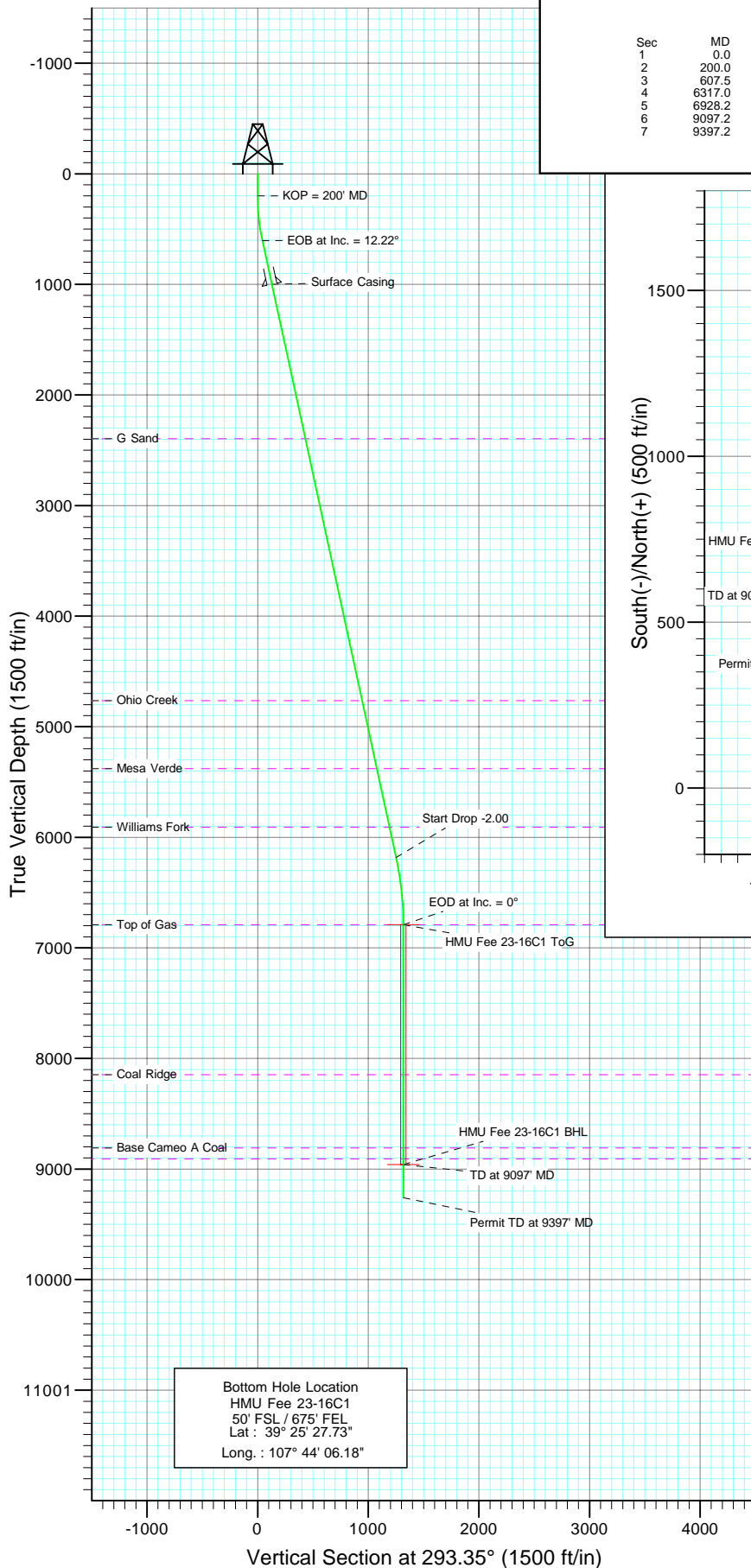
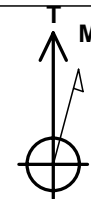
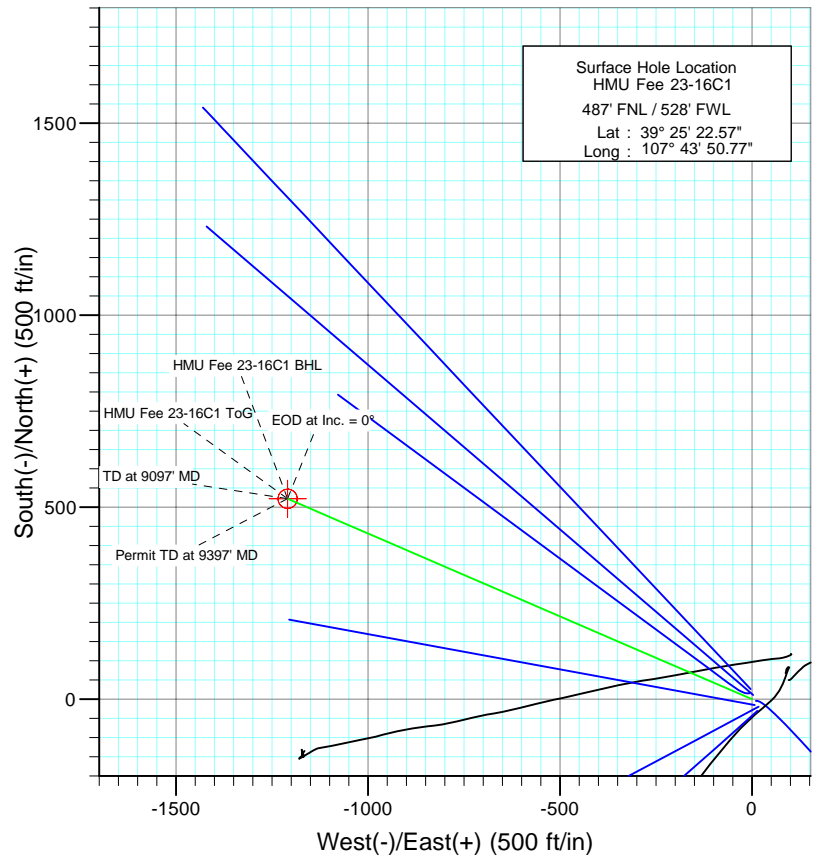




Project: Mamm Creek
Site: (D25W)
Well: HMU Fee 23-16C1
Wellbore: DD
Design: Plan #1



SECTION DETAILS										
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	Vsect	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	200.0	0.00	0.00	200.0	0.0	0.0	0.00	0.00	0.0	
3	607.5	12.22	293.35	604.4	17.2	-39.8	3.00	293.35	43.3	
4	6317.0	12.22	293.35	6184.4	496.4	-1149.6	0.00	0.00	1252.2	
5	6928.2	0.00	0.00	6791.0	522.1	-1209.2	2.00	180.00	1317.1	HMU Fee 23-16C1 ToG
6	9097.2	0.00	0.00	8960.0	522.1	-1209.2	0.00	0.00	1317.1	HMU Fee 23-16C1 BHL
7	9397.2	0.00	0.00	9260.0	522.1	-1209.2	0.00	0.00	1317.1	



Azimuths to True North
Magnetic North: 10.30°

Magnetic Field
Strength: 52346.2snT
Dip Angle: 65.76°
Date: 8/25/2010
Model: IGRF200510

FORMATION TOP DETAILS

TVDPPath	MDPath	Formation
2396.0	2440.6	G Sand
4765.0	4864.6	Ohio Creek
5380.0	5493.9	Mesa Verde
5909.0	6035.1	Williams Fork
6791.0	6928.2	Top of Gas
8147.0	8284.2	Coal Ridge
8810.0	8947.2	Base Cameo A Coal
8909.0	9046.2	Rollins

DESIGN DETAILS: Plan #1

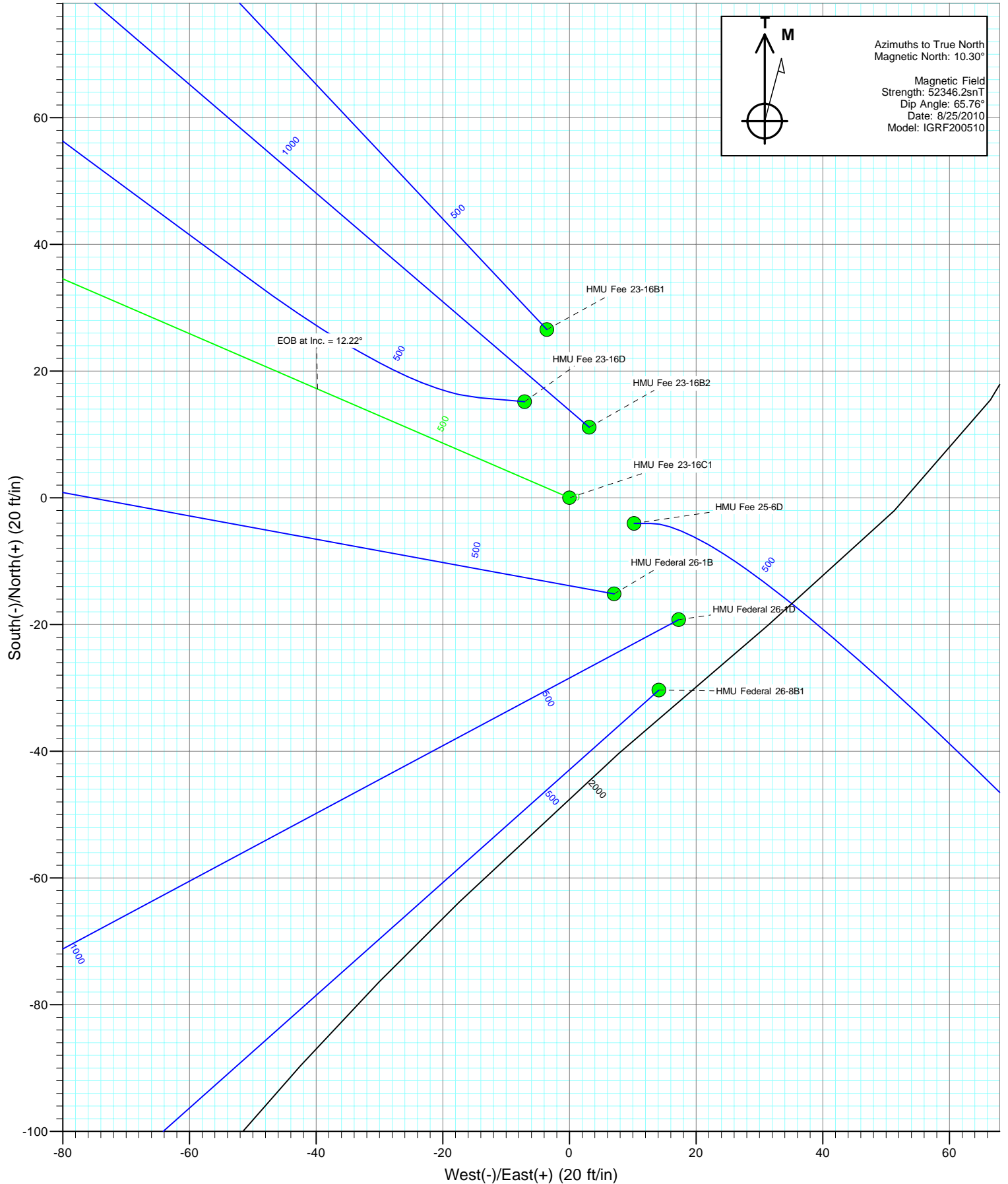
Job #10xxx: KR

WELL @ 7250.0ft (Original Well Elev)

Target	Azimuth	Origin	N/S	E/W	From TVD
HMU Fee 23-16C1 BHL	293.35	Slot	0.0	0.0	0.0

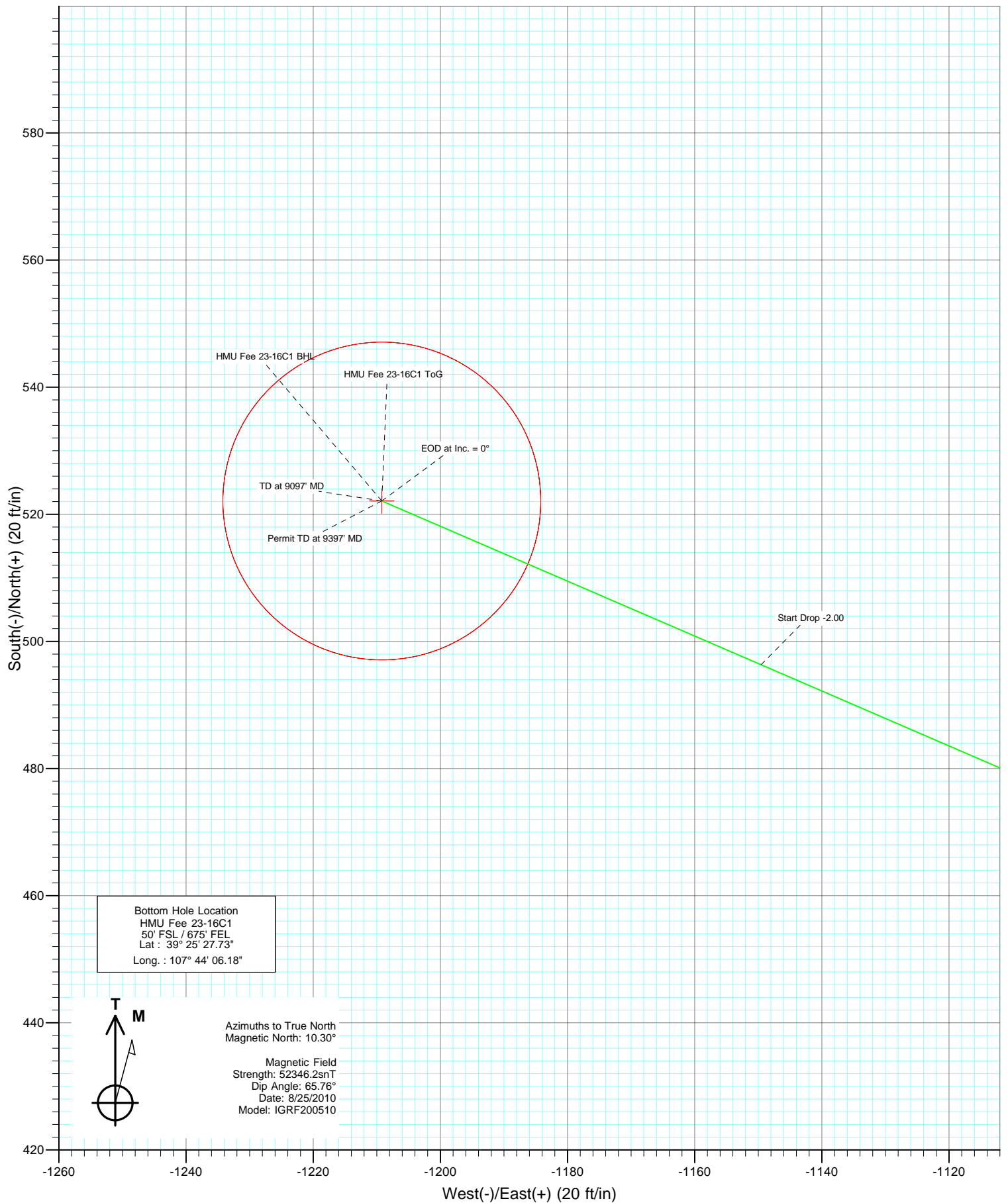


Project: Mamm Creek
Site: (D25W)
Well: HMU Fee 23-16C1
Wellbore: DD
Design: Plan #1





Project: Mamm Creek
Site: (D25W)
Well: HMU Fee 23-16C1
Wellbore: DD
Design: Plan #1



Cathedral Energy Services

Planning Report

Database:	EDM 5000.1 US Multi Users DB	Local Co-ordinate Reference:	Well HMU Fee 23-16C1
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	WELL @ 7250.0ft (Original Well Elev)
Project:	Mamm Creek	MD Reference:	WELL @ 7250.0ft (Original Well Elev)
Site:	(D25W)	North Reference:	True
Well:	HMU Fee 23-16C1	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		(D25W)			
Site Position:		Northing:	1,586,700.90 ft	Latitude:	39.423009
From:	Lat/Long	Easting:	2,369,887.50 ft	Longitude:	-107.730782
Position Uncertainty:	0.0 ft	Slot Radius:	13.200 in	Grid Convergence:	-1.41 °

Well	HMU Fee 23-16C1					
Well Position	+N/-S	0.0 ft	Northing:	1,586,674.27 ft	Latitude:	39.422936
	+E/-W	0.0 ft	Easting:	2,369,890.40 ft	Longitude:	-107.730769
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	7,228.0 ft

Wellbore	DD				
Magnetics	Model Name	Sample Date	Declination	Dip Angle	Field Strength
			(°)	(°)	(nT)
	IGRF200510	8/25/2010	10.30	65.76	52,346

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	293.35

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	
607.5	12.22	293.35	604.4	17.2	-39.8	3.00	3.00	0.00	293.35	
6,317.0	12.22	293.35	6,184.4	496.4	-1,149.6	0.00	0.00	0.00	0.00	
6,928.2	0.00	0.00	6,791.0	522.1	-1,209.2	2.00	-2.00	0.00	180.00	HMU Fee 23-16C1 Tc
9,097.2	0.00	0.00	8,960.0	522.1	-1,209.2	0.00	0.00	0.00	0.00	HMU Fee 23-16C1 Bl
9,397.2	0.00	0.00	9,260.0	522.1	-1,209.2	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 HMU Fee 23-16C1
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	WELL @ 7250.0ft (Original Well Elev)
Project:	Mamm Creek	MD Reference:	WELL @ 7250.0ft (Original Well Elev)
Site:	(D25W)	North Reference:	True
Well:	HMU Fee 23-16C1	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	293.35	300.0	1.0	-2.4	2.6	3.00	3.00	
400.0	6.00	293.35	399.6	4.1	-9.6	10.5	3.00	3.00	
500.0	9.00	293.35	498.8	9.3	-21.6	23.5	3.00	3.00	
600.0	12.00	293.35	597.1	16.5	-38.3	41.7	3.00	3.00	
607.5	12.22	293.35	604.4	17.2	-39.8	43.3	3.00	3.00	EOB at Inc. = 12.22°
700.0	12.22	293.35	694.8	24.9	-57.7	62.9	0.00	0.00	
800.0	12.22	293.35	792.6	33.3	-77.2	84.1	0.00	0.00	
900.0	12.22	293.35	890.3	41.7	-96.6	105.2	0.00	0.00	
1,000.0	12.22	293.35	988.0	50.1	-116.1	126.4	0.00	0.00	
1,012.3	12.22	293.35	1,000.0	51.1	-118.4	129.0	0.00	0.00	Surface Casing
1,100.0	12.22	293.35	1,085.7	58.5	-135.5	147.6	0.00	0.00	
1,200.0	12.22	293.35	1,183.5	66.9	-154.9	168.8	0.00	0.00	
1,300.0	12.22	293.35	1,281.2	75.3	-174.4	189.9	0.00	0.00	
1,400.0	12.22	293.35	1,378.9	83.7	-193.8	211.1	0.00	0.00	
1,500.0	12.22	293.35	1,476.7	92.1	-213.2	232.3	0.00	0.00	
1,600.0	12.22	293.35	1,574.4	100.5	-232.7	253.4	0.00	0.00	
1,700.0	12.22	293.35	1,672.1	108.9	-252.1	274.6	0.00	0.00	
1,800.0	12.22	293.35	1,769.9	117.3	-271.6	295.8	0.00	0.00	
1,900.0	12.22	293.35	1,867.6	125.6	-291.0	317.0	0.00	0.00	
2,000.0	12.22	293.35	1,965.3	134.0	-310.4	338.1	0.00	0.00	
2,100.0	12.22	293.35	2,063.1	142.4	-329.9	359.3	0.00	0.00	
2,200.0	12.22	293.35	2,160.8	150.8	-349.3	380.5	0.00	0.00	
2,300.0	12.22	293.35	2,258.5	159.2	-368.8	401.7	0.00	0.00	
2,400.0	12.22	293.35	2,356.3	167.6	-388.2	422.8	0.00	0.00	
2,440.6	12.22	293.35	2,396.0	171.0	-396.1	431.4	0.00	0.00	G Sand
2,500.0	12.22	293.35	2,454.0	176.0	-407.6	444.0	0.00	0.00	
2,600.0	12.22	293.35	2,551.7	184.4	-427.1	465.2	0.00	0.00	
2,700.0	12.22	293.35	2,649.5	192.8	-446.5	486.3	0.00	0.00	
2,800.0	12.22	293.35	2,747.2	201.2	-465.9	507.5	0.00	0.00	
2,900.0	12.22	293.35	2,844.9	209.6	-485.4	528.7	0.00	0.00	
3,000.0	12.22	293.35	2,942.7	218.0	-504.8	549.9	0.00	0.00	
3,100.0	12.22	293.35	3,040.4	226.4	-524.3	571.0	0.00	0.00	
3,200.0	12.22	293.35	3,138.1	234.8	-543.7	592.2	0.00	0.00	
3,300.0	12.22	293.35	3,235.9	243.1	-563.1	613.4	0.00	0.00	
3,400.0	12.22	293.35	3,333.6	251.5	-582.6	634.6	0.00	0.00	
3,500.0	12.22	293.35	3,431.3	259.9	-602.0	655.7	0.00	0.00	
3,600.0	12.22	293.35	3,529.1	268.3	-621.4	676.9	0.00	0.00	
3,700.0	12.22	293.35	3,626.8	276.7	-640.9	698.1	0.00	0.00	
3,800.0	12.22	293.35	3,724.5	285.1	-660.3	719.2	0.00	0.00	
3,900.0	12.22	293.35	3,822.3	293.5	-679.8	740.4	0.00	0.00	
4,000.0	12.22	293.35	3,920.0	301.9	-699.2	761.6	0.00	0.00	
4,100.0	12.22	293.35	4,017.7	310.3	-718.6	782.8	0.00	0.00	
4,200.0	12.22	293.35	4,115.5	318.7	-738.1	803.9	0.00	0.00	
4,300.0	12.22	293.35	4,213.2	327.1	-757.5	825.1	0.00	0.00	
4,400.0	12.22	293.35	4,310.9	335.5	-777.0	846.3	0.00	0.00	
4,500.0	12.22	293.35	4,408.7	343.9	-796.4	867.5	0.00	0.00	
4,600.0	12.22	293.35	4,506.4	352.3	-815.8	888.6	0.00	0.00	
4,700.0	12.22	293.35	4,604.1	360.6	-835.3	909.8	0.00	0.00	
4,800.0	12.22	293.35	4,701.9	369.0	-854.7	931.0	0.00	0.00	

Cathedral Energy Services

Planning Report

Database:	EDM 5000.1 US Multi Users DB	Local Co-ordinate Reference:	Well HMU Fee 23-16C1
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	WELL @ 7250.0ft (Original Well Elev)
Project:	Mamm Creek	MD Reference:	WELL @ 7250.0ft (Original Well Elev)
Site:	(D25W)	North Reference:	True
Well:	HMU Fee 23-16C1	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
4,864.6	12.22	293.35	4,765.0	374.5	-867.3	944.7	0.00	0.00	Ohio Creek
4,900.0	12.22	293.35	4,799.6	377.4	-874.1	952.1	0.00	0.00	
5,000.0	12.22	293.35	4,897.3	385.8	-893.6	973.3	0.00	0.00	
5,100.0	12.22	293.35	4,995.1	394.2	-913.0	994.5	0.00	0.00	
5,200.0	12.22	293.35	5,092.8	402.6	-932.5	1,015.7	0.00	0.00	
5,300.0	12.22	293.35	5,190.5	411.0	-951.9	1,036.8	0.00	0.00	
5,400.0	12.22	293.35	5,288.3	419.4	-971.3	1,058.0	0.00	0.00	
5,493.9	12.22	293.35	5,380.0	427.3	-989.6	1,077.9	0.00	0.00	Mesa Verde
5,500.0	12.22	293.35	5,386.0	427.8	-990.8	1,079.2	0.00	0.00	
5,600.0	12.22	293.35	5,483.7	436.2	-1,010.2	1,100.4	0.00	0.00	
5,700.0	12.22	293.35	5,581.5	444.6	-1,029.7	1,121.5	0.00	0.00	
5,800.0	12.22	293.35	5,679.2	453.0	-1,049.1	1,142.7	0.00	0.00	
5,900.0	12.22	293.35	5,776.9	461.4	-1,068.5	1,163.9	0.00	0.00	
6,000.0	12.22	293.35	5,874.7	469.8	-1,088.0	1,185.0	0.00	0.00	
6,035.1	12.22	293.35	5,909.0	472.7	-1,094.8	1,192.5	0.00	0.00	Williams Fork
6,100.0	12.22	293.35	5,972.4	478.1	-1,107.4	1,206.2	0.00	0.00	
6,200.0	12.22	293.35	6,070.1	486.5	-1,126.8	1,227.4	0.00	0.00	
6,300.0	12.22	293.35	6,167.9	494.9	-1,146.3	1,248.6	0.00	0.00	
6,317.0	12.22	293.35	6,184.4	496.4	-1,149.6	1,252.2	0.00	0.00	Start Drop -2.00
6,400.0	10.56	293.35	6,265.8	502.9	-1,164.6	1,268.6	2.00	-2.00	
6,500.0	8.56	293.35	6,364.4	509.4	-1,179.9	1,285.2	2.00	-2.00	
6,600.0	6.56	293.35	6,463.6	514.7	-1,192.0	1,298.3	2.00	-2.00	
6,700.0	4.56	293.35	6,563.1	518.5	-1,200.9	1,308.0	2.00	-2.00	
6,800.0	2.56	293.35	6,662.9	521.0	-1,206.6	1,314.2	2.00	-2.00	
6,900.0	0.56	293.35	6,762.8	522.0	-1,209.1	1,317.0	2.00	-2.00	
6,928.2	0.00	0.00	6,791.0	522.1	-1,209.2	1,317.1	2.00	-2.00	EOD at Inc. = 0° - Top of Gas - HMU Fee 23-16
7,000.0	0.00	0.00	6,862.8	522.1	-1,209.2	1,317.1	0.00	0.00	
7,100.0	0.00	0.00	6,962.8	522.1	-1,209.2	1,317.1	0.00	0.00	
7,200.0	0.00	0.00	7,062.8	522.1	-1,209.2	1,317.1	0.00	0.00	
7,300.0	0.00	0.00	7,162.8	522.1	-1,209.2	1,317.1	0.00	0.00	
7,400.0	0.00	0.00	7,262.8	522.1	-1,209.2	1,317.1	0.00	0.00	
7,500.0	0.00	0.00	7,362.8	522.1	-1,209.2	1,317.1	0.00	0.00	
7,600.0	0.00	0.00	7,462.8	522.1	-1,209.2	1,317.1	0.00	0.00	
7,700.0	0.00	0.00	7,562.8	522.1	-1,209.2	1,317.1	0.00	0.00	
7,800.0	0.00	0.00	7,662.8	522.1	-1,209.2	1,317.1	0.00	0.00	
7,900.0	0.00	0.00	7,762.8	522.1	-1,209.2	1,317.1	0.00	0.00	
8,000.0	0.00	0.00	7,862.8	522.1	-1,209.2	1,317.1	0.00	0.00	
8,100.0	0.00	0.00	7,962.8	522.1	-1,209.2	1,317.1	0.00	0.00	
8,200.0	0.00	0.00	8,062.8	522.1	-1,209.2	1,317.1	0.00	0.00	
8,284.2	0.00	0.00	8,147.0	522.1	-1,209.2	1,317.1	0.00	0.00	Coal Ridge
8,300.0	0.00	0.00	8,162.8	522.1	-1,209.2	1,317.1	0.00	0.00	
8,400.0	0.00	0.00	8,262.8	522.1	-1,209.2	1,317.1	0.00	0.00	
8,500.0	0.00	0.00	8,362.8	522.1	-1,209.2	1,317.1	0.00	0.00	
8,600.0	0.00	0.00	8,462.8	522.1	-1,209.2	1,317.1	0.00	0.00	
8,700.0	0.00	0.00	8,562.8	522.1	-1,209.2	1,317.1	0.00	0.00	
8,800.0	0.00	0.00	8,662.8	522.1	-1,209.2	1,317.1	0.00	0.00	
8,900.0	0.00	0.00	8,762.8	522.1	-1,209.2	1,317.1	0.00	0.00	
8,947.2	0.00	0.00	8,810.0	522.1	-1,209.2	1,317.1	0.00	0.00	Base Cameo A Coal
9,000.0	0.00	0.00	8,862.8	522.1	-1,209.2	1,317.1	0.00	0.00	
9,046.2	0.00	0.00	8,909.0	522.1	-1,209.2	1,317.1	0.00	0.00	Rollins
9,097.2	0.00	0.00	8,960.0	522.1	-1,209.2	1,317.1	0.00	0.00	TD at 9097' MD - HMU Fee 23-16C1 BHL
9,100.0	0.00	0.00	8,962.8	522.1	-1,209.2	1,317.1	0.00	0.00	

Cathedral Energy Services

Planning Report

Database:	EDM 5000.1 US Multi Users DB	Local Co-ordinate Reference:	Well HMU Fee 23-16C1
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	WELL @ 7250.0ft (Original Well Elev)
Project:	Mamm Creek	MD Reference:	WELL @ 7250.0ft (Original Well Elev)
Site:	(D25W)	North Reference:	True
Well:	HMU Fee 23-16C1	Survey Calculation Method:	Minimum Curvature
Wellbore:	DD		
Design:	Plan #1		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Comments / Formations
9,200.0	0.00	0.00	9,062.8	522.1	-1,209.2	1,317.1	0.00	0.00	
9,300.0	0.00	0.00	9,162.8	522.1	-1,209.2	1,317.1	0.00	0.00	
9,397.2	0.00	0.00	9,260.0	522.1	-1,209.2	1,317.1	0.00	0.00	Permit TD at 9397' 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									
HMU Fee 23-16C1 ToG	0.00	0.00	6,791.0	522.1	-1,209.2	1,587,225.90	2,368,694.38	39.424369	-107.735050
- plan hits target center									
- Point									
HMU Fee 23-16C1 BHL	0.00	0.00	8,960.0	522.1	-1,209.2	1,587,225.90	2,368,694.38	39.424369	-107.735050
- plan hits target center									
- Circle (radius 25.0)									

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)	
1,012.3	1,000.0	Surface Casing	5.500	6.000	

Formations					
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
2,440.6	2,396.0	G Sand			
4,864.6	4,765.0	Ohio Creek			
5,493.9	5,380.0	Mesa Verde			
6,035.1	5,909.0	Williams Fork			
6,928.2	6,791.0	Top of Gas			
8,284.2	8,147.0	Coal Ridge			
8,947.2	8,810.0	Base Cameo A Coal			
9,046.2	8,909.0	Rollins			

Plan Annotations				
Measured Depth (ft)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Comment
200.0	200.0	0.0	0.0	KOP = 200' MD
607.5	604.4	17.2	-39.8	EOB at Inc. = 12.22°
6,317.0	6,184.4	496.4	-1,149.6	Start Drop -2.00
6,928.2	6,791.0	522.1	-1,209.2	EOD at Inc. = 0°
9,097.2	8,960.0	522.1	-1,209.2	TD at 9097' MD
9,397.2	9,260.0	522.1	-1,209.2	Permit TD at 9397' MD

EnCana Oil & Gas (USA) Inc

Mamm Creek

(D25W)

HMU Fee 23-16C1

DD

Plan #1

Anticollision Report

30 August, 2010

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well HMU Fee 23-16C1
Project:	Mamm Creek	TVD Reference:	WELL @ 7250.0ft (Original Well Elev)
Reference Site:	(D25W)	MD Reference:	WELL @ 7250.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	HMU Fee 23-16C1	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	EDM 5000.1 US Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Reference	Plan #1
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria
Interpolation Method:	Stations
Depth Range:	0.0 to 99,999.0ft
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	8/30/2010		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
0.0	9,397.2	Plan #1 (DD)	MWD	Geolink MWD	

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well HMU Fee 23-16C1
Project:	Mamm Creek	TVD Reference:	WELL @ 7250.0ft (Original Well Elev)
Reference Site:	(D25W)	MD Reference:	WELL @ 7250.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	HMU Fee 23-16C1	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	EDM 5000.1 US Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Summary

Site Name Offset Well - Wellbore - Design	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance		Separation Factor	Warning
			Between Centres (ft)	Between Ellipses (ft)		
(D25W)						
HMU 25-3D (Existing) - Excel Drilling - Surveys	0.0	0.0	107.8			
HMU 25-3D (Existing) - Excel Drilling - Surveys	100.0	99.4	108.1	107.8	366.944	ES
HMU 25-3D (Existing) - Excel Drilling - Surveys	1,100.0	1,063.9	269.2	264.9	63.465	SF
HMU 26-1C (Existing) - Baker Hughes (Inteq) - Surveys	1,589.3	1,610.4	125.0	118.9	20.749	CC
HMU 26-1C (Existing) - Baker Hughes (Inteq) - Surveys	1,600.0	1,621.0	125.0	118.9	20.603	ES
HMU 26-1C (Existing) - Baker Hughes (Inteq) - Surveys	3,300.0	3,306.0	252.4	230.9	11.742	SF
HMU Federal 24-13A1 - DD - Plan #1	200.0	200.0	250.5	249.8	403.093	CC, ES
HMU Federal 24-13A1 - DD - Plan #1	1,400.0	1,337.2	484.3	476.8	65.068	SF
HMU Federal 24-13D1 - DD - Plan #1	200.0	200.0	256.1	255.5	412.161	CC, ES
HMU Federal 24-13D1 - DD - Plan #1	1,500.0	1,450.6	485.7	478.1	64.557	SF
HMU Federal 24-13D2 - DD - Plan #1	200.0	200.0	246.3	245.7	396.388	CC, ES
HMU Federal 24-13D2 - DD - Plan #1	1,900.0	1,867.6	490.7	483.3	66.788	SF
HMU Federal 24-14A1 - DD - Plan #1	200.0	200.0	253.0	252.4	407.163	CC, ES
HMU Federal 24-14A1 - DD - Plan #1	1,000.0	856.5	461.7	457.6	111.688	SF
HMU Federal 24-14A2 - DD - Plan #1	200.0	200.0	243.6	243.0	392.130	CC, ES
HMU Federal 24-14A2 - DD - Plan #1	1,100.0	953.5	498.6	493.9	106.906	SF
HMU Federal 24-14A3 - DD - Plan #1	200.0	200.0	250.5	249.8	403.109	CC, ES
HMU Federal 24-14A3 - DD - Plan #1	1,000.0	876.0	463.4	459.3	114.441	SF
HMU Federal 25-3C - DD - Plan #1	200.0	200.0	249.6	249.0	401.735	CC, ES
HMU Federal 25-3C - DD - Plan #1	1,300.0	1,244.1	413.4	408.5	84.303	SF
HMU Federal 26-1B - DD - Plan #1	200.0	200.0	16.7	16.1	26.941	CC, ES
HMU Federal 26-1B - DD - Plan #1	9,397.2	9,379.7	314.7	260.8	5.838	SF
HMU Federal 26-1D - DD - Plan #1	200.0	200.0	25.8	25.2	41.583	CC, ES
HMU Federal 26-1D - DD - Plan #1	500.0	499.6	43.6	41.7	22.888	SF
HMU Federal 26-8B1 - DD - Plan #1	200.0	200.0	33.5	32.9	53.881	CC, ES
HMU Federal 26-8B1 - DD - Plan #1	500.0	496.4	58.1	56.2	30.759	SF
HMU Fee 23-16B1 - DD - Plan #1	200.0	200.0	26.8	26.2	43.115	CC, ES
HMU Fee 23-16B1 - DD - Plan #1	700.0	693.1	49.4	46.1	14.792	SF
HMU Fee 23-16B2 - DD - Plan #1	276.5	276.4	11.5	10.6	12.815	CC
HMU Fee 23-16B2 - DD - Plan #1	300.0	300.0	11.5	10.5	11.763	ES
HMU Fee 23-16B2 - DD - Plan #1	1,500.0	1,505.7	79.7	69.8	8.034	SF
HMU Fee 23-16D - DD - Plan #1	555.4	553.2	12.9	10.8	6.194	CC
HMU Fee 23-16D - DD - Plan #1	607.5	605.0	13.2	10.8	5.420	ES
HMU Fee 23-16D - DD - Plan #1	700.0	697.1	16.2	13.1	5.117	SF
HMU Fee 25-6B - DD - Plan #1	200.0	200.0	241.7	241.0	388.927	CC, ES
HMU Fee 25-6B - DD - Plan #1	1,000.0	913.1	429.4	425.3	104.881	SF
HMU Fee 25-6D - DD - Plan #1	200.0	200.0	11.0	10.4	17.663	CC, ES
HMU Fee 25-6D - DD - Plan #1	300.0	299.2	16.0	15.1	16.539	SF
MCU 26-8C (Existing) - Excel Drilling - Surveys	0.0	0.0	111.0			
MCU 26-8C (Existing) - Excel Drilling - Surveys	100.0	99.6	111.2	110.9	374.863	ES
MCU 26-8C (Existing) - Excel Drilling - Surveys	2,600.0	2,555.3	489.0	475.2	35.350	SF

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 HMU Fee 23-16C1
Project:	Mamm Creek	TVD Reference:	WELL @ 7250.0ft (Original Well Elev)
Reference Site:	(D25W)	MD Reference:	WELL @ 7250.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	HMU Fee 23-16C1	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	EDM 5000.1 US Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design (D25W) - HMU 25-3D (Existing) - Excel Drilling - Surveys													Offset Site Error:	0.0 ft
Survey Program: 238-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	62.62	49.6	95.7	107.8					
100.0	100.0	99.4	99.4	0.1	0.2	62.66	49.6	96.0	108.1	107.8	0.29	366.944 ES		
200.0	200.0	198.8	198.8	0.3	0.3	62.76	49.9	96.9	108.9	108.3	0.63	173.609		
300.0	300.0	297.8	297.8	0.5	0.5	130.45	50.4	98.3	112.1	111.2	0.97	115.244		
400.0	399.6	396.2	396.2	0.7	0.7	132.93	51.8	100.3	119.8	118.5	1.34	89.115		
500.0	498.8	493.9	493.8	1.0	0.9	136.29	54.0	102.9	132.3	130.6	1.74	76.060		
607.5	604.4	597.8	597.5	1.4	1.1	140.24	57.4	106.3	151.7	149.5	2.19	69.118		
700.0	694.8	686.5	686.1	1.8	1.3	143.52	60.9	109.8	171.6	169.0	2.58	66.414		
800.0	792.6	782.1	781.5	2.2	1.5	146.16	65.3	114.2	194.4	191.4	3.00	64.812		
900.0	890.3	877.4	876.6	2.6	1.7	148.10	70.4	119.2	218.2	214.8	3.41	63.974		
1,000.0	988.0	971.6	970.4	3.0	1.9	149.48	76.0	124.9	243.0	239.2	3.83	63.519		
1,100.0	1,085.7	1,063.9	1,062.3	3.4	2.1	150.39	82.6	131.6	269.2	264.9	4.24	63.465 SF		
1,200.0	1,183.5	1,152.9	1,150.7	3.8	2.4	151.23	88.6	139.8	297.3	292.7	4.64	64.028		
1,300.0	1,281.2	1,238.1	1,235.1	4.2	2.6	151.98	94.1	150.1	328.3	323.2	5.03	65.218		
1,400.0	1,378.9	1,317.0	1,312.9	4.6	2.9	152.71	98.4	162.1	362.3	356.9	5.40	67.104		
1,500.0	1,476.7	1,405.4	1,399.9	5.0	3.1	153.79	100.8	178.1	398.9	393.2	5.74	69.448		
1,600.0	1,574.4	1,495.3	1,488.0	5.4	3.4	155.22	99.7	195.7	437.0	431.0	6.05	72.183		
1,700.0	1,672.1	1,587.6	1,578.3	5.9	3.7	156.99	94.5	213.9	475.6	469.2	6.33	75.102		

Cathedral Energy Services

Anticollision Report

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Project:	Mamm Creek	TVD Reference:	WELL @ 7250.0ft (Original Well Elev)
Reference Site:	(D25W)	MD Reference:	WELL @ 7250.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	HMU Fee 23-16C1	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	EDM 5000.1 US Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design (D25W) - HMU 26-1C (Existing) - Baker Hughes (Inteq) - Surveys													Offset Site Error:	0.0 ft
Survey Program: 170-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance				Total Uncertainty Axis	Separation Factor	Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)				
0.0	0.0	0.0	0.0	0.0	0.0	40.54	118.4	101.2	155.8					
100.0	100.0	100.0	100.0	0.1	0.2	40.63	118.2	101.4	155.7	155.5	0.29	540.343		
173.4	173.4	173.5	173.4	0.3	0.3	40.82	117.8	101.8	155.7	155.2	0.53	294.486		
200.0	200.0	199.9	199.9	0.3	0.3	40.92	117.7	102.0	155.7	155.1	0.62	250.649		
300.0	300.0	301.4	301.4	0.5	0.5	108.92	116.9	102.9	156.6	155.6	0.98	159.284		
400.0	399.6	408.5	408.4	0.7	0.7	111.50	114.9	99.7	155.8	154.5	1.38	112.676		
500.0	498.8	511.5	511.1	1.0	0.9	115.18	111.8	92.8	154.1	152.3	1.83	84.384		
582.7	580.1	595.7	595.0	1.3	1.1	119.08	109.3	85.2	153.5	151.2	2.24	68.569		
607.5	604.4	620.9	620.0	1.4	1.1	120.34	108.7	82.5	153.5	151.2	2.36	65.076		
700.0	694.8	716.5	714.8	1.8	1.4	124.80	106.8	70.5	153.5	150.7	2.81	54.529		
800.0	792.6	819.9	816.9	2.2	1.7	129.01	104.8	54.2	151.5	148.2	3.29	46.045		
900.0	890.3	923.8	918.9	2.6	2.1	133.02	102.3	34.9	147.6	143.9	3.74	39.478		
1,000.0	988.0	1,023.7	1,016.8	3.0	2.4	137.05	99.4	14.7	142.6	138.5	4.14	34.427		
1,100.0	1,085.7	1,123.8	1,114.6	3.4	2.8	141.31	96.5	-6.0	138.0	133.5	4.50	30.647		
1,200.0	1,183.5	1,224.2	1,212.6	3.8	3.2	145.93	93.1	-27.5	133.3	128.5	4.82	27.647		
1,300.0	1,281.2	1,322.5	1,308.7	4.2	3.6	150.77	89.9	-48.2	129.9	124.8	5.11	25.422		
1,400.0	1,378.9	1,422.5	1,406.3	4.6	4.1	155.93	86.6	-69.5	127.3	122.0	5.39	23.614		
1,500.0	1,476.7	1,522.1	1,503.5	5.0	4.5	161.54	82.6	-90.9	125.6	119.9	5.70	22.048		
1,589.3	1,564.0	1,610.4	1,589.7	5.4	4.8	166.57	79.1	-110.0	125.0	118.9	6.02	20.749 CC		
1,600.0	1,574.4	1,621.0	1,600.0	5.4	4.9	167.17	78.7	-112.3	125.0	118.9	6.07	20.603 ES		
1,700.0	1,672.1	1,720.1	1,696.7	5.9	5.3	172.69	75.0	-133.4	125.9	119.4	6.52	19.294		
1,800.0	1,769.9	1,818.8	1,793.1	6.3	5.7	178.06	71.3	-154.3	128.1	121.0	7.10	18.047		
1,900.0	1,867.6	1,917.5	1,889.6	6.7	6.1	-176.74	67.3	-174.7	132.0	124.2	7.79	16.951		
2,000.0	1,965.3	2,017.8	1,987.6	7.1	6.5	-171.91	63.5	-195.5	136.7	128.1	8.59	15.917		
2,100.0	2,063.1	2,116.3	2,084.0	7.5	6.9	-167.46	59.8	-216.2	142.1	132.6	9.46	15.023		
2,200.0	2,160.8	2,216.1	2,181.4	7.9	7.3	-163.29	56.0	-237.0	148.4	138.0	10.41	14.259		
2,300.0	2,258.5	2,316.2	2,279.0	8.3	7.8	-159.28	52.1	-258.7	154.9	143.5	11.43	13.555		
2,400.0	2,356.3	2,414.9	2,375.4	8.7	8.2	-155.84	48.7	-279.7	162.1	149.7	12.42	13.049		
2,500.0	2,454.0	2,514.7	2,472.9	9.2	8.6	-152.60	45.1	-301.0	169.9	156.4	13.46	12.619		
2,600.0	2,551.7	2,614.6	2,570.1	9.6	9.1	-149.30	41.2	-323.5	177.7	163.1	14.56	12.203		
2,700.0	2,649.5	2,712.6	2,665.6	10.0	9.5	-146.37	37.4	-345.5	186.1	170.4	15.62	11.910		
2,800.0	2,747.2	2,809.6	2,760.2	10.4	9.9	-143.82	32.9	-366.4	196.0	179.3	16.64	11.775		
2,900.0	2,844.9	2,908.0	2,856.5	10.8	10.3	-141.76	28.2	-386.4	207.0	189.4	17.61	11.755		
3,000.0	2,942.7	3,007.4	2,953.6	11.2	10.7	-139.87	23.3	-406.6	218.3	199.7	18.57	11.752		
3,100.0	3,040.4	3,106.6	3,050.6	11.6	11.1	-138.05	18.4	-427.3	229.7	210.1	19.55	11.751		
3,200.0	3,138.1	3,206.7	3,148.1	12.1	11.6	-136.23	13.3	-448.9	241.1	220.6	20.53	11.743		
3,300.0	3,235.9	3,306.0	3,245.0	12.5	12.0	-134.59	8.5	-470.4	252.4	230.9	21.50	11.742 SF		
3,400.0	3,333.6	3,403.9	3,340.5	12.9	12.4	-133.21	3.8	-491.1	264.2	241.7	22.41	11.786		
3,500.0	3,431.3	3,503.5	3,438.0	13.3	12.8	-132.12	-0.8	-511.2	276.2	252.9	23.29	11.860		
3,600.0	3,529.1	3,604.7	3,536.9	13.7	13.2	-131.00	-5.3	-532.3	287.9	263.7	24.20	11.894		
3,700.0	3,626.8	3,701.1	3,630.8	14.1	13.6	-129.82	-10.0	-553.3	299.8	274.7	25.12	11.935		
3,800.0	3,724.5	3,801.6	3,729.0	14.6	14.1	-128.83	-14.7	-574.4	311.9	285.9	26.00	11.999		
3,900.0	3,822.3	3,898.2	3,823.4	15.0	14.5	-128.09	-19.3	-594.0	324.4	297.6	26.83	12.090		
4,000.0	3,920.0	3,996.1	3,919.1	15.4	14.9	-127.34	-24.7	-613.8	337.6	309.9	27.68	12.197		
4,100.0	4,017.7	4,098.9	4,019.6	15.8	15.3	-126.57	-30.0	-635.1	350.4	321.9	28.56	12.268		
4,200.0	4,115.5	4,201.3	4,119.4	16.2	15.8	-125.64	-34.4	-657.8	362.1	332.6	29.49	12.278		
4,300.0	4,213.2	4,300.9	4,216.3	16.6	16.2	-124.71	-38.5	-680.6	373.6	343.2	30.40	12.287		
4,400.0	4,310.9	4,398.0	4,310.9	17.0	16.6	-123.97	-42.2	-702.0	385.1	353.8	31.27	12.313		
4,500.0	4,408.7	4,493.8	4,404.2	17.5	17.0	-123.25	-47.0	-723.1	397.7	365.5	32.14	12.373		
4,600.0	4,506.4	4,592.3	4,500.0	17.9	17.5	-122.53	-52.3	-745.0	410.8	377.7	33.02	12.438		
4,700.0	4,604.1	4,692.2	4,597.3	18.3	17.9	-121.84	-57.6	-767.2	423.9	390.0	33.91	12.501		
4,800.0	4,701.9	4,797.2	4,699.8	18.7	18.4	-121.28	-62.4	-789.8	436.3	401.6	34.77	12.548		

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 HMU Fee 23-16C1
Project:	Mamm Creek	TVD Reference:	WELL @ 7250.0ft (Original Well Elev)
Reference Site:	(D25W)	MD Reference:	WELL @ 7250.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	HMU Fee 23-16C1	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	EDM 5000.1 US Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design (D25W) - HMU 26-1C (Existing) - Baker Hughes (Inteq) - Surveys													Offset Site Error:	0.0 ft
Survey Program: 170-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance							
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre +N/-S	+E/-W	Between Centres	Between Ellipses	Total Uncertainty Axis	Separation Factor	Warning	
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	(ft)	(ft)	(ft)	(ft)				
4,900.0	4,799.6	4,896.1	4,796.2	19.1	18.8	-120.76	-66.0	-811.3	447.9	412.2	35.65	12.563		
5,000.0	4,897.3	5,000.3	4,897.5	19.5	19.3	-120.03	-69.8	-835.6	459.3	422.7	36.56	12.561		
5,100.0	4,995.1	5,099.2	4,993.8	19.9	19.7	-119.47	-72.6	-858.0	470.0	432.6	37.43	12.556		
5,200.0	5,092.8	5,200.5	5,092.6	20.4	20.1	-119.03	-75.2	-880.2	480.7	442.4	38.27	12.559		
5,300.0	5,190.5	5,291.7	5,181.8	20.8	20.5	-118.79	-78.1	-898.9	492.0	453.0	39.04	12.604		

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well HMU Fee 23-16C1
Project:	Mamm Creek	TVD Reference:	WELL @ 7250.0ft (Original Well Elev)
Reference Site:	(D25W)	MD Reference:	WELL @ 7250.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	HMU Fee 23-16C1	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	EDM 5000.1 US Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design (D25W) - HMU Federal 24-13A1 - 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	50.23	160.2	192.5	250.5					
100.0	100.0	100.0	100.0	0.1	0.1	50.23	160.2	192.5	250.5	250.2	0.27	919.878		
200.0	200.0	200.0	200.0	0.3	0.3	50.23	160.2	192.5	250.5	249.8	0.62	403.093 CC, ES		
300.0	300.0	291.2	291.2	0.5	0.5	116.94	162.4	192.8	253.4	252.4	0.97	262.425		
400.0	399.6	382.0	381.7	0.7	0.7	117.12	168.8	193.5	262.1	260.7	1.35	193.641		
500.0	498.8	471.9	470.9	1.0	0.9	117.37	179.4	194.8	276.6	274.8	1.82	152.377		
607.5	604.4	567.5	565.2	1.4	1.2	117.66	195.2	196.6	298.5	296.1	2.41	123.909		
700.0	694.8	657.3	653.5	1.8	1.5	118.55	212.0	198.6	320.0	317.1	2.97	107.600		
800.0	792.6	754.5	748.9	2.2	1.9	119.39	230.2	200.7	343.3	339.8	3.60	95.425		
900.0	890.3	851.6	844.3	2.6	2.2	120.12	248.3	202.9	366.7	362.5	4.23	86.686		
1,000.0	988.0	948.7	939.6	3.0	2.6	120.76	266.5	205.0	390.2	385.3	4.87	80.146		
1,100.0	1,085.7	1,045.9	1,035.0	3.4	2.9	121.33	284.6	207.1	413.6	408.1	5.51	75.083		
1,200.0	1,183.5	1,143.0	1,130.4	3.8	3.3	121.84	302.8	209.3	437.2	431.0	6.15	71.057		
1,300.0	1,281.2	1,240.1	1,225.8	4.2	3.7	122.30	321.0	211.4	460.7	453.9	6.80	67.782		
1,400.0	1,378.9	1,337.2	1,321.2	4.6	4.0	122.71	339.1	213.5	484.3	476.8	7.44	65.068 SF		

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well HMU Fee 23-16C1
Project:	Mamm Creek	TVD Reference:	WELL @ 7250.0ft (Original Well Elev)
Reference Site:	(D25W)	MD Reference:	WELL @ 7250.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	HMU Fee 23-16C1	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	EDM 5000.1 US Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design (D25W) - HMU Federal 24-13D1 - 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	52.52	155.8	203.2	256.1					
100.0	100.0	100.0	100.0	0.1	0.1	52.52	155.8	203.2	256.1	255.8	0.27	940.572		
200.0	200.0	200.0	200.0	0.3	0.3	52.52	155.8	203.2	256.1	255.5	0.62	412.161	CC, ES	
300.0	300.0	291.3	291.3	0.5	0.5	119.21	158.0	203.5	259.0	258.1	0.97	268.293		
400.0	399.6	382.1	381.8	0.7	0.7	119.32	164.4	204.3	267.9	266.6	1.35	197.967		
500.0	498.8	473.7	472.8	1.0	0.9	119.50	175.1	205.7	282.5	280.7	1.81	156.249		
607.5	604.4	579.1	577.2	1.4	1.2	120.29	189.1	207.5	302.3	299.9	2.40	126.196		
700.0	694.8	669.5	666.8	1.8	1.4	121.70	201.0	209.0	320.8	317.9	2.92	109.877		
800.0	792.6	767.1	763.6	2.2	1.7	123.05	214.0	210.6	341.0	337.5	3.49	97.616		
900.0	890.3	864.8	860.3	2.6	2.0	124.25	226.9	212.3	361.4	357.3	4.07	88.787		
1,000.0	988.0	962.4	957.1	3.0	2.3	125.32	239.8	213.9	381.8	377.2	4.65	82.164		
1,100.0	1,085.7	1,060.0	1,053.9	3.4	2.6	126.28	252.7	215.5	402.4	397.2	5.22	77.030		
1,200.0	1,183.5	1,157.7	1,150.7	3.8	2.8	127.15	265.6	217.2	423.1	417.3	5.80	72.944		
1,300.0	1,281.2	1,255.3	1,247.4	4.2	3.1	127.93	278.5	218.8	443.9	437.5	6.38	69.621		
1,400.0	1,378.9	1,353.0	1,344.2	4.6	3.4	128.65	291.4	220.5	464.8	457.8	6.95	66.870		
1,500.0	1,476.7	1,450.6	1,441.0	5.0	3.7	129.30	304.4	222.1	485.7	478.1	7.52	64.557	SF	

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well HMU Fee 23-16C1
Project:	Mamm Creek	TVD Reference:	WELL @ 7250.0ft (Original Well Elev)
Reference Site:	(D25W)	MD Reference:	WELL @ 7250.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	HMU Fee 23-16C1	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	EDM 5000.1 US Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design (D25W) - HMU Federal 24-13D2 - DD - Plan #1													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Total Uncertainty Axis	Separation Factor	Warning			
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)		Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)						
0.0	0.0	0.0	0.0	0.0	0.0	54.02	144.7	199.3	246.3					
100.0	100.0	100.0	100.0	0.1	0.1	54.02	144.7	199.3	246.3	0.27	904.576			
200.0	200.0	200.0	200.0	0.3	0.3	54.02	144.7	199.3	246.3	0.62	396.388 CC, ES			
300.0	300.0	300.0	300.0	0.5	0.5	121.16	144.7	199.3	247.6	0.98	253.625			
400.0	399.6	399.6	399.6	0.7	0.7	122.58	144.7	199.3	251.8	1.36	185.524			
500.0	498.8	498.8	498.8	1.0	0.8	124.81	144.7	199.3	259.1	1.78	145.739			
607.5	604.4	604.4	604.4	1.4	1.0	127.93	144.7	199.3	270.9	2.28	118.959			
700.0	694.8	694.8	694.8	1.8	1.2	131.02	144.7	199.3	283.6	2.70	104.908			
800.0	792.6	792.6	792.6	2.2	1.3	134.05	144.7	199.3	298.1	3.15	94.621			
900.0	890.3	890.3	890.3	2.6	1.5	136.81	144.7	199.3	313.3	3.58	87.460			
1,000.0	988.0	988.0	988.0	3.0	1.7	139.31	144.7	199.3	329.2	4.00	82.297			
1,100.0	1,085.7	1,085.7	1,085.7	3.4	1.9	141.57	144.7	199.3	345.7	4.41	78.469			
1,200.0	1,183.5	1,183.5	1,183.5	3.8	2.0	143.64	144.7	199.3	362.7	4.80	75.567			
1,300.0	1,281.2	1,281.2	1,281.2	4.2	2.2	145.52	144.7	199.3	380.1	5.18	73.326			
1,400.0	1,378.9	1,378.9	1,378.9	4.6	2.4	147.23	144.7	199.3	397.8	5.56	71.570			
1,500.0	1,476.7	1,476.7	1,476.7	5.0	2.5	148.80	144.7	199.3	415.9	5.93	70.175			
1,600.0	1,574.4	1,574.4	1,574.4	5.4	2.7	150.24	144.7	199.3	434.3	6.29	69.054			
1,700.0	1,672.1	1,672.1	1,672.1	5.9	2.9	151.56	144.7	199.3	452.9	6.65	68.146			
1,800.0	1,769.9	1,769.9	1,769.9	6.3	3.1	152.78	144.7	199.3	471.7	7.00	67.402			
1,900.0	1,867.6	1,867.6	1,867.6	6.7	3.2	153.91	144.7	199.3	490.7	7.35	66.788 SF			

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well HMU Fee 23-16C1
Project:	Mamm Creek	TVD Reference:	WELL @ 7250.0ft (Original Well Elev)
Reference Site:	(D25W)	MD Reference:	WELL @ 7250.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	HMU Fee 23-16C1	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	EDM 5000.1 US Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design (D25W) - HMU Federal 24-14A1 - 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 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	56.23	140.6	210.3	253.0					
100.0	100.0	100.0	100.0	0.1	0.1	56.23	140.6	210.3	253.0	252.7	0.27	929.167		
200.0	200.0	200.0	200.0	0.3	0.3	56.23	140.6	210.3	253.0	252.4	0.62	407.163	CC, ES	
300.0	300.0	288.4	288.4	0.5	0.5	123.12	142.1	211.7	256.7	255.7	0.96	268.330		
400.0	399.6	376.0	375.7	0.7	0.7	123.80	146.5	215.9	267.7	266.4	1.32	203.171		
500.0	498.8	461.9	461.1	1.0	0.9	124.77	153.5	222.7	286.2	284.5	1.72	166.239		
607.5	604.4	551.5	549.5	1.4	1.2	125.95	163.9	232.7	314.2	312.0	2.22	141.804		
700.0	694.8	626.5	622.9	1.8	1.5	127.44	174.8	243.2	343.8	341.1	2.65	129.533		
800.0	792.6	700.0	694.3	2.2	1.8	128.55	187.5	255.4	379.5	376.4	3.12	121.514		
900.0	890.3	782.2	773.2	2.6	2.3	129.42	204.1	271.3	418.9	415.3	3.63	115.402		
1,000.0	988.0	856.5	843.7	3.0	2.7	129.94	221.2	287.8	461.7	457.6	4.13	111.688	SF	

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well HMU Fee 23-16C1
Project:	Mamm Creek	TVD Reference:	WELL @ 7250.0ft (Original Well Elev)
Reference Site:	(D25W)	MD Reference:	WELL @ 7250.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	HMU Fee 23-16C1	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	EDM 5000.1 US Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design (D25W) - HMU Federal 24-14A2 - 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	57.89	129.5	206.4	243.6					
100.0	100.0	100.0	100.0	0.1	0.1	57.89	129.5	206.4	243.6	243.4	0.27	894.861		
200.0	200.0	200.0	200.0	0.3	0.3	57.89	129.5	206.4	243.6	243.0	0.62	392.130 CC, ES		
300.0	300.0	288.8	288.8	0.5	0.5	124.78	131.0	207.8	247.4	246.4	0.96	258.503		
400.0	399.6	376.8	376.5	0.7	0.7	125.45	135.3	212.1	258.7	257.3	1.32	196.274		
500.0	498.8	463.0	462.2	1.0	0.9	126.41	142.3	219.1	277.4	275.7	1.72	161.317		
607.5	604.4	553.0	551.0	1.4	1.2	127.56	152.6	229.3	305.9	303.7	2.21	138.404		
700.0	694.8	628.2	624.6	1.8	1.5	129.01	163.4	240.0	335.8	333.2	2.65	126.954		
800.0	792.6	700.0	694.3	2.2	1.8	130.04	175.7	252.2	372.0	368.9	3.11	119.704		
900.0	890.3	784.3	775.2	2.6	2.3	130.87	192.5	268.8	411.7	408.1	3.62	113.854		
1,000.0	988.0	863.7	850.5	3.0	2.7	131.36	210.4	286.6	454.7	450.6	4.12	110.282		
1,100.0	1,085.7	953.5	935.4	3.4	3.3	131.78	231.3	307.3	498.6	493.9	4.66	106.906 SF		

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well HMU Fee 23-16C1
Project:	Mamm Creek	TVD Reference:	WELL @ 7250.0ft (Original Well Elev)
Reference Site:	(D25W)	MD Reference:	WELL @ 7250.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	HMU Fee 23-16C1	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	EDM 5000.1 US Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design (D25W) - HMU Federal 24-14A3 - 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	60.21	124.4	217.4	250.5					
100.0	100.0	100.0	100.0	0.1	0.1	60.21	124.4	217.4	250.5	250.2	0.27	919.914		
200.0	200.0	200.0	200.0	0.3	0.3	60.21	124.4	217.4	250.5	249.8	0.62	403.109 CC, ES		
300.0	300.0	288.4	288.4	0.5	0.5	127.09	125.8	218.9	254.3	253.4	0.96	266.046		
400.0	399.6	376.0	375.7	0.7	0.7	127.76	129.7	223.5	265.9	264.6	1.31	202.422		
500.0	498.8	461.8	460.9	1.0	0.9	128.70	136.1	231.0	285.1	283.4	1.71	166.888		
607.5	604.4	551.1	549.1	1.4	1.2	129.83	145.4	241.8	314.3	312.1	2.19	143.773		
700.0	694.8	625.6	622.1	1.8	1.5	131.28	155.2	253.2	344.9	342.3	2.61	132.297		
800.0	792.6	700.0	694.3	2.2	1.8	132.37	166.8	266.8	381.8	378.7	3.06	124.798		
900.0	890.3	785.1	776.0	2.6	2.2	133.26	182.2	284.7	422.1	418.6	3.54	119.088		
1,000.0	988.0	876.0	863.1	3.0	2.7	134.01	199.2	304.6	463.4	459.3	4.05	114.441 SF		

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well HMU Fee 23-16C1
Project:	Mamm Creek	TVD Reference:	WELL @ 7250.0ft (Original Well Elev)
Reference Site:	(D25W)	MD Reference:	WELL @ 7250.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	HMU Fee 23-16C1	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	EDM 5000.1 US Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design (D25W) - HMU Federal 25-3C - 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	64.04	109.3	224.4	249.6					
100.0	100.0	100.0	100.0	0.1	0.1	64.04	109.3	224.4	249.6	249.3	0.27	916.779		
200.0	200.0	200.0	200.0	0.3	0.3	64.04	109.3	224.4	249.6	249.0	0.62	401.735 CC, ES		
300.0	300.0	300.0	300.0	0.5	0.5	131.10	109.3	224.4	251.3	250.4	0.97	257.809		
400.0	399.6	399.6	399.6	0.7	0.7	132.30	109.3	224.4	256.6	255.2	1.35	190.365		
500.0	498.8	498.8	498.8	1.0	0.8	134.18	109.3	224.4	265.5	263.8	1.75	151.717		
607.5	604.4	604.4	604.4	1.4	1.0	136.77	109.3	224.4	279.8	277.6	2.22	126.120		
700.0	694.8	694.8	694.8	1.8	1.2	139.36	109.3	224.4	294.5	291.9	2.62	112.501		
800.0	792.6	792.6	792.6	2.2	1.3	141.88	109.3	224.4	311.0	308.0	3.04	102.348		
900.0	890.3	890.3	890.3	2.6	1.5	144.14	109.3	224.4	328.1	324.6	3.45	95.145		
1,000.0	988.0	988.0	988.0	3.0	1.7	146.18	109.3	224.4	345.6	341.7	3.85	89.846		
1,100.0	1,085.7	1,075.8	1,075.8	3.4	1.8	148.03	108.3	225.6	364.6	360.4	4.22	86.440		
1,200.0	1,183.5	1,160.5	1,160.3	3.8	2.0	150.05	105.0	229.7	387.2	382.6	4.57	84.729		
1,300.0	1,281.2	1,244.1	1,243.4	4.2	2.2	152.22	99.5	236.5	413.4	408.5	4.90	84.303 SF		
1,400.0	1,378.9	1,337.1	1,335.7	4.6	2.4	154.53	92.1	245.8	441.8	436.6	5.24	84.329		
1,500.0	1,476.7	1,431.4	1,429.2	5.0	2.6	156.61	84.5	255.1	470.8	465.3	5.57	84.494		

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well HMU Fee 23-16C1
Project:	Mamm Creek	TVD Reference:	WELL @ 7250.0ft (Original Well Elev)
Reference Site:	(D25W)	MD Reference:	WELL @ 7250.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	HMU Fee 23-16C1	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	EDM 5000.1 US Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design (D25W) - HMU Federal 26-1B - 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	155.04	-15.2	7.1	16.7					
100.0	100.0	100.0	100.0	0.1	0.1	155.04	-15.2	7.1	16.7	16.5	0.27	61.480		
200.0	200.0	200.0	200.0	0.3	0.3	155.04	-15.2	7.1	16.7	16.1	0.62	26.941	CC, ES	
300.0	300.0	300.5	300.5	0.5	0.5	-136.94	-14.7	4.5	17.2	16.2	0.98	17.509		
400.0	399.6	401.0	400.6	0.7	0.7	-133.24	-13.3	-3.3	18.5	17.1	1.39	13.321		
500.0	498.8	501.4	500.2	1.0	1.0	-128.19	-10.9	-16.3	20.9	19.0	1.91	10.947		
607.5	604.4	609.1	606.1	1.4	1.4	-122.96	-7.3	-35.7	24.9	22.3	2.64	9.424		
700.0	694.8	701.6	696.7	1.8	1.7	-121.59	-4.0	-53.6	29.3	26.0	3.30	8.893		
800.0	792.6	801.5	794.6	2.2	2.1	-120.52	-0.5	-73.0	34.1	30.1	4.03	8.474		
900.0	890.3	901.4	892.5	2.6	2.5	-119.71	3.1	-92.4	38.9	34.2	4.77	8.165		
1,000.0	988.0	1,001.2	990.5	3.0	2.9	-119.07	6.6	-111.7	43.8	38.2	5.52	7.929		
1,100.0	1,085.7	1,101.1	1,088.4	3.4	3.3	-118.57	10.2	-131.1	48.6	42.3	6.27	7.744		
1,200.0	1,183.5	1,201.0	1,186.3	3.8	3.6	-118.15	13.8	-150.5	53.4	46.4	7.03	7.595		
1,300.0	1,281.2	1,300.9	1,284.2	4.2	4.0	-117.81	17.3	-169.9	58.2	50.4	7.79	7.473		
1,400.0	1,378.9	1,400.8	1,382.1	4.6	4.4	-117.51	20.9	-189.3	63.1	54.5	8.55	7.372		
1,500.0	1,476.7	1,500.6	1,480.1	5.0	4.8	-117.26	24.4	-208.6	67.9	58.6	9.32	7.286		
1,600.0	1,574.4	1,600.5	1,578.0	5.4	5.2	-117.04	28.0	-228.0	72.7	62.6	10.08	7.213		
1,700.0	1,672.1	1,700.4	1,675.9	5.9	5.6	-116.85	31.5	-247.4	77.5	66.7	10.85	7.149		
1,800.0	1,769.9	1,800.3	1,773.8	6.3	6.0	-116.68	35.1	-266.8	82.4	70.8	11.61	7.094		
1,900.0	1,867.6	1,900.2	1,871.7	6.7	6.4	-116.53	38.7	-286.2	87.2	74.8	12.38	7.045		
2,000.0	1,965.3	2,000.1	1,969.7	7.1	6.8	-116.40	42.2	-305.5	92.0	78.9	13.15	7.002		
2,100.0	2,063.1	2,099.9	2,067.6	7.5	7.1	-116.28	45.8	-324.9	96.9	83.0	13.91	6.963		
2,200.0	2,160.8	2,199.8	2,165.5	7.9	7.5	-116.17	49.3	-344.3	101.7	87.0	14.68	6.928		
2,300.0	2,258.5	2,299.7	2,263.4	8.3	7.9	-116.07	52.9	-363.7	106.5	91.1	15.45	6.896		
2,400.0	2,356.3	2,399.6	2,361.3	8.7	8.3	-115.98	56.5	-383.1	111.4	95.2	16.22	6.868		
2,500.0	2,454.0	2,499.5	2,459.3	9.2	8.7	-115.90	60.0	-402.4	116.2	99.2	16.99	6.842		
2,600.0	2,551.7	2,599.4	2,557.2	9.6	9.1	-115.82	63.6	-421.8	121.1	103.3	17.76	6.818		
2,700.0	2,649.5	2,699.2	2,655.1	10.0	9.5	-115.75	67.1	-441.2	125.9	107.4	18.52	6.796		
2,800.0	2,747.2	2,799.1	2,753.0	10.4	9.9	-115.68	70.7	-460.6	130.7	111.4	19.29	6.776		
2,900.0	2,844.9	2,899.0	2,850.9	10.8	10.3	-115.62	74.3	-480.0	135.6	115.5	20.06	6.757		
3,000.0	2,942.7	2,998.9	2,948.9	11.2	10.7	-115.57	77.8	-499.3	140.4	119.6	20.83	6.740		
3,100.0	3,040.4	3,098.8	3,046.8	11.6	11.1	-115.51	81.4	-518.7	145.2	123.6	21.60	6.724		
3,200.0	3,138.1	3,198.7	3,144.7	12.1	11.4	-115.46	84.9	-538.1	150.1	127.7	22.37	6.708		
3,300.0	3,235.9	3,298.5	3,242.6	12.5	11.8	-115.42	88.5	-557.5	154.9	131.8	23.14	6.694		
3,400.0	3,333.6	3,398.4	3,340.5	12.9	12.2	-115.37	92.1	-576.9	159.7	135.8	23.91	6.681		
3,500.0	3,431.3	3,498.3	3,438.5	13.3	12.6	-115.33	95.6	-596.3	164.6	139.9	24.68	6.669		
3,600.0	3,529.1	3,598.2	3,536.4	13.7	13.0	-115.29	99.2	-615.6	169.4	144.0	25.45	6.657		
3,700.0	3,626.8	3,698.1	3,634.3	14.1	13.4	-115.26	102.7	-635.0	174.3	148.0	26.22	6.646		
3,800.0	3,724.5	3,798.0	3,732.2	14.6	13.8	-115.22	106.3	-654.4	179.1	152.1	26.99	6.636		
3,900.0	3,822.3	3,897.8	3,830.1	15.0	14.2	-115.19	109.8	-673.8	183.9	156.2	27.76	6.626		
4,000.0	3,920.0	3,997.7	3,928.1	15.4	14.6	-115.16	113.4	-693.2	188.8	160.2	28.53	6.617		
4,100.0	4,017.7	4,097.6	4,026.0	15.8	15.0	-115.13	117.0	-712.5	193.6	164.3	29.30	6.608		
4,200.0	4,115.5	4,197.5	4,123.9	16.2	15.4	-115.10	120.5	-731.9	198.4	168.4	30.07	6.600		
4,300.0	4,213.2	4,297.4	4,221.8	16.6	15.7	-115.07	124.1	-751.3	203.3	172.4	30.84	6.592		
4,400.0	4,310.9	4,397.3	4,319.7	17.0	16.1	-115.05	127.6	-770.7	208.1	176.5	31.61	6.584		
4,500.0	4,408.7	4,497.1	4,417.7	17.5	16.5	-115.02	131.2	-790.1	212.9	180.6	32.38	6.577		
4,600.0	4,506.4	4,597.0	4,515.6	17.9	16.9	-115.00	134.8	-809.4	217.8	184.6	33.15	6.570		
4,700.0	4,604.1	4,696.9	4,613.5	18.3	17.3	-114.98	138.3	-828.8	222.6	188.7	33.92	6.564		
4,800.0	4,701.9	4,796.8	4,711.4	18.7	17.7	-114.96	141.9	-848.2	227.5	192.8	34.69	6.557		
4,900.0	4,799.6	4,896.7	4,809.3	19.1	18.1	-114.94	145.4	-867.6	232.3	196.8	35.46	6.551		
5,000.0	4,897.3	4,996.5	4,907.2	19.5	18.5	-114.92	149.0	-887.0	237.1	200.9	36.23	6.546		
5,100.0	4,995.1	5,096.4	5,005.2	19.9	18.9	-114.90	152.6	-906.3	242.0	205.0	37.00	6.540		

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 HMU Fee 23-16C1
Project:	Mamm Creek	TVD Reference:	WELL @ 7250.0ft (Original Well Elev)
Reference Site:	(D25W)	MD Reference:	WELL @ 7250.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	HMU Fee 23-16C1	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	EDM 5000.1 US Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design (D25W) - HMU Federal 26-1B - 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		
5,200.0	5,092.8	5,196.3	5,103.1	20.4	19.3	-114.88	156.1	-925.7	246.8	209.0	37.77	6.535		
5,300.0	5,190.5	5,296.2	5,201.0	20.8	19.7	-114.86	159.7	-945.1	251.6	213.1	38.54	6.530		
5,400.0	5,288.3	5,396.1	5,298.9	21.2	20.1	-114.85	163.2	-964.5	256.5	217.2	39.31	6.525		
5,500.0	5,386.0	5,496.0	5,396.8	21.6	20.4	-114.83	166.8	-983.9	261.3	221.2	40.08	6.520		
5,600.0	5,483.7	5,595.8	5,494.8	22.0	20.8	-114.82	170.3	-1,003.2	266.2	225.3	40.85	6.516		
5,700.0	5,581.5	5,695.7	5,592.7	22.4	21.2	-114.80	173.9	-1,022.6	271.0	229.4	41.62	6.511		
5,800.0	5,679.2	5,795.6	5,690.6	22.8	21.6	-114.79	177.5	-1,042.0	275.8	233.4	42.39	6.507		
5,900.0	5,776.9	5,895.5	5,788.5	23.3	22.0	-114.77	181.0	-1,061.4	280.7	237.5	43.16	6.503		
6,000.0	5,874.7	5,995.4	5,886.4	23.7	22.4	-114.76	184.6	-1,080.8	285.5	241.6	43.93	6.499		
6,100.0	5,972.4	6,095.3	5,984.4	24.1	22.8	-114.75	188.1	-1,100.2	290.3	245.6	44.70	6.495		
6,200.0	6,070.1	6,195.1	6,082.3	24.5	23.2	-114.73	191.7	-1,119.5	295.2	249.7	45.47	6.492		
6,300.0	6,167.9	6,295.0	6,180.2	24.9	23.6	-114.72	195.3	-1,138.9	300.0	253.8	46.24	6.488		
6,317.0	6,184.4	6,312.0	6,196.8	25.0	23.6	-114.72	195.9	-1,142.2	300.8	254.5	46.37	6.488		
6,400.0	6,265.8	6,394.0	6,277.3	25.3	23.9	-114.63	198.7	-1,157.8	304.4	257.4	46.99	6.478		
6,500.0	6,364.4	6,491.8	6,373.7	25.6	24.3	-114.48	201.7	-1,173.8	308.0	260.4	47.63	6.467		
6,600.0	6,463.6	6,589.6	6,470.7	25.9	24.5	-114.36	204.0	-1,186.5	310.8	262.6	48.16	6.454		
6,700.0	6,563.1	6,687.5	6,568.1	26.1	24.7	-114.25	205.7	-1,196.0	312.8	264.3	48.58	6.440		
6,800.0	6,662.9	6,785.4	6,665.8	26.2	24.9	-114.16	206.9	-1,202.2	314.1	265.3	48.89	6.425		
6,900.0	6,762.8	6,883.3	6,763.6	26.3	25.0	-114.09	207.4	-1,205.1	314.7	265.6	49.10	6.408		
6,928.2	6,791.0	6,910.9	6,791.2	26.3	25.0	179.29	207.4	-1,205.3	314.7	265.5	49.15	6.402		
6,956.0	6,818.8	6,938.5	6,818.8	26.4	25.0	179.29	207.4	-1,205.3	314.7	265.5	49.20	6.396		
7,000.0	6,862.8	6,982.5	6,862.8	26.4	25.0	179.29	207.4	-1,205.3	314.7	265.4	49.28	6.386		
7,100.0	6,962.8	7,082.5	6,962.8	26.5	25.1	179.29	207.4	-1,205.3	314.7	265.2	49.45	6.363		
7,200.0	7,062.8	7,182.5	7,062.8	26.6	25.2	179.29	207.4	-1,205.3	314.7	265.1	49.63	6.341		
7,300.0	7,162.8	7,282.5	7,162.8	26.6	25.3	179.29	207.4	-1,205.3	314.7	264.9	49.80	6.318		
7,400.0	7,262.8	7,382.5	7,262.8	26.7	25.4	179.29	207.4	-1,205.3	314.7	264.7	49.98	6.296		
7,500.0	7,362.8	7,482.5	7,362.8	26.8	25.5	179.29	207.4	-1,205.3	314.7	264.5	50.16	6.273		
7,600.0	7,462.8	7,582.5	7,462.8	26.9	25.6	179.29	207.4	-1,205.3	314.7	264.3	50.34	6.251		
7,700.0	7,562.8	7,682.5	7,562.8	27.0	25.7	179.29	207.4	-1,205.3	314.7	264.2	50.53	6.228		
7,800.0	7,662.8	7,782.5	7,662.8	27.1	25.8	179.29	207.4	-1,205.3	314.7	264.0	50.71	6.205		
7,900.0	7,762.8	7,882.5	7,762.8	27.1	25.8	179.29	207.4	-1,205.3	314.7	263.8	50.90	6.182		
8,000.0	7,862.8	7,982.5	7,862.8	27.2	25.9	179.29	207.4	-1,205.3	314.7	263.6	51.09	6.159		
8,100.0	7,962.8	8,082.5	7,962.8	27.3	26.0	179.29	207.4	-1,205.3	314.7	263.4	51.28	6.136		
8,200.0	8,062.8	8,182.5	8,062.8	27.4	26.1	179.29	207.4	-1,205.3	314.7	263.2	51.47	6.113		
8,300.0	8,162.8	8,282.5	8,162.8	27.5	26.2	179.29	207.4	-1,205.3	314.7	263.0	51.67	6.090		
8,400.0	8,262.8	8,382.5	8,262.8	27.6	26.3	179.29	207.4	-1,205.3	314.7	262.8	51.86	6.067		
8,500.0	8,362.8	8,482.5	8,362.8	27.7	26.4	179.29	207.4	-1,205.3	314.7	262.6	52.06	6.044		
8,600.0	8,462.8	8,582.5	8,462.8	27.8	26.5	179.29	207.4	-1,205.3	314.7	262.4	52.26	6.021		
8,700.0	8,562.8	8,682.5	8,562.8	27.9	26.6	179.29	207.4	-1,205.3	314.7	262.2	52.46	5.998		
8,800.0	8,662.8	8,782.5	8,662.8	28.0	26.7	179.29	207.4	-1,205.3	314.7	262.0	52.66	5.975		
8,900.0	8,762.8	8,882.5	8,762.8	28.1	26.8	179.29	207.4	-1,205.3	314.7	261.8	52.87	5.952		
9,000.0	8,862.8	8,982.5	8,862.8	28.2	26.9	179.29	207.4	-1,205.3	314.7	261.6	53.07	5.929		
9,097.2	8,960.0	9,079.7	8,960.0	28.3	27.0	179.29	207.4	-1,205.3	314.7	261.4	53.27	5.907		
9,100.0	8,962.8	9,082.5	8,962.8	28.3	27.0	179.29	207.4	-1,205.3	314.7	261.4	53.28	5.906		
9,200.0	9,062.8	9,182.5	9,062.8	28.4	27.1	179.29	207.4	-1,205.3	314.7	261.2	53.49	5.883		
9,300.0	9,162.8	9,282.5	9,162.8	28.5	27.2	179.29	207.4	-1,205.3	314.7	261.0	53.70	5.860		
9,397.2	9,260.0	9,379.7	9,260.0	28.6	27.3	179.29	207.4	-1,205.3	314.7	260.8	53.90	5.838 SF		

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 HMU Fee 23-16C1
Project:	Mamm Creek	TVD Reference:	WELL @ 7250.0ft (Original Well Elev)
Reference Site:	(D25W)	MD Reference:	WELL @ 7250.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	HMU Fee 23-16C1	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	EDM 5000.1 US Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design (D25W) - HMU Federal 26-1D - 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	138.07	-19.2	17.3	25.8					
100.0	100.0	100.0	100.0	0.1	0.1	138.07	-19.2	17.3	25.8	25.6	0.27	94.895		
200.0	200.0	200.0	200.0	0.3	0.3	138.07	-19.2	17.3	25.8	25.2	0.62	41.583 CC, ES		
300.0	300.0	300.3	300.2	0.5	0.5	-152.23	-20.5	14.9	27.6	26.6	0.98	28.176		
400.0	399.6	400.2	399.9	0.7	0.7	-145.12	-24.2	8.0	33.3	32.0	1.39	23.983		
500.0	498.8	499.6	498.4	1.0	1.0	-137.59	-30.3	-3.4	43.6	41.7	1.90	22.888 SF		
607.5	604.4	605.7	603.0	1.4	1.3	-132.76	-38.7	-19.1	59.5	57.0	2.55	23.307		
700.0	694.8	696.9	692.9	1.8	1.6	-131.87	-45.9	-32.8	75.2	72.0	3.14	23.946		
800.0	792.6	795.5	790.0	2.2	2.0	-131.26	-53.8	-47.5	92.1	88.3	3.79	24.329		
900.0	890.3	894.0	887.1	2.6	2.3	-130.83	-61.7	-62.2	109.0	104.6	4.44	24.556		
1,000.0	988.0	992.6	984.3	3.0	2.6	-130.52	-69.6	-77.0	125.9	120.9	5.10	24.700		
1,100.0	1,085.7	1,091.1	1,081.4	3.4	3.0	-130.28	-77.4	-91.7	142.9	137.1	5.76	24.798		
1,200.0	1,183.5	1,189.7	1,178.5	3.8	3.3	-130.09	-85.3	-106.4	159.8	153.4	6.43	24.867		
1,300.0	1,281.2	1,288.2	1,275.6	4.2	3.7	-129.94	-93.2	-121.1	176.8	169.7	7.09	24.918		
1,400.0	1,378.9	1,386.8	1,372.8	4.6	4.0	-129.82	-101.0	-135.9	193.7	185.9	7.76	24.956		
1,500.0	1,476.7	1,485.4	1,469.9	5.0	4.3	-129.71	-108.9	-150.6	210.6	202.2	8.43	24.985		
1,600.0	1,574.4	1,583.9	1,567.0	5.4	4.7	-129.62	-116.8	-165.3	227.6	218.5	9.10	25.008		
1,700.0	1,672.1	1,682.5	1,664.2	5.9	5.0	-129.55	-124.6	-180.1	244.5	234.7	9.77	25.026		
1,800.0	1,769.9	1,781.0	1,761.3	6.3	5.3	-129.48	-132.5	-194.8	261.4	251.0	10.44	25.041		
1,900.0	1,867.6	1,879.6	1,858.4	6.7	5.7	-129.42	-140.4	-209.5	278.4	267.3	11.11	25.054		
2,000.0	1,965.3	1,978.1	1,955.5	7.1	6.0	-129.37	-148.3	-224.3	295.3	283.5	11.78	25.064		
2,100.0	2,063.1	2,076.7	2,052.7	7.5	6.4	-129.32	-156.1	-239.0	312.3	299.8	12.45	25.073		
2,200.0	2,160.8	2,175.2	2,149.8	7.9	6.7	-129.28	-164.0	-253.7	329.2	316.1	13.13	25.080		
2,300.0	2,258.5	2,273.8	2,246.9	8.3	7.1	-129.24	-171.9	-268.5	346.1	332.3	13.80	25.086		
2,400.0	2,356.3	2,372.3	2,344.1	8.7	7.4	-129.21	-179.7	-283.2	363.1	348.6	14.47	25.092		
2,500.0	2,454.0	2,470.9	2,441.2	9.2	7.7	-129.18	-187.6	-297.9	380.0	364.9	15.14	25.096		
2,600.0	2,551.7	2,569.5	2,538.3	9.6	8.1	-129.15	-195.5	-312.6	397.0	381.1	15.81	25.101		
2,700.0	2,649.5	2,668.0	2,635.4	10.0	8.4	-129.12	-203.3	-327.4	413.9	397.4	16.49	25.104		
2,800.0	2,747.2	2,766.6	2,732.6	10.4	8.8	-129.10	-211.2	-342.1	430.8	413.7	17.16	25.107		
2,900.0	2,844.9	2,865.1	2,829.7	10.8	9.1	-129.08	-219.1	-356.8	447.8	429.9	17.83	25.110		
3,000.0	2,942.7	2,963.7	2,926.8	11.2	9.4	-129.06	-226.9	-371.6	464.7	446.2	18.51	25.113		
3,100.0	3,040.4	3,062.2	3,024.0	11.6	9.8	-129.04	-234.8	-386.3	481.7	462.5	19.18	25.115		
3,200.0	3,138.1	3,160.8	3,121.1	12.1	10.1	-129.02	-242.7	-401.0	498.6	478.7	19.85	25.117		

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well HMU Fee 23-16C1
Project:	Mamm Creek	TVD Reference:	WELL @ 7250.0ft (Original Well Elev)
Reference Site:	(D25W)	MD Reference:	WELL @ 7250.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	HMU Fee 23-16C1	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	EDM 5000.1 US Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design (D25W) - HMU Federal 26-8B1 - 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	155.04	-30.4	14.1	33.5					
100.0	100.0	100.0	100.0	0.1	0.1	155.04	-30.4	14.1	33.5	33.2	0.27	122.959		
200.0	200.0	200.0	200.0	0.3	0.3	155.04	-30.4	14.1	33.5	32.9	0.62	53.881 CC, ES		
300.0	300.0	299.4	299.4	0.5	0.5	-137.07	-32.1	12.2	36.2	35.2	0.98	36.905		
400.0	399.6	398.4	398.0	0.7	0.7	-134.25	-37.2	6.4	44.4	43.0	1.39	31.915		
500.0	498.8	496.4	495.2	1.0	1.0	-131.26	-45.6	-3.0	58.1	56.2	1.89	30.759 SF		
607.5	604.4	600.0	597.1	1.4	1.4	-128.60	-58.1	-17.1	78.9	76.4	2.55	30.973		
700.0	694.8	688.3	683.0	1.8	1.8	-126.34	-71.6	-32.3	100.6	97.4	3.20	31.379		
800.0	792.6	784.7	776.1	2.2	2.2	-123.59	-88.2	-50.9	125.4	121.5	3.94	31.867		
900.0	890.3	881.4	869.5	2.6	2.7	-121.73	-104.9	-69.6	150.5	145.8	4.68	32.182		
1,000.0	988.0	978.1	962.9	3.0	3.1	-120.40	-121.6	-88.4	175.7	170.3	5.42	32.404		
1,100.0	1,085.7	1,074.8	1,056.3	3.4	3.6	-119.41	-138.3	-107.1	201.0	194.8	6.17	32.571		
1,200.0	1,183.5	1,171.5	1,149.7	3.8	4.1	-118.63	-154.9	-125.8	226.3	219.3	6.92	32.700		
1,300.0	1,281.2	1,268.2	1,243.1	4.2	4.5	-118.02	-171.6	-144.6	251.6	243.9	7.67	32.803		
1,400.0	1,378.9	1,365.0	1,336.5	4.6	5.0	-117.51	-188.3	-163.3	276.9	268.5	8.42	32.888		
1,500.0	1,476.7	1,461.7	1,429.9	5.0	5.5	-117.09	-205.0	-182.0	302.3	293.1	9.17	32.959		
1,600.0	1,574.4	1,558.4	1,523.3	5.4	6.0	-116.74	-221.6	-200.8	327.7	317.8	9.92	33.019		
1,700.0	1,672.1	1,655.1	1,616.7	5.9	6.4	-116.43	-238.3	-219.5	353.1	342.4	10.68	33.070		
1,800.0	1,769.9	1,751.8	1,710.1	6.3	6.9	-116.17	-255.0	-238.3	378.5	367.0	11.43	33.115		
1,900.0	1,867.6	1,848.5	1,803.5	6.7	7.4	-115.94	-271.7	-257.0	403.9	391.7	12.18	33.154		
2,000.0	1,965.3	1,945.2	1,896.9	7.1	7.9	-115.74	-288.3	-275.7	429.3	416.3	12.93	33.188		
2,100.0	2,063.1	2,041.9	1,990.3	7.5	8.3	-115.56	-305.0	-294.5	454.7	441.0	13.69	33.219		
2,200.0	2,160.8	2,138.6	2,083.7	7.9	8.8	-115.40	-321.7	-313.2	480.1	465.7	14.44	33.246		

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well HMU Fee 23-16C1
Project:	Mamm Creek	TVD Reference:	WELL @ 7250.0ft (Original Well Elev)
Reference Site:	(D25W)	MD Reference:	WELL @ 7250.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	HMU Fee 23-16C1	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	EDM 5000.1 US Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design (D25W) - HMU Fee 23-16B1 - DD - Plan #1													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Total Uncertainty Axis	Separation Factor	Warning			
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)		Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)						
0.0	0.0	0.0	0.0	0.0	0.0	-7.61	26.6	-3.5	26.8					
100.0	100.0	100.0	100.0	0.1	0.1	-7.61	26.6	-3.5	26.8	26.5	0.27	98.390		
200.0	200.0	200.0	200.0	0.3	0.3	-7.61	26.6	-3.5	26.8	26.2	0.62	43.115 CC, ES		
300.0	300.0	298.9	298.8	0.5	0.5	60.53	28.4	-5.3	27.6	26.6	0.98	28.178		
400.0	399.6	397.7	397.3	0.7	0.7	64.53	34.0	-10.6	30.0	28.6	1.38	21.641		
500.0	498.8	496.3	495.2	1.0	1.0	69.87	43.3	-19.3	34.2	32.3	1.90	18.031		
607.5	604.4	602.2	599.2	1.4	1.4	75.73	57.3	-32.5	41.1	38.5	2.63	15.627		
700.0	694.8	693.1	687.6	1.8	1.8	77.89	72.6	-46.9	49.4	46.1	3.34	14.792 SF		
800.0	792.6	790.7	781.3	2.2	2.3	75.73	92.5	-65.7	61.3	57.2	4.12	14.882		
900.0	890.3	887.9	873.1	2.6	2.9	71.43	115.6	-87.4	76.4	71.6	4.86	15.740		
1,000.0	988.0	986.4	965.8	3.0	3.5	67.91	140.0	-110.4	92.7	87.2	5.56	16.677		
1,100.0	1,085.7	1,084.9	1,058.5	3.4	4.1	65.45	164.3	-133.3	109.3	103.0	6.26	17.466		
1,200.0	1,183.5	1,183.4	1,151.2	3.8	4.7	63.64	188.7	-156.2	126.0	119.0	6.95	18.131		
1,300.0	1,281.2	1,282.0	1,243.9	4.2	5.3	62.25	213.0	-179.1	142.8	135.1	7.64	18.695		
1,400.0	1,378.9	1,380.5	1,336.6	4.6	5.9	61.16	237.3	-202.0	159.6	151.3	8.32	19.178		
1,500.0	1,476.7	1,479.0	1,429.2	5.0	6.6	60.27	261.7	-225.0	176.5	167.5	9.01	19.595		
1,600.0	1,574.4	1,577.6	1,521.9	5.4	7.2	59.54	286.0	-247.9	193.4	183.7	9.69	19.958		
1,700.0	1,672.1	1,676.1	1,614.6	5.9	7.8	58.93	310.4	-270.8	210.4	200.0	10.38	20.277		
1,800.0	1,769.9	1,774.6	1,707.3	6.3	8.4	58.40	334.7	-293.7	227.4	216.3	11.06	20.559		
1,900.0	1,867.6	1,873.1	1,800.0	6.7	9.0	57.95	359.1	-316.7	244.4	232.6	11.74	20.810		
2,000.0	1,965.3	1,971.7	1,892.6	7.1	9.7	57.56	383.4	-339.6	261.4	248.9	12.43	21.035		
2,100.0	2,063.1	2,070.2	1,985.3	7.5	10.3	57.22	407.7	-362.5	278.4	265.3	13.11	21.238		
2,200.0	2,160.8	2,168.7	2,078.0	7.9	10.9	56.92	432.1	-385.4	295.4	281.6	13.79	21.421		
2,300.0	2,258.5	2,267.3	2,170.7	8.3	11.5	56.65	456.4	-408.4	312.4	298.0	14.47	21.588		
2,400.0	2,356.3	2,365.8	2,263.4	8.7	12.1	56.40	480.8	-431.3	329.5	314.3	15.15	21.741		
2,500.0	2,454.0	2,464.3	2,356.1	9.2	12.8	56.18	505.1	-454.2	346.5	330.7	15.84	21.880		
2,600.0	2,551.7	2,562.8	2,448.7	9.6	13.4	55.99	529.4	-477.1	363.6	347.0	16.52	22.009		
2,700.0	2,649.5	2,661.4	2,541.4	10.0	14.0	55.81	553.8	-500.0	380.6	363.4	17.20	22.127		
2,800.0	2,747.2	2,759.9	2,634.1	10.4	14.6	55.64	578.1	-523.0	397.7	379.8	17.88	22.237		
2,900.0	2,844.9	2,858.4	2,726.8	10.8	15.3	55.49	602.5	-545.9	414.7	396.2	18.56	22.339		
3,000.0	2,942.7	2,957.0	2,819.5	11.2	15.9	55.35	626.8	-568.8	431.8	412.5	19.25	22.434		
3,100.0	3,040.4	3,055.5	2,912.1	11.6	16.5	55.22	651.2	-591.7	448.8	428.9	19.93	22.523		
3,200.0	3,138.1	3,154.0	3,004.8	12.1	17.1	55.10	675.5	-614.7	465.9	445.3	20.61	22.605		
3,300.0	3,235.9	3,252.5	3,097.5	12.5	17.8	54.99	699.8	-637.6	483.0	461.7	21.29	22.683		

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 HMU Fee 23-16C1
Project:	Mamm Creek	TVD Reference:	WELL @ 7250.0ft (Original Well Elev)
Reference Site:	(D25W)	MD Reference:	WELL @ 7250.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	HMU Fee 23-16C1	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	EDM 5000.1 US Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design (D25W) - HMU Fee 23-16B2 - DD - Plan #1													Offset Site Error:	0.0 ft
Survey Program: O-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Total Uncertainty Axis	Separation Factor	Warning			
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)		Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)						
0.0	0.0	0.0	0.0	0.0	0.0	15.75	11.1	3.1	11.6					
100.0	100.0	100.0	100.0	0.1	0.1	15.75	11.1	3.1	11.6	11.3	0.27	42.470		
200.0	200.0	200.0	200.0	0.3	0.3	15.75	11.1	3.1	11.6	10.9	0.62	18.611		
276.5	276.4	276.4	276.4	0.4	0.4	90.00	11.1	3.1	11.5	10.6	0.89	12.815 CC		
300.0	300.0	300.0	300.0	0.5	0.5	95.41	11.1	3.1	11.5	10.5	0.98	11.763 ES		
400.0	399.6	399.6	399.6	0.7	0.7	127.78	11.1	3.1	14.5	13.2	1.35	10.746		
500.0	498.8	498.8	498.8	1.0	0.8	152.17	11.1	3.1	24.8	23.1	1.70	14.607		
607.5	604.4	606.3	606.2	1.4	1.0	162.21	13.1	0.9	40.9	38.8	2.07	19.803		
700.0	694.8	699.9	699.5	1.8	1.2	164.13	17.9	-4.8	53.6	51.2	2.41	22.254		
800.0	792.6	802.0	800.8	2.2	1.5	162.88	26.6	-15.0	63.1	60.3	2.82	22.348		
900.0	890.3	904.7	901.7	2.6	1.8	159.31	38.9	-29.3	68.3	65.0	3.32	20.553		
1,000.0	988.0	1,007.3	1,001.3	3.0	2.2	153.33	54.7	-47.7	69.8	65.8	3.99	17.478		
1,100.0	1,085.7	1,109.2	1,098.9	3.4	2.7	144.26	73.8	-70.0	68.5	63.6	4.95	13.837		
1,192.2	1,175.9	1,200.9	1,185.7	3.8	3.2	133.64	93.0	-92.4	67.4	61.3	6.10	11.049		
1,200.0	1,183.5	1,208.6	1,193.0	3.8	3.3	132.73	94.6	-94.2	67.4	61.2	6.20	10.867		
1,300.0	1,281.2	1,307.6	1,286.8	4.2	3.8	121.27	115.4	-118.5	69.0	61.5	7.54	9.159		
1,400.0	1,378.9	1,406.6	1,380.5	4.6	4.4	110.73	136.1	-142.7	73.3	64.5	8.80	8.323		
1,500.0	1,476.7	1,505.7	1,474.3	5.0	5.0	101.59	156.9	-166.9	79.7	69.8	9.92	8.034 SF		
1,600.0	1,574.4	1,604.7	1,568.1	5.4	5.6	93.97	177.7	-191.1	87.9	77.0	10.89	8.071		
1,700.0	1,672.1	1,703.8	1,661.8	5.9	6.2	87.71	198.4	-215.3	97.4	85.6	11.74	8.294		
1,800.0	1,769.9	1,802.8	1,755.6	6.3	6.7	82.61	219.2	-239.5	107.8	95.3	12.50	8.622		
1,900.0	1,867.6	1,901.8	1,849.3	6.7	7.3	78.42	239.9	-263.8	118.9	105.7	13.21	9.004		
2,000.0	1,965.3	2,000.9	1,943.1	7.1	7.9	74.97	260.7	-288.0	130.5	116.7	13.87	9.410		
2,100.0	2,063.1	2,099.9	2,036.9	7.5	8.5	72.08	281.5	-312.2	142.6	128.1	14.52	9.821		
2,200.0	2,160.8	2,198.9	2,130.6	7.9	9.1	69.65	302.2	-336.4	154.9	139.8	15.15	10.228		
2,300.0	2,258.5	2,298.0	2,224.4	8.3	9.7	67.57	323.0	-360.6	167.5	151.7	15.76	10.624		
2,400.0	2,356.3	2,397.0	2,318.1	8.7	10.3	65.79	343.7	-384.8	180.2	163.9	16.38	11.005		
2,500.0	2,454.0	2,496.1	2,411.9	9.2	10.9	64.24	364.5	-409.1	193.1	176.2	16.99	11.369		
2,600.0	2,551.7	2,595.1	2,505.7	9.6	11.5	62.89	385.3	-433.3	206.2	188.6	17.60	11.716		
2,700.0	2,649.5	2,694.1	2,599.4	10.0	12.1	61.70	406.0	-457.5	219.3	201.1	18.20	12.047		
2,800.0	2,747.2	2,793.2	2,693.2	10.4	12.7	60.64	426.8	-481.7	232.5	213.7	18.81	12.360		
2,900.0	2,844.9	2,892.2	2,786.9	10.8	13.3	59.70	447.5	-505.9	245.8	226.4	19.42	12.658		
3,000.0	2,942.7	2,991.2	2,880.7	11.2	13.9	58.86	468.3	-530.1	259.1	239.1	20.02	12.940		
3,100.0	3,040.4	3,090.3	2,974.5	11.6	14.5	58.09	489.1	-554.4	272.5	251.9	20.63	13.208		
3,200.0	3,138.1	3,189.3	3,068.2	12.1	15.1	57.40	509.8	-578.6	285.9	264.7	21.24	13.462		
3,300.0	3,235.9	3,288.4	3,162.0	12.5	15.7	56.77	530.6	-602.8	299.4	277.6	21.85	13.703		
3,400.0	3,333.6	3,387.4	3,255.8	12.9	16.3	56.20	551.3	-627.0	312.9	290.4	22.46	13.933		
3,500.0	3,431.3	3,486.4	3,349.5	13.3	16.9	55.67	572.1	-651.2	326.4	303.4	23.07	14.150		
3,600.0	3,529.1	3,585.5	3,443.3	13.7	17.5	55.18	592.9	-675.4	340.0	316.3	23.68	14.358		
3,700.0	3,626.8	3,684.5	3,537.0	14.1	18.0	54.73	613.6	-699.7	353.6	329.3	24.29	14.555		
3,800.0	3,724.5	3,783.5	3,630.8	14.6	18.6	54.32	634.4	-723.9	367.2	342.3	24.90	14.744		
3,900.0	3,822.3	3,882.6	3,724.6	15.0	19.2	53.93	655.1	-748.1	380.8	355.3	25.52	14.923		
4,000.0	3,920.0	3,981.6	3,818.3	15.4	19.8	53.57	675.9	-772.3	394.4	368.3	26.13	15.095		
4,100.0	4,017.7	4,080.7	3,912.1	15.8	20.4	53.24	696.7	-796.5	408.0	381.3	26.74	15.259		
4,200.0	4,115.5	4,179.7	4,005.8	16.2	21.0	52.92	717.4	-820.7	421.7	394.3	27.36	15.415		
4,300.0	4,213.2	4,278.7	4,099.6	16.6	21.6	52.63	738.2	-844.9	435.4	407.4	27.97	15.565		
4,400.0	4,310.9	4,377.8	4,193.4	17.0	22.2	52.35	758.9	-869.2	449.1	420.5	28.59	15.709		
4,500.0	4,408.7	4,476.8	4,287.1	17.5	22.8	52.10	779.7	-893.4	462.7	433.5	29.20	15.847		
4,600.0	4,506.4	4,575.8	4,380.9	17.9	23.4	51.85	800.5	-917.6	476.4	446.6	29.82	15.979		
4,700.0	4,604.1	4,674.9	4,474.6	18.3	24.0	51.62	821.2	-941.8	490.1	459.7	30.43	16.106		

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 HMU Fee 23-16C1
Project:	Mamm Creek	TVD Reference:	WELL @ 7250.0ft (Original Well Elev)
Reference Site:	(D25W)	MD Reference:	WELL @ 7250.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	HMU Fee 23-16C1	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	EDM 5000.1 US Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design (D25W) - HMU Fee 23-16D - 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	-24.95	15.2	-7.1	16.7					
100.0	100.0	100.0	100.0	0.1	0.1	-24.95	15.2	-7.1	16.7	16.5	0.27	61.480		
200.0	200.0	200.0	200.0	0.3	0.3	-24.95	15.2	-7.1	16.7	16.1	0.62	26.941		
300.0	300.0	299.6	299.5	0.5	0.5	39.87	15.4	-9.6	16.1	15.1	0.98	16.441		
400.0	399.6	399.0	398.6	0.7	0.7	34.27	16.3	-17.3	14.4	13.0	1.36	10.564		
500.0	498.8	498.3	497.2	1.0	1.0	35.07	20.5	-28.4	13.2	11.4	1.78	7.385		
555.4	553.3	553.2	551.5	1.2	1.1	40.52	24.6	-35.8	12.9	10.8	2.09	6.194 CC		
607.5	604.4	605.0	602.4	1.4	1.3	48.68	29.6	-43.6	13.2	10.8	2.44	5.420 ES		
700.0	694.8	697.1	692.5	1.8	1.7	60.50	40.9	-59.2	16.2	13.1	3.17	5.117 SF		
800.0	792.6	797.0	790.0	2.2	2.1	67.92	53.6	-76.4	20.5	16.5	3.99	5.132		
900.0	890.3	896.9	887.6	2.6	2.5	72.75	66.3	-93.6	24.9	20.1	4.82	5.179		
1,000.0	988.0	996.7	985.2	3.0	2.9	76.09	79.0	-110.8	29.5	23.9	5.64	5.233		
1,100.0	1,085.7	1,096.6	1,082.7	3.4	3.3	78.53	91.7	-128.0	34.2	27.7	6.47	5.284		
1,200.0	1,183.5	1,196.5	1,180.3	3.8	3.7	80.38	104.4	-145.2	38.9	31.6	7.30	5.330		
1,300.0	1,281.2	1,296.4	1,277.9	4.2	4.1	81.83	117.1	-162.4	43.7	35.5	8.13	5.371		
1,400.0	1,378.9	1,396.3	1,375.4	4.6	4.5	83.00	129.8	-179.6	48.4	39.5	8.96	5.407		
1,500.0	1,476.7	1,496.2	1,473.0	5.0	4.9	83.95	142.5	-196.8	53.2	43.4	9.78	5.438		
1,600.0	1,574.4	1,596.0	1,570.6	5.4	5.3	84.75	155.3	-214.0	58.0	47.4	10.61	5.466		
1,700.0	1,672.1	1,695.9	1,668.1	5.9	5.8	85.43	168.0	-231.2	62.8	51.4	11.44	5.491		
1,800.0	1,769.9	1,795.8	1,765.7	6.3	6.2	86.01	180.7	-248.4	67.6	55.4	12.27	5.513		
1,900.0	1,867.6	1,895.7	1,863.3	6.7	6.6	86.51	193.4	-265.6	72.4	59.3	13.09	5.533		
2,000.0	1,965.3	1,995.6	1,960.8	7.1	7.0	86.95	206.1	-282.9	77.3	63.3	13.92	5.551		
2,100.0	2,063.1	2,095.4	2,058.4	7.5	7.4	87.34	218.8	-300.1	82.1	67.3	14.75	5.567		
2,200.0	2,160.8	2,195.3	2,156.0	7.9	7.8	87.68	231.5	-317.3	86.9	71.3	15.57	5.581		
2,300.0	2,258.5	2,295.2	2,253.5	8.3	8.2	87.99	244.2	-334.5	91.7	75.4	16.40	5.595		
2,400.0	2,356.3	2,395.1	2,351.1	8.7	8.7	88.27	256.9	-351.7	96.6	79.4	17.23	5.607		
2,500.0	2,454.0	2,495.0	2,448.7	9.2	9.1	88.52	269.6	-368.9	101.4	83.4	18.05	5.618		
2,600.0	2,551.7	2,594.9	2,546.2	9.6	9.5	88.75	282.3	-386.1	106.3	87.4	18.88	5.629		
2,700.0	2,649.5	2,694.7	2,643.8	10.0	9.9	88.96	295.0	-403.3	111.1	91.4	19.71	5.638		
2,800.0	2,747.2	2,794.6	2,741.4	10.4	10.3	89.15	307.7	-420.5	115.9	95.4	20.53	5.647		
2,900.0	2,844.9	2,894.5	2,838.9	10.8	10.7	89.32	320.4	-437.7	120.8	99.4	21.36	5.655		
3,000.0	2,942.7	2,994.4	2,936.5	11.2	11.2	89.49	333.1	-454.9	125.6	103.4	22.18	5.663		
3,100.0	3,040.4	3,094.3	3,034.1	11.6	11.6	89.64	345.8	-472.1	130.5	107.5	23.01	5.670		
3,200.0	3,138.1	3,194.1	3,131.6	12.1	12.0	89.78	358.5	-489.3	135.3	111.5	23.84	5.677		
3,300.0	3,235.9	3,294.0	3,229.2	12.5	12.4	89.91	371.2	-506.5	140.2	115.5	24.66	5.683		
3,400.0	3,333.6	3,393.9	3,326.7	12.9	12.8	90.03	383.9	-523.7	145.0	119.5	25.49	5.689		
3,500.0	3,431.3	3,493.8	3,424.3	13.3	13.2	90.14	396.6	-540.9	149.9	123.6	26.32	5.695		
3,600.0	3,529.1	3,593.7	3,521.9	13.7	13.7	90.25	409.3	-558.1	154.7	127.6	27.14	5.700		
3,700.0	3,626.8	3,693.6	3,619.4	14.1	14.1	90.35	422.0	-575.3	159.6	131.6	27.97	5.705		
3,800.0	3,724.5	3,793.4	3,717.0	14.6	14.5	90.44	434.7	-592.5	164.4	135.6	28.80	5.710		
3,900.0	3,822.3	3,893.3	3,814.6	15.0	14.9	90.53	447.4	-609.8	169.3	139.6	29.62	5.714		
4,000.0	3,920.0	3,993.2	3,912.1	15.4	15.3	90.61	460.1	-627.0	174.1	143.7	30.45	5.718		
4,100.0	4,017.7	4,093.1	4,009.7	15.8	15.7	90.69	472.8	-644.2	179.0	147.7	31.28	5.722		
4,200.0	4,115.5	4,193.0	4,107.3	16.2	16.2	90.77	485.5	-661.4	183.8	151.7	32.10	5.726		
4,300.0	4,213.2	4,292.8	4,204.8	16.6	16.6	90.84	498.2	-678.6	188.7	155.7	32.93	5.730		
4,400.0	4,310.9	4,392.7	4,302.4	17.0	17.0	90.90	510.9	-695.8	193.5	159.8	33.75	5.733		
4,500.0	4,408.7	4,492.6	4,400.0	17.5	17.4	90.97	523.6	-713.0	198.4	163.8	34.58	5.736		
4,600.0	4,506.4	4,592.5	4,497.5	17.9	17.8	91.03	536.3	-730.2	203.2	167.8	35.41	5.740		
4,700.0	4,604.1	4,692.4	4,595.1	18.3	18.2	91.09	549.0	-747.4	208.1	171.8	36.23	5.743		
4,800.0	4,701.9	4,792.3	4,692.7	18.7	18.7	91.14	561.7	-764.6	212.9	175.9	37.06	5.746		
4,900.0	4,799.6	4,892.1	4,790.2	19.1	19.1	91.20	574.5	-781.8	217.8	179.9	37.89	5.748		
5,000.0	4,897.3	4,992.0	4,887.8	19.5	19.5	91.25	587.2	-799.0	222.6	183.9	38.71	5.751		

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 HMU Fee 23-16C1
Project:	Mamm Creek	TVD Reference:	WELL @ 7250.0ft (Original Well Elev)
Reference Site:	(D25W)	MD Reference:	WELL @ 7250.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	HMU Fee 23-16C1	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	EDM 5000.1 US Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design (D25W) - HMU Fee 23-16D - 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			
5,100.0	4,995.1	5,091.9	4,985.4	19.9	19.9	91.30	599.9	-816.2	227.5	188.0	39.54	5.754		
5,200.0	5,092.8	5,191.8	5,082.9	20.4	20.3	91.34	612.6	-833.4	232.3	192.0	40.37	5.756		
5,300.0	5,190.5	5,291.7	5,180.5	20.8	20.7	91.39	625.3	-850.6	237.2	196.0	41.19	5.758		
5,400.0	5,288.3	5,391.5	5,278.1	21.2	21.2	91.43	638.0	-867.8	242.1	200.0	42.02	5.761		
5,500.0	5,386.0	5,491.4	5,375.6	21.6	21.6	91.47	650.7	-885.0	246.9	204.1	42.84	5.763		
5,600.0	5,483.7	5,591.3	5,473.2	22.0	22.0	91.51	663.4	-902.2	251.8	208.1	43.67	5.765		
5,700.0	5,581.5	5,691.2	5,570.8	22.4	22.4	91.55	676.1	-919.5	256.6	212.1	44.50	5.767		
5,800.0	5,679.2	5,791.1	5,668.3	22.8	22.8	91.58	688.8	-936.7	261.5	216.1	45.32	5.769		
5,900.0	5,776.9	5,891.0	5,765.9	23.3	23.2	91.62	701.5	-953.9	266.3	220.2	46.15	5.771		
6,000.0	5,874.7	5,990.8	5,863.5	23.7	23.7	91.65	714.2	-971.1	271.2	224.2	46.98	5.773		
6,100.0	5,972.4	6,090.7	5,961.0	24.1	24.1	91.69	726.9	-988.3	276.0	228.2	47.80	5.774		
6,200.0	6,070.1	6,190.6	6,058.6	24.5	24.5	91.72	739.6	-1,005.5	280.9	232.3	48.63	5.776		
6,300.0	6,167.9	6,290.5	6,156.1	24.9	24.9	91.75	752.3	-1,022.7	285.7	236.3	49.46	5.778		
6,317.0	6,184.4	6,307.5	6,172.8	25.0	25.0	91.76	754.5	-1,025.6	286.6	237.0	49.59	5.778		
6,400.0	6,265.8	6,392.1	6,255.7	25.3	25.3	91.89	764.4	-1,039.1	290.3	240.1	50.21	5.782		
6,500.0	6,364.4	6,494.0	6,356.2	25.6	25.6	92.03	774.4	-1,052.7	294.1	243.2	50.84	5.784		
6,600.0	6,463.6	6,596.0	6,457.2	25.9	25.9	92.15	782.3	-1,063.4	297.0	245.7	51.36	5.783		
6,700.0	6,563.1	6,697.9	6,558.7	26.1	26.1	92.26	788.1	-1,071.2	299.2	247.4	51.77	5.779		
6,800.0	6,662.9	6,799.9	6,660.5	26.2	26.2	92.35	791.7	-1,076.1	300.6	248.5	52.07	5.772		
6,900.0	6,762.8	6,901.9	6,762.5	26.3	26.3	92.43	793.2	-1,078.1	301.1	248.9	52.26	5.762		
6,928.2	6,791.0	6,930.4	6,791.0	26.3	26.3	25.80	793.2	-1,078.2	301.2	248.8	52.31	5.757		
7,000.0	6,862.8	7,002.2	6,862.8	26.4	26.4	25.80	793.2	-1,078.2	301.2	248.7	52.43	5.744		
7,100.0	6,962.8	7,102.2	6,962.8	26.5	26.5	25.80	793.2	-1,078.2	301.2	248.6	52.59	5.727		
7,200.0	7,062.8	7,202.2	7,062.8	26.6	26.5	25.80	793.2	-1,078.2	301.2	248.4	52.75	5.709		
7,300.0	7,162.8	7,302.2	7,162.8	26.6	26.6	25.80	793.2	-1,078.2	301.2	248.2	52.92	5.691		
7,400.0	7,262.8	7,402.2	7,262.8	26.7	26.7	25.80	793.2	-1,078.2	301.2	248.1	53.09	5.673		
7,500.0	7,362.8	7,502.2	7,362.8	26.8	26.8	25.80	793.2	-1,078.2	301.2	247.9	53.26	5.654		
7,600.0	7,462.8	7,602.2	7,462.8	26.9	26.9	25.80	793.2	-1,078.2	301.2	247.7	53.43	5.636		
7,700.0	7,562.8	7,702.2	7,562.8	27.0	27.0	25.80	793.2	-1,078.2	301.2	247.6	53.61	5.618		
7,800.0	7,662.8	7,802.2	7,662.8	27.1	27.1	25.80	793.2	-1,078.2	301.2	247.4	53.78	5.600		
7,900.0	7,762.8	7,902.2	7,762.8	27.1	27.1	25.80	793.2	-1,078.2	301.2	247.2	53.96	5.581		
8,000.0	7,862.8	8,002.2	7,862.8	27.2	27.2	25.80	793.2	-1,078.2	301.2	247.0	54.14	5.563		
8,100.0	7,962.8	8,102.2	7,962.8	27.3	27.3	25.80	793.2	-1,078.2	301.2	246.8	54.32	5.544		
8,200.0	8,062.8	8,202.2	8,062.8	27.4	27.4	25.80	793.2	-1,078.2	301.2	246.7	54.50	5.526		
8,300.0	8,162.8	8,302.2	8,162.8	27.5	27.5	25.80	793.2	-1,078.2	301.2	246.5	54.68	5.507		
8,400.0	8,262.8	8,402.2	8,262.8	27.6	27.6	25.80	793.2	-1,078.2	301.2	246.3	54.87	5.489		
8,500.0	8,362.8	8,502.2	8,362.8	27.7	27.7	25.80	793.2	-1,078.2	301.2	246.1	55.06	5.470		
8,600.0	8,462.8	8,602.2	8,462.8	27.8	27.8	25.80	793.2	-1,078.2	301.2	245.9	55.24	5.451		
8,700.0	8,562.8	8,702.2	8,562.8	27.9	27.9	25.80	793.2	-1,078.2	301.2	245.7	55.43	5.433		
8,800.0	8,662.8	8,802.2	8,662.8	28.0	28.0	25.80	793.2	-1,078.2	301.2	245.5	55.63	5.414		
8,900.0	8,762.8	8,902.2	8,762.8	28.1	28.1	25.80	793.2	-1,078.2	301.2	245.3	55.82	5.395		
9,000.0	8,862.8	9,002.2	8,862.8	28.2	28.2	25.80	793.2	-1,078.2	301.2	245.1	56.01	5.377		
9,097.2	8,960.0	9,099.4	8,960.0	28.3	28.3	25.80	793.2	-1,078.2	301.2	245.0	56.20	5.358		
9,100.0	8,962.8	9,102.2	8,962.8	28.3	28.3	25.80	793.2	-1,078.2	301.2	244.9	56.21	5.358		
9,200.0	9,062.8	9,202.2	9,062.8	28.4	28.4	25.80	793.2	-1,078.2	301.2	244.7	56.41	5.339		
9,300.0	9,162.8	9,302.2	9,162.8	28.5	28.5	25.80	793.2	-1,078.2	301.2	244.6	56.61	5.320		
9,361.1	9,223.9	9,363.3	9,223.9	28.5	28.5	25.80	793.2	-1,078.2	301.2	244.4	56.73	5.309		
9,397.2	9,260.0	9,389.4	9,250.0	28.6	28.5	25.80	793.2	-1,078.2	301.3	244.5	56.79	5.306		

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 HMU Fee 23-16C1
Project:	Mamm Creek	TVD Reference:	WELL @ 7250.0ft (Original Well Elev)
Reference Site:	(D25W)	MD Reference:	WELL @ 7250.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	HMU Fee 23-16C1	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	EDM 5000.1 US Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design (D25W) - HMU Fee 25-6B - 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	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Total Uncertainty Axis	Separation Factor	Warning	
(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	62.04	113.3	213.4	241.7					
100.0	100.0	100.0	100.0	0.1	0.1	62.04	113.3	213.4	241.7	241.4	0.27	887.551		
200.0	200.0	200.0	200.0	0.3	0.3	62.04	113.3	213.4	241.7	241.0	0.62	388.927	CC, ES	
300.0	300.0	295.5	295.5	0.5	0.5	129.61	111.7	215.2	244.2	243.2	0.97	250.651		
400.0	399.6	389.6	389.3	0.7	0.7	132.20	107.1	220.5	252.3	250.9	1.37	183.937		
500.0	498.8	480.9	479.8	1.0	0.9	136.01	99.7	228.9	266.9	265.1	1.83	146.199		
607.5	604.4	574.5	572.1	1.4	1.3	140.77	89.1	240.9	291.5	289.1	2.36	123.524		
700.0	694.8	651.4	647.2	1.8	1.6	145.27	78.1	253.2	319.0	316.2	2.81	113.478		
800.0	792.6	734.9	728.0	2.2	2.0	149.85	64.2	269.0	353.5	350.2	3.27	108.184		
900.0	890.3	824.0	814.0	2.6	2.4	154.01	48.8	286.4	390.6	386.9	3.70	105.676		
1,000.0	988.0	913.1	900.0	3.0	2.8	157.49	33.4	303.8	429.4	425.3	4.09	104.881	SF	
1,100.0	1,085.7	1,002.1	986.0	3.4	3.3	160.42	18.0	321.3	469.3	464.8	4.47	105.040		

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well HMU Fee 23-16C1
Project:	Mamm Creek	TVD Reference:	WELL @ 7250.0ft (Original Well Elev)
Reference Site:	(D25W)	MD Reference:	WELL @ 7250.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	HMU Fee 23-16C1	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	EDM 5000.1 US Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design (D25W) - HMU Fee 25-6D - 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	111.64	-4.0	10.2	11.0				
100.0	100.0	100.0	100.0	0.1	0.1	111.64	-4.0	10.2	11.0	10.7	0.27	40.308	
200.0	200.0	200.0	200.0	0.3	0.3	111.64	-4.0	10.2	11.0	10.4	0.62	17.663 CC, ES	
300.0	300.0	299.2	299.2	0.5	0.5	175.15	-4.0	12.8	16.0	15.1	0.97	16.539 SF	
400.0	399.6	397.1	396.8	0.7	0.7	175.92	-6.0	19.4	30.8	29.5	1.31	23.538	
500.0	498.8	492.3	491.4	1.0	0.9	179.42	-11.8	28.7	55.0	53.4	1.64	33.472	
607.5	604.4	590.1	587.9	1.4	1.3	-177.56	-21.6	41.1	91.2	89.2	1.99	45.838	
700.0	694.8	670.6	666.6	1.8	1.6	-175.66	-32.7	53.6	128.5	126.2	2.30	55.910	
800.0	792.6	754.4	747.7	2.2	2.0	-173.99	-47.1	68.6	172.4	169.8	2.63	65.548	
900.0	890.3	834.7	824.6	2.6	2.4	-172.59	-63.6	85.0	219.9	217.0	2.96	74.264	
1,000.0	988.0	911.5	897.2	3.0	2.9	-171.40	-81.7	102.4	270.8	267.5	3.29	82.342	
1,100.0	1,085.7	988.8	969.2	3.4	3.4	-170.34	-102.2	121.5	324.8	321.1	3.62	89.614	
1,200.0	1,183.5	1,072.4	1,046.9	3.8	4.0	-169.46	-124.9	142.6	379.4	375.4	3.97	95.478	
1,300.0	1,281.2	1,156.0	1,124.6	4.2	4.5	-168.80	-147.5	163.7	434.1	429.8	4.32	100.409	
1,400.0	1,378.9	1,239.7	1,202.3	4.6	5.1	-168.29	-170.2	184.7	488.8	484.1	4.67	104.596	

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well HMU Fee 23-16C1
Project:	Mamm Creek	TVD Reference:	WELL @ 7250.0ft (Original Well Elev)
Reference Site:	(D25W)	MD Reference:	WELL @ 7250.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	HMU Fee 23-16C1	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	EDM 5000.1 US Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design (D25W) - MCU 26-8C (Existing) - Excel Drilling - Surveys													Offset Site Error: 0.0 ft	
Survey Program: 264-MWD													Offset Well Error: 0.0 ft	
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor		
0.0	0.0	0.0	0.0	0.0	0.0	52.36	67.8	87.9	111.0					
100.0	100.0	99.6	99.6	0.1	0.2	52.29	68.0	88.0	111.2	110.9	0.30	374.863	ES	
200.0	200.0	199.2	199.2	0.3	0.3	52.09	68.7	88.2	111.7	111.1	0.63	176.934		
300.0	300.0	298.8	298.8	0.5	0.5	119.49	69.8	88.5	113.9	113.0	0.98	116.696		
400.0	399.6	398.3	398.3	0.7	0.7	122.05	71.4	88.7	119.1	117.7	1.36	87.569		
500.0	498.8	496.3	496.3	1.0	0.8	125.91	73.7	88.7	127.8	126.0	1.78	71.811		
607.5	604.4	601.1	601.0	1.4	1.0	130.80	77.5	89.8	142.9	140.7	2.27	63.013		
700.0	694.8	690.8	690.6	1.8	1.2	135.36	80.3	91.0	158.8	156.1	2.67	59.443		
800.0	792.6	787.2	787.0	2.2	1.4	139.62	82.6	93.2	177.4	174.3	3.08	57.525		
900.0	890.3	886.1	885.8	2.6	1.5	143.46	84.0	95.6	196.9	193.4	3.47	56.668		
1,000.0	988.0	989.0	988.8	3.0	1.7	147.29	83.0	96.7	215.3	211.4	3.84	56.078		
1,100.0	1,085.7	1,088.7	1,088.4	3.4	1.9	150.60	81.0	96.1	232.7	228.5	4.18	55.607		
1,200.0	1,183.5	1,189.3	1,188.9	3.8	2.0	153.65	78.2	94.7	249.9	245.4	4.51	55.371		
1,300.0	1,281.2	1,288.7	1,288.1	4.2	2.2	156.88	72.6	92.3	266.7	261.9	4.82	55.369		
1,400.0	1,378.9	1,388.2	1,387.2	4.6	2.4	160.42	63.6	89.2	283.9	278.8	5.10	55.613		
1,500.0	1,476.7	1,489.0	1,487.1	5.0	2.6	164.21	51.3	84.7	300.9	295.6	5.39	55.795		
1,600.0	1,574.4	1,591.2	1,587.8	5.4	2.8	168.37	35.1	78.0	317.7	312.0	5.71	55.614		
1,700.0	1,672.1	1,706.9	1,700.8	5.9	3.2	173.29	13.8	65.2	332.5	326.4	6.11	54.384		
1,800.0	1,769.9	1,820.5	1,810.7	6.3	3.6	178.05	-7.2	46.1	343.6	337.0	6.62	51.871		
1,900.0	1,867.6	1,929.6	1,914.8	6.7	4.1	-177.11	-28.5	21.3	351.5	344.2	7.27	48.336		
2,000.0	1,965.3	2,024.7	2,004.1	7.1	4.6	-172.40	-50.3	-3.1	360.5	352.4	8.03	44.914		
2,100.0	2,063.1	2,114.2	2,087.2	7.5	5.1	-167.77	-73.4	-27.1	372.6	363.7	8.89	41.931		
2,200.0	2,160.8	2,200.1	2,166.6	7.9	5.6	-163.44	-97.4	-49.4	389.3	379.5	9.81	39.680		
2,300.0	2,258.5	2,287.9	2,247.7	8.3	6.2	-159.31	-122.9	-71.4	410.0	399.2	10.81	37.940		
2,400.0	2,356.3	2,375.7	2,328.7	8.7	6.7	-155.55	-149.2	-92.7	434.1	422.3	11.82	36.724		
2,500.0	2,454.0	2,468.1	2,414.2	9.2	7.3	-152.04	-176.9	-114.4	460.5	447.7	12.87	35.797		
2,600.0	2,551.7	2,555.3	2,495.0	9.6	7.9	-149.16	-202.9	-134.0	489.0	475.2	13.83	35.350	SF	

Cathedral Energy Services

Anticollision Report

Company: EnCana Oil & Gas (USA) Inc
Project: Mamm Creek
Reference Site: (D25W)
Site Error: 0.0ft
Reference Well: HMU Fee 23-16C1
Well Error: 0.0ft
Reference Wellbore: DD
Reference Design: Plan #1

Local Co-ordinate Reference: Well HMU Fee 23-16C1
TVD Reference: WELL @ 7250.0ft (Original Well Elev)
MD Reference: WELL @ 7250.0ft (Original Well Elev)
North Reference: True
Survey Calculation Method: Minimum Curvature
Output errors are at 2.00 sigma
Database: EDM 5000.1 US Multi Users DB
Offset TVD Reference: Offset Datum

Reference Depths are relative to WELL @ 7250.0ft (Original Well Elev)
 Offset Depths are relative to Offset Datum
 Central Meridian is -105.500000 °

Coordinates are relative to: HMU Fee 23-16C1
 Coordinate System is US State Plane 1983, Colorado Central Zone
 Grid Convergence at Surface is: -1.41°

