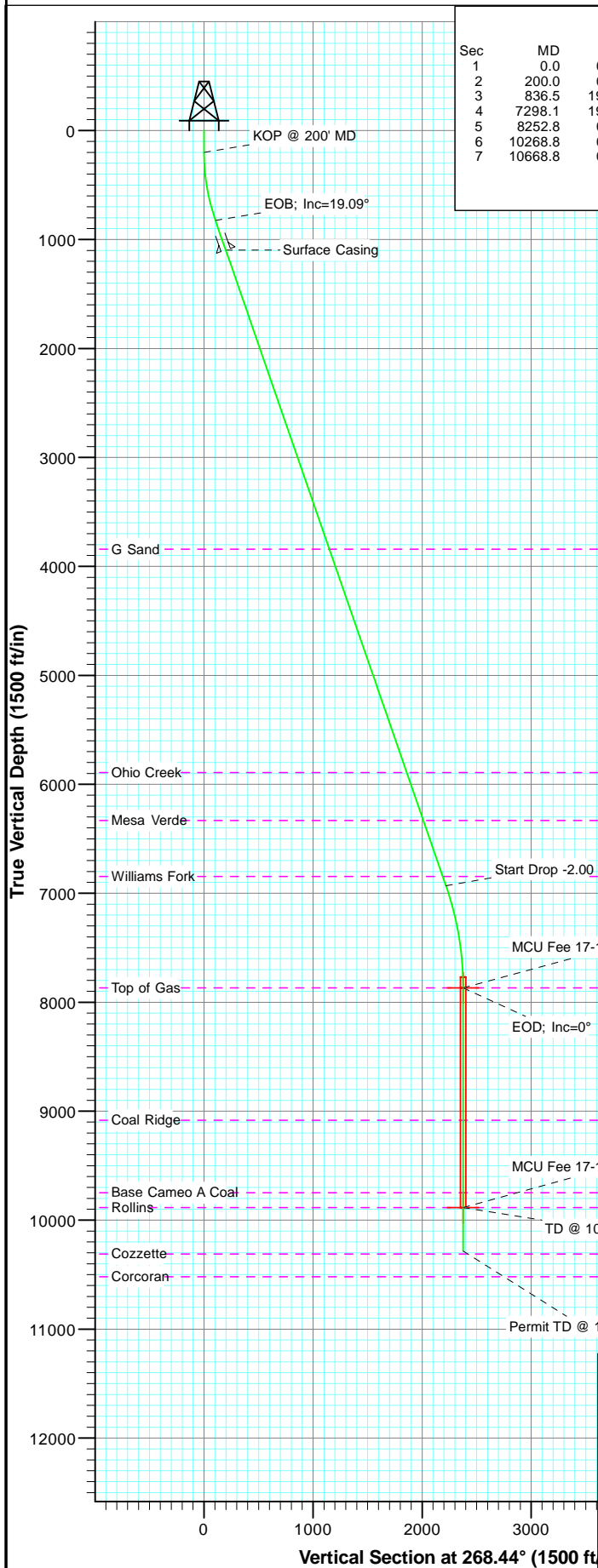
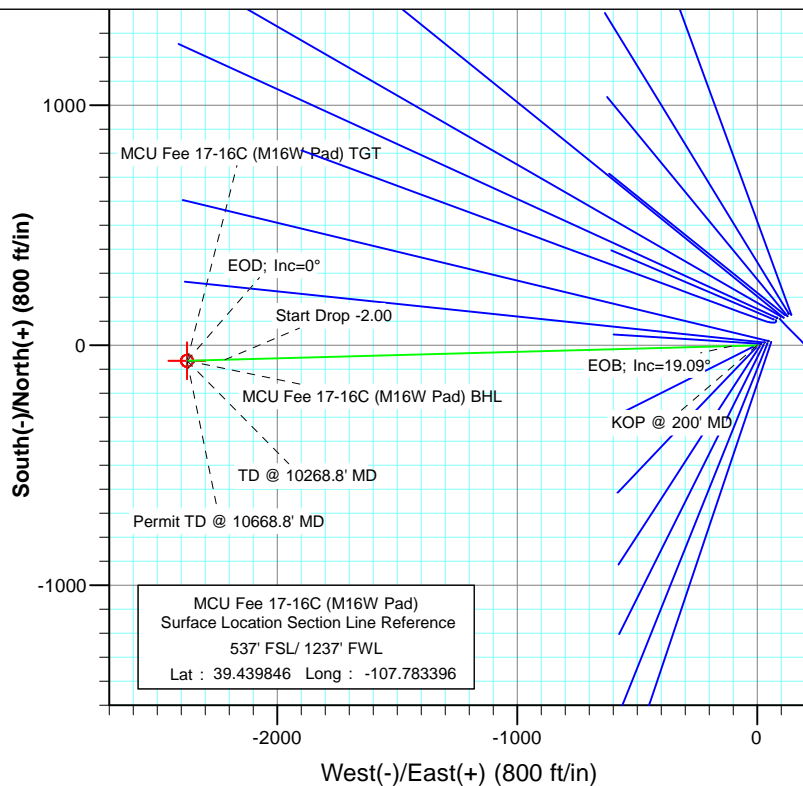




Project: Mamm Creek
Site: SWSW S16-T7S-R93W (M16W Pad)
Well: MCU Fee 17-16C (M16W Pad)
Wellbore: DD
Plan: Plan #1



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	836.5	19.09	268.44	824.7	-2.9	-105.0	3.00	268.44	105.1	
4	7298.1	19.09	268.44	6930.9	-60.4	-2217.9	0.00	0.00	2218.8	MCU Fee 17-16C (M16W Pad) TGT
5	8252.8	0.00	0.00	7868.0	-64.7	-2375.5	2.00	180.00	2376.4	MCU Fee 17-16C (M16W Pad) BHL
6	10268.8	0.00	0.00	9884.0	-64.7	-2375.5	0.00	0.00	2376.4	
7	10668.8	0.00	0.00	10284.0	-64.7	-2375.5	0.00	0.00	2376.4	



FORMATION TOP DETAILS		
TVDPath	MDPath	Formation
3842.0	4029.4	G Sand
5892.0	6198.7	Ohio Creek
6333.0	6665.4	Mesa Verde
6845.0	7207.2	Williams Fork
7868.0	8252.8	Top of Gas
9084.0	9468.8	Coal Ridge
9748.0	10132.8	Base Cameo A Coal
9884.0	10268.8	Rollins



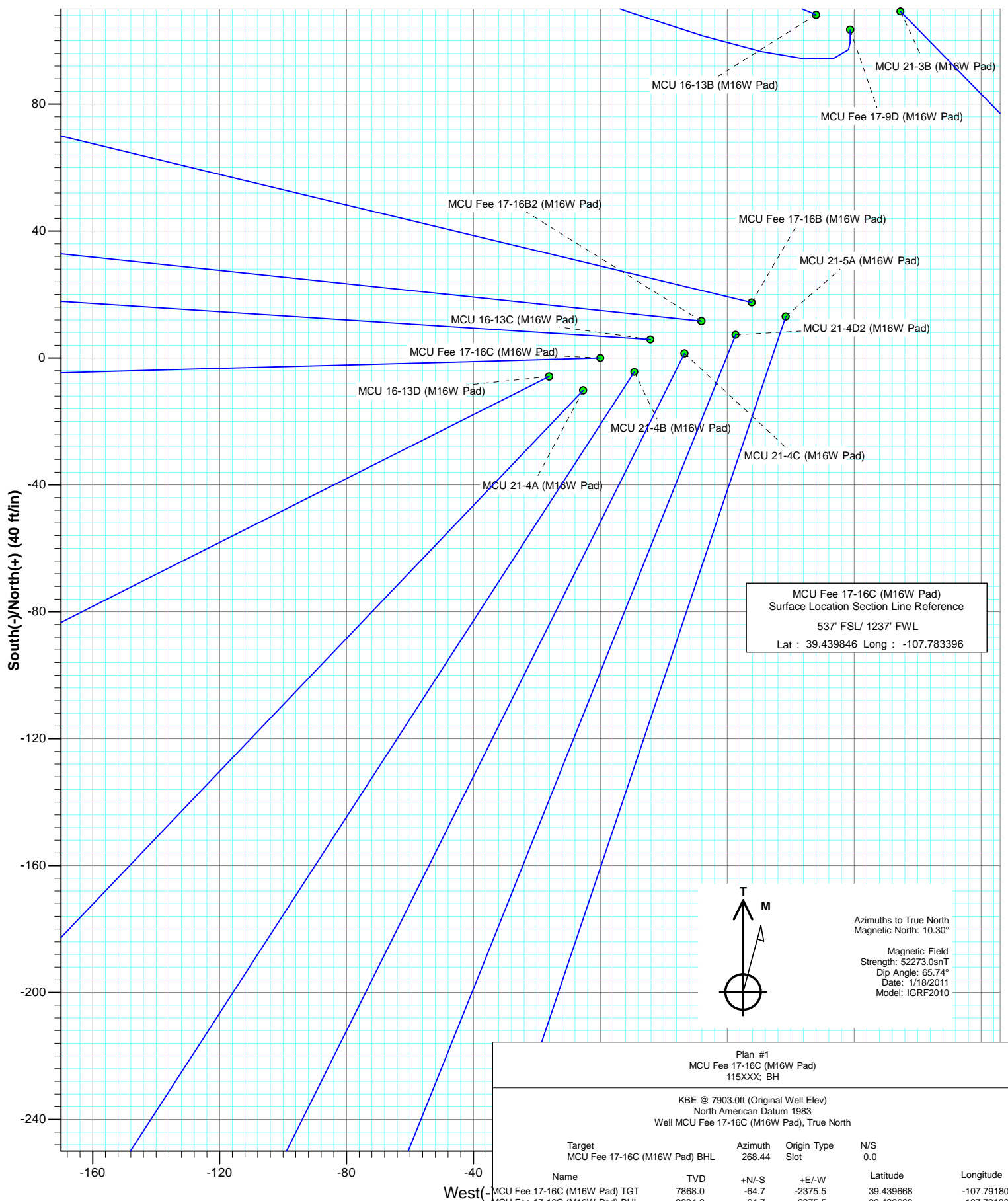
Azimuths to True North
Magnetic North: 10.30°

Magnetic Field
Strength: 52273.0nT
Dip Angle: 65.74°
Date: 1/18/2011
Model: IGRF2010

Plan #1 MCU Fee 17-16C (M16W Pad) 115XXX; BH					
KBE @ 7903.0ft (Original Well Elev) North American Datum 1983 Well MCU Fee 17-16C (M16W Pad), True North					
Target	Azimuth	Origin Type	N/S		
MCU Fee 17-16C (M16W Pad) BHL	268.44	Slot	0.0		
Name	TVD	+N/-S	+E/-W	Latitude	Longitude
MCU Fee 17-16C (M16W Pad) TGT	7868.0	-64.7	-2375.5	39.439668	-107.791807
MCU Fee 17-16C (M16W Pad) BHL	9884.0	-64.7	-2375.5	39.439668	-107.791807

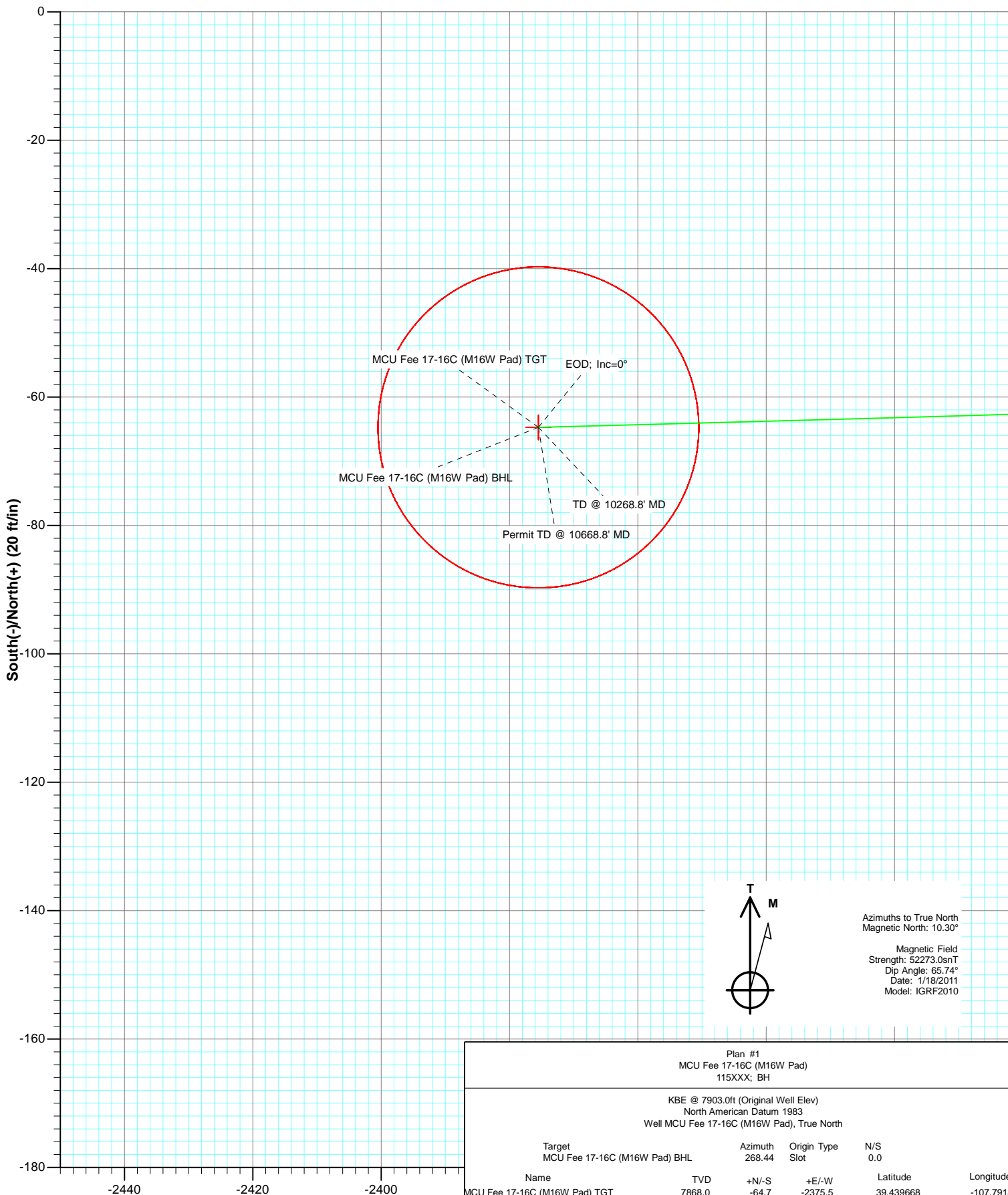


Project: Mamm Creek
Site: SWSW S16-T7S-R93W (M16W Pad)
Well: MCU Fee 17-16C (M16W Pad)
Wellbore: DD
Plan: Plan #1





Project: Mamm Creek
 Site: SWSW S16-T7S-R93W (M16W Pad)
 Well: MCU Fee 17-16C (M16W Pad)
 Wellbore: DD
 Plan: Plan #1



W

Cathedral Energy Services

Planning Report

Database:	EDM 5000.1 US Multi Users DB	Local Co-ordinate Reference:	Well MCU Fee 17-16C (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 17-16C (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 17-16C (M16W Pad)					
Well Position	+N/-S	0.0 ft	Northing:	1,593,200.80 ft	Latitude:	39.439846
	+E/-W	0.0 ft	Easting:	2,355,183.09 ft	Longitude:	-107.783396
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	268.44	

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	
836.5	19.09	268.44	824.7	-2.9	-105.0	3.00	3.00	0.00	268.44	
7,298.1	19.09	268.44	6,930.9	-60.4	-2,217.9	0.00	0.00	0.00	0.00	
8,252.8	0.00	0.00	7,868.0	-64.7	-2,375.5	2.00	-2.00	0.00	180.00	MCU Fee 17-16C (M1
10,268.8	0.00	0.00	9,884.0	-64.7	-2,375.5	0.00	0.00	0.00	0.00	MCU Fee 17-16C (M1
10,668.8	0.00	0.00	10,284.0	-64.7	-2,375.5	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 17-16C (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 17-16C (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	268.44	300.0	-0.1	-2.6	2.6	3.00	3.00	
400.0	6.00	268.44	399.6	-0.3	-10.5	10.5	3.00	3.00	
500.0	9.00	268.44	498.8	-0.6	-23.5	23.5	3.00	3.00	
600.0	12.00	268.44	597.1	-1.1	-41.7	41.7	3.00	3.00	
700.0	15.00	268.44	694.3	-1.8	-65.1	65.1	3.00	3.00	
800.0	18.00	268.44	790.2	-2.5	-93.4	93.5	3.00	3.00	
836.5	19.09	268.44	824.7	-2.9	-105.0	105.1	3.00	3.00	EOB; Inc=19.09°
900.0	19.09	268.44	884.8	-3.4	-125.8	125.9	0.00	0.00	
1,000.0	19.09	268.44	979.3	-4.3	-158.5	158.6	0.00	0.00	
1,100.0	19.09	268.44	1,073.8	-5.2	-191.2	191.3	0.00	0.00	
1,125.6	19.09	268.44	1,098.0	-5.4	-199.6	199.7	0.00	0.00	Surface Casing
1,200.0	19.09	268.44	1,168.3	-6.1	-223.9	224.0	0.00	0.00	
1,300.0	19.09	268.44	1,262.8	-7.0	-256.6	256.7	0.00	0.00	
1,400.0	19.09	268.44	1,357.3	-7.9	-289.3	289.4	0.00	0.00	
1,500.0	19.09	268.44	1,451.8	-8.8	-322.0	322.1	0.00	0.00	
1,600.0	19.09	268.44	1,546.3	-9.7	-354.7	354.8	0.00	0.00	
1,700.0	19.09	268.44	1,640.8	-10.6	-387.4	387.5	0.00	0.00	
1,800.0	19.09	268.44	1,735.3	-11.4	-420.1	420.3	0.00	0.00	
1,900.0	19.09	268.44	1,829.8	-12.3	-452.8	453.0	0.00	0.00	
2,000.0	19.09	268.44	1,924.3	-13.2	-485.5	485.7	0.00	0.00	
2,100.0	19.09	268.44	2,018.8	-14.1	-518.2	518.4	0.00	0.00	
2,200.0	19.09	268.44	2,113.3	-15.0	-550.9	551.1	0.00	0.00	
2,300.0	19.09	268.44	2,207.8	-15.9	-583.6	583.8	0.00	0.00	
2,400.0	19.09	268.44	2,302.3	-16.8	-616.3	616.5	0.00	0.00	
2,500.0	19.09	268.44	2,396.8	-17.7	-649.0	649.2	0.00	0.00	
2,600.0	19.09	268.44	2,491.3	-18.6	-681.7	682.0	0.00	0.00	
2,700.0	19.09	268.44	2,585.8	-19.5	-714.4	714.7	0.00	0.00	
2,800.0	19.09	268.44	2,680.3	-20.4	-747.1	747.4	0.00	0.00	
2,900.0	19.09	268.44	2,774.8	-21.2	-779.8	780.1	0.00	0.00	
3,000.0	19.09	268.44	2,869.3	-22.1	-812.5	812.8	0.00	0.00	
3,100.0	19.09	268.44	2,963.8	-23.0	-845.2	845.5	0.00	0.00	
3,200.0	19.09	268.44	3,058.3	-23.9	-877.9	878.2	0.00	0.00	
3,300.0	19.09	268.44	3,152.8	-24.8	-910.6	910.9	0.00	0.00	
3,400.0	19.09	268.44	3,247.3	-25.7	-943.3	943.6	0.00	0.00	
3,500.0	19.09	268.44	3,341.7	-26.6	-976.0	976.4	0.00	0.00	
3,600.0	19.09	268.44	3,436.2	-27.5	-1,008.7	1,009.1	0.00	0.00	
3,700.0	19.09	268.44	3,530.7	-28.4	-1,041.4	1,041.8	0.00	0.00	
3,800.0	19.09	268.44	3,625.2	-29.3	-1,074.1	1,074.5	0.00	0.00	
3,900.0	19.09	268.44	3,719.7	-30.2	-1,106.8	1,107.2	0.00	0.00	
4,000.0	19.09	268.44	3,814.2	-31.0	-1,139.5	1,139.9	0.00	0.00	
4,029.4	19.09	268.44	3,842.0	-31.3	-1,149.1	1,149.5	0.00	0.00	G Sand
4,100.0	19.09	268.44	3,908.7	-31.9	-1,172.2	1,172.6	0.00	0.00	
4,200.0	19.09	268.44	4,003.2	-32.8	-1,204.9	1,205.3	0.00	0.00	
4,300.0	19.09	268.44	4,097.7	-33.7	-1,237.6	1,238.0	0.00	0.00	
4,400.0	19.09	268.44	4,192.2	-34.6	-1,270.3	1,270.8	0.00	0.00	
4,500.0	19.09	268.44	4,286.7	-35.5	-1,303.0	1,303.5	0.00	0.00	
4,600.0	19.09	268.44	4,381.2	-36.4	-1,335.7	1,336.2	0.00	0.00	
4,700.0	19.09	268.44	4,475.7	-37.3	-1,368.4	1,368.9	0.00	0.00	
4,800.0	19.09	268.44	4,570.2	-38.2	-1,401.1	1,401.6	0.00	0.00	

Cathedral Energy Services

Planning Report

Database:	EDM 5000.1 US Multi Users DB	Local Co-ordinate Reference:	Well MCU Fee 17-16C (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 17-16C (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	19.09	268.44	4,664.7	-39.1	-1,433.8	1,434.3	0.00	0.00	
5,000.0	19.09	268.44	4,759.2	-40.0	-1,466.5	1,467.0	0.00	0.00	
5,100.0	19.09	268.44	4,853.7	-40.8	-1,499.2	1,499.7	0.00	0.00	
5,200.0	19.09	268.44	4,948.2	-41.7	-1,531.9	1,532.5	0.00	0.00	
5,300.0	19.09	268.44	5,042.7	-42.6	-1,564.6	1,565.2	0.00	0.00	
5,400.0	19.09	268.44	5,137.2	-43.5	-1,597.3	1,597.9	0.00	0.00	
5,500.0	19.09	268.44	5,231.7	-44.4	-1,630.0	1,630.6	0.00	0.00	
5,600.0	19.09	268.44	5,326.2	-45.3	-1,662.7	1,663.3	0.00	0.00	
5,700.0	19.09	268.44	5,420.7	-46.2	-1,695.4	1,696.0	0.00	0.00	
5,800.0	19.09	268.44	5,515.2	-47.1	-1,728.1	1,728.7	0.00	0.00	
5,900.0	19.09	268.44	5,609.7	-48.0	-1,760.8	1,761.4	0.00	0.00	
6,000.0	19.09	268.44	5,704.2	-48.9	-1,793.5	1,794.1	0.00	0.00	
6,100.0	19.09	268.44	5,798.7	-49.8	-1,826.2	1,826.9	0.00	0.00	
6,198.7	19.09	268.44	5,892.0	-50.6	-1,858.5	1,859.1	0.00	0.00	Ohio Creek
6,200.0	19.09	268.44	5,893.2	-50.6	-1,858.9	1,859.6	0.00	0.00	
6,300.0	19.09	268.44	5,987.7	-51.5	-1,891.6	1,892.3	0.00	0.00	
6,400.0	19.09	268.44	6,082.2	-52.4	-1,924.3	1,925.0	0.00	0.00	
6,500.0	19.09	268.44	6,176.7	-53.3	-1,957.0	1,957.7	0.00	0.00	
6,600.0	19.09	268.44	6,271.2	-54.2	-1,989.7	1,990.4	0.00	0.00	
6,665.4	19.09	268.44	6,333.0	-54.8	-2,011.1	2,011.8	0.00	0.00	Mesa Verde
6,700.0	19.09	268.44	6,365.7	-55.1	-2,022.4	2,023.1	0.00	0.00	
6,800.0	19.09	268.44	6,460.2	-56.0	-2,055.1	2,055.8	0.00	0.00	
6,900.0	19.09	268.44	6,554.7	-56.9	-2,087.8	2,088.5	0.00	0.00	
7,000.0	19.09	268.44	6,649.2	-57.8	-2,120.5	2,121.3	0.00	0.00	
7,100.0	19.09	268.44	6,743.7	-58.7	-2,153.2	2,154.0	0.00	0.00	
7,200.0	19.09	268.44	6,838.2	-59.5	-2,185.9	2,186.7	0.00	0.00	
7,207.2	19.09	268.44	6,845.0	-59.6	-2,188.2	2,189.0	0.00	0.00	Williams Fork
7,298.1	19.09	268.44	6,930.9	-60.4	-2,217.9	2,218.8	0.00	0.00	Start Drop -2.00
7,300.0	19.06	268.44	6,932.7	-60.4	-2,218.6	2,219.4	2.00	-2.00	
7,400.0	17.06	268.44	7,027.8	-61.3	-2,249.5	2,250.4	2.00	-2.00	
7,500.0	15.06	268.44	7,123.9	-62.0	-2,277.2	2,278.0	2.00	-2.00	
7,600.0	13.06	268.44	7,220.9	-62.7	-2,301.5	2,302.3	2.00	-2.00	
7,700.0	11.06	268.44	7,318.6	-63.3	-2,322.3	2,323.2	2.00	-2.00	
7,800.0	9.06	268.44	7,417.1	-63.7	-2,339.8	2,340.7	2.00	-2.00	
7,900.0	7.06	268.44	7,516.1	-64.1	-2,353.8	2,354.7	2.00	-2.00	
8,000.0	5.06	268.44	7,615.6	-64.4	-2,364.4	2,365.2	2.00	-2.00	
8,100.0	3.06	268.44	7,715.3	-64.6	-2,371.4	2,372.3	2.00	-2.00	
8,200.0	1.06	268.44	7,815.2	-64.7	-2,375.0	2,375.9	2.00	-2.00	
8,252.8	0.00	0.00	7,868.0	-64.7	-2,375.5	2,376.4	2.00	-2.00	EOD; Inc=0° - Top of Gas - MCU Fee 17-16C (I
8,300.0	0.00	0.00	7,915.2	-64.7	-2,375.5	2,376.4	0.00	0.00	
8,400.0	0.00	0.00	8,015.2	-64.7	-2,375.5	2,376.4	0.00	0.00	
8,500.0	0.00	0.00	8,115.2	-64.7	-2,375.5	2,376.4	0.00	0.00	
8,600.0	0.00	0.00	8,215.2	-64.7	-2,375.5	2,376.4	0.00	0.00	
8,700.0	0.00	0.00	8,315.2	-64.7	-2,375.5	2,376.4	0.00	0.00	
8,800.0	0.00	0.00	8,415.2	-64.7	-2,375.5	2,376.4	0.00	0.00	
8,900.0	0.00	0.00	8,515.2	-64.7	-2,375.5	2,376.4	0.00	0.00	
9,000.0	0.00	0.00	8,615.2	-64.7	-2,375.5	2,376.4	0.00	0.00	
9,100.0	0.00	0.00	8,715.2	-64.7	-2,375.5	2,376.4	0.00	0.00	
9,200.0	0.00	0.00	8,815.2	-64.7	-2,375.5	2,376.4	0.00	0.00	
9,300.0	0.00	0.00	8,915.2	-64.7	-2,375.5	2,376.4	0.00	0.00	
9,400.0	0.00	0.00	9,015.2	-64.7	-2,375.5	2,376.4	0.00	0.00	
9,468.8	0.00	0.00	9,084.0	-64.7	-2,375.5	2,376.4	0.00	0.00	Coal Ridge

Cathedral Energy Services

Planning Report

Database:	EDM 5000.1 US Multi Users DB	Local Co-ordinate Reference:	Well MCU Fee 17-16C (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 17-16C (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	9,115.2	-64.7	-2,375.5	2,376.4	0.00	0.00	
9,600.0	0.00	0.00	9,215.2	-64.7	-2,375.5	2,376.4	0.00	0.00	
9,700.0	0.00	0.00	9,315.2	-64.7	-2,375.5	2,376.4	0.00	0.00	
9,800.0	0.00	0.00	9,415.2	-64.7	-2,375.5	2,376.4	0.00	0.00	
9,900.0	0.00	0.00	9,515.2	-64.7	-2,375.5	2,376.4	0.00	0.00	
10,000.0	0.00	0.00	9,615.2	-64.7	-2,375.5	2,376.4	0.00	0.00	
10,100.0	0.00	0.00	9,715.2	-64.7	-2,375.5	2,376.4	0.00	0.00	
10,132.8	0.00	0.00	9,748.0	-64.7	-2,375.5	2,376.4	0.00	0.00	Base Cameo A Coal
10,200.0	0.00	0.00	9,815.2	-64.7	-2,375.5	2,376.4	0.00	0.00	
10,268.8	0.00	0.00	9,884.0	-64.7	-2,375.5	2,376.4	0.00	0.00	TD @ 10268.8' MD - Rollins - MCU Fee 17-16C
10,300.0	0.00	0.00	9,915.2	-64.7	-2,375.5	2,376.4	0.00	0.00	
10,400.0	0.00	0.00	10,015.2	-64.7	-2,375.5	2,376.4	0.00	0.00	
10,500.0	0.00	0.00	10,115.2	-64.7	-2,375.5	2,376.4	0.00	0.00	
10,600.0	0.00	0.00	10,215.2	-64.7	-2,375.5	2,376.4	0.00	0.00	
10,668.8	0.00	0.00	10,284.0	-64.7	-2,375.5	2,376.4	0.00	0.00	Permit TD @ 10668.8' MD

Targets

Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
- hit/miss target									
- Shape									
MCU Fee 17-16C (M16v - plan hits target center - Circle (radius 25.0)	0.00	0.00	7,868.0	-64.7	-2,375.5	1,593,195.81	2,352,806.73	39.439668	-107.791807
MCU Fee 17-16C (M16v - plan hits target center - Circle (radius 25.0)	0.00	0.00	9,884.0	-64.7	-2,375.5	1,593,195.81	2,352,806.73	39.439668	-107.791807

Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)
1,125.6	1,098.0	Surface Casing	0.000	0.000

Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
4,029.4	3,842.0	G Sand		0.00	
6,198.7	5,892.0	Ohio Creek		0.00	
6,665.4	6,333.0	Mesa Verde		0.00	
7,207.2	6,845.0	Williams Fork		0.00	
8,252.8	7,868.0	Top of Gas		0.00	
9,468.8	9,084.0	Coal Ridge		0.00	
10,132.8	9,748.0	Base Cameo A Coal		0.00	
10,268.8	9,884.0	Rollins		0.00	

Cathedral Energy Services

Planning Report

Database:	EDM 5000.1 US Multi Users DB	Local Co-ordinate Reference:	Well MCU Fee 17-16C (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 17-16C (M16W Pad)	Survey Calculation Method:	Minimum Curvature
Wellbore:	DD		
Design:	Plan #1		

Plan Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
200.0	200.0	0.0	0.0	KOP @ 200' MD
836.5	824.7	-2.9	-105.0	EOB; Inc=19.09°
7,298.1	6,930.9	-60.4	-2,217.9	Start Drop -2.00
8,252.8	7,868.0	-64.7	-2,375.5	EOD; Inc=0°
10,268.8	9,884.0	-64.7	-2,375.5	TD @ 10268.8' MD
10,668.8	10,284.0	-64.7	-2,375.5	Permit TD @ 10668.8' MD

EnCana Oil & Gas (USA) Inc

Mamm Creek

SWSW S16-T7S-R93W (M16W Pad)

MCU Fee 17-16C (M16W Pad)

DD

Plan #1

Anticollision Report

28 January, 2011

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well MCU Fee 17-16C (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 17-16C (M16W Pad)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Reference	Plan #1
Filter type:	GLOBAL FILTER APPLIED: All wellpaths within 200'+ 100/1000 of reference
Interpolation Method:	MD Interval 100.0ft
Depth Range:	Unlimited
Results Limited by:	Maximum center-center distance of 500.0ft
Warning Levels Evaluated at:	2.00 Sigma
Error Model:	Systematic Ellipse
Scan Method:	Closest Approach 3D
Error Surface:	Elliptical Conic

Survey Tool Program	Date	1/20/2011
From (ft)	To (ft)	Survey (Wellbore)
0.0	10,668.8	Plan #1 (DD)
		Tool Name
		MWD
		Description
		Geolink MWD

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well MCU Fee 17-16C (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 17-16C (M16W Pad)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Summary

Site Name Offset Well - Wellbore - Design	Reference	Offset	Distance		Separation Factor	Warning
	Measured Depth (ft)	Measured Depth (ft)	Between Centres (ft)	Between Ellipses (ft)		
SWSW S16-T7S-R93W (M16W Pad)						
MCU 16-13A (M16W Pad) - DD - Plan #1	200.0	200.0	171.1	170.4	275.323	CC, ES
MCU 16-13A (M16W Pad) - DD - Plan #1	1,900.0	1,862.5	491.9	481.8	48.919	SF
MCU 16-13B (M16W Pad) - DD - Plan #1	100.0	100.0	127.8	127.5	469.418	CC
MCU 16-13B (M16W Pad) - DD - Plan #1	200.0	200.0	127.8	127.2	205.700	ES
MCU 16-13B (M16W Pad) - DD - Plan #1	1,100.0	1,089.0	236.5	231.4	45.958	SF
MCU 16-13C (M16W Pad) - DD - Plan #1	100.0	100.0	16.9	16.6	61.907	CC
MCU 16-13C (M16W Pad) - DD - Plan #1	300.0	300.8	16.9	16.0	17.382	ES
MCU 16-13C (M16W Pad) - DD - Plan #1	400.0	401.3	17.6	16.3	13.200	SF
MCU 16-13D (M16W Pad) - DD - Plan #1	547.6	545.6	15.9	13.7	7.485	CC, ES
MCU 16-13D (M16W Pad) - DD - Plan #1	600.0	597.6	16.9	14.4	6.804	SF
MCU 21-3B (M16W Pad) - DD - Plan #1	200.0	200.0	144.5	143.9	232.610	CC, ES
MCU 21-3B (M16W Pad) - DD - Plan #1	700.0	676.4	213.6	210.8	75.752	SF
MCU 21-4A (M16W Pad) - DD - Plan #1	200.0	200.0	11.5	10.9	18.547	CC, ES
MCU 21-4A (M16W Pad) - DD - Plan #1	400.0	398.5	17.5	16.2	12.621	SF
MCU 21-4B (M16W Pad) - DD - Plan #1	200.0	200.0	11.6	11.0	18.645	CC, ES
MCU 21-4B (M16W Pad) - DD - Plan #1	300.0	300.1	13.6	12.6	13.847	SF
MCU 21-4C (M16W Pad) - DD - Plan #1	200.0	200.0	26.6	26.0	42.792	CC, ES
MCU 21-4C (M16W Pad) - DD - Plan #1	500.0	500.1	43.9	42.0	23.573	SF
MCU 21-4D2 (M16W Pad) - DD - Plan #1	200.0	200.0	43.3	42.6	69.629	CC, ES
MCU 21-4D2 (M16W Pad) - DD - Plan #1	600.0	599.5	75.2	72.8	31.110	SF
MCU 21-5A (M16W Pad) - DD - Plan #1	200.0	200.0	59.9	59.3	96.429	CC, ES
MCU 21-5A (M16W Pad) - DD - Plan #1	700.0	697.0	112.9	109.8	36.762	SF
MCU Fee 16-12C2 (M16W Pad) - DD - Plan #1	200.0	200.0	175.0	174.4	281.683	CC, ES
MCU Fee 16-12C2 (M16W Pad) - DD - Plan #1	1,700.0	1,659.5	480.8	470.8	48.193	SF
MCU Fee 16-2C (M16W Pad) - DD - Plan #1	200.0	200.0	186.2	185.6	299.739	CC, ES
MCU Fee 16-2C (M16W Pad) - DD - Plan #1	1,600.0	1,548.3	499.0	488.9	49.232	SF
MCU Fee 16-5C (M16W Pad) - DD - Plan #1	200.0	200.0	190.8	190.2	307.095	CC, ES
MCU Fee 16-5C (M16W Pad) - DD - Plan #1	1,300.0	1,220.9	479.7	471.2	56.783	SF
MCU Fee 17-16B (M16W Pad) - DD - Plan #1	200.0	200.0	50.8	50.2	81.809	CC
MCU Fee 17-16B (M16W Pad) - DD - Plan #1	300.0	302.3	51.1	50.1	52.254	ES
MCU Fee 17-16B (M16W Pad) - DD - Plan #1	5,900.0	5,893.4	492.8	424.2	7.186	SF
MCU Fee 17-16B2 (M16W Pad) - DD - Plan #1	200.0	200.0	34.0	33.4	54.682	CC
MCU Fee 17-16B2 (M16W Pad) - DD - Plan #1	400.0	403.2	34.4	33.0	25.586	ES
MCU Fee 17-16B2 (M16W Pad) - DD - Plan #1	10,668.8	10,686.3	330.1	234.9	3.468	SF
MCU Fee 17-9B (M16W pad) - DD - Plan #1	200.0	200.0	159.7	159.1	257.023	CC, ES
MCU Fee 17-9B (M16W pad) - DD - Plan #1	2,000.0	1,960.4	497.6	478.8	26.383	SF
MCU Fee 17-9B2 (M16W Pad) - DD - Plan #1	200.0	200.0	156.1	155.4	251.157	CC, ES
MCU Fee 17-9B2 (M16W Pad) - DD - Plan #1	2,400.0	2,374.4	493.8	469.2	20.077	SF
MCU Fee 17-9C (M16W Pad) - DD - Plan #1	100.0	100.0	141.5	141.3	519.804	CC
MCU Fee 17-9C (M16W Pad) - DD - Plan #1	200.0	200.0	141.5	140.9	227.779	ES
MCU Fee 17-9C (M16W Pad) - DD - Plan #1	2,900.0	2,881.3	492.9	462.2	16.044	SF
MCU Fee 17-9D (M16W Pad) - DD - Plan #1	200.0	200.0	130.0	129.4	209.284	CC
MCU Fee 17-9D (M16W Pad) - DD - Plan #1	300.0	303.7	130.3	129.3	132.510	ES
MCU Fee 17-9D (M16W Pad) - DD - Plan #1	3,600.0	3,597.8	493.0	459.7	14.809	SF

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well MCU Fee 17-16C (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 17-16C (M16W Pad)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	USA EDM 5000 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				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	42.73	125.7	116.1	171.1					
100.0	100.0	100.0	100.0	0.1	0.1	42.73	125.7	116.1	171.1	170.8	0.27	628.302		
200.0	200.0	200.0	200.0	0.3	0.3	42.73	125.7	116.1	171.1	170.4	0.62	275.323 CC, ES		
300.0	300.0	300.6	300.5	0.5	0.5	134.00	127.3	114.0	172.7	171.7	0.98	175.491		
400.0	399.6	401.0	400.6	0.7	0.7	133.17	132.3	107.8	177.7	176.3	1.40	126.519		
500.0	498.8	500.8	499.6	1.0	1.0	132.16	139.9	98.4	186.0	184.1	1.90	98.107		
600.0	597.1	600.0	598.1	1.4	1.2	132.15	147.8	88.6	197.9	195.4	2.44	80.937		
700.0	694.3	698.7	696.0	1.8	1.5	133.08	155.6	78.8	213.3	210.2	3.04	70.089		
800.0	790.2	796.6	793.1	2.4	1.8	134.70	163.4	69.2	232.4	228.7	3.68	63.185		
900.0	884.8	893.5	889.3	3.0	2.0	136.91	171.1	59.6	254.7	250.4	4.31	59.088		
1,000.0	979.3	990.4	985.4	3.6	2.3	138.96	178.8	50.1	277.6	272.7	4.93	56.323		
1,100.0	1,073.8	1,087.3	1,081.5	4.2	2.6	140.69	186.5	40.5	300.8	295.3	5.53	54.363		
1,200.0	1,168.3	1,184.2	1,177.6	4.8	2.9	142.18	194.2	30.9	324.3	318.1	6.13	52.932		
1,300.0	1,262.8	1,281.1	1,273.7	5.4	3.1	143.46	201.9	21.4	347.9	341.2	6.71	51.860		
1,400.0	1,357.3	1,378.0	1,369.8	6.0	3.4	144.58	209.6	11.8	371.6	364.4	7.28	51.041		
1,500.0	1,451.8	1,474.9	1,465.9	6.7	3.7	145.57	217.3	2.3	395.5	387.7	7.85	50.405		
1,600.0	1,546.3	1,571.8	1,562.0	7.3	3.9	146.45	224.9	-7.3	419.5	411.1	8.41	49.903		
1,700.0	1,640.8	1,668.7	1,658.2	7.9	4.2	147.23	232.6	-16.8	443.6	434.6	8.96	49.503		
1,800.0	1,735.3	1,765.6	1,754.3	8.5	4.5	147.93	240.3	-26.4	467.7	458.2	9.51	49.181		
1,900.0	1,829.8	1,862.5	1,850.4	9.2	4.8	148.56	248.0	-36.0	491.9	481.8	10.06	48.919 SF		

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well MCU Fee 17-16C (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 17-16C (M16W Pad)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	USA EDM 5000 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						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	32.18	108.2	68.1	127.8					
100.0	100.0	100.0	100.0	0.1	0.1	32.18	108.2	68.1	127.8	127.5	0.27	469.418	CC	
200.0	200.0	200.0	200.0	0.3	0.3	32.18	108.2	68.1	127.8	127.2	0.62	205.700	ES	
300.0	300.0	301.1	301.0	0.5	0.5	123.52	109.2	65.6	128.8	127.9	0.99	130.578		
400.0	399.6	401.9	401.5	0.7	0.7	122.90	112.3	58.3	132.0	130.5	1.41	93.477		
500.0	498.8	501.7	500.9	1.0	0.9	123.27	116.2	49.3	137.6	135.7	1.89	72.707		
600.0	597.1	601.2	599.9	1.4	1.2	125.24	120.0	40.3	146.3	143.9	2.43	60.280		
700.0	694.3	700.0	698.2	1.8	1.4	128.39	123.8	31.3	158.3	155.3	3.00	52.816		
800.0	790.2	798.0	795.7	2.4	1.7	132.25	127.5	22.5	174.3	170.7	3.58	48.644		
900.0	884.8	895.0	892.3	3.0	1.9	136.45	131.3	13.7	194.1	189.9	4.14	46.908		
1,000.0	979.3	992.0	988.8	3.6	2.1	140.07	135.0	4.9	215.0	210.3	4.66	46.173		
1,100.0	1,073.8	1,089.0	1,085.3	4.2	2.4	143.04	138.7	-3.9	236.5	231.4	5.15	45.958	SF	
1,200.0	1,168.3	1,185.9	1,181.8	4.8	2.6	145.51	142.5	-12.6	258.6	253.0	5.62	46.043		
1,300.0	1,262.8	1,282.9	1,278.3	5.4	2.8	147.60	146.2	-21.4	281.1	275.0	6.07	46.301		
1,400.0	1,357.3	1,379.9	1,374.7	6.0	3.1	149.38	149.9	-30.2	303.9	297.4	6.51	46.658		
1,500.0	1,451.8	1,476.8	1,471.2	6.7	3.3	150.91	153.6	-39.0	326.9	320.0	6.95	47.069		
1,600.0	1,546.3	1,573.8	1,567.7	7.3	3.5	152.24	157.4	-47.7	350.1	342.8	7.37	47.506		
1,700.0	1,640.8	1,670.8	1,664.2	7.9	3.8	153.40	161.1	-56.5	373.5	365.7	7.79	47.952		
1,800.0	1,735.3	1,767.7	1,760.7	8.5	4.0	154.43	164.8	-65.3	397.0	388.8	8.20	48.395		
1,900.0	1,829.8	1,864.7	1,857.2	9.2	4.3	155.34	168.5	-74.1	420.6	412.0	8.61	48.830		
2,000.0	1,924.3	1,961.6	1,953.7	9.8	4.5	156.16	172.3	-82.8	444.3	435.3	9.02	49.251		
2,100.0	2,018.8	2,058.6	2,050.2	10.4	4.7	156.89	176.0	-91.6	468.1	458.7	9.43	49.657		
2,200.0	2,113.3	2,155.6	2,146.7	11.0	5.0	157.56	179.7	-100.4	491.9	482.1	9.83	50.047		

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well MCU Fee 17-16C (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 17-16C (M16W Pad)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	USA EDM 5000 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	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	69.77	5.8	15.8	16.9					
100.0	100.0	100.0	100.0	0.1	0.1	69.77	5.8	15.8	16.9	16.6	0.27	61.907 CC		
200.0	200.0	200.0	200.0	0.3	0.3	69.77	5.8	15.8	16.9	16.2	0.62	27.128		
300.0	300.0	300.8	300.8	0.5	0.5	160.54	6.0	13.2	16.9	16.0	0.97	17.382 ES		
400.0	399.6	401.3	400.9	0.7	0.7	158.98	6.5	5.8	17.6	16.3	1.33	13.200 SF		
500.0	498.8	501.1	500.5	1.0	0.9	161.64	7.0	-2.4	22.5	20.8	1.70	13.271		
600.0	597.1	600.6	599.6	1.4	1.1	165.95	7.5	-10.5	32.5	30.4	2.04	15.881		
700.0	694.3	699.4	698.1	1.8	1.4	169.47	8.1	-18.6	47.6	45.2	2.38	20.003		
800.0	790.2	797.3	795.6	2.4	1.6	171.92	8.6	-26.6	67.9	65.2	2.71	25.102		
900.0	884.8	894.2	892.2	3.0	1.8	173.57	9.1	-34.6	92.4	89.4	3.04	30.387		
1,000.0	979.3	991.0	988.7	3.6	2.0	174.57	9.6	-42.5	117.2	113.9	3.38	34.646		
1,100.0	1,073.8	1,087.9	1,085.3	4.2	2.2	175.21	10.1	-50.4	142.1	138.4	3.73	38.120		
1,200.0	1,168.3	1,184.7	1,181.8	4.8	2.4	175.67	10.6	-58.3	167.0	162.9	4.07	41.008		
1,300.0	1,262.8	1,281.6	1,278.3	5.4	2.7	176.01	11.1	-66.3	191.8	187.4	4.42	43.445		
1,400.0	1,357.3	1,378.5	1,374.8	6.0	2.9	176.27	11.7	-74.2	216.7	212.0	4.76	45.531		
1,500.0	1,451.8	1,475.3	1,471.4	6.7	3.1	176.47	12.2	-82.1	241.6	236.5	5.10	47.336		
1,600.0	1,546.3	1,572.2	1,567.9	7.3	3.3	176.64	12.7	-90.0	266.5	261.1	5.45	48.912		
1,700.0	1,640.8	1,669.0	1,664.4	7.9	3.5	176.78	13.2	-97.9	291.4	285.6	5.79	50.302		
1,800.0	1,735.3	1,765.9	1,760.9	8.5	3.8	176.90	13.7	-105.9	316.3	310.1	6.14	51.536		
1,900.0	1,829.8	1,862.7	1,857.5	9.2	4.0	177.00	14.2	-113.8	341.2	334.7	6.48	52.639		
2,000.0	1,924.3	1,959.6	1,954.0	9.8	4.2	177.08	14.7	-121.7	366.1	359.2	6.83	53.631		
2,100.0	2,018.8	2,056.4	2,050.5	10.4	4.4	177.16	15.2	-129.6	391.0	383.8	7.17	54.528		
2,200.0	2,113.3	2,153.3	2,147.0	11.0	4.6	177.23	15.8	-137.6	415.9	408.3	7.51	55.342		
2,300.0	2,207.8	2,250.1	2,243.6	11.6	4.8	177.28	16.3	-145.5	440.8	432.9	7.86	56.086		
2,400.0	2,302.3	2,347.0	2,340.1	12.3	5.1	177.34	16.8	-153.4	465.6	457.4	8.20	56.767		
2,500.0	2,396.8	2,443.8	2,436.6	12.9	5.3	177.38	17.3	-161.3	490.5	482.0	8.55	57.393		

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well MCU Fee 17-16C (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 17-16C (M16W Pad)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	USA EDM 5000 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				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	-109.90	-5.8	-16.1	17.1					
100.0	100.0	100.0	100.0	0.1	0.1	-109.90	-5.8	-16.1	17.1	16.8	0.27	62.881		
200.0	200.0	200.0	200.0	0.3	0.3	-109.90	-5.8	-16.1	17.1	16.5	0.62	27.555		
300.0	300.0	299.1	299.1	0.5	0.5	-22.07	-7.0	-18.4	17.2	16.3	0.97	17.791		
400.0	399.6	398.5	398.1	0.7	0.7	-32.88	-10.3	-25.0	17.7	16.4	1.33	13.316		
500.0	498.8	498.2	497.5	1.0	0.9	-54.17	-14.2	-32.6	16.4	14.6	1.80	9.102		
547.6	545.6	545.6	544.7	1.2	1.0	-70.77	-16.0	-36.3	15.9	13.7	2.12	7.485 CC, ES		
600.0	597.1	597.6	596.5	1.4	1.1	-93.04	-18.0	-40.2	16.9	14.4	2.49	6.804 SF		
700.0	694.3	696.3	694.9	1.8	1.4	-128.55	-21.8	-47.8	26.4	23.5	2.94	8.982		
800.0	790.2	794.0	792.2	2.4	1.6	-146.56	-25.5	-55.2	44.6	41.4	3.22	13.872		
900.0	884.8	890.8	888.6	3.0	1.8	-155.45	-29.2	-62.6	68.4	64.9	3.50	19.528		
1,000.0	979.3	987.5	985.0	3.6	2.0	-159.87	-33.0	-70.0	93.2	89.4	3.83	24.331		
1,100.0	1,073.8	1,084.1	1,081.3	4.2	2.2	-162.43	-36.7	-77.4	118.3	114.1	4.18	28.306		
1,200.0	1,168.3	1,180.8	1,177.6	4.8	2.5	-164.09	-40.4	-84.8	143.6	139.1	4.54	31.627		
1,300.0	1,262.8	1,277.5	1,274.0	5.4	2.7	-165.25	-44.1	-92.2	168.9	164.0	4.91	34.437		
1,400.0	1,357.3	1,374.2	1,370.3	6.0	2.9	-166.11	-47.8	-99.6	194.3	189.1	5.27	36.843		
1,500.0	1,451.8	1,470.9	1,466.6	6.7	3.1	-166.77	-51.6	-106.9	219.8	214.1	5.65	38.925		
1,600.0	1,546.3	1,567.6	1,562.9	7.3	3.4	-167.30	-55.3	-114.3	245.2	239.2	6.02	40.743		
1,700.0	1,640.8	1,664.2	1,659.3	7.9	3.6	-167.72	-59.0	-121.7	270.7	264.3	6.39	42.344		
1,800.0	1,735.3	1,760.9	1,755.6	8.5	3.8	-168.08	-62.7	-129.1	296.2	289.4	6.77	43.765		
1,900.0	1,829.8	1,857.6	1,851.9	9.2	4.0	-168.37	-66.4	-136.5	321.7	314.5	7.14	45.035		
2,000.0	1,924.3	1,954.3	1,948.3	9.8	4.2	-168.63	-70.1	-143.9	347.2	339.6	7.52	46.175		
2,100.0	2,018.8	2,051.0	2,044.6	10.4	4.5	-168.84	-73.9	-151.3	372.7	364.8	7.89	47.206		
2,200.0	2,113.3	2,147.7	2,140.9	11.0	4.7	-169.03	-77.6	-158.7	398.2	389.9	8.27	48.142		
2,300.0	2,207.8	2,244.4	2,237.3	11.6	4.9	-169.20	-81.3	-166.0	423.7	415.0	8.65	48.995		
2,400.0	2,302.3	2,341.0	2,333.6	12.3	5.1	-169.35	-85.0	-173.4	449.2	440.2	9.02	49.777		
2,500.0	2,396.8	2,437.7	2,429.9	12.9	5.3	-169.48	-88.7	-180.8	474.7	465.3	9.40	50.495		

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well MCU Fee 17-16C (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 17-16C (M16W Pad)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	USA EDM 5000 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							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	40.89	109.3	94.6	144.5					
100.0	100.0	100.0	100.0	0.1	0.1	40.89	109.3	94.6	144.5	144.3	0.27	530.827		
200.0	200.0	200.0	200.0	0.3	0.3	40.89	109.3	94.6	144.5	143.9	0.62	232.610 CC, ES		
300.0	300.0	300.4	300.4	0.5	0.5	134.21	107.4	96.5	146.1	145.2	0.98	148.555		
400.0	399.6	399.4	399.1	0.7	0.7	139.12	101.8	101.9	151.8	150.4	1.39	108.857		
500.0	498.8	495.8	494.6	1.0	1.0	146.20	92.9	110.6	163.6	161.7	1.86	87.792		
600.0	597.1	588.3	585.6	1.4	1.3	154.08	81.1	122.1	183.7	181.3	2.36	77.910		
700.0	694.3	676.4	671.5	1.8	1.7	161.58	67.0	135.9	213.6	210.8	2.82	75.752 SF		
800.0	790.2	764.8	757.2	2.4	2.1	167.99	51.7	150.9	252.4	249.2	3.23	78.170		
900.0	884.8	851.2	841.1	3.0	2.5	173.00	36.7	165.5	297.3	293.7	3.61	82.322		
1,000.0	979.3	937.5	924.8	3.6	2.9	176.82	21.7	180.1	344.0	340.0	4.00	86.018		
1,100.0	1,073.8	1,023.8	1,008.6	4.2	3.2	179.76	6.8	194.7	391.6	387.2	4.39	89.157		
1,200.0	1,168.3	1,110.1	1,092.3	4.8	3.6	-177.93	-8.2	209.4	439.9	435.1	4.80	91.729		
1,300.0	1,262.8	1,196.4	1,176.0	5.4	4.0	-176.07	-23.1	224.0	488.6	483.4	5.21	93.804		

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well MCU Fee 17-16C (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 17-16C (M16W Pad)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	USA EDM 5000 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	-152.25	-10.2	-5.4	11.5						
100.0	100.0	100.0	100.0	0.1	0.1	-152.25	-10.2	-5.4	11.5	11.3	0.27	42.326			
200.0	200.0	200.0	200.0	0.3	0.3	-152.25	-10.2	-5.4	11.5	10.9	0.62	18.547	CC, ES		
300.0	300.0	299.4	299.3	0.5	0.5	-67.63	-12.1	-7.2	12.8	11.9	0.98	13.131			
400.0	399.6	398.5	398.2	0.7	0.7	-81.34	-17.7	-12.5	17.5	16.2	1.39	12.621	SF		
500.0	498.8	498.0	497.0	1.0	1.0	-95.43	-25.7	-20.1	25.3	23.4	1.90	13.297			
600.0	597.1	597.1	595.5	1.4	1.2	-110.68	-33.7	-27.8	35.4	33.0	2.49	14.220			
700.0	694.3	695.6	693.4	1.8	1.5	-123.89	-41.7	-35.4	49.7	46.6	3.08	16.154			
800.0	790.2	793.1	790.3	2.4	1.7	-134.06	-49.6	-42.9	69.0	65.4	3.62	19.079			
900.0	884.8	889.7	886.3	3.0	2.0	-141.47	-57.4	-50.4	92.7	88.6	4.10	22.621			
1,000.0	979.3	986.2	982.2	3.6	2.2	-146.04	-65.2	-57.9	117.7	113.1	4.57	25.731			
1,100.0	1,073.8	1,082.7	1,078.1	4.2	2.5	-149.01	-73.0	-65.3	143.0	138.0	5.05	28.349			
1,200.0	1,168.3	1,179.2	1,174.0	4.8	2.7	-151.08	-80.8	-72.8	168.7	163.2	5.52	30.557			
1,300.0	1,262.8	1,275.7	1,269.8	5.4	3.0	-152.61	-88.6	-80.3	194.5	188.5	6.00	32.434			
1,400.0	1,357.3	1,372.2	1,365.7	6.0	3.2	-153.78	-96.5	-87.7	220.4	213.9	6.47	34.044			
1,500.0	1,451.8	1,468.7	1,461.6	6.7	3.5	-154.70	-104.3	-95.2	246.3	239.4	6.95	35.438			
1,600.0	1,546.3	1,565.2	1,557.5	7.3	3.7	-155.45	-112.1	-102.6	272.3	264.9	7.43	36.656			
1,700.0	1,640.8	1,661.7	1,653.4	7.9	4.0	-156.06	-119.9	-110.1	298.4	290.5	7.91	37.728			
1,800.0	1,735.3	1,758.2	1,749.3	8.5	4.2	-156.58	-127.7	-117.6	324.4	316.0	8.39	38.679			
1,900.0	1,829.8	1,854.7	1,845.2	9.2	4.5	-157.02	-135.5	-125.0	350.5	341.7	8.87	39.528			
2,000.0	1,924.3	1,951.2	1,941.1	9.8	4.7	-157.40	-143.4	-132.5	376.6	367.3	9.35	40.290			
2,100.0	2,018.8	2,047.7	2,037.0	10.4	5.0	-157.73	-151.2	-139.9	402.7	392.9	9.83	40.978			
2,200.0	2,113.3	2,144.3	2,132.9	11.0	5.2	-158.02	-159.0	-147.4	428.9	418.6	10.31	41.602			
2,300.0	2,207.8	2,240.8	2,228.8	11.6	5.5	-158.28	-166.8	-154.9	455.0	444.2	10.79	42.170			
2,400.0	2,302.3	2,337.3	2,324.7	12.3	5.7	-158.51	-174.6	-162.3	481.2	469.9	11.27	42.690			

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well MCU Fee 17-16C (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 17-16C (M16W Pad)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	USA EDM 5000 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	112.12	-4.4	10.7	11.6					
100.0	100.0	100.0	100.0	0.1	0.1	112.12	-4.4	10.7	11.6	11.3	0.27	42.549		
200.0	200.0	200.0	200.0	0.3	0.3	112.12	-4.4	10.7	11.6	11.0	0.62	18.645 CC, ES		
300.0	300.0	300.1	300.0	0.5	0.5	-149.85	-6.6	9.3	13.6	12.6	0.98	13.847 SF		
400.0	399.6	399.8	399.4	0.7	0.7	-138.64	-13.1	5.1	20.1	18.8	1.39	14.444		
500.0	498.8	498.8	497.6	1.0	1.0	-130.77	-23.9	-1.9	31.8	29.9	1.90	16.694		
600.0	597.1	597.6	595.3	1.4	1.3	-130.01	-36.0	-9.7	47.4	44.9	2.47	19.157		
700.0	694.3	695.7	692.4	1.8	1.6	-132.89	-48.1	-17.5	66.4	63.3	3.08	21.555		
800.0	790.2	792.9	788.5	2.4	1.9	-136.67	-60.0	-25.2	89.2	85.5	3.70	24.095		
900.0	884.8	889.2	883.8	3.0	2.1	-140.40	-71.8	-32.9	115.4	111.1	4.31	26.778		
1,000.0	979.3	985.3	978.9	3.6	2.4	-142.96	-83.6	-40.5	142.2	137.3	4.91	28.936		
1,100.0	1,073.8	1,081.5	1,074.1	4.2	2.7	-144.71	-95.4	-48.1	169.1	163.6	5.52	30.661		
1,200.0	1,168.3	1,177.7	1,169.2	4.8	3.0	-145.97	-107.2	-55.8	196.2	190.1	6.12	32.067		
1,300.0	1,262.8	1,273.9	1,264.4	5.4	3.3	-146.93	-119.1	-63.4	223.3	216.6	6.72	33.231		
1,400.0	1,357.3	1,370.1	1,359.5	6.0	3.6	-147.68	-130.9	-71.1	250.5	243.2	7.32	34.210		
1,500.0	1,451.8	1,466.3	1,454.7	6.7	3.9	-148.29	-142.7	-78.7	277.7	269.8	7.93	35.044		
1,600.0	1,546.3	1,562.5	1,549.8	7.3	4.2	-148.78	-154.5	-86.3	305.0	296.4	8.53	35.762		
1,700.0	1,640.8	1,658.7	1,645.0	7.9	4.5	-149.20	-166.3	-94.0	332.2	323.1	9.13	36.388		
1,800.0	1,735.3	1,754.9	1,740.1	8.5	4.8	-149.55	-178.1	-101.6	359.5	349.8	9.73	36.937		
1,900.0	1,829.8	1,851.0	1,835.3	9.2	5.1	-149.85	-189.9	-109.2	386.8	376.4	10.34	37.422		
2,000.0	1,924.3	1,947.2	1,930.5	9.8	5.4	-150.12	-201.7	-116.9	414.1	403.1	10.94	37.855		
2,100.0	2,018.8	2,043.4	2,025.6	10.4	5.7	-150.35	-213.5	-124.5	441.4	429.8	11.54	38.243		
2,200.0	2,113.3	2,139.6	2,120.8	11.0	6.0	-150.55	-225.4	-132.2	468.7	456.5	12.14	38.593		
2,300.0	2,207.8	2,235.8	2,215.9	11.6	6.3	-150.73	-237.2	-139.8	496.0	483.2	12.75	38.910		

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well MCU Fee 17-16C (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 17-16C (M16W Pad)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	USA EDM 5000 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					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	86.86	1.5	26.5	26.6					
100.0	100.0	100.0	100.0	0.1	0.1	86.86	1.5	26.5	26.6	26.3	0.27	97.652		
200.0	200.0	200.0	200.0	0.3	0.3	86.86	1.5	26.5	26.6	26.0	0.62	42.792 CC, ES		
300.0	300.0	300.6	300.6	0.5	0.5	-176.71	-0.9	25.4	28.0	27.0	0.98	28.630		
400.0	399.6	400.8	400.4	0.7	0.7	-165.00	-8.0	21.8	33.2	31.8	1.37	24.176		
500.0	498.8	500.1	498.9	1.0	1.0	-152.55	-19.6	16.0	43.9	42.0	1.86	23.573 SF		
600.0	597.1	598.4	595.6	1.4	1.3	-143.52	-35.1	8.3	60.5	58.0	2.45	24.720		
700.0	694.3	696.0	691.5	1.8	1.7	-140.15	-51.0	0.4	81.9	78.8	3.09	26.534		
800.0	790.2	792.7	786.6	2.4	2.0	-139.82	-66.9	-7.5	107.4	103.6	3.77	28.506		
900.0	884.8	888.5	880.8	3.0	2.3	-140.90	-82.5	-15.4	135.9	131.5	4.46	30.498		
1,000.0	979.3	984.2	974.9	3.6	2.7	-141.82	-98.2	-23.2	164.8	159.6	5.16	31.961		
1,100.0	1,073.8	1,079.9	1,069.0	4.2	3.0	-142.46	-113.9	-31.0	193.6	187.8	5.86	33.060		
1,200.0	1,168.3	1,175.6	1,163.1	4.8	3.4	-142.94	-129.5	-38.8	222.5	216.0	6.56	33.914		
1,300.0	1,262.8	1,271.3	1,257.2	5.4	3.7	-143.30	-145.2	-46.6	251.4	244.2	7.27	34.596		
1,400.0	1,357.3	1,367.1	1,351.3	6.0	4.1	-143.59	-160.8	-54.4	280.4	272.4	7.98	35.153		
1,500.0	1,451.8	1,462.8	1,445.4	6.7	4.4	-143.83	-176.5	-62.2	309.3	300.6	8.68	35.616		
1,600.0	1,546.3	1,558.5	1,539.5	7.3	4.8	-144.03	-192.1	-70.0	338.2	328.8	9.39	36.007		
1,700.0	1,640.8	1,654.2	1,633.7	7.9	5.1	-144.19	-207.8	-77.9	367.1	357.0	10.10	36.341		
1,800.0	1,735.3	1,749.9	1,727.8	8.5	5.5	-144.33	-223.5	-85.7	396.1	385.2	10.81	36.631		
1,900.0	1,829.8	1,845.7	1,821.9	9.2	5.8	-144.45	-239.1	-93.5	425.0	413.5	11.52	36.883		
2,000.0	1,924.3	1,941.4	1,916.0	9.8	6.2	-144.56	-254.8	-101.3	453.9	441.7	12.23	37.106		
2,100.0	2,018.8	2,037.1	2,010.1	10.4	6.5	-144.66	-270.4	-109.1	482.8	469.9	12.94	37.303		

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well MCU Fee 17-16C (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 17-16C (M16W Pad)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	USA EDM 5000 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	80.31	7.3	42.6	43.3					
100.0	100.0	100.0	100.0	0.1	0.1	80.31	7.3	42.6	43.3	43.0	0.27	158.898		
200.0	200.0	200.0	200.0	0.3	0.3	80.31	7.3	42.6	43.3	42.6	0.62	69.629	CC, ES	
300.0	300.0	301.1	301.1	0.5	0.5	175.28	4.8	41.7	44.5	43.6	0.98	45.516		
400.0	399.6	401.7	401.3	0.7	0.7	-175.74	-2.6	38.7	49.2	47.9	1.37	35.944		
500.0	498.8	501.3	500.1	1.0	1.0	-164.49	-14.7	33.8	59.0	57.2	1.84	32.166		
600.0	597.1	599.5	596.6	1.4	1.4	-154.22	-31.4	27.2	75.2	72.8	2.42	31.110	SF	
700.0	694.3	696.3	690.9	1.8	1.7	-146.80	-51.3	19.2	97.8	94.7	3.09	31.601		
800.0	790.2	792.2	784.4	2.4	2.1	-143.24	-71.3	11.1	125.3	121.5	3.82	32.778		
900.0	884.8	887.3	877.1	3.0	2.5	-142.07	-91.2	3.2	156.2	151.6	4.58	34.084		
1,000.0	979.3	982.3	969.6	3.6	2.9	-141.49	-111.0	-4.8	187.4	182.0	5.36	34.946		
1,100.0	1,073.8	1,077.3	1,062.2	4.2	3.3	-141.08	-130.8	-12.7	218.6	212.4	6.15	35.540		
1,200.0	1,168.3	1,172.3	1,154.8	4.8	3.7	-140.77	-150.7	-20.7	249.8	242.8	6.94	35.972		
1,300.0	1,262.8	1,267.3	1,247.3	5.4	4.2	-140.53	-170.5	-28.6	281.0	273.2	7.74	36.298		
1,400.0	1,357.3	1,362.3	1,339.9	6.0	4.6	-140.34	-190.4	-36.6	312.2	303.7	8.54	36.551		
1,500.0	1,451.8	1,457.3	1,432.5	6.7	5.0	-140.19	-210.2	-44.5	343.4	334.1	9.34	36.753		
1,600.0	1,546.3	1,552.3	1,525.0	7.3	5.4	-140.05	-230.0	-52.5	374.6	364.5	10.15	36.918		
1,700.0	1,640.8	1,647.3	1,617.6	7.9	5.8	-139.94	-249.9	-60.4	405.8	394.9	10.95	37.055		
1,800.0	1,735.3	1,742.3	1,710.2	8.5	6.2	-139.85	-269.7	-68.4	437.1	425.3	11.76	37.170		
1,900.0	1,829.8	1,837.3	1,802.7	9.2	6.6	-139.77	-289.5	-76.4	468.3	455.7	12.57	37.268		
2,000.0	1,924.3	1,932.3	1,895.3	9.8	7.0	-139.69	-309.4	-84.3	499.5	486.1	13.37	37.352		

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well MCU Fee 17-16C (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 17-16C (M16W Pad)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	USA EDM 5000 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	77.36	13.1	58.5	59.9							
100.0	100.0	100.0	100.0	0.1	0.1	77.36	13.1	58.5	59.9	59.6	0.27	220.055				
200.0	200.0	200.0	200.0	0.3	0.3	77.36	13.1	58.5	59.9	59.3	0.62	96.429	CC, ES			
300.0	300.0	301.6	301.5	0.5	0.5	171.55	10.6	57.6	61.2	60.2	0.98	62.433				
400.0	399.6	402.6	402.2	0.7	0.7	178.74	2.9	55.0	65.6	64.3	1.37	47.899				
500.0	498.8	502.5	501.2	1.0	1.0	-171.55	-9.5	50.8	74.9	73.1	1.83	41.012				
600.0	597.1	600.8	597.8	1.4	1.4	-161.75	-26.6	45.1	90.5	88.1	2.38	37.948				
700.0	694.3	697.0	691.4	1.8	1.8	-153.39	-47.8	38.0	112.9	109.8	3.07	36.762	SF			
800.0	790.2	791.8	782.8	2.4	2.2	-147.29	-71.9	29.9	141.7	137.8	3.84	36.878				
900.0	884.8	886.0	873.5	3.0	2.7	-144.13	-95.9	21.8	174.6	169.9	4.66	37.454				
1,000.0	979.3	980.0	964.0	3.6	3.2	-142.17	-119.9	13.8	208.0	202.5	5.51	37.767				
1,100.0	1,073.8	1,074.1	1,054.6	4.2	3.6	-140.75	-143.8	5.7	241.6	235.2	6.37	37.949				
1,200.0	1,168.3	1,168.1	1,145.2	4.8	4.1	-139.68	-167.8	-2.4	275.2	268.0	7.23	38.062				
1,300.0	1,262.8	1,262.2	1,235.8	5.4	4.6	-138.84	-191.8	-10.4	309.0	300.9	8.10	38.136				
1,400.0	1,357.3	1,356.2	1,326.4	6.0	5.0	-138.17	-215.7	-18.5	342.8	333.8	8.98	38.186				
1,500.0	1,451.8	1,450.3	1,416.9	6.7	5.5	-137.61	-239.7	-26.5	376.6	366.8	9.85	38.220				
1,600.0	1,546.3	1,544.3	1,507.5	7.3	6.0	-137.15	-263.7	-34.6	410.5	399.8	10.73	38.245				
1,700.0	1,640.8	1,638.3	1,598.1	7.9	6.4	-136.76	-287.7	-42.7	444.4	432.7	11.61	38.263				
1,800.0	1,735.3	1,732.4	1,688.7	8.5	6.9	-136.42	-311.6	-50.7	478.3	465.8	12.49	38.277				

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well MCU Fee 17-16C (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 17-16C (M16W Pad)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	USA EDM 5000 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		Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	
							+N/-S (ft)	+E/-W (ft)					
0.0	0.0	0.0	0.0	0.0	0.0	46.30	120.9	126.5	175.0				
100.0	100.0	100.0	100.0	0.1	0.1	46.30	120.9	126.5	175.0	174.7	0.27	642.814	
200.0	200.0	200.0	200.0	0.3	0.3	46.30	120.9	126.5	175.0	174.4	0.62	281.683 CC, ES	
300.0	300.0	299.3	299.2	0.5	0.5	137.55	122.9	124.9	177.2	176.2	0.98	180.588	
400.0	399.6	398.2	397.9	0.7	0.7	136.65	128.9	120.0	183.6	182.2	1.39	131.706	
500.0	498.8	496.6	495.4	1.0	1.0	135.29	138.7	111.9	194.3	192.4	1.90	102.079	
600.0	597.1	595.3	592.8	1.4	1.3	134.12	150.9	101.9	209.2	206.7	2.48	84.278	
700.0	694.3	693.5	689.8	1.8	1.6	133.95	163.1	91.9	227.6	224.5	3.12	72.978	
800.0	790.2	791.0	786.0	2.4	1.9	134.54	175.1	82.0	249.7	245.9	3.81	65.616	
900.0	884.8	887.5	881.3	3.0	2.2	135.87	187.1	72.1	274.8	270.3	4.51	60.971	
1,000.0	979.3	984.0	976.5	3.6	2.5	137.19	199.0	62.3	300.2	295.0	5.21	57.669	
1,100.0	1,073.8	1,080.5	1,071.8	4.2	2.9	138.30	211.0	52.5	325.8	319.9	5.90	55.218	
1,200.0	1,168.3	1,177.0	1,167.0	4.8	3.2	139.25	222.9	42.7	351.5	344.9	6.59	53.339	
1,300.0	1,262.8	1,273.5	1,262.3	5.4	3.5	140.07	234.9	32.8	377.2	369.9	7.27	51.860	
1,400.0	1,357.3	1,370.0	1,357.5	6.0	3.8	140.79	246.8	23.0	403.0	395.1	7.95	50.669	
1,500.0	1,451.8	1,466.5	1,452.8	6.7	4.1	141.42	258.8	13.2	428.9	420.3	8.63	49.693	
1,600.0	1,546.3	1,563.0	1,548.0	7.3	4.5	141.98	270.7	3.4	454.8	445.5	9.30	48.880	
1,700.0	1,640.8	1,659.5	1,643.3	7.9	4.8	142.48	282.7	-6.5	480.8	470.8	9.98	48.193 SF	

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well MCU Fee 17-16C (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 17-16C (M16W Pad)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	USA EDM 5000 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	45.09	131.5	131.9	186.2				
100.0	100.0	100.0	100.0	0.1	0.1	45.09	131.5	131.9	186.2	186.0	0.27	684.019	
200.0	200.0	200.0	200.0	0.3	0.3	45.09	131.5	131.9	186.2	185.6	0.62	299.739 CC, ES	
300.0	300.0	297.7	297.7	0.5	0.5	136.39	133.6	130.6	188.7	187.8	0.98	193.009	
400.0	399.6	395.0	394.7	0.7	0.7	135.66	140.0	126.7	196.2	194.9	1.38	141.703	
500.0	498.8	491.6	490.5	1.0	1.0	134.54	150.4	120.3	208.8	206.9	1.88	111.117	
600.0	597.1	587.1	584.5	1.4	1.3	133.15	164.8	111.5	226.2	223.8	2.48	91.354	
700.0	694.3	684.7	680.1	1.8	1.7	132.15	181.5	101.3	248.0	244.8	3.16	78.480	
800.0	790.2	781.5	774.9	2.4	2.0	132.00	198.1	91.2	273.1	269.2	3.90	69.956	
900.0	884.8	877.4	868.8	3.0	2.4	132.72	214.5	81.2	301.0	296.3	4.68	64.361	
1,000.0	979.3	973.2	962.8	3.6	2.8	133.56	230.8	71.2	329.1	323.7	5.46	60.321	
1,100.0	1,073.8	1,069.1	1,056.7	4.2	3.1	134.27	247.2	61.2	357.4	351.1	6.24	57.290	
1,200.0	1,168.3	1,164.9	1,150.6	4.8	3.5	134.88	263.6	51.2	385.6	378.6	7.02	54.941	
1,300.0	1,262.8	1,260.8	1,244.5	5.4	3.9	135.40	280.0	41.2	413.9	406.1	7.80	53.071	
1,400.0	1,357.3	1,356.6	1,338.4	6.0	4.3	135.85	296.4	31.1	442.3	433.7	8.58	51.551	
1,500.0	1,451.8	1,452.5	1,432.3	6.7	4.6	136.26	312.7	21.1	470.6	461.3	9.36	50.291	
1,600.0	1,546.3	1,548.3	1,526.2	7.3	5.0	136.61	329.1	11.1	499.0	488.9	10.14	49.232 SF	

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well MCU Fee 17-16C (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 17-16C (M16W Pad)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	USA EDM 5000 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								
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	48.37	126.8	142.6	190.8						
100.0	100.0	100.0	100.0	0.1	0.1	48.37	126.8	142.6	190.8	190.5	0.27	700.806			
200.0	200.0	200.0	200.0	0.3	0.3	48.37	126.8	142.6	190.8	190.2	0.62	307.095 CC, ES			
300.0	300.0	296.4	296.3	0.5	0.5	139.69	129.0	141.8	193.7	192.8	0.97	198.871			
400.0	399.6	392.2	391.9	0.7	0.7	138.99	135.8	139.3	202.5	201.2	1.37	147.726			
500.0	498.8	487.1	486.0	1.0	1.0	137.93	147.0	135.2	217.2	215.3	1.84	117.847			
600.0	597.1	580.5	578.0	1.4	1.3	136.63	162.2	129.7	237.6	235.2	2.41	98.558			
700.0	694.3	672.0	667.2	1.8	1.7	135.20	181.3	122.7	263.6	260.6	3.09	85.454			
800.0	790.2	761.2	753.1	2.4	2.1	133.71	203.7	114.6	295.2	291.4	3.87	76.276			
900.0	884.8	849.7	837.3	3.0	2.6	132.65	229.4	105.2	331.4	326.7	4.73	70.057			
1,000.0	979.3	942.5	925.1	3.6	3.2	131.87	257.5	94.9	368.4	362.8	5.65	65.255			
1,100.0	1,073.8	1,035.3	1,012.9	4.2	3.7	131.23	285.6	84.7	405.5	398.9	6.57	61.690			
1,200.0	1,168.3	1,128.1	1,100.8	4.8	4.2	130.70	313.7	74.4	442.6	435.0	7.51	58.949			
1,300.0	1,262.8	1,220.9	1,188.6	5.4	4.8	130.25	341.8	64.2	479.7	471.2	8.45	56.783 SF			

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well MCU Fee 17-16C (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 17-16C (M16W Pad)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	USA EDM 5000 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									
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	69.88	17.5	47.7	50.8						
100.0	100.0	100.0	100.0	0.1	0.1	69.88	17.5	47.7	50.8	50.6	0.27	186.693			
200.0	200.0	200.0	200.0	0.3	0.3	69.88	17.5	47.7	50.8	50.2	0.62	81.809 CC			
300.0	300.0	302.3	302.2	0.5	0.5	160.69	18.1	45.1	51.1	50.1	0.98	52.254 ES			
400.0	399.6	404.5	404.1	0.7	0.7	158.50	20.0	37.1	51.9	50.6	1.35	38.334			
500.0	498.8	506.6	505.3	1.0	1.0	155.00	23.2	23.9	53.4	51.7	1.78	29.957			
600.0	597.1	608.7	605.6	1.4	1.4	150.47	27.7	5.4	55.9	53.5	2.32	24.067			
700.0	694.3	710.6	704.5	1.8	1.9	145.24	33.4	-18.2	59.4	56.4	3.04	19.576			
800.0	790.2	812.3	801.9	2.4	2.4	139.71	40.3	-46.9	64.3	60.3	3.98	16.147			
900.0	884.8	912.8	896.7	3.0	3.1	134.32	48.1	-79.4	70.4	65.2	5.13	13.721			
1,000.0	979.3	1,012.4	990.4	3.6	3.7	129.73	56.0	-112.1	76.9	70.6	6.36	12.099			
1,100.0	1,073.8	1,112.0	1,084.2	4.2	4.3	125.88	63.9	-144.8	83.9	76.2	7.63	10.994			
1,200.0	1,168.3	1,211.7	1,177.9	4.8	4.9	122.63	71.7	-177.5	91.1	82.2	8.92	10.215			
1,300.0	1,262.8	1,311.3	1,271.7	5.4	5.6	119.87	79.6	-210.2	98.7	88.4	10.23	9.648			
1,400.0	1,357.3	1,410.9	1,365.5	6.0	6.2	117.50	87.5	-242.9	106.4	94.8	11.53	9.223			
1,500.0	1,451.8	1,510.5	1,459.2	6.7	6.9	115.46	95.4	-275.6	114.3	101.4	12.84	8.897			
1,600.0	1,546.3	1,610.1	1,553.0	7.3	7.5	113.68	103.2	-308.3	122.3	108.1	14.15	8.642			
1,700.0	1,640.8	1,709.7	1,646.7	7.9	8.1	112.12	111.1	-341.0	130.4	114.9	15.45	8.438			
1,800.0	1,735.3	1,809.3	1,740.5	8.5	8.8	110.74	119.0	-373.7	138.6	121.8	16.75	8.273			
1,900.0	1,829.8	1,908.9	1,834.3	9.2	9.4	109.52	126.9	-406.4	146.8	128.8	18.04	8.137			
2,000.0	1,924.3	2,008.5	1,928.0	9.8	10.1	108.43	134.8	-439.1	155.1	135.8	19.33	8.024			
2,100.0	2,018.8	2,108.2	2,021.8	10.4	10.7	107.45	142.6	-471.8	163.5	142.9	20.62	7.928			
2,200.0	2,113.3	2,207.8	2,115.5	11.0	11.3	106.56	150.5	-504.5	171.9	150.0	21.91	7.847			
2,300.0	2,207.8	2,307.4	2,209.3	11.6	12.0	105.76	158.4	-537.2	180.4	157.2	23.19	7.778			
2,400.0	2,302.3	2,407.0	2,303.1	12.3	12.6	105.03	166.3	-569.9	188.8	164.4	24.47	7.717			
2,500.0	2,396.8	2,506.6	2,396.8	12.9	13.3	104.36	174.1	-602.6	197.4	171.6	25.75	7.665			
2,600.0	2,491.3	2,606.2	2,490.6	13.5	13.9	103.75	182.0	-635.3	205.9	178.9	27.02	7.619			
2,700.0	2,585.8	2,705.8	2,584.4	14.1	14.5	103.19	189.9	-668.0	214.4	186.1	28.30	7.578			
2,800.0	2,680.3	2,805.4	2,678.1	14.8	15.2	102.67	197.8	-700.7	223.0	193.4	29.57	7.542			
2,900.0	2,774.8	2,905.1	2,771.9	15.4	15.8	102.19	205.7	-733.4	231.6	200.8	30.84	7.510			
3,000.0	2,869.3	3,004.7	2,865.6	16.0	16.5	101.74	213.5	-766.1	240.2	208.1	32.11	7.482			
3,100.0	2,963.8	3,104.3	2,959.4	16.6	17.1	101.32	221.4	-798.8	248.8	215.5	33.37	7.456			
3,200.0	3,058.3	3,203.9	3,053.2	17.3	17.7	100.93	229.3	-831.5	257.5	222.8	34.64	7.433			
3,300.0	3,152.8	3,303.5	3,146.9	17.9	18.4	100.57	237.2	-864.2	266.1	230.2	35.91	7.411			
3,400.0	3,247.3	3,403.1	3,240.7	18.5	19.0	100.23	245.0	-896.9	274.8	237.6	37.17	7.392			
3,500.0	3,341.7	3,502.7	3,334.4	19.1	19.7	99.91	252.9	-929.6	283.4	245.0	38.43	7.375			
3,600.0	3,436.2	3,602.3	3,428.2	19.8	20.3	99.61	260.8	-962.3	292.1	252.4	39.69	7.359			
3,700.0	3,530.7	3,702.0	3,522.0	20.4	20.9	99.33	268.7	-995.0	300.8	259.8	40.95	7.344			
3,800.0	3,625.2	3,801.6	3,615.7	21.0	21.6	99.06	276.6	-1,027.7	309.5	267.2	42.22	7.330			
3,900.0	3,719.7	3,901.2	3,709.5	21.6	22.2	98.81	284.4	-1,060.4	318.1	274.7	43.47	7.318			
4,000.0	3,814.2	4,000.8	3,803.2	22.3	22.9	98.57	292.3	-1,093.1	326.8	282.1	44.73	7.306			
4,100.0	3,908.7	4,100.4	3,897.0	22.9	23.5	98.34	300.2	-1,125.8	335.5	289.5	45.99	7.296			
4,200.0	4,003.2	4,200.0	3,990.8	23.5	24.2	98.13	308.1	-1,158.5	344.2	297.0	47.25	7.286			
4,300.0	4,097.7	4,299.6	4,084.5	24.1	24.8	97.92	315.9	-1,191.2	353.0	304.5	48.51	7.276			
4,400.0	4,192.2	4,399.2	4,178.3	24.8	25.4	97.73	323.8	-1,223.9	361.7	311.9	49.76	7.268			
4,500.0	4,286.7	4,498.9	4,272.0	25.4	26.1	97.54	331.7	-1,256.6	370.4	319.4	51.02	7.260			
4,600.0	4,381.2	4,598.5	4,365.8	26.0	26.7	97.36	339.6	-1,289.3	379.1	326.8	52.28	7.252			
4,700.0	4,475.7	4,698.1	4,459.6	26.6	27.4	97.19	347.4	-1,322.0	387.8	334.3	53.53	7.245			
4,800.0	4,570.2	4,797.7	4,553.3	27.3	28.0	97.03	355.3	-1,354.7	396.6	341.8	54.79	7.238			
4,900.0	4,664.7	4,897.3	4,647.1	27.9	28.6	96.88	363.2	-1,387.5	405.3	349.3	56.04	7.232			
5,000.0	4,759.2	4,996.9	4,740.9	28.5	29.3	96.73	371.1	-1,420.2	414.0	356.7	57.30	7.226			
5,100.0	4,853.7	5,096.5	4,834.6	29.1	29.9	96.59	379.0	-1,452.9	422.8	364.2	58.55	7.221			

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 17-16C (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 17-16C (M16W Pad)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	USA EDM 5000 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							
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	
5,200.0	4,948.2	5,196.1	4,928.4	29.8	30.6	96.45	386.8	-1,485.6	431.5	371.7	59.80	7.216		
5,300.0	5,042.7	5,295.7	5,022.1	30.4	31.2	96.32	394.7	-1,518.3	440.3	379.2	61.06	7.211		
5,400.0	5,137.2	5,395.4	5,115.9	31.0	31.9	96.19	402.6	-1,551.0	449.0	386.7	62.31	7.206		
5,500.0	5,231.7	5,495.0	5,209.7	31.6	32.5	96.07	410.5	-1,583.7	457.8	394.2	63.56	7.201		
5,600.0	5,326.2	5,594.6	5,303.4	32.3	33.1	95.96	418.3	-1,616.4	466.5	401.7	64.82	7.197		
5,700.0	5,420.7	5,694.2	5,397.2	32.9	33.8	95.84	426.2	-1,649.1	475.3	409.2	66.07	7.193		
5,800.0	5,515.2	5,793.8	5,490.9	33.5	34.4	95.74	434.1	-1,681.8	484.0	416.7	67.32	7.189		
5,900.0	5,609.7	5,893.4	5,584.7	34.2	35.1	95.63	442.0	-1,714.5	492.8	424.2	68.57	7.186 SF		

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well MCU Fee 17-16C (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 17-16C (M16W Pad)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	USA EDM 5000 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	69.94	11.7	31.9	34.0					
100.0	100.0	100.0	100.0	0.1	0.1	69.94	11.7	31.9	34.0	33.7	0.27	124.787		
200.0	200.0	200.0	200.0	0.3	0.3	69.94	11.7	31.9	34.0	33.4	0.62	54.682 CC		
300.0	300.0	301.6	301.6	0.5	0.5	160.92	11.9	29.2	34.1	33.1	0.98	34.929		
400.0	399.6	403.2	402.8	0.7	0.7	159.21	12.8	21.2	34.4	33.0	1.34	25.586 ES		
500.0	498.8	504.8	503.5	1.0	1.0	156.43	14.2	7.8	34.9	33.2	1.75	19.968		
600.0	597.1	606.4	603.3	1.4	1.4	152.71	16.2	-10.9	35.9	33.6	2.24	16.018		
700.0	694.3	707.9	701.9	1.8	1.9	148.24	18.7	-34.8	37.3	34.4	2.88	12.953		
800.0	790.2	809.3	799.0	2.4	2.4	143.26	21.7	-63.9	39.2	35.5	3.73	10.518		
900.0	884.8	909.8	893.9	3.0	3.0	138.10	25.2	-96.9	41.7	36.9	4.79	8.698		
1,000.0	979.3	1,009.7	988.1	3.6	3.7	133.44	28.7	-130.2	44.4	38.4	5.97	7.436		
1,100.0	1,073.8	1,109.6	1,082.2	4.2	4.3	129.34	32.2	-163.4	47.3	40.1	7.22	6.561		
1,200.0	1,168.3	1,209.5	1,176.4	4.8	4.9	125.74	35.6	-196.6	50.5	42.0	8.51	5.938		
1,300.0	1,262.8	1,309.4	1,270.5	5.4	5.6	122.58	39.1	-229.8	53.9	44.1	9.83	5.484		
1,400.0	1,357.3	1,409.4	1,364.7	6.0	6.2	119.79	42.6	-263.1	57.4	46.2	11.16	5.144		
1,500.0	1,451.8	1,509.3	1,458.8	6.7	6.8	117.33	46.1	-296.3	61.0	48.5	12.49	4.883		
1,600.0	1,546.3	1,609.2	1,553.0	7.3	7.5	115.15	49.6	-329.5	64.7	50.9	13.83	4.680		
1,700.0	1,640.8	1,709.1	1,647.1	7.9	8.1	113.21	53.1	-362.8	68.5	53.4	15.17	4.519		
1,800.0	1,735.3	1,809.0	1,741.3	8.5	8.7	111.47	56.6	-396.0	72.4	55.9	16.50	4.389		
1,900.0	1,829.8	1,908.9	1,835.4	9.2	9.4	109.92	60.1	-429.2	76.4	58.5	17.83	4.283		
2,000.0	1,924.3	2,008.8	1,929.6	9.8	10.0	108.51	63.6	-462.4	80.3	61.2	19.15	4.195		
2,100.0	2,018.8	2,108.7	2,023.7	10.4	10.6	107.24	67.0	-495.7	84.4	63.9	20.47	4.121		
2,200.0	2,113.3	2,208.6	2,117.9	11.0	11.3	106.09	70.5	-528.9	88.4	66.7	21.79	4.060		
2,300.0	2,207.8	2,308.5	2,212.0	11.6	11.9	105.03	74.0	-562.1	92.5	69.4	23.10	4.007		
2,400.0	2,302.3	2,408.4	2,306.2	12.3	12.5	104.07	77.5	-595.4	96.7	72.3	24.40	3.962		
2,500.0	2,396.8	2,508.3	2,400.3	12.9	13.2	103.19	81.0	-628.6	100.8	75.1	25.70	3.923		
2,600.0	2,491.3	2,608.2	2,494.5	13.5	13.8	102.37	84.5	-661.8	105.0	78.0	27.00	3.889		
2,700.0	2,585.8	2,708.1	2,588.6	14.1	14.5	101.62	88.0	-695.0	109.2	80.9	28.29	3.859		
2,800.0	2,680.3	2,808.0	2,682.8	14.8	15.1	100.93	91.5	-728.3	113.4	83.8	29.59	3.833		
2,900.0	2,774.8	2,907.9	2,776.9	15.4	15.7	100.28	94.9	-761.5	117.6	86.8	30.87	3.810		
3,000.0	2,869.3	3,007.8	2,871.1	16.0	16.4	99.68	98.4	-794.7	121.9	89.7	32.16	3.790		
3,100.0	2,963.8	3,107.7	2,965.2	16.6	17.0	99.12	101.9	-828.0	126.1	92.7	33.44	3.772		
3,200.0	3,058.3	3,207.6	3,059.4	17.3	17.6	98.60	105.4	-861.2	130.4	95.7	34.72	3.755		
3,300.0	3,152.8	3,307.5	3,153.5	17.9	18.3	98.11	108.9	-894.4	134.7	98.7	36.00	3.741		
3,400.0	3,247.3	3,407.4	3,247.7	18.5	18.9	97.65	112.4	-927.6	139.0	101.7	37.28	3.728		
3,500.0	3,341.7	3,507.3	3,341.8	19.1	19.6	97.21	115.9	-960.9	143.3	104.7	38.55	3.716		
3,600.0	3,436.2	3,607.2	3,436.0	19.8	20.2	96.81	119.4	-994.1	147.6	107.7	39.83	3.705		
3,700.0	3,530.7	3,707.1	3,530.1	20.4	20.8	96.42	122.8	-1,027.3	151.9	110.8	41.10	3.695		
3,800.0	3,625.2	3,807.0	3,624.3	21.0	21.5	96.06	126.3	-1,060.6	156.2	113.8	42.37	3.686		
3,900.0	3,719.7	3,906.9	3,718.4	21.6	22.1	95.71	129.8	-1,093.8	160.5	116.9	43.64	3.678		
4,000.0	3,814.2	4,006.8	3,812.6	22.3	22.8	95.39	133.3	-1,127.0	164.8	119.9	44.91	3.671		
4,100.0	3,908.7	4,106.7	3,906.7	22.9	23.4	95.08	136.8	-1,160.2	169.2	123.0	46.17	3.664		
4,200.0	4,003.2	4,206.6	4,000.9	23.5	24.0	94.79	140.3	-1,193.5	173.5	126.1	47.44	3.658		
4,300.0	4,097.7	4,306.5	4,095.0	24.1	24.7	94.51	143.8	-1,226.7	177.8	129.1	48.70	3.652		
4,400.0	4,192.2	4,406.4	4,189.2	24.8	25.3	94.24	147.3	-1,259.9	182.2	132.2	49.97	3.646		
4,500.0	4,286.7	4,506.3	4,283.3	25.4	25.9	93.99	150.8	-1,293.2	186.5	135.3	51.23	3.641		
4,600.0	4,381.2	4,606.2	4,377.5	26.0	26.6	93.75	154.2	-1,326.4	190.9	138.4	52.49	3.637		
4,700.0	4,475.7	4,706.1	4,471.6	26.6	27.2	93.52	157.7	-1,359.6	195.2	141.5	53.75	3.632		
4,800.0	4,570.2	4,806.0	4,565.8	27.3	27.9	93.29	161.2	-1,392.8	199.6	144.6	55.01	3.628		
4,900.0	4,664.7	4,905.9	4,659.9	27.9	28.5	93.08	164.7	-1,426.1	204.0	147.7	56.27	3.625		
5,000.0	4,759.2	5,005.8	4,754.1	28.5	29.1	92.88	168.2	-1,459.3	208.3	150.8	57.53	3.621		
5,100.0	4,853.7	5,105.7	4,848.2	29.1	29.8	92.69	171.7	-1,492.5	212.7	153.9	58.79	3.618		

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 17-16C (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 17-16C (M16W Pad)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	USA EDM 5000 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: O-MWDD															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)	Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning			
5,200.0	4,948.2	5,205.6	4,942.4	29.8	30.4	92.50	175.2	-1,525.7	217.1	157.0	60.05	3.615				
5,300.0	5,042.7	5,305.5	5,036.5	30.4	31.1	92.32	178.7	-1,559.0	221.4	160.1	61.30	3.612				
5,400.0	5,137.2	5,405.4	5,130.7	31.0	31.7	92.15	182.1	-1,592.2	225.8	163.3	62.56	3.610				
5,500.0	5,231.7	5,505.3	5,224.8	31.6	32.3	91.98	185.6	-1,625.4	230.2	166.4	63.82	3.607				
5,600.0	5,326.2	5,605.2	5,319.0	32.3	33.0	91.82	189.1	-1,658.7	234.6	169.5	65.07	3.605				
5,700.0	5,420.7	5,705.1	5,413.1	32.9	33.6	91.67	192.6	-1,691.9	238.9	172.6	66.33	3.603				
5,800.0	5,515.2	5,805.0	5,507.2	33.5	34.2	91.52	196.1	-1,725.1	243.3	175.7	67.58	3.600				
5,900.0	5,609.7	5,904.9	5,601.4	34.2	34.9	91.38	199.6	-1,758.3	247.7	178.9	68.84	3.598				
6,000.0	5,704.2	6,004.8	5,695.5	34.8	35.5	91.24	203.1	-1,791.6	252.1	182.0	70.09	3.597				
6,100.0	5,798.7	6,104.7	5,789.7	35.4	36.2	91.11	206.6	-1,824.8	256.5	185.1	71.34	3.595				
6,200.0	5,893.2	6,204.7	5,883.8	36.0	36.8	90.98	210.0	-1,858.0	260.9	188.3	72.60	3.593				
6,300.0	5,987.7	6,304.6	5,978.0	36.7	37.4	90.85	213.5	-1,891.3	265.2	191.4	73.85	3.592				
6,400.0	6,082.2	6,404.5	6,072.1	37.3	38.1	90.73	217.0	-1,924.5	269.6	194.5	75.10	3.590				
6,500.0	6,176.7	6,504.4	6,166.3	37.9	38.7	90.62	220.5	-1,957.7	274.0	197.7	76.36	3.589				
6,600.0	6,271.2	6,604.3	6,260.4	38.5	39.4	90.50	224.0	-1,990.9	278.4	200.8	77.61	3.588				
6,700.0	6,365.7	6,704.2	6,354.6	39.2	40.0	90.39	227.5	-2,024.2	282.8	203.9	78.86	3.586				
6,800.0	6,460.2	6,804.1	6,448.7	39.8	40.6	90.29	231.0	-2,057.4	287.2	207.1	80.11	3.585				
6,900.0	6,554.7	6,904.0	6,542.9	40.4	41.3	90.18	234.5	-2,090.6	291.6	210.2	81.36	3.584				
7,000.0	6,649.2	7,003.9	6,637.0	41.0	41.9	90.08	238.0	-2,123.9	296.0	213.4	82.61	3.583				
7,100.0	6,743.7	7,103.8	6,731.2	41.7	42.5	89.99	241.4	-2,157.1	300.4	216.5	83.86	3.582				
7,200.0	6,838.2	7,203.7	6,825.3	42.3	43.2	89.89	244.9	-2,190.3	304.8	219.7	85.12	3.581				
7,300.0	6,932.7	7,303.7	6,919.6	42.9	43.8	89.81	248.4	-2,223.6	309.2	222.8	86.36	3.580				
7,400.0	7,027.8	7,405.0	7,015.8	43.5	44.4	89.85	251.7	-2,255.2	313.3	225.8	87.50	3.581				
7,500.0	7,123.9	7,506.4	7,113.1	44.0	44.9	89.90	254.7	-2,283.5	317.0	228.5	88.51	3.581				
7,600.0	7,220.9	7,607.8	7,211.4	44.4	45.4	89.93	257.3	-2,308.4	320.2	230.8	89.40	3.582				
7,700.0	7,318.6	7,709.2	7,310.5	44.8	45.7	89.97	259.6	-2,329.7	323.0	232.9	90.16	3.583				
7,800.0	7,417.1	7,810.7	7,410.4	45.1	46.1	89.99	261.4	-2,347.6	325.4	234.6	90.79	3.583				
7,900.0	7,516.1	7,912.2	7,510.8	45.3	46.3	90.01	263.0	-2,362.0	327.2	235.9	91.31	3.584				
8,000.0	7,615.6	8,013.7	7,611.7	45.5	46.5	90.03	264.1	-2,372.8	328.6	236.9	91.71	3.583				
8,100.0	7,715.3	8,115.2	7,713.0	45.7	46.7	90.04	264.8	-2,380.0	329.6	237.6	91.99	3.583				
8,200.0	7,815.2	8,216.7	7,814.4	45.8	46.8	90.05	265.2	-2,383.7	330.1	237.9	92.16	3.581				
8,300.0	7,915.2	8,317.5	7,915.2	45.8	46.8	-1.51	265.3	-2,384.2	330.1	237.8	92.27	3.578				
8,400.0	8,015.2	8,417.5	8,015.2	45.9	46.9	-1.51	265.3	-2,384.2	330.1	237.7	92.38	3.573				
8,500.0	8,115.2	8,517.5	8,115.2	45.9	46.9	-1.51	265.3	-2,384.2	330.1	237.6	92.49	3.569				
8,600.0	8,215.2	8,617.5	8,215.2	46.0	47.0	-1.51	265.3	-2,384.2	330.1	237.5	92.60	3.565				
8,700.0	8,315.2	8,717.5	8,315.2	46.0	47.0	-1.51	265.3	-2,384.2	330.1	237.4	92.72	3.560				
8,800.0	8,415.2	8,817.5	8,415.2	46.1	47.1	-1.51	265.3	-2,384.2	330.1	237.3	92.83	3.556				
8,900.0	8,515.2	8,917.5	8,515.2	46.2	47.1	-1.51	265.3	-2,384.2	330.1	237.2	92.95	3.552				
9,000.0	8,615.2	9,017.5	8,615.2	46.2	47.2	-1.51	265.3	-2,384.2	330.1	237.0	93.07	3.547				
9,100.0	8,715.2	9,117.5	8,715.2	46.3	47.3	-1.51	265.3	-2,384.2	330.1	236.9	93.18	3.543				
9,200.0	8,815.2	9,217.5	8,815.2	46.3	47.3	-1.51	265.3	-2,384.2	330.1	236.8	93.30	3.538				
9,300.0	8,915.2	9,317.5	8,915.2	46.4	47.4	-1.51	265.3	-2,384.2	330.1	236.7	93.42	3.534				
9,400.0	9,015.2	9,417.5	9,015.2	46.5	47.4	-1.51	265.3	-2,384.2	330.1	236.6	93.55	3.529				
9,500.0	9,115.2	9,517.5	9,115.2	46.5	47.5	-1.51	265.3	-2,384.2	330.1	236.4	93.67	3.524				
9,600.0	9,215.2	9,617.5	9,215.2	46.6	47.6	-1.51	265.3	-2,384.2	330.1	236.3	93.79	3.520				
9,700.0	9,315.2	9,717.5	9,315.2	46.6	47.6	-1.51	265.3	-2,384.2	330.1	236.2	93.92	3.515				
9,800.0	9,415.2	9,817.5	9,415.2	46.7	47.7	-1.51	265.3	-2,384.2	330.1	236.1	94.04	3.510				
9,900.0	9,515.2	9,917.5	9,515.2	46.8	47.8	-1.51	265.3	-2,384.2	330.1	235.9	94.17	3.505				
10,000.0	9,615.2	10,017.5	9,615.2	46.8	47.8	-1.51	265.3	-2,384.2	330.1	235.8	94.30	3.501				
10,100.0	9,715.2	10,117.5	9,715.2	46.9	47.9	-1.51	265.3	-2,384.2	330.1	235.7	94.43	3.496				
10,200.0	9,815.2	10,217.5	9,815.2	47.0	47.9	-1.51	265.3	-2,384.2	330.1	235.6	94.56	3.491				
10,300.0	9,915.2	10,317.5	9,915.2	47.0	48.0	-1.51	265.3	-2,384.2	330.1	235.4	94.69	3.486				

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 17-16C (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 17-16C (M16W Pad)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	USA EDM 5000 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	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre	Between Centres	Between Ellipses	Total Uncertainty	Separation Factor							
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	Axis							
10,400.0	10,015.2	10,417.5	10,015.2	47.1	48.1	-1.51	265.3	-2,384.2	330.1	235.3	94.83	3.481						
10,500.0	10,115.2	10,517.5	10,115.2	47.2	48.1	-1.51	265.3	-2,384.2	330.1	235.2	94.96	3.476						
10,600.0	10,215.2	10,617.5	10,215.2	47.2	48.2	-1.51	265.3	-2,384.2	330.1	235.0	95.09	3.471						
10,668.8	10,284.0	10,686.3	10,284.0	47.3	48.3	-1.51	265.3	-2,384.2	330.1	234.9	95.19	3.468 SF						

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well MCU Fee 17-16C (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 17-16C (M16W Pad)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design SWSW S16-T7S-R93W (M16W Pad) - MCU Fee 17-9B (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 Axis	Separation Factor	
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)			
0.0	0.0	0.0	0.0	0.0	0.0	43.89	115.1	110.7	159.7				
100.0	100.0	100.0	100.0	0.1	0.1	43.89	115.1	110.7	159.7	159.4	0.27	586.539	
200.0	200.0	200.0	200.0	0.3	0.3	43.89	115.1	110.7	159.7	159.1	0.62	257.023	CC, ES
300.0	300.0	300.7	300.6	0.5	0.5	135.13	116.8	108.6	161.3	160.4	0.98	163.924	
400.0	399.6	401.2	400.8	0.7	0.7	134.22	121.8	102.5	166.3	164.9	1.40	118.425	
500.0	498.8	501.3	500.0	1.0	1.0	132.80	130.0	92.3	174.6	172.6	1.92	90.708	
600.0	597.1	600.8	597.8	1.4	1.4	131.02	141.4	78.1	186.3	183.7	2.58	72.239	
700.0	694.3	699.5	693.8	1.8	1.8	129.02	155.9	60.2	201.4	198.0	3.39	59.454	
800.0	790.2	797.3	787.6	2.4	2.3	126.91	173.4	38.7	220.0	215.7	4.36	50.412	
900.0	884.8	894.1	878.9	3.0	3.0	124.95	193.6	13.7	241.5	236.0	5.48	44.057	
1,000.0	979.3	990.8	968.8	3.6	3.6	122.67	216.0	-14.0	263.7	257.0	6.67	39.553	
1,100.0	1,073.8	1,087.7	1,058.8	4.2	4.3	120.68	238.7	-42.1	286.3	278.4	7.87	36.357	
1,200.0	1,168.3	1,184.7	1,148.8	4.8	4.9	118.98	261.4	-70.1	309.2	300.1	9.09	34.009	
1,300.0	1,262.8	1,281.7	1,238.8	5.4	5.6	117.51	284.1	-98.2	332.3	322.0	10.31	32.223	
1,400.0	1,357.3	1,378.6	1,328.8	6.0	6.3	116.24	306.8	-126.2	355.6	344.0	11.53	30.825	
1,500.0	1,451.8	1,475.6	1,418.8	6.7	6.9	115.12	329.5	-154.3	379.0	366.2	12.76	29.707	
1,600.0	1,546.3	1,572.6	1,508.8	7.3	7.6	114.13	352.2	-182.3	402.5	388.6	13.98	28.793	
1,700.0	1,640.8	1,669.5	1,598.8	7.9	8.3	113.25	374.8	-210.4	426.2	411.0	15.20	28.034	
1,800.0	1,735.3	1,766.5	1,688.8	8.5	9.0	112.46	397.5	-238.4	449.9	433.5	16.42	27.396	
1,900.0	1,829.8	1,863.5	1,778.8	9.2	9.6	111.75	420.2	-266.5	473.8	456.1	17.64	26.852	
2,000.0	1,924.3	1,960.4	1,868.8	9.8	10.3	111.11	442.9	-294.5	497.6	478.8	18.86	26.383	SF

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well MCU Fee 17-16C (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 17-16C (M16W Pad)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	USA EDM 5000 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	39.84	119.8	100.0	156.1					
100.0	100.0	100.0	100.0	0.1	0.1	39.84	119.8	100.0	156.1	155.8	0.27	573.152		
200.0	200.0	200.0	200.0	0.3	0.3	39.84	119.8	100.0	156.1	155.4	0.62	251.157 CC, ES		
300.0	300.0	301.4	301.4	0.5	0.5	131.13	121.2	97.6	157.3	156.3	0.99	159.524		
400.0	399.6	402.7	402.3	0.7	0.7	130.35	125.2	90.7	161.2	159.8	1.41	114.198		
500.0	498.8	503.7	502.4	1.0	1.0	129.12	131.8	79.1	167.6	165.7	1.94	86.280		
600.0	597.1	604.4	601.3	1.4	1.4	127.55	141.1	63.0	176.7	174.1	2.62	67.560		
700.0	694.3	704.5	698.7	1.8	1.8	125.73	152.9	42.6	188.5	185.0	3.45	54.579		
800.0	790.2	804.1	794.0	2.4	2.4	123.78	167.1	17.9	202.9	198.5	4.47	45.407		
900.0	884.8	903.0	887.2	3.0	3.0	121.84	183.7	-10.9	219.6	213.9	5.63	38.969		
1,000.0	979.3	1,001.1	978.4	3.6	3.7	119.48	201.8	-42.4	236.6	229.7	6.87	34.435		
1,100.0	1,073.8	1,099.2	1,069.4	4.2	4.4	117.40	220.0	-74.0	253.9	245.8	8.13	31.250		
1,200.0	1,168.3	1,197.3	1,160.5	4.8	5.0	115.59	238.2	-105.7	271.6	262.2	9.39	28.915		
1,300.0	1,262.8	1,295.4	1,251.5	5.4	5.7	114.00	256.4	-137.3	289.4	278.8	10.66	27.144		
1,400.0	1,357.3	1,393.5	1,342.6	6.0	6.4	112.60	274.7	-168.9	307.5	295.5	11.94	25.761		
1,500.0	1,451.8	1,491.6	1,433.6	6.7	7.1	111.35	292.9	-200.6	325.7	312.5	13.21	24.657		
1,600.0	1,546.3	1,589.7	1,524.7	7.3	7.8	110.23	311.1	-232.2	344.0	329.6	14.48	23.757		
1,700.0	1,640.8	1,687.8	1,615.7	7.9	8.5	109.22	329.3	-263.8	362.5	346.7	15.75	23.012		
1,800.0	1,735.3	1,785.9	1,706.8	8.5	9.2	108.32	347.5	-295.5	381.1	364.0	17.02	22.386		
1,900.0	1,829.8	1,884.0	1,797.8	9.2	9.8	107.49	365.7	-327.1	399.7	381.4	18.29	21.854		
2,000.0	1,924.3	1,982.1	1,888.9	9.8	10.5	106.74	383.9	-358.7	418.4	398.9	19.55	21.397		
2,100.0	2,018.8	2,080.2	1,979.9	10.4	11.2	106.06	402.2	-390.3	437.2	416.4	20.82	21.001		
2,200.0	2,113.3	2,178.2	2,071.0	11.0	11.9	105.43	420.4	-422.0	456.0	434.0	22.08	20.654		
2,300.0	2,207.8	2,276.3	2,162.0	11.6	12.6	104.85	438.6	-453.6	474.9	451.6	23.34	20.348		
2,400.0	2,302.3	2,374.4	2,253.1	12.3	13.3	104.31	456.8	-485.2	493.8	469.2	24.60	20.077 SF		

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well MCU Fee 17-16C (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 17-16C (M16W Pad)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	USA EDM 5000 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	36.35	114.0	83.9	141.5					
100.0	100.0	100.0	100.0	0.1	0.1	36.35	114.0	83.9	141.5	141.3	0.27	519.804	CC	
200.0	200.0	200.0	200.0	0.3	0.3	36.35	114.0	83.9	141.5	140.9	0.62	227.779	ES	
300.0	300.0	301.5	301.5	0.5	0.5	127.66	115.1	81.4	142.6	141.6	0.99	144.482		
400.0	399.6	402.9	402.6	0.7	0.7	126.95	118.5	74.1	145.8	144.4	1.41	103.054		
500.0	498.8	504.2	502.9	1.0	1.0	125.83	124.0	61.9	151.2	149.2	1.95	77.430		
600.0	597.1	605.2	602.1	1.4	1.4	124.39	131.8	44.9	158.8	156.1	2.64	60.228		
700.0	694.3	705.8	699.9	1.8	1.9	122.71	141.7	23.3	168.6	165.1	3.49	48.311		
800.0	790.2	806.0	795.9	2.4	2.4	120.90	153.7	-2.8	180.7	176.2	4.53	39.909		
900.0	884.8	905.6	889.7	3.0	3.0	119.03	167.6	-33.2	194.5	188.8	5.70	34.101		
1,000.0	979.3	1,004.4	982.2	3.6	3.7	117.14	182.0	-64.9	208.6	201.7	6.92	30.154		
1,100.0	1,073.8	1,103.2	1,074.6	4.2	4.3	115.50	196.5	-96.5	222.9	214.7	8.15	27.346		
1,200.0	1,168.3	1,202.0	1,167.1	4.8	5.0	114.05	211.0	-128.1	237.3	227.9	9.39	25.262		
1,300.0	1,262.8	1,300.8	1,259.5	5.4	5.6	112.77	225.4	-159.7	251.8	241.2	10.64	23.663		
1,400.0	1,357.3	1,399.5	1,352.0	6.0	6.3	111.63	239.9	-191.4	266.5	254.6	11.90	22.401		
1,500.0	1,451.8	1,498.3	1,444.5	6.7	6.9	110.61	254.4	-223.0	281.3	268.1	13.15	21.383		
1,600.0	1,546.3	1,597.1	1,536.9	7.3	7.6	109.69	268.9	-254.6	296.1	281.7	14.41	20.546		
1,700.0	1,640.8	1,695.9	1,629.4	7.9	8.2	108.86	283.3	-286.2	311.0	295.3	15.67	19.848		
1,800.0	1,735.3	1,794.7	1,721.9	8.5	8.9	108.11	297.8	-317.9	326.0	309.1	16.93	19.257		
1,900.0	1,829.8	1,893.5	1,814.3	9.2	9.6	107.42	312.3	-349.5	341.0	322.8	18.19	18.751		
2,000.0	1,924.3	1,992.3	1,906.8	9.8	10.2	106.79	326.7	-381.1	356.1	336.6	19.44	18.313		
2,100.0	2,018.8	2,091.0	1,999.2	10.4	10.9	106.21	341.2	-412.7	371.2	350.5	20.70	17.931		
2,200.0	2,113.3	2,189.8	2,091.7	11.0	11.5	105.67	355.7	-444.4	386.3	364.3	21.96	17.594		
2,300.0	2,207.8	2,288.6	2,184.2	11.6	12.2	105.18	370.1	-476.0	401.4	378.2	23.21	17.296		
2,400.0	2,302.3	2,387.4	2,276.6	12.3	12.9	104.72	384.6	-507.6	416.6	392.2	24.46	17.031		
2,500.0	2,396.8	2,486.2	2,369.1	12.9	13.5	104.29	399.1	-539.2	431.9	406.1	25.72	16.792		
2,600.0	2,491.3	2,585.0	2,461.6	13.5	14.2	103.90	413.5	-570.9	447.1	420.1	26.97	16.578		
2,700.0	2,585.8	2,683.8	2,554.0	14.1	14.8	103.52	428.0	-602.5	462.3	434.1	28.22	16.383		
2,800.0	2,680.3	2,782.6	2,646.5	14.8	15.5	103.18	442.5	-634.1	477.6	448.1	29.47	16.206		
2,900.0	2,774.8	2,881.3	2,738.9	15.4	16.1	102.85	456.9	-665.7	492.9	462.2	30.72	16.044	SF	

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well MCU Fee 17-16C (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 17-16C (M16W Pad)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	USA EDM 5000 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	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	37.30	103.4	78.8	130.0					
100.0	100.0	100.0	100.0	0.1	0.1	37.30	103.4	78.8	130.0	129.8	0.27	477.596		
200.0	200.0	200.0	200.0	0.3	0.3	37.30	103.4	78.8	130.0	129.4	0.62	209.284 CC		
300.0	300.0	303.7	303.6	0.5	0.5	130.28	101.6	78.8	130.3	129.3	0.98	132.510 ES		
400.0	399.6	405.8	405.6	0.7	0.7	133.91	97.0	78.1	131.7	130.3	1.36	96.681		
500.0	498.8	507.3	507.0	1.0	0.9	137.05	94.4	73.1	135.8	134.0	1.76	77.211		
600.0	597.1	609.2	608.4	1.4	1.1	139.29	94.4	63.4	142.5	140.3	2.20	64.719		
700.0	694.3	711.4	709.5	1.8	1.4	140.62	97.1	48.9	151.6	148.9	2.73	55.565		
800.0	790.2	813.7	809.9	2.4	1.7	141.11	102.3	29.7	162.9	159.6	3.36	48.495		
900.0	884.8	916.2	909.2	3.0	2.2	140.84	110.3	5.7	175.5	171.4	4.13	42.499		
1,000.0	979.3	1,017.1	1,005.8	3.6	2.7	139.39	120.3	-21.9	186.8	181.8	5.03	37.113		
1,100.0	1,073.8	1,116.4	1,100.6	4.2	3.2	137.94	130.5	-49.5	198.0	192.0	5.99	33.062		
1,200.0	1,168.3	1,215.7	1,195.3	4.8	3.8	136.65	140.7	-77.2	209.3	202.3	6.98	29.986		
1,300.0	1,262.8	1,314.9	1,290.1	5.4	4.3	135.48	150.9	-104.9	220.7	212.7	8.00	27.596		
1,400.0	1,357.3	1,414.2	1,384.9	6.0	4.8	134.44	161.1	-132.6	232.1	223.1	9.03	25.698		
1,500.0	1,451.8	1,513.4	1,479.6	6.7	5.4	133.49	171.3	-160.2	243.7	233.6	10.08	24.161		
1,600.0	1,546.3	1,612.7	1,574.4	7.3	5.9	132.62	181.5	-187.9	255.3	244.1	11.15	22.895		
1,700.0	1,640.8	1,711.9	1,669.2	7.9	6.5	131.83	191.7	-215.6	266.9	254.7	12.22	21.837		
1,800.0	1,735.3	1,811.2	1,764.0	8.5	7.0	131.11	201.9	-243.3	278.6	265.3	13.30	20.941		
1,900.0	1,829.8	1,910.4	1,858.7	9.2	7.6	130.45	212.1	-270.9	290.3	275.9	14.39	20.174		
2,000.0	1,924.3	2,009.7	1,953.5	9.8	8.2	129.83	222.3	-298.6	302.1	286.6	15.48	19.510		
2,100.0	2,018.8	2,109.0	2,048.3	10.4	8.7	129.27	232.5	-326.3	313.9	297.3	16.58	18.930		
2,200.0	2,113.3	2,208.2	2,143.0	11.0	9.3	128.74	242.7	-354.0	325.7	308.0	17.68	18.420		
2,300.0	2,207.8	2,307.5	2,237.8	11.6	9.8	128.25	252.9	-381.7	337.5	318.8	18.79	17.968		
2,400.0	2,302.3	2,406.7	2,332.6	12.3	10.4	127.80	263.1	-409.3	349.4	329.5	19.89	17.565		
2,500.0	2,396.8	2,506.0	2,427.4	12.9	11.0	127.37	273.3	-437.0	361.3	340.3	21.00	17.204		
2,600.0	2,491.3	2,605.2	2,522.1	13.5	11.5	126.97	283.5	-464.7	373.2	351.1	22.11	16.878		
2,700.0	2,585.8	2,704.5	2,616.9	14.1	12.1	126.60	293.7	-492.4	385.1	361.9	23.23	16.582		
2,800.0	2,680.3	2,803.7	2,711.7	14.8	12.6	126.25	303.9	-520.0	397.1	372.7	24.34	16.314		
2,900.0	2,774.8	2,903.0	2,806.4	15.4	13.2	125.92	314.1	-547.7	409.0	383.6	25.46	16.068		
3,000.0	2,869.3	3,002.3	2,901.2	16.0	13.8	125.60	324.3	-575.4	421.0	394.4	26.57	15.843		
3,100.0	2,963.8	3,101.5	2,996.0	16.6	14.3	125.31	334.5	-603.1	433.0	405.3	27.69	15.636		
3,200.0	3,058.3	3,200.8	3,090.8	17.3	14.9	125.03	344.7	-630.7	445.0	416.2	28.81	15.445		
3,300.0	3,152.8	3,300.0	3,185.5	17.9	15.4	124.77	354.9	-658.4	457.0	427.1	29.93	15.269		
3,400.0	3,247.3	3,399.3	3,280.3	18.5	16.0	124.52	365.1	-686.1	469.0	437.9	31.05	15.104		
3,500.0	3,341.7	3,498.5	3,375.1	19.1	16.6	124.28	375.3	-713.8	481.0	448.8	32.17	14.952		
3,600.0	3,436.2	3,597.8	3,469.8	19.8	17.1	124.05	385.5	-741.5	493.0	459.7	33.29	14.809 SF		

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well MCU Fee 17-16C (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 17-16C (M16W Pad)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Reference Depths are relative to KBE @ 7903.0ft (Original Well Elev)

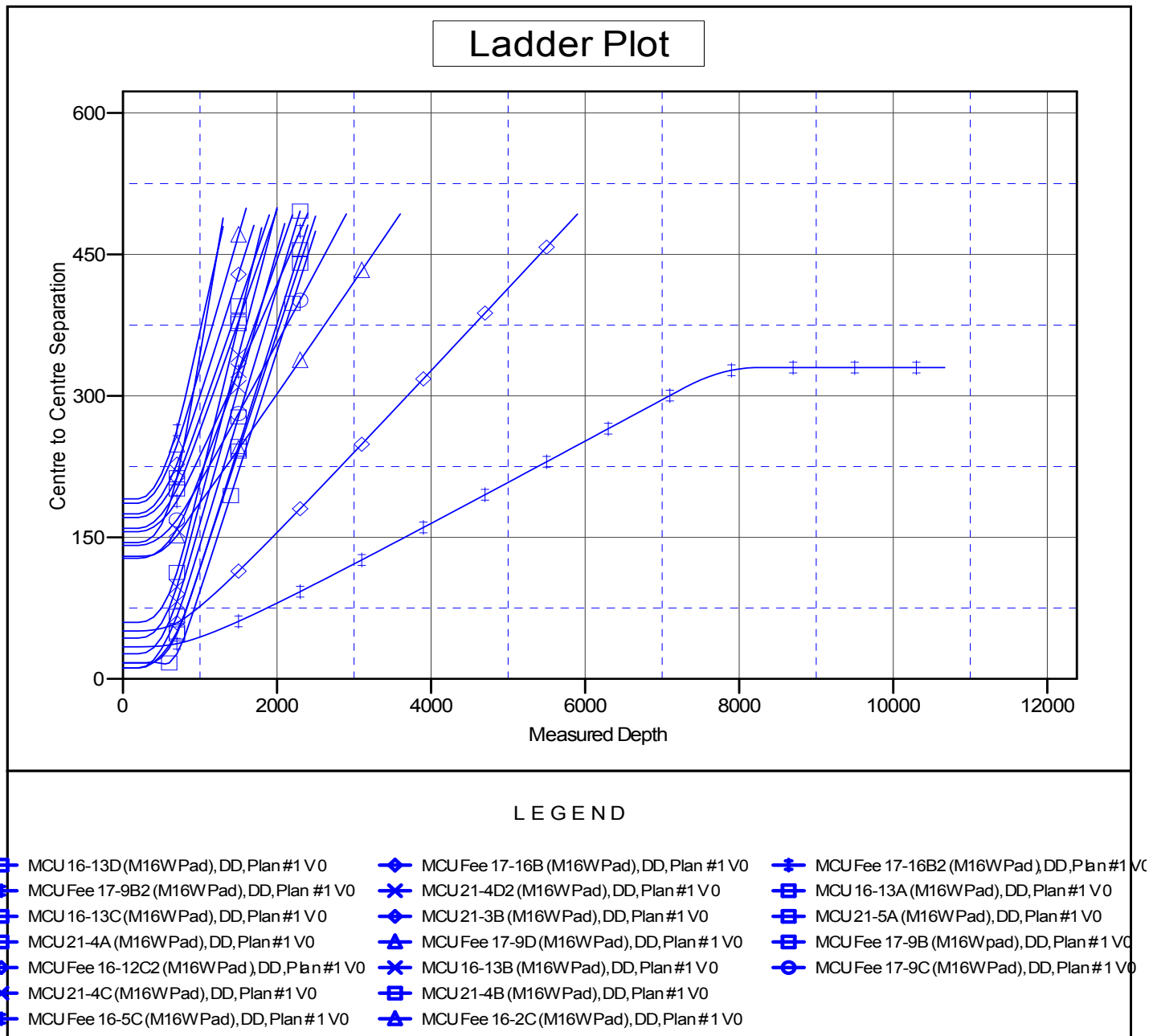
Offset Depths are relative to Offset Datum

Central Meridian is -105.500000 °

Coordinates are relative to: MCU Fee 17-16C (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