

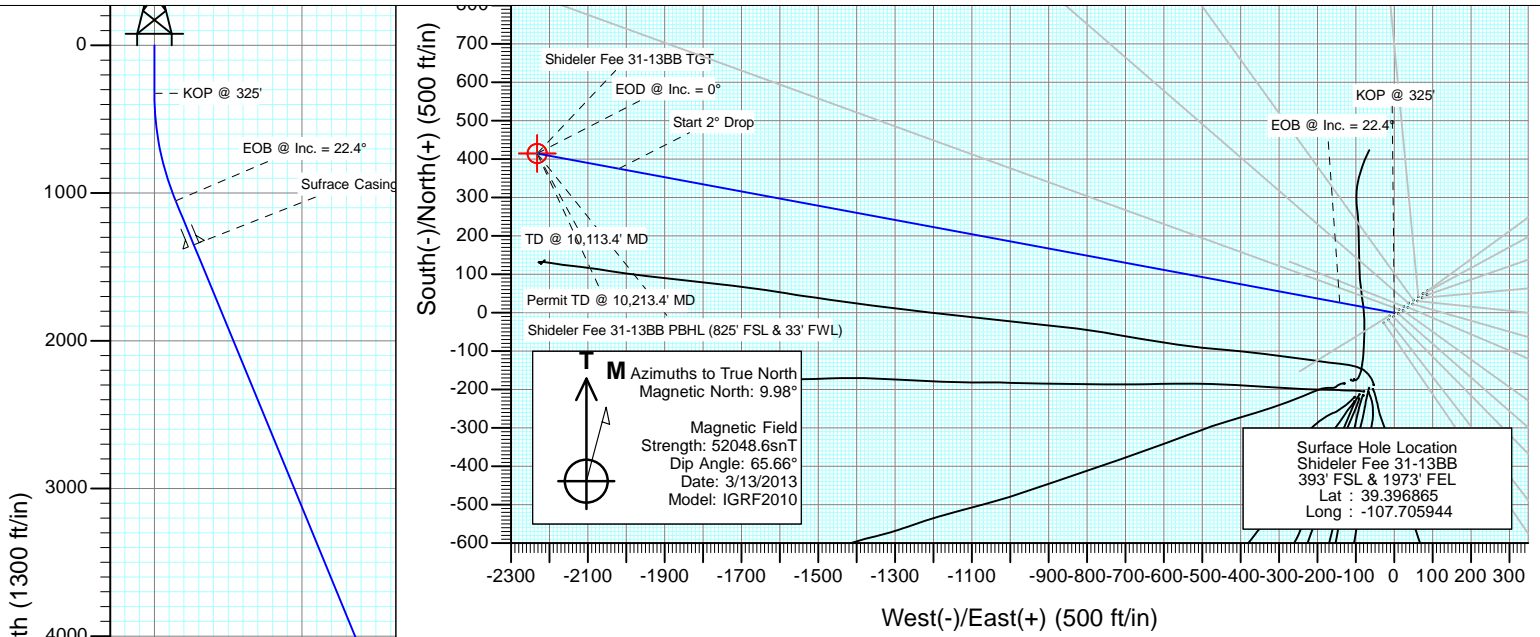


Project: Mamm Creek
 Site: O31E Pad (2nd Occupation)
 Well: Shideler Fee 31-13BB
 Wellbore: OH
 Design: Plan #1

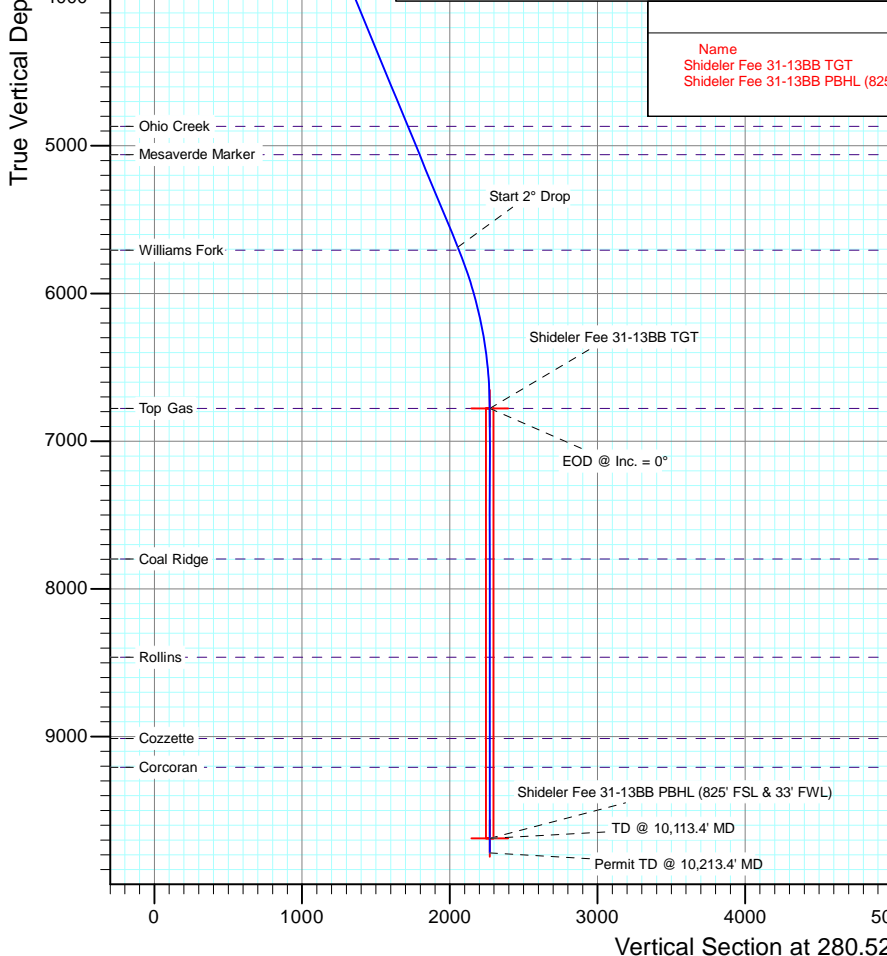


SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSec	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	325.0	0.00	0.00	325.0	0.0	0.0	0.00	0.00	0.0	
3	1071.7	22.40	280.52	1052.8	26.3	-141.7	3.00	280.52	144.1	
4	6083.3	22.40	280.52	5686.3	375.1	-2019.4	0.00	0.00	2053.9	
5	7203.4	0.00	0.00	6778.0	414.6	-2231.9	2.00	180.00	2270.1	Shideler Fee 31-13BB TGT
6	10113.4	0.00	0.00	9688.0	414.6	-2231.9	0.00	0.00	2270.1	Shideler Fee 31-13BB PBHL (825' FSL & 33' FWL)
7	10213.4	0.00	0.00	9788.0	414.6	-2231.9	0.00	0.00	2270.1	

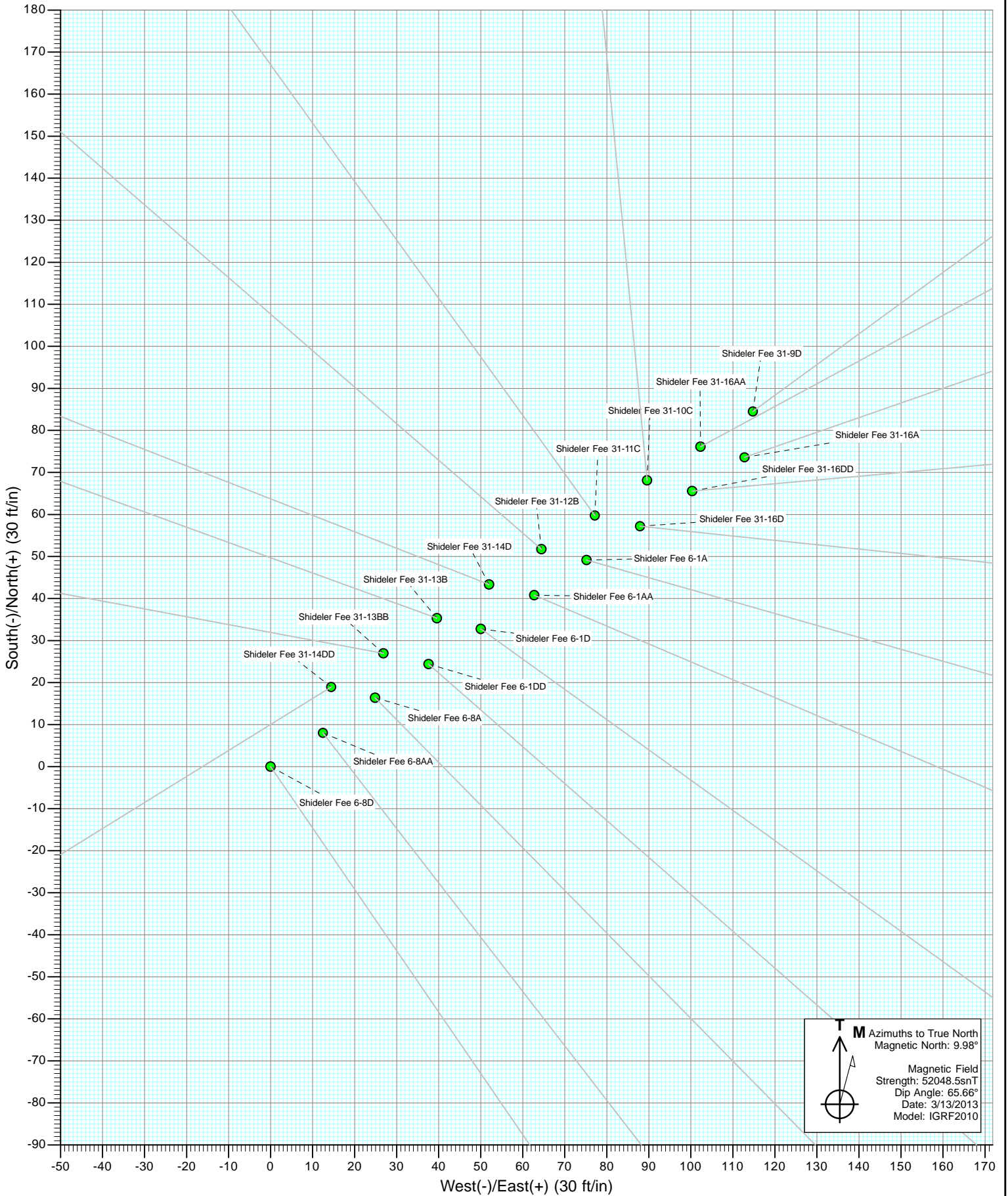


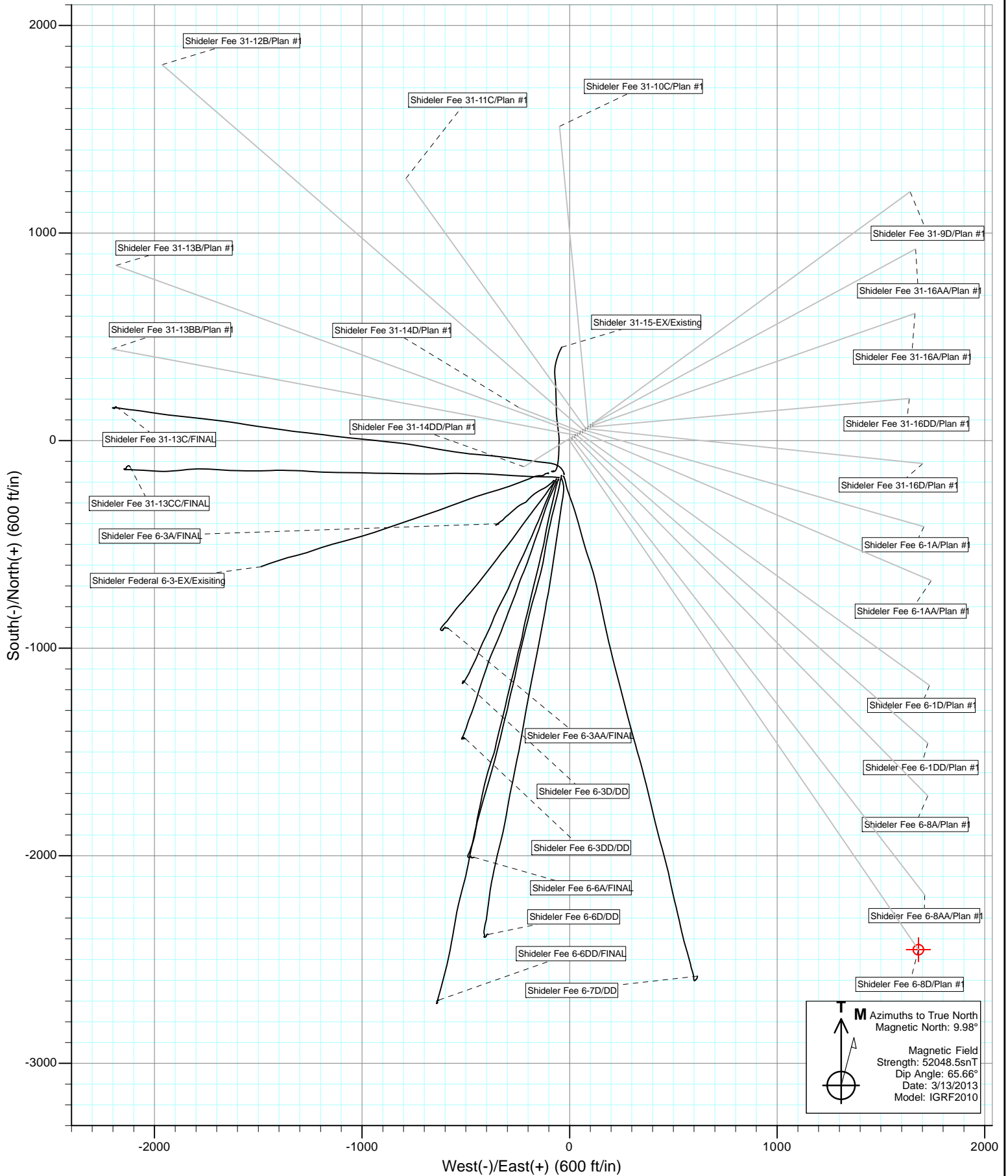
DESIGN TARGET DETAILS						
Name	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
Shideler Fee 31-13BB TGT	414.6	-2231.9	1577478.58	2374449.58	39.398003	-107.713842
Shideler Fee 31-13BB PBHL (825' FSL & 33' FWL)	414.6	-2231.9	1577478.58	2374449.58	39.398003	-107.713842

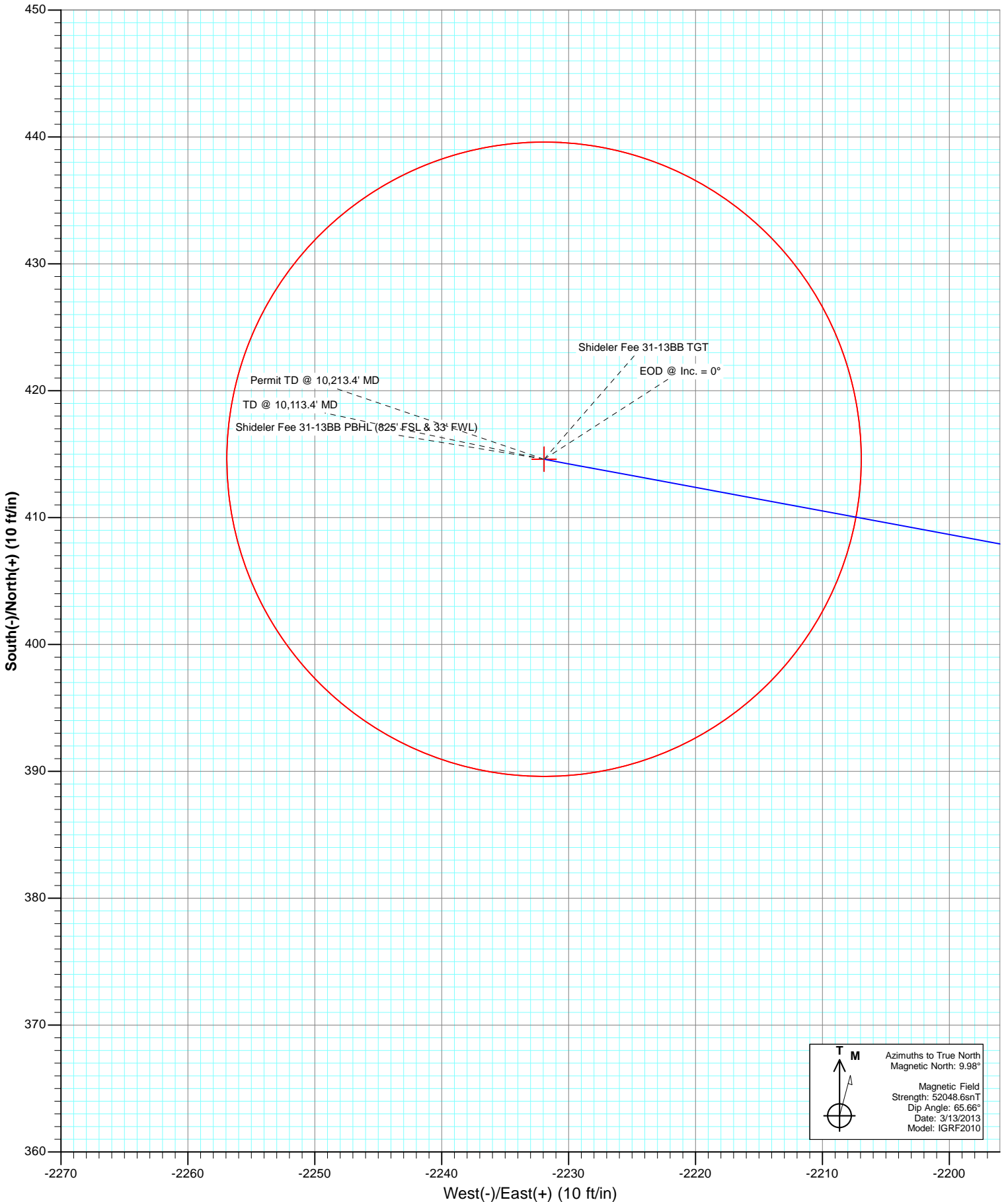


FORMATION TOP DETAILS			
TVDPath	MDPath	Formation	
4868.0	5198.3	Ohio Creek	
5059.0	5404.8	Mesaverde Marker	
5707.0	6105.7	Williams Fork	
6778.0	7203.4	Top Gas	
7797.0	8222.4	Coal Ridge	
8463.0	8888.4	Rollins	
9013.0	9438.4	Cozzette	
9208.0	9633.4	Corcoran	

Plan #1
 Shideler Fee 31-13BB
 135XXX; SC
 KB=22' @ 7126.0ft (Patterson #308)
 Ground Elevation @ 7104.0
 North American Datum 1983
 Well Shideler Fee 31-13BB, True North







Cathedral Energy Services

Planning Report

Database: USA EDM 5000 Multi Users DB	Local Co-ordinate Reference: Well Shideler Fee 31-13BB
Company: EnCana Oil & Gas (USA) Inc	TVD Reference: KB=22' @ 7126.0ft (Patterson #308)
Project: Mamm Creek	MD Reference: KB=22' @ 7126.0ft (Patterson #308)
Site: O31E Pad (2nd Occupation)	North Reference: True
Well: Shideler Fee 31-13BB	Survey Calculation Method: Minimum Curvature
Wellbore: OH	
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 O31E Pad (2nd Occupation)					
Site Position:		Northing:	1,577,065.31 ft	Latitude:	39.397023
From:	Lat/Long	Easting:	2,376,760.05 ft	Longitude:	-107.705633
Position Uncertainty:	0.0 ft	Slot Radius:	13.200 in	Grid Convergence:	-1.39 °

Well Shideler Fee 31-13BB						
Well Position	+N/-S	0.0 ft	Northing:	1,577,009.91 ft	Latitude:	39.396865
	+E/-W	0.0 ft	Easting:	2,376,670.79 ft	Longitude:	-107.705944
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	7,104.0 ft

Wellbore OH					
Magnetics	Model Name	Sample Date	Declination	Dip Angle	Field Strength
			(°)	(°)	(nT)
	IGRF2010	3/13/2013	9.98	65.66	52,049

Design Plan #1				
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W	Direction
	(ft)	(ft)	(ft)	(°)
	0.0	0.0	0.0	280.52

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	
325.0	0.00	0.00	325.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,071.7	22.40	280.52	1,052.8	26.3	-141.7	3.00	3.00	0.00	280.52	
6,083.3	22.40	280.52	5,686.3	375.1	-2,019.4	0.00	0.00	0.00	0.00	
7,203.4	0.00	0.00	6,778.0	414.6	-2,231.9	2.00	-2.00	0.00	180.00	Shideler Fee 31-13BE
10,113.4	0.00	0.00	9,688.0	414.6	-2,231.9	0.00	0.00	0.00	0.00	Shideler Fee 31-13BE
10,213.4	0.00	0.00	9,788.0	414.6	-2,231.9	0.00	0.00	0.00	0.00	

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Shideler Fee 31-13BB
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Project:	Mamm Creek	MD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Site:	O31E Pad (2nd Occupation)	North Reference:	True
Well:	Shideler Fee 31-13BB	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Comments / Formations
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	
325.0	0.00	0.00	325.0	0.0	0.0	0.0	0.00	0.00	KOP @ 325'
400.0	2.25	280.52	400.0	0.3	-1.4	1.5	3.00	3.00	
500.0	5.25	280.52	499.8	1.5	-7.9	8.0	3.00	3.00	
600.0	8.25	280.52	599.1	3.6	-19.4	19.8	3.00	3.00	
700.0	11.25	280.52	697.6	6.7	-36.1	36.7	3.00	3.00	
800.0	14.25	280.52	795.1	10.7	-57.8	58.8	3.00	3.00	
900.0	17.25	280.52	891.4	15.7	-84.5	85.9	3.00	3.00	
1,000.0	20.25	280.52	986.0	21.6	-116.1	118.0	3.00	3.00	
1,071.7	22.40	280.52	1,052.8	26.3	-141.7	144.1	3.00	3.00	EOB @ Inc. = 22.4°
1,100.0	22.40	280.52	1,079.0	28.3	-152.3	154.9	0.00	0.00	
1,200.0	22.40	280.52	1,171.4	35.3	-189.8	193.0	0.00	0.00	
1,300.0	22.40	280.52	1,263.9	42.2	-227.2	231.1	0.00	0.00	
1,393.1	22.40	280.52	1,350.0	48.7	-262.1	266.6	0.00	0.00	Surface Casing
1,400.0	22.40	280.52	1,356.3	49.2	-264.7	269.2	0.00	0.00	
1,500.0	22.40	280.52	1,448.8	56.1	-302.2	307.3	0.00	0.00	
1,600.0	22.40	280.52	1,541.3	63.1	-339.6	345.4	0.00	0.00	
1,700.0	22.40	280.52	1,633.7	70.0	-377.1	383.6	0.00	0.00	
1,800.0	22.40	280.52	1,726.2	77.0	-414.6	421.7	0.00	0.00	
1,900.0	22.40	280.52	1,818.6	84.0	-452.0	459.8	0.00	0.00	
2,000.0	22.40	280.52	1,911.1	90.9	-489.5	497.9	0.00	0.00	
2,100.0	22.40	280.52	2,003.5	97.9	-527.0	536.0	0.00	0.00	
2,200.0	22.40	280.52	2,096.0	104.8	-564.4	574.1	0.00	0.00	
2,300.0	22.40	280.52	2,188.4	111.8	-601.9	612.2	0.00	0.00	
2,400.0	22.40	280.52	2,280.9	118.8	-639.4	650.3	0.00	0.00	
2,500.0	22.40	280.52	2,373.3	125.7	-676.8	688.4	0.00	0.00	
2,600.0	22.40	280.52	2,465.8	132.7	-714.3	726.5	0.00	0.00	
2,700.0	22.40	280.52	2,558.3	139.6	-751.8	764.6	0.00	0.00	
2,800.0	22.40	280.52	2,650.7	146.6	-789.2	802.7	0.00	0.00	
2,900.0	22.40	280.52	2,743.2	153.6	-826.7	840.8	0.00	0.00	
3,000.0	22.40	280.52	2,835.6	160.5	-864.2	879.0	0.00	0.00	
3,100.0	22.40	280.52	2,928.1	167.5	-901.6	917.1	0.00	0.00	
3,200.0	22.40	280.52	3,020.5	174.4	-939.1	955.2	0.00	0.00	
3,300.0	22.40	280.52	3,113.0	181.4	-976.6	993.3	0.00	0.00	
3,400.0	22.40	280.52	3,205.4	188.4	-1,014.0	1,031.4	0.00	0.00	
3,500.0	22.40	280.52	3,297.9	195.3	-1,051.5	1,069.5	0.00	0.00	
3,600.0	22.40	280.52	3,390.3	202.3	-1,089.0	1,107.6	0.00	0.00	
3,700.0	22.40	280.52	3,482.8	209.2	-1,126.4	1,145.7	0.00	0.00	
3,800.0	22.40	280.52	3,575.3	216.2	-1,163.9	1,183.8	0.00	0.00	
3,900.0	22.40	280.52	3,667.7	223.2	-1,201.4	1,221.9	0.00	0.00	
4,000.0	22.40	280.52	3,760.2	230.1	-1,238.8	1,260.0	0.00	0.00	
4,100.0	22.40	280.52	3,852.6	237.1	-1,276.3	1,298.1	0.00	0.00	
4,200.0	22.40	280.52	3,945.1	244.0	-1,313.8	1,336.2	0.00	0.00	
4,300.0	22.40	280.52	4,037.5	251.0	-1,351.2	1,374.4	0.00	0.00	
4,400.0	22.40	280.52	4,130.0	258.0	-1,388.7	1,412.5	0.00	0.00	
4,500.0	22.40	280.52	4,222.4	264.9	-1,426.2	1,450.6	0.00	0.00	
4,600.0	22.40	280.52	4,314.9	271.9	-1,463.6	1,488.7	0.00	0.00	
4,700.0	22.40	280.52	4,407.3	278.8	-1,501.1	1,526.8	0.00	0.00	
4,800.0	22.40	280.52	4,499.8	285.8	-1,538.6	1,564.9	0.00	0.00	

Cathedral Energy Services

Planning Report

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Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Project:	Mamm Creek	MD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Site:	O31E Pad (2nd Occupation)	North Reference:	True
Well:	Shideler Fee 31-13BB	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
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	22.40	280.52	4,592.2	292.8	-1,576.0	1,603.0	0.00	0.00	
5,000.0	22.40	280.52	4,684.7	299.7	-1,613.5	1,641.1	0.00	0.00	
5,100.0	22.40	280.52	4,777.2	306.7	-1,651.0	1,679.2	0.00	0.00	
5,198.3	22.40	280.52	4,868.0	313.5	-1,687.8	1,716.7	0.00	0.00	Ohio Creek
5,200.0	22.40	280.52	4,869.6	313.6	-1,688.4	1,717.3	0.00	0.00	
5,300.0	22.40	280.52	4,962.1	320.6	-1,725.9	1,755.4	0.00	0.00	
5,400.0	22.40	280.52	5,054.5	327.6	-1,763.4	1,793.5	0.00	0.00	
5,404.8	22.40	280.52	5,059.0	327.9	-1,765.2	1,795.4	0.00	0.00	Mesaverde Marker
5,500.0	22.40	280.52	5,147.0	334.5	-1,800.8	1,831.6	0.00	0.00	
5,600.0	22.40	280.52	5,239.4	341.5	-1,838.3	1,869.8	0.00	0.00	
5,700.0	22.40	280.52	5,331.9	348.4	-1,875.8	1,907.9	0.00	0.00	
5,800.0	22.40	280.52	5,424.3	355.4	-1,913.2	1,946.0	0.00	0.00	
5,900.0	22.40	280.52	5,516.8	362.4	-1,950.7	1,984.1	0.00	0.00	
6,000.0	22.40	280.52	5,609.2	369.3	-1,988.2	2,022.2	0.00	0.00	
6,083.3	22.40	280.52	5,686.3	375.1	-2,019.4	2,053.9	0.00	0.00	Start 2° Drop
6,100.0	22.07	280.52	5,701.7	376.3	-2,025.6	2,060.2	2.00	-2.00	
6,105.7	21.95	280.52	5,707.0	376.7	-2,027.7	2,062.4	2.00	-2.00	Williams Fork
6,200.0	20.07	280.52	5,795.0	382.8	-2,060.9	2,096.2	2.00	-2.00	
6,300.0	18.07	280.52	5,889.5	388.8	-2,093.1	2,128.9	2.00	-2.00	
6,400.0	16.07	280.52	5,985.1	394.2	-2,121.9	2,158.2	2.00	-2.00	
6,500.0	14.07	280.52	6,081.7	398.9	-2,147.5	2,184.2	2.00	-2.00	
6,600.0	12.07	280.52	6,179.1	403.0	-2,169.7	2,206.8	2.00	-2.00	
6,700.0	10.07	280.52	6,277.2	406.5	-2,188.6	2,226.0	2.00	-2.00	
6,800.0	8.07	280.52	6,376.0	409.4	-2,204.1	2,241.8	2.00	-2.00	
6,900.0	6.07	280.52	6,475.2	411.7	-2,216.2	2,254.1	2.00	-2.00	
7,000.0	4.07	280.52	6,574.8	413.3	-2,224.8	2,262.9	2.00	-2.00	
7,100.0	2.07	280.52	6,674.7	414.3	-2,230.1	2,268.2	2.00	-2.00	
7,203.4	0.00	0.00	6,778.0	414.6	-2,231.9	2,270.1	2.00	-2.00	EOD @ Inc. = 0° - Top Gas
7,300.0	0.00	0.00	6,874.6	414.6	-2,231.9	2,270.1	0.00	0.00	
7,400.0	0.00	0.00	6,974.6	414.6	-2,231.9	2,270.1	0.00	0.00	
7,500.0	0.00	0.00	7,074.6	414.6	-2,231.9	2,270.1	0.00	0.00	
7,600.0	0.00	0.00	7,174.6	414.6	-2,231.9	2,270.1	0.00	0.00	
7,700.0	0.00	0.00	7,274.6	414.6	-2,231.9	2,270.1	0.00	0.00	
7,800.0	0.00	0.00	7,374.6	414.6	-2,231.9	2,270.1	0.00	0.00	
7,900.0	0.00	0.00	7,474.6	414.6	-2,231.9	2,270.1	0.00	0.00	
8,000.0	0.00	0.00	7,574.6	414.6	-2,231.9	2,270.1	0.00	0.00	
8,100.0	0.00	0.00	7,674.6	414.6	-2,231.9	2,270.1	0.00	0.00	
8,200.0	0.00	0.00	7,774.6	414.6	-2,231.9	2,270.1	0.00	0.00	
8,222.4	0.00	0.00	7,797.0	414.6	-2,231.9	2,270.1	0.00	0.00	Coal Ridge
8,300.0	0.00	0.00	7,874.6	414.6	-2,231.9	2,270.1	0.00	0.00	
8,400.0	0.00	0.00	7,974.6	414.6	-2,231.9	2,270.1	0.00	0.00	
8,500.0	0.00	0.00	8,074.6	414.6	-2,231.9	2,270.1	0.00	0.00	
8,600.0	0.00	0.00	8,174.6	414.6	-2,231.9	2,270.1	0.00	0.00	
8,700.0	0.00	0.00	8,274.6	414.6	-2,231.9	2,270.1	0.00	0.00	
8,800.0	0.00	0.00	8,374.6	414.6	-2,231.9	2,270.1	0.00	0.00	
8,888.4	0.00	0.00	8,463.0	414.6	-2,231.9	2,270.1	0.00	0.00	Rollins
8,900.0	0.00	0.00	8,474.6	414.6	-2,231.9	2,270.1	0.00	0.00	
9,000.0	0.00	0.00	8,574.6	414.6	-2,231.9	2,270.1	0.00	0.00	
9,100.0	0.00	0.00	8,674.6	414.6	-2,231.9	2,270.1	0.00	0.00	
9,200.0	0.00	0.00	8,774.6	414.6	-2,231.9	2,270.1	0.00	0.00	
9,300.0	0.00	0.00	8,874.6	414.6	-2,231.9	2,270.1	0.00	0.00	
9,400.0	0.00	0.00	8,974.6	414.6	-2,231.9	2,270.1	0.00	0.00	

Cathedral Energy Services

Planning Report

Database: USA EDM 5000 Multi Users DB	Local Co-ordinate Reference: Well Shideler Fee 31-13BB
Company: EnCana Oil & Gas (USA) Inc	TVD Reference: KB=22' @ 7126.0ft (Patterson #308)
Project: Mamm Creek	MD Reference: KB=22' @ 7126.0ft (Patterson #308)
Site: O31E Pad (2nd Occupation)	North Reference: True
Well: Shideler Fee 31-13BB	Survey Calculation Method: Minimum Curvature
Wellbore: OH	
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
9,438.4	0.00	0.00	9,013.0	414.6	-2,231.9	2,270.1	0.00	0.00	Cozzette
9,500.0	0.00	0.00	9,074.6	414.6	-2,231.9	2,270.1	0.00	0.00	
9,600.0	0.00	0.00	9,174.6	414.6	-2,231.9	2,270.1	0.00	0.00	
9,633.4	0.00	0.00	9,208.0	414.6	-2,231.9	2,270.1	0.00	0.00	Corcoran
9,700.0	0.00	0.00	9,274.6	414.6	-2,231.9	2,270.1	0.00	0.00	
9,800.0	0.00	0.00	9,374.6	414.6	-2,231.9	2,270.1	0.00	0.00	
9,900.0	0.00	0.00	9,474.6	414.6	-2,231.9	2,270.1	0.00	0.00	
10,000.0	0.00	0.00	9,574.6	414.6	-2,231.9	2,270.1	0.00	0.00	
10,100.0	0.00	0.00	9,674.6	414.6	-2,231.9	2,270.1	0.00	0.00	
10,113.4	0.00	0.00	9,688.0	414.6	-2,231.9	2,270.1	0.00	0.00	TD @ 10,113.4' MD
10,200.0	0.00	0.00	9,774.6	414.6	-2,231.9	2,270.1	0.00	0.00	
10,213.4	0.00	0.00	9,788.0	414.6	-2,231.9	2,270.1	0.00	0.00	Permit TD @ 10,213.4' MD

Targets									
Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
Shideler Fee 31-13BB P - plan hits target center - Circle (radius 25.0)	0.00	0.00	9,688.0	414.6	-2,231.9	1,577,478.58	2,374,449.58	39.398003	-107.713842
Shideler Fee 31-13BB T - plan hits target center - Point	0.00	0.00	6,778.0	414.6	-2,231.9	1,577,478.58	2,374,449.58	39.398003	-107.713842

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)	
1,393.1	1,350.0	Suface Casing			

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
5,198.3	4,868.0	Ohio Creek				
5,404.8	5,059.0	Mesaverde Marker				
6,105.7	5,707.0	Williams Fork				
7,203.4	6,778.0	Top Gas				
8,222.4	7,797.0	Coal Ridge				
8,888.4	8,463.0	Rollins				
9,438.4	9,013.0	Cozzette				
9,633.4	9,208.0	Corcoran				

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Shideler Fee 31-13BB
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Project:	Mamm Creek	MD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Site:	O31E Pad (2nd Occupation)	North Reference:	True
Well:	Shideler Fee 31-13BB	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1		

Plan Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
325.0	325.0	0.0	0.0	KOP @ 325'
1,071.7	1,052.8	26.3	-141.7	EOB @ Inc. = 22.4°
6,083.3	5,686.3	375.1	-2,019.4	Start 2° Drop
7,203.4	6,778.0	414.6	-2,231.9	EOD @ Inc. = 0°
10,113.4	9,688.0	414.6	-2,231.9	TD @ 10,113.4' MD
10,213.4	9,788.0	414.6	-2,231.9	Permit TD @ 10,213.4' MD

EnCana Oil & Gas (USA) Inc

Mamm Creek

O31E Pad (2nd Occupation)

Shideler Fee 31-13BB

OH

Plan #1

Anticollision Report

21 March, 2013

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Shideler Fee 31-13BB
Project:	Mamm Creek	TVD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Reference Site:	O31E Pad (2nd Occupation)	MD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Shideler Fee 31-13BB	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

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

Survey Tool Program		Date	3/14/2013		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
0.0	10,213.4	Plan #1 (OH)	MWD	Geolink MWD	

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Shideler Fee 31-13BB
Project:	Mamm Creek	TVD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Reference Site:	O31E Pad (2nd Occupation)	MD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Shideler Fee 31-13BB	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Summary						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance		Separation Factor	Warning
Offset Well - Wellbore - Design			Between Centres (ft)	Between Ellipses (ft)		
O31E Pad						
Shideler 31-15-EX - Existing - Existing	857.7	829.5	188.4	185.5	65.743	CC, ES
Shideler 31-15-EX - Existing - Existing	1,200.0	1,147.5	226.6	221.7	46.300	SF
Shideler Federal 6-3-EX - Existing - Existing	924.0	889.6	207.3	204.0	63.208	CC, ES
Shideler Federal 6-3-EX - Existing - Existing	1,300.0	1,239.5	244.9	239.2	42.885	SF
Shideler Fee 31-13C - OH - FINAL	919.1	921.3	155.4	150.8	34.140	CC, ES
Shideler Fee 31-13C - OH - FINAL	9,122.5	9,114.4	278.7	192.5	3.235	SF
Shideler Fee 31-13CC - OH - FINAL	0.0	3.0	219.2			
Shideler Fee 31-13CC - OH - FINAL	100.0	102.4	219.3	219.0	784.639	ES
Shideler Fee 31-13CC - OH - FINAL	5,500.0	5,467.7	498.1	430.1	7.315	SF
Shideler Fee 6-3A - DD - FINAL	0.0	3.0	242.7			
Shideler Fee 6-3A - DD - FINAL	100.0	102.3	242.9	242.6	869.687	ES
Shideler Fee 6-3A - DD - FINAL	1,600.0	1,548.8	371.0	362.1	41.824	SF
Shideler Fee 6-3AA - DD - FINAL	0.0	0.0	253.5			
Shideler Fee 6-3AA - DD - FINAL	1,700.0	1,608.0	491.5	480.3	44.052	SF
Shideler Fee 6-3D - DD - DD	0.0	3.0	231.0			
Shideler Fee 6-3D - DD - DD	200.0	202.0	231.5	230.9	370.420	ES
Shideler Fee 6-3D - DD - DD	1,600.0	1,497.5	489.3	479.5	49.765	SF
Shideler Fee 6-3DD - DD - DD	0.0	3.0	241.7			
Shideler Fee 6-3DD - DD - DD	100.0	102.2	241.8	241.6	865.944	ES
Shideler Fee 6-3DD - DD - DD	1,400.0	1,284.3	472.9	464.7	57.691	SF
Shideler Fee 6-6A - DD - FINAL	414.0	415.5	229.1	227.7	166.358	CC, ES
Shideler Fee 6-6A - DD - FINAL	1,500.0	1,334.9	499.2	490.5	57.388	SF
Shideler Fee 6-6D - DD - DD	130.9	134.0	217.2	216.8	563.095	CC, ES
Shideler Fee 6-6D - DD - DD	1,200.0	1,050.9	457.2	451.2	75.969	SF
Shideler Fee 6-6DD - DD - FINAL	153.0	156.0	206.8	206.3	447.060	CC
Shideler Fee 6-6DD - DD - FINAL	200.0	201.0	206.9	206.3	332.080	ES
Shideler Fee 6-6DD - DD - FINAL	1,300.0	1,105.9	494.3	487.2	69.824	SF
Shideler Fee 6-7D - DD - DD	138.8	138.8	206.4	206.0	499.614	CC, ES
Shideler Fee 6-7D - DD - DD	1,100.0	937.0	433.0	427.9	84.938	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 Shideler Fee 31-13BB
Project:	Mamm Creek	TVD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Reference Site:	O31E Pad (2nd Occupation)	MD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Shideler Fee 31-13BB	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Summary

Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
O31E Pad (2nd Occupation)						
Shideler Fee 31-10C - OH - Plan #1	200.0	200.0	75.0	74.4	120.756	CC, ES
Shideler Fee 31-10C - OH - Plan #1	1,400.0	1,335.8	373.0	364.6	44.007	SF
Shideler Fee 31-11C - OH - Plan #1	303.8	303.8	60.0	59.0	60.946	CC, ES
Shideler Fee 31-11C - OH - Plan #1	1,200.0	1,182.8	196.2	188.6	26.037	SF
Shideler Fee 31-12B - OH - Plan #1	357.5	358.2	44.1	42.9	36.565	CC
Shideler Fee 31-12B - OH - Plan #1	400.0	400.7	44.2	42.8	32.086	ES
Shideler Fee 31-12B - OH - Plan #1	2,700.0	2,641.7	497.0	466.9	16.532	SF
Shideler Fee 31-13B - OH - Plan #1	400.0	400.4	12.5	11.1	9.045	CC, ES
Shideler Fee 31-13B - OH - Plan #1	9,100.0	9,129.1	402.6	313.3	4.510	SF
Shideler Fee 31-14D - OH - Plan #1	300.0	300.0	30.0	29.1	30.936	CC, ES
Shideler Fee 31-14D - OH - Plan #1	500.0	499.8	36.2	34.6	21.649	SF
Shideler Fee 31-14DD - OH - Plan #1	300.0	300.0	14.8	13.8	15.244	CC, ES
Shideler Fee 31-14DD - OH - Plan #1	600.0	598.8	17.8	15.7	8.364	SF
Shideler Fee 31-16A - OH - Plan #1	300.0	300.0	97.7	96.8	100.726	CC, ES
Shideler Fee 31-16A - OH - Plan #1	600.0	587.3	123.5	121.5	61.193	SF
Shideler Fee 31-16AA - OH - Plan #1	300.0	300.0	90.1	89.1	92.808	CC, ES
Shideler Fee 31-16AA - OH - Plan #1	600.0	581.4	127.3	125.3	63.141	SF
Shideler Fee 31-16D - OH - Plan #1	300.0	300.0	68.1	67.1	70.195	CC, ES
Shideler Fee 31-16D - OH - Plan #1	500.0	493.5	81.5	79.9	48.945	SF
Shideler Fee 31-16DD - OH - Plan #1	300.0	300.0	83.0	82.0	85.533	CC, ES
Shideler Fee 31-16DD - OH - Plan #1	500.0	490.7	98.9	97.2	59.534	SF
Shideler Fee 31-9D - OH - Plan #1	200.0	200.0	105.1	104.4	169.079	CC, ES
Shideler Fee 31-9D - OH - Plan #1	600.0	571.0	158.6	156.6	79.045	SF
Shideler Fee 6-1A - OH - Plan #1	300.0	300.0	53.2	52.2	54.808	CC
Shideler Fee 6-1A - OH - Plan #1	300.2	300.2	53.2	52.2	54.769	ES
Shideler Fee 6-1A - OH - Plan #1	500.0	495.8	64.6	62.9	38.736	SF
Shideler Fee 6-1AA - OH - Plan #1	300.0	300.0	38.5	37.5	39.640	CC, ES
Shideler Fee 6-1AA - OH - Plan #1	400.0	398.8	40.8	39.5	30.949	SF
Shideler Fee 6-1D - OH - Plan #1	300.0	300.0	23.9	22.9	24.623	CC, ES
Shideler Fee 6-1D - OH - Plan #1	400.0	399.0	27.0	25.7	20.470	SF
Shideler Fee 6-1DD - OH - Plan #1	255.6	255.6	11.0	10.2	13.538	CC
Shideler Fee 6-1DD - OH - Plan #1	300.0	299.9	11.2	10.2	11.526	ES, SF
Shideler Fee 6-8A - OH - Plan #1	235.3	235.3	10.7	10.0	14.430	CC, ES
Shideler Fee 6-8A - OH - Plan #1	300.0	299.8	11.1	10.2	11.471	SF
Shideler Fee 6-8AA - OH - Plan #1	200.0	200.0	23.8	23.2	38.305	CC, ES
Shideler Fee 6-8AA - OH - Plan #1	400.0	398.8	26.8	25.4	19.948	SF
Shideler Fee 6-8D - OH - Plan #1	200.0	200.0	38.0	37.4	61.227	CC, ES
Shideler Fee 6-8D - OH - Plan #1	500.0	495.4	47.9	46.2	27.197	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 Shideler Fee 31-13BB
Project:	Mamm Creek	TVD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Reference Site:	O31E Pad (2nd Occupation)	MD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Shideler Fee 31-13BB	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft	
Survey Program: 100-Gyro													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	-147.37	-175.5	-112.4	209.5						
100.0	100.0	78.2	78.2	0.1	0.1	-147.43	-175.6	-112.2	208.4	208.2	0.20	1,019.408			
200.0	200.0	178.5	178.5	0.3	0.2	-147.62	-175.8	-111.5	208.2	207.7	0.47	446.376			
300.0	300.0	278.4	278.4	0.5	0.2	-147.90	-176.2	-110.5	208.0	207.2	0.73	285.615			
400.0	400.0	378.7	378.7	0.7	0.3	-69.32	-176.9	-108.9	207.2	206.2	0.99	208.318			
500.0	499.8	479.6	479.6	0.9	0.4	-71.70	-177.5	-106.8	204.5	203.2	1.28	159.667			
600.0	599.1	581.5	581.4	1.1	0.5	-75.40	-176.6	-105.2	199.6	198.0	1.62	123.581			
700.0	697.6	680.3	680.2	1.4	0.6	-80.31	-174.4	-104.4	193.6	191.6	2.02	95.636			
800.0	795.1	775.1	775.0	1.8	0.7	-86.46	-172.5	-104.6	189.2	186.6	2.52	74.951			
857.7	850.8	829.5	829.4	2.1	0.7	-90.65	-172.1	-104.9	188.4	185.5	2.87	65.743 CC, ES			
900.0	891.4	869.3	869.2	2.4	0.8	-94.06	-172.0	-105.1	188.9	185.8	3.11	60.677			
1,000.0	986.0	962.6	962.5	3.0	0.8	-102.84	-172.5	-104.9	194.4	190.6	3.76	51.733			
1,100.0	1,079.0	1,054.6	1,054.4	3.7	0.9	-112.03	-173.4	-104.3	207.3	202.9	4.38	47.319			
1,200.0	1,171.4	1,147.5	1,147.4	4.4	1.0	-120.68	-174.4	-103.6	226.6	221.7	4.89	46.300 SF			
1,300.0	1,263.9	1,240.7	1,240.5	5.1	1.1	-127.97	-174.7	-103.2	249.9	244.6	5.31	47.047			
1,400.0	1,356.3	1,332.1	1,332.0	5.8	1.2	-133.97	-175.2	-102.7	276.7	271.1	5.66	48.935			
1,500.0	1,448.8	1,424.2	1,424.1	6.5	1.2	-139.02	-175.6	-101.9	306.3	300.3	5.94	51.535			
1,600.0	1,541.3	1,516.4	1,516.3	7.2	1.3	-143.30	-175.6	-100.7	337.7	331.5	6.19	54.566			
1,700.0	1,633.7	1,609.3	1,609.1	7.9	1.4	-146.99	-175.1	-99.3	370.5	364.1	6.40	57.859			
1,800.0	1,726.2	1,701.5	1,701.3	8.7	1.5	-150.22	-173.8	-97.3	404.4	397.8	6.59	61.342			
1,900.0	1,818.6	1,795.8	1,795.5	9.4	1.6	-153.38	-170.1	-94.0	439.0	432.2	6.73	65.178			
2,000.0	1,911.1	1,897.9	1,897.1	10.1	1.7	-156.76	-162.1	-89.6	473.3	466.5	6.81	69.502			

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 Shideler Fee 31-13BB
Project:	Mamm Creek	TVD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Reference Site:	O31E Pad (2nd Occupation)	MD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Shideler Fee 31-13BB	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft	
Survey Program: 100-Gyro													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	-144.92	-184.6	-129.7	226.7						
100.0	100.0	79.1	79.1	0.1	0.1	-144.95	-184.5	-129.5	225.4	225.2	0.21	1,098.159			
200.0	200.0	179.4	179.4	0.3	0.2	-145.02	-184.2	-128.9	224.8	224.4	0.47	480.961			
289.9	289.9	267.9	267.9	0.5	0.2	-145.02	-183.9	-128.7	224.5	223.8	0.70	319.963			
300.0	300.0	277.8	277.8	0.5	0.2	-145.02	-183.9	-128.7	224.5	223.8	0.73	308.455			
400.0	400.0	377.1	377.1	0.7	0.3	-65.77	-183.9	-129.3	224.2	223.2	0.99	226.326			
500.0	499.8	476.7	476.6	0.9	0.4	-67.18	-183.9	-130.1	222.0	220.7	1.27	174.429			
600.0	599.1	575.6	575.6	1.1	0.5	-69.87	-183.9	-131.2	218.3	216.7	1.60	136.295			
700.0	697.6	673.5	673.5	1.4	0.6	-73.90	-184.1	-132.5	213.8	211.8	2.00	106.618			
800.0	795.1	770.4	770.4	1.8	0.7	-79.23	-184.4	-134.4	209.7	207.2	2.51	83.684			
900.0	891.4	866.7	866.6	2.4	0.8	-85.83	-185.0	-136.9	207.4	204.3	3.11	66.671			
924.0	914.2	889.6	889.5	2.5	0.8	-87.58	-185.1	-137.6	207.3	204.0	3.28	63.208	CC, ES		
1,000.0	986.0	961.7	961.6	3.0	0.8	-93.50	-185.6	-139.9	208.6	204.8	3.81	54.807			
1,100.0	1,079.0	1,055.1	1,054.9	3.7	0.9	-101.87	-186.5	-142.9	215.0	210.5	4.52	47.528			
1,200.0	1,171.4	1,147.3	1,147.1	4.4	1.0	-110.04	-187.7	-145.5	227.3	222.2	5.16	44.025			
1,300.0	1,263.9	1,239.5	1,239.2	5.1	1.1	-117.37	-189.4	-147.7	244.9	239.2	5.71	42.885	SF		
1,400.0	1,356.3	1,332.4	1,332.1	5.8	1.2	-123.86	-191.2	-149.5	266.5	260.4	6.17	43.222			
1,500.0	1,448.8	1,426.3	1,426.0	6.5	1.3	-129.47	-192.8	-151.3	291.0	284.5	6.55	44.448			
1,600.0	1,541.3	1,520.9	1,520.6	7.2	1.3	-134.24	-194.1	-153.4	317.5	310.7	6.88	46.182			
1,700.0	1,633.7	1,618.6	1,618.1	7.9	1.4	-138.32	-195.3	-156.5	345.2	338.0	7.17	48.159			
1,800.0	1,726.2	1,724.5	1,723.9	8.7	1.5	-141.85	-195.6	-162.6	371.7	364.3	7.44	49.981			
1,900.0	1,818.6	1,829.6	1,828.5	9.4	1.7	-144.38	-195.9	-173.1	396.4	388.6	7.75	51.160			
2,000.0	1,911.1	1,928.6	1,926.4	10.1	1.8	-145.96	-197.6	-186.9	419.8	411.6	8.12	51.685			
2,100.0	2,003.5	2,021.5	2,017.9	10.8	1.9	-146.69	-202.9	-202.3	444.1	435.5	8.58	51.761			
2,200.0	2,096.0	2,126.4	2,120.4	11.6	2.1	-146.96	-211.2	-222.7	467.8	458.7	9.12	51.312			
2,300.0	2,188.4	2,232.4	2,223.3	12.3	2.3	-146.82	-220.7	-246.7	489.8	480.1	9.73	50.331			

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 Shideler Fee 31-13BB
Project:	Mamm Creek	TVD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Reference Site:	O31E Pad (2nd Occupation)	MD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Shideler Fee 31-13BB	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design O31E Pad - Shideler Fee 31-13C - OH - FINAL													Offset Site Error:	0.0 ft
Survey Program: 111-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	3.0	3.0	0.0	0.0	-164.25	-188.3	-53.1	195.7					
100.0	100.0	102.4	102.4	0.1	0.1	-164.25	-188.5	-53.1	195.8	195.6	0.28	700.677		
200.0	200.0	203.3	203.3	0.3	0.3	-164.25	-188.7	-53.2	196.0	195.4	0.63	312.621		
300.0	300.0	305.8	305.8	0.5	0.5	-164.18	-188.0	-53.3	195.5	194.5	0.98	199.336		
400.0	400.0	413.4	413.3	0.7	0.7	-84.65	-183.9	-54.2	191.8	190.5	1.35	142.458		
500.0	499.8	518.5	517.9	0.9	0.9	-85.18	-175.2	-57.8	184.2	182.5	1.74	105.764		
600.0	599.1	618.7	617.5	1.1	1.2	-86.43	-164.6	-64.1	174.8	172.6	2.20	79.280		
700.0	697.6	716.0	713.5	1.4	1.4	-88.13	-153.5	-74.0	165.1	162.4	2.78	59.424		
800.0	795.1	809.6	805.4	1.8	1.8	-89.68	-144.1	-89.3	158.2	154.7	3.49	45.254		
900.0	891.4	903.3	896.6	2.4	2.1	-91.42	-137.7	-109.6	155.4	151.1	4.36	35.628		
919.1	909.5	921.3	914.1	2.5	2.2	-91.82	-136.8	-113.9	155.4	150.8	4.55	34.140	CC, ES	
1,000.0	986.0	999.2	989.3	3.0	2.5	-93.78	-133.8	-133.8	156.4	151.0	5.39	28.993		
1,100.0	1,079.0	1,098.8	1,084.5	3.7	3.1	-96.56	-130.6	-162.9	159.3	152.7	6.57	24.231		
1,200.0	1,171.4	1,200.5	1,180.3	4.4	3.7	-98.19	-126.3	-196.9	161.8	154.0	7.88	20.532		
1,300.0	1,263.9	1,301.4	1,273.6	5.1	4.4	-98.14	-120.9	-234.9	163.5	154.2	9.30	17.585		
1,400.0	1,356.3	1,400.7	1,364.7	5.8	5.1	-97.49	-115.5	-273.9	165.0	154.3	10.75	15.360		
1,500.0	1,448.8	1,500.2	1,456.0	6.5	5.8	-96.74	-110.5	-313.3	167.1	154.8	12.22	13.675		
1,600.0	1,541.3	1,599.9	1,547.2	7.2	6.6	-95.86	-105.6	-353.2	169.3	155.6	13.72	12.340		
1,700.0	1,633.7	1,698.3	1,637.1	7.9	7.4	-94.83	-101.2	-393.2	172.0	156.8	15.22	11.301		
1,800.0	1,726.2	1,798.0	1,727.8	8.7	8.1	-93.63	-97.3	-434.2	175.4	158.6	16.76	10.462		
1,900.0	1,818.6	1,897.1	1,817.7	9.4	8.9	-92.21	-93.5	-475.8	179.1	160.8	18.31	9.786		
2,000.0	1,911.1	1,999.2	1,910.7	10.1	9.7	-91.13	-89.6	-517.6	182.7	162.9	19.83	9.212		
2,100.0	2,003.5	2,102.0	2,004.7	10.8	10.5	-90.27	-83.7	-559.0	184.4	163.1	21.36	8.633		
2,200.0	2,096.0	2,201.5	2,095.4	11.6	11.3	-89.32	-77.7	-599.3	185.9	163.0	22.87	8.126		
2,300.0	2,188.4	2,302.6	2,187.7	12.3	12.1	-88.42	-71.6	-640.1	187.4	163.0	24.36	7.693		
2,400.0	2,280.9	2,403.8	2,281.3	13.0	12.8	-88.42	-65.1	-678.1	187.9	162.1	25.82	7.279		
2,500.0	2,373.3	2,504.3	2,374.3	13.8	13.5	-88.55	-58.5	-715.4	188.2	160.9	27.27	6.902		
2,600.0	2,465.8	2,602.4	2,465.2	14.5	14.2	-88.69	-52.2	-751.9	188.7	160.0	28.72	6.571		
2,700.0	2,558.3	2,702.6	2,557.7	15.2	15.0	-88.60	-46.3	-789.9	189.9	159.7	30.18	6.292		
2,800.0	2,650.7	2,799.4	2,647.0	15.9	15.7	-88.44	-41.2	-827.0	191.7	160.0	31.63	6.059		
2,900.0	2,743.2	2,898.9	2,738.3	16.7	16.5	-88.00	-36.7	-866.2	194.5	161.4	33.11	5.874		
3,000.0	2,835.6	2,998.5	2,829.7	17.4	17.2	-87.47	-32.3	-905.8	197.5	162.9	34.59	5.711		
3,100.0	2,928.1	3,098.8	2,921.8	18.1	18.0	-87.20	-28.1	-944.9	200.5	164.5	36.05	5.562		
3,200.0	3,020.5	3,198.5	3,013.8	18.9	18.7	-87.08	-24.0	-983.3	203.5	166.0	37.51	5.426		
3,300.0	3,113.0	3,298.1	3,105.7	19.6	19.4	-87.01	-20.0	-1,021.5	206.7	167.7	38.97	5.303		
3,400.0	3,205.4	3,397.5	3,197.5	20.3	20.2	-87.05	-16.4	-1,059.4	210.0	169.6	40.42	5.196		
3,500.0	3,297.9	3,498.8	3,291.2	21.1	20.9	-87.15	-12.8	-1,097.8	213.4	171.5	41.89	5.094		
3,600.0	3,390.3	3,599.7	3,384.4	21.8	21.6	-87.15	-8.2	-1,136.1	215.9	172.5	43.35	4.980		
3,700.0	3,482.8	3,700.4	3,477.7	22.5	22.4	-87.32	-3.6	-1,173.8	218.2	173.4	44.80	4.870		
3,800.0	3,575.3	3,799.5	3,569.2	23.2	23.1	-87.32	1.1	-1,211.4	220.5	174.2	46.28	4.763		
3,900.0	3,667.7	3,899.2	3,660.7	24.0	23.9	-86.90	5.9	-1,250.8	223.0	175.3	47.75	4.670		
4,000.0	3,760.2	3,998.2	3,751.4	24.7	24.6	-86.42	10.5	-1,290.2	225.8	176.6	49.22	4.588		
4,100.0	3,852.6	4,097.4	3,842.0	25.4	25.4	-85.79	14.7	-1,330.4	229.2	178.6	50.68	4.523		
4,200.0	3,945.1	4,200.5	3,936.3	26.2	26.2	-85.22	20.0	-1,371.7	231.7	179.5	52.16	4.442		
4,300.0	4,037.5	4,300.2	4,027.2	26.9	27.0	-84.45	25.6	-1,412.4	233.9	180.3	53.59	4.365		
4,400.0	4,130.0	4,401.3	4,120.2	27.6	27.8	-84.22	31.0	-1,451.6	235.9	180.8	55.04	4.285		
4,500.0	4,222.4	4,502.1	4,213.3	28.4	28.5	-84.24	36.5	-1,489.7	237.4	180.9	56.50	4.202		
4,600.0	4,314.9	4,600.2	4,304.0	29.1	29.2	-84.22	41.9	-1,527.0	239.0	181.0	57.94	4.124		
4,700.0	4,407.3	4,703.0	4,399.0	29.8	30.0	-84.29	47.0	-1,565.8	240.9	181.5	59.40	4.056		
4,800.0	4,499.8	4,805.6	4,494.5	30.6	30.7	-84.70	53.4	-1,602.8	241.3	180.4	60.89	3.963		
4,811.2	4,510.1	4,816.7	4,504.8	30.6	30.8	-84.74	54.1	-1,606.8	241.3	180.2	61.06	3.952		
4,900.0	4,592.2	4,901.7	4,583.7	31.3	31.4	-85.00	59.1	-1,637.8	242.0	179.6	62.33	3.882		

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 Shideler Fee 31-13BB
Project:	Mamm Creek	TVD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Reference Site:	O31E Pad (2nd Occupation)	MD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Shideler Fee 31-13BB	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft	
Survey Program: 111-MWD													Offset Well Error:		0.0 ft
Reference		Offset		Semi Major Axis			Distance				Total Uncertainty Axis	Separation Factor	Warning		
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)					
5,000.0	4,684.7	5,001.2	4,676.1	32.0	32.1	-85.23	64.2	-1,674.7	243.6	179.8	63.79	3.819			
5,100.0	4,777.2	5,100.0	4,767.8	32.8	32.8	-85.49	68.9	-1,711.2	245.6	180.4	65.25	3.765			
5,200.0	4,869.6	5,200.2	4,860.8	33.5	33.5	-85.81	73.5	-1,748.0	247.7	181.0	66.71	3.713			
5,300.0	4,962.1	5,299.0	4,952.6	34.2	34.2	-86.18	77.6	-1,784.2	250.2	182.0	68.17	3.670			
5,400.0	5,054.5	5,398.7	5,045.3	34.9	34.9	-86.55	81.6	-1,820.7	252.8	183.2	69.63	3.631			
5,500.0	5,147.0	5,497.6	5,137.1	35.7	35.6	-86.78	85.4	-1,857.5	255.8	184.7	71.09	3.598			
5,600.0	5,239.4	5,599.3	5,231.4	36.4	36.3	-87.02	89.3	-1,895.3	258.8	186.3	72.54	3.568			
5,700.0	5,331.9	5,699.8	5,325.5	37.1	37.0	-87.78	93.4	-1,930.3	261.0	187.0	74.00	3.527			
5,800.0	5,424.3	5,801.5	5,421.0	37.9	37.6	-88.71	97.5	-1,965.0	263.1	187.7	75.42	3.489			
5,900.0	5,516.8	5,901.8	5,516.1	38.6	38.2	-90.18	101.7	-1,996.6	264.7	187.9	76.80	3.447			
6,000.0	5,609.2	6,002.7	5,612.5	39.3	38.8	-92.18	105.8	-2,026.1	266.3	188.2	78.06	3.411			
6,100.0	5,701.7	6,102.7	5,708.9	40.1	39.3	-94.76	109.8	-2,052.4	267.8	188.7	79.14	3.384			
6,200.0	5,795.0	6,201.5	5,804.5	40.7	39.7	-97.13	113.8	-2,077.1	269.6	189.6	79.99	3.370			
6,300.0	5,889.5	6,298.8	5,899.0	41.3	40.1	-99.06	117.0	-2,099.9	272.0	191.3	80.69	3.370			
6,400.0	5,985.1	6,397.1	5,995.1	41.8	40.5	-100.80	119.6	-2,120.5	274.7	193.4	81.24	3.381			
6,500.0	6,081.7	6,495.8	6,091.9	42.3	40.9	-102.11	121.7	-2,139.8	277.4	195.7	81.75	3.394			
6,600.0	6,179.1	6,595.9	6,190.3	42.7	41.2	-103.01	123.8	-2,157.9	279.6	197.4	82.23	3.400			
6,700.0	6,277.2	6,695.1	6,288.3	43.0	41.5	-103.77	126.0	-2,173.0	281.1	198.5	82.63	3.402			
6,800.0	6,376.0	6,793.6	6,386.0	43.3	41.7	-104.30	127.8	-2,185.8	282.3	199.3	82.98	3.402			
6,900.0	6,475.2	6,893.4	6,485.2	43.5	42.0	-104.56	129.5	-2,196.5	283.0	199.7	83.33	3.396			
7,000.0	6,574.8	6,990.7	6,582.0	43.7	42.1	-104.43	130.9	-2,205.7	283.1	199.4	83.71	3.381			
7,100.0	6,674.7	7,089.1	6,680.2	43.8	42.3	-104.00	131.5	-2,213.0	283.3	199.2	84.11	3.368			
7,200.0	6,774.6	7,187.9	6,778.8	43.9	42.4	-103.22	131.8	-2,218.6	283.1	198.6	84.51	3.350			
7,281.6	6,856.2	7,268.4	6,859.2	43.9	42.5	-102.55	131.9	-2,222.0	282.9	198.1	84.83	3.335			
7,300.0	6,874.6	7,286.6	6,877.4	43.9	42.5	178.13	131.8	-2,222.7	282.9	198.0	84.90	3.332			
7,400.0	6,974.6	7,386.7	6,977.4	44.0	42.6	178.73	131.7	-2,225.7	283.0	197.8	85.21	3.321			
7,500.0	7,074.6	7,486.1	7,076.9	44.0	42.7	179.11	131.4	-2,227.5	283.2	197.8	85.43	3.315			
7,600.0	7,174.6	7,586.0	7,176.7	44.1	42.8	179.34	131.1	-2,228.7	283.5	197.9	85.60	3.312			
7,700.0	7,274.6	7,686.0	7,276.7	44.1	42.8	179.37	130.7	-2,228.8	283.9	198.2	85.71	3.312			
7,800.0	7,374.6	7,787.4	7,378.1	44.2	42.8	179.15	130.7	-2,227.7	283.9	198.2	85.74	3.312			
7,886.9	7,461.5	7,873.8	7,464.5	44.2	42.9	178.81	130.9	-2,226.0	283.8	198.0	85.74	3.310			
7,900.0	7,474.6	7,886.6	7,477.3	44.2	42.9	178.78	130.9	-2,225.9	283.8	198.0	85.74	3.310			
8,000.0	7,574.6	7,985.7	7,576.4	44.3	42.9	178.67	130.5	-2,225.3	284.2	198.3	85.82	3.311			
8,100.0	7,674.6	8,086.2	7,676.9	44.3	42.9	178.41	130.2	-2,224.0	284.5	198.7	85.83	3.315			
8,200.0	7,774.6	8,184.9	7,775.6	44.4	43.0	178.12	129.8	-2,222.6	284.9	199.1	85.87	3.318			
8,300.0	7,874.6	8,283.9	7,874.5	44.4	43.1	178.15	128.9	-2,222.7	285.9	199.9	85.99	3.324			
8,400.0	7,974.6	8,384.2	7,974.8	44.5	43.1	177.95	127.9	-2,221.7	286.9	200.9	86.03	3.335			
8,500.0	8,074.6	8,486.5	8,077.1	44.6	43.2	177.90	127.3	-2,221.4	287.5	201.3	86.15	3.337			
8,600.0	8,174.6	8,587.4	8,178.1	44.6	43.2	178.02	127.3	-2,222.0	287.5	201.2	86.31	3.331			
8,700.0	8,274.6	8,688.3	8,279.0	44.7	43.3	178.00	127.6	-2,221.9	287.2	200.8	86.42	3.324			
8,800.0	8,374.6	8,791.3	8,382.0	44.7	43.3	177.77	128.6	-2,220.8	286.3	199.8	86.46	3.311			
8,900.0	8,474.6	8,895.1	8,485.7	44.8	43.3	177.31	130.9	-2,218.6	284.1	197.7	86.41	3.288			
9,000.0	8,574.6	8,994.6	8,585.1	44.9	43.4	176.66	134.1	-2,215.6	281.1	194.8	86.30	3.257			
9,100.0	8,674.6	9,091.8	8,682.3	44.9	43.4	176.03	136.3	-2,212.6	279.0	192.9	86.18	3.238			
9,122.5	8,697.2	9,114.4	8,704.8	44.9	43.4	175.88	136.7	-2,211.9	278.7	192.5	86.15	3.235 SF			
9,200.0	8,774.6	9,118.0	8,708.4	45.0	43.4	175.85	136.8	-2,211.8	287.0	200.9	86.19	3.330			
9,300.0	8,874.6	9,118.0	8,708.4	45.0	43.4	175.85	136.8	-2,211.8	325.9	239.7	86.26	3.779			
9,400.0	8,974.6	9,118.0	8,708.4	45.1	43.4	175.85	136.8	-2,211.8	387.4	301.1	86.32	4.488			
9,500.0	9,074.6	9,118.0	8,708.4	45.2	43.4	175.85	136.8	-2,211.8	462.5	376.1	86.39	5.354			

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

Cathedral Energy Services

Anticollision Report

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Reference Site:	O31E Pad (2nd Occupation)	MD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Shideler Fee 31-13BB	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft	
Survey Program: 111-MWD, 1242-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	3.0	3.0	0.0	0.0	-159.07	-204.7	-78.3	219.2						
100.0	100.0	102.4	102.4	0.1	0.1	-159.05	-204.8	-78.4	219.3	219.0	0.28	784.639	ES		
200.0	200.0	201.9	201.9	0.3	0.3	-159.04	-205.2	-78.6	219.8	219.1	0.62	351.722			
300.0	300.0	300.7	300.7	0.5	0.5	-158.40	-205.1	-81.2	220.6	219.7	0.97	226.997			
400.0	400.0	398.8	398.5	0.7	0.7	-77.59	-204.0	-87.7	221.8	220.5	1.34	165.002			
500.0	499.8	492.6	491.7	0.9	0.9	-76.51	-203.0	-98.2	223.8	222.0	1.76	127.061			
600.0	599.1	589.3	587.3	1.1	1.2	-75.82	-202.5	-112.6	226.7	224.4	2.28	99.391			
700.0	697.6	686.0	682.3	1.4	1.6	-75.52	-201.9	-130.7	229.7	226.8	2.92	78.569			
800.0	795.1	781.6	775.4	1.8	2.0	-75.57	-201.3	-152.2	233.2	229.5	3.71	62.889			
900.0	891.4	877.6	868.0	2.4	2.5	-75.91	-200.7	-177.7	237.1	232.4	4.65	50.942			
1,000.0	986.0	973.8	959.7	3.0	3.0	-76.56	-200.1	-207.0	241.4	235.6	5.79	41.712			
1,100.0	1,079.0	1,072.3	1,051.6	3.7	3.7	-77.02	-198.3	-242.3	245.7	238.6	7.09	34.642			
1,200.0	1,171.4	1,171.5	1,143.5	4.4	4.4	-77.48	-196.1	-279.3	250.0	241.6	8.43	29.655			
1,300.0	1,263.9	1,271.3	1,236.2	5.1	5.1	-78.07	-194.4	-316.2	254.6	244.8	9.80	25.991			
1,400.0	1,356.3	1,373.2	1,330.9	5.8	5.8	-78.58	-192.0	-353.9	258.7	247.5	11.19	23.124			
1,500.0	1,448.8	1,472.5	1,423.5	6.5	6.4	-79.28	-189.6	-389.6	262.3	249.7	12.57	20.860			
1,600.0	1,541.3	1,571.9	1,516.1	7.2	7.1	-79.88	-187.7	-425.9	266.7	252.7	13.97	19.089			
1,700.0	1,633.7	1,668.3	1,605.9	7.9	7.8	-80.51	-186.0	-460.8	271.1	255.8	15.36	17.657			
1,800.0	1,726.2	1,766.4	1,696.9	8.7	8.5	-81.01	-185.6	-497.4	277.3	260.5	16.76	16.542			
1,900.0	1,818.6	1,868.8	1,792.0	9.4	9.2	-81.53	-184.9	-535.4	283.1	264.9	18.19	15.558			
2,000.0	1,911.1	1,964.1	1,880.7	10.1	9.9	-82.09	-184.5	-570.3	288.9	269.4	19.59	14.751			
2,100.0	2,003.5	2,062.6	1,972.3	10.8	10.6	-82.69	-185.2	-606.5	296.1	275.1	20.99	14.103			
2,200.0	2,096.0	2,163.4	2,066.3	11.6	11.3	-83.39	-186.2	-643.0	303.2	280.8	22.43	13.520			
2,300.0	2,188.4	2,264.7	2,160.7	12.3	12.0	-84.08	-186.6	-679.6	309.9	286.0	23.86	12.987			
2,400.0	2,280.9	2,364.9	2,254.3	13.0	12.6	-84.79	-186.9	-715.3	316.4	291.1	25.29	12.511			
2,500.0	2,373.3	2,466.3	2,349.1	13.8	13.3	-85.48	-186.9	-751.4	322.5	295.8	26.72	12.069			
2,600.0	2,465.8	2,566.9	2,443.3	14.5	14.0	-86.25	-186.5	-786.5	328.3	300.1	28.15	11.660			
2,700.0	2,558.3	2,666.3	2,536.4	15.2	14.7	-86.91	-186.0	-821.6	334.0	304.4	29.57	11.295			
2,800.0	2,650.7	2,767.9	2,631.7	15.9	15.3	-87.69	-185.6	-856.8	339.7	308.7	31.00	10.958			
2,900.0	2,743.2	2,865.4	2,723.0	16.7	16.0	-88.31	-184.8	-891.0	345.2	312.8	32.42	10.647			
3,000.0	2,835.6	2,964.5	2,815.3	17.4	16.7	-88.73	-184.5	-927.0	351.5	317.7	33.85	10.385			
3,100.0	2,928.1	3,067.6	2,911.6	18.1	17.4	-89.27	-183.9	-963.8	357.4	322.1	35.29	10.128			
3,200.0	3,020.5	3,169.3	3,007.1	18.9	18.0	-90.01	-182.7	-998.5	362.5	325.8	36.70	9.877			
3,300.0	3,113.0	3,266.0	3,098.1	19.6	18.7	-90.72	-181.8	-1,031.4	367.8	329.7	38.09	9.656			
3,400.0	3,205.4	3,361.7	3,187.5	20.3	19.3	-91.19	-181.8	-1,065.5	374.3	334.8	39.49	9.479			
3,500.0	3,297.9	3,465.5	3,284.6	21.1	20.0	-91.71	-181.6	-1,102.2	380.6	339.7	40.91	9.303			
3,600.0	3,390.3	3,566.2	3,379.2	21.8	20.7	-92.37	-180.7	-1,136.7	386.2	343.9	42.32	9.126			
3,700.0	3,482.8	3,666.1	3,472.8	22.5	21.4	-92.88	-180.0	-1,171.7	392.1	348.4	43.72	8.968			
3,800.0	3,575.3	3,767.6	3,567.9	23.2	22.1	-93.38	-178.6	-1,207.1	397.3	352.2	45.14	8.802			
3,900.0	3,667.7	3,868.7	3,662.4	24.0	22.7	-93.76	-177.1	-1,243.2	402.6	356.0	46.56	8.647			
4,000.0	3,760.2	3,971.1	3,758.4	24.7	23.4	-94.30	-175.1	-1,278.6	407.2	359.2	47.95	8.492			
4,100.0	3,852.6	4,070.9	3,852.2	25.4	24.1	-94.85	-172.8	-1,312.7	411.5	362.2	49.35	8.339			
4,200.0	3,945.1	4,163.7	3,939.1	26.2	24.7	-95.25	-171.3	-1,345.3	416.7	366.0	50.68	8.222			
4,300.0	4,037.5	4,263.0	4,032.3	26.9	25.3	-95.78	-170.5	-1,379.4	422.5	370.5	52.05	8.118			
4,400.0	4,130.0	4,358.7	4,122.3	27.6	26.0	-96.32	-170.1	-1,412.0	428.8	375.5	53.37	8.035			
4,500.0	4,222.4	4,459.7	4,217.5	28.4	26.6	-96.98	-170.4	-1,445.6	435.8	381.1	54.71	7.965			
4,600.0	4,314.9	4,553.6	4,305.8	29.1	27.2	-97.47	-171.3	-1,477.6	443.5	387.5	56.03	7.916			
4,700.0	4,407.3	4,656.2	4,402.2	29.8	27.9	-98.01	-172.6	-1,512.5	451.6	394.2	57.39	7.870			
4,800.0	4,499.8	4,760.2	4,499.5	30.6	28.6	-98.34	-172.7	-1,549.3	458.7	399.9	58.80	7.800			
4,900.0	4,592.2	4,861.6	4,594.4	31.3	29.3	-98.67	-172.5	-1,585.1	465.3	405.2	60.17	7.733			
5,000.0	4,684.7	4,963.8	4,690.3	32.0	30.0	-99.11	-171.7	-1,620.2	471.4	409.9	61.54	7.660			
5,100.0	4,777.2	5,061.2	4,781.7	32.8	30.6	-99.48	-170.8	-1,654.0	477.5	414.6	62.85	7.597			

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 Shideler Fee 31-13BB
Project:	Mamm Creek	TVD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Reference Site:	O31E Pad (2nd Occupation)	MD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Shideler Fee 31-13BB	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft
Survey Program: 111-MWD, 1242-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor		
5,200.0	4,869.6	5,174.5	4,888.9	33.5	31.3	-100.24	-169.1	-1,690.5	483.0	418.8	64.19	7.525		
5,300.0	4,962.1	5,265.8	4,975.2	34.2	31.9	-100.78	-166.7	-1,720.6	487.5	422.0	65.43	7.450		
5,400.0	5,054.5	5,364.9	5,068.1	34.9	32.5	-101.14	-165.3	-1,754.7	493.1	426.3	66.77	7.385		
5,500.0	5,147.0	5,467.7	5,164.6	35.7	33.2	-101.52	-163.3	-1,790.2	498.1	430.1	68.10	7.315 SF		

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Shideler Fee 31-13BB
Project:	Mamm Creek	TVD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Reference Site:	O31E Pad (2nd Occupation)	MD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Shideler Fee 31-13BB	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft	
Survey Program: 111-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	3.0	3.0	0.0	0.0	-155.00	-220.0	-102.6	242.7						
100.0	100.0	102.3	102.3	0.1	0.1	-154.99	-220.1	-102.7	242.9	242.6	0.28	869.687	ES		
200.0	200.0	200.2	200.2	0.3	0.3	-154.87	-220.6	-103.5	243.7	243.0	0.62	391.681			
300.0	300.0	295.0	295.0	0.5	0.5	-154.66	-221.5	-104.9	245.2	244.2	0.96	254.484			
400.0	400.0	389.6	389.5	0.7	0.7	-75.04	-224.2	-107.9	248.8	247.5	1.31	190.490			
500.0	499.8	488.0	487.7	0.9	0.9	-75.87	-228.5	-112.2	253.0	251.3	1.68	150.662			
600.0	599.1	589.6	589.1	1.1	1.1	-77.87	-232.6	-116.6	255.7	253.6	2.11	121.264			
700.0	697.6	688.2	687.5	1.4	1.3	-80.93	-236.4	-120.7	257.7	255.1	2.61	98.675			
800.0	795.1	786.6	785.8	1.8	1.4	-84.89	-240.0	-125.5	260.0	256.8	3.21	80.879			
900.0	891.4	883.5	882.5	2.4	1.6	-89.72	-243.5	-130.2	263.4	259.5	3.92	67.269			
1,000.0	986.0	980.2	979.1	3.0	1.8	-95.38	-247.0	-134.9	269.4	264.7	4.71	57.188			
1,100.0	1,079.0	1,075.2	1,073.9	3.7	2.0	-101.54	-250.1	-139.6	278.7	273.2	5.55	50.231			
1,200.0	1,171.4	1,169.0	1,167.5	4.4	2.2	-107.59	-253.0	-144.4	291.9	285.6	6.34	46.023			
1,300.0	1,263.9	1,262.9	1,261.2	5.1	2.4	-113.21	-256.0	-148.7	308.4	301.3	7.07	43.619			
1,400.0	1,356.3	1,357.6	1,355.9	5.8	2.6	-118.51	-258.5	-152.0	327.7	320.0	7.72	42.443			
1,500.0	1,448.8	1,455.7	1,453.9	6.5	2.8	-123.28	-260.4	-156.3	348.5	340.2	8.32	41.887			
1,600.0	1,541.3	1,548.8	1,546.8	7.2	3.0	-127.28	-261.9	-160.8	371.0	362.1	8.87	41.824	SF		
1,700.0	1,633.7	1,641.4	1,639.2	7.9	3.2	-130.57	-264.6	-166.6	395.4	386.0	9.40	42.044			
1,800.0	1,726.2	1,734.2	1,731.8	8.7	3.4	-133.47	-267.8	-172.3	421.4	411.5	9.91	42.542			
1,900.0	1,818.6	1,827.7	1,825.0	9.4	3.5	-136.10	-270.9	-177.7	448.6	438.2	10.37	43.243			
2,000.0	1,911.1	1,920.4	1,917.6	10.1	3.7	-138.48	-274.0	-182.6	476.9	466.1	10.81	44.105			

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 Shideler Fee 31-13BB
Project:	Mamm Creek	TVD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Reference Site:	O31E Pad (2nd Occupation)	MD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Shideler Fee 31-13BB	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft	
Survey Program: 111-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	-155.85	-231.3	-103.7	253.5						
100.0	100.0	97.3	97.3	0.1	0.1	-155.83	-231.7	-104.0	254.0	253.7	0.27	929.703			
200.0	200.0	188.9	188.9	0.3	0.3	-155.74	-233.6	-105.3	256.4	255.8	0.61	421.559			
300.0	300.0	277.3	277.1	0.5	0.5	-155.44	-238.2	-108.8	262.9	261.9	0.96	273.672			
400.0	400.0	366.9	366.1	0.7	0.7	-75.52	-246.1	-115.0	273.4	272.1	1.27	215.350			
500.0	499.8	458.7	457.0	0.9	1.0	-75.84	-256.4	-122.5	285.4	283.8	1.63	174.778			
600.0	599.1	551.4	548.4	1.1	1.3	-76.91	-268.9	-131.5	299.0	296.9	2.05	145.813			
700.0	697.6	651.3	646.8	1.4	1.6	-78.96	-283.3	-141.2	312.6	310.1	2.56	121.929			
800.0	795.1	754.1	748.3	1.8	2.0	-81.78	-296.5	-151.1	324.5	321.3	3.19	101.726			
900.0	891.4	852.2	845.2	2.4	2.3	-85.20	-308.3	-159.8	335.9	331.9	3.92	85.610			
1,000.0	986.0	949.5	941.5	3.0	2.6	-89.18	-319.9	-168.1	348.3	343.5	4.78	72.878			
1,100.0	1,079.0	1,043.6	1,034.6	3.7	2.8	-93.50	-330.8	-176.3	362.6	356.9	5.72	63.417			
1,200.0	1,171.4	1,138.6	1,128.6	4.4	3.1	-98.01	-341.8	-184.6	379.5	372.8	6.68	56.837			
1,300.0	1,263.9	1,232.2	1,221.2	5.1	3.4	-102.02	-352.4	-193.3	398.4	390.8	7.62	52.258			
1,400.0	1,356.3	1,324.1	1,312.1	5.8	3.7	-105.64	-363.2	-201.5	419.5	411.0	8.54	49.123			
1,500.0	1,448.8	1,420.0	1,407.0	6.5	4.0	-109.13	-374.4	-209.6	442.4	432.9	9.44	46.859			
1,600.0	1,541.3	1,514.6	1,500.6	7.2	4.3	-112.22	-385.2	-217.8	466.3	456.0	10.32	45.210			
1,700.0	1,633.7	1,608.0	1,593.0	7.9	4.6	-114.98	-395.9	-225.9	491.5	480.3	11.16	44.052 SF			

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Shideler Fee 31-13BB
Project:	Mamm Creek	TVD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Reference Site:	O31E Pad (2nd Occupation)	MD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Shideler Fee 31-13BB	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft
Survey Program: 111-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	3.0	3.0	0.0	0.0	-157.03	-212.7	-90.1	231.0					
100.0	100.0	102.3	102.3	0.1	0.1	-157.02	-212.8	-90.3	231.2	230.9	0.28	827.499		
200.0	200.0	202.0	202.0	0.3	0.3	-157.03	-213.1	-90.4	231.5	230.9	0.62	370.420 ES		
300.0	300.0	297.0	297.0	0.5	0.5	-156.98	-214.1	-91.0	232.8	231.8	0.97	240.837		
400.0	400.0	387.0	386.9	0.7	0.6	-77.47	-217.3	-93.4	236.8	235.5	1.30	182.236		
500.0	499.8	477.0	476.6	0.9	0.8	-78.30	-223.9	-97.6	244.0	242.3	1.66	147.370		
600.0	599.1	567.2	566.0	1.1	1.1	-80.08	-234.1	-103.0	254.5	252.5	2.06	123.365		
700.0	697.6	657.2	654.8	1.4	1.3	-82.64	-246.9	-109.1	267.8	265.3	2.55	105.147		
800.0	795.1	751.3	747.5	1.8	1.6	-86.13	-262.4	-115.3	283.6	280.5	3.13	90.488		
900.0	891.4	845.2	839.8	2.4	2.0	-90.05	-278.4	-121.6	301.4	297.6	3.83	78.701		
1,000.0	986.0	940.0	932.9	3.0	2.3	-94.23	-294.7	-128.6	321.5	316.8	4.64	69.305		
1,100.0	1,079.0	1,032.0	1,023.3	3.7	2.6	-98.60	-310.6	-135.7	344.3	338.8	5.52	62.359		
1,200.0	1,171.4	1,123.0	1,112.6	4.4	3.0	-103.09	-326.5	-142.2	370.1	363.7	6.41	57.752		
1,300.0	1,263.9	1,214.4	1,202.3	5.1	3.3	-107.04	-342.9	-148.9	398.2	390.9	7.29	54.625		
1,400.0	1,356.3	1,308.9	1,295.1	5.8	3.6	-110.64	-359.6	-155.4	428.0	419.8	8.15	52.482		
1,500.0	1,448.8	1,405.1	1,389.8	6.5	4.0	-113.99	-375.6	-161.2	458.3	449.3	9.01	50.892		
1,600.0	1,541.3	1,497.5	1,480.7	7.2	4.3	-116.73	-390.6	-167.5	489.3	479.5	9.83	49.765 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 Shideler Fee 31-13BB
Project:	Mamm Creek	TVD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Reference Site:	O31E Pad (2nd Occupation)	MD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Shideler Fee 31-13BB	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft	
Survey Program: 111-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	3.0	3.0	0.0	0.0	-157.74	-223.7	-91.6	241.7						
100.0	100.0	102.2	102.2	0.1	0.1	-157.78	-223.9	-91.5	241.8	241.6	0.28	865.944	ES		
200.0	200.0	200.0	200.0	0.3	0.3	-157.92	-224.8	-91.2	242.6	242.0	0.62	389.894			
300.0	300.0	291.1	291.1	0.5	0.5	-158.01	-227.5	-91.9	245.6	244.7	0.96	255.349			
400.0	400.0	381.1	380.8	0.7	0.7	-78.70	-233.2	-94.1	252.1	250.8	1.29	195.626			
500.0	499.8	469.6	468.8	0.9	0.9	-79.69	-242.2	-97.5	261.8	260.2	1.64	159.469			
600.0	599.1	560.1	558.3	1.1	1.1	-81.47	-254.4	-102.4	274.5	272.5	2.05	134.035			
700.0	697.6	645.2	642.0	1.4	1.5	-83.60	-268.6	-108.4	290.6	288.0	2.52	115.202			
800.0	795.1	735.6	730.3	1.8	1.8	-86.24	-286.4	-116.4	310.4	307.3	3.10	100.044			
900.0	891.4	831.7	823.9	2.4	2.2	-89.52	-306.1	-124.9	331.9	328.1	3.80	87.297			
1,000.0	986.0	925.1	915.1	3.0	2.6	-93.14	-325.1	-132.3	354.9	350.3	4.61	77.015			
1,100.0	1,079.0	1,015.9	1,003.8	3.7	3.0	-97.09	-343.8	-138.9	380.5	375.0	5.49	69.255			
1,200.0	1,171.4	1,104.4	1,090.0	4.4	3.3	-101.15	-362.5	-145.2	409.1	402.7	6.39	63.989			
1,300.0	1,263.9	1,193.8	1,177.0	5.1	3.7	-104.75	-382.0	-151.5	440.2	432.9	7.30	60.334			
1,400.0	1,356.3	1,284.3	1,265.1	5.8	4.1	-107.94	-401.8	-157.9	472.9	464.7	8.20	57.691	SF		

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Shideler Fee 31-13BB
Project:	Mamm Creek	TVD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Reference Site:	O31E Pad (2nd Occupation)	MD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Shideler Fee 31-13BB	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft	
Survey Program: 111-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	3.0	3.0	0.0	0.0	-159.72	-215.6	-79.7	229.9						
100.0	100.0	103.1	103.1	0.1	0.1	-159.68	-215.6	-79.8	229.9	229.6	0.28	819.561			
200.0	200.0	203.4	203.4	0.3	0.3	-159.56	-215.2	-80.2	229.7	229.1	0.63	366.184			
300.0	300.0	304.1	304.1	0.5	0.5	-159.45	-214.7	-80.5	229.3	228.3	0.98	234.490			
400.0	400.0	401.7	401.7	0.7	0.7	-80.16	-214.5	-81.1	229.1	227.8	1.33	172.878			
414.0	414.0	415.5	415.5	0.7	0.7	-80.29	-214.6	-81.2	229.1	227.7	1.38	166.358	CC, ES		
500.0	499.8	495.7	495.7	0.9	0.8	-81.55	-215.9	-82.1	229.8	228.1	1.69	136.143			
600.0	599.1	586.5	586.3	1.1	1.0	-84.05	-219.9	-83.4	233.0	231.0	2.10	111.199			
700.0	697.6	675.7	675.2	1.4	1.2	-87.39	-227.3	-85.7	240.5	238.0	2.58	93.358			
800.0	795.1	762.4	761.3	1.8	1.4	-91.21	-237.8	-88.9	253.2	250.0	3.14	80.554			
900.0	891.4	844.0	841.6	2.4	1.6	-95.07	-251.1	-92.5	272.1	268.3	3.79	71.725			
1,000.0	986.0	928.1	923.8	3.0	1.9	-99.12	-268.3	-96.5	297.7	293.2	4.54	65.568			
1,100.0	1,079.0	1,006.6	999.9	3.7	2.3	-102.91	-287.2	-100.6	330.0	324.7	5.34	61.748			
1,200.0	1,171.4	1,084.4	1,074.5	4.4	2.7	-106.66	-308.8	-105.5	368.0	361.9	6.16	59.770			
1,300.0	1,263.9	1,165.1	1,151.1	5.1	3.1	-109.69	-333.5	-111.3	409.9	402.9	6.99	58.668			
1,400.0	1,356.3	1,248.9	1,230.2	5.8	3.6	-112.22	-360.4	-117.7	453.9	446.0	7.84	57.929			
1,500.0	1,448.8	1,334.9	1,311.2	6.5	4.1	-114.35	-388.6	-124.3	499.2	490.5	8.70	57.388	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 Shideler Fee 31-13BB
Project:	Mamm Creek	TVD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Reference Site:	O31E Pad (2nd Occupation)	MD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Shideler Fee 31-13BB	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft
Survey Program: 111-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	3.0	3.0	0.0	0.0	-161.96	-206.5	-67.3	217.2					
100.0	100.0	103.2	103.2	0.1	0.1	-161.94	-206.5	-67.3	217.2	216.9	0.28	774.175		
130.9	130.9	134.0	134.0	0.2	0.2	-161.94	-206.5	-67.3	217.2	216.8	0.39	563.095 CC, ES		
200.0	200.0	199.0	199.0	0.3	0.3	-162.09	-207.1	-66.9	217.7	217.1	0.62	351.139		
300.0	300.0	290.5	290.4	0.5	0.5	-162.82	-210.8	-65.2	221.0	220.1	0.96	229.755		
400.0	400.0	383.5	383.0	0.7	0.7	-84.87	-218.7	-62.0	228.1	226.8	1.31	173.656		
500.0	499.8	472.9	471.6	0.9	0.9	-87.47	-229.5	-58.5	238.5	236.9	1.69	141.146		
600.0	599.1	562.1	559.7	1.1	1.2	-90.72	-243.6	-55.9	253.4	251.3	2.10	120.473		
700.0	697.6	646.3	642.4	1.4	1.5	-93.88	-259.7	-55.1	273.4	270.8	2.56	106.624		
800.0	795.1	728.6	722.3	1.8	1.9	-96.82	-278.9	-56.3	299.4	296.3	3.09	96.825		
900.0	891.4	807.9	798.6	2.4	2.3	-99.32	-300.6	-59.4	331.4	327.7	3.71	89.422		
1,000.0	986.0	885.4	872.1	3.0	2.7	-101.51	-324.7	-63.4	369.2	364.8	4.42	83.624		
1,100.0	1,079.0	964.7	946.5	3.7	3.2	-103.99	-351.7	-68.0	412.1	406.9	5.20	79.217		
1,200.0	1,171.4	1,050.9	1,027.3	4.4	3.7	-107.28	-381.4	-72.6	457.2	451.2	6.02	75.969 SF		

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Shideler Fee 31-13BB
Project:	Mamm Creek	TVD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Reference Site:	O31E Pad (2nd Occupation)	MD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Shideler Fee 31-13BB	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft	
Survey Program: 111-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	3.0	3.0	0.0	0.0	-161.61	-196.3	-65.3	206.9						
100.0	100.0	103.3	103.3	0.1	0.1	-161.65	-196.3	-65.1	206.8	206.5	0.28	736.640			
153.0	153.0	156.0	156.0	0.2	0.2	-161.67	-196.3	-65.0	206.8	206.3	0.46	447.060 CC			
200.0	200.0	201.0	201.0	0.3	0.3	-161.66	-196.4	-65.1	206.9	206.3	0.62	332.080 ES			
300.0	300.0	292.7	292.6	0.5	0.5	-161.59	-199.0	-66.2	210.0	209.0	0.96	218.374			
400.0	400.0	382.2	381.9	0.7	0.7	-82.44	-205.5	-67.8	217.2	215.9	1.29	168.309			
500.0	499.8	470.3	469.3	0.9	0.9	-83.73	-215.8	-70.4	228.6	226.9	1.64	139.123			
600.0	599.1	557.5	555.3	1.1	1.2	-85.91	-230.4	-73.6	244.7	242.6	2.04	119.661			
700.0	697.6	641.8	637.6	1.4	1.5	-88.68	-248.1	-76.9	265.6	263.1	2.52	105.596			
800.0	795.1	724.6	717.6	1.8	1.9	-91.50	-269.0	-81.2	292.1	289.0	3.07	95.048			
900.0	891.4	807.0	796.4	2.4	2.3	-94.31	-292.8	-86.5	323.6	319.9	3.73	86.744			
1,000.0	986.0	887.9	872.8	3.0	2.8	-96.78	-318.2	-93.1	359.8	355.3	4.49	80.061			
1,100.0	1,079.0	965.2	945.2	3.7	3.3	-99.30	-344.5	-99.9	400.5	395.2	5.34	75.033			
1,200.0	1,171.4	1,038.9	1,013.3	4.4	3.8	-102.11	-371.6	-106.9	445.4	439.2	6.21	71.746			
1,300.0	1,263.9	1,105.9	1,074.3	5.1	4.3	-104.21	-398.5	-113.5	494.3	487.2	7.08	69.824 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 Shideler Fee 31-13BB
Project:	Mamm Creek	TVD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Reference Site:	O31E Pad (2nd Occupation)	MD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Shideler Fee 31-13BB	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft	
Survey Program: 111-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	-164.46	-199.2	-55.4	206.8						
100.0	100.0	101.0	101.0	0.1	0.1	-164.47	-199.0	-55.3	206.6	206.3	0.28	731.456			
138.8	138.8	138.8	138.8	0.2	0.2	-164.48	-198.9	-55.2	206.4	206.0	0.41	499.614 CC, ES			
200.0	200.0	194.6	194.6	0.3	0.3	-164.66	-199.7	-54.8	207.2	206.6	0.62	335.492			
300.0	300.0	287.9	287.8	0.5	0.5	-165.50	-204.4	-52.9	211.4	210.5	0.97	218.952			
400.0	400.0	378.6	378.0	0.7	0.7	-87.43	-212.6	-50.1	219.5	218.2	1.31	167.663			
500.0	499.8	466.7	465.2	0.9	0.9	-89.85	-224.3	-47.2	231.8	230.1	1.68	138.158			
600.0	599.1	554.4	551.5	1.1	1.2	-93.29	-239.8	-43.2	249.1	247.0	2.09	118.919			
700.0	697.6	640.1	635.2	1.4	1.6	-96.94	-258.0	-39.7	272.0	269.4	2.58	105.290			
800.0	795.1	720.1	712.4	1.8	2.0	-101.05	-277.8	-32.8	301.2	298.1	3.13	96.192			
900.0	891.4	795.3	784.0	2.4	2.4	-104.80	-299.2	-25.0	337.9	334.2	3.74	90.443			
1,000.0	986.0	866.5	851.0	3.0	2.8	-107.97	-321.8	-16.9	382.1	377.7	4.40	86.798			
1,100.0	1,079.0	937.0	916.6	3.7	3.3	-111.16	-346.3	-8.2	433.0	427.9	5.10	84.938 SF			
1,200.0	1,171.4	1,002.6	976.9	4.4	3.8	-114.60	-370.7	-0.1	488.5	482.8	5.74	85.083			

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Shideler Fee 31-13BB
Project:	Mamm Creek	TVD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Reference Site:	O31E Pad (2nd Occupation)	MD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Shideler Fee 31-13BB	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design													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	56.74	41.2	62.7	75.0						
100.0	100.0	100.0	100.0	0.1	0.1	56.74	41.2	62.7	75.0	74.8	0.27	275.571			
200.0	200.0	200.0	200.0	0.3	0.3	56.74	41.2	62.7	75.0	74.4	0.62	120.756 CC, ES			
300.0	300.0	298.6	298.6	0.5	0.5	55.79	42.6	62.6	75.7	74.7	0.97	78.133			
400.0	400.0	396.4	396.2	0.7	0.7	131.96	48.8	62.0	80.0	78.6	1.34	59.824			
500.0	499.8	493.3	492.5	0.9	0.9	128.70	59.9	61.0	90.6	88.8	1.75	51.827			
600.0	599.1	588.9	586.7	1.1	1.3	126.05	75.6	59.5	107.5	105.3	2.23	48.238			
700.0	697.6	682.5	678.2	1.4	1.6	124.08	95.5	57.6	130.5	127.7	2.80	46.587			
800.0	795.1	777.7	770.4	1.8	2.1	123.05	118.8	55.3	158.4	154.9	3.46	45.807			
900.0	891.4	872.8	862.5	2.4	2.5	123.38	142.2	53.1	189.1	184.9	4.20	45.068			
1,000.0	986.0	966.7	953.5	3.0	2.9	124.49	165.4	50.9	222.7	217.7	5.01	44.496			
1,100.0	1,079.0	1,059.3	1,043.2	3.7	3.3	126.23	188.2	48.7	259.3	253.5	5.86	44.222			
1,200.0	1,171.4	1,151.4	1,132.5	4.4	3.7	128.27	210.9	46.5	297.0	290.3	6.74	44.079			
1,300.0	1,263.9	1,243.6	1,221.8	5.1	4.2	129.86	233.6	44.4	334.9	327.3	7.61	44.019			
1,400.0	1,356.3	1,335.8	1,311.1	5.8	4.6	131.12	256.3	42.2	373.0	364.6	8.48	44.007 SF			
1,500.0	1,448.8	1,427.9	1,400.4	6.5	5.0	132.15	279.1	40.0	411.3	401.9	9.34	44.023			
1,600.0	1,541.3	1,520.1	1,489.7	7.2	5.4	133.01	301.8	37.9	449.6	439.4	10.21	44.055			
1,700.0	1,633.7	1,612.3	1,579.0	7.9	5.9	133.73	324.5	35.7	488.0	476.9	11.07	44.096			

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Shideler Fee 31-13BB
Project:	Mamm Creek	TVD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Reference Site:	O31E Pad (2nd Occupation)	MD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Shideler Fee 31-13BB	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design													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	56.91	32.8	50.3	60.0						
100.0	100.0	100.0	100.0	0.1	0.1	56.91	32.8	50.3	60.0	59.8	0.27	220.519			
200.0	200.0	200.0	200.0	0.3	0.3	56.91	32.8	50.3	60.0	59.4	0.62	96.632			
300.0	300.0	300.1	300.1	0.5	0.5	56.28	33.3	49.9	60.0	59.0	0.97	61.837			
303.8	303.8	303.8	303.8	0.5	0.5	135.66	33.4	49.9	60.0	59.0	0.98	60.946 CC, ES			
400.0	400.0	400.0	399.8	0.7	0.7	131.79	37.6	46.9	61.0	59.7	1.34	45.567			
500.0	499.8	499.4	498.7	0.9	0.9	126.85	46.0	40.8	66.0	64.2	1.77	37.334			
600.0	599.1	598.3	596.4	1.1	1.2	121.99	58.5	31.8	75.1	72.8	2.30	32.710			
700.0	697.6	696.3	692.2	1.4	1.6	117.83	74.9	20.0	88.5	85.5	2.96	29.900			
800.0	795.1	794.2	787.1	1.8	2.0	114.99	94.6	5.9	105.6	101.8	3.73	28.264			
900.0	891.4	892.3	882.0	2.4	2.5	114.80	114.5	-8.5	125.0	120.4	4.61	27.143			
1,000.0	986.0	989.8	976.4	3.0	2.9	116.34	134.4	-22.8	146.7	141.2	5.56	26.406			
1,100.0	1,079.0	1,086.4	1,070.0	3.7	3.4	118.98	154.1	-37.0	170.9	164.4	6.55	26.102			
1,200.0	1,171.4	1,182.8	1,163.3	4.4	3.8	121.66	173.7	-51.1	196.2	188.6	7.53	26.037 SF			
1,300.0	1,263.9	1,279.2	1,256.6	5.1	4.3	123.73	193.4	-65.2	221.7	213.2	8.51	26.050			
1,400.0	1,356.3	1,375.6	1,349.9	5.8	4.7	125.37	213.0	-79.3	247.5	238.0	9.48	26.102			
1,500.0	1,448.8	1,472.0	1,443.2	6.5	5.2	126.70	232.6	-93.5	273.4	263.0	10.45	26.174			
1,600.0	1,541.3	1,568.4	1,536.6	7.2	5.6	127.81	252.3	-107.6	299.4	288.0	11.41	26.254			
1,700.0	1,633.7	1,664.8	1,629.9	7.9	6.1	128.73	271.9	-121.7	325.6	313.2	12.36	26.337			
1,800.0	1,726.2	1,761.2	1,723.2	8.7	6.6	129.52	291.6	-135.8	351.8	338.4	13.32	26.418			
1,900.0	1,818.6	1,857.6	1,816.5	9.4	7.0	130.20	311.2	-150.0	378.0	363.7	14.27	26.496			
2,000.0	1,911.1	1,954.0	1,909.8	10.1	7.5	130.79	330.8	-164.1	404.3	389.1	15.22	26.571			
2,100.0	2,003.5	2,050.4	2,003.2	10.8	7.9	131.31	350.5	-178.2	430.6	414.5	16.16	26.642			
2,200.0	2,096.0	2,146.9	2,096.5	11.6	8.4	131.77	370.1	-192.3	457.0	439.9	17.11	26.708			
2,300.0	2,188.4	2,243.3	2,189.8	12.3	8.8	132.18	389.8	-206.5	483.4	465.3	18.06	26.771			

CC - Min centre to center distance or covergent 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 Shideler Fee 31-13BB
Project:	Mamm Creek	TVD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Reference Site:	O31E Pad (2nd Occupation)	MD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Shideler Fee 31-13BB	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design													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	56.62	24.8	37.6	45.0						
100.0	100.0	100.0	100.0	0.1	0.1	56.62	24.8	37.6	45.0	44.7	0.27	165.322			
200.0	200.0	200.0	200.0	0.3	0.3	56.62	24.8	37.6	45.0	44.4	0.62	72.444			
300.0	300.0	300.5	300.5	0.5	0.5	53.32	26.5	35.6	44.4	43.4	0.97	45.679			
357.5	357.5	358.2	358.0	0.6	0.6	128.47	29.1	32.6	44.1	42.9	1.21	36.565 CC			
400.0	400.0	400.7	400.3	0.7	0.7	124.17	31.7	29.6	44.2	42.8	1.38	32.086 ES			
500.0	499.8	500.3	499.0	0.9	1.0	114.85	40.2	19.8	47.6	45.8	1.85	25.691			
600.0	599.1	599.3	596.4	1.1	1.4	106.80	52.0	6.2	54.8	52.4	2.44	22.443			
700.0	697.6	697.7	692.1	1.4	1.8	100.81	67.0	-11.1	65.5	62.4	3.17	20.684			
800.0	795.1	795.3	785.7	1.8	2.3	96.71	85.1	-31.9	79.3	75.2	4.04	19.624			
900.0	891.4	892.1	877.0	2.4	2.9	94.03	106.1	-56.1	95.8	90.7	5.07	18.896			
1,000.0	986.0	987.9	965.8	3.0	3.6	92.31	129.8	-83.4	114.8	108.6	6.26	18.337			
1,100.0	1,079.0	1,082.9	1,051.8	3.7	4.4	91.31	156.2	-113.8	136.3	128.7	7.59	17.951			
1,200.0	1,171.4	1,180.3	1,139.1	4.4	5.2	90.64	184.6	-146.5	158.8	149.8	8.97	17.706			
1,300.0	1,263.9	1,277.8	1,226.3	5.1	6.0	90.15	213.0	-179.3	181.3	170.9	10.35	17.510			
1,400.0	1,356.3	1,375.2	1,313.6	5.8	6.8	89.76	241.4	-212.0	203.8	192.1	11.75	17.349			
1,500.0	1,448.8	1,472.6	1,400.8	6.5	7.6	89.45	269.8	-244.7	226.4	213.2	13.15	17.217			
1,600.0	1,541.3	1,570.0	1,488.1	7.2	8.4	89.19	298.2	-277.4	248.9	234.3	14.55	17.107			
1,700.0	1,633.7	1,667.4	1,575.3	7.9	9.2	88.98	326.5	-310.2	271.4	255.5	15.95	17.013			
1,800.0	1,726.2	1,764.9	1,662.6	8.7	10.0	88.80	354.9	-342.9	294.0	276.6	17.36	16.934			
1,900.0	1,818.6	1,862.3	1,749.9	9.4	10.8	88.65	383.3	-375.6	316.5	297.8	18.77	16.864			
2,000.0	1,911.1	1,959.7	1,837.1	10.1	11.7	88.52	411.7	-408.3	339.1	318.9	20.18	16.804			
2,100.0	2,003.5	2,057.1	1,924.4	10.8	12.5	88.40	440.1	-441.0	361.6	340.1	21.59	16.751			
2,200.0	2,096.0	2,154.5	2,011.6	11.6	13.3	88.30	468.5	-473.8	384.2	361.2	23.00	16.704			
2,300.0	2,188.4	2,252.0	2,098.9	12.3	14.1	88.20	496.9	-506.5	406.8	382.3	24.41	16.662			
2,400.0	2,280.9	2,349.4	2,186.1	13.0	14.9	88.12	525.3	-539.2	429.3	403.5	25.82	16.625			
2,500.0	2,373.3	2,446.8	2,273.4	13.8	15.7	88.05	553.7	-571.9	451.9	424.6	27.24	16.591			
2,600.0	2,465.8	2,544.2	2,360.7	14.5	16.5	87.98	582.1	-604.6	474.4	445.8	28.65	16.560			
2,700.0	2,558.3	2,641.7	2,447.9	15.2	17.4	87.92	610.5	-637.4	497.0	466.9	30.06	16.532 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 Shideler Fee 31-13BB
Project:	Mamm Creek	TVD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Reference Site:	O31E Pad (2nd Occupation)	MD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Shideler Fee 31-13BB	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design													O31E Pad (2nd Occupation) - Shideler Fee 31-13B - OH - 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	56.63	8.4	12.7	15.2							
100.0	100.0	100.0	100.0	0.1	0.1	56.63	8.4	12.7	15.2	15.0	0.27	55.930				
200.0	200.0	200.0	200.0	0.3	0.3	56.63	8.4	12.7	15.2	14.6	0.62	24.509				
300.0	300.0	300.4	300.3	0.5	0.5	47.82	9.3	10.2	13.8	12.8	0.97	14.220				
388.6	388.6	389.0	388.7	0.6	0.7	105.25	11.6	3.9	12.5	11.2	1.33	9.416				
400.0	400.0	400.4	400.0	0.7	0.7	99.64	12.0	2.8	12.5	11.1	1.38	9.045 CC, ES				
500.0	499.8	500.0	498.8	0.9	1.0	73.45	16.4	-9.4	15.1	13.2	1.83	8.231				
600.0	599.1	599.2	596.3	1.1	1.4	58.72	22.6	-26.4	20.4	18.1	2.31	8.829				
700.0	697.6	698.1	692.4	1.4	1.8	51.66	30.4	-48.0	27.0	24.2	2.84	9.518				
800.0	795.1	796.6	786.9	1.8	2.4	48.46	39.9	-74.2	34.5	31.0	3.46	9.951				
900.0	891.4	894.7	879.5	2.4	3.0	47.24	51.0	-104.7	42.4	38.2	4.21	10.087				
1,000.0	986.0	993.1	970.6	3.0	3.7	47.25	63.7	-139.7	50.7	45.6	5.10	9.955				
1,100.0	1,079.0	1,092.8	1,062.4	3.7	4.4	50.20	77.0	-176.2	56.7	50.5	6.28	9.041				
1,200.0	1,171.4	1,192.6	1,154.3	4.4	5.1	53.66	90.3	-212.8	62.1	54.5	7.61	8.159				
1,300.0	1,263.9	1,292.4	1,246.2	5.1	5.9	56.56	103.6	-249.3	67.6	58.6	8.99	7.517				
1,400.0	1,356.3	1,392.2	1,338.1	5.8	6.6	59.02	116.9	-285.9	73.2	62.8	10.40	7.039				
1,500.0	1,448.8	1,492.0	1,430.0	6.5	7.3	61.12	130.1	-322.5	79.0	67.2	11.84	6.673				
1,600.0	1,541.3	1,591.8	1,521.9	7.2	8.1	62.94	143.4	-359.0	84.9	71.6	13.29	6.387				
1,700.0	1,633.7	1,691.6	1,613.8	7.9	8.8	64.52	156.7	-395.6	90.8	76.1	14.74	6.158				
1,800.0	1,726.2	1,791.4	1,705.7	8.7	9.6	65.90	170.0	-432.1	96.8	80.6	16.21	5.973				
1,900.0	1,818.6	1,891.2	1,797.6	9.4	10.3	67.12	183.3	-468.7	102.8	85.2	17.67	5.820				
2,000.0	1,911.1	1,991.0	1,889.5	10.1	11.0	68.21	196.5	-505.3	108.9	89.8	19.14	5.692				
2,100.0	2,003.5	2,090.8	1,981.4	10.8	11.8	69.18	209.8	-541.8	115.1	94.5	20.61	5.583				
2,200.0	2,096.0	2,190.6	2,073.3	11.6	12.5	70.05	223.1	-578.4	121.2	99.1	22.08	5.490				
2,300.0	2,188.4	2,290.4	2,165.2	12.3	13.3	70.84	236.4	-614.9	127.4	103.8	23.55	5.410				
2,400.0	2,280.9	2,390.2	2,257.1	13.0	14.0	71.56	249.7	-651.5	133.6	108.6	25.02	5.340				
2,500.0	2,373.3	2,490.0	2,349.0	13.8	14.7	72.21	263.0	-688.1	139.8	113.3	26.48	5.279				
2,600.0	2,465.8	2,589.8	2,440.9	14.5	15.5	72.81	276.2	-724.6	146.0	118.1	27.95	5.225				
2,700.0	2,558.3	2,689.5	2,532.9	15.2	16.2	73.35	289.5	-761.2	152.3	122.9	29.42	5.177				
2,800.0	2,650.7	2,789.3	2,624.8	15.9	17.0	73.86	302.8	-797.7	158.6	127.7	30.89	5.133				
2,900.0	2,743.2	2,889.1	2,716.7	16.7	17.7	74.32	316.1	-834.3	164.8	132.5	32.36	5.095				
3,000.0	2,835.6	2,988.9	2,808.6	17.4	18.5	74.75	329.4	-870.9	171.1	137.3	33.82	5.060				
3,100.0	2,928.1	3,088.7	2,900.5	18.1	19.2	75.16	342.6	-907.4	177.4	142.1	35.29	5.028				
3,200.0	3,020.5	3,188.5	2,992.4	18.9	19.9	75.53	355.9	-944.0	183.7	147.0	36.75	4.999				
3,300.0	3,113.0	3,288.3	3,084.3	19.6	20.7	75.88	369.2	-980.5	190.0	151.8	38.22	4.972				
3,400.0	3,205.4	3,388.1	3,176.2	20.3	21.4	76.20	382.5	-1,017.1	196.3	156.7	39.68	4.948				
3,500.0	3,297.9	3,487.9	3,268.1	21.1	22.2	76.51	395.8	-1,053.7	202.7	161.5	41.15	4.925				
3,600.0	3,390.3	3,587.7	3,360.0	21.8	22.9	76.80	409.1	-1,090.2	209.0	166.4	42.61	4.905				
3,700.0	3,482.8	3,687.5	3,451.9	22.5	23.7	77.07	422.3	-1,126.8	215.3	171.2	44.07	4.885				
3,800.0	3,575.3	3,787.3	3,543.8	23.2	24.4	77.32	435.6	-1,163.4	221.7	176.1	45.54	4.868				
3,900.0	3,667.7	3,887.1	3,635.7	24.0	25.1	77.56	448.9	-1,199.9	228.0	181.0	47.00	4.851				
4,000.0	3,760.2	3,986.9	3,727.6	24.7	25.9	77.79	462.2	-1,236.5	234.3	185.9	48.46	4.836				
4,100.0	3,852.6	4,086.7	3,819.5	25.4	26.6	78.01	475.5	-1,273.0	240.7	190.8	49.92	4.821				
4,200.0	3,945.1	4,186.5	3,911.4	26.2	27.4	78.21	488.7	-1,309.6	247.0	195.7	51.39	4.808				
4,300.0	4,037.5	4,286.3	4,003.3	26.9	28.1	78.41	502.0	-1,346.2	253.4	200.6	52.85	4.795				
4,400.0	4,130.0	4,386.1	4,095.2	27.6	28.9	78.59	515.3	-1,382.7	259.8	205.4	54.31	4.783				
4,500.0	4,222.4	4,485.8	4,187.1	28.4	29.6	78.77	528.6	-1,419.3	266.1	210.3	55.77	4.772				
4,600.0	4,314.9	4,585.6	4,279.0	29.1	30.4	78.94	541.9	-1,455.8	272.5	215.2	57.23	4.761				
4,700.0	4,407.3	4,685.4	4,370.9	29.8	31.1	79.10	555.2	-1,492.4	278.8	220.2	58.69	4.751				
4,800.0	4,499.8	4,785.2	4,462.8	30.6	31.8	79.25	568.4	-1,529.0	285.2	225.1	60.15	4.742				
4,900.0	4,592.2	4,885.0	4,554.7	31.3	32.6	79.40	581.7	-1,565.5	291.6	230.0	61.61	4.733				
5,000.0	4,684.7	4,984.8	4,646.6	32.0	33.3	79.54	595.0	-1,602.1	297.9	234.9	63.07	4.724				

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 Shideler Fee 31-13BB
Project:	Mamm Creek	TVD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Reference Site:	O31E Pad (2nd Occupation)	MD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Shideler Fee 31-13BB	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design													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		
5,100.0	4,777.2	5,084.6	4,738.5	32.8	34.1	79.67	608.3	-1,638.6	304.3	239.8	64.53	4.716			
5,200.0	4,869.6	5,184.4	4,830.4	33.5	34.8	79.80	621.6	-1,675.2	310.7	244.7	65.99	4.708			
5,300.0	4,962.1	5,284.2	4,922.3	34.2	35.6	79.92	634.8	-1,711.8	317.1	249.6	67.45	4.701			
5,400.0	5,054.5	5,384.0	5,014.2	34.9	36.3	80.04	648.1	-1,748.3	323.4	254.5	68.91	4.694			
5,500.0	5,147.0	5,483.8	5,106.1	35.7	37.0	80.15	661.4	-1,784.9	329.8	259.5	70.37	4.687			
5,600.0	5,239.4	5,583.6	5,198.0	36.4	37.8	80.26	674.7	-1,821.4	336.2	264.4	71.83	4.681			
5,700.0	5,331.9	5,683.4	5,289.9	37.1	38.5	80.37	688.0	-1,858.0	342.6	269.3	73.28	4.675			
5,800.0	5,424.3	5,783.2	5,381.8	37.9	39.3	80.47	701.3	-1,894.6	349.0	274.2	74.74	4.669			
5,900.0	5,516.8	5,883.0	5,473.7	38.6	40.0	80.57	714.5	-1,931.1	355.3	279.1	76.20	4.663			
6,000.0	5,609.2	5,982.8	5,565.6	39.3	40.8	80.66	727.8	-1,967.7	361.7	284.1	77.66	4.658			
6,100.0	5,701.7	6,083.1	5,658.0	40.1	41.5	80.78	741.2	-2,004.4	368.1	289.0	79.12	4.652			
6,200.0	5,795.0	6,187.1	5,754.6	40.7	42.2	80.97	754.2	-2,040.4	374.2	293.7	80.48	4.649			
6,300.0	5,889.5	6,291.1	5,852.7	41.3	42.8	81.15	766.1	-2,073.2	379.6	297.9	81.71	4.646			
6,400.0	5,985.1	6,395.2	5,952.0	41.8	43.4	81.31	776.8	-2,102.5	384.6	301.7	82.81	4.644			
6,500.0	6,081.7	6,499.4	6,052.4	42.3	43.9	81.47	786.2	-2,128.5	388.9	305.1	83.78	4.642			
6,600.0	6,179.1	6,603.6	6,153.9	42.7	44.3	81.61	794.4	-2,151.0	392.6	308.0	84.62	4.640			
6,700.0	6,277.2	6,707.9	6,256.2	43.0	44.7	81.75	801.3	-2,170.1	395.8	310.4	85.34	4.638			
6,800.0	6,376.0	6,812.2	6,359.2	43.3	45.0	81.87	807.0	-2,185.6	398.3	312.4	85.93	4.636			
6,900.0	6,475.2	6,916.6	6,462.7	43.5	45.2	81.98	811.4	-2,197.7	400.3	313.9	86.40	4.633			
7,000.0	6,574.8	7,020.9	6,566.7	43.7	45.4	82.08	814.4	-2,206.1	401.7	314.9	86.76	4.630			
7,100.0	6,674.7	7,125.3	6,670.9	43.8	45.5	82.18	816.2	-2,211.0	402.4	315.4	86.99	4.626			
7,200.0	6,774.6	7,229.1	6,774.6	43.9	45.5	82.26	816.7	-2,212.4	402.6	315.5	87.12	4.621			
7,239.5	6,814.1	7,268.6	6,814.1	43.9	45.5	82.26	816.7	-2,212.4	402.6	315.4	87.16	4.619			
7,300.0	6,874.6	7,329.1	6,874.6	43.9	45.6	2.78	816.7	-2,212.4	402.6	315.4	87.22	4.615			
7,400.0	6,974.6	7,429.1	6,974.6	44.0	45.6	2.78	816.7	-2,212.4	402.6	315.3	87.33	4.610			
7,500.0	7,074.6	7,529.1	7,074.6	44.0	45.7	2.78	816.7	-2,212.4	402.6	315.2	87.43	4.605			
7,600.0	7,174.6	7,629.1	7,174.6	44.1	45.7	2.78	816.7	-2,212.4	402.6	315.0	87.54	4.599			
7,700.0	7,274.6	7,729.1	7,274.6	44.1	45.8	2.78	816.7	-2,212.4	402.6	314.9	87.64	4.593			
7,800.0	7,374.6	7,829.1	7,374.6	44.2	45.8	2.78	816.7	-2,212.4	402.6	314.8	87.75	4.588			
7,900.0	7,474.6	7,929.1	7,474.6	44.2	45.9	2.78	816.7	-2,212.4	402.6	314.7	87.86	4.582			
8,000.0	7,574.6	8,029.1	7,574.6	44.3	45.9	2.78	816.7	-2,212.4	402.6	314.6	87.97	4.576			
8,100.0	7,674.6	8,129.1	7,674.6	44.3	46.0	2.78	816.7	-2,212.4	402.6	314.5	88.08	4.571			
8,200.0	7,774.6	8,229.1	7,774.6	44.4	46.0	2.78	816.7	-2,212.4	402.6	314.4	88.19	4.565			
8,300.0	7,874.6	8,329.1	7,874.6	44.4	46.1	2.78	816.7	-2,212.4	402.6	314.3	88.31	4.559			
8,400.0	7,974.6	8,429.1	7,974.6	44.5	46.1	2.78	816.7	-2,212.4	402.6	314.2	88.42	4.553			
8,500.0	8,074.6	8,529.1	8,074.6	44.6	46.2	2.78	816.7	-2,212.4	402.6	314.0	88.54	4.547			
8,600.0	8,174.6	8,629.1	8,174.6	44.6	46.2	2.78	816.7	-2,212.4	402.6	313.9	88.66	4.541			
8,700.0	8,274.6	8,729.1	8,274.6	44.7	46.3	2.78	816.7	-2,212.4	402.6	313.8	88.77	4.535			
8,800.0	8,374.6	8,829.1	8,374.6	44.7	46.4	2.78	816.7	-2,212.4	402.6	313.7	88.89	4.529			
8,900.0	8,474.6	8,929.1	8,474.6	44.8	46.4	2.78	816.7	-2,212.4	402.6	313.6	89.01	4.523			
9,000.0	8,574.6	9,029.1	8,574.6	44.9	46.5	2.78	816.7	-2,212.4	402.6	313.4	89.14	4.516			
9,100.0	8,674.6	9,129.1	8,674.6	44.9	46.5	2.78	816.7	-2,212.4	402.6	313.3	89.26	4.510 SF			
9,200.0	8,774.6	9,151.4	8,697.0	45.0	46.6	2.78	816.7	-2,212.4	410.0	320.7	89.34	4.589			
9,300.0	8,874.6	9,151.4	8,697.0	45.0	46.6	2.78	816.7	-2,212.4	440.0	350.6	89.40	4.922			
9,400.0	8,974.6	9,151.4	8,697.0	45.1	46.6	2.78	816.7	-2,212.4	489.0	399.6	89.46	5.466			

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 Shideler Fee 31-13BB
Project:	Mamm Creek	TVD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Reference Site:	O31E Pad (2nd Occupation)	MD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Shideler Fee 31-13BB	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design													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	56.91	16.4	25.2	30.0						
100.0	100.0	100.0	100.0	0.1	0.1	56.91	16.4	25.2	30.0	29.7	0.27	110.259			
200.0	200.0	200.0	200.0	0.3	0.3	56.91	16.4	25.2	30.0	29.4	0.62	48.316			
300.0	300.0	300.0	300.0	0.5	0.5	56.91	16.4	25.2	30.0	29.1	0.97	30.936	CC, ES		
400.0	400.0	400.0	400.0	0.7	0.7	138.23	16.4	25.2	31.1	29.8	1.32	23.564			
500.0	499.8	499.8	499.8	0.9	0.8	145.04	16.4	25.2	36.2	34.6	1.67	21.649	SF		
600.0	599.1	600.9	600.9	1.1	1.0	151.30	17.4	22.7	44.3	42.3	2.04	21.762			
700.0	697.6	700.2	700.0	1.4	1.2	156.08	19.3	17.7	55.3	52.9	2.40	23.051			
800.0	795.1	798.8	798.4	1.8	1.4	160.67	21.2	12.8	71.4	68.7	2.75	25.971			
900.0	891.4	896.3	895.8	2.4	1.6	164.41	23.2	7.9	92.8	89.7	3.09	30.060			
1,000.0	986.0	992.5	991.9	3.0	1.8	167.26	25.0	3.1	119.3	115.9	3.41	35.010			
1,100.0	1,079.0	1,087.3	1,086.6	3.7	1.9	169.43	26.9	-1.7	150.8	147.1	3.73	40.469			
1,200.0	1,171.4	1,181.6	1,180.8	4.4	2.1	171.01	28.7	-6.4	183.7	179.7	4.06	45.200			
1,300.0	1,263.9	1,276.0	1,275.0	5.1	2.3	172.12	30.6	-11.1	216.7	212.3	4.40	49.223			
1,400.0	1,356.3	1,370.3	1,369.1	5.8	2.5	172.93	32.4	-15.8	249.8	245.0	4.74	52.683			
1,500.0	1,448.8	1,464.6	1,463.3	6.5	2.7	173.56	34.3	-20.5	282.8	277.8	5.08	55.688			
1,600.0	1,541.3	1,559.0	1,557.5	7.2	2.9	174.05	36.1	-25.3	315.9	310.5	5.42	58.322			
1,700.0	1,633.7	1,653.3	1,651.7	7.9	3.0	174.45	38.0	-30.0	349.1	343.3	5.76	60.649			
1,800.0	1,726.2	1,747.6	1,745.9	8.7	3.2	174.78	39.8	-34.7	382.2	376.1	6.09	62.719			
1,900.0	1,818.6	1,842.0	1,840.1	9.4	3.4	175.05	41.7	-39.4	415.3	408.9	6.43	64.573			
2,000.0	1,911.1	1,936.3	1,934.3	10.1	3.6	175.29	43.5	-44.1	448.5	441.7	6.77	66.242			
2,100.0	2,003.5	2,030.6	2,028.5	10.8	3.8	175.49	45.4	-48.9	481.6	474.5	7.11	67.753			

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 Shideler Fee 31-13BB
Project:	Mamm Creek	TVD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Reference Site:	O31E Pad (2nd Occupation)	MD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Shideler Fee 31-13BB	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design													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	-122.80	-8.0	-12.4	14.8						
100.0	100.0	100.0	100.0	0.1	0.1	-122.80	-8.0	-12.4	14.8	14.5	0.27	54.330			
200.0	200.0	200.0	200.0	0.3	0.3	-122.80	-8.0	-12.4	14.8	14.2	0.62	23.808			
300.0	300.0	300.0	300.0	0.5	0.5	-122.80	-8.0	-12.4	14.8	13.8	0.97	15.244 CC, ES			
400.0	400.0	399.3	399.3	0.7	0.7	-46.67	-9.3	-14.6	16.3	15.0	1.32	12.352			
500.0	499.8	499.2	499.0	0.9	0.8	-61.85	-11.7	-18.4	16.8	15.1	1.69	9.966			
519.3	518.9	518.4	518.3	0.9	0.9	-66.46	-12.1	-19.1	16.8	15.0	1.77	9.495			
600.0	599.1	598.8	598.5	1.1	1.0	-91.55	-14.0	-22.1	17.8	15.7	2.13	8.364 SF			
700.0	697.6	697.8	697.4	1.4	1.2	-123.84	-16.3	-25.9	25.2	22.6	2.57	9.793			
800.0	795.1	795.9	795.5	1.8	1.4	-143.58	-18.6	-29.6	40.7	37.8	2.92	13.915			
900.0	891.4	893.0	892.4	2.4	1.6	-154.08	-20.9	-33.3	62.9	59.7	3.25	19.371			
1,000.0	986.0	988.6	988.0	3.0	1.8	-160.08	-23.1	-36.9	90.9	87.4	3.57	25.503			
1,100.0	1,079.0	1,082.7	1,082.0	3.7	1.9	-163.89	-25.3	-40.4	124.1	120.2	3.88	31.956			
1,200.0	1,171.4	1,176.3	1,175.5	4.4	2.1	-166.36	-27.5	-44.0	158.8	154.6	4.22	37.607			
1,300.0	1,263.9	1,269.9	1,269.0	5.1	2.3	-167.94	-29.7	-47.5	193.6	189.1	4.57	42.407			
1,400.0	1,356.3	1,363.5	1,362.5	5.8	2.5	-169.04	-31.9	-51.1	228.6	223.7	4.91	46.528			
1,500.0	1,448.8	1,457.2	1,456.1	6.5	2.7	-169.85	-34.1	-54.6	263.6	258.3	5.26	50.101			
1,600.0	1,541.3	1,550.8	1,549.6	7.2	2.8	-170.47	-36.3	-58.2	298.6	293.0	5.61	53.227			
1,700.0	1,633.7	1,644.4	1,643.1	7.9	3.0	-170.96	-38.5	-61.7	333.7	327.7	5.96	55.984			
1,800.0	1,726.2	1,738.0	1,736.6	8.7	3.2	-171.35	-40.7	-65.2	368.8	362.5	6.31	58.435			
1,900.0	1,818.6	1,831.6	1,830.2	9.4	3.4	-171.68	-42.9	-68.8	403.9	397.2	6.66	60.627			
2,000.0	1,911.1	1,925.2	1,923.7	10.1	3.6	-171.96	-45.1	-72.3	439.0	431.9	7.01	62.598			
2,100.0	2,003.5	2,018.9	2,017.2	10.8	3.7	-172.19	-47.3	-75.9	474.1	466.7	7.36	64.382			

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 Shideler Fee 31-13BB
Project:	Mamm Creek	TVD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Reference Site:	O31E Pad (2nd Occupation)	MD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Shideler Fee 31-13BB	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design													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	61.51	46.6	85.9	97.7						
100.0	100.0	100.0	100.0	0.1	0.1	61.51	46.6	85.9	97.7	97.5	0.27	358.998			
200.0	200.0	200.0	200.0	0.3	0.3	61.51	46.6	85.9	97.7	97.1	0.62	157.314			
300.0	300.0	300.0	300.0	0.5	0.5	61.51	46.6	85.9	97.7	96.8	0.97	100.726	CC, ES		
400.0	400.0	400.0	400.0	0.7	0.7	141.50	46.6	85.9	98.9	97.6	1.32	74.930			
500.0	499.8	494.6	494.5	0.9	0.8	143.64	47.4	88.1	106.5	104.9	1.67	63.959			
600.0	599.1	587.3	587.0	1.1	1.0	146.78	49.6	94.6	123.5	121.5	2.02	61.193	SF		
700.0	697.6	676.9	675.9	1.4	1.2	149.91	53.2	104.8	150.0	147.6	2.37	63.145			
800.0	795.1	762.4	760.2	1.8	1.5	152.50	57.9	118.3	185.6	182.8	2.73	67.953			
900.0	891.4	842.8	838.9	2.4	1.8	154.42	63.4	134.2	229.9	226.8	3.09	74.454			
1,000.0	986.0	917.7	911.4	3.0	2.2	155.72	69.5	151.8	282.2	278.7	3.45	81.864			
1,100.0	1,079.0	988.1	978.9	3.7	2.5	156.81	76.1	170.7	341.6	337.7	3.81	89.559			
1,200.0	1,171.4	1,066.5	1,053.7	4.4	2.9	158.25	83.8	192.8	403.2	399.0	4.20	96.059			
1,300.0	1,263.9	1,144.9	1,128.5	5.1	3.3	159.31	91.4	214.9	465.0	460.4	4.58	101.477			

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Shideler Fee 31-13BB
Project:	Mamm Creek	TVD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Reference Site:	O31E Pad (2nd Occupation)	MD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Shideler Fee 31-13BB	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design													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	56.91	49.2	75.5	90.1						
100.0	100.0	100.0	100.0	0.1	0.1	56.91	49.2	75.5	90.1	89.8	0.27	330.778			
200.0	200.0	200.0	200.0	0.3	0.3	56.91	49.2	75.5	90.1	89.4	0.62	144.948			
300.0	300.0	300.0	300.0	0.5	0.5	56.91	49.2	75.5	90.1	89.1	0.97	92.808	CC, ES		
400.0	400.0	395.4	395.3	0.7	0.7	137.03	50.3	77.5	93.6	92.3	1.31	71.357			
500.0	499.8	489.6	489.3	0.9	0.9	139.35	53.6	83.7	105.9	104.3	1.66	63.846			
600.0	599.1	581.4	580.4	1.1	1.1	142.33	59.0	93.6	127.3	125.3	2.02	63.141	SF		
700.0	697.6	669.7	667.4	1.4	1.4	145.11	66.2	106.8	157.7	155.3	2.38	66.165			
800.0	795.1	753.6	749.3	1.8	1.7	147.30	74.7	122.6	196.8	194.0	2.76	71.256			
900.0	891.4	832.3	825.5	2.4	2.1	148.86	84.3	140.3	244.0	240.9	3.15	77.388			
1,000.0	986.0	905.4	895.3	3.0	2.5	149.85	94.5	159.1	298.8	295.2	3.56	83.896			
1,100.0	1,079.0	982.3	968.3	3.7	2.9	150.96	106.1	180.6	359.4	355.4	4.00	89.884			
1,200.0	1,171.4	1,060.5	1,042.4	4.4	3.4	152.47	118.0	202.5	421.2	416.7	4.44	94.772			
1,300.0	1,263.9	1,138.8	1,116.6	5.1	3.8	153.59	129.8	224.4	483.1	478.2	4.89	98.735			

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 Shideler Fee 31-13BB
Project:	Mamm Creek	TVD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Reference Site:	O31E Pad (2nd Occupation)	MD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Shideler Fee 31-13BB	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design													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	63.65	30.2	61.0	68.1						
100.0	100.0	100.0	100.0	0.1	0.1	63.65	30.2	61.0	68.1	67.8	0.27	250.181			
200.0	200.0	200.0	200.0	0.3	0.3	63.65	30.2	61.0	68.1	67.5	0.62	109.630			
300.0	300.0	300.0	300.0	0.5	0.5	63.65	30.2	61.0	68.1	67.1	0.97	70.195 CC, ES			
400.0	400.0	397.7	397.7	0.7	0.7	144.38	30.1	62.4	70.5	69.2	1.32	53.579			
500.0	499.8	493.5	493.3	0.9	0.8	149.01	29.5	68.4	81.5	79.9	1.67	48.945 SF			
600.0	599.1	586.7	585.9	1.1	1.1	154.65	28.4	78.9	102.2	100.2	2.01	50.724			
700.0	697.6	676.1	674.1	1.4	1.4	159.52	26.9	93.0	132.8	130.4	2.35	56.488			
800.0	795.1	760.5	756.7	1.8	1.7	163.16	25.1	110.2	172.9	170.3	2.67	64.824			
900.0	891.4	839.1	832.9	2.4	2.0	165.72	23.1	129.4	221.9	218.9	2.96	74.850			
1,000.0	986.0	915.4	906.1	3.0	2.4	167.60	20.9	150.8	278.6	275.4	3.25	85.800			
1,100.0	1,079.0	993.8	981.2	3.7	2.8	169.15	18.6	173.3	340.1	336.6	3.53	96.350			
1,200.0	1,171.4	1,071.4	1,055.5	4.4	3.2	170.51	16.2	195.5	402.8	399.0	3.83	105.237			
1,300.0	1,263.9	1,149.0	1,129.8	5.1	3.7	171.51	13.9	217.8	465.6	461.5	4.12	112.888			

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Shideler Fee 31-13BB
Project:	Mamm Creek	TVD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Reference Site:	O31E Pad (2nd Occupation)	MD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Shideler Fee 31-13BB	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design													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	62.28	38.6	73.5	83.0						
100.0	100.0	100.0	100.0	0.1	0.1	62.28	38.6	73.5	83.0	82.7	0.27	304.848			
200.0	200.0	200.0	200.0	0.3	0.3	62.28	38.6	73.5	83.0	82.4	0.62	133.585			
300.0	300.0	300.0	300.0	0.5	0.5	62.28	38.6	73.5	83.0	82.0	0.97	85.533	CC, ES		
400.0	400.0	396.0	395.9	0.7	0.7	142.89	38.8	75.9	86.5	85.2	1.31	65.849			
500.0	499.8	490.7	490.4	0.9	0.9	146.39	39.5	82.9	98.9	97.2	1.66	59.534	SF		
600.0	599.1	582.7	581.7	1.1	1.1	150.68	40.5	94.3	120.8	118.8	2.01	60.103			
700.0	697.6	670.8	668.5	1.4	1.4	154.53	41.8	109.2	152.3	149.9	2.35	64.777			
800.0	795.1	754.1	749.8	1.8	1.7	157.52	43.4	127.0	193.0	190.3	2.68	72.009			
900.0	891.4	832.3	825.4	2.4	2.1	159.70	45.2	146.9	242.3	239.3	3.00	80.801			
1,000.0	986.0	915.0	905.0	3.0	2.5	161.49	47.2	169.3	297.7	294.4	3.32	89.661			
1,100.0	1,079.0	994.7	981.7	3.7	2.9	162.97	49.1	190.9	357.3	353.7	3.64	98.160			
1,200.0	1,171.4	1,073.7	1,057.7	4.4	3.3	164.45	51.0	212.3	418.2	414.2	3.97	105.381			
1,300.0	1,263.9	1,152.7	1,133.7	5.1	3.7	165.55	52.9	233.8	479.1	474.8	4.29	111.561			

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 Shideler Fee 31-13BB
Project:	Mamm Creek	TVD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Reference Site:	O31E Pad (2nd Occupation)	MD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Shideler Fee 31-13BB	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design													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)	Offset Wellbore Centre +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	56.78	57.6	87.9	105.1						
100.0	100.0	100.0	100.0	0.1	0.1	56.78	57.6	87.9	105.1	104.8	0.27	385.848			
200.0	200.0	200.0	200.0	0.3	0.3	56.78	57.6	87.9	105.1	104.4	0.62	169.079	CC, ES		
300.0	300.0	294.7	294.7	0.5	0.5	56.72	58.9	89.8	107.5	106.6	0.97	110.973			
400.0	400.0	388.9	388.5	0.7	0.7	136.35	63.1	95.4	116.0	114.7	1.30	89.154			
500.0	499.8	481.3	480.3	0.9	0.9	137.57	69.8	104.6	133.0	131.4	1.65	80.776			
600.0	599.1	571.0	568.7	1.1	1.3	139.27	78.7	116.9	158.6	156.6	2.01	79.045	SF		
700.0	697.6	656.9	652.6	1.4	1.6	140.94	89.6	131.8	192.6	190.2	2.39	80.700			
800.0	795.1	738.3	731.2	1.8	2.0	142.30	102.0	148.8	234.7	231.9	2.79	84.080			
900.0	891.4	814.6	804.0	2.4	2.4	143.27	115.4	167.1	284.3	281.1	3.22	88.257			
1,000.0	986.0	891.7	876.9	3.0	2.9	144.01	130.4	187.6	340.5	336.8	3.69	92.204			
1,100.0	1,079.0	971.0	951.6	3.7	3.4	145.05	145.9	208.9	400.6	396.4	4.20	95.414			
1,200.0	1,171.4	1,049.5	1,025.6	4.4	3.9	146.64	161.3	229.9	461.9	457.1	4.71	97.978			

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Shideler Fee 31-13BB
Project:	Mamm Creek	TVD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Reference Site:	O31E Pad (2nd Occupation)	MD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Shideler Fee 31-13BB	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design													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	65.31	22.2	48.3	53.2						
100.0	100.0	100.0	100.0	0.1	0.1	65.31	22.2	48.3	53.2	52.9	0.27	195.339			
200.0	200.0	200.0	200.0	0.3	0.3	65.31	22.2	48.3	53.2	52.6	0.62	85.598			
300.0	300.0	300.0	300.0	0.5	0.5	65.31	22.2	48.3	53.2	52.2	0.97	54.808 CC			
300.2	300.2	300.2	300.2	0.5	0.5	65.31	22.2	48.3	53.2	52.2	0.97	54.769 ES			
400.0	400.0	398.9	398.9	0.7	0.7	146.06	22.0	48.9	54.9	53.6	1.32	41.650			
500.0	499.8	495.8	495.6	0.9	0.8	151.87	20.7	53.7	64.6	62.9	1.67	38.736 SF			
600.0	599.1	590.2	589.5	1.1	1.1	158.96	18.1	62.8	84.1	82.1	2.02	41.694			
700.0	697.6	680.8	679.1	1.4	1.3	164.77	14.4	75.8	113.7	111.3	2.35	48.394			
800.0	795.1	766.5	763.2	1.8	1.6	168.90	9.9	91.8	153.0	150.3	2.66	57.520			
900.0	891.4	846.4	840.8	2.4	2.0	171.71	4.7	110.0	201.2	198.3	2.95	68.264			
1,000.0	986.0	919.9	911.5	3.0	2.3	173.63	-0.8	129.5	257.6	254.4	3.21	80.174			
1,100.0	1,079.0	994.9	983.0	3.7	2.7	175.17	-7.0	151.3	320.4	316.9	3.48	92.091			
1,200.0	1,171.4	1,071.5	1,056.0	4.4	3.2	176.39	-13.4	173.7	384.4	380.6	3.77	101.926			
1,300.0	1,263.9	1,148.1	1,129.0	5.1	3.6	177.27	-19.7	196.0	448.5	444.4	4.06	110.363			

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Shideler Fee 31-13BB
Project:	Mamm Creek	TVD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Reference Site:	O31E Pad (2nd Occupation)	MD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Shideler Fee 31-13BB	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design													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	68.91	13.8	35.9	38.5						
100.0	100.0	100.0	100.0	0.1	0.1	68.91	13.8	35.9	38.5	38.2	0.27	141.279			
200.0	200.0	200.0	200.0	0.3	0.3	68.91	13.8	35.9	38.5	37.8	0.62	61.909			
300.0	300.0	300.0	300.0	0.5	0.5	68.91	13.8	35.9	38.5	37.5	0.97	39.640	CC, ES		
400.0	400.0	398.8	398.8	0.7	0.7	150.82	13.3	37.2	40.8	39.5	1.32	30.949	SF		
500.0	499.8	496.1	495.9	0.9	0.9	158.80	10.8	42.9	51.8	50.1	1.67	31.043			
600.0	599.1	590.8	589.9	1.1	1.1	166.73	6.6	52.9	72.9	70.9	2.01	36.238			
700.0	697.6	681.4	679.4	1.4	1.4	172.34	0.8	66.4	104.3	101.9	2.34	44.565			
800.0	795.1	767.0	763.1	1.8	1.7	175.96	-6.1	82.7	145.1	142.5	2.65	54.827			
900.0	891.4	846.7	840.3	2.4	2.1	178.33	-13.9	101.1	194.7	191.7	2.93	66.359			
1,000.0	986.0	920.0	910.4	3.0	2.5	179.94	-22.2	120.5	252.2	249.0	3.20	78.822			
1,100.0	1,079.0	991.3	977.9	3.7	2.9	-178.86	-31.1	141.5	316.3	312.8	3.46	91.288			
1,200.0	1,171.4	1,066.6	1,049.1	4.4	3.3	-177.99	-40.7	164.0	382.0	378.2	3.77	101.347			
1,300.0	1,263.9	1,141.9	1,120.4	5.1	3.8	-177.38	-50.3	186.6	447.7	443.6	4.07	109.894			

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Shideler Fee 31-13BB
Project:	Mamm Creek	TVD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Reference Site:	O31E Pad (2nd Occupation)	MD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Shideler Fee 31-13BB	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design													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	75.88	5.8	23.2	23.9						
100.0	100.0	100.0	100.0	0.1	0.1	75.88	5.8	23.2	23.9	23.6	0.27	87.760			
200.0	200.0	200.0	200.0	0.3	0.3	75.88	5.8	23.2	23.9	23.3	0.62	38.457			
300.0	300.0	300.0	300.0	0.5	0.5	75.88	5.8	23.2	23.9	22.9	0.97	24.623	CC, ES		
400.0	400.0	399.0	399.0	0.7	0.7	160.79	4.3	25.3	27.0	25.7	1.32	20.470	SF		
500.0	499.8	496.7	496.4	0.9	0.9	171.64	-0.1	31.4	39.4	37.8	1.67	23.587			
600.0	599.1	591.6	590.5	1.1	1.1	179.53	-7.2	41.2	62.2	60.2	2.02	30.855			
700.0	697.6	682.5	680.0	1.4	1.4	-175.88	-16.5	54.2	94.8	92.5	2.35	40.383			
800.0	795.1	768.3	763.7	1.8	1.8	-173.18	-27.6	69.5	136.6	134.0	2.67	51.151			
900.0	891.4	848.3	840.8	2.4	2.2	-171.45	-39.8	86.6	186.8	183.8	2.98	62.622			
1,000.0	986.0	921.8	910.9	3.0	2.6	-170.22	-52.8	104.6	244.7	241.4	3.28	74.489			
1,100.0	1,079.0	988.8	974.0	3.7	3.0	-169.37	-66.0	122.9	309.3	305.7	3.59	86.141			
1,200.0	1,171.4	1,056.8	1,037.2	4.4	3.5	-168.93	-80.5	143.0	377.0	373.1	3.93	95.830			
1,300.0	1,263.9	1,130.0	1,105.3	5.1	4.0	-168.58	-96.3	165.0	445.2	440.9	4.29	103.689			

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Shideler Fee 31-13BB
Project:	Mamm Creek	TVD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Reference Site:	O31E Pad (2nd Occupation)	MD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Shideler Fee 31-13BB	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design													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	103.38	-2.6	10.7	11.0						
100.0	100.0	100.0	100.0	0.1	0.1	103.38	-2.6	10.7	11.0	10.8	0.27	40.541			
200.0	200.0	200.0	200.0	0.3	0.3	103.38	-2.6	10.7	11.0	10.4	0.62	17.765			
255.6	255.6	255.6	255.6	0.4	0.4	103.38	-2.6	10.7	11.0	10.2	0.82	13.538 CC			
300.0	300.0	299.9	299.9	0.5	0.5	103.77	-2.7	10.9	11.2	10.2	0.97	11.526 ES, SF			
400.0	400.0	399.1	399.0	0.7	0.7	-170.68	-5.2	13.8	16.2	14.9	1.32	12.287			
500.0	499.8	496.8	496.3	0.9	0.9	-166.48	-11.0	20.4	31.1	29.5	1.67	18.687			
600.0	599.1	591.6	590.2	1.1	1.2	-164.85	-19.8	30.4	55.8	53.8	2.01	27.764			
700.0	697.6	682.4	679.3	1.4	1.5	-164.12	-31.1	43.3	89.8	87.4	2.35	38.165			
800.0	795.1	768.0	762.5	1.8	1.9	-163.68	-44.3	58.3	132.5	129.8	2.69	49.208			
900.0	891.4	847.7	839.2	2.4	2.3	-163.30	-58.8	74.8	183.4	180.4	3.03	60.494			
1,000.0	986.0	921.1	908.8	3.0	2.7	-162.90	-74.0	92.1	241.7	238.3	3.37	71.761			
1,100.0	1,079.0	987.9	971.5	3.7	3.1	-162.65	-89.3	109.6	306.6	302.8	3.71	82.520			
1,200.0	1,171.4	1,051.5	1,030.3	4.4	3.6	-162.78	-105.3	127.8	374.8	370.7	4.09	91.670			
1,300.0	1,263.9	1,122.1	1,095.1	5.1	4.1	-162.82	-123.7	148.7	444.2	439.8	4.48	99.090			

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 Shideler Fee 31-13BB
Project:	Mamm Creek	TVD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Reference Site:	O31E Pad (2nd Occupation)	MD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Shideler Fee 31-13BB	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design													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	-169.39	-10.6	-2.0	10.7						
100.0	100.0	100.0	100.0	0.1	0.1	-169.39	-10.6	-2.0	10.7	10.5	0.27	39.469			
200.0	200.0	200.0	200.0	0.3	0.3	-169.39	-10.6	-2.0	10.7	10.1	0.62	17.295			
235.3	235.3	235.3	235.3	0.4	0.4	-169.39	-10.6	-2.0	10.7	10.0	0.74	14.430	CC, ES		
300.0	300.0	299.8	299.8	0.5	0.5	-172.14	-11.0	-1.5	11.1	10.2	0.97	11.471	SF		
400.0	400.0	399.1	399.0	0.7	0.7	-113.71	-14.7	2.1	15.4	14.1	1.32	11.646			
500.0	499.8	496.7	496.0	0.9	0.9	-136.07	-21.9	9.2	29.2	27.5	1.68	17.415			
600.0	599.1	591.3	589.5	1.1	1.2	-146.69	-32.2	19.4	53.7	51.7	2.02	26.525			
700.0	697.6	681.8	678.1	1.4	1.6	-151.57	-45.2	32.1	87.9	85.5	2.38	36.981			
800.0	795.1	767.0	760.7	1.8	2.0	-154.02	-60.1	46.8	130.9	128.2	2.74	47.874			
900.0	891.4	846.5	836.8	2.4	2.4	-155.28	-76.4	62.8	182.1	179.0	3.10	58.741			
1,000.0	986.0	919.5	905.9	3.0	2.8	-155.86	-93.3	79.5	240.6	237.1	3.47	69.294			
1,100.0	1,079.0	986.2	968.1	3.7	3.3	-156.29	-110.4	96.3	305.6	301.7	3.86	79.180			
1,200.0	1,171.4	1,048.4	1,025.4	4.4	3.7	-157.03	-127.8	113.4	373.9	369.7	4.27	87.664			
1,300.0	1,263.9	1,111.3	1,082.5	5.1	4.2	-157.47	-146.5	131.9	444.4	439.8	4.68	94.989			

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 Shideler Fee 31-13BB
Project:	Mamm Creek	TVD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Reference Site:	O31E Pad (2nd Occupation)	MD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Shideler Fee 31-13BB	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design													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	-142.73	-18.9	-14.4	23.8						
100.0	100.0	100.0	100.0	0.1	0.1	-142.73	-18.9	-14.4	23.8	23.5	0.27	87.413			
200.0	200.0	200.0	200.0	0.3	0.3	-142.73	-18.9	-14.4	23.8	23.2	0.62	38.305 CC, ES			
300.0	300.0	299.7	299.7	0.5	0.5	-146.07	-20.1	-13.5	24.2	23.3	0.97	24.957			
400.0	400.0	398.8	398.6	0.7	0.7	-82.71	-25.2	-9.6	26.8	25.4	1.34	19.948 SF			
500.0	499.8	496.2	495.3	0.9	0.9	-108.17	-34.1	-2.7	36.3	34.6	1.72	21.137			
600.0	599.1	590.5	588.2	1.1	1.3	-126.69	-46.5	6.9	57.7	55.6	2.07	27.800			
700.0	697.6	680.6	676.3	1.4	1.6	-136.75	-61.7	18.7	90.2	87.7	2.44	36.984			
800.0	795.1	765.7	758.5	1.8	2.0	-142.15	-79.1	32.1	132.2	129.4	2.82	46.853			
900.0	891.4	845.0	834.1	2.4	2.5	-145.14	-97.9	46.6	182.6	179.4	3.23	56.589			
1,000.0	986.0	918.1	903.0	3.0	3.0	-146.78	-117.4	61.7	240.4	236.7	3.65	65.793			
1,100.0	1,079.0	985.0	965.1	3.7	3.4	-147.96	-137.0	76.9	304.6	300.5	4.10	74.264			
1,200.0	1,171.4	1,047.5	1,022.3	4.4	3.9	-149.36	-156.9	92.3	372.4	367.9	4.56	81.644			
1,300.0	1,263.9	1,100.0	1,069.7	5.1	4.3	-150.14	-174.8	106.1	442.6	437.6	5.01	88.307			

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Shideler Fee 31-13BB
Project:	Mamm Creek	TVD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Reference Site:	O31E Pad (2nd Occupation)	MD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Shideler Fee 31-13BB	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design													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	-135.11	-27.0	-26.8	38.0						
100.0	100.0	100.0	100.0	0.1	0.1	-135.11	-27.0	-26.8	38.0	37.8	0.27	139.722			
200.0	200.0	200.0	200.0	0.3	0.3	-135.11	-27.0	-26.8	38.0	37.4	0.62	61.227 CC, ES			
300.0	300.0	299.5	299.5	0.5	0.5	-138.90	-29.1	-25.4	38.6	37.6	0.97	39.758			
400.0	400.0	398.4	398.1	0.7	0.7	-71.71	-35.4	-21.0	40.8	39.4	1.36	29.943			
500.0	499.8	495.4	494.2	0.9	1.0	-92.56	-45.8	-14.0	47.9	46.2	1.76	27.197 SF			
600.0	599.1	589.2	586.5	1.1	1.3	-112.13	-59.6	-4.5	66.1	64.0	2.14	30.876			
700.0	697.6	678.9	673.9	1.4	1.7	-125.05	-76.2	6.9	96.4	93.9	2.51	38.356			
800.0	795.1	763.4	755.3	1.8	2.2	-132.69	-95.0	19.8	137.1	134.2	2.91	47.162			
900.0	891.4	842.3	830.3	2.4	2.6	-137.18	-115.2	33.6	186.6	183.3	3.33	56.008			
1,000.0	986.0	915.1	898.5	3.0	3.1	-139.80	-136.1	47.9	243.8	240.0	3.79	64.306			
1,100.0	1,079.0	981.7	960.0	3.7	3.6	-141.69	-157.1	62.3	307.5	303.2	4.28	71.930			
1,200.0	1,171.4	1,044.0	1,016.8	4.4	4.1	-143.69	-178.3	76.9	375.0	370.2	4.76	78.783			
1,300.0	1,263.9	1,100.0	1,067.1	5.1	4.5	-144.95	-198.7	90.8	444.9	439.6	5.24	84.836			

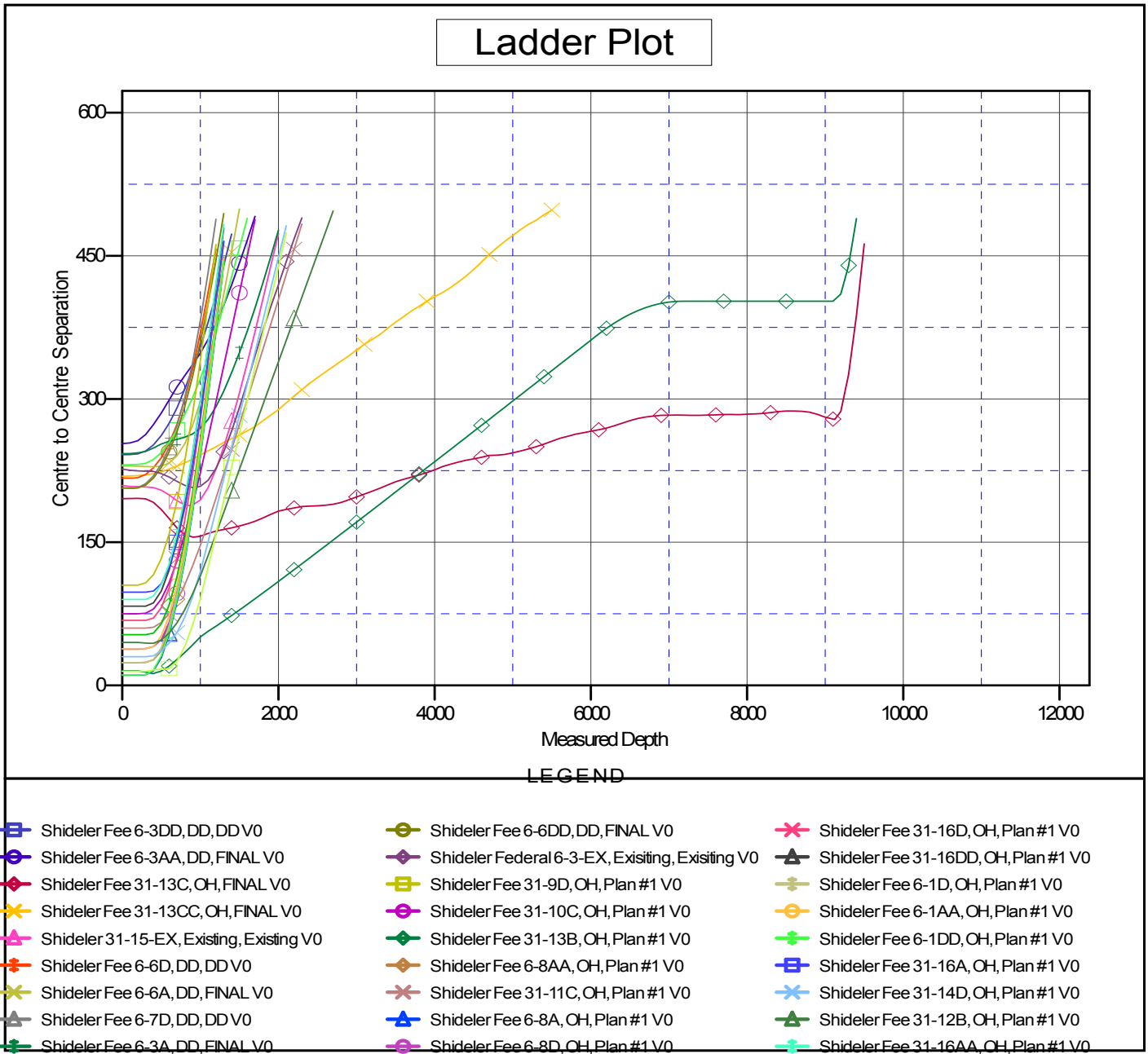
Cathedral Energy Services

Anticollision Report

Company: EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference: Well Shideler Fee 31-13BB	
Project: Mamm Creek	TVD Reference: KB=22' @ 7126.0ft (Patterson #308)	
Reference Site: O31E Pad (2nd Occupation)	MD Reference: KB=22' @ 7126.0ft (Patterson #308)	
Site Error: 0.0ft	North Reference: True	
Reference Well: Shideler Fee 31-13BB	Survey Calculation Method: Minimum Curvature	
Well Error: 0.0ft	Output errors are at 2.00 sigma	
Reference Wellbore OH	Database: USA EDM 5000 Multi Users DB	
Reference Design: Plan #1	Offset TVD Reference: Offset Datum	

Reference Depths are relative to KB=22' @ 7126.0ft (Patterson #308)
 Offset Depths are relative to Offset Datum
 Central Meridian is -105.500000 °

Coordinates are relative to: Shideler Fee 31-13BB
 Coordinate System is US State Plane 1983, Colorado Central Zone
 Grid Convergence at Surface is: -1.39°



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