Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Summary

Site Name Offset Well - Wellbore - Design	Reference Measured Depth	Offset Measured Depth	Distance		Separation Factor	Warning
	(ft)	(ft)	Between Centres (ft)	Between Ellipses (ft)		
SWSW S16-T7S-R93W (M16W Pad)						
MCU 16-13A (M16W Pad) - DD - Plan #1	540.7	540.4	11.5	9.3	5.179	CC, ES
MCU 16-13A (M16W Pad) - DD - Plan #1	600.0	599.5	12.2	9.6	4.796	SF
MCU 16-13B (M16W Pad) - DD - Plan #1	662.1	657.4	42.7	39.8	14.706	CC, ES
MCU 16-13B (M16W Pad) - DD - Plan #1	800.0	792.9	48.9	45.0	12.559	SF
MCU 16-13C (M16W Pad) - DD - Plan #1	200.0	200.0	144.7	144.1	232.918	CC, ES
MCU 16-13C (M16W Pad) - DD - Plan #1	1,100.0	1,073.7	231.6	225.7	39.663	SF
MCU 16-13D (M16W Pad) - DD - Plan #1	200.0	200.0	175.2	174.6	282.007	CC, ES
MCU 16-13D (M16W Pad) - DD - Plan #1	1,300.0	1,247.5	331.8	324.7	46.490	SF
MCU 21-3B (M16W Pad) - DD - Plan #1	323.6	323.5	15.2	14.1	13.917	CC, ES, SF
MCU 21-4A (M16W Pad) - DD - Plan #1	200.0	200.0	170.8	170.2	274.888	CC, ES
MCU 21-4A (M16W Pad) - DD - Plan #1	1,300.0	1,241.1	355.7	348.7	50.445	SF
MCU 21-4B (M16W Pad) - DD - Plan #1	200.0	200.0	155.8	155.2	250.707	CC, ES
MCU 21-4B (M16W Pad) - DD - Plan #1	1,300.0	1,218.6	405.7	398.8	58.628	SF
MCU 21-4C (M16W Pad) - DD - Plan #1	200.0	200.0	141.4	140.8	227.589	CC, ES
MCU 21-4C (M16W Pad) - DD - Plan #1	1,200.0	1,113.9	391.2	385.1	63.290	SF
MCU 21-4D2 (M16W Pad) - DD - Plan #1	200.0	200.0	127.5	126.9	205.204	CC, ES
MCU 21-4D2 (M16W Pad) - DD - Plan #1	1,100.0	1,010.0	367.8	362.4	67.827	SF
MCU 21-5A (M16W Pad) - DD - Plan #1	200.0	200.0	114.6	114.0	184.419	CC, ES
MCU 21-5A (M16W Pad) - DD - Plan #1	900.0	823.3	284.3	280.3	70.836	SF
MCU Fee 16-12C2 (M16W Pad) - DD - Plan #1	200.0	200.0	16.9	16.2	27.130	CC, ES
MCU Fee 16-12C2 (M16W Pad) - DD - Plan #1	600.0	600.7	25.3	22.7	9.766	SF
MCU Fee 16-2C (M16W Pad) - DD - Plan #1	200.0	200.0	26.8	26.2	43.110	CC, ES
MCU Fee 16-2C (M16W Pad) - DD - Plan #1	800.0	797.9	58.1	53.8	13.457	SF
MCU Fee 16-5C (M16W Pad) - DD - Plan #1	200.0	200.0	34.0	33.4	54.684	CC, ES
MCU Fee 16-5C (M16W Pad) - DD - Plan #1	2,900.0	2,857.1	482.5	453.2	16.495	SF
MCU Fee 17-16B (M16W Pad) - DD - Plan #1	200.0	200.0	116.2	115.5	186.960	CC, ES
MCU Fee 17-16B (M16W Pad) - DD - Plan #1	2,900.0	2,857.2	485.4	454.1	15.506	SF
MCU Fee 17-16B2 (M16W Pad) - DD - Plan #1	200.0	200.0	130.0	129.4	209.278	CC, ES
MCU Fee 17-16B2 (M16W Pad) - DD - Plan #1	2,400.0	2,339.3	495.5	471.2	20.336	SF
MCU Fee 17-16C (M16W Pad) - DD - Plan #1	200.0	200.0	159.7	159.1	257.023	CC, ES
MCU Fee 17-16C (M16W Pad) - DD - Plan #1	2,000.0	1,919.4	492.7	474.0	26.410	SF
MCU Fee 17-9B2 (M16W Pad) - DD - Plan #1	200.0	200.0	11.7	11.1	18.873	CC
MCU Fee 17-9B2 (M16W Pad) - DD - Plan #1	400.0	398.8	12.1	10.8	9.103	ES
MCU Fee 17-9B2 (M16W Pad) - DD - Plan #1	10,822.0	10,822.1	460.4	348.4	4.110	SF
MCU Fee 17-9C (M16W Pad) - DD - Plan #1	200.0	200.0	26.9	26.2	43.218	CC
MCU Fee 17-9C (M16W Pad) - DD - Plan #1	300.0	298.8	27.2	26.2	27.933	ES
MCU Fee 17-9C (M16W Pad) - DD - Plan #1	4,000.0	3,976.7	330.3	283.2	7.003	SF
MCU Fee 17-9D (M16W Pad) - DD - Plan #1	328.4	327.5	33.4	32.3	30.565	CC, ES
MCU Fee 17-9D (M16W Pad) - DD - Plan #1	3,900.0	3,872.4	488.7	453.7	13.971	SF

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well MCU Fee 17-9B (M16W pad)
Project:	Mamm Creek	TVD Reference:	KBE @ 7903.0ft (Original Well Elev)
Reference Site:	SWSW S16-T7S-R93W (M16W Pad)	MD Reference:	KBE @ 7903.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	MCU Fee 17-9B (M16W pad)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	EDM 5000.1 US Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design SWSW S16-T7S-R93W (M16W Pad) - MCU 16-13A (M16W Pad) - DD - Plan #1													Offset Site Error: 0.0 ft
Survey Program: 0-MWD													Offset Well Error: 0.0 ft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	26.92	10.6	5.4	11.9				
100.0	100.0	100.0	100.0	0.1	0.1	26.92	10.6	5.4	11.9	11.6	0.27	43.529	
200.0	200.0	200.0	200.0	0.3	0.3	26.92	10.6	5.4	11.9	11.2	0.62	19.074	
300.0	300.0	299.9	299.8	0.5	0.5	77.96	12.2	3.3	11.8	10.9	0.99	12.007	
400.0	399.6	399.7	399.4	0.7	0.7	77.99	17.1	-2.8	11.8	10.4	1.42	8.303	
500.0	498.8	499.7	498.6	1.0	1.0	82.16	24.7	-12.3	11.6	9.7	1.96	5.929	
540.7	538.9	540.4	538.9	1.1	1.1	90.36	28.0	-16.3	11.5	9.3	2.22	5.179 CC, ES	
600.0	597.1	599.5	597.6	1.4	1.2	109.29	32.7	-22.1	12.2	9.6	2.54	4.796 SF	
700.0	694.3	698.9	696.2	1.8	1.5	142.13	40.6	-31.9	18.8	16.0	2.75	6.821	
800.0	790.2	797.6	794.1	2.4	1.8	159.37	48.4	-41.6	33.0	30.1	2.90	11.369	
900.0	884.4	895.3	891.0	3.0	2.1	167.30	56.2	-51.3	53.3	50.2	3.13	17.031	
1,000.0	977.3	992.2	987.1	3.7	2.3	171.33	63.8	-60.8	77.9	74.5	3.42	22.763	
1,100.0	1,070.1	1,088.9	1,083.1	4.4	2.6	173.46	71.5	-70.4	102.8	99.1	3.74	27.472	
1,200.0	1,163.0	1,185.7	1,179.1	5.0	2.9	174.76	79.2	-79.9	127.9	123.8	4.07	31.381	
1,300.0	1,255.8	1,282.5	1,275.1	5.7	3.1	175.63	86.9	-89.5	152.9	148.5	4.41	34.677	
1,400.0	1,348.6	1,379.3	1,371.1	6.4	3.4	176.26	94.6	-99.0	178.0	173.3	4.75	37.493	
1,500.0	1,441.4	1,476.1	1,467.1	7.1	3.7	176.73	102.3	-108.6	203.1	198.1	5.09	39.926	
1,600.0	1,534.2	1,572.9	1,563.1	7.8	4.0	177.10	109.9	-118.1	228.3	222.8	5.43	42.050	
1,700.0	1,627.1	1,669.6	1,659.1	8.5	4.2	177.39	117.6	-127.7	253.4	247.6	5.77	43.920	
1,800.0	1,719.9	1,766.4	1,755.1	9.2	4.5	177.64	125.3	-137.2	278.5	272.4	6.11	45.579	
1,900.0	1,812.7	1,863.2	1,851.1	9.9	4.8	177.84	133.0	-146.7	303.7	297.2	6.45	47.060	
2,000.0	1,905.5	1,960.0	1,947.1	10.6	5.0	178.01	140.7	-156.3	328.8	322.0	6.79	48.392	
2,100.0	1,998.3	2,056.8	2,043.1	11.3	5.3	178.16	148.4	-165.8	354.0	346.8	7.14	49.595	
2,200.0	2,091.2	2,153.6	2,139.1	12.0	5.6	178.28	156.0	-175.4	379.1	371.6	7.48	50.687	
2,300.0	2,184.0	2,250.3	2,235.1	12.7	5.9	178.39	163.7	-184.9	404.2	396.4	7.82	51.682	
2,400.0	2,276.8	2,347.1	2,331.2	13.4	6.1	178.49	171.4	-194.5	429.4	421.2	8.16	52.594	
2,500.0	2,369.6	2,443.9	2,427.2	14.1	6.4	178.58	179.1	-204.0	454.5	446.0	8.51	53.433	
2,600.0	2,462.4	2,540.7	2,523.2	14.8	6.7	178.66	186.8	-213.6	479.7	470.8	8.85	54.206	

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well MCU Fee 17-9B (M16W pad)
Project:	Mamm Creek	TVD Reference:	KBE @ 7903.0ft (Original Well Elev)
Reference Site:	SWSW S16-T7S-R93W (M16W Pad)	MD Reference:	KBE @ 7903.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	MCU Fee 17-9B (M16W pad)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	EDM 5000.1 US Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design SWSW S16-T7S-R93W (M16W Pad) - MCU 16-13B (M16W Pad) - DD - Plan #1													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance				Total	Separation	Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Uncertainty Axis	Factor		
0.0	0.0	0.0	0.0	0.0	0.0	-99.21	-6.9	-42.6	43.2					
100.0	100.0	100.0	100.0	0.1	0.1	-99.21	-6.9	-42.6	43.2	42.9	0.27	158.677		
200.0	200.0	200.0	200.0	0.3	0.3	-99.21	-6.9	-42.6	43.2	42.6	0.62	69.533		
300.0	300.0	298.1	298.1	0.5	0.5	-48.92	-5.9	-45.0	43.6	42.7	0.97	44.790		
400.0	399.6	396.4	396.0	0.7	0.7	-51.07	-3.0	-51.9	45.0	43.6	1.36	32.996		
500.0	498.8	496.3	495.4	1.0	0.9	-56.82	0.9	-61.0	45.0	43.2	1.83	24.659		
600.0	597.1	595.8	594.5	1.4	1.2	-68.63	4.7	-70.0	43.3	40.9	2.43	17.835		
662.1	657.6	657.4	655.8	1.6	1.3	-79.56	7.1	-75.5	42.7	39.8	2.91	14.706 CC, ES		
700.0	694.3	694.8	693.0	1.8	1.4	-87.47	8.5	-78.9	43.1	39.9	3.20	13.474		
800.0	790.2	792.9	790.6	2.4	1.6	-110.17	12.3	-87.8	48.9	45.0	3.90	12.559 SF		
900.0	884.4	889.8	887.1	3.0	1.9	-129.56	16.0	-96.6	63.9	59.6	4.30	14.852		
1,000.0	977.3	985.8	982.6	3.7	2.1	-142.62	19.7	-105.2	86.4	81.9	4.53	19.098		
1,100.0	1,070.1	1,081.6	1,078.0	4.4	2.3	-150.28	23.4	-113.9	111.8	107.0	4.76	23.472		
1,200.0	1,163.0	1,177.5	1,173.4	5.0	2.6	-155.10	27.0	-122.6	138.3	133.3	5.03	27.493		
1,300.0	1,255.8	1,273.4	1,268.8	5.7	2.8	-158.36	30.7	-131.3	165.4	160.1	5.32	31.079		
1,400.0	1,348.6	1,369.3	1,364.3	6.4	3.0	-160.70	34.4	-140.0	192.9	187.3	5.63	34.252		
1,500.0	1,441.4	1,465.2	1,459.7	7.1	3.3	-162.46	38.1	-148.6	220.6	214.7	5.95	37.059		
1,600.0	1,534.2	1,561.1	1,555.1	7.8	3.5	-163.83	41.8	-157.3	248.5	242.2	6.28	39.550		
1,700.0	1,627.1	1,657.0	1,650.5	8.5	3.7	-164.92	45.5	-166.0	276.5	269.9	6.62	41.770		
1,800.0	1,719.9	1,752.9	1,745.9	9.2	4.0	-165.81	49.2	-174.7	304.5	297.6	6.96	43.759		
1,900.0	1,812.7	1,848.7	1,841.4	9.9	4.2	-166.55	52.8	-183.3	332.6	325.3	7.30	45.549		
2,000.0	1,905.5	1,944.6	1,936.8	10.6	4.5	-167.18	56.5	-192.0	360.8	353.2	7.65	47.167		
2,100.0	1,998.3	2,040.5	2,032.2	11.3	4.7	-167.71	60.2	-200.7	389.0	381.0	8.00	48.637		
2,200.0	2,091.2	2,136.4	2,127.6	12.0	4.9	-168.18	63.9	-209.4	417.2	408.9	8.35	49.977		
2,300.0	2,184.0	2,232.3	2,223.1	12.7	5.2	-168.58	67.6	-218.0	445.4	436.7	8.70	51.203		
2,400.0	2,276.8	2,328.2	2,318.5	13.4	5.4	-168.94	71.3	-226.7	473.7	464.6	9.05	52.330		

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well MCU Fee 17-9B (M16W pad)
Project:	Mamm Creek	TVD Reference:	KBE @ 7903.0ft (Original Well Elev)
Reference Site:	SWSW S16-T7S-R93W (M16W Pad)	MD Reference:	KBE @ 7903.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	MCU Fee 17-9B (M16W pad)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	EDM 5000.1 US Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design SWSW S16-T7S-R93W (M16W Pad) - MCU 16-13C (M16W Pad) - DD - Plan #1													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance				Total		Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Uncertainty Axis	Separation Factor		
0.0	0.0	0.0	0.0	0.0	0.0	-139.03	-109.3	-94.9	144.7					
100.0	100.0	100.0	100.0	0.1	0.1	-139.03	-109.3	-94.9	144.7	144.4	0.27	531.531		
200.0	200.0	200.0	200.0	0.3	0.3	-139.03	-109.3	-94.9	144.7	144.1	0.62	232.918 CC, ES		
300.0	300.0	295.6	295.6	0.5	0.5	-88.19	-109.1	-97.3	146.1	145.2	0.98	149.671		
400.0	399.6	392.7	392.4	0.7	0.7	-88.86	-108.7	-104.2	150.2	148.9	1.39	108.376		
500.0	498.8	492.3	491.7	1.0	0.9	-91.10	-108.1	-112.4	155.0	153.1	1.87	82.691		
600.0	597.1	591.5	590.6	1.4	1.1	-95.03	-107.6	-120.5	160.4	157.9	2.45	65.531		
700.0	694.3	690.0	688.7	1.8	1.3	-100.33	-107.1	-128.6	167.4	164.3	3.10	53.957		
800.0	790.2	787.4	785.8	2.4	1.6	-106.61	-106.6	-136.5	177.3	173.5	3.82	46.448		
900.0	884.4	883.6	881.7	3.0	1.8	-113.38	-106.1	-144.4	191.4	186.9	4.56	42.018		
1,000.0	977.3	978.7	976.4	3.7	2.0	-120.22	-105.6	-152.2	210.1	204.9	5.23	40.149		
1,100.0	1,070.1	1,073.7	1,071.1	4.4	2.2	-126.09	-105.1	-160.0	231.6	225.7	5.84	39.663 SF		
1,200.0	1,163.0	1,168.7	1,165.8	5.0	2.4	-130.97	-104.6	-167.7	255.0	248.7	6.39	39.942		
1,300.0	1,255.8	1,263.7	1,260.4	5.7	2.6	-135.04	-104.0	-175.5	280.0	273.2	6.89	40.655		
1,400.0	1,348.6	1,358.7	1,355.1	6.4	2.8	-138.45	-103.5	-183.3	306.2	298.8	7.36	41.609		
1,500.0	1,441.4	1,453.7	1,449.8	7.1	3.0	-141.33	-103.0	-191.0	333.2	325.4	7.81	42.691		
1,600.0	1,534.2	1,548.7	1,544.5	7.8	3.3	-143.78	-102.5	-198.8	360.9	352.7	8.23	43.829		
1,700.0	1,627.1	1,643.7	1,639.1	8.5	3.5	-145.88	-102.0	-206.6	389.2	380.5	8.65	44.983		
1,800.0	1,719.9	1,738.7	1,733.8	9.2	3.7	-147.70	-101.5	-214.4	417.8	408.8	9.06	46.124		
1,900.0	1,812.7	1,833.6	1,828.5	9.9	3.9	-149.30	-101.0	-222.1	446.9	437.4	9.46	47.237		
2,000.0	1,905.5	1,928.6	1,923.2	10.6	4.1	-150.69	-100.5	-229.9	476.1	466.3	9.86	48.313		

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well MCU Fee 17-9B (M16W pad)
Project:	Mamm Creek	TVD Reference:	KBE @ 7903.0ft (Original Well Elev)
Reference Site:	SWSW S16-T7S-R93W (M16W Pad)	MD Reference:	KBE @ 7903.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	MCU Fee 17-9B (M16W pad)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	EDM 5000.1 US Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design SWSW S16-T7S-R93W (M16W Pad) - MCU 16-13D (M16W Pad) - DD - Plan #1													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor		
0.0	0.0	0.0	0.0	0.0	0.0	-133.64	-120.9	-126.8	175.2					
100.0	100.0	100.0	100.0	0.1	0.1	-133.64	-120.9	-126.8	175.2	174.9	0.27	643.554		
200.0	200.0	200.0	200.0	0.3	0.3	-133.64	-120.9	-126.8	175.2	174.6	0.62	282.007	CC, ES	
300.0	300.0	291.9	291.8	0.5	0.5	-83.12	-121.9	-128.8	177.2	176.2	0.97	183.523		
400.0	399.6	385.1	384.9	0.7	0.7	-84.61	-124.9	-134.7	183.1	181.8	1.35	135.432		
500.0	498.8	484.4	483.7	1.0	0.9	-87.45	-128.7	-142.3	190.3	188.4	1.82	104.698		
600.0	597.1	583.0	582.0	1.4	1.1	-91.53	-132.5	-149.8	198.0	195.6	2.37	83.662		
700.0	694.3	680.6	679.3	1.8	1.3	-96.58	-136.3	-157.3	207.4	204.4	3.00	69.022		
800.0	790.2	777.2	775.5	2.4	1.5	-102.31	-140.0	-164.7	219.5	215.8	3.72	59.033		
900.0	884.4	872.3	870.2	3.0	1.8	-108.34	-143.6	-171.9	235.6	231.1	4.48	52.535		
1,000.0	977.3	966.1	963.7	3.7	2.0	-114.55	-147.2	-179.1	256.0	250.7	5.22	49.023		
1,100.0	1,070.1	1,059.9	1,057.1	4.4	2.2	-120.02	-150.8	-186.3	279.2	273.3	5.91	47.282		
1,200.0	1,163.0	1,153.7	1,150.6	5.0	2.4	-124.66	-154.5	-193.4	304.7	298.1	6.54	46.575		
1,300.0	1,255.8	1,247.5	1,244.0	5.7	2.6	-128.61	-158.1	-200.6	331.8	324.7	7.14	46.490	SF	
1,400.0	1,348.6	1,341.3	1,337.5	6.4	2.8	-131.97	-161.7	-207.8	360.3	352.6	7.70	46.784		
1,500.0	1,441.4	1,435.1	1,430.9	7.1	3.0	-134.85	-165.3	-214.9	389.7	381.5	8.24	47.310		
1,600.0	1,534.2	1,528.8	1,524.4	7.8	3.3	-137.33	-168.9	-222.1	420.0	411.2	8.75	47.974		
1,700.0	1,627.1	1,622.6	1,617.8	8.5	3.5	-139.49	-172.5	-229.3	450.8	441.6	9.25	48.717		
1,800.0	1,719.9	1,716.4	1,711.3	9.2	3.7	-141.37	-176.1	-236.4	482.3	472.5	9.74	49.500		

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well MCU Fee 17-9B (M16W pad)
Project:	Mamm Creek	TVD Reference:	KBE @ 7903.0ft (Original Well Elev)
Reference Site:	SWSW S16-T7S-R93W (M16W Pad)	MD Reference:	KBE @ 7903.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	MCU Fee 17-9B (M16W pad)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	EDM 5000.1 US Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design SWSW S16-T7S-R93W (M16W Pad) - MCU 21-3B (M16W Pad) - DD - Plan #1													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance				Total		Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Uncertainty Axis	Separation Factor		
0.0	0.0	0.0	0.0	0.0	0.0	-109.93	-5.8	-16.1	17.1					
100.0	100.0	100.0	100.0	0.1	0.1	-109.93	-5.8	-16.1	17.1	16.9	0.27	62.892		
200.0	200.0	200.0	200.0	0.3	0.3	-109.93	-5.8	-16.1	17.1	16.5	0.62	27.559		
300.0	300.0	300.1	300.1	0.5	0.5	-76.43	-7.7	-14.3	15.4	14.4	0.99	15.603		
323.6	323.5	323.5	323.4	0.5	0.5	-86.65	-8.7	-13.3	15.2	14.1	1.09	13.917	CC, ES, SF	
400.0	399.6	398.6	398.2	0.7	0.7	-126.28	-13.2	-8.9	19.9	18.5	1.38	14.381		
500.0	498.8	493.9	492.7	1.0	1.0	-154.14	-22.0	-0.3	41.4	39.7	1.70	24.332		
600.0	597.1	584.8	582.2	1.4	1.3	-163.95	-33.5	10.9	75.3	73.3	2.01	37.500		
700.0	694.3	670.3	665.5	1.8	1.7	-168.18	-47.0	24.2	119.0	116.7	2.30	51.634		
800.0	790.2	756.5	749.2	2.4	2.0	-170.48	-62.0	38.8	169.4	166.8	2.60	65.154		
900.0	884.4	839.9	830.1	3.0	2.4	-171.83	-76.4	52.9	224.3	221.4	2.88	77.787		
1,000.0	977.3	921.1	908.9	3.7	2.8	-172.87	-90.5	66.6	282.5	279.3	3.18	88.804		
1,100.0	1,070.1	1,002.2	987.6	4.4	3.1	-173.62	-104.6	80.4	340.9	337.4	3.49	97.748		
1,200.0	1,163.0	1,083.3	1,066.2	5.0	3.5	-174.15	-118.6	94.1	399.4	395.6	3.79	105.233		
1,300.0	1,255.8	1,164.4	1,144.9	5.7	3.9	-174.54	-132.7	107.8	457.8	453.7	4.10	111.601		

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well MCU Fee 17-9B (M16W pad)
Project:	Mamm Creek	TVD Reference:	KBE @ 7903.0ft (Original Well Elev)
Reference Site:	SWSW S16-T7S-R93W (M16W Pad)	MD Reference:	KBE @ 7903.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	MCU Fee 17-9B (M16W pad)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	EDM 5000.1 US Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design SWSW S16-T7S-R93W (M16W Pad) - MCU 21-4A (M16W Pad) - DD - Plan #1													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor		
0.0	0.0	0.0	0.0	0.0	0.0	-137.19	-125.3	-116.1	170.8					
100.0	100.0	100.0	100.0	0.1	0.1	-137.19	-125.3	-116.1	170.8	170.5	0.27	627.308		
200.0	200.0	200.0	200.0	0.3	0.3	-137.19	-125.3	-116.1	170.8	170.2	0.62	274.888	CC, ES	
300.0	300.0	291.8	291.8	0.5	0.5	-86.76	-126.6	-117.8	173.0	172.0	0.97	179.257		
400.0	399.6	385.4	385.1	0.7	0.7	-88.53	-130.7	-123.2	179.8	178.4	1.35	133.080		
500.0	498.8	481.9	481.1	1.0	0.9	-91.49	-136.4	-130.7	189.2	187.4	1.81	104.637		
600.0	597.1	580.1	578.9	1.4	1.1	-95.62	-142.2	-138.2	199.7	197.4	2.35	84.963		
700.0	694.3	677.5	675.8	1.8	1.4	-100.55	-147.9	-145.7	212.3	209.3	2.98	71.329		
800.0	790.2	773.5	771.4	2.4	1.6	-105.97	-153.6	-153.1	227.9	224.2	3.67	62.064		
900.0	884.4	868.1	865.5	3.0	1.8	-111.54	-159.1	-160.4	247.5	243.1	4.42	56.051		
1,000.0	977.3	961.4	958.4	3.7	2.0	-117.25	-164.6	-167.6	271.4	266.2	5.14	52.837		
1,100.0	1,070.1	1,054.6	1,051.2	4.4	2.3	-122.24	-170.1	-174.8	297.8	291.9	5.81	51.235		
1,200.0	1,163.0	1,147.9	1,144.0	5.0	2.5	-126.44	-175.6	-182.0	326.0	319.6	6.45	50.562		
1,300.0	1,255.8	1,241.1	1,236.8	5.7	2.7	-129.99	-181.1	-189.2	355.7	348.7	7.05	50.445	SF	
1,400.0	1,348.6	1,334.3	1,329.6	6.4	2.9	-133.00	-186.6	-196.3	386.5	378.9	7.63	50.667		
1,500.0	1,441.4	1,427.6	1,422.4	7.1	3.2	-135.58	-192.0	-203.5	418.2	410.0	8.19	51.093		
1,600.0	1,534.2	1,520.8	1,515.2	7.8	3.4	-137.80	-197.5	-210.7	450.6	441.8	8.72	51.640		
1,700.0	1,627.1	1,614.0	1,608.0	8.5	3.6	-139.73	-203.0	-217.9	483.4	474.2	9.25	52.257		

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well MCU Fee 17-9B (M16W pad)
Project:	Mamm Creek	TVD Reference:	KBE @ 7903.0ft (Original Well Elev)
Reference Site:	SWSW S16-T7S-R93W (M16W Pad)	MD Reference:	KBE @ 7903.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	MCU Fee 17-9B (M16W pad)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	EDM 5000.1 US Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design SWSW S16-T7S-R93W (M16W Pad) - MCU 21-4B (M16W Pad) - DD - Plan #1													Offset Site Error: 0.0 ft
Survey Program: 0-MWD													Offset Well Error: 0.0 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	
0.0	0.0	0.0	0.0	0.0	0.0	-140.07	-119.5	-100.0	155.8				
100.0	100.0	100.0	100.0	0.1	0.1	-140.07	-119.5	-100.0	155.8	155.5	0.27	572.125	
200.0	200.0	200.0	200.0	0.3	0.3	-140.07	-119.5	-100.0	155.8	155.2	0.62	250.707	CC, ES
300.0	300.0	292.4	292.3	0.5	0.5	-89.95	-121.3	-101.2	158.2	157.2	0.97	163.733	
400.0	399.6	384.0	383.7	0.7	0.7	-92.47	-126.9	-104.8	165.6	164.2	1.35	122.891	
500.0	498.8	474.2	473.2	1.0	0.9	-96.10	-136.0	-110.6	178.6	176.8	1.79	100.002	
600.0	597.1	570.6	568.6	1.4	1.2	-100.73	-147.8	-118.3	196.1	193.8	2.31	84.928	
700.0	694.3	666.4	663.4	1.8	1.5	-105.73	-159.5	-125.9	216.4	213.5	2.90	74.491	
800.0	790.2	760.8	756.8	2.4	1.8	-110.78	-171.1	-133.4	240.2	236.6	3.56	67.389	
900.0	884.4	853.5	848.5	3.0	2.0	-115.63	-182.5	-140.8	268.1	263.8	4.27	62.752	
1,000.0	977.3	944.8	938.8	3.7	2.3	-120.59	-193.7	-148.0	300.0	295.0	4.97	60.374	
1,100.0	1,070.1	1,036.1	1,029.1	4.4	2.6	-124.86	-204.9	-155.3	333.9	328.3	5.64	59.210	
1,200.0	1,163.0	1,127.3	1,119.4	5.0	2.9	-128.36	-216.1	-162.5	369.3	363.0	6.29	58.721	
1,300.0	1,255.8	1,218.6	1,209.6	5.7	3.2	-131.27	-227.4	-169.7	405.7	398.8	6.92	58.628	SF
1,400.0	1,348.6	1,309.8	1,299.9	6.4	3.4	-133.71	-238.6	-177.0	442.9	435.4	7.54	58.770	
1,500.0	1,441.4	1,401.1	1,390.2	7.1	3.7	-135.78	-249.8	-184.2	480.7	472.6	8.14	59.050	

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well MCU Fee 17-9B (M16W pad)
Project:	Mamm Creek	TVD Reference:	KBE @ 7903.0ft (Original Well Elev)
Reference Site:	SWSW S16-T7S-R93W (M16W Pad)	MD Reference:	KBE @ 7903.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	MCU Fee 17-9B (M16W pad)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	EDM 5000.1 US Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design SWSW S16-T7S-R93W (M16W Pad) - MCU 21-4C (M16W Pad) - DD - Plan #1													Offset Site Error:	0.0 ft
Survey Program:		0-MWD											Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor		
0.0	0.0	0.0	0.0	0.0	0.0	-143.48	-113.6	-84.2	141.4					
100.0	100.0	100.0	100.0	0.1	0.1	-143.48	-113.6	-84.2	141.4	141.1	0.27	519.370		
200.0	200.0	200.0	200.0	0.3	0.3	-143.48	-113.6	-84.2	141.4	140.8	0.62	227.589	CC, ES	
300.0	300.0	293.1	293.0	0.5	0.5	-93.50	-115.7	-85.2	144.0	143.0	0.97	148.842		
400.0	399.6	385.3	385.0	0.7	0.7	-96.39	-121.7	-88.2	151.9	150.5	1.35	112.594		
500.0	498.8	475.8	474.9	1.0	0.9	-100.47	-131.4	-93.0	166.0	164.2	1.79	92.896		
600.0	597.1	565.3	563.0	1.4	1.2	-105.01	-144.7	-99.7	186.9	184.6	2.29	81.693		
700.0	694.3	659.9	656.1	1.8	1.5	-109.93	-160.2	-107.4	212.5	209.6	2.86	74.171		
800.0	790.2	753.1	747.7	2.4	1.9	-114.63	-175.5	-115.0	241.8	238.3	3.50	69.074		
900.0	884.4	844.4	837.5	3.0	2.2	-118.95	-190.4	-122.5	275.3	271.1	4.19	65.756		
1,000.0	977.3	934.3	925.8	3.7	2.5	-123.41	-205.1	-129.8	312.5	307.6	4.87	64.208		
1,100.0	1,070.1	1,024.1	1,014.1	4.4	2.8	-127.20	-219.8	-137.1	351.3	345.8	5.53	63.520		
1,200.0	1,163.0	1,113.9	1,102.4	5.0	3.2	-130.25	-234.5	-144.5	391.2	385.1	6.18	63.290	SF	
1,300.0	1,255.8	1,203.6	1,190.7	5.7	3.5	-132.76	-249.2	-151.8	432.0	425.2	6.82	63.320		
1,400.0	1,348.6	1,293.4	1,278.9	6.4	3.8	-134.84	-263.9	-159.1	473.3	465.9	7.45	63.497		

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well MCU Fee 17-9B (M16W pad)
Project:	Mamm Creek	TVD Reference:	KBE @ 7903.0ft (Original Well Elev)
Reference Site:	SWSW S16-T7S-R93W (M16W Pad)	MD Reference:	KBE @ 7903.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	MCU Fee 17-9B (M16W pad)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	EDM 5000.1 US Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design SWSW S16-T7S-R93W (M16W Pad) - MCU 21-4D2 (M16W Pad) - DD - Plan #1													Offset Site Error: 0.0 ft
Survey Program: 0-MWD													Offset Well Error: 0.0 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	
0.0	0.0	0.0	0.0	0.0	0.0	-147.73	-107.8	-68.1	127.5				
100.0	100.0	100.0	100.0	0.1	0.1	-147.73	-107.8	-68.1	127.5	127.2	0.27	468.286	
200.0	200.0	200.0	200.0	0.3	0.3	-147.73	-107.8	-68.1	127.5	126.9	0.62	205.204	CC, ES
300.0	300.0	293.7	293.6	0.5	0.5	-97.88	-109.9	-68.9	130.3	129.3	0.97	134.550	
400.0	399.6	386.5	386.2	0.7	0.7	-101.07	-116.3	-71.4	138.8	137.5	1.35	102.894	
500.0	498.8	477.4	476.5	1.0	0.9	-105.44	-126.5	-75.6	154.1	152.3	1.78	86.433	
600.0	597.1	565.8	563.6	1.4	1.2	-110.08	-140.2	-81.1	176.6	174.4	2.27	77.745	
700.0	694.3	652.8	648.6	1.8	1.6	-114.41	-157.3	-87.9	206.8	204.0	2.82	73.343	
800.0	790.2	744.4	737.8	2.4	1.9	-118.61	-176.4	-95.6	242.1	238.6	3.43	70.477	
900.0	884.4	834.0	825.1	3.0	2.3	-122.31	-195.1	-103.1	281.3	277.2	4.10	68.620	
1,000.0	977.3	922.1	910.9	3.7	2.7	-126.20	-213.5	-110.4	323.9	319.2	4.76	67.985	
1,100.0	1,070.1	1,010.0	996.7	4.4	3.1	-129.49	-231.9	-117.8	367.8	362.4	5.42	67.827	SF
1,200.0	1,163.0	1,098.0	1,082.4	5.0	3.4	-132.10	-250.3	-125.2	412.6	406.5	6.08	67.894	
1,300.0	1,255.8	1,186.0	1,168.1	5.7	3.8	-134.21	-268.6	-132.5	457.9	451.1	6.73	68.077	

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well MCU Fee 17-9B (M16W pad)
Project:	Mamm Creek	TVD Reference:	KBE @ 7903.0ft (Original Well Elev)
Reference Site:	SWSW S16-T7S-R93W (M16W Pad)	MD Reference:	KBE @ 7903.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	MCU Fee 17-9B (M16W pad)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	EDM 5000.1 US Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design SWSW S16-T7S-R93W (M16W Pad) - MCU 21-5A (M16W Pad) - DD - Plan #1													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor		
0.0	0.0	0.0	0.0	0.0	0.0	-152.87	-102.0	-52.2	114.6					
100.0	100.0	100.0	100.0	0.1	0.1	-152.87	-102.0	-52.2	114.6	114.3	0.27	420.854		
200.0	200.0	200.0	200.0	0.3	0.3	-152.87	-102.0	-52.2	114.6	114.0	0.62	184.419	CC, ES	
300.0	300.0	294.2	294.2	0.5	0.5	-103.10	-104.2	-53.0	117.6	116.6	0.97	121.409		
400.0	399.6	387.5	387.2	0.7	0.7	-106.46	-110.7	-55.2	127.0	125.6	1.35	94.173		
500.0	498.8	478.9	477.9	1.0	0.9	-110.93	-121.2	-58.7	143.4	141.7	1.78	80.813		
600.0	597.1	567.6	565.3	1.4	1.2	-115.49	-135.4	-63.5	167.6	165.4	2.25	74.419		
700.0	694.3	652.8	648.5	1.8	1.6	-119.48	-152.6	-69.3	199.8	197.0	2.78	71.791		
800.0	790.2	735.6	728.6	2.4	2.0	-122.72	-172.6	-76.0	239.5	236.1	3.37	71.136		
900.0	884.4	823.3	813.1	3.0	2.4	-125.71	-195.0	-83.5	284.3	280.3	4.01	70.836	SF	
1,000.0	977.3	909.3	895.9	3.7	2.8	-129.00	-216.9	-90.9	332.2	327.5	4.67	71.182		
1,100.0	1,070.1	995.2	978.6	4.4	3.2	-131.78	-238.8	-98.3	381.0	375.7	5.32	71.607		
1,200.0	1,163.0	1,081.1	1,061.4	5.0	3.7	-133.94	-260.7	-105.6	430.4	424.4	5.98	72.020		
1,300.0	1,255.8	1,167.0	1,144.1	5.7	4.1	-135.67	-282.6	-113.0	480.1	473.5	6.63	72.407		

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well MCU Fee 17-9B (M16W pad)
Project:	Mamm Creek	TVD Reference:	KBE @ 7903.0ft (Original Well Elev)
Reference Site:	SWSW S16-T7S-R93W (M16W Pad)	MD Reference:	KBE @ 7903.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	MCU Fee 17-9B (M16W pad)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	EDM 5000.1 US Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design SWSW S16-T7S-R93W (M16W Pad) - MCU Fee 16-12C2 (M16W Pad) - DD - Plan #1													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor		
0.0	0.0	0.0	0.0	0.0	0.0	69.76	5.8	15.8	16.9					
100.0	100.0	100.0	100.0	0.1	0.1	69.76	5.8	15.8	16.9	16.6	0.27	61.912	CC, ES	
200.0	200.0	200.0	200.0	0.3	0.3	69.76	5.8	15.8	16.9	16.2	0.62	27.130		
300.0	300.0	300.3	300.2	0.5	0.5	120.01	7.9	14.1	17.3	16.4	0.98	17.601		
400.0	399.6	400.6	400.2	0.7	0.7	117.92	14.0	9.1	18.8	17.4	1.41	13.287		
500.0	498.8	500.8	499.6	1.0	1.0	115.07	24.1	0.8	21.2	19.3	1.97	10.804		
600.0	597.1	600.7	598.2	1.4	1.3	117.12	36.5	-9.4	25.3	22.7	2.59	9.766	SF	
700.0	694.3	700.3	696.5	1.8	1.6	126.70	48.8	-19.5	32.1	29.0	3.17	10.153		
800.0	790.2	799.4	794.3	2.4	1.9	137.74	61.1	-29.6	43.3	39.7	3.62	11.972		
900.0	884.4	897.7	891.3	3.0	2.3	146.90	73.2	-39.6	59.8	55.8	3.97	15.076		
1,000.0	977.3	995.2	987.6	3.7	2.6	153.43	85.3	-49.5	80.5	76.3	4.27	18.867		
1,100.0	1,070.1	1,092.7	1,083.8	4.4	2.9	157.37	97.4	-59.5	102.1	97.5	4.60	22.182		
1,200.0	1,163.0	1,190.1	1,180.0	5.0	3.2	159.93	109.5	-69.4	123.9	118.9	4.95	25.012		
1,300.0	1,255.8	1,287.6	1,276.2	5.7	3.5	161.73	121.5	-79.3	145.9	140.6	5.32	27.438		
1,400.0	1,348.6	1,385.1	1,372.4	6.4	3.9	163.05	133.6	-89.2	168.0	162.3	5.69	29.532		
1,500.0	1,441.4	1,482.5	1,468.6	7.1	4.2	164.07	145.7	-99.1	190.2	184.1	6.06	31.356		
1,600.0	1,534.2	1,580.0	1,564.8	7.8	4.5	164.87	157.8	-109.1	212.4	205.9	6.44	32.956		
1,700.0	1,627.1	1,677.5	1,661.0	8.5	4.8	165.52	169.8	-119.0	234.6	227.8	6.83	34.370		
1,800.0	1,719.9	1,774.9	1,757.2	9.2	5.1	166.06	181.9	-128.9	256.9	249.7	7.21	35.629		
1,900.0	1,812.7	1,872.4	1,853.4	9.9	5.5	166.51	194.0	-138.8	279.2	271.6	7.60	36.756		
2,000.0	1,905.5	1,969.9	1,949.6	10.6	5.8	166.90	206.0	-148.8	301.5	293.5	7.98	37.771		
2,100.0	1,998.3	2,067.3	2,045.8	11.3	6.1	167.23	218.1	-158.7	323.8	315.4	8.37	38.689		
2,200.0	2,091.2	2,164.8	2,142.0	12.0	6.4	167.52	230.2	-168.6	346.1	337.4	8.76	39.525		
2,300.0	2,184.0	2,262.2	2,238.2	12.7	6.8	167.77	242.3	-178.5	368.5	359.3	9.15	40.288		
2,400.0	2,276.8	2,359.7	2,334.4	13.4	7.1	168.00	254.3	-188.5	390.8	381.3	9.53	40.987		
2,500.0	2,369.6	2,457.2	2,430.6	14.1	7.4	168.20	266.4	-198.4	413.1	403.2	9.92	41.630		
2,600.0	2,462.4	2,554.6	2,526.8	14.8	7.7	168.38	278.5	-208.3	435.5	425.2	10.31	42.224		
2,700.0	2,555.3	2,652.1	2,623.0	15.5	8.0	168.54	290.5	-218.2	457.8	447.1	10.70	42.774		
2,800.0	2,648.1	2,749.6	2,719.2	16.2	8.4	168.69	302.6	-228.1	480.2	469.1	11.09	43.284		

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well MCU Fee 17-9B (M16W pad)
Project:	Mamm Creek	TVD Reference:	KBE @ 7903.0ft (Original Well Elev)
Reference Site:	SWSW S16-T7S-R93W (M16W Pad)	MD Reference:	KBE @ 7903.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	MCU Fee 17-9B (M16W pad)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	EDM 5000.1 US Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design SWSW S16-T7S-R93W (M16W Pad) - MCU Fee 16-2C (M16W Pad) - DD - Plan #1												Offset Site Error: 0.0 ft			
Survey Program: 0-MWD														Offset Well Error: 0.0 ft	
Reference		Offset		Semi Major Axis			Distance							Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor			
0.0	0.0	0.0	0.0	0.0	0.0	52.26	16.4	21.2	26.8						
100.0	100.0	100.0	100.0	0.1	0.1	52.26	16.4	21.2	26.8	26.5	0.27	98.378			
200.0	200.0	200.0	200.0	0.3	0.3	52.26	16.4	21.2	26.8	26.2	0.62	43.110	CC, ES		
300.0	300.0	299.8	299.8	0.5	0.5	103.16	18.6	19.8	27.7	26.7	0.99	28.051			
400.0	399.6	399.6	399.3	0.7	0.7	102.81	25.3	15.7	30.3	28.9	1.42	21.298			
500.0	498.8	499.3	498.1	1.0	1.0	102.34	36.4	9.0	34.8	32.8	1.98	17.517			
600.0	597.1	598.9	596.0	1.4	1.3	101.89	51.8	-0.4	41.0	38.3	2.69	15.224			
700.0	694.3	698.6	693.7	1.8	1.7	105.28	68.8	-10.8	48.6	45.1	3.49	13.921			
800.0	790.2	797.9	791.0	2.4	2.1	112.55	85.8	-21.2	58.1	53.8	4.32	13.457	SF		
900.0	884.4	896.5	887.6	3.0	2.5	121.27	102.6	-31.5	71.0	65.9	5.09	13.937			
1,000.0	977.3	994.5	983.6	3.7	2.8	129.37	119.4	-41.8	87.4	81.7	5.73	15.250			
1,100.0	1,070.1	1,092.5	1,079.6	4.4	3.2	135.01	136.1	-52.0	105.2	98.9	6.32	16.652			
1,200.0	1,163.0	1,190.4	1,175.6	5.0	3.6	139.01	152.9	-62.2	123.7	116.8	6.88	17.974			
1,300.0	1,255.8	1,288.4	1,271.5	5.7	4.0	141.96	169.6	-72.4	142.7	135.2	7.44	19.176			
1,400.0	1,348.6	1,386.4	1,367.5	6.4	4.4	144.21	186.4	-82.7	161.9	153.9	7.99	20.256			
1,500.0	1,441.4	1,484.3	1,463.5	7.1	4.8	145.99	203.1	-92.9	181.3	172.7	8.54	21.223			
1,600.0	1,534.2	1,582.3	1,559.5	7.8	5.1	147.42	219.8	-103.1	200.8	191.7	9.09	22.088			
1,700.0	1,627.1	1,680.2	1,655.4	8.5	5.5	148.60	236.6	-113.4	220.5	210.8	9.64	22.865			
1,800.0	1,719.9	1,778.2	1,751.4	9.2	5.9	149.59	253.3	-123.6	240.2	230.0	10.19	23.565			
1,900.0	1,812.7	1,876.1	1,847.4	9.9	6.3	150.42	270.1	-133.8	260.0	249.2	10.74	24.197			
2,000.0	1,905.5	1,974.1	1,943.4	10.6	6.7	151.14	286.8	-144.1	279.8	268.5	11.30	24.771			
2,100.0	1,998.3	2,072.1	2,039.3	11.3	7.0	151.76	303.5	-154.3	299.6	287.8	11.85	25.294			
2,200.0	2,091.2	2,170.0	2,135.3	12.0	7.4	152.31	320.3	-164.5	319.5	307.1	12.40	25.771			
2,300.0	2,184.0	2,268.0	2,231.3	12.7	7.8	152.79	337.0	-174.8	339.5	326.5	12.95	26.210			
2,400.0	2,276.8	2,365.9	2,327.3	13.4	8.2	153.22	353.8	-185.0	359.4	345.9	13.50	26.613			
2,500.0	2,369.6	2,463.9	2,423.2	14.1	8.6	153.60	370.5	-195.2	379.3	365.3	14.06	26.985			
2,600.0	2,462.4	2,561.9	2,519.2	14.8	9.0	153.95	387.3	-205.4	399.3	384.7	14.61	27.330			
2,700.0	2,555.3	2,659.8	2,615.2	15.5	9.4	154.26	404.0	-215.7	419.3	404.1	15.16	27.650			
2,800.0	2,648.1	2,757.8	2,711.2	16.2	9.7	154.54	420.7	-225.9	439.3	423.6	15.72	27.948			
2,900.0	2,740.9	2,855.7	2,807.1	16.9	10.1	154.80	437.5	-236.1	459.3	443.0	16.27	28.225			
3,000.0	2,833.7	2,953.7	2,903.1	17.6	10.5	155.04	454.2	-246.4	479.3	462.5	16.83	28.485			
3,100.0	2,926.5	3,051.7	2,999.1	18.3	10.9	155.26	471.0	-256.6	499.3	481.9	17.38	28.728			

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well MCU Fee 17-9B (M16W pad)
Project:	Mamm Creek	TVD Reference:	KBE @ 7903.0ft (Original Well Elev)
Reference Site:	SWSW S16-T7S-R93W (M16W Pad)	MD Reference:	KBE @ 7903.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	MCU Fee 17-9B (M16W pad)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	EDM 5000.1 US Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design SWSW S16-T7S-R93W (M16W Pad) - MCU Fee 16-5C (M16W Pad) - DD - Plan #1												Offset Site Error:	0.0 ft
Survey Program: 0-MWD												Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	
0.0	0.0	0.0	0.0	0.0	0.0	69.93	11.7	31.9	34.0				
100.0	100.0	100.0	100.0	0.1	0.1	69.93	11.7	31.9	34.0	33.7	0.27	124.792	
200.0	200.0	200.0	200.0	0.3	0.3	69.93	11.7	31.9	34.0	33.4	0.62	54.684	CC, ES
300.0	300.0	300.0	299.9	0.5	0.5	120.32	14.1	31.0	35.3	34.3	0.99	35.863	
400.0	399.6	399.8	399.5	0.7	0.7	118.66	21.5	28.3	39.4	38.0	1.42	27.835	
500.0	498.8	499.5	498.2	1.0	1.0	116.53	33.7	23.9	46.2	44.2	1.96	23.562	
600.0	597.1	598.8	595.9	1.4	1.4	114.38	50.6	17.7	55.8	53.1	2.65	21.013	
700.0	694.3	697.6	692.0	1.8	1.8	112.46	72.2	9.8	68.1	64.6	3.51	19.395	
800.0	790.2	795.9	786.3	2.4	2.3	110.82	98.3	0.3	83.1	78.5	4.53	18.330	
900.0	884.4	894.1	879.4	3.0	2.9	110.11	127.8	-10.5	100.5	94.9	5.67	17.730	
1,000.0	977.3	992.3	972.3	3.7	3.4	111.46	157.5	-21.3	119.4	112.5	6.83	17.469	
1,100.0	1,070.1	1,090.5	1,065.2	4.4	4.0	112.64	187.3	-32.1	138.4	130.4	8.00	17.285	
1,200.0	1,163.0	1,188.6	1,158.1	5.0	4.6	113.53	217.0	-43.0	157.4	148.2	9.18	17.146	
1,300.0	1,255.8	1,286.7	1,251.0	5.7	5.2	114.23	246.7	-53.8	176.4	166.1	10.36	17.037	
1,400.0	1,348.6	1,384.9	1,343.9	6.4	5.7	114.80	276.4	-64.6	195.5	184.0	11.53	16.951	
1,500.0	1,441.4	1,483.0	1,436.8	7.1	6.3	115.26	306.1	-75.5	214.6	201.9	12.71	16.880	
1,600.0	1,534.2	1,581.2	1,529.7	7.8	6.9	115.65	335.8	-86.3	233.7	219.8	13.89	16.822	
1,700.0	1,627.1	1,679.3	1,622.7	8.5	7.5	115.98	365.6	-97.2	252.8	237.7	15.07	16.773	
1,800.0	1,719.9	1,777.5	1,715.6	9.2	8.0	116.26	395.3	-108.0	271.9	255.7	16.25	16.731	
1,900.0	1,812.7	1,875.6	1,808.5	9.9	8.6	116.51	425.0	-118.8	291.1	273.6	17.43	16.694	
2,000.0	1,905.5	1,973.8	1,901.4	10.6	9.2	116.72	454.7	-129.7	310.2	291.6	18.62	16.663	
2,100.0	1,998.3	2,071.9	1,994.3	11.3	9.8	116.91	484.4	-140.5	329.3	309.5	19.80	16.635	
2,200.0	2,091.2	2,170.1	2,087.2	12.0	10.4	117.08	514.1	-151.4	348.5	327.5	20.98	16.610	
2,300.0	2,184.0	2,268.2	2,180.1	12.7	10.9	117.23	543.9	-162.2	367.6	345.4	22.16	16.588	
2,400.0	2,276.8	2,366.4	2,273.0	13.4	11.5	117.37	573.6	-173.0	386.7	363.4	23.34	16.569	
2,500.0	2,369.6	2,464.5	2,365.9	14.1	12.1	117.49	603.3	-183.9	405.9	381.4	24.52	16.551	
2,600.0	2,462.4	2,562.7	2,458.8	14.8	12.7	117.61	633.0	-194.7	425.0	399.3	25.70	16.535	
2,700.0	2,555.3	2,660.8	2,551.8	15.5	13.3	117.71	662.7	-205.6	444.2	417.3	26.89	16.520	
2,800.0	2,648.1	2,759.0	2,644.7	16.2	13.8	117.80	692.5	-216.4	463.3	435.2	28.07	16.507	
2,900.0	2,740.9	2,857.1	2,737.6	16.9	14.4	117.89	722.2	-227.2	482.5	453.2	29.25	16.495	SF

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well MCU Fee 17-9B (M16W pad)
Project:	Mamm Creek	TVD Reference:	KBE @ 7903.0ft (Original Well Elev)
Reference Site:	SWSW S16-T7S-R93W (M16W Pad)	MD Reference:	KBE @ 7903.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	MCU Fee 17-9B (M16W pad)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	EDM 5000.1 US Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design SWSW S16-T7S-R93W (M16W Pad) - MCU Fee 17-16B (M16W Pad) - DD - Plan #1												Offset Site Error: 0.0 ft	
Survey Program: 0-MWD												Offset Well Error: 0.0 ft	
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Total Uncertainty	Separation	
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	Axis	Factor	
0.0	0.0	0.0	0.0	0.0	0.0	-147.17	-97.6	-63.0	116.2				
100.0	100.0	100.0	100.0	0.1	0.1	-147.17	-97.6	-63.0	116.2	115.9	0.27	426.652	
200.0	200.0	200.0	200.0	0.3	0.3	-147.17	-97.6	-63.0	116.2	115.5	0.62	186.960	CC, ES
300.0	300.0	298.0	298.0	0.5	0.5	-96.19	-97.0	-65.4	117.3	116.3	0.98	119.343	
400.0	399.6	396.0	395.6	0.7	0.7	-96.35	-95.3	-72.7	120.7	119.3	1.41	85.343	
500.0	498.8	493.8	492.6	1.0	1.0	-96.57	-92.3	-84.9	126.3	124.3	1.96	64.344	
600.0	597.1	591.4	588.6	1.4	1.3	-96.85	-88.3	-101.8	134.1	131.5	2.66	50.423	
700.0	694.3	688.7	683.4	1.8	1.8	-97.13	-83.0	-123.4	144.2	140.7	3.52	40.926	
800.0	790.2	785.7	776.5	2.4	2.3	-97.40	-76.7	-149.6	156.4	151.9	4.56	34.308	
900.0	884.4	882.9	868.5	3.0	2.9	-97.69	-69.4	-180.3	170.8	165.0	5.75	29.704	
1,000.0	977.3	981.6	961.4	3.7	3.5	-98.96	-61.6	-212.7	186.1	179.1	7.01	26.557	
1,100.0	1,070.1	1,080.3	1,054.3	4.4	4.1	-100.21	-53.7	-245.1	201.5	193.2	8.28	24.343	
1,200.0	1,163.0	1,179.0	1,147.2	5.0	4.7	-101.27	-45.9	-277.5	217.0	207.5	9.56	22.711	
1,300.0	1,255.8	1,277.8	1,240.2	5.7	5.4	-102.20	-38.1	-309.9	232.6	221.8	10.84	21.463	
1,400.0	1,348.6	1,376.5	1,333.1	6.4	6.0	-103.00	-30.3	-342.3	248.2	236.1	12.12	20.481	
1,500.0	1,441.4	1,475.2	1,426.0	7.1	6.6	-103.72	-22.5	-374.7	263.9	250.5	13.40	19.690	
1,600.0	1,534.2	1,573.9	1,518.9	7.8	7.3	-104.35	-14.7	-407.1	279.6	264.9	14.68	19.039	
1,700.0	1,627.1	1,672.6	1,611.8	8.5	7.9	-104.91	-6.9	-439.5	295.3	279.4	15.97	18.496	
1,800.0	1,719.9	1,771.3	1,704.7	9.2	8.5	-105.42	0.9	-471.9	311.1	293.8	17.25	18.035	
1,900.0	1,812.7	1,870.1	1,797.7	9.9	9.2	-105.88	8.7	-504.3	326.9	308.3	18.53	17.640	
2,000.0	1,905.5	1,968.8	1,890.6	10.6	9.8	-106.30	16.5	-536.7	342.7	322.8	19.81	17.297	
2,100.0	1,998.3	2,067.5	1,983.5	11.3	10.4	-106.68	24.3	-569.2	358.5	337.4	21.09	16.998	
2,200.0	2,091.2	2,166.2	2,076.4	12.0	11.1	-107.03	32.1	-601.6	374.3	351.9	22.37	16.734	
2,300.0	2,184.0	2,264.9	2,169.3	12.7	11.7	-107.35	39.9	-634.0	390.1	366.5	23.65	16.499	
2,400.0	2,276.8	2,363.6	2,262.2	13.4	12.3	-107.64	47.7	-666.4	406.0	381.1	24.92	16.289	
2,500.0	2,369.6	2,462.3	2,355.2	14.1	13.0	-107.91	55.5	-698.8	421.9	395.7	26.20	16.101	
2,600.0	2,462.4	2,561.1	2,448.1	14.8	13.6	-108.17	63.4	-731.2	437.7	410.2	27.48	15.931	
2,700.0	2,555.3	2,659.8	2,541.0	15.5	14.2	-108.40	71.2	-763.6	453.6	424.8	28.75	15.776	
2,800.0	2,648.1	2,758.5	2,633.9	16.2	14.9	-108.62	79.0	-796.0	469.5	439.5	30.03	15.635	
2,900.0	2,740.9	2,857.2	2,726.8	16.9	15.5	-108.82	86.8	-828.4	485.4	454.1	31.30	15.506	SF

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well MCU Fee 17-9B (M16W pad)
Project:	Mamm Creek	TVD Reference:	KBE @ 7903.0ft (Original Well Elev)
Reference Site:	SWSW S16-T7S-R93W (M16W Pad)	MD Reference:	KBE @ 7903.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	MCU Fee 17-9B (M16W pad)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	EDM 5000.1 US Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design SWSW S16-T7S-R93W (M16W Pad) - MCU Fee 17-16B2 (M16W Pad) - DD - Plan #1													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor		
0.0	0.0	0.0	0.0	0.0	0.0	-142.70	-103.4	-78.8	130.0					
100.0	100.0	100.0	100.0	0.1	0.1	-142.70	-103.4	-78.8	130.0	129.8	0.27	477.583		
200.0	200.0	200.0	200.0	0.3	0.3	-142.70	-103.4	-78.8	130.0	129.4	0.62	209.278 CC, ES		
300.0	300.0	296.6	296.5	0.5	0.5	-91.82	-103.2	-81.2	131.4	130.4	0.98	134.245		
400.0	399.6	393.0	392.7	0.7	0.7	-92.25	-102.4	-88.5	135.6	134.2	1.40	96.821		
500.0	498.8	489.2	488.1	1.0	1.0	-92.91	-101.2	-100.5	142.6	140.6	1.93	73.826		
600.0	597.1	585.1	582.5	1.4	1.3	-93.70	-99.4	-117.3	152.3	149.7	2.60	58.550		
700.0	694.3	680.6	675.5	1.8	1.7	-94.54	-97.2	-138.6	164.8	161.4	3.43	48.069		
800.0	790.2	775.5	766.8	2.4	2.2	-95.38	-94.5	-164.4	180.1	175.7	4.42	40.725		
900.0	884.4	870.6	856.9	3.0	2.8	-96.18	-91.3	-194.6	198.1	192.5	5.56	35.596		
1,000.0	977.3	968.5	949.2	3.7	3.4	-97.82	-87.9	-227.2	217.3	210.5	6.79	31.989		
1,100.0	1,070.1	1,066.4	1,041.5	4.4	4.0	-99.38	-84.4	-259.7	236.6	228.6	8.04	29.449		
1,200.0	1,163.0	1,164.3	1,133.7	5.0	4.6	-100.71	-81.0	-292.3	256.2	246.9	9.29	27.582		
1,300.0	1,255.8	1,262.2	1,226.0	5.7	5.3	-101.85	-77.6	-324.9	275.8	265.3	10.54	26.159		
1,400.0	1,348.6	1,360.1	1,318.3	6.4	5.9	-102.84	-74.2	-357.4	295.6	283.8	11.80	25.043		
1,500.0	1,441.4	1,458.1	1,410.6	7.1	6.5	-103.70	-70.8	-390.0	315.4	302.3	13.06	24.147		
1,600.0	1,534.2	1,556.0	1,502.8	7.8	7.1	-104.46	-67.4	-422.6	335.2	320.9	14.32	23.412		
1,700.0	1,627.1	1,653.9	1,595.1	8.5	7.7	-105.14	-63.9	-455.1	355.2	339.6	15.58	22.800		
1,800.0	1,719.9	1,751.8	1,687.4	9.2	8.4	-105.74	-60.5	-487.7	375.1	358.3	16.84	22.282		
1,900.0	1,812.7	1,849.7	1,779.7	9.9	9.0	-106.28	-57.1	-520.3	395.1	377.0	18.09	21.840		
2,000.0	1,905.5	1,947.6	1,872.0	10.6	9.6	-106.78	-53.7	-552.8	415.2	395.8	19.35	21.457		
2,100.0	1,998.3	2,045.5	1,964.2	11.3	10.2	-107.22	-50.3	-585.4	435.2	414.6	20.60	21.123		
2,200.0	2,091.2	2,143.5	2,056.5	12.0	10.9	-107.63	-46.8	-618.0	455.3	433.5	21.86	20.829		
2,300.0	2,184.0	2,241.4	2,148.8	12.7	11.5	-108.00	-43.4	-650.5	475.4	452.3	23.11	20.569		
2,400.0	2,276.8	2,339.3	2,241.1	13.4	12.1	-108.34	-40.0	-683.1	495.5	471.2	24.37	20.336 SF		

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well MCU Fee 17-9B (M16W pad)
Project:	Mamm Creek	TVD Reference:	KBE @ 7903.0ft (Original Well Elev)
Reference Site:	SWSW S16-T7S-R93W (M16W Pad)	MD Reference:	KBE @ 7903.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	MCU Fee 17-9B (M16W pad)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	EDM 5000.1 US Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design SWSW S16-T7S-R93W (M16W Pad) - MCU Fee 17-16C (M16W Pad) - DD - Plan #1													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance					Separation Factor	Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis			
0.0	0.0	0.0	0.0	0.0	0.0	-136.11	-115.1	-110.7	159.7					
100.0	100.0	100.0	100.0	0.1	0.1	-136.11	-115.1	-110.7	159.7	159.4	0.27	586.539		
200.0	200.0	200.0	200.0	0.3	0.3	-136.11	-115.1	-110.7	159.7	159.1	0.62	257.023 CC, ES		
300.0	300.0	294.3	294.3	0.5	0.5	-85.33	-115.2	-113.0	161.2	160.3	0.97	165.699		
400.0	399.6	388.5	388.2	0.7	0.7	-86.04	-115.3	-120.0	165.9	164.5	1.38	120.208		
500.0	498.8	482.4	481.4	1.0	0.9	-87.13	-115.7	-131.5	173.6	171.8	1.88	92.244		
600.0	597.1	575.8	573.4	1.4	1.3	-88.47	-116.1	-147.5	184.6	182.1	2.51	73.509		
700.0	694.3	668.6	663.9	1.8	1.7	-89.94	-116.7	-167.9	198.8	195.5	3.29	60.495		
800.0	790.2	760.6	752.6	2.4	2.2	-91.41	-117.3	-192.4	216.2	212.0	4.22	51.270		
900.0	884.4	852.8	840.2	3.0	2.7	-92.84	-118.1	-221.1	236.9	231.6	5.29	44.744		
1,000.0	977.3	949.8	931.8	3.7	3.3	-95.04	-119.0	-252.8	259.0	252.5	6.47	40.009		
1,100.0	1,070.1	1,046.8	1,023.5	4.4	3.9	-97.11	-119.8	-284.5	281.6	273.9	7.68	36.674		
1,200.0	1,163.0	1,143.7	1,115.1	5.0	4.5	-98.86	-120.7	-316.2	304.4	295.5	8.89	34.236		
1,300.0	1,255.8	1,240.7	1,206.7	5.7	5.1	-100.37	-121.6	-347.9	327.4	317.3	10.11	32.390		
1,400.0	1,348.6	1,337.6	1,298.4	6.4	5.7	-101.69	-122.4	-379.6	350.7	339.4	11.33	30.950		
1,500.0	1,441.4	1,434.6	1,390.0	7.1	6.3	-102.84	-123.3	-411.3	374.1	361.5	12.55	29.801		
1,600.0	1,534.2	1,531.6	1,481.6	7.8	6.9	-103.85	-124.1	-443.0	397.6	383.9	13.78	28.866		
1,700.0	1,627.1	1,628.5	1,573.2	8.5	7.5	-104.75	-125.0	-474.7	421.3	406.3	15.00	28.091		
1,800.0	1,719.9	1,725.5	1,664.9	9.2	8.1	-105.56	-125.9	-506.5	445.0	428.8	16.22	27.440		
1,900.0	1,812.7	1,822.5	1,756.5	9.9	8.7	-106.29	-126.7	-538.2	468.8	451.4	17.44	26.886		
2,000.0	1,905.5	1,919.4	1,848.1	10.6	9.3	-106.94	-127.6	-569.9	492.7	474.0	18.65	26.410 SF		

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well MCU Fee 17-9B (M16W pad)
Project:	Mamm Creek	TVD Reference:	KBE @ 7903.0ft (Original Well Elev)
Reference Site:	SWSW S16-T7S-R93W (M16W Pad)	MD Reference:	KBE @ 7903.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	MCU Fee 17-9B (M16W pad)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	EDM 5000.1 US Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design SWSW S16-T7S-R93W (M16W Pad) - MCU Fee 17-9B2 (M16W Pad) - DD - Plan #1													Offset Site Error: 0.0 ft			
Survey Program: 0-MWD															Offset Well Error: 0.0 ft	
Reference		Offset		Semi Major Axis			Distance							Warning		
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor				
0.0	0.0	0.0	0.0	0.0	0.0	-66.23	4.7	-10.7	11.7							
100.0	100.0	100.0	100.0	0.1	0.1	-66.23	4.7	-10.7	11.7	11.5	0.27	43.070				
200.0	200.0	200.0	200.0	0.3	0.3	-66.23	4.7	-10.7	11.7	11.1	0.62	18.873 CC				
300.0	300.0	299.4	299.3	0.5	0.5	-17.17	6.0	-13.0	11.8	10.8	0.97	12.163				
400.0	399.6	398.8	398.4	0.7	0.7	-22.90	9.9	-19.7	12.1	10.8	1.33	9.103 ES				
500.0	498.8	498.1	496.9	1.0	1.0	-31.69	16.3	-30.9	12.8	11.1	1.74	7.375				
600.0	597.1	597.5	594.6	1.4	1.4	-42.10	25.3	-46.4	14.2	12.0	2.30	6.203				
700.0	694.3	696.8	691.2	1.8	1.8	-52.34	36.8	-66.4	16.6	13.5	3.11	5.349				
800.0	790.2	796.1	786.4	2.4	2.3	-61.16	50.8	-90.7	20.1	15.9	4.20	4.783				
900.0	884.4	895.3	880.0	3.0	3.0	-68.15	67.2	-119.2	24.5	19.0	5.52	4.445				
1,000.0	977.3	994.9	972.6	3.7	3.7	-73.15	85.6	-151.1	29.8	22.9	6.93	4.310				
1,100.0	1,070.1	1,094.7	1,065.3	4.4	4.3	-76.56	104.1	-183.3	35.4	27.0	8.34	4.244				
1,200.0	1,163.0	1,194.6	1,157.9	5.0	5.0	-79.04	122.6	-215.5	41.0	31.3	9.75	4.207				
1,300.0	1,255.8	1,294.4	1,250.6	5.7	5.7	-80.92	141.2	-247.7	46.7	35.5	11.16	4.185				
1,400.0	1,348.6	1,394.2	1,343.2	6.4	6.4	-82.39	159.7	-279.9	52.4	39.8	12.57	4.171				
1,500.0	1,441.4	1,494.0	1,435.9	7.1	7.1	-83.57	178.2	-312.1	58.2	44.2	13.97	4.163				
1,600.0	1,534.2	1,593.9	1,528.6	7.8	7.8	-84.54	196.8	-344.2	63.9	48.6	15.38	4.158				
1,700.0	1,627.1	1,693.7	1,621.2	8.5	8.5	-85.34	215.3	-376.4	69.7	52.9	16.78	4.155				
1,800.0	1,719.9	1,793.5	1,713.9	9.2	9.2	-86.03	233.8	-408.6	75.5	57.3	18.18	4.153				
1,900.0	1,812.7	1,893.4	1,806.5	9.9	9.9	-86.61	252.4	-440.8	81.3	61.7	19.59	4.153				
2,000.0	1,905.5	1,993.2	1,899.2	10.6	10.6	-87.12	270.9	-473.0	87.1	66.2	20.99	4.152				
2,100.0	1,998.3	2,093.0	1,991.8	11.3	11.3	-87.56	289.5	-505.2	93.0	70.6	22.39	4.153				
2,200.0	2,091.2	2,192.8	2,084.5	12.0	12.0	-87.95	308.0	-537.4	98.8	75.0	23.79	4.153				
2,300.0	2,184.0	2,292.7	2,177.2	12.7	12.7	-88.30	326.5	-569.6	104.6	79.4	25.19	4.154				
2,400.0	2,276.8	2,392.5	2,269.8	13.4	13.4	-88.61	345.1	-601.8	110.5	83.9	26.59	4.154				
2,500.0	2,369.6	2,492.3	2,362.5	14.1	14.1	-88.89	363.6	-634.0	116.3	88.3	27.99	4.155				
2,600.0	2,462.4	2,592.2	2,455.1	14.8	14.8	-89.15	382.1	-666.2	122.1	92.7	29.39	4.156				
2,700.0	2,555.3	2,692.0	2,547.8	15.5	15.5	-89.38	400.7	-698.4	128.0	97.2	30.78	4.157				
2,800.0	2,648.1	2,791.8	2,640.5	16.2	16.2	-89.59	419.2	-730.5	133.8	101.6	32.18	4.158				
2,900.0	2,740.9	2,891.6	2,733.1	16.9	16.9	-89.78	437.7	-762.7	139.7	106.1	33.58	4.159				
3,000.0	2,833.7	2,991.5	2,825.8	17.6	17.6	-89.96	456.3	-794.9	145.5	110.5	34.98	4.159				
3,100.0	2,926.5	3,091.3	2,918.4	18.3	18.3	-90.12	474.8	-827.1	151.3	115.0	36.38	4.160				
3,200.0	3,019.4	3,191.1	3,011.1	18.9	19.0	-90.27	493.4	-859.3	157.2	119.4	37.78	4.161				
3,300.0	3,112.2	3,290.9	3,103.8	19.6	19.7	-90.41	511.9	-891.5	163.0	123.9	39.17	4.162				
3,400.0	3,205.0	3,390.8	3,196.4	20.3	20.4	-90.54	530.4	-923.7	168.9	128.3	40.57	4.163				
3,500.0	3,297.8	3,490.6	3,289.1	21.0	21.1	-90.66	549.0	-955.9	174.7	132.8	41.97	4.163				
3,600.0	3,390.6	3,590.4	3,381.7	21.7	21.8	-90.78	567.5	-988.1	180.6	137.2	43.37	4.164				
3,700.0	3,483.5	3,690.3	3,474.4	22.4	22.5	-90.89	586.0	-1,020.3	186.4	141.7	44.77	4.165				
3,800.0	3,576.3	3,790.1	3,567.1	23.1	23.2	-90.99	604.6	-1,052.5	192.3	146.1	46.16	4.166				
3,900.0	3,669.1	3,889.9	3,659.7	23.8	24.0	-91.08	623.1	-1,084.7	198.1	150.6	47.56	4.166				
4,000.0	3,761.9	3,989.7	3,752.4	24.5	24.7	-91.17	641.6	-1,116.8	204.0	155.0	48.96	4.167				
4,100.0	3,854.7	4,089.6	3,845.0	25.2	25.4	-91.25	660.2	-1,149.0	209.9	159.5	50.36	4.167				
4,200.0	3,947.6	4,189.4	3,937.7	25.9	26.1	-91.33	678.7	-1,181.2	215.7	164.0	51.75	4.168				
4,300.0	4,040.4	4,289.2	4,030.4	26.6	26.8	-91.41	697.3	-1,213.4	221.6	168.4	53.15	4.169				
4,400.0	4,133.2	4,389.1	4,123.0	27.3	27.5	-91.48	715.8	-1,245.6	227.4	172.9	54.55	4.169				
4,500.0	4,226.0	4,488.9	4,215.7	28.0	28.2	-91.55	734.3	-1,277.8	233.3	177.3	55.95	4.170				
4,600.0	4,318.8	4,588.7	4,308.3	28.7	28.9	-91.61	752.9	-1,310.0	239.1	181.8	57.34	4.170				
4,700.0	4,411.7	4,688.5	4,401.0	29.4	29.6	-91.67	771.4	-1,342.2	245.0	186.2	58.74	4.171				
4,800.0	4,504.5	4,788.4	4,493.6	30.1	30.3	-91.73	789.9	-1,374.4	250.8	190.7	60.14	4.171				
4,900.0	4,597.3	4,888.2	4,586.3	30.8	31.0	-91.79	808.5	-1,406.6	256.7	195.2	61.53	4.172				
5,000.0	4,690.1	4,988.0	4,679.0	31.5	31.7	-91.84	827.0	-1,438.8	262.6	199.6	62.93	4.172				
5,100.0	4,782.9	5,087.9	4,771.6	32.2	32.4	-91.89	845.5	-1,471.0	268.4	204.1	64.33	4.173				

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well MCU Fee 17-9B (M16W pad)
Project:	Mamm Creek	TVD Reference:	KBE @ 7903.0ft (Original Well Elev)
Reference Site:	SWSW S16-T7S-R93W (M16W Pad)	MD Reference:	KBE @ 7903.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	MCU Fee 17-9B (M16W pad)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	EDM 5000.1 US Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design SWSW S16-T7S-R93W (M16W Pad) - MCU Fee 17-9B2 (M16W Pad) - DD - Plan #1													Offset Site Error:	0.0 ft
Survey Program: O-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance				Total Uncertainty Axis	Separation Factor	Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)				
5,200.0	4,875.7	5,187.7	4,864.3	32.9	33.1	-91.94	864.1	-1,503.1	274.3	208.5	65.73	4.173		
5,300.0	4,968.6	5,287.5	4,956.9	33.6	33.8	-91.99	882.6	-1,535.3	280.1	213.0	67.12	4.173		
5,400.0	5,061.4	5,387.3	5,049.6	34.3	34.5	-92.03	901.2	-1,567.5	286.0	217.5	68.52	4.174		
5,500.0	5,154.2	5,487.2	5,142.3	35.0	35.2	-92.08	919.7	-1,599.7	291.8	221.9	69.92	4.174		
5,600.0	5,247.0	5,587.0	5,234.9	35.7	35.9	-92.12	938.2	-1,631.9	297.7	226.4	71.31	4.175		
5,700.0	5,339.8	5,686.8	5,327.6	36.4	36.6	-92.16	956.8	-1,664.1	303.6	230.9	72.71	4.175		
5,800.0	5,432.7	5,786.7	5,420.2	37.1	37.3	-92.20	975.3	-1,696.3	309.4	235.3	74.11	4.175		
5,900.0	5,525.5	5,886.5	5,512.9	37.8	38.0	-92.23	993.8	-1,728.5	315.3	239.8	75.51	4.176		
6,000.0	5,618.3	5,986.3	5,605.6	38.5	38.7	-92.27	1,012.4	-1,760.7	321.1	244.2	76.90	4.176		
6,100.0	5,711.1	6,086.1	5,698.2	39.2	39.4	-92.30	1,030.9	-1,792.9	327.0	248.7	78.30	4.176		
6,200.0	5,803.9	6,186.0	5,790.9	39.9	40.1	-92.33	1,049.4	-1,825.1	332.9	253.2	79.70	4.177		
6,300.0	5,896.8	6,285.8	5,883.5	40.6	40.8	-92.37	1,068.0	-1,857.3	338.7	257.6	81.09	4.177		
6,400.0	5,989.6	6,385.6	5,976.2	41.3	41.5	-92.40	1,086.5	-1,889.4	344.6	262.1	82.49	4.177		
6,500.0	6,082.4	6,485.4	6,068.9	42.0	42.2	-92.43	1,105.1	-1,921.6	350.4	266.5	83.89	4.177		
6,600.0	6,175.2	6,585.3	6,161.5	42.7	42.9	-92.46	1,123.6	-1,953.8	356.3	271.0	85.28	4.178		
6,700.0	6,268.0	6,685.1	6,254.2	43.4	43.6	-92.48	1,142.1	-1,986.0	362.2	275.5	86.68	4.178		
6,800.0	6,360.9	6,784.9	6,346.8	44.1	44.3	-92.51	1,160.7	-2,018.2	368.0	279.9	88.08	4.178		
6,900.0	6,453.7	6,884.8	6,439.5	44.8	45.0	-92.54	1,179.2	-2,050.4	373.9	284.4	89.48	4.178		
7,000.0	6,546.5	6,984.6	6,532.2	45.5	45.7	-92.56	1,197.7	-2,082.6	379.7	288.9	90.87	4.179		
7,100.0	6,639.3	7,084.4	6,624.8	46.2	46.4	-92.59	1,216.3	-2,114.8	385.6	293.3	92.27	4.179		
7,200.0	6,732.1	7,184.2	6,717.5	46.9	47.1	-92.61	1,234.8	-2,147.0	391.4	297.8	93.67	4.179		
7,300.0	6,825.0	7,284.1	6,810.1	47.6	47.9	-92.63	1,253.3	-2,179.2	397.3	302.2	95.06	4.179		
7,400.0	6,917.8	7,383.9	6,902.8	48.3	48.6	-92.66	1,271.9	-2,211.4	403.2	306.7	96.46	4.180		
7,500.0	7,010.6	7,483.7	6,995.5	49.0	49.3	-92.68	1,290.4	-2,243.6	409.0	311.2	97.86	4.180		
7,600.0	7,103.4	7,583.6	7,088.1	49.7	50.0	-92.70	1,309.0	-2,275.7	414.9	315.6	99.25	4.180		
7,700.0	7,196.2	7,683.4	7,180.8	50.4	50.7	-92.72	1,327.5	-2,307.9	420.7	320.1	100.65	4.180		
7,800.0	7,289.1	7,783.2	7,273.4	51.1	51.4	-92.74	1,346.0	-2,340.1	426.6	324.6	102.05	4.180		
7,900.0	7,381.9	7,883.0	7,366.1	51.8	52.1	-92.76	1,364.6	-2,372.3	432.5	329.0	103.44	4.181		
8,000.0	7,474.7	7,982.9	7,458.7	52.4	52.8	-92.78	1,383.1	-2,404.5	438.3	333.5	104.84	4.181		
8,100.0	7,568.4	8,084.6	7,553.8	53.1	53.4	-92.86	1,401.2	-2,435.9	443.9	337.8	106.10	4.184		
8,200.0	7,663.8	8,186.8	7,651.1	53.6	54.0	-92.92	1,416.8	-2,463.1	448.7	341.5	107.17	4.187		
8,300.0	7,760.6	8,289.2	7,750.1	54.0	54.4	-92.97	1,429.9	-2,485.7	452.7	344.6	108.05	4.189		
8,400.0	7,858.6	8,391.6	7,850.4	54.3	54.8	-93.01	1,440.2	-2,503.7	455.9	347.1	108.75	4.192		
8,500.0	7,957.5	8,494.1	7,951.7	54.6	55.0	-93.04	1,447.9	-2,517.1	458.2	348.9	109.26	4.194		
8,600.0	8,057.1	8,596.7	8,053.7	54.7	55.2	-93.06	1,452.9	-2,525.7	459.7	350.1	109.59	4.195		
8,700.0	8,157.0	8,699.3	8,156.2	54.8	55.3	-93.07	1,455.1	-2,529.6	460.4	350.7	109.74	4.195		
8,800.0	8,257.0	8,800.1	8,257.0	54.9	55.3	-144.10	1,455.3	-2,529.8	460.4	350.6	109.84	4.192		
8,900.0	8,357.0	8,900.1	8,357.0	54.9	55.4	-144.10	1,455.3	-2,529.8	460.4	350.5	109.94	4.188		
9,000.0	8,457.0	9,000.1	8,457.0	55.0	55.4	-144.10	1,455.3	-2,529.8	460.4	350.4	110.04	4.184		
9,100.0	8,557.0	9,100.1	8,557.0	55.0	55.5	-144.10	1,455.3	-2,529.8	460.4	350.3	110.14	4.181		
9,200.0	8,657.0	9,200.1	8,657.0	55.1	55.5	-144.10	1,455.3	-2,529.8	460.4	350.2	110.24	4.177		
9,300.0	8,757.0	9,300.1	8,757.0	55.1	55.6	-144.10	1,455.3	-2,529.8	460.4	350.1	110.34	4.173		
9,400.0	8,857.0	9,400.1	8,857.0	55.2	55.6	-144.10	1,455.3	-2,529.8	460.4	350.0	110.44	4.169		
9,500.0	8,957.0	9,500.1	8,957.0	55.2	55.7	-144.10	1,455.3	-2,529.8	460.4	349.9	110.55	4.165		
9,600.0	9,057.0	9,600.1	9,057.0	55.3	55.7	-144.10	1,455.3	-2,529.8	460.4	349.8	110.65	4.161		
9,700.0	9,157.0	9,700.1	9,157.0	55.3	55.8	-144.10	1,455.3	-2,529.8	460.4	349.7	110.76	4.157		
9,800.0	9,257.0	9,800.1	9,257.0	55.4	55.8	-144.10	1,455.3	-2,529.8	460.4	349.6	110.87	4.153		
9,900.0	9,357.0	9,900.1	9,357.0	55.4	55.9	-144.10	1,455.3	-2,529.8	460.4	349.5	110.97	4.149		
10,000.0	9,457.0	10,000.1	9,457.0	55.5	55.9	-144.10	1,455.3	-2,529.8	460.4	349.4	111.08	4.145		
10,100.0	9,557.0	10,100.1	9,557.0	55.5	56.0	-144.10	1,455.3	-2,529.8	460.4	349.2	111.19	4.141		
10,200.0	9,657.0	10,200.1	9,657.0	55.6	56.0	-144.10	1,455.3	-2,529.8	460.4	349.1	111.30	4.137		
10,300.0	9,757.0	10,300.1	9,757.0	55.7	56.1	-144.10	1,455.3	-2,529.8	460.4	349.0	111.41	4.133		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well MCU Fee 17-9B (M16W pad)
Project:	Mamm Creek	TVD Reference:	KBE @ 7903.0ft (Original Well Elev)
Reference Site:	SWSW S16-T7S-R93W (M16W Pad)	MD Reference:	KBE @ 7903.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	MCU Fee 17-9B (M16W pad)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	EDM 5000.1 US Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design SWSW S16-T7S-R93W (M16W Pad) - MCU Fee 17-9B2 (M16W Pad) - DD - Plan #1												Offset Site Error:	0.0 ft
Survey Program: 0-MWD												Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance						
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning
10,400.0	9,857.0	10,400.1	9,857.0	55.7	56.2	-144.10	1,455.3	-2,529.8	460.4	348.9	111.53	4.128	
10,500.0	9,957.0	10,500.1	9,957.0	55.8	56.2	-144.10	1,455.3	-2,529.8	460.4	348.8	111.64	4.124	
10,600.0	10,057.0	10,600.1	10,057.0	55.8	56.3	-144.10	1,455.3	-2,529.8	460.4	348.7	111.76	4.120	
10,700.0	10,157.0	10,700.1	10,157.0	55.9	56.3	-144.10	1,455.3	-2,529.8	460.4	348.6	111.87	4.116	
10,800.0	10,257.0	10,800.1	10,257.0	55.9	56.4	-144.10	1,455.3	-2,529.8	460.4	348.4	111.99	4.111	
10,822.0	10,279.0	10,822.1	10,279.0	56.0	56.4	-144.10	1,455.3	-2,529.8	460.4	348.4	112.01	4.110 SF	

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well MCU Fee 17-9B (M16W pad)
Project:	Mamm Creek	TVD Reference:	KBE @ 7903.0ft (Original Well Elev)
Reference Site:	SWSW S16-T7S-R93W (M16W Pad)	MD Reference:	KBE @ 7903.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	MCU Fee 17-9B (M16W pad)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	EDM 5000.1 US Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design SWSW S16-T7S-R93W (M16W Pad) - MCU Fee 17-9C (M16W Pad) - DD - Plan #1													Offset Site Error: 0.0 ft	
Survey Program: 0-MWD													Offset Well Error: 0.0 ft	
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor		
0.0	0.0	0.0	0.0	0.0	0.0	-92.35	-1.1	-26.8	26.9					
100.0	100.0	100.0	100.0	0.1	0.1	-92.35	-1.1	-26.8	26.9	26.6	0.27	98.626		
200.0	200.0	200.0	200.0	0.3	0.3	-92.35	-1.1	-26.8	26.9	26.2	0.62	43.218 CC		
300.0	300.0	298.8	298.7	0.5	0.5	-42.48	0.0	-29.2	27.2	26.2	0.97	27.933 ES		
400.0	399.6	397.5	397.1	0.7	0.7	-45.76	3.1	-36.1	28.3	26.9	1.36	20.841		
500.0	498.8	496.2	495.0	1.0	1.0	-50.65	8.4	-47.7	30.3	28.5	1.82	16.637		
600.0	597.1	594.8	592.0	1.4	1.3	-56.41	15.8	-63.8	33.4	31.0	2.43	13.752		
700.0	694.3	693.4	687.9	1.8	1.8	-62.31	25.3	-84.5	37.9	34.6	3.24	11.676		
800.0	790.2	791.8	782.4	2.4	2.3	-67.77	36.7	-109.5	43.7	39.4	4.28	10.207		
900.0	884.4	890.2	875.2	3.0	2.9	-72.52	50.2	-139.0	50.9	45.4	5.53	9.206		
1,000.0	977.3	989.7	968.4	3.7	3.6	-77.80	64.8	-170.9	58.6	51.7	6.91	8.481		
1,100.0	1,070.1	1,089.3	1,061.6	4.4	4.2	-82.06	79.4	-202.7	66.7	58.4	8.31	8.026		
1,200.0	1,163.0	1,188.9	1,154.8	5.0	4.9	-85.38	94.0	-234.6	75.0	65.3	9.70	7.736		
1,300.0	1,255.8	1,288.4	1,248.0	5.7	5.5	-88.04	108.5	-266.5	83.6	72.5	11.08	7.542		
1,400.0	1,348.6	1,388.0	1,341.2	6.4	6.2	-90.19	123.1	-298.4	92.3	79.8	12.46	7.407		
1,500.0	1,441.4	1,487.6	1,434.4	7.1	6.9	-91.97	137.7	-330.2	101.1	87.3	13.83	7.312		
1,600.0	1,534.2	1,587.1	1,527.6	7.8	7.5	-93.47	152.3	-362.1	110.0	94.8	15.19	7.242		
1,700.0	1,627.1	1,686.7	1,620.8	8.5	8.2	-94.74	166.9	-394.0	119.0	102.4	16.55	7.190		
1,800.0	1,719.9	1,786.3	1,714.0	9.2	8.8	-95.83	181.5	-425.9	128.0	110.1	17.90	7.150		
1,900.0	1,812.7	1,885.8	1,807.2	9.9	9.5	-96.78	196.0	-457.7	137.0	117.8	19.24	7.119		
2,000.0	1,905.5	1,985.4	1,900.4	10.6	10.2	-97.61	210.6	-489.6	146.1	125.5	20.59	7.096		
2,100.0	1,998.3	2,085.0	1,993.6	11.3	10.8	-98.35	225.2	-521.5	155.2	133.3	21.93	7.077		
2,200.0	2,091.2	2,184.5	2,086.7	12.0	11.5	-99.00	239.8	-553.4	164.3	141.1	23.27	7.062		
2,300.0	2,184.0	2,284.1	2,179.9	12.7	12.2	-99.58	254.4	-585.2	173.5	148.9	24.60	7.050		
2,400.0	2,276.8	2,383.7	2,273.1	13.4	12.8	-100.11	269.0	-617.1	182.6	156.7	25.94	7.041		
2,500.0	2,369.6	2,483.2	2,366.3	14.1	13.5	-100.59	283.5	-649.0	191.8	164.5	27.27	7.033		
2,600.0	2,462.4	2,582.8	2,459.5	14.8	14.2	-101.02	298.1	-680.9	201.0	172.4	28.60	7.027		
2,700.0	2,555.3	2,682.4	2,552.7	15.5	14.8	-101.41	312.7	-712.7	210.2	180.3	29.94	7.022		
2,800.0	2,648.1	2,781.9	2,645.9	16.2	15.5	-101.77	327.3	-744.6	219.4	188.1	31.26	7.018		
2,900.0	2,740.9	2,881.5	2,739.1	16.9	16.1	-102.10	341.9	-776.5	228.6	196.0	32.59	7.014		
3,000.0	2,833.7	2,981.1	2,832.3	17.6	16.8	-102.41	356.5	-808.4	237.8	203.9	33.92	7.012		
3,100.0	2,926.5	3,080.6	2,925.5	18.3	17.5	-102.69	371.0	-840.2	247.1	211.8	35.25	7.009		
3,200.0	3,019.4	3,180.2	3,018.7	18.9	18.1	-102.96	385.6	-872.1	256.3	219.7	36.58	7.008		
3,300.0	3,112.2	3,279.8	3,111.9	19.6	18.8	-103.20	400.2	-904.0	265.6	227.7	37.90	7.006		
3,400.0	3,205.0	3,379.3	3,205.1	20.3	19.5	-103.43	414.8	-935.9	274.8	235.6	39.23	7.005		
3,500.0	3,297.8	3,478.9	3,298.2	21.0	20.1	-103.64	429.4	-967.7	284.0	243.5	40.55	7.005		
3,600.0	3,390.6	3,578.5	3,391.4	21.7	20.8	-103.84	444.0	-999.6	293.3	251.4	41.88	7.004		
3,700.0	3,483.5	3,678.0	3,484.6	22.4	21.5	-104.03	458.5	-1,031.5	302.6	259.4	43.20	7.004		
3,800.0	3,576.3	3,777.6	3,577.8	23.1	22.1	-104.21	473.1	-1,063.4	311.8	267.3	44.52	7.003		
3,900.0	3,669.1	3,877.2	3,671.0	23.8	22.8	-104.37	487.7	-1,095.2	321.1	275.2	45.85	7.003		
4,000.0	3,761.9	3,976.7	3,764.2	24.5	23.5	-104.53	502.3	-1,127.1	330.3	283.2	47.17	7.003 SF		
4,100.0	3,854.7	4,076.3	3,857.4	25.2	24.1	-104.68	516.9	-1,159.0	339.6	291.1	48.49	7.003		
4,200.0	3,947.6	4,175.9	3,950.6	25.9	24.8	-104.82	531.5	-1,190.9	348.9	299.1	49.82	7.003		
4,300.0	4,040.4	4,275.4	4,043.8	26.6	25.5	-104.95	546.0	-1,222.7	358.1	307.0	51.14	7.004		
4,400.0	4,133.2	4,375.0	4,137.0	27.3	26.1	-105.08	560.6	-1,254.6	367.4	315.0	52.46	7.004		
4,500.0	4,226.0	4,474.6	4,230.2	28.0	26.8	-105.20	575.2	-1,286.5	376.7	322.9	53.78	7.004		
4,600.0	4,318.8	4,574.1	4,323.4	28.7	27.5	-105.31	589.8	-1,318.3	386.0	330.9	55.10	7.004		
4,700.0	4,411.7	4,673.7	4,416.6	29.4	28.1	-105.42	604.4	-1,350.2	395.2	338.8	56.42	7.005		
4,800.0	4,504.5	4,773.3	4,509.7	30.1	28.8	-105.52	619.0	-1,382.1	404.5	346.8	57.75	7.005		
4,900.0	4,597.3	4,872.8	4,602.9	30.8	29.4	-105.62	633.5	-1,414.0	413.8	354.7	59.07	7.006		
5,000.0	4,690.1	4,972.4	4,696.1	31.5	30.1	-105.72	648.1	-1,445.8	423.1	362.7	60.39	7.006		
5,100.0	4,782.9	5,071.9	4,789.3	32.2	30.8	-105.81	662.7	-1,477.7	432.4	370.7	61.71	7.007		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well MCU Fee 17-9B (M16W pad)
Project:	Mamm Creek	TVD Reference:	KBE @ 7903.0ft (Original Well Elev)
Reference Site:	SWSW S16-T7S-R93W (M16W Pad)	MD Reference:	KBE @ 7903.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	MCU Fee 17-9B (M16W pad)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	EDM 5000.1 US Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design SWSW S16-T7S-R93W (M16W Pad) - MCU Fee 17-9C (M16W Pad) - DD - Plan #1													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor		
5,200.0	4,875.7	5,171.5	4,882.5	32.9	31.4	-105.90	677.3	-1,509.6	441.6	378.6	63.03	7.007		
5,300.0	4,968.6	5,271.1	4,975.7	33.6	32.1	-105.98	691.9	-1,541.5	450.9	386.6	64.35	7.008		
5,400.0	5,061.4	5,370.6	5,068.9	34.3	32.8	-106.06	706.4	-1,573.3	460.2	394.5	65.67	7.008		
5,500.0	5,154.2	5,470.2	5,162.1	35.0	33.4	-106.14	721.0	-1,605.2	469.5	402.5	66.99	7.008		
5,600.0	5,247.0	5,569.8	5,255.3	35.7	34.1	-106.21	735.6	-1,637.1	478.8	410.5	68.31	7.009		
5,700.0	5,339.8	5,669.3	5,348.5	36.4	34.8	-106.28	750.2	-1,669.0	488.1	418.4	69.63	7.009		
5,800.0	5,432.7	5,768.9	5,441.7	37.1	35.4	-106.35	764.8	-1,700.8	497.4	426.4	70.95	7.010		

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well MCU Fee 17-9B (M16W pad)
Project:	Mamm Creek	TVD Reference:	KBE @ 7903.0ft (Original Well Elev)
Reference Site:	SWSW S16-T7S-R93W (M16W Pad)	MD Reference:	KBE @ 7903.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	MCU Fee 17-9B (M16W pad)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	EDM 5000.1 US Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design SWSW S16-T7S-R93W (M16W Pad) - MCU Fee 17-9D (M16W Pad) - DD - Plan #1													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance				Total Uncertainty Axis	Separation Factor	Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)				
0.0	0.0	0.0	0.0	0.0	0.0	-110.06	-11.7	-31.9	34.0					
100.0	100.0	100.0	100.0	0.1	0.1	-110.06	-11.7	-31.9	34.0	33.7	0.27	124.781		
200.0	200.0	200.0	200.0	0.3	0.3	-110.06	-11.7	-31.9	34.0	33.4	0.62	54.679		
300.0	300.0	299.5	299.4	0.5	0.5	-65.65	-13.4	-31.9	33.4	32.5	0.98	34.149		
328.4	328.3	327.5	327.5	0.6	0.5	-69.99	-14.5	-31.9	33.4	32.3	1.09	30.565 CC, ES		
400.0	399.6	398.2	398.1	0.7	0.7	-83.83	-17.8	-32.4	34.5	33.1	1.38	25.049		
500.0	498.8	497.2	497.0	1.0	0.9	-100.67	-20.6	-36.9	40.0	38.2	1.82	21.926		
600.0	597.1	596.7	596.0	1.4	1.1	-112.36	-20.8	-45.9	49.0	46.6	2.35	20.797		
700.0	694.3	696.7	695.0	1.8	1.3	-119.81	-18.6	-59.4	60.2	57.2	2.99	20.142		
800.0	790.2	797.1	793.6	2.4	1.7	-124.45	-13.8	-77.6	72.8	69.1	3.73	19.501		
900.0	884.4	897.9	891.6	3.0	2.1	-127.30	-6.4	-100.4	86.5	81.9	4.61	18.775		
1,000.0	977.3	998.6	988.1	3.7	2.6	-128.75	3.3	-127.4	100.3	94.8	5.58	17.987		
1,100.0	1,070.1	1,097.7	1,082.7	4.4	3.1	-129.43	13.5	-155.0	113.7	107.1	6.58	17.290		
1,200.0	1,163.0	1,196.8	1,177.3	5.0	3.7	-129.97	23.7	-182.7	127.0	119.5	7.58	16.761		
1,300.0	1,255.8	1,295.9	1,271.9	5.7	4.2	-130.41	33.9	-210.3	140.4	131.8	8.59	16.348		
1,400.0	1,348.6	1,395.0	1,366.5	6.4	4.7	-130.78	44.0	-237.9	153.8	144.2	9.60	16.019		
1,500.0	1,441.4	1,494.1	1,461.2	7.1	5.3	-131.08	54.2	-265.6	167.2	156.5	10.61	15.751		
1,600.0	1,534.2	1,593.2	1,555.8	7.8	5.8	-131.34	64.4	-293.2	180.5	168.9	11.63	15.528		
1,700.0	1,627.1	1,692.3	1,650.4	8.5	6.4	-131.56	74.6	-320.8	193.9	181.3	12.64	15.341		
1,800.0	1,719.9	1,791.4	1,745.0	9.2	6.9	-131.76	84.8	-348.5	207.3	193.7	13.66	15.182		
1,900.0	1,812.7	1,890.5	1,839.7	9.9	7.5	-131.93	95.0	-376.1	220.7	206.0	14.67	15.044		
2,000.0	1,905.5	1,989.6	1,934.3	10.6	8.0	-132.08	105.1	-403.7	234.1	218.4	15.69	14.924		
2,100.0	1,998.3	2,088.7	2,028.9	11.3	8.6	-132.21	115.3	-431.4	247.5	230.8	16.70	14.818		
2,200.0	2,091.2	2,187.8	2,123.5	12.0	9.2	-132.33	125.5	-459.0	260.9	243.2	17.72	14.725		
2,300.0	2,184.0	2,286.9	2,218.1	12.7	9.7	-132.44	135.7	-486.6	274.3	255.5	18.73	14.642		
2,400.0	2,276.8	2,386.0	2,312.8	13.4	10.3	-132.54	145.9	-514.3	287.7	267.9	19.75	14.567		
2,500.0	2,369.6	2,485.1	2,407.4	14.1	10.8	-132.63	156.1	-541.9	301.1	280.3	20.76	14.500		
2,600.0	2,462.4	2,584.1	2,502.0	14.8	11.4	-132.72	166.2	-569.5	314.5	292.7	21.78	14.439		
2,700.0	2,555.3	2,683.2	2,596.6	15.5	12.0	-132.79	176.4	-597.1	327.9	305.1	22.79	14.384		
2,800.0	2,648.1	2,782.3	2,691.2	16.2	12.5	-132.86	186.6	-624.8	341.3	317.5	23.81	14.333		
2,900.0	2,740.9	2,881.4	2,785.9	16.9	13.1	-132.93	196.8	-652.4	354.7	329.8	24.82	14.287		
3,000.0	2,833.7	2,980.5	2,880.5	17.6	13.6	-132.99	207.0	-680.0	368.1	342.2	25.84	14.244		
3,100.0	2,926.5	3,079.6	2,975.1	18.3	14.2	-133.04	217.2	-707.7	381.5	354.6	26.86	14.204		
3,200.0	3,019.4	3,178.7	3,069.7	18.9	14.7	-133.09	227.3	-735.3	394.9	367.0	27.87	14.167		
3,300.0	3,112.2	3,277.8	3,164.3	19.6	15.3	-133.14	237.5	-762.9	408.3	379.4	28.89	14.133		
3,400.0	3,205.0	3,376.9	3,259.0	20.3	15.9	-133.19	247.7	-790.6	421.7	391.8	29.90	14.102		
3,500.0	3,297.8	3,476.0	3,353.6	21.0	16.4	-133.23	257.9	-818.2	435.1	404.1	30.92	14.072		
3,600.0	3,390.6	3,575.1	3,448.2	21.7	17.0	-133.27	268.1	-845.8	448.5	416.5	31.93	14.044		
3,700.0	3,483.5	3,674.2	3,542.8	22.4	17.5	-133.31	278.3	-873.5	461.9	428.9	32.95	14.018		
3,800.0	3,576.3	3,773.3	3,637.4	23.1	18.1	-133.34	288.4	-901.1	475.3	441.3	33.96	13.994		
3,900.0	3,669.1	3,872.4	3,732.1	23.8	18.7	-133.38	298.6	-928.7	488.7	453.7	34.98	13.971 SF		

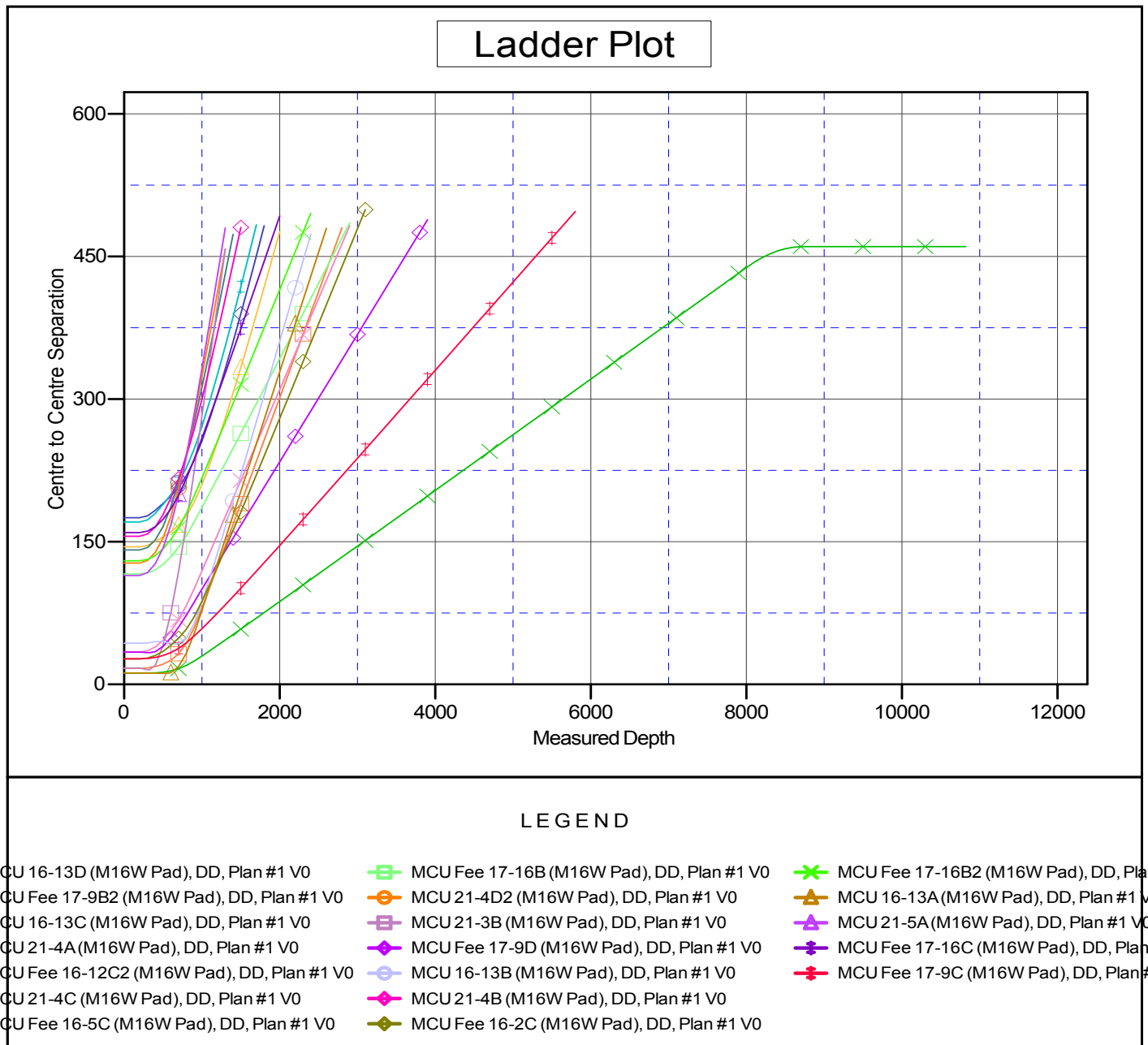
Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well MCU Fee 17-9B (M16W pad)
Project:	Mamm Creek	TVD Reference:	KBE @ 7903.0ft (Original Well Elev)
Reference Site:	SWSW S16-T7S-R93W (M16W Pad)	MD Reference:	KBE @ 7903.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	MCU Fee 17-9B (M16W pad)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	EDM 5000.1 US Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Reference Depths are relative to KBE @ 7903.0ft (Original Well Elev)
Offset Depths are relative to Offset Datum
Central Meridian is -105.500000 °

Coordinates are relative to: MCU Fee 17-9B (M16W pad)
Coordinate System is US State Plane 1983, Colorado Central Zone
Grid Convergence at Surface is: -1.44°



CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation