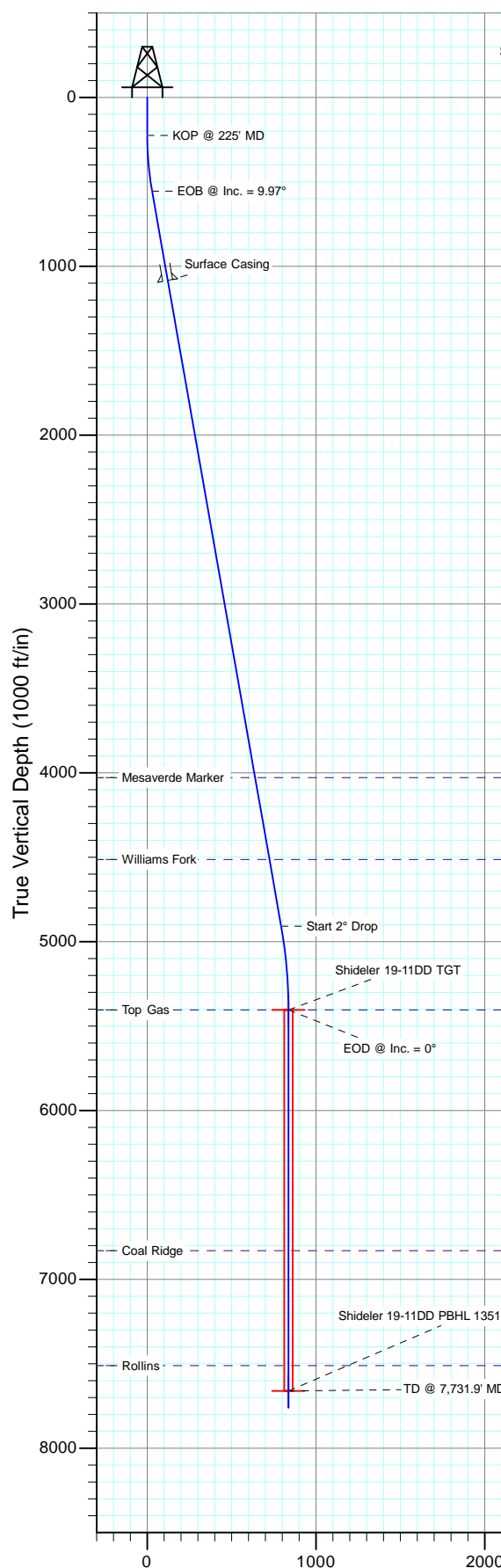
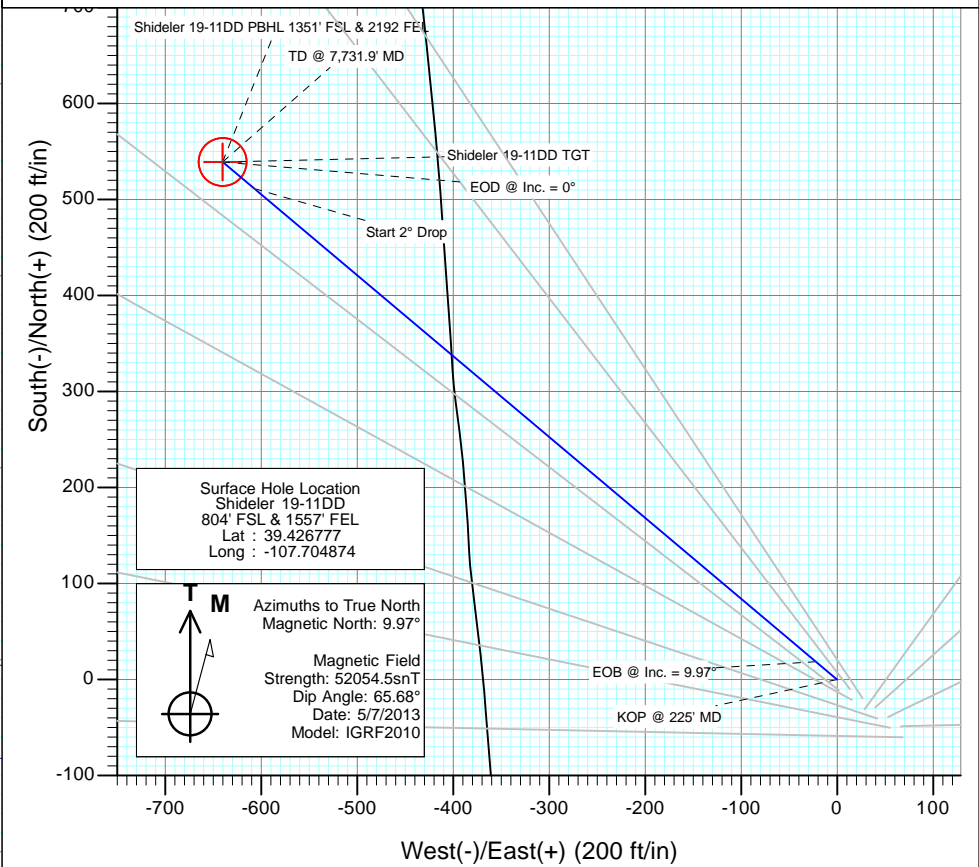




Project: Mamm Creek
Site: O19EB Pad (2nd Occupation)
Well: Shideler 19-11DD
Wellbore: OH
Design: Plan #1



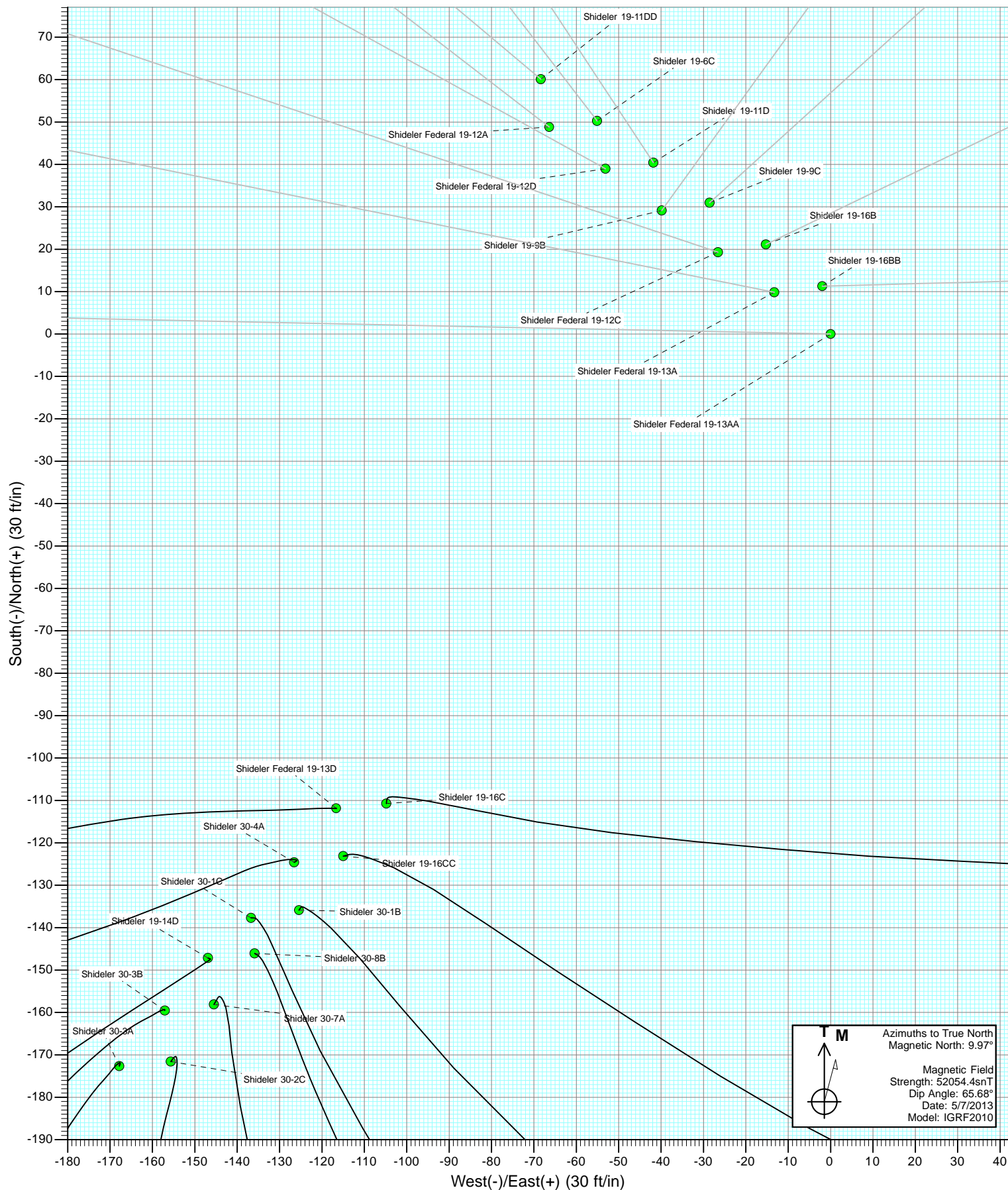
SECTION DETAILS										
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSec	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	225.0	0.00	0.00	225.0	0.0	0.0	0.00	0.00	0.0	
3	557.2	9.97	310.10	555.5	18.6	-22.0	3.00	310.10	28.8	
4	4976.6	9.97	310.10	4908.2	511.2	-607.0	0.00	0.00	793.6	Shideler 19-11DD TGT
5	5474.9	0.00	0.00	5404.0	539.1	-640.1	2.00	180.00	836.9	Shideler 19-11DD PBHL 1351' FSL & 2192 FEL
6	7731.9	0.00	0.00	7661.0	539.1	-640.1	0.00	0.00	836.9	
7	7831.9	0.00	0.00	7761.0	539.1	-640.1	0.00	0.00	836.9	

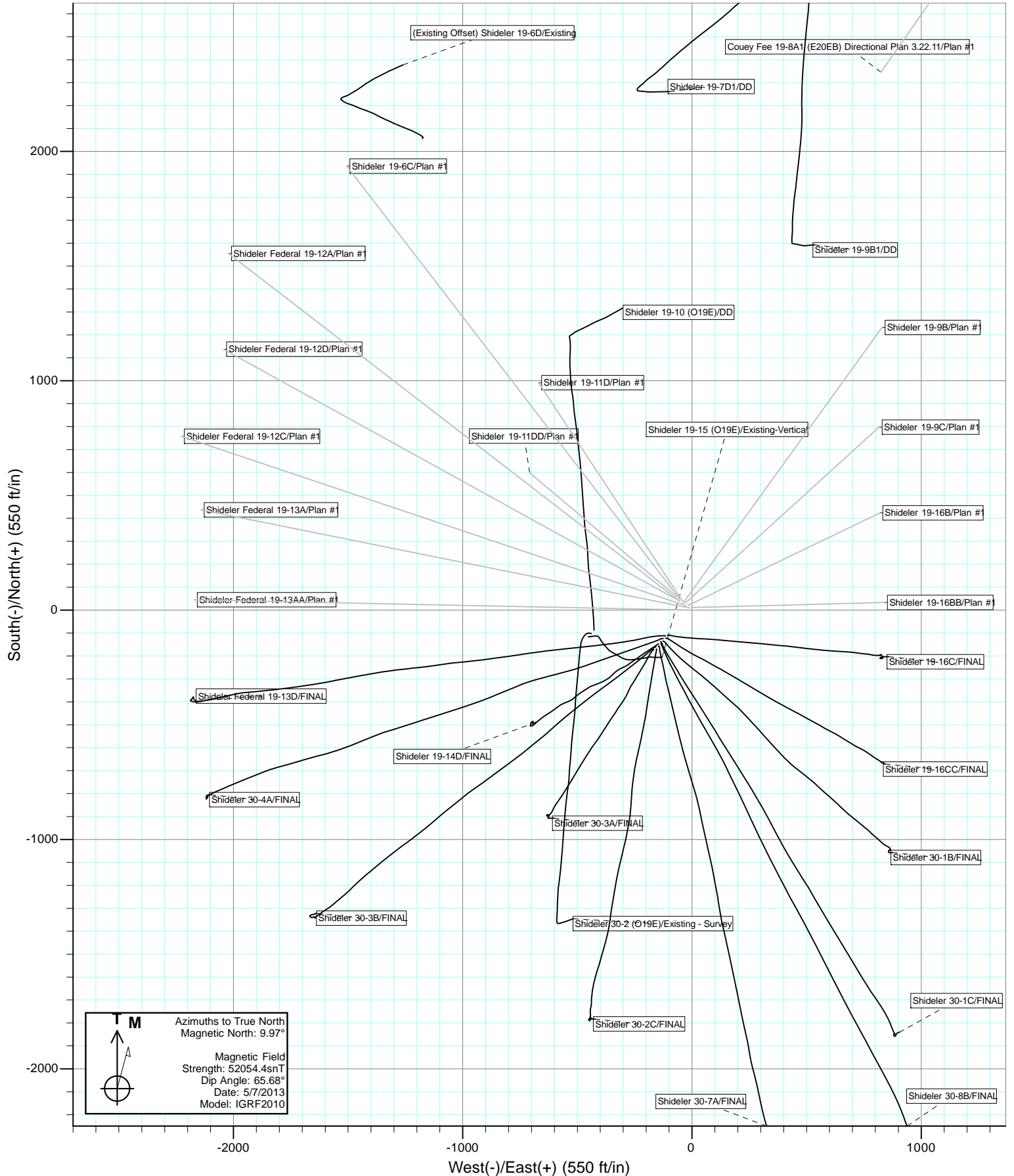


DESIGN TARGET DETAILS						
Name	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
Shideler 19-11DD TGT	539.1	-640.1	1588448.72	2376610.66	39.428257	-107.707140
Shideler 19-11DD PBHL 1351' FSL & 2192 FEL	539.1	-640.1	1588448.72	2376610.66	39.428257	-107.707140

FORMATION TOP DETAILS		
TVDPath	MDPath	Formation
4028.0	4082.9	Mesaverde Marker
4513.0	4575.3	Williams Fork
5404.0	5474.9	Top Gas
6830.0	6900.9	Coal Ridge
7511.0	7581.9	Rollins

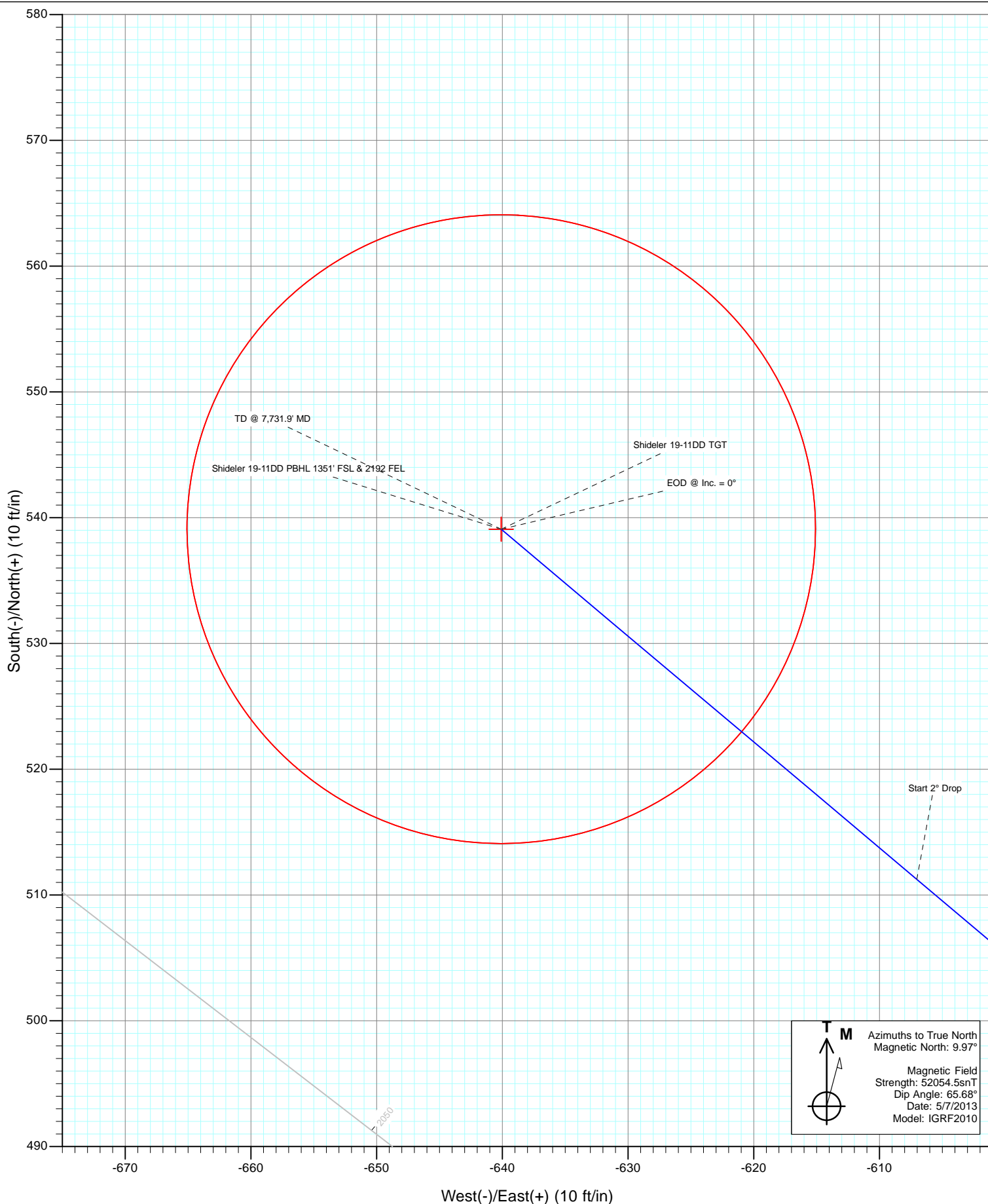
Plan #1
Shideler 19-11DD
135XXX; SC
KB=22' @ 6531.0ft (Nabors M-15)
Ground Elevation @ 6509.0
North American Datum 1983
Well Shideler 19-11DD, True North







Project: Mamm Creek
Site: O19EB Pad (2nd Occupation)
Well: Shideler 19-11DD
Wellbore: OH
Design: Plan #1



Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Shideler 19-11DD
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	KB=22' @ 6531.0ft (Nabors M-15)
Project:	Mamm Creek	MD Reference:	KB=22' @ 6531.0ft (Nabors M-15)
Site:	O19EB Pad (2nd Occupation)	North Reference:	True
Well:	Shideler 19-11DD	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		O19EB Pad (2nd Occupation)			
Site Position:		Northing:	1,587,894.27 ft	Latitude:	39.426777
From:	Lat/Long	Easting:	2,377,237.48 ft	Longitude:	-107.704874
Position Uncertainty:	0.0 ft	Slot Radius:	13.200 in	Grid Convergence:	-1.39 °

Well	Shideler 19-11DD					
Well Position	+N/-S	0.0 ft	Northing:	1,587,894.26 ft	Latitude:	39.426777
	+E/-W	0.0 ft	Easting:	2,377,237.48 ft	Longitude:	-107.704874
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	6,509.0 ft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination	Dip Angle	Field Strength
			(°)	(°)	(nT)
	IGRF2010	5/7/2013	9.97	65.68	52,055

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	310.10

Plan Sections										
Measured Depth	Inclination	Azimuth	Vertical Depth	+N/-S	+E/-W	Dogleg Rate	Build Rate	Turn Rate	TFO	Target
(ft)	(°)	(°)	(ft)	(ft)	(ft)	(°/100ft)	(°/100ft)	(°/100ft)	(°)	
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
225.0	0.00	0.00	225.0	0.0	0.0	0.00	0.00	0.00	0.00	
557.2	9.97	310.10	555.5	18.6	-22.0	3.00	3.00	0.00	310.10	
4,976.6	9.97	310.10	4,908.2	511.2	-607.0	0.00	0.00	0.00	0.00	
5,474.9	0.00	0.00	5,404.0	539.1	-640.1	2.00	-2.00	0.00	180.00	Shideler 19-11DD TG
7,731.9	0.00	0.00	7,661.0	539.1	-640.1	0.00	0.00	0.00	0.00	Shideler 19-11DD PB
7,831.9	0.00	0.00	7,761.0	539.1	-640.1	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 19-11DD
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	KB=22' @ 6531.0ft (Nabors M-15)
Project:	Mamm Creek	MD Reference:	KB=22' @ 6531.0ft (Nabors M-15)
Site:	O19EB Pad (2nd Occupation)	North Reference:	True
Well:	Shideler 19-11DD	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	
225.0	0.00	0.00	225.0	0.0	0.0	0.0	0.00	0.00	KOP @ 225' MD
300.0	2.25	310.10	300.0	0.9	-1.1	1.5	3.00	3.00	
400.0	5.25	310.10	399.8	5.2	-6.1	8.0	3.00	3.00	
500.0	8.25	310.10	499.1	12.7	-15.1	19.8	3.00	3.00	
557.2	9.97	310.10	555.5	18.6	-22.0	28.8	3.00	3.00	EOB @ Inc. = 9.97°
600.0	9.97	310.10	597.7	23.3	-27.7	36.2	0.00	0.00	
700.0	9.97	310.10	696.2	34.5	-40.9	53.5	0.00	0.00	
800.0	9.97	310.10	794.7	45.6	-54.2	70.8	0.00	0.00	
900.0	9.97	310.10	893.2	56.8	-67.4	88.1	0.00	0.00	
1,000.0	9.97	310.10	991.6	67.9	-80.7	105.4	0.00	0.00	
1,094.8	9.97	310.10	1,085.0	78.5	-93.2	121.9	0.00	0.00	Surface Casing
1,100.0	9.97	310.10	1,090.1	79.1	-93.9	122.8	0.00	0.00	
1,200.0	9.97	310.10	1,188.6	90.2	-107.1	140.1	0.00	0.00	
1,300.0	9.97	310.10	1,287.1	101.4	-120.4	157.4	0.00	0.00	
1,400.0	9.97	310.10	1,385.6	112.5	-133.6	174.7	0.00	0.00	
1,500.0	9.97	310.10	1,484.1	123.7	-146.8	192.0	0.00	0.00	
1,600.0	9.97	310.10	1,582.6	134.8	-160.1	209.3	0.00	0.00	
1,700.0	9.97	310.10	1,681.1	146.0	-173.3	226.6	0.00	0.00	
1,800.0	9.97	310.10	1,779.6	157.1	-186.5	243.9	0.00	0.00	
1,900.0	9.97	310.10	1,878.1	168.3	-199.8	261.2	0.00	0.00	
2,000.0	9.97	310.10	1,976.6	179.4	-213.0	278.5	0.00	0.00	
2,100.0	9.97	310.10	2,075.0	190.6	-226.3	295.8	0.00	0.00	
2,200.0	9.97	310.10	2,173.5	201.7	-239.5	313.1	0.00	0.00	
2,300.0	9.97	310.10	2,272.0	212.9	-252.7	330.4	0.00	0.00	
2,400.0	9.97	310.10	2,370.5	224.0	-266.0	347.7	0.00	0.00	
2,500.0	9.97	310.10	2,469.0	235.1	-279.2	365.0	0.00	0.00	
2,600.0	9.97	310.10	2,567.5	246.3	-292.4	382.3	0.00	0.00	
2,700.0	9.97	310.10	2,666.0	257.4	-305.7	399.6	0.00	0.00	
2,800.0	9.97	310.10	2,764.5	268.6	-318.9	417.0	0.00	0.00	
2,900.0	9.97	310.10	2,863.0	279.7	-332.2	434.3	0.00	0.00	
3,000.0	9.97	310.10	2,961.5	290.9	-345.4	451.6	0.00	0.00	
3,100.0	9.97	310.10	3,060.0	302.0	-358.6	468.9	0.00	0.00	
3,200.0	9.97	310.10	3,158.5	313.2	-371.9	486.2	0.00	0.00	
3,300.0	9.97	310.10	3,256.9	324.3	-385.1	503.5	0.00	0.00	
3,400.0	9.97	310.10	3,355.4	335.5	-398.3	520.8	0.00	0.00	
3,500.0	9.97	310.10	3,453.9	346.6	-411.6	538.1	0.00	0.00	
3,600.0	9.97	310.10	3,552.4	357.8	-424.8	555.4	0.00	0.00	
3,700.0	9.97	310.10	3,650.9	368.9	-438.0	572.7	0.00	0.00	
3,800.0	9.97	310.10	3,749.4	380.1	-451.3	590.0	0.00	0.00	
3,900.0	9.97	310.10	3,847.9	391.2	-464.5	607.3	0.00	0.00	
4,000.0	9.97	310.10	3,946.4	402.4	-477.8	624.6	0.00	0.00	
4,082.9	9.97	310.10	4,028.0	411.6	-488.7	639.0	0.00	0.00	Mesaverde Marker
4,100.0	9.97	310.10	4,044.9	413.5	-491.0	641.9	0.00	0.00	
4,200.0	9.97	310.10	4,143.4	424.7	-504.2	659.2	0.00	0.00	
4,300.0	9.97	310.10	4,241.9	435.8	-517.5	676.5	0.00	0.00	
4,400.0	9.97	310.10	4,340.3	447.0	-530.7	693.8	0.00	0.00	
4,500.0	9.97	310.10	4,438.8	458.1	-543.9	711.2	0.00	0.00	
4,575.3	9.97	310.10	4,513.0	466.5	-553.9	724.2	0.00	0.00	Williams Fork
4,600.0	9.97	310.10	4,537.3	469.3	-557.2	728.5	0.00	0.00	

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Shideler 19-11DD
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	KB=22' @ 6531.0ft (Nabors M-15)
Project:	Mamm Creek	MD Reference:	KB=22' @ 6531.0ft (Nabors M-15)
Site:	O19EB Pad (2nd Occupation)	North Reference:	True
Well:	Shideler 19-11DD	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
4,700.0	9.97	310.10	4,635.8	480.4	-570.4	745.8	0.00	0.00	
4,800.0	9.97	310.10	4,734.3	491.6	-583.6	763.1	0.00	0.00	
4,900.0	9.97	310.10	4,832.8	502.7	-596.9	780.4	0.00	0.00	
4,976.6	9.97	310.10	4,908.2	511.2	-607.0	793.6	0.00	0.00	Start 2° Drop
5,000.0	9.50	310.10	4,931.3	513.8	-610.0	797.6	2.00	-2.00	
5,100.0	7.50	310.10	5,030.2	523.3	-621.4	812.4	2.00	-2.00	
5,200.0	5.50	310.10	5,129.6	530.6	-630.0	823.7	2.00	-2.00	
5,300.0	3.50	310.10	5,229.2	535.6	-636.0	831.5	2.00	-2.00	
5,400.0	1.50	310.10	5,329.1	538.5	-639.3	835.9	2.00	-2.00	
5,474.9	0.00	0.00	5,404.0	539.1	-640.1	836.9	2.00	-2.00	EOD @ Inc. = 0° - Top Gas
5,500.0	0.00	0.00	5,429.1	539.1	-640.1	836.9	0.00	0.00	
5,600.0	0.00	0.00	5,529.1	539.1	-640.1	836.9	0.00	0.00	
5,700.0	0.00	0.00	5,629.1	539.1	-640.1	836.9	0.00	0.00	
5,800.0	0.00	0.00	5,729.1	539.1	-640.1	836.9	0.00	0.00	
5,900.0	0.00	0.00	5,829.1	539.1	-640.1	836.9	0.00	0.00	
6,000.0	0.00	0.00	5,929.1	539.1	-640.1	836.9	0.00	0.00	
6,100.0	0.00	0.00	6,029.1	539.1	-640.1	836.9	0.00	0.00	
6,200.0	0.00	0.00	6,129.1	539.1	-640.1	836.9	0.00	0.00	
6,300.0	0.00	0.00	6,229.1	539.1	-640.1	836.9	0.00	0.00	
6,400.0	0.00	0.00	6,329.1	539.1	-640.1	836.9	0.00	0.00	
6,500.0	0.00	0.00	6,429.1	539.1	-640.1	836.9	0.00	0.00	
6,600.0	0.00	0.00	6,529.1	539.1	-640.1	836.9	0.00	0.00	
6,700.0	0.00	0.00	6,629.1	539.1	-640.1	836.9	0.00	0.00	
6,800.0	0.00	0.00	6,729.1	539.1	-640.1	836.9	0.00	0.00	
6,900.0	0.00	0.00	6,829.1	539.1	-640.1	836.9	0.00	0.00	
6,900.9	0.00	0.00	6,830.0	539.1	-640.1	836.9	0.00	0.00	Coal Ridge
7,000.0	0.00	0.00	6,929.1	539.1	-640.1	836.9	0.00	0.00	
7,100.0	0.00	0.00	7,029.1	539.1	-640.1	836.9	0.00	0.00	
7,200.0	0.00	0.00	7,129.1	539.1	-640.1	836.9	0.00	0.00	
7,300.0	0.00	0.00	7,229.1	539.1	-640.1	836.9	0.00	0.00	
7,400.0	0.00	0.00	7,329.1	539.1	-640.1	836.9	0.00	0.00	
7,500.0	0.00	0.00	7,429.1	539.1	-640.1	836.9	0.00	0.00	
7,581.9	0.00	0.00	7,511.0	539.1	-640.1	836.9	0.00	0.00	Rollins
7,600.0	0.00	0.00	7,529.1	539.1	-640.1	836.9	0.00	0.00	
7,700.0	0.00	0.00	7,629.1	539.1	-640.1	836.9	0.00	0.00	
7,731.9	0.00	0.00	7,661.0	539.1	-640.1	836.9	0.00	0.00	TD @ 7,731.9' MD
7,800.0	0.00	0.00	7,729.1	539.1	-640.1	836.9	0.00	0.00	
7,831.9	0.00	0.00	7,761.0	539.1	-640.1	836.9	0.00	0.00	Permit TD @ 7,831.9' MD

Targets

Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
- hit/miss target									
- Shape									
Shideler 19-11DD PBHL	0.00	0.00	7,661.0	539.1	-640.1	1,588,448.72	2,376,610.66	39.428257	-107.707140
- plan hits target center									
- Circle (radius 25.0)									
Shideler 19-11DD TGT	0.00	0.00	5,404.0	539.1	-640.1	1,588,448.72	2,376,610.66	39.428257	-107.707140
- plan hits target center									
- Point									

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Shideler 19-11DD
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	KB=22' @ 6531.0ft (Nabors M-15)
Project:	Mamm Creek	MD Reference:	KB=22' @ 6531.0ft (Nabors M-15)
Site:	O19EB Pad (2nd Occupation)	North Reference:	True
Well:	Shideler 19-11DD	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1		

Casing Points				
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)
1,094.8	1,085.0	Surface Casing		

Formations					
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
4,082.9	4,028.0	Mesaverde Marker			
4,575.3	4,513.0	Williams Fork			
5,474.9	5,404.0	Top Gas			
6,900.9	6,830.0	Coal Ridge			
7,581.9	7,511.0	Rollins			

Plan Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
225.0	225.0	0.0	0.0	KOP @ 225' MD
557.2	555.5	18.6	-22.0	EOB @ Inc. = 9.97°
4,976.6	4,908.2	511.2	-607.0	Start 2° Drop
5,474.9	5,404.0	539.1	-640.1	EOD @ Inc. = 0°
7,731.9	7,661.0	539.1	-640.1	TD @ 7,731.9' MD
7,831.9	7,761.0	539.1	-640.1	Permit TD @ 7,831.9' MD

EnCana Oil & Gas (USA) Inc

Mamm Creek

O19EB Pad (2nd Occupation)

Shideler 19-11DD

OH

Plan #1

Anticollision Report

09 May, 2013

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Shideler 19-11DD
Project:	Mamm Creek	TVD Reference:	KB=22' @ 6531.0ft (Nabors M-15)
Reference Site:	O19EB Pad (2nd Occupation)	MD Reference:	KB=22' @ 6531.0ft (Nabors M-15)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Shideler 19-11DD	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	5/8/2013		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.0	7,831.5	Plan #1 (OH)	MWD	Geolink MWD

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Shideler 19-11DD
Project:	Mamm Creek	TVD Reference:	KB=22' @ 6531.0ft (Nabors M-15)
Reference Site:	O19EB Pad (2nd Occupation)	MD Reference:	KB=22' @ 6531.0ft (Nabors M-15)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Shideler 19-11DD	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 Offset Well - Wellbore - Design	Reference Measured Depth	Offset Measured Depth	Distance		Separation Factor	Warning
	(ft)	(ft)	Between Centres (ft)	Between Ellipses (ft)		
O19E Pad						
Shideler 19-10 (O19E) - DD - DD	1,912.7	1,939.3	206.3	195.5	19.106	CC, ES
Shideler 19-10 (O19E) - DD - DD	2,000.0	2,022.8	207.7	196.8	19.022	SF
Shideler 19-15 (O19E) - Existing-Vertical - Existing-Vertic	1,252.7	1,267.9	352.8	347.0	61.202	CC, ES
Shideler 19-15 (O19E) - Existing-Vertical - Existing-Vertic	2,500.0	2,478.9	471.0	459.7	41.536	SF
Shideler 30-2 (O19E) - Existing - Survey - Existing - Surv	0.0	25.9	405.5			
Shideler 30-2 (O19E) - Existing - Survey - Existing - Surv	200.0	221.5	405.8	405.2	603.006	ES
Shideler 30-2 (O19E) - Existing - Survey - Existing - Surv	1,200.0	1,121.3	499.4	494.0	92.159	SF
O19EB Pad (1st Occupation)						
(Existing Offset) Shideler 19-6D - Existing - Existing						Out of range
Shideler 19-14D - OH - FINAL	183.8	183.8	221.6	221.1	392.357	CC
Shideler 19-14D - OH - FINAL	200.0	200.0	221.6	221.0	356.622	ES
Shideler 19-14D - OH - FINAL	1,900.0	1,848.3	487.1	477.8	52.443	SF
Shideler 19-16C - OH - FINAL	260.1	261.7	173.4	172.6	207.619	CC
Shideler 19-16C - OH - FINAL	300.0	301.0	173.5	172.5	177.877	ES
Shideler 19-16C - OH - FINAL	1,000.0	960.5	298.6	294.4	71.850	SF
Shideler 19-16CC - OH - FINAL	247.0	248.2	188.5	187.7	238.712	CC, ES
Shideler 19-16CC - OH - FINAL	900.0	841.3	298.0	294.5	83.679	SF
Shideler 30-1B - OH - FINAL	249.6	250.8	203.5	202.7	255.179	CC, ES
Shideler 30-1B - OH - FINAL	900.0	827.8	317.6	314.1	90.578	SF
Shideler 30-1C - OH - FINAL	218.7	218.9	209.0	208.4	303.937	CC, ES
Shideler 30-1C - OH - FINAL	900.0	797.4	356.9	353.4	102.340	SF
Shideler 30-2C - OH - FINAL	224.3	225.1	246.1	245.4	347.418	CC, ES
Shideler 30-2C - OH - FINAL	1,100.0	938.0	471.1	466.8	110.993	SF
Shideler 30-3A - OH - FINAL	214.3	214.7	252.3	251.6	375.365	CC, ES
Shideler 30-3A - OH - FINAL	1,300.0	1,213.2	473.9	468.2	83.995	SF
Shideler 30-3B - OH - FINAL	209.3	209.6	236.6	236.0	361.546	CC, ES
Shideler 30-3B - OH - FINAL	1,200.0	1,049.9	468.8	463.1	81.598	SF
Shideler 30-4A - OH - FINAL	208.5	208.6	192.9	192.3	296.190	CC, ES
Shideler 30-4A - OH - FINAL	1,500.0	1,389.8	485.3	476.4	54.586	SF
Shideler 30-7A - OH - FINAL	240.0	241.3	229.4	228.6	300.028	CC, ES
Shideler 30-7A - OH - FINAL	900.0	793.6	366.4	363.0	107.475	SF
Shideler 30-8B - OH - FINAL	0.0	0.0	216.9			
Shideler 30-8B - OH - FINAL	200.0	198.6	217.2	216.6	350.418	ES
Shideler 30-8B - OH - FINAL	900.0	788.0	370.1	366.7	107.877	SF
Shideler Federal 19-13D - OH - FINAL	0.0	0.0	178.6			
Shideler Federal 19-13D - OH - FINAL	200.0	199.8	178.6	178.0	287.634	ES
Shideler Federal 19-13D - OH - FINAL	1,600.0	1,509.4	485.3	474.9	46.651	SF

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Shideler 19-11DD
Project:	Mamm Creek	TVD Reference:	KB=22' @ 6531.0ft (Nabors M-15)
Reference Site:	O19EB Pad (2nd Occupation)	MD Reference:	KB=22' @ 6531.0ft (Nabors M-15)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Shideler 19-11DD	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
Offset Well - Wellbore - Design						
O19EB Pad (2nd Occupation)						
Shideler 19-11D - OH - Plan #1	200.0	200.0	33.0	32.4	53.178	CC, ES
Shideler 19-11D - OH - Plan #1	1,600.0	1,608.1	71.8	61.8	7.242	SF
Shideler 19-16B - OH - Plan #1	200.0	200.0	65.9	65.2	106.012	CC, ES
Shideler 19-16B - OH - Plan #1	500.0	494.4	90.7	89.0	53.912	SF
Shideler 19-16BB - OH - Plan #1	200.0	200.0	82.4	81.8	132.603	CC, ES
Shideler 19-16BB - OH - Plan #1	500.0	495.0	104.1	102.4	62.940	SF
Shideler 19-6C - OH - Plan #1	200.0	200.0	16.5	15.9	26.587	CC, ES
Shideler 19-6C - OH - Plan #1	1,009.9	1,016.8	28.0	22.6	5.190	SF
Shideler 19-9B - OH - Plan #1	200.0	200.0	42.1	41.5	67.753	CC, ES
Shideler 19-9B - OH - Plan #1	500.0	499.4	61.0	59.3	35.806	SF
Shideler 19-9C - OH - Plan #1	200.0	200.0	49.4	48.7	79.426	CC, ES
Shideler 19-9C - OH - Plan #1	500.0	494.7	76.7	74.9	42.865	SF
Shideler Federal 19-12A - OH - Plan #1	630.4	631.6	9.6	6.8	3.376	CC, ES
Shideler Federal 19-12A - OH - Plan #1	700.0	701.0	10.7	7.3	3.202	SF
Shideler Federal 19-12C - OH - Plan #1	200.0	200.0	58.4	57.8	94.010	CC, ES
Shideler Federal 19-12C - OH - Plan #1	1,200.0	1,213.4	77.5	69.9	10.168	SF
Shideler Federal 19-12D - OH - Plan #1	200.0	200.0	26.1	25.4	41.931	CC, ES
Shideler Federal 19-12D - OH - Plan #1	1,004.1	1,012.5	32.2	26.7	5.819	SF
Shideler Federal 19-13A - OH - Plan #1	200.0	200.0	74.6	73.9	120.010	CC, ES
Shideler Federal 19-13A - OH - Plan #1	1,100.0	1,109.8	99.7	92.6	14.030	SF
Shideler Federal 19-13AA - OH - Plan #1	312.3	316.4	90.4	89.4	87.964	CC, ES
Shideler Federal 19-13AA - OH - Plan #1	1,100.0	1,101.1	144.3	137.0	19.862	SF

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Shideler 19-11DD
Project:	Mamm Creek	TVD Reference:	KB=22' @ 6531.0ft (Nabors M-15)
Reference Site:	O19EB Pad (2nd Occupation)	MD Reference:	KB=22' @ 6531.0ft (Nabors M-15)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Shideler 19-11DD	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 O19E Pad - Shideler 19-10 (O19E) - DD - DD													Offset Site Error: 0.0 ft	
Survey Program: 154--MWD													Offset Well Error: 0.0 ft	
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor		
0.0	0.0	26.0	26.0	0.0	0.0	-112.33	-147.4	-358.9	388.0					
100.0	100.0	125.9	125.9	0.1	0.2	-112.31	-147.3	-359.0	388.0	387.7	0.34	1,154.803		
200.0	200.0	226.3	226.3	0.3	0.4	-112.24	-146.9	-359.1	388.0	387.3	0.68	569.375		
300.0	300.0	326.7	326.7	0.5	0.5	-62.46	-146.2	-359.3	387.2	386.1	1.03	374.399		
400.0	399.8	432.6	432.6	0.7	0.7	-63.16	-143.8	-359.1	383.2	381.7	1.42	269.308		
500.0	499.1	536.9	536.7	1.0	0.9	-64.17	-137.5	-359.1	375.5	373.6	1.87	200.342		
600.0	597.7	643.4	642.5	1.3	1.2	-65.09	-125.7	-359.7	364.4	362.0	2.42	150.762		
700.0	696.2	749.4	747.0	1.6	1.5	-65.16	-108.2	-360.3	350.6	347.6	3.03	115.562		
800.0	794.7	851.4	846.7	1.9	1.9	-64.39	-86.4	-361.7	335.7	331.9	3.71	90.405		
900.0	893.2	952.7	944.7	2.3	2.4	-62.85	-61.0	-363.8	320.0	315.5	4.45	71.972		
1,000.0	991.6	1,052.6	1,040.8	2.6	2.9	-60.78	-33.8	-366.0	303.8	298.6	5.21	58.335		
1,100.0	1,090.1	1,150.3	1,134.4	3.0	3.4	-58.26	-6.0	-368.3	287.9	281.9	5.99	48.041		
1,200.0	1,188.6	1,247.4	1,227.0	3.3	3.9	-55.18	23.0	-371.2	272.8	266.0	6.78	40.254		
1,300.0	1,287.1	1,344.3	1,319.3	3.7	4.4	-51.64	52.3	-374.5	258.9	251.4	7.55	34.282		
1,400.0	1,385.6	1,441.5	1,411.6	4.0	5.0	-47.51	82.6	-378.2	246.4	238.1	8.29	29.725		
1,500.0	1,484.1	1,540.5	1,506.0	4.4	5.5	-43.15	112.5	-381.8	235.3	226.3	8.98	26.202		
1,600.0	1,582.6	1,641.3	1,601.6	4.7	6.1	-37.95	144.1	-383.8	224.1	214.5	9.61	23.314		
1,700.0	1,681.1	1,737.1	1,692.5	5.1	6.6	-32.46	174.6	-385.6	214.8	204.6	10.13	21.204		
1,800.0	1,779.6	1,832.0	1,781.9	5.4	7.2	-26.27	206.1	-388.0	208.7	198.1	10.52	19.835		
1,900.0	1,878.1	1,927.2	1,871.4	5.8	7.8	-19.69	238.5	-391.0	206.3	195.6	10.77	19.150		
1,912.7	1,890.6	1,939.3	1,882.8	5.8	7.9	-18.85	242.6	-391.5	206.3	195.5	10.80	19.106 CC, ES		
2,000.0	1,976.6	2,022.8	1,961.2	6.1	8.4	-13.12	270.9	-394.8	207.7	196.8	10.92	19.022 SF		
2,100.0	2,075.0	2,121.7	2,054.3	6.5	9.0	-6.61	304.2	-399.1	212.1	201.1	11.00	19.285		
2,200.0	2,173.5	2,221.6	2,148.4	6.8	9.6	-0.12	337.5	-401.5	217.5	206.4	11.04	19.697		
2,300.0	2,272.0	2,316.7	2,238.0	7.2	10.2	5.75	369.2	-403.5	225.3	214.2	11.10	20.295		
2,400.0	2,370.5	2,410.7	2,326.2	7.5	10.8	11.25	401.7	-405.8	236.8	225.6	11.18	21.179		
2,500.0	2,469.0	2,508.7	2,418.0	7.9	11.4	16.45	435.7	-408.3	250.6	239.3	11.30	22.177		
2,600.0	2,567.5	2,607.2	2,510.7	8.2	12.0	21.08	469.3	-410.7	265.7	254.2	11.47	23.160		
2,700.0	2,666.0	2,705.7	2,603.5	8.6	12.6	25.16	502.2	-413.0	281.5	269.8	11.69	24.075		
2,800.0	2,764.5	2,803.5	2,695.8	8.9	13.1	28.74	534.3	-415.2	298.1	286.1	11.96	24.917		
2,900.0	2,863.0	2,900.5	2,787.5	9.3	13.7	31.80	566.0	-418.1	315.6	303.3	12.28	25.693		
3,000.0	2,961.5	2,998.3	2,880.0	9.6	14.3	34.49	597.7	-421.3	333.8	321.2	12.66	26.380		
3,100.0	3,060.0	3,097.3	2,973.6	10.0	14.9	36.91	629.5	-424.6	352.4	339.4	13.08	26.953		
3,200.0	3,158.5	3,197.6	3,068.8	10.3	15.4	39.15	661.1	-427.6	370.9	357.3	13.54	27.384		
3,300.0	3,256.9	3,298.3	3,164.5	10.7	16.0	41.14	691.9	-430.8	388.9	374.8	14.05	27.675		
3,400.0	3,355.4	3,394.9	3,256.5	11.0	16.6	42.85	721.3	-434.0	407.1	392.5	14.58	27.917		
3,500.0	3,453.9	3,494.6	3,351.5	11.4	17.1	44.37	751.5	-438.1	425.5	410.4	15.15	28.097		
3,600.0	3,552.4	3,595.9	3,448.1	11.7	17.7	45.74	781.4	-442.5	443.6	427.9	15.74	28.191		
3,700.0	3,650.9	3,697.3	3,545.2	12.1	18.2	47.10	810.7	-446.1	461.0	444.7	16.36	28.188		
3,800.0	3,749.4	3,798.7	3,642.4	12.4	18.7	48.53	839.3	-448.3	478.1	461.1	17.02	28.094		
3,900.0	3,847.9	3,904.8	3,744.5	12.8	19.2	49.80	868.0	-451.6	494.2	476.5	17.70	27.911		

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Shideler 19-11DD
Project:	Mamm Creek	TVD Reference:	KB=22' @ 6531.0ft (Nabors M-15)
Reference Site:	O19EB Pad (2nd Occupation)	MD Reference:	KB=22' @ 6531.0ft (Nabors M-15)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Shideler 19-11DD	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 O19E Pad - Shideler 19-15 (O19E) - Existing-Vertical - Existing-Vertical													Offset Site Error:	0.0 ft
Survey Program: 100-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis		Distance		Total		Separation		Warning		
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Uncertainty Axis			
0.0	0.0	26.5	26.5	0.0	0.0	-114.72	-175.9	-382.2	420.7					
100.0	100.0	127.7	127.7	0.1	0.2	-114.73	-175.9	-381.8	420.4	420.1	0.33	1,256.197		
200.0	200.0	228.6	228.6	0.3	0.4	-114.81	-176.2	-381.2	420.0	419.3	0.69	612.998		
300.0	300.0	332.2	332.1	0.5	0.6	-65.23	-176.4	-379.9	418.3	417.3	1.04	400.944		
400.0	399.8	434.7	434.6	0.7	0.7	-66.27	-176.1	-378.1	413.8	412.4	1.42	290.968		
500.0	499.1	537.4	537.4	1.0	0.9	-68.14	-175.6	-375.4	406.7	404.8	1.85	219.521		
600.0	597.7	639.4	639.3	1.3	1.1	-70.71	-174.9	-371.6	397.3	394.9	2.34	170.108		
700.0	696.2	738.7	738.4	1.6	1.3	-73.32	-174.0	-367.3	387.6	384.8	2.84	136.633		
800.0	794.7	836.3	836.0	1.9	1.5	-76.12	-173.8	-362.7	378.9	375.6	3.35	113.043		
900.0	893.2	935.6	935.2	2.3	1.7	-79.08	-173.3	-357.8	370.9	367.0	3.88	95.578		
1,000.0	991.6	1,033.9	1,033.3	2.6	1.9	-82.16	-172.8	-352.7	363.6	359.2	4.42	82.344		
1,100.0	1,090.1	1,130.2	1,129.4	3.0	2.1	-85.39	-172.9	-347.2	357.5	352.6	4.95	72.164		
1,200.0	1,188.6	1,222.7	1,221.8	3.3	2.2	-88.67	-173.8	-342.0	353.5	348.0	5.49	64.364		
1,252.7	1,240.6	1,267.9	1,266.9	3.5	2.3	-90.34	-175.1	-339.8	352.8	347.0	5.76	61.202 CC, ES		
1,300.0	1,287.1	1,308.9	1,307.9	3.7	2.4	-91.88	-176.9	-338.1	353.3	347.3	6.01	58.750		
1,400.0	1,385.6	1,400.9	1,399.7	4.0	2.6	-95.33	-181.9	-334.9	356.9	350.4	6.54	54.556		
1,500.0	1,484.1	1,500.3	1,498.8	4.4	2.8	-98.95	-187.7	-331.8	362.4	355.3	7.07	51.256		
1,600.0	1,582.6	1,599.1	1,597.4	4.7	3.0	-102.45	-193.1	-328.4	368.7	361.2	7.58	48.650		
1,700.0	1,681.1	1,696.3	1,694.4	5.1	3.1	-105.77	-198.2	-324.9	376.3	368.2	8.07	46.634		
1,800.0	1,779.6	1,796.9	1,794.8	5.4	3.3	-109.11	-203.1	-320.9	384.7	376.1	8.54	45.019		
1,900.0	1,878.1	1,891.5	1,889.2	5.8	3.5	-112.13	-207.7	-317.0	394.1	385.1	8.99	43.838		
2,000.0	1,976.6	1,990.4	1,988.0	6.1	3.7	-115.10	-212.7	-313.2	404.9	395.5	9.42	42.973		
2,100.0	2,075.0	2,087.5	2,084.9	6.5	3.9	-117.87	-217.2	-309.4	416.5	406.7	9.84	42.343		
2,200.0	2,173.5	2,184.3	2,181.5	6.8	4.1	-120.48	-221.9	-305.6	429.1	418.9	10.23	41.938		
2,300.0	2,272.0	2,282.9	2,279.8	7.2	4.3	-123.00	-226.6	-301.7	442.5	431.9	10.62	41.685		
2,400.0	2,370.5	2,380.8	2,377.5	7.5	4.5	-125.41	-231.0	-297.3	456.5	445.5	10.98	41.555		
2,500.0	2,469.0	2,478.9	2,475.4	7.9	4.7	-127.71	-235.3	-292.7	471.0	459.7	11.34	41.536 SF		
2,600.0	2,567.5	2,579.6	2,575.9	8.2	4.9	-129.96	-239.3	-287.7	485.9	474.3	11.69	41.579		

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Shideler 19-11DD
Project:	Mamm Creek	TVD Reference:	KB=22' @ 6531.0ft (Nabors M-15)
Reference Site:	O19EB Pad (2nd Occupation)	MD Reference:	KB=22' @ 6531.0ft (Nabors M-15)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Shideler 19-11DD	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 O19E Pad - Shideler 30-2 (O19E) - Existing - Survey - Existing - Survey													Offset Site Error: 0.0 ft
Survey Program: 164-MWD2													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	25.9	25.9	0.0	0.0	-113.64	-162.6	-371.4	405.5				
100.0	100.0	125.6	125.6	0.1	0.2	-113.62	-162.5	-371.5	405.5	405.2	0.34	1,204.633	
200.0	200.0	221.5	221.5	0.3	0.4	-113.55	-162.1	-372.0	405.8	405.2	0.67	603.006 ES	
300.0	300.0	309.7	309.7	0.5	0.5	-63.53	-161.4	-374.7	407.7	406.7	1.01	404.333	
400.0	399.8	396.4	396.2	0.7	0.7	-63.71	-160.4	-380.5	410.4	409.1	1.36	300.737	
500.0	499.1	485.5	484.9	1.0	0.9	-64.65	-161.6	-388.2	413.8	412.0	1.77	233.667	
600.0	597.7	574.1	573.0	1.3	1.1	-66.61	-167.0	-396.3	418.0	415.8	2.21	188.781	
700.0	696.2	662.5	660.4	1.6	1.4	-69.15	-176.6	-404.6	425.0	422.3	2.68	158.288	
800.0	794.7	758.2	754.7	1.9	1.6	-72.38	-191.3	-412.1	434.2	431.0	3.20	135.806	
900.0	893.2	850.1	844.6	2.3	2.0	-75.99	-209.7	-416.7	445.6	441.9	3.74	119.094	
1,000.0	991.6	934.6	926.5	2.6	2.3	-79.62	-230.3	-419.3	460.4	456.1	4.29	107.286	
1,100.0	1,090.1	1,025.8	1,014.4	3.0	2.7	-83.50	-254.6	-422.1	478.9	474.1	4.86	98.612	
1,200.0	1,188.6	1,121.3	1,106.4	3.3	3.1	-87.29	-279.8	-424.5	499.4	494.0	5.42	92.159 SF	

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Shideler 19-11DD
Project:	Mamm Creek	TVD Reference:	KB=22' @ 6531.0ft (Nabors M-15)
Reference Site:	O19EB Pad (2nd Occupation)	MD Reference:	KB=22' @ 6531.0ft (Nabors M-15)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Shideler 19-11DD	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 O19EB Pad (1st Occupation) - Shideler 19-14D - OH - FINAL													Offset Site Error:	0.0 ft
Survey Program: 172-MWD, 1613-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor		
0.0	0.0	0.0	0.0	0.0	0.0	-159.25	-207.2	-78.5	221.6					
100.0	100.0	100.0	100.0	0.1	0.2	-159.29	-207.3	-78.4	221.6	221.3	0.29	768.325		
183.8	183.8	183.8	183.8	0.3	0.3	-159.38	-207.4	-78.1	221.6	221.1	0.56	392.357	CC	
200.0	200.0	200.0	200.0	0.3	0.3	-159.40	-207.4	-78.0	221.6	221.0	0.62	356.622	ES	
300.0	300.0	296.6	296.6	0.5	0.5	-109.73	-207.9	-78.5	222.8	221.8	0.97	230.424		
400.0	399.8	386.0	385.9	0.7	0.6	-110.43	-209.9	-81.4	228.3	227.0	1.32	172.321		
500.0	499.1	478.0	477.6	1.0	0.8	-111.38	-214.2	-88.1	239.4	237.6	1.75	136.917		
600.0	597.7	573.5	572.4	1.3	1.1	-112.79	-220.6	-98.0	255.1	252.9	2.24	114.061		
700.0	696.2	671.5	669.5	1.6	1.3	-114.39	-227.6	-108.7	272.0	269.3	2.75	98.916		
800.0	794.7	769.0	766.1	1.9	1.6	-115.78	-234.9	-119.4	289.4	286.1	3.27	88.377		
900.0	893.2	867.5	863.8	2.3	1.9	-117.03	-242.2	-130.2	306.9	303.1	3.81	80.608		
1,000.0	991.6	964.9	960.3	2.6	2.2	-118.10	-249.5	-141.1	324.7	320.3	4.34	74.751		
1,100.0	1,090.1	1,062.2	1,056.7	3.0	2.4	-119.04	-257.1	-152.1	342.8	337.9	4.88	70.206		
1,200.0	1,188.6	1,159.9	1,153.4	3.3	2.7	-119.87	-264.9	-163.4	361.2	355.8	5.43	66.584		
1,300.0	1,287.1	1,258.2	1,250.7	3.7	3.0	-120.63	-272.7	-174.7	379.7	373.7	5.97	63.605		
1,400.0	1,385.6	1,357.1	1,348.7	4.0	3.3	-121.35	-280.6	-185.8	398.3	391.8	6.51	61.135		
1,500.0	1,484.1	1,457.4	1,448.1	4.4	3.6	-122.05	-288.2	-196.8	416.4	409.4	7.06	58.999		
1,600.0	1,582.6	1,556.3	1,546.2	4.7	3.9	-122.77	-295.4	-207.1	434.3	426.7	7.59	57.214		
1,700.0	1,681.1	1,655.6	1,644.7	5.1	4.2	-123.44	-302.5	-217.2	452.1	444.0	8.14	55.546		
1,800.0	1,779.6	1,756.2	1,744.2	5.4	4.5	-123.68	-309.1	-230.5	469.6	460.8	8.72	53.826		
1,900.0	1,878.1	1,848.3	1,835.2	5.8	4.8	-123.80	-315.0	-243.5	487.1	477.8	9.29	52.443	SF	

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Shideler 19-11DD
Project:	Mamm Creek	TVD Reference:	KB=22' @ 6531.0ft (Nabors M-15)
Reference Site:	O19EB Pad (2nd Occupation)	MD Reference:	KB=22' @ 6531.0ft (Nabors M-15)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Shideler 19-11DD	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 O19EB Pad (1st Occupation) - Shideler 19-16C - OH - FINAL												Offset Site Error:	0.0 ft
Survey Program: 173-MWD												Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Total Uncertainty Axis	Separation Factor	
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)			
0.0	0.0	0.0	0.0	0.0	0.0	-167.96	-170.8	-36.4	174.7				
100.0	100.0	100.9	100.9	0.1	0.2	-167.95	-170.6	-36.4	174.4	174.1	0.29	601.010	
200.0	200.0	201.5	201.5	0.3	0.3	-167.94	-169.8	-36.3	173.7	173.1	0.62	277.991	
260.1	260.1	261.7	261.7	0.4	0.4	-118.37	-169.3	-35.8	173.4	172.6	0.84	207.619 CC	
300.0	300.0	301.0	301.0	0.5	0.5	-118.90	-169.2	-34.8	173.5	172.5	0.98	177.877 ES	
400.0	399.8	399.6	399.4	0.7	0.7	-122.77	-170.0	-28.3	176.5	175.2	1.36	129.598	
500.0	499.1	494.9	494.0	1.0	0.9	-128.96	-172.0	-17.3	184.8	183.0	1.82	101.297	
600.0	597.7	589.4	587.3	1.3	1.2	-136.54	-174.9	-2.6	200.1	197.8	2.33	86.020	
700.0	696.2	683.0	679.2	1.6	1.5	-144.02	-177.5	15.0	219.9	217.0	2.83	77.695	
800.0	794.7	776.2	770.2	1.9	1.9	-150.74	-179.6	34.5	243.3	240.0	3.30	73.719	
900.0	893.2	869.0	860.8	2.3	2.3	-156.47	-181.4	54.8	269.7	266.0	3.74	72.118	
1,000.0	991.6	960.5	950.0	2.6	2.7	-161.29	-183.1	75.6	298.6	294.4	4.16	71.850 SF	
1,100.0	1,090.1	1,056.4	1,043.2	3.0	3.1	-165.56	-184.3	97.6	329.1	324.5	4.56	72.179	
1,200.0	1,188.6	1,150.2	1,134.6	3.3	3.5	-168.95	-185.4	118.4	360.2	355.3	4.93	72.988	
1,300.0	1,287.1	1,242.8	1,225.0	3.7	3.9	-171.70	-186.7	138.5	392.2	386.9	5.31	73.924	
1,400.0	1,385.6	1,333.5	1,313.5	4.0	4.3	-174.02	-188.1	158.5	425.3	419.7	5.67	74.969	
1,500.0	1,484.1	1,427.5	1,405.1	4.4	4.7	-176.08	-189.7	179.4	459.2	453.1	6.04	76.015	
1,600.0	1,582.6	1,519.7	1,495.1	4.7	5.1	-177.81	-191.3	199.6	493.4	486.9	6.41	77.009	

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Shideler 19-11DD
Project:	Mamm Creek	TVD Reference:	KB=22' @ 6531.0ft (Nabors M-15)
Reference Site:	O19EB Pad (2nd Occupation)	MD Reference:	KB=22' @ 6531.0ft (Nabors M-15)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Shideler 19-11DD	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 O19EB Pad (1st Occupation) - Shideler 19-16CC - OH - FINAL												Offset Site Error:	0.0 ft
Survey Program: 202-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	-165.73	-183.2	-46.6	189.0				
100.0	100.0	100.4	100.4	0.1	0.2	-165.78	-183.2	-46.4	188.9	188.7	0.29	646.386	
200.0	200.0	200.8	200.8	0.3	0.3	-165.96	-183.0	-45.8	188.6	188.0	0.62	302.768	
247.0	247.0	248.2	248.2	0.4	0.4	-116.32	-182.8	-45.3	188.5	187.7	0.79	238.712 CC, ES	
300.0	300.0	300.8	300.8	0.5	0.5	-116.87	-182.8	-44.3	188.8	187.8	0.98	193.233	
400.0	399.8	398.1	397.9	0.7	0.7	-119.69	-183.7	-40.4	192.0	190.6	1.35	141.760	
500.0	499.1	492.3	491.9	1.0	0.9	-124.34	-186.6	-33.4	200.3	198.5	1.78	112.368	
600.0	597.7	581.5	580.4	1.3	1.1	-130.09	-192.0	-23.9	216.1	213.8	2.24	96.325	
700.0	696.2	668.5	666.1	1.6	1.4	-135.90	-200.0	-11.7	238.2	235.5	2.70	88.214	
800.0	794.7	754.0	749.7	1.9	1.7	-141.29	-210.1	3.4	265.9	262.8	3.14	84.623	
900.0	893.2	841.3	834.4	2.3	2.1	-146.23	-221.7	21.1	298.0	294.5	3.56	83.679 SF	
1,000.0	991.6	929.0	919.1	2.6	2.5	-150.49	-233.8	40.4	333.1	329.2	3.95	84.277	
1,100.0	1,090.1	1,024.1	1,010.8	3.0	3.0	-154.40	-246.6	62.0	369.7	365.4	4.33	85.309	
1,200.0	1,188.6	1,114.3	1,097.9	3.3	3.4	-157.58	-257.7	82.9	406.7	402.0	4.69	86.664	
1,300.0	1,287.1	1,201.6	1,181.9	3.7	3.9	-160.24	-268.6	103.9	445.2	440.2	5.04	88.369	
1,400.0	1,385.6	1,290.6	1,267.5	4.0	4.3	-162.57	-279.9	125.7	485.0	479.6	5.36	90.412	

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Shideler 19-11DD
Project:	Mamm Creek	TVD Reference:	KB=22' @ 6531.0ft (Nabors M-15)
Reference Site:	O19EB Pad (2nd Occupation)	MD Reference:	KB=22' @ 6531.0ft (Nabors M-15)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Shideler 19-11DD	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 O19EB Pad (1st Occupation) - Shideler 30-1B - OH - FINAL												Offset Site Error:	0.0 ft
Survey Program: 202-MWD												Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	
0.0	0.0	0.0	0.0	0.0	0.0	-163.77	-196.0	-57.1	204.1				
100.0	100.0	100.5	100.5	0.1	0.2	-163.78	-195.9	-57.0	204.0	203.7	0.29	697.386	
200.0	200.0	201.0	201.0	0.3	0.3	-163.82	-195.5	-56.8	203.6	203.0	0.62	326.628	
249.6	249.6	250.8	250.8	0.4	0.4	-114.07	-195.3	-56.6	203.5	202.7	0.80	255.179	CC, ES
300.0	300.0	300.1	300.1	0.5	0.5	-114.41	-195.2	-56.2	203.7	202.7	0.97	209.342	
400.0	399.8	396.1	396.1	0.7	0.7	-116.69	-196.7	-53.6	207.4	206.1	1.34	154.446	
500.0	499.1	488.4	488.1	1.0	0.8	-120.52	-200.8	-48.8	216.5	214.7	1.76	123.187	
600.0	597.7	575.7	574.8	1.3	1.0	-125.32	-208.0	-42.1	232.9	230.7	2.20	105.779	
700.0	696.2	661.0	659.1	1.6	1.3	-130.27	-218.5	-33.4	255.8	253.1	2.64	96.712	
800.0	794.7	744.2	740.4	1.9	1.6	-134.91	-231.5	-22.1	284.2	281.1	3.08	92.302	
900.0	893.2	827.8	821.3	2.3	2.0	-139.35	-246.7	-7.4	317.6	314.1	3.51	90.578	SF
1,000.0	991.6	912.3	902.3	2.6	2.4	-143.53	-263.1	10.4	354.8	350.8	3.91	90.804	
1,100.0	1,090.1	996.6	982.6	3.0	2.9	-147.17	-280.0	29.7	394.7	390.4	4.28	92.110	
1,200.0	1,188.6	1,081.2	1,062.8	3.3	3.4	-150.33	-297.4	50.1	436.8	432.2	4.64	94.130	
1,300.0	1,287.1	1,167.2	1,144.1	3.7	3.9	-153.12	-315.1	71.8	480.5	475.5	4.99	96.344	

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Shideler 19-11DD
Project:	Mamm Creek	TVD Reference:	KB=22' @ 6531.0ft (Nabors M-15)
Reference Site:	O19EB Pad (2nd Occupation)	MD Reference:	KB=22' @ 6531.0ft (Nabors M-15)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Shideler 19-11DD	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													O19EB Pad (1st Occupation) - Shideler 30-1C - OH - FINAL		Offset Site Error:		0.0 ft
Survey Program:													111-MWD		Offset Well Error:		0.0 ft
Reference		Offset		Semi Major Axis			Distance							Warning			
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre		Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor					
							+N/-S (ft)	+E/-W (ft)									
0.0	0.0	0.0	0.0	0.0	0.0	-160.93	-197.8	-68.4	209.3								
100.0	100.0	100.2	100.2	0.1	0.1	-160.95	-197.8	-68.3	209.2	208.9	0.28	757.214					
200.0	200.0	200.5	200.5	0.3	0.3	-161.11	-197.8	-67.7	209.1	208.4	0.62	335.920					
218.7	218.7	218.9	218.9	0.3	0.3	-111.29	-197.8	-67.5	209.0	208.4	0.69	303.937	CC, ES				
300.0	300.0	294.0	294.0	0.5	0.5	-111.96	-198.9	-66.3	210.3	209.3	0.96	218.011					
400.0	399.8	384.0	383.8	0.7	0.7	-114.35	-204.1	-63.4	217.6	216.2	1.33	163.386					
500.0	499.1	472.0	471.1	1.0	0.9	-117.96	-213.8	-59.2	232.4	230.7	1.75	133.012					
600.0	597.7	556.9	554.8	1.3	1.1	-122.46	-226.9	-53.1	255.2	253.0	2.20	115.830					
700.0	696.2	641.2	637.0	1.6	1.5	-127.26	-243.2	-44.4	284.0	281.3	2.66	106.869					
800.0	794.7	721.3	714.3	1.9	1.9	-131.53	-261.2	-33.7	317.8	314.7	3.09	102.966					
900.0	893.2	797.4	786.8	2.3	2.3	-135.16	-280.8	-21.8	356.9	353.4	3.49	102.340	SF				
1,000.0	991.6	869.5	854.6	2.6	2.8	-138.22	-301.9	-9.0	400.9	397.0	3.86	103.836					
1,100.0	1,090.1	938.0	917.9	3.0	3.2	-140.79	-324.2	4.6	449.4	445.2	4.21	106.765					

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Shideler 19-11DD
Project:	Mamm Creek	TVD Reference:	KB=22' @ 6531.0ft (Nabors M-15)
Reference Site:	O19EB Pad (2nd Occupation)	MD Reference:	KB=22' @ 6531.0ft (Nabors M-15)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Shideler 19-11DD	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												O19EB Pad (1st Occupation) - Shideler 30-2C - OH - FINAL		Offset Site Error:		0.0 ft
Survey Program:												172-MWD, 1616-MWD		Offset Well Error:		0.0 ft
Reference		Offset		Semi Major Axis			Distance							Warning		
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor				
0.0	0.0	0.0	0.0	0.0	0.0	-159.35	-231.6	-87.3	247.5							
100.0	100.0	101.7	101.7	0.1	0.2	-159.38	-231.4	-87.1	247.2	246.9	0.29	848.610				
200.0	200.0	202.0	202.0	0.3	0.3	-159.46	-230.6	-86.4	246.2	245.6	0.63	393.675				
224.3	224.3	225.1	225.1	0.4	0.4	-109.63	-230.5	-86.2	246.1	245.4	0.71	347.418	CC, ES			
300.0	300.0	294.0	294.0	0.5	0.5	-109.99	-231.3	-85.9	247.3	246.3	0.96	256.756				
400.0	399.8	383.1	383.0	0.7	0.6	-111.28	-235.3	-86.2	253.9	252.6	1.32	192.407				
500.0	499.1	467.4	466.9	1.0	0.8	-113.06	-242.9	-87.9	267.7	266.0	1.71	156.194				
600.0	597.7	550.9	549.5	1.3	1.1	-115.52	-254.7	-90.4	289.0	286.9	2.15	134.738				
700.0	696.2	631.3	628.5	1.6	1.3	-118.13	-269.8	-92.8	316.0	313.4	2.57	122.788				
800.0	794.7	709.1	704.0	1.9	1.7	-120.26	-288.0	-95.9	348.2	345.2	3.00	116.261				
900.0	893.2	784.2	776.0	2.3	2.1	-121.99	-308.9	-99.5	385.3	381.9	3.41	112.995				
1,000.0	991.6	858.3	846.1	2.6	2.5	-123.41	-332.7	-103.5	426.9	423.1	3.82	111.678				
1,100.0	1,090.1	938.0	920.7	3.0	3.0	-124.64	-360.3	-108.3	471.1	466.8	4.24	110.993	SF			

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Shideler 19-11DD
Project:	Mamm Creek	TVD Reference:	KB=22' @ 6531.0ft (Nabors M-15)
Reference Site:	O19EB Pad (2nd Occupation)	MD Reference:	KB=22' @ 6531.0ft (Nabors M-15)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Shideler 19-11DD	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 O19EB Pad (1st Occupation) - Shideler 30-3A - OH - FINAL												Offset Site Error:	0.0 ft
Survey Program: 172-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	-156.87	-232.7	-99.4	253.1				
100.0	100.0	101.0	101.0	0.1	0.2	-156.86	-232.5	-99.4	252.9	252.6	0.29	871.531	
200.0	200.0	201.0	201.0	0.3	0.3	-156.84	-232.0	-99.2	252.3	251.7	0.62	404.673	
214.3	214.3	214.7	214.7	0.3	0.3	-106.94	-232.0	-99.3	252.3	251.6	0.67	375.365 CC, ES	
300.0	300.0	294.0	294.0	0.5	0.5	-107.06	-232.5	-100.1	253.6	252.7	0.96	263.462	
400.0	399.8	382.4	382.3	0.7	0.6	-107.80	-235.9	-103.0	260.4	259.1	1.32	197.258	
500.0	499.1	467.4	466.8	1.0	0.8	-108.95	-242.3	-108.1	273.4	271.6	1.72	158.559	
600.0	597.7	553.3	551.9	1.3	1.1	-110.82	-252.6	-114.7	292.9	290.7	2.17	134.745	
700.0	696.2	644.6	641.9	1.6	1.4	-112.98	-266.1	-122.6	316.1	313.5	2.65	119.454	
800.0	794.7	737.2	732.8	1.9	1.7	-114.82	-280.7	-131.2	341.0	337.8	3.13	108.988	
900.0	893.2	829.9	823.9	2.3	2.0	-116.44	-296.4	-139.9	367.1	363.5	3.61	101.598	
1,000.0	991.6	928.4	920.4	2.6	2.4	-117.92	-313.2	-149.2	393.8	389.6	4.12	95.635	
1,100.0	1,090.1	1,025.2	1,015.4	3.0	2.7	-119.09	-329.1	-159.0	420.0	415.4	4.62	90.833	
1,200.0	1,188.6	1,118.8	1,107.2	3.3	3.1	-120.07	-344.6	-168.6	446.6	441.5	5.13	87.064	
1,300.0	1,287.1	1,213.2	1,199.7	3.7	3.5	-120.88	-360.7	-178.9	473.9	468.2	5.64	83.995 SF	

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Shideler 19-11DD
Project:	Mamm Creek	TVD Reference:	KB=22' @ 6531.0ft (Nabors M-15)
Reference Site:	O19EB Pad (2nd Occupation)	MD Reference:	KB=22' @ 6531.0ft (Nabors M-15)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Shideler 19-11DD	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													O19EB Pad (1st Occupation) - Shideler 30-3B - OH - FINAL		Offset Site Error:		0.0 ft
Survey Program:													160-MWD		Offset Well Error:		0.0 ft
Reference		Offset		Semi Major Axis				Distance						Warning			
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre	Between Centres	Between Ellipses	Total Uncertainty Axis	Separation Factor						
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)							
0.0	0.0	0.0	0.0	0.0	0.0	-158.01	-219.6	-88.7	236.9								
100.0	100.0	100.2	100.2	0.1	0.2	-158.00	-219.6	-88.7	236.8	236.5	0.29	825.037					
200.0	200.0	200.7	200.7	0.3	0.3	-157.99	-219.4	-88.7	236.7	236.0	0.62	380.065					
209.3	209.3	209.6	209.6	0.3	0.3	-108.09	-219.4	-88.7	236.6	236.0	0.65	361.546	CC, ES				
300.0	300.0	294.0	294.0	0.5	0.5	-108.12	-219.8	-89.9	238.0	237.0	0.96	247.148					
400.0	399.8	386.0	385.8	0.7	0.6	-108.56	-222.1	-94.2	244.2	242.9	1.33	183.533					
500.0	499.1	478.0	477.3	1.0	0.9	-109.37	-227.6	-102.0	256.5	254.7	1.76	145.799					
600.0	597.7	557.1	555.6	1.3	1.1	-110.54	-235.6	-110.9	275.2	273.0	2.22	123.949					
700.0	696.2	645.1	641.8	1.6	1.4	-111.67	-247.1	-123.8	298.5	295.8	2.74	108.924					
800.0	794.7	729.6	723.8	1.9	1.8	-112.08	-259.9	-139.7	325.1	321.8	3.29	98.818					
900.0	893.2	810.7	801.5	2.3	2.3	-112.04	-274.5	-157.9	355.5	351.6	3.87	91.913					
1,000.0	991.6	888.8	874.9	2.6	2.8	-111.58	-290.9	-178.8	389.9	385.4	4.47	87.197					
1,100.0	1,090.1	967.0	946.9	3.0	3.3	-110.81	-309.4	-202.8	428.2	423.1	5.10	84.027					
1,200.0	1,188.6	1,049.9	1,022.4	3.3	4.0	-109.97	-330.6	-230.0	468.8	463.1	5.75	81.598	SF				

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Shideler 19-11DD
Project:	Mamm Creek	TVD Reference:	KB=22' @ 6531.0ft (Nabors M-15)
Reference Site:	O19EB Pad (2nd Occupation)	MD Reference:	KB=22' @ 6531.0ft (Nabors M-15)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Shideler 19-11DD	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 O19EB Pad (1st Occupation) - Shideler 30-4A - OH - FINAL												Offset Site Error:	0.0 ft
Survey Program: 111-MWD												Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	
0.0	0.0	0.0	0.0	0.0	0.0	-162.51	-184.7	-58.2	193.6				
100.0	100.0	100.8	100.8	0.1	0.1	-162.58	-184.5	-57.9	193.4	193.1	0.28	697.652	
200.0	200.0	200.4	200.4	0.3	0.3	-162.65	-184.2	-57.5	192.9	192.3	0.62	310.193	
208.5	208.5	208.6	208.6	0.3	0.3	-112.74	-184.1	-57.6	192.9	192.3	0.65	296.190	CC, ES
300.0	300.0	296.5	296.4	0.5	0.5	-112.44	-184.0	-59.8	194.1	193.1	0.97	200.456	
400.0	399.8	390.5	390.2	0.7	0.7	-112.30	-185.4	-66.2	200.0	198.7	1.35	148.418	
500.0	499.1	480.5	479.7	1.0	0.9	-112.47	-189.2	-75.8	211.7	209.9	1.79	118.309	
600.0	597.7	573.7	571.6	1.3	1.2	-112.88	-195.1	-89.7	228.5	226.2	2.33	98.126	
700.0	696.2	667.7	663.5	1.6	1.5	-112.73	-201.7	-107.9	247.7	244.7	2.94	84.149	
800.0	794.7	754.0	747.1	1.9	1.9	-111.86	-208.8	-128.4	269.2	265.7	3.59	75.047	
900.0	893.2	846.0	834.8	2.3	2.5	-110.28	-217.9	-154.7	294.1	289.8	4.32	68.064	
1,000.0	991.6	930.8	914.2	2.6	3.1	-108.40	-227.6	-182.9	322.2	317.1	5.07	63.611	
1,100.0	1,090.1	1,020.3	996.8	3.0	3.7	-106.34	-238.9	-215.2	352.9	347.1	5.83	60.489	
1,200.0	1,188.6	1,111.4	1,080.5	3.3	4.4	-104.43	-250.9	-249.2	385.0	378.4	6.61	58.272	
1,300.0	1,287.1	1,204.5	1,165.7	3.7	5.1	-102.68	-263.3	-284.6	418.0	410.6	7.38	56.616	
1,400.0	1,385.6	1,296.5	1,249.8	4.0	5.8	-101.18	-275.6	-319.9	451.4	443.3	8.14	55.473	
1,500.0	1,484.1	1,389.8	1,335.0	4.4	6.5	-99.86	-288.3	-355.7	485.3	476.4	8.89	54.586	SF

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Shideler 19-11DD
Project:	Mamm Creek	TVD Reference:	KB=22' @ 6531.0ft (Nabors M-15)
Reference Site:	O19EB Pad (2nd Occupation)	MD Reference:	KB=22' @ 6531.0ft (Nabors M-15)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Shideler 19-11DD	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 O19EB Pad (1st Occupation) - Shideler 30-7A - OH - FINAL												Offset Site Error:	0.0 ft
Survey Program: 172-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	-160.53	-218.2	-77.1	231.4				
100.0	100.0	102.1	102.1	0.1	0.2	-160.56	-217.8	-76.9	230.9	230.7	0.29	790.211	
200.0	200.0	203.1	203.1	0.3	0.3	-160.63	-216.6	-76.2	229.7	229.0	0.63	365.537	
240.0	240.0	241.3	241.3	0.4	0.4	-110.85	-216.3	-75.9	229.4	228.6	0.76	300.028	CC, ES
300.0	300.0	296.4	296.4	0.5	0.5	-111.26	-216.8	-75.3	230.1	229.1	0.97	237.764	
400.0	399.8	384.9	384.8	0.7	0.6	-113.02	-220.8	-73.9	236.3	235.0	1.33	178.291	
500.0	499.1	472.7	472.1	1.0	0.8	-115.59	-228.9	-73.0	249.9	248.2	1.73	144.539	
600.0	597.7	558.1	556.8	1.3	1.1	-119.02	-240.5	-71.2	270.5	268.3	2.17	124.810	
700.0	696.2	639.6	636.8	1.6	1.3	-122.60	-255.2	-68.3	297.0	294.4	2.60	114.308	
800.0	794.7	717.9	713.0	1.9	1.7	-125.77	-273.0	-64.4	329.1	326.0	3.01	109.174	
900.0	893.2	793.6	785.7	2.3	2.1	-128.53	-293.5	-59.8	366.4	363.0	3.41	107.475	SF
1,000.0	991.6	867.0	855.3	2.6	2.5	-130.78	-316.3	-55.2	408.5	404.7	3.79	107.817	
1,100.0	1,090.1	938.0	921.7	3.0	2.9	-132.65	-341.0	-50.4	454.6	450.5	4.16	109.414	

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Shideler 19-11DD
Project:	Mamm Creek	TVD Reference:	KB=22' @ 6531.0ft (Nabors M-15)
Reference Site:	O19EB Pad (2nd Occupation)	MD Reference:	KB=22' @ 6531.0ft (Nabors M-15)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Shideler 19-11DD	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 O19EB Pad (1st Occupation) - Shideler 30-8B - OH - FINAL													Offset Site Error:	0.0 ft
Survey Program: 142-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Total Uncertainty	Separation		
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	Axis	Factor		
0.0	0.0	0.0	0.0	0.0	0.0	-161.87	-206.2	-67.5	216.9					
100.0	100.0	99.7	99.7	0.1	0.1	-161.93	-206.3	-67.3	217.0	216.7	0.28	765.496		
200.0	200.0	198.6	198.6	0.3	0.3	-162.15	-206.7	-66.6	217.2	216.6	0.62	350.418	ES	
300.0	300.0	292.4	292.3	0.5	0.5	-113.13	-209.2	-64.9	219.7	218.8	0.96	227.777		
400.0	399.8	383.1	382.8	0.7	0.7	-115.34	-215.0	-62.3	227.9	226.5	1.33	170.926		
500.0	499.1	470.1	469.2	1.0	0.9	-118.56	-224.7	-58.7	243.2	241.5	1.74	139.481		
600.0	597.7	555.2	553.1	1.3	1.1	-122.63	-237.8	-53.5	266.2	264.0	2.18	121.828		
700.0	696.2	636.1	632.2	1.6	1.5	-126.79	-253.7	-46.6	295.3	292.6	2.62	112.779		
800.0	794.7	713.9	707.1	1.9	1.8	-130.50	-272.2	-38.0	330.0	327.0	3.04	108.653		
900.0	893.2	788.0	777.7	2.3	2.3	-133.71	-292.7	-28.1	370.1	366.7	3.43	107.877	SF	
1,000.0	991.6	859.3	844.5	2.6	2.7	-136.45	-315.1	-17.3	415.2	411.4	3.80	109.154		
1,100.0	1,090.1	938.0	917.1	3.0	3.3	-139.18	-342.1	-3.4	464.3	460.1	4.17	111.260		

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Shideler 19-11DD
Project:	Mamm Creek	TVD Reference:	KB=22' @ 6531.0ft (Nabors M-15)
Reference Site:	O19EB Pad (2nd Occupation)	MD Reference:	KB=22' @ 6531.0ft (Nabors M-15)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Shideler 19-11DD	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 O19EB Pad (1st Occupation) - Shideler Federal 19-13D - OH - FINAL												Offset Site Error:	0.0 ft
Survey Program: 111-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	-164.31	-171.9	-48.3	178.6				
100.0	100.0	99.9	99.9	0.1	0.1	-164.33	-172.0	-48.2	178.6	178.3	0.28	647.137	
200.0	200.0	199.8	199.8	0.3	0.3	-164.32	-172.0	-48.3	178.6	178.0	0.62	287.634 ES	
300.0	300.0	297.6	297.6	0.5	0.5	-114.05	-171.9	-50.7	179.9	178.9	0.97	185.152	
400.0	399.8	393.8	393.5	0.7	0.7	-113.57	-172.2	-57.9	184.9	183.5	1.37	135.386	
500.0	499.1	490.0	488.8	1.0	1.0	-112.67	-172.6	-71.1	193.8	192.0	1.87	103.395	
600.0	597.7	583.9	581.0	1.3	1.3	-111.78	-173.5	-88.9	206.8	204.3	2.49	83.122	
700.0	696.2	674.3	668.9	1.6	1.7	-110.63	-176.3	-109.6	223.4	220.2	3.15	70.855	
800.0	794.7	764.5	755.6	1.9	2.2	-108.93	-181.1	-133.9	243.5	239.6	3.88	62.833	
900.0	893.2	853.1	839.4	2.3	2.7	-106.69	-187.2	-162.0	267.1	262.5	4.65	57.454	
1,000.0	991.6	943.8	923.5	2.6	3.4	-103.87	-193.5	-195.4	293.6	288.1	5.49	53.493	
1,100.0	1,090.1	1,032.0	1,003.4	3.0	4.1	-100.78	-199.4	-232.1	322.7	316.4	6.34	50.890	
1,200.0	1,188.6	1,119.8	1,081.7	3.3	4.9	-97.74	-205.2	-271.5	354.6	347.4	7.18	49.409	
1,300.0	1,287.1	1,216.2	1,167.2	3.7	5.7	-94.73	-210.9	-315.7	387.3	379.3	8.03	48.209	
1,400.0	1,385.6	1,311.9	1,251.9	4.0	6.6	-92.10	-215.5	-359.9	420.4	411.5	8.85	47.494	
1,500.0	1,484.1	1,409.0	1,338.5	4.4	7.4	-89.93	-220.1	-403.6	453.1	443.5	9.63	47.035	
1,600.0	1,582.6	1,509.4	1,428.8	4.7	8.2	-88.18	-225.0	-447.2	485.3	474.9	10.40	46.651 SF	

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Shideler 19-11DD
Project:	Mamm Creek	TVD Reference:	KB=22' @ 6531.0ft (Nabors M-15)
Reference Site:	O19EB Pad (2nd Occupation)	MD Reference:	KB=22' @ 6531.0ft (Nabors M-15)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Shideler 19-11DD	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 O19EB Pad (2nd Occupation) - Shideler 19-11D - OH - Plan #1													Offset Site Error: 0.0 ft	
Survey Program: O-MWD													Offset Well Error: 0.0 ft	
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor		
0.0	0.0	0.0	0.0	0.0	0.0	126.52	-19.7	26.6	33.0					
100.0	100.0	100.0	100.0	0.1	0.1	126.52	-19.7	26.6	33.0	32.8	0.27	121.355		
200.0	200.0	200.0	200.0	0.3	0.3	126.52	-19.7	26.6	33.0	32.4	0.62	53.178	CC, ES	
300.0	300.0	300.0	300.0	0.5	0.5	176.57	-19.7	26.6	34.5	33.5	0.97	35.581		
400.0	399.8	399.8	399.8	0.7	0.7	177.10	-19.7	26.6	41.0	39.7	1.32	31.183		
500.0	499.1	501.6	501.6	1.0	0.8	176.76	-17.4	25.1	50.3	48.6	1.66	30.225		
600.0	597.7	604.0	603.6	1.3	1.1	175.00	-10.6	20.6	59.3	57.3	2.02	29.351		
700.0	696.2	706.9	705.5	1.6	1.3	171.91	0.9	13.0	64.3	61.9	2.40	26.754		
800.0	794.7	809.8	806.7	1.9	1.7	167.04	16.9	2.4	64.6	61.8	2.84	22.771		
900.0	893.2	911.6	905.5	2.3	2.1	159.55	37.1	-10.9	61.2	57.8	3.40	17.975		
1,000.0	991.6	1,011.1	1,001.8	2.6	2.5	150.47	58.0	-24.7	57.8	53.6	4.14	13.949		
1,100.0	1,090.1	1,110.6	1,098.1	3.0	3.0	140.55	78.9	-38.5	56.0	50.9	5.06	11.069		
1,150.3	1,139.7	1,160.6	1,146.5	3.1	3.2	135.40	89.4	-45.4	55.8	50.2	5.57	10.009		
1,200.0	1,188.6	1,210.1	1,194.4	3.3	3.4	130.31	99.8	-52.3	56.0	49.9	6.10	9.184		
1,300.0	1,287.1	1,309.6	1,290.7	3.7	3.9	120.38	120.8	-66.1	57.8	50.6	7.16	8.066		
1,400.0	1,385.6	1,409.1	1,387.0	4.0	4.4	111.30	141.7	-79.9	61.1	53.0	8.17	7.483		
1,500.0	1,484.1	1,508.6	1,483.3	4.4	4.8	103.33	162.6	-93.7	65.9	56.8	9.09	7.252		
1,600.0	1,582.6	1,608.1	1,579.5	4.7	5.3	96.54	183.6	-107.5	71.8	61.8	9.91	7.242	SF	
1,700.0	1,681.1	1,707.6	1,675.8	5.1	5.8	90.84	204.5	-121.3	78.5	67.8	10.65	7.369		
1,800.0	1,779.6	1,807.1	1,772.1	5.4	6.2	86.06	225.4	-135.1	85.8	74.5	11.33	7.578		
1,900.0	1,878.1	1,906.5	1,868.4	5.8	6.7	82.07	246.3	-148.9	93.7	81.7	11.96	7.833		
2,000.0	1,976.6	2,006.0	1,964.7	6.1	7.2	78.70	267.3	-162.7	101.9	89.4	12.56	8.112		
2,100.0	2,075.0	2,105.5	2,061.0	6.5	7.6	75.84	288.2	-176.5	110.5	97.3	13.15	8.402		
2,200.0	2,173.5	2,205.0	2,157.2	6.8	8.1	73.40	309.1	-190.3	119.2	105.5	13.72	8.692		
2,300.0	2,272.0	2,304.5	2,253.5	7.2	8.6	71.30	330.0	-204.1	128.2	113.9	14.28	8.979		
2,400.0	2,370.5	2,404.0	2,349.8	7.5	9.0	69.47	351.0	-217.9	137.3	122.5	14.83	9.258		
2,500.0	2,469.0	2,503.5	2,446.1	7.9	9.5	67.87	371.9	-231.7	146.6	131.2	15.38	9.527		
2,600.0	2,567.5	2,603.0	2,542.4	8.2	10.0	66.46	392.8	-245.6	155.9	140.0	15.93	9.785		
2,700.0	2,666.0	2,702.5	2,638.7	8.6	10.5	65.21	413.8	-259.4	165.3	148.8	16.48	10.033		
2,800.0	2,764.5	2,802.0	2,734.9	8.9	10.9	64.09	434.7	-273.2	174.8	157.8	17.02	10.269		
2,900.0	2,863.0	2,901.5	2,831.2	9.3	11.4	63.09	455.6	-287.0	184.3	166.8	17.56	10.495		
3,000.0	2,961.5	3,001.0	2,927.5	9.6	11.9	62.19	476.5	-300.8	193.9	175.8	18.11	10.709		
3,100.0	3,060.0	3,100.5	3,023.8	10.0	12.4	61.38	497.5	-314.6	203.6	184.9	18.65	10.914		
3,200.0	3,158.5	3,200.0	3,120.1	10.3	12.8	60.63	518.4	-328.4	213.2	194.0	19.20	11.109		
3,300.0	3,256.9	3,299.5	3,216.4	10.7	13.3	59.96	539.3	-342.2	222.9	203.2	19.74	11.294		
3,400.0	3,355.4	3,399.0	3,312.7	11.0	13.8	59.33	560.2	-356.0	232.7	212.4	20.28	11.471		
3,500.0	3,453.9	3,498.5	3,408.9	11.4	14.2	58.76	581.2	-369.8	242.4	221.6	20.83	11.640		
3,600.0	3,552.4	3,598.0	3,505.2	11.7	14.7	58.24	602.1	-383.6	252.2	230.8	21.37	11.801		
3,700.0	3,650.9	3,697.5	3,601.5	12.1	15.2	57.75	623.0	-397.4	262.0	240.1	21.92	11.954		
3,800.0	3,749.4	3,796.9	3,697.8	12.4	15.7	57.30	644.0	-411.2	271.8	249.4	22.46	12.101		
3,900.0	3,847.9	3,896.4	3,794.1	12.8	16.1	56.88	664.9	-425.0	281.7	258.7	23.01	12.241		
4,000.0	3,946.4	3,995.9	3,890.4	13.1	16.6	56.48	685.8	-438.8	291.5	268.0	23.56	12.375		
4,100.0	4,044.9	4,095.4	3,986.6	13.5	17.1	56.12	706.7	-452.6	301.4	277.3	24.10	12.504		
4,200.0	4,143.4	4,194.9	4,082.9	13.8	17.6	55.77	727.7	-466.4	311.3	286.6	24.65	12.627		
4,300.0	4,241.9	4,294.4	4,179.2	14.2	18.0	55.45	748.6	-480.2	321.1	295.9	25.20	12.744		
4,400.0	4,340.3	4,393.9	4,275.5	14.5	18.5	55.15	769.5	-494.0	331.0	305.3	25.75	12.857		
4,500.0	4,438.8	4,493.4	4,371.8	14.9	19.0	54.86	790.4	-507.8	340.9	314.6	26.30	12.966		
4,600.0	4,537.3	4,592.9	4,468.1	15.2	19.5	54.59	811.4	-521.7	350.9	324.0	26.84	13.070		
4,700.0	4,635.8	4,692.4	4,564.3	15.6	19.9	54.34	832.3	-535.5	360.8	333.4	27.39	13.170		
4,800.0	4,734.3	4,791.9	4,660.6	15.9	20.4	54.10	853.2	-549.3	370.7	342.8	27.94	13.267		
4,900.0	4,832.8	4,902.5	4,768.1	16.3	20.9	54.02	874.9	-563.6	379.2	350.7	28.54	13.286		
5,000.0	4,931.3	5,014.0	4,877.5	16.6	21.3	54.35	893.2	-575.7	384.8	355.5	29.24	13.161		

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 19-11DD
Project:	Mamm Creek	TVD Reference:	KB=22' @ 6531.0ft (Nabors M-15)
Reference Site:	O19EB Pad (2nd Occupation)	MD Reference:	KB=22' @ 6531.0ft (Nabors M-15)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Shideler 19-11DD	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 O19EB Pad (2nd Occupation) - Shideler 19-11D - 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				Total		Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Uncertainty Axis	Separation Factor		
5,100.0	5,030.2	5,125.8	4,987.8	16.9	21.6	54.79	908.0	-585.4	388.7	358.9	29.87	13.016		
5,200.0	5,129.6	5,237.6	5,098.8	17.1	21.9	55.13	919.2	-592.8	391.6	361.2	30.39	12.887		
5,300.0	5,229.2	5,349.5	5,210.4	17.3	22.1	55.38	926.8	-597.8	393.5	362.7	30.81	12.772		
5,400.0	5,329.1	5,461.5	5,322.2	17.5	22.2	55.55	930.8	-600.4	394.3	363.2	31.12	12.669		
5,500.0	5,429.1	5,568.4	5,429.1	17.6	22.3	5.72	931.4	-600.8	394.2	362.9	31.35	12.575		
5,600.0	5,529.1	5,668.4	5,529.1	17.6	22.4	5.72	931.4	-600.8	394.2	362.7	31.57	12.489		
5,700.0	5,629.1	5,768.4	5,629.1	17.7	22.4	5.72	931.4	-600.8	394.2	362.5	31.78	12.403		
5,800.0	5,729.1	5,868.4	5,729.1	17.8	22.5	5.72	931.4	-600.8	394.2	362.2	32.01	12.318		
5,900.0	5,829.1	5,968.4	5,829.1	17.9	22.6	5.72	931.4	-600.8	394.2	362.0	32.23	12.233		
6,000.0	5,929.1	6,068.4	5,929.1	18.0	22.7	5.72	931.4	-600.8	394.2	361.8	32.45	12.148		
6,100.0	6,029.1	6,168.4	6,029.1	18.1	22.7	5.72	931.4	-600.8	394.2	361.6	32.68	12.064		
6,200.0	6,129.1	6,268.4	6,129.1	18.2	22.8	5.72	931.4	-600.8	394.2	361.3	32.91	11.980		
6,300.0	6,229.1	6,368.4	6,229.1	18.3	22.9	5.72	931.4	-600.8	394.2	361.1	33.14	11.897		
6,400.0	6,329.1	6,468.4	6,329.1	18.5	23.0	5.72	931.4	-600.8	394.2	360.9	33.37	11.813		
6,500.0	6,429.1	6,568.4	6,429.1	18.6	23.1	5.72	931.4	-600.8	394.2	360.6	33.61	11.731		
6,600.0	6,529.1	6,668.4	6,529.1	18.7	23.2	5.72	931.4	-600.8	394.2	360.4	33.84	11.649		
6,700.0	6,629.1	6,768.4	6,629.1	18.8	23.3	5.72	931.4	-600.8	394.2	360.2	34.08	11.567		
6,800.0	6,729.1	6,868.4	6,729.1	18.9	23.3	5.72	931.4	-600.8	394.2	359.9	34.32	11.486		
6,900.0	6,829.1	6,968.4	6,829.1	19.0	23.4	5.72	931.4	-600.8	394.2	359.7	34.57	11.405		
7,000.0	6,929.1	7,068.4	6,929.1	19.1	23.5	5.72	931.4	-600.8	394.2	359.4	34.81	11.325		
7,100.0	7,029.1	7,168.4	7,029.1	19.2	23.6	5.72	931.4	-600.8	394.2	359.2	35.06	11.245		
7,200.0	7,129.1	7,268.4	7,129.1	19.3	23.7	5.72	931.4	-600.8	394.2	358.9	35.31	11.166		
7,300.0	7,229.1	7,368.4	7,229.1	19.4	23.8	5.72	931.4	-600.8	394.2	358.7	35.56	11.088		
7,400.0	7,329.1	7,468.4	7,329.1	19.6	23.9	5.72	931.4	-600.8	394.2	358.4	35.81	11.010		
7,500.0	7,429.1	7,568.4	7,429.1	19.7	24.0	5.72	931.4	-600.8	394.2	358.2	36.06	10.933		
7,600.0	7,529.1	7,668.4	7,529.1	19.8	24.1	5.72	931.4	-600.8	394.2	357.9	36.31	10.856		
7,700.0	7,629.1	7,768.4	7,629.1	19.9	24.2	5.72	931.4	-600.8	394.2	357.7	36.57	10.780		
7,800.0	7,729.1	7,868.4	7,729.1	20.0	24.3	5.72	931.4	-600.8	394.2	357.4	36.83	10.705		
7,809.1	7,738.2	7,877.5	7,738.2	20.0	24.3	5.72	931.4	-600.8	394.2	357.4	36.85	10.698		
7,831.9	7,761.0	7,883.3	7,744.0	20.1	24.3	5.72	931.4	-600.8	394.6	357.7	36.89	10.697		

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Shideler 19-11DD
Project:	Mamm Creek	TVD Reference:	KB=22' @ 6531.0ft (Nabors M-15)
Reference Site:	O19EB Pad (2nd Occupation)	MD Reference:	KB=22' @ 6531.0ft (Nabors M-15)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Shideler 19-11DD	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 O19EB Pad (2nd Occupation) - Shideler 19-16B - 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							Warning
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre	Between Centres	Between Ellipses	Total Uncertainty Axis	Separation Factor			
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)				
0.0	0.0	0.0	0.0	0.0	0.0	126.27	-39.0	53.1	65.9					
100.0	100.0	100.0	100.0	0.1	0.1	126.27	-39.0	53.1	65.9	65.6	0.27	241.926		
200.0	200.0	200.0	200.0	0.3	0.3	126.27	-39.0	53.1	65.9	65.2	0.62	106.012	CC, ES	
300.0	300.0	300.0	300.0	0.5	0.5	176.25	-39.0	53.1	67.3	66.4	0.97	69.427		
400.0	399.8	397.9	397.9	0.7	0.7	174.85	-37.9	55.4	75.1	73.8	1.32	56.980		
500.0	499.1	494.4	494.1	1.0	0.9	171.31	-34.7	62.0	90.7	89.0	1.68	53.912	SF	
600.0	597.7	588.5	587.4	1.3	1.1	167.27	-29.5	72.7	113.9	111.8	2.08	54.808		
700.0	696.2	680.4	677.9	1.6	1.4	163.29	-22.6	87.1	141.4	138.9	2.52	56.178		
800.0	794.7	774.7	770.2	1.9	1.8	159.78	-14.2	104.5	171.3	168.3	2.98	57.541		
900.0	893.2	869.7	863.2	2.3	2.1	157.28	-5.7	122.0	201.7	198.2	3.45	58.527		
1,000.0	991.6	964.6	956.1	2.6	2.5	155.43	2.7	139.5	232.3	228.4	3.92	59.281		
1,100.0	1,090.1	1,059.6	1,049.1	3.0	2.9	154.01	11.2	157.0	263.1	258.7	4.39	59.877		
1,200.0	1,188.6	1,154.6	1,142.0	3.3	3.2	152.89	19.6	174.5	294.0	289.2	4.87	60.360		
1,300.0	1,287.1	1,249.5	1,235.0	3.7	3.6	151.98	28.1	192.0	325.0	319.7	5.35	60.759		
1,400.0	1,385.6	1,344.5	1,327.9	4.0	4.0	151.23	36.5	209.5	356.1	350.3	5.83	61.094		
1,500.0	1,484.1	1,439.4	1,420.9	4.4	4.4	150.60	45.0	227.0	387.2	380.9	6.31	61.379		
1,600.0	1,582.6	1,534.4	1,513.8	4.7	4.7	150.07	53.4	244.5	418.4	411.6	6.79	61.626		
1,700.0	1,681.1	1,629.4	1,606.8	5.1	5.1	149.61	61.9	262.0	449.5	442.3	7.27	61.840		
1,800.0	1,779.6	1,724.3	1,699.7	5.4	5.5	149.20	70.3	279.5	480.7	473.0	7.75	62.029		

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Shideler 19-11DD
Project:	Mamm Creek	TVD Reference:	KB=22' @ 6531.0ft (Nabors M-15)
Reference Site:	O19EB Pad (2nd Occupation)	MD Reference:	KB=22' @ 6531.0ft (Nabors M-15)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Shideler 19-11DD	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 O19EB Pad (2nd Occupation) - Shideler 19-16BB - 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						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	
0.0	0.0	0.0	0.0	0.0	0.0	126.32	-48.8	66.4	82.4				
100.0	100.0	100.0	100.0	0.1	0.1	126.32	-48.8	66.4	82.4	82.1	0.27	302.608	
200.0	200.0	200.0	200.0	0.3	0.3	126.32	-48.8	66.4	82.4	81.8	0.62	132.603	CC, ES
300.0	300.0	300.0	300.0	0.5	0.5	176.28	-48.8	66.4	83.9	82.9	0.97	86.461	
400.0	399.8	399.8	399.8	0.7	0.7	176.54	-48.8	66.4	90.4	89.1	1.32	68.675	
500.0	499.1	495.0	495.0	1.0	0.8	176.08	-48.7	68.7	104.1	102.4	1.65	62.940	SF
600.0	597.7	588.0	587.7	1.3	1.0	174.57	-48.6	75.6	126.3	124.3	2.00	63.276	
700.0	696.2	678.7	677.7	1.6	1.3	172.59	-48.3	86.7	153.2	150.9	2.35	65.098	
800.0	794.7	767.3	765.1	1.9	1.5	170.47	-47.9	101.6	184.1	181.4	2.72	67.664	
900.0	893.2	861.6	857.6	2.3	1.8	168.55	-47.4	119.4	216.9	213.8	3.11	69.783	
1,000.0	991.6	955.9	950.2	2.6	2.2	167.13	-47.0	137.3	249.8	246.3	3.50	71.424	
1,100.0	1,090.1	1,050.1	1,042.7	3.0	2.5	166.04	-46.5	155.1	282.9	279.0	3.89	72.722	
1,200.0	1,188.6	1,144.4	1,135.3	3.3	2.8	165.19	-46.0	173.0	316.0	311.8	4.28	73.776	
1,300.0	1,287.1	1,238.6	1,227.8	3.7	3.2	164.49	-45.6	190.8	349.2	344.5	4.68	74.647	
1,400.0	1,385.6	1,332.9	1,320.4	4.0	3.5	163.91	-45.1	208.7	382.5	377.4	5.07	75.380	
1,500.0	1,484.1	1,427.1	1,412.9	4.4	3.9	163.43	-44.6	226.5	415.7	410.2	5.47	76.005	
1,600.0	1,582.6	1,521.4	1,505.5	4.7	4.2	163.02	-44.2	244.4	449.0	443.1	5.87	76.544	
1,700.0	1,681.1	1,615.6	1,598.0	5.1	4.6	162.66	-43.7	262.3	482.3	476.0	6.26	77.014	

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Shideler 19-11DD
Project:	Mamm Creek	TVD Reference:	KB=22' @ 6531.0ft (Nabors M-15)
Reference Site:	O19EB Pad (2nd Occupation)	MD Reference:	KB=22' @ 6531.0ft (Nabors M-15)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Shideler 19-11DD	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 O19EB Pad (2nd Occupation) - Shideler 19-6C - 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		Total		Separation		Warning		
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Uncertainty Axis	Factor		
0.0	0.0	0.0	0.0	0.0	0.0	126.52	-9.8	13.3	16.5					
100.0	100.0	100.0	100.0	0.1	0.1	126.52	-9.8	13.3	16.5	16.2	0.27	60.673		
200.0	200.0	200.0	200.0	0.3	0.3	126.52	-9.8	13.3	16.5	15.9	0.62	26.587 CC, ES		
300.0	300.0	300.0	300.0	0.5	0.5	176.70	-9.8	13.3	18.0	17.0	0.97	18.547		
400.0	399.8	400.4	400.4	0.7	0.7	177.17	-9.3	12.9	23.9	22.6	1.32	18.134		
500.0	499.1	501.5	501.4	1.0	0.9	175.64	-5.1	9.6	30.6	28.9	1.67	18.349		
600.0	597.7	603.0	602.3	1.3	1.1	172.83	3.4	3.1	36.9	34.9	2.03	18.241		
700.0	696.2	704.8	702.8	1.6	1.4	168.18	16.2	-6.8	39.3	36.9	2.42	16.224		
800.0	794.7	806.5	802.2	1.9	1.8	160.19	33.2	-19.8	37.3	34.4	2.93	12.729		
900.0	893.2	907.4	899.5	2.3	2.3	145.34	54.2	-36.0	32.2	28.4	3.77	8.541		
1,000.0	991.6	1,007.0	994.2	2.6	2.8	117.27	78.9	-55.0	28.0	22.8	5.23	5.358		
1,009.9	1,001.4	1,016.8	1,003.4	2.7	2.9	113.68	81.5	-57.0	28.0	22.6	5.39	5.190 SF		
1,100.0	1,090.1	1,104.9	1,085.4	3.0	3.5	80.62	106.9	-76.5	33.1	26.9	6.26	5.293		
1,200.0	1,188.6	1,200.0	1,172.2	3.3	4.2	55.83	137.6	-100.2	50.7	44.4	6.24	8.118		
1,300.0	1,287.1	1,293.4	1,255.5	3.7	5.0	42.72	171.1	-125.9	76.8	70.6	6.16	12.466		
1,400.0	1,385.6	1,383.4	1,333.7	4.0	5.8	35.46	206.4	-153.1	109.0	102.8	6.23	17.509		
1,500.0	1,484.1	1,470.3	1,407.1	4.4	6.7	31.00	243.2	-181.4	146.3	139.9	6.39	22.908		
1,600.0	1,582.6	1,561.4	1,483.0	4.7	7.6	27.96	283.3	-212.2	186.2	179.6	6.61	28.157		
1,700.0	1,681.1	1,652.7	1,558.9	5.1	8.6	25.99	323.4	-243.1	226.5	219.6	6.89	32.847		
1,800.0	1,779.6	1,744.1	1,634.9	5.4	9.5	24.61	363.6	-274.0	266.8	259.6	7.20	37.043		
1,900.0	1,878.1	1,835.4	1,710.9	5.8	10.4	23.59	403.8	-304.8	307.3	299.8	7.53	40.811		
2,000.0	1,976.6	1,926.7	1,786.9	6.1	11.4	22.81	443.9	-335.7	347.8	340.0	7.87	44.212		
2,100.0	2,075.0	2,018.0	1,862.9	6.5	12.3	22.19	484.1	-366.6	388.4	380.2	8.21	47.296		
2,200.0	2,173.5	2,109.4	1,938.9	6.8	13.2	21.69	524.2	-397.5	429.0	420.5	8.56	50.103		
2,300.0	2,272.0	2,200.7	2,014.9	7.2	14.2	21.28	564.4	-428.4	469.6	460.7	8.92	52.671		

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Shideler 19-11DD
Project:	Mamm Creek	TVD Reference:	KB=22' @ 6531.0ft (Nabors M-15)
Reference Site:	O19EB Pad (2nd Occupation)	MD Reference:	KB=22' @ 6531.0ft (Nabors M-15)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Shideler 19-11DD	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 O19EB Pad (2nd Occupation) - Shideler 19-9B - 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						Warning
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Total Uncertainty Axis	Separation Factor	
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)			
0.0	0.0	0.0	0.0	0.0	0.0	137.33	-31.0	28.5	42.1				
100.0	100.0	100.0	100.0	0.1	0.1	137.33	-31.0	28.5	42.1	41.8	0.27	154.617	
200.0	200.0	200.0	200.0	0.3	0.3	137.33	-31.0	28.5	42.1	41.5	0.62	67.753 CC, ES	
300.0	300.0	300.0	300.0	0.5	0.5	-173.01	-31.0	28.5	43.6	42.6	0.97	44.908	
400.0	399.8	400.1	400.1	0.7	0.7	-176.89	-28.8	30.1	49.7	48.3	1.32	37.530	
500.0	499.1	499.4	499.0	1.0	0.9	175.18	-22.5	34.6	61.0	59.3	1.70	35.806 SF	
600.0	597.7	597.0	595.8	1.3	1.1	166.70	-12.3	42.0	78.3	76.2	2.14	36.520	
700.0	696.2	693.1	690.3	1.6	1.5	158.78	1.7	52.1	98.8	96.2	2.67	36.971	
800.0	794.7	787.4	782.1	1.9	1.9	151.58	19.2	64.7	122.5	119.2	3.28	37.349	
900.0	893.2	879.4	870.5	2.3	2.3	145.23	39.7	79.6	149.7	145.8	3.94	38.011	
1,000.0	991.6	969.0	955.4	2.6	2.9	139.72	63.1	96.4	180.8	176.2	4.61	39.200	
1,100.0	1,090.1	1,061.9	1,042.7	3.0	3.4	135.19	88.8	115.0	214.5	209.2	5.30	40.487	
1,200.0	1,188.6	1,154.9	1,130.1	3.3	4.0	131.88	114.6	133.7	249.0	243.0	5.97	41.739	
1,300.0	1,287.1	1,247.9	1,217.5	3.7	4.6	129.37	140.4	152.3	284.1	277.5	6.62	42.890	
1,400.0	1,385.6	1,340.9	1,304.9	4.0	5.1	127.41	166.2	170.9	319.5	312.3	7.27	43.929	
1,500.0	1,484.1	1,433.9	1,392.3	4.4	5.7	125.83	191.9	189.5	355.3	347.4	7.92	44.861	
1,600.0	1,582.6	1,526.9	1,479.7	4.7	6.3	124.55	217.7	208.1	391.2	382.6	8.56	45.696	
1,700.0	1,681.1	1,619.9	1,567.1	5.1	6.9	123.48	243.5	226.7	427.3	418.1	9.20	46.444	
1,800.0	1,779.6	1,712.9	1,654.5	5.4	7.5	122.57	269.3	245.4	463.4	453.6	9.84	47.118	
1,900.0	1,878.1	1,805.9	1,741.9	5.8	8.1	121.80	295.1	264.0	499.7	489.2	10.47	47.726	

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Shideler 19-11DD
Project:	Mamm Creek	TVD Reference:	KB=22' @ 6531.0ft (Nabors M-15)
Reference Site:	O19EB Pad (2nd Occupation)	MD Reference:	KB=22' @ 6531.0ft (Nabors M-15)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Shideler 19-11DD	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 O19EB Pad (2nd Occupation) - Shideler 19-9C - 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							Warning
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre	Between Centres	Between Ellipses	Total Uncertainty Axis	Separation Factor			
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)				
0.0	0.0	0.0	0.0	0.0	0.0	126.19	-29.1	39.8	49.4					
100.0	100.0	100.0	100.0	0.1	0.1	126.19	-29.1	39.8	49.4	49.1	0.27	181.254		
200.0	200.0	200.0	200.0	0.3	0.3	126.19	-29.1	39.8	49.4	48.7	0.62	79.426	CC, ES	
300.0	300.0	299.4	299.3	0.5	0.5	173.36	-27.4	41.7	51.4	50.4	0.98	52.620		
400.0	399.8	397.9	397.5	0.7	0.7	166.91	-22.3	47.4	60.2	58.8	1.36	44.217		
500.0	499.1	494.7	493.6	1.0	1.0	159.85	-13.9	56.6	76.7	74.9	1.79	42.865	SF	
600.0	597.7	589.2	586.5	1.3	1.3	154.06	-2.6	69.1	100.8	98.6	2.27	44.334		
700.0	696.2	682.9	677.8	1.6	1.7	149.06	11.7	84.8	129.1	126.3	2.81	45.942		
800.0	794.7	776.0	767.9	1.9	2.1	145.20	27.3	102.0	159.6	156.2	3.36	47.530		
900.0	893.2	870.8	859.7	2.3	2.6	142.52	43.3	119.6	190.5	186.6	3.91	48.684		
1,000.0	991.6	965.6	951.5	2.6	3.0	140.59	59.2	137.2	221.7	217.2	4.47	49.587		
1,100.0	1,090.1	1,060.4	1,043.3	3.0	3.5	139.14	75.1	154.7	253.0	248.0	5.03	50.310		
1,200.0	1,188.6	1,155.2	1,135.0	3.3	3.9	138.01	91.1	172.3	284.5	278.9	5.59	50.901		
1,300.0	1,287.1	1,249.9	1,226.8	3.7	4.4	137.10	107.0	189.8	316.1	309.9	6.15	51.393		
1,400.0	1,385.6	1,344.7	1,318.6	4.0	4.8	136.35	123.0	207.4	347.7	341.0	6.71	51.809		
1,500.0	1,484.1	1,439.5	1,410.3	4.4	5.3	135.73	138.9	225.0	379.4	372.1	7.27	52.164		
1,600.0	1,582.6	1,534.3	1,502.1	4.7	5.7	135.21	154.8	242.5	411.0	403.2	7.83	52.471		
1,700.0	1,681.1	1,629.1	1,593.9	5.1	6.2	134.76	170.8	260.1	442.8	434.4	8.40	52.740		
1,800.0	1,779.6	1,723.9	1,685.6	5.4	6.6	134.37	186.7	277.6	474.5	465.6	8.96	52.976		

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Shideler 19-11DD
Project:	Mamm Creek	TVD Reference:	KB=22' @ 6531.0ft (Nabors M-15)
Reference Site:	O19EB Pad (2nd Occupation)	MD Reference:	KB=22' @ 6531.0ft (Nabors M-15)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Shideler 19-11DD	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 O19EB Pad (2nd Occupation) - Shideler Federal 19-12A - 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				Total	Separation	Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Uncertainty Axis	Factor		
0.0	0.0	0.0	0.0	0.0	0.0	170.06	-11.3	2.0	11.5					
100.0	100.0	100.0	100.0	0.1	0.1	170.06	-11.3	2.0	11.5	11.2	0.27	42.086		
200.0	200.0	200.0	200.0	0.3	0.3	170.06	-11.3	2.0	11.5	10.8	0.62	18.442		
300.0	300.0	300.4	300.4	0.5	0.5	-135.59	-9.7	-0.1	10.7	9.7	0.98	10.932		
400.0	399.8	400.7	400.4	0.7	0.7	-128.84	-4.9	-6.4	10.0	8.7	1.38	7.291		
500.0	499.1	501.0	499.8	1.0	1.0	-120.54	3.2	-16.8	9.7	7.8	1.89	5.150		
600.0	597.7	601.2	598.2	1.3	1.4	-108.74	14.3	-31.3	9.7	7.1	2.59	3.751		
630.4	627.6	631.6	627.9	1.4	1.5	-100.67	18.3	-36.5	9.6	6.8	2.86	3.376 CC, ES		
700.0	696.2	701.0	695.3	1.6	1.8	-73.26	28.6	-49.8	10.7	7.3	3.33	3.202 SF		
800.0	794.7	800.0	790.2	1.9	2.4	-38.57	45.8	-72.1	18.4	15.1	3.38	5.461		
900.0	893.2	897.3	881.9	2.3	3.0	-22.93	65.5	-97.8	33.5	30.1	3.44	9.741		
1,000.0	991.6	992.9	970.3	2.6	3.7	-15.85	87.7	-126.5	54.3	50.7	3.65	14.873		
1,100.0	1,090.1	1,086.1	1,054.7	3.0	4.4	-12.11	111.9	-158.0	80.3	76.3	3.93	20.425		
1,200.0	1,188.6	1,176.8	1,134.7	3.3	5.3	-9.89	137.9	-191.6	111.0	106.7	4.23	26.227		
1,300.0	1,287.1	1,264.5	1,210.2	3.7	6.1	-8.46	165.1	-227.0	146.1	141.6	4.54	32.196		
1,400.0	1,385.6	1,355.5	1,287.0	4.0	7.1	-7.45	194.9	-265.7	184.2	179.4	4.86	37.918		
1,500.0	1,484.1	1,447.8	1,364.9	4.4	8.0	-6.77	225.2	-305.0	222.5	217.3	5.19	42.894		
1,600.0	1,582.6	1,540.2	1,442.9	4.7	8.9	-6.29	255.4	-344.2	260.7	255.2	5.52	47.255		
1,700.0	1,681.1	1,632.6	1,520.8	5.1	9.9	-5.93	285.7	-383.5	299.0	293.2	5.85	51.109		
1,800.0	1,779.6	1,725.0	1,598.7	5.4	10.8	-5.66	316.0	-422.8	337.3	331.1	6.18	54.540		
1,900.0	1,878.1	1,817.3	1,676.6	5.8	11.8	-5.44	346.2	-462.1	375.6	369.1	6.52	57.615		
2,000.0	1,976.6	1,909.7	1,754.6	6.1	12.7	-5.26	376.5	-501.4	413.9	407.0	6.85	60.387		
2,100.0	2,075.0	2,002.1	1,832.5	6.5	13.7	-5.11	406.8	-540.7	452.2	445.0	7.19	62.899		
2,200.0	2,173.5	2,094.4	1,910.4	6.8	14.6	-4.98	437.0	-580.0	490.5	483.0	7.52	65.185		

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Shideler 19-11DD
Project:	Mamm Creek	TVD Reference:	KB=22' @ 6531.0ft (Nabors M-15)
Reference Site:	O19EB Pad (2nd Occupation)	MD Reference:	KB=22' @ 6531.0ft (Nabors M-15)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Shideler 19-11DD	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 O19EB Pad (2nd Occupation) - Shideler Federal 19-12C - 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				Total		Warning		
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Uncertainty Axis	Separation Factor			
0.0	0.0	0.0	0.0	0.0	0.0	134.30	-40.8	41.8	58.4						
100.0	100.0	100.0	100.0	0.1	0.1	134.30	-40.8	41.8	58.4	58.1	0.27	214.536			
200.0	200.0	200.0	200.0	0.3	0.3	134.30	-40.8	41.8	58.4	57.8	0.62	94.010 CC, ES			
300.0	300.0	300.0	300.0	0.5	0.5	-175.91	-40.8	41.8	59.9	58.9	0.97	61.737			
400.0	399.8	401.4	401.4	0.7	0.7	-176.05	-40.6	41.2	65.8	64.5	1.32	49.880			
500.0	499.1	504.5	504.3	1.0	0.9	-174.81	-38.8	35.9	72.7	71.0	1.67	43.451			
600.0	597.7	607.8	607.0	1.3	1.1	-172.30	-35.3	25.3	79.6	77.5	2.05	38.911			
700.0	696.2	711.4	709.3	1.6	1.4	-168.30	-29.9	9.5	82.9	80.4	2.47	33.581			
800.0	794.7	814.7	810.1	1.9	1.8	-162.33	-22.9	-11.5	82.2	79.2	2.99	27.468			
900.0	893.2	917.1	908.8	2.3	2.3	-153.56	-14.2	-37.4	78.6	74.9	3.73	21.094			
1,000.0	991.6	1,018.0	1,004.4	2.6	2.9	-140.90	-4.0	-67.8	74.2	69.4	4.81	15.416			
1,086.8	1,077.1	1,104.0	1,084.5	2.9	3.5	-126.27	5.9	-97.5	72.2	66.2	6.04	11.962			
1,100.0	1,090.1	1,116.9	1,096.5	3.0	3.6	-123.79	7.5	-102.2	72.3	66.1	6.24	11.582			
1,200.0	1,188.6	1,213.4	1,184.3	3.3	4.4	-104.14	20.2	-140.1	77.5	69.9	7.62	10.168 SF			
1,300.0	1,287.1	1,307.0	1,267.5	3.7	5.2	-86.13	33.9	-180.8	92.7	84.2	8.48	10.924			
1,400.0	1,385.6	1,398.5	1,346.7	4.0	6.1	-72.29	48.4	-224.1	117.6	108.7	8.88	13.244			
1,500.0	1,484.1	1,491.4	1,426.5	4.4	7.0	-62.87	63.5	-269.1	147.9	138.8	9.10	16.266			
1,600.0	1,582.6	1,584.3	1,506.4	4.7	7.9	-56.65	78.6	-314.1	180.8	171.5	9.32	19.403			
1,700.0	1,681.1	1,677.2	1,586.2	5.1	8.9	-52.33	93.7	-359.1	215.1	205.5	9.58	22.444			
1,800.0	1,779.6	1,770.0	1,666.1	5.4	9.8	-49.19	108.8	-404.1	250.1	240.2	9.88	25.310			
1,900.0	1,878.1	1,862.9	1,745.9	5.8	10.7	-46.82	123.9	-449.1	285.7	275.4	10.21	27.975			
2,000.0	1,976.6	1,955.8	1,825.8	6.1	11.6	-44.96	139.0	-494.1	321.5	311.0	10.56	30.441			
2,100.0	2,075.0	2,048.7	1,905.6	6.5	12.6	-43.48	154.1	-539.1	357.7	346.7	10.93	32.717			
2,200.0	2,173.5	2,141.6	1,985.5	6.8	13.5	-42.27	169.2	-584.1	394.0	382.6	11.31	34.818			
2,300.0	2,272.0	2,234.5	2,065.3	7.2	14.4	-41.26	184.3	-629.1	430.4	418.7	11.71	36.760			
2,400.0	2,370.5	2,327.4	2,145.1	7.5	15.4	-40.41	199.4	-674.1	466.9	454.8	12.11	38.557			

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Shideler 19-11DD
Project:	Mamm Creek	TVD Reference:	KB=22' @ 6531.0ft (Nabors M-15)
Reference Site:	O19EB Pad (2nd Occupation)	MD Reference:	KB=22' @ 6531.0ft (Nabors M-15)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Shideler 19-11DD	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 O19EB Pad (2nd Occupation) - Shideler Federal 19-12D - 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				Total	Separation	Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Uncertainty Axis	Factor		
0.0	0.0	0.0	0.0	0.0	0.0	144.16	-21.1	15.3	26.1					
100.0	100.0	100.0	100.0	0.1	0.1	144.16	-21.1	15.3	26.1	25.8	0.27	95.689		
200.0	200.0	200.0	200.0	0.3	0.3	144.16	-21.1	15.3	26.1	25.4	0.62	41.931 CC, ES		
300.0	300.0	300.0	300.0	0.5	0.5	-166.68	-21.1	15.3	27.5	26.5	0.97	28.332		
400.0	399.8	401.0	400.9	0.7	0.7	-168.23	-20.4	13.9	32.5	31.2	1.32	24.624		
500.0	499.1	502.5	502.3	1.0	0.9	-167.91	-17.1	8.0	37.9	36.3	1.68	22.632		
600.0	597.7	604.4	603.4	1.3	1.1	-166.18	-11.3	-2.6	43.1	41.1	2.05	21.017		
700.0	696.2	706.4	703.9	1.6	1.5	-162.04	-2.8	-18.0	44.4	42.0	2.48	17.895		
800.0	794.7	808.1	803.0	1.9	1.9	-154.11	8.3	-38.0	41.6	38.5	3.06	13.602		
900.0	893.2	909.0	899.9	2.3	2.4	-139.22	21.7	-62.3	36.1	32.1	4.00	9.022		
1,000.0	991.6	1,008.4	993.9	2.6	3.0	-112.35	37.3	-90.6	32.3	26.8	5.48	5.888		
1,004.1	995.7	1,012.5	997.7	2.6	3.0	-110.98	38.0	-91.9	32.2	26.7	5.54	5.819 SF		
1,100.0	1,090.1	1,105.9	1,084.3	3.0	3.7	-78.79	55.0	-122.6	37.9	31.5	6.43	5.896		
1,200.0	1,188.6	1,200.0	1,169.7	3.3	4.5	-55.43	74.1	-157.2	55.9	49.5	6.42	8.712		
1,300.0	1,287.1	1,293.4	1,252.5	3.7	5.3	-42.29	95.0	-195.1	82.7	76.3	6.31	13.097		
1,400.0	1,385.6	1,385.5	1,332.2	4.0	6.2	-34.85	117.3	-235.4	115.1	108.8	6.34	18.153		
1,500.0	1,484.1	1,479.1	1,413.0	4.4	7.1	-30.53	140.1	-276.8	149.0	142.5	6.51	22.891		
1,600.0	1,582.6	1,572.7	1,493.9	4.7	8.0	-27.81	162.9	-318.1	183.4	176.7	6.76	27.146		
1,700.0	1,681.1	1,666.3	1,574.7	5.1	8.9	-25.95	185.7	-359.4	218.1	211.0	7.05	30.951		
1,800.0	1,779.6	1,759.9	1,655.5	5.4	9.8	-24.60	208.6	-400.8	252.8	245.5	7.36	34.359		
1,900.0	1,878.1	1,853.6	1,736.3	5.8	10.7	-23.57	231.4	-442.1	287.7	280.0	7.69	37.425		
2,000.0	1,976.6	1,947.2	1,817.2	6.1	11.6	-22.77	254.2	-483.4	322.7	314.6	8.03	40.194		
2,100.0	2,075.0	2,040.8	1,898.0	6.5	12.5	-22.12	277.0	-524.8	357.7	349.3	8.38	42.706		
2,200.0	2,173.5	2,134.4	1,978.8	6.8	13.4	-21.59	299.8	-566.1	392.7	384.0	8.73	44.995		
2,300.0	2,272.0	2,228.0	2,059.7	7.2	14.3	-21.15	322.6	-607.4	427.7	418.7	9.08	47.088		
2,400.0	2,370.5	2,321.6	2,140.5	7.5	15.2	-20.77	345.5	-648.8	462.8	453.4	9.44	49.010		
2,500.0	2,469.0	2,415.2	2,221.3	7.9	16.1	-20.44	368.3	-690.1	497.9	488.1	9.80	50.780		

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Shideler 19-11DD
Project:	Mamm Creek	TVD Reference:	KB=22' @ 6531.0ft (Nabors M-15)
Reference Site:	O19EB Pad (2nd Occupation)	MD Reference:	KB=22' @ 6531.0ft (Nabors M-15)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Shideler 19-11DD	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 O19EB Pad (2nd Occupation) - Shideler Federal 19-13A - 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						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	
0.0	0.0	0.0	0.0	0.0	0.0	132.38	-50.3	55.1	74.6				
100.0	100.0	100.0	100.0	0.1	0.1	132.38	-50.3	55.1	74.6	74.3	0.27	273.869	CC, ES
200.0	200.0	200.0	200.0	0.3	0.3	132.38	-50.3	55.1	74.6	73.9	0.62	120.010	
300.0	300.0	301.7	301.7	0.5	0.5	-177.50	-50.1	54.4	75.5	74.5	0.97	77.531	
400.0	399.8	405.2	405.0	0.7	0.7	-175.56	-49.0	48.9	77.4	76.1	1.33	58.063	
500.0	499.1	508.5	507.7	1.0	0.9	-171.86	-46.8	38.0	80.2	78.5	1.72	46.763	
600.0	597.7	611.6	609.5	1.3	1.3	-166.65	-43.5	21.6	83.9	81.8	2.16	38.800	
700.0	696.2	714.3	709.7	1.6	1.7	-159.45	-39.2	0.0	85.4	82.6	2.75	31.099	
800.0	794.7	816.0	807.7	1.9	2.2	-149.68	-33.9	-26.5	85.2	81.6	3.55	23.984	
839.2	833.3	855.4	845.3	2.1	2.5	-145.06	-31.5	-38.2	85.1	81.1	3.95	21.545	
900.0	893.2	916.1	902.7	2.3	2.8	-137.03	-27.6	-57.7	85.5	80.9	4.64	18.435	
1,000.0	991.6	1,014.2	994.0	2.6	3.5	-122.10	-20.6	-92.8	89.3	83.4	5.91	15.116	
1,100.0	1,090.1	1,109.8	1,081.1	3.0	4.3	-106.73	-12.8	-131.5	99.7	92.6	7.10	14.030	SF
1,200.0	1,188.6	1,203.6	1,164.6	3.3	5.1	-93.04	-4.4	-173.2	117.9	109.9	8.00	14.737	
1,300.0	1,287.1	1,297.9	1,248.3	3.7	5.9	-82.85	4.2	-215.9	141.7	133.1	8.63	16.418	
1,400.0	1,385.6	1,392.3	1,332.0	4.0	6.8	-75.62	12.8	-258.7	168.8	159.6	9.15	18.447	
1,500.0	1,484.1	1,486.6	1,415.6	4.4	7.6	-70.39	21.3	-301.4	197.6	188.0	9.62	20.546	
1,600.0	1,582.6	1,581.0	1,499.3	4.7	8.5	-66.48	29.9	-344.2	227.7	217.6	10.08	22.590	
1,700.0	1,681.1	1,675.3	1,583.0	5.1	9.3	-63.47	38.5	-386.9	258.4	247.9	10.54	24.525	
1,800.0	1,779.6	1,769.7	1,666.7	5.4	10.1	-61.11	47.1	-429.7	289.8	278.7	11.00	26.333	
1,900.0	1,878.1	1,864.1	1,750.4	5.8	11.0	-59.20	55.7	-472.4	321.4	309.9	11.47	28.011	
2,000.0	1,976.6	1,958.4	1,834.0	6.1	11.8	-57.63	64.3	-515.2	353.3	341.4	11.95	29.564	
2,100.0	2,075.0	2,052.8	1,917.7	6.5	12.7	-56.32	72.8	-557.9	385.5	373.0	12.43	31.000	
2,200.0	2,173.5	2,147.1	2,001.4	6.8	13.5	-55.21	81.4	-600.6	417.8	404.8	12.92	32.328	
2,300.0	2,272.0	2,241.5	2,085.1	7.2	14.4	-54.26	90.0	-643.4	450.2	436.8	13.41	33.559	
2,400.0	2,370.5	2,335.8	2,168.8	7.5	15.2	-53.44	98.6	-686.1	482.7	468.8	13.91	34.700	

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Shideler 19-11DD
Project:	Mamm Creek	TVD Reference:	KB=22' @ 6531.0ft (Nabors M-15)
Reference Site:	O19EB Pad (2nd Occupation)	MD Reference:	KB=22' @ 6531.0ft (Nabors M-15)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Shideler 19-11DD	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 O19EB Pad (2nd Occupation) - Shideler Federal 19-13AA - 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						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor		
0.0	0.0	0.0	0.0	0.0	0.0	131.32	-60.1	68.4	91.0					
100.0	100.0	100.0	100.0	0.1	0.1	131.32	-60.1	68.4	91.0	90.7	0.27	334.293		
200.0	200.0	200.0	200.0	0.3	0.3	131.32	-60.1	68.4	91.0	90.4	0.62	146.488		
300.0	300.0	303.7	303.7	0.5	0.5	-177.66	-60.0	65.5	90.4	89.4	0.98	92.181		
312.3	312.2	316.4	316.4	0.5	0.5	-177.37	-60.0	64.8	90.4	89.4	1.03	87.964	CC, ES	
400.0	399.8	407.2	406.8	0.7	0.7	-174.33	-59.9	57.1	91.0	89.6	1.36	66.829		
500.0	499.1	510.2	508.9	1.0	1.0	-169.06	-59.6	43.2	93.4	91.6	1.80	52.024		
600.0	597.7	612.6	609.4	1.3	1.4	-162.28	-59.2	24.0	98.1	95.7	2.34	41.918		
700.0	696.2	714.1	707.9	1.6	1.9	-153.79	-58.7	-0.4	102.3	99.2	3.06	33.456		
800.0	794.7	814.1	803.6	1.9	2.5	-143.57	-58.1	-29.5	107.0	103.0	3.98	26.877		
900.0	893.2	912.2	895.8	2.3	3.1	-132.12	-57.4	-62.9	114.3	109.2	5.07	22.535		
1,000.0	991.6	1,008.0	984.1	2.6	3.8	-120.38	-56.6	-100.0	126.3	120.0	6.21	20.326		
1,100.0	1,090.1	1,101.1	1,068.1	3.0	4.6	-109.39	-55.8	-140.3	144.3	137.0	7.27	19.862	SF	
1,200.0	1,188.6	1,195.1	1,151.9	3.3	5.4	-100.22	-54.9	-182.7	167.7	159.6	8.14	20.591		
1,300.0	1,287.1	1,289.0	1,235.7	3.7	6.3	-93.31	-54.0	-225.1	194.3	185.5	8.90	21.843		
1,400.0	1,385.6	1,383.0	1,319.5	4.0	7.1	-88.05	-53.1	-267.6	223.1	213.5	9.58	23.297		
1,500.0	1,484.1	1,476.9	1,403.3	4.4	7.9	-83.98	-52.3	-310.0	253.2	243.0	10.21	24.793		
1,600.0	1,582.6	1,570.9	1,487.1	4.7	8.7	-80.77	-51.4	-352.5	284.3	273.4	10.83	26.257		
1,700.0	1,681.1	1,664.8	1,570.9	5.1	9.5	-78.18	-50.5	-394.9	316.0	304.5	11.43	27.653		
1,800.0	1,779.6	1,758.8	1,654.8	5.4	10.4	-76.06	-49.6	-437.3	348.2	336.2	12.02	28.967		
1,900.0	1,878.1	1,852.7	1,738.6	5.8	11.2	-74.30	-48.8	-479.8	380.7	368.1	12.61	30.196		
2,000.0	1,976.6	1,946.7	1,822.4	6.1	12.0	-72.81	-47.9	-522.2	413.6	400.4	13.20	31.339		
2,100.0	2,075.0	2,040.6	1,906.2	6.5	12.8	-71.54	-47.0	-564.7	446.6	432.8	13.78	32.403		
2,200.0	2,173.5	2,134.6	1,990.0	6.8	13.7	-70.45	-46.1	-607.1	479.8	465.5	14.37	33.393		

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Shideler 19-11DD
Project:	Mamm Creek	TVD Reference:	KB=22' @ 6531.0ft (Nabors M-15)
Reference Site:	O19EB Pad (2nd Occupation)	MD Reference:	KB=22' @ 6531.0ft (Nabors M-15)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Shideler 19-11DD	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' @ 6531.0ft (Nabors M-15)

Offset Depths are relative to Offset Datum

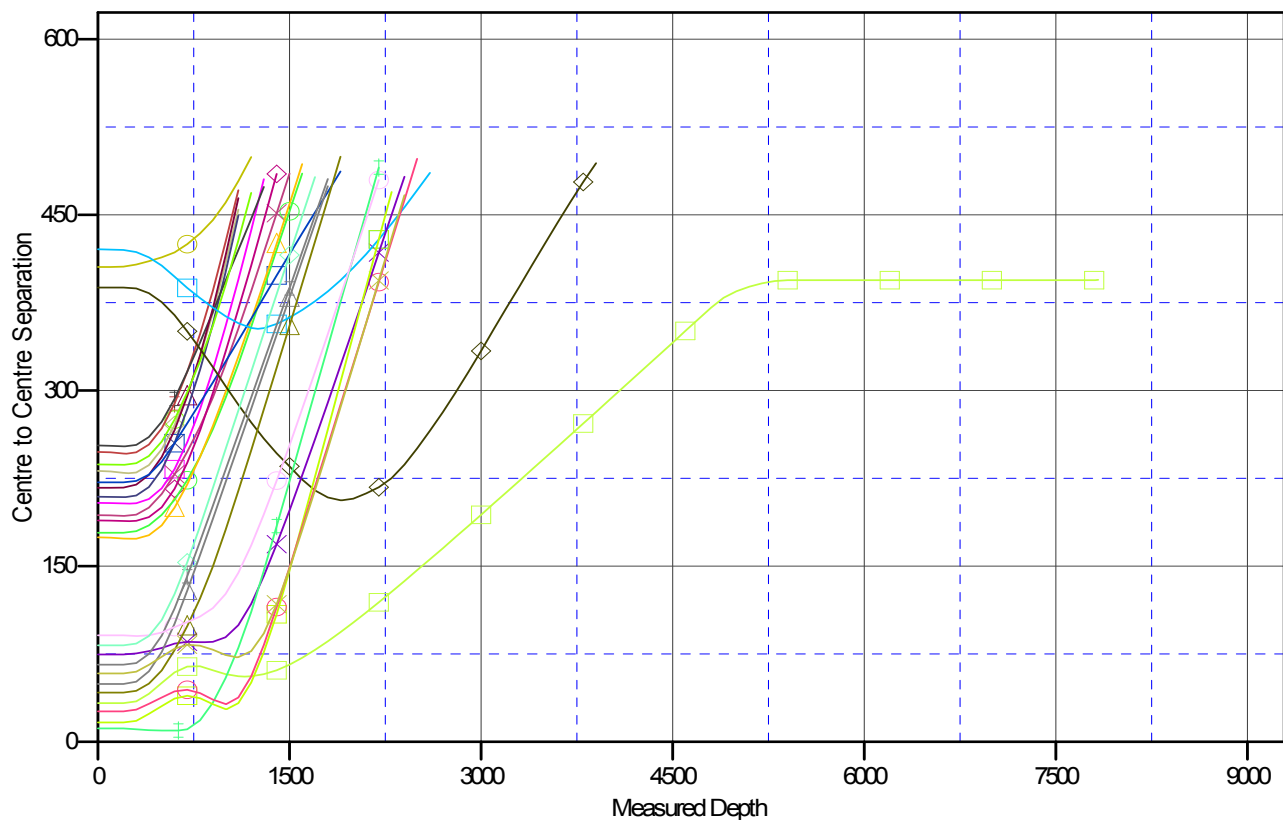
Central Meridian is -105.500000 °

Coordinates are relative to: Shideler 19-11DD

Coordinate System is US State Plane 1983, Colorado Central Zone

Grid Convergence at Surface is: -1.39°

Ladder Plot



LEGEND

2C, OH, FINAL V0	Shideler 19-14D, OH, FINAL V0	Shideler 19-11D, OH, Plan #1 V0
1B, OH, FINAL V0	Shideler 30-3B, OH, FINAL V0	Shideler 19-9C, OH, Plan #1 V0
eral 19-13D, OH, FINAL V0	Shideler 19-16CC, OH, FINAL V0	Shideler Federal 19-12A, OH, Plan #1 V0
7A, OH, FINAL V0	Shideler 30-2 (O19E), Existing - Survey, Existing - Survey V0	Shideler 19-6C, OH, Plan #1 V0
1C, OH, FINAL V0	Shideler 19-10 (O19E), DD, DD V0	Shideler Federal 19-12D, OH, Plan #1 V0
4A, OH, FINAL V0	Shideler 19-15 (O19E), Existing-Vertical, Existing-Vertical V0	Shideler Federal 19-13AA, OH, Plan #1 V0
3A, OH, FINAL V0	Shideler Federal 19-13A, OH, Plan #1 V0	Shideler 19-16BB, OH, Plan #1 V0
16C, OH, FINAL V0	Shideler 19-9B, OH, Plan #1 V0	Shideler Federal 19-12C, OH, Plan #1 V0
3B, OH, FINAL V0	Shideler 19-16B, OH, Plan #1 V0	

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