

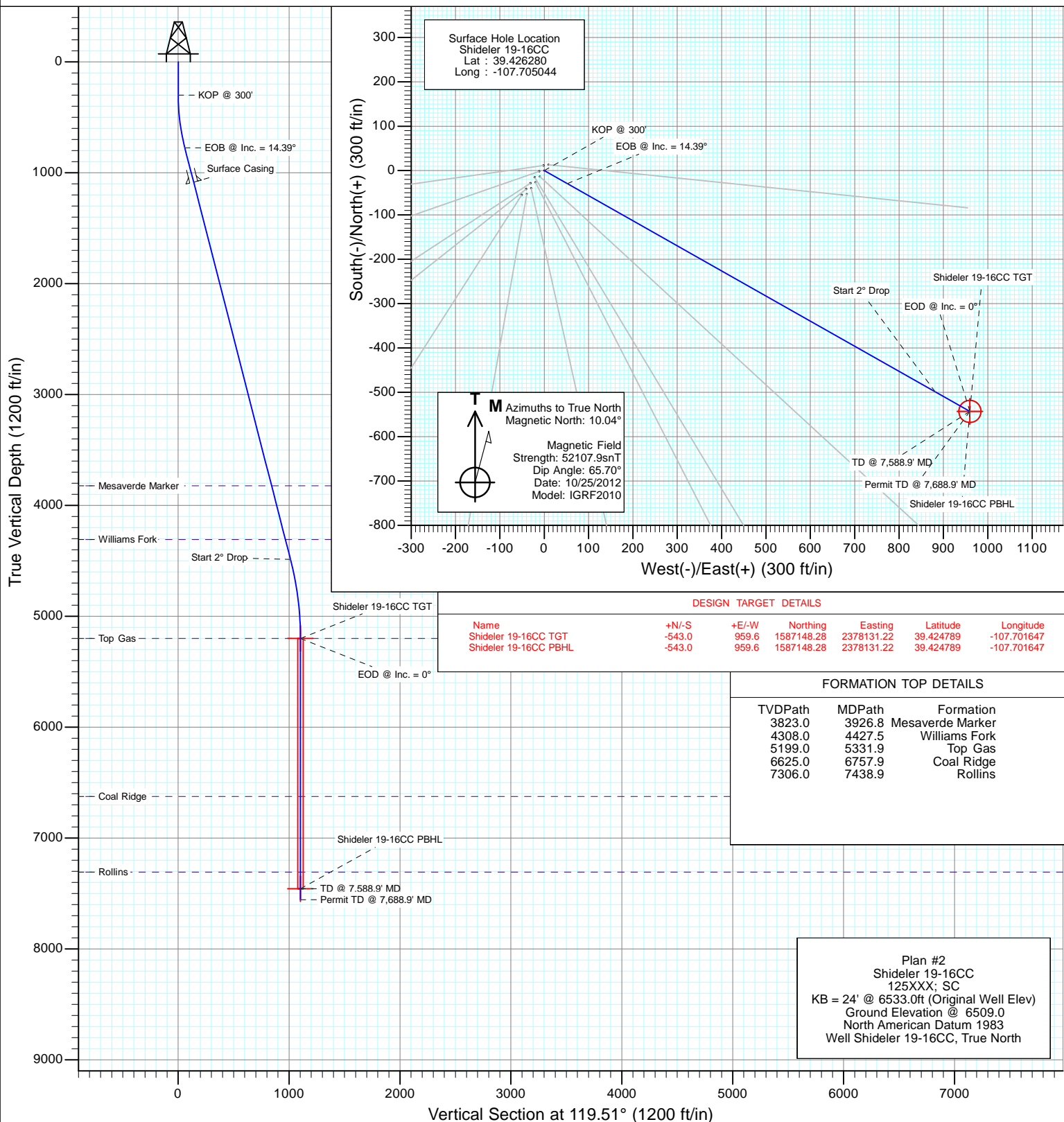


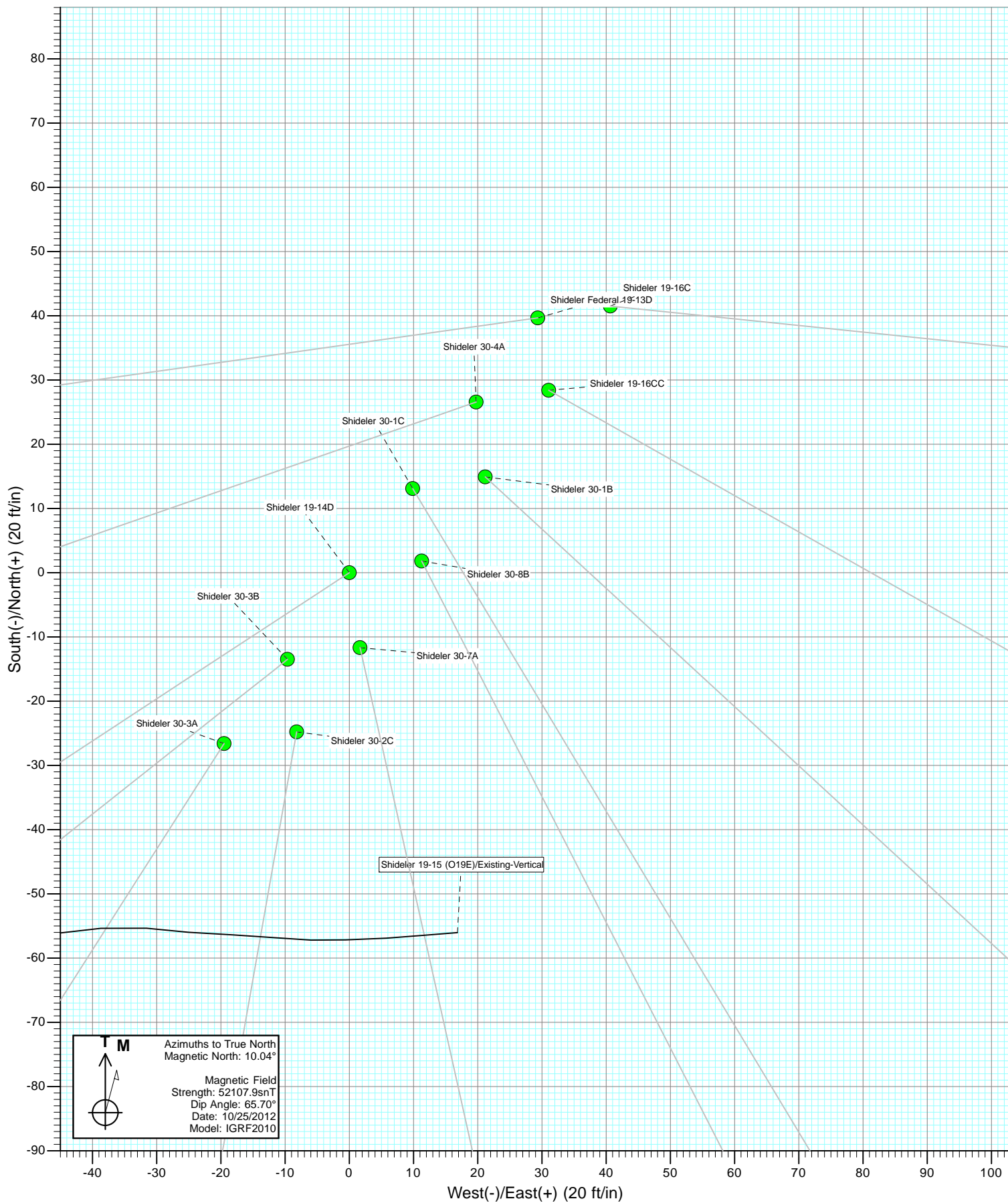
Project: Mamm Creek
Site: O19EB Pad
Well: Shideler 19-16CC
Wellbore: OH
Design: Plan #2

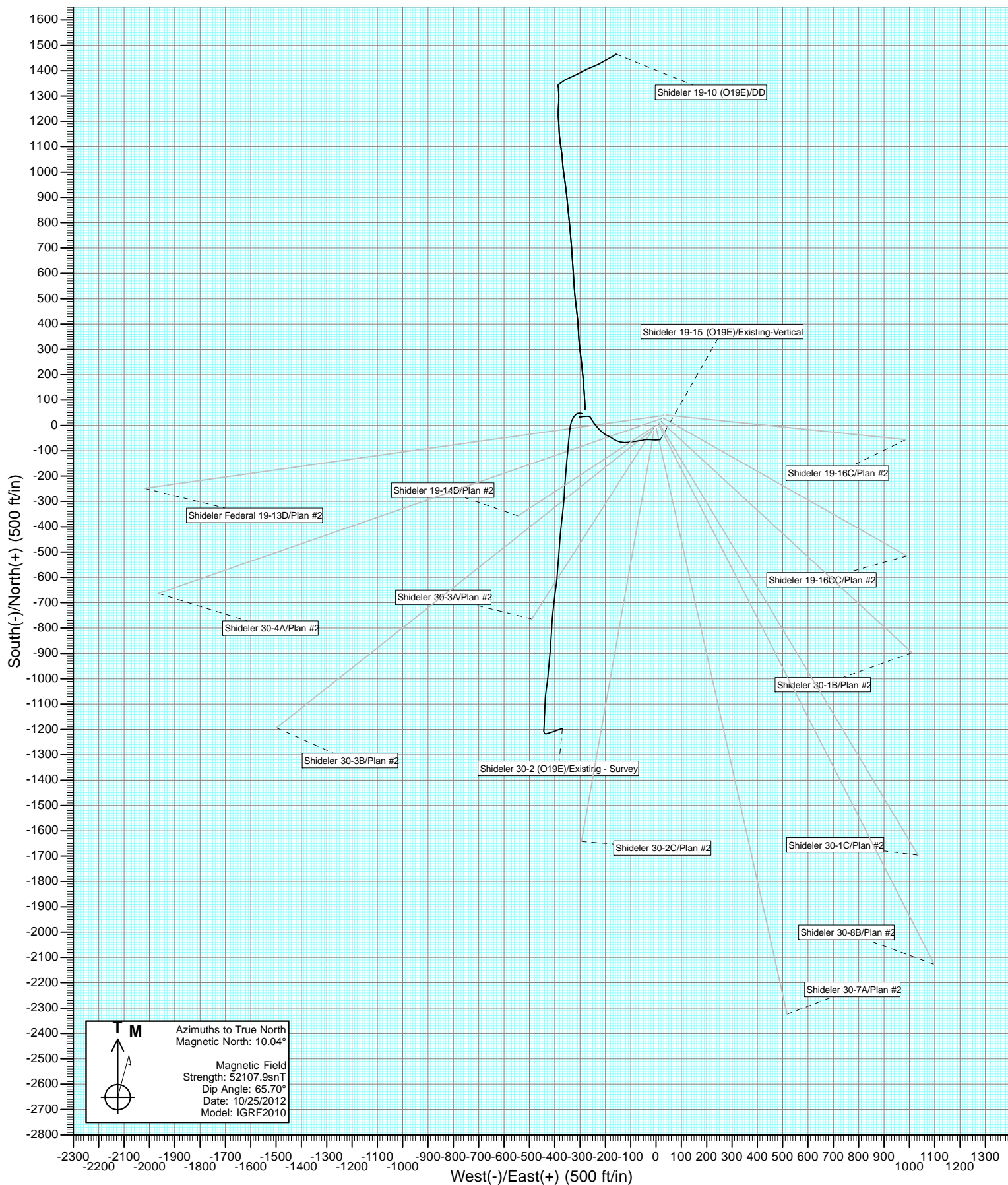


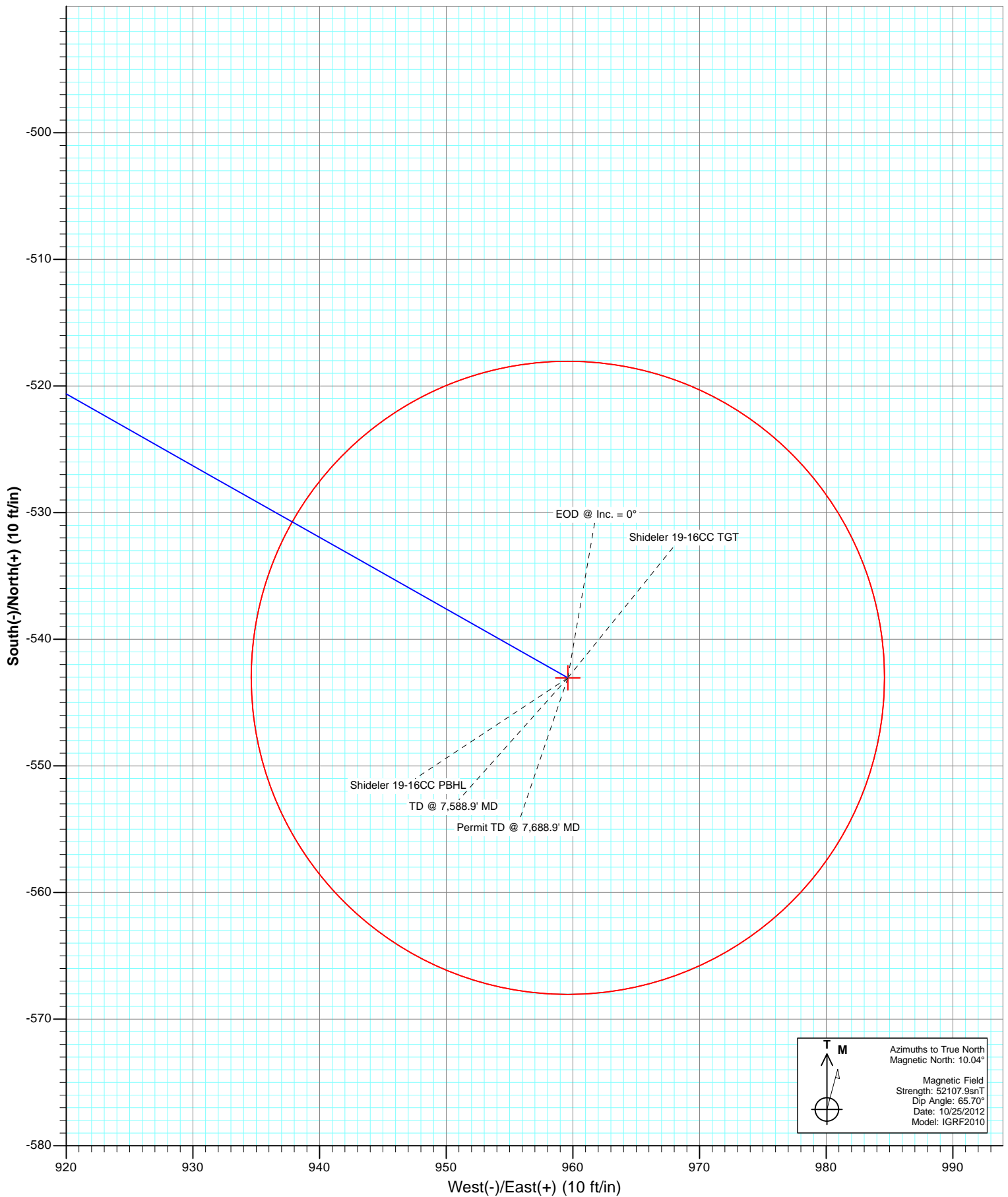
SECTION DETAILS

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	300.0	0.00	0.00	300.0	0.0	0.0	0.00	0.00	0.0	
3	779.8	14.39	119.51	774.8	-29.5	52.2	3.00	119.51	60.0	
4	4612.2	14.39	119.51	4486.8	-498.8	881.3	0.00	0.00	1012.7	
5	5331.9	0.00	0.00	5199.0	-543.0	959.6	2.00	180.00	1102.6	Shideler 19-16CC TGT
6	7588.9	0.00	0.00	7456.0	-543.0	959.6	0.00	0.00	1102.6	Shideler 19-16CC PBHL
7	7688.9	0.00	0.00	7556.0	-543.0	959.6	0.00	0.00	1102.6	









Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Shideler 19-16CC
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	KB = 24' @ 6533.0ft (Original Well Elev)
Project:	Mamm Creek	MD Reference:	KB = 24' @ 6533.0ft (Original Well Elev)
Site:	O19EB Pad	North Reference:	True
Well:	Shideler 19-16CC	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #2		

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			
Site Position:		Northing:	1,587,688.01 ft	Latitude:	39.426206
From:	Lat/Long	Easting:	2,377,164.37 ft	Longitude:	-107.705115
Position Uncertainty:	0.0 ft	Slot Radius:	13.200 in	Grid Convergence:	-1.39 °

Well	Shideler 19-16CC					
Well Position	+N/-S	0.0 ft	Northing:	1,587,714.46 ft	Latitude:	39.426280
	+E/-W	0.0 ft	Easting:	2,377,185.08 ft	Longitude:	-107.705044
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	10/25/2012	10.04	65.70	52,108

Design		Plan #2		
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	119.51

Plan Sections										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
300.0	0.00	0.00	300.0	0.0	0.0	0.00	0.00	0.00	0.00	
779.8	14.39	119.51	774.8	-29.5	52.2	3.00	3.00	0.00	119.51	
4,612.2	14.39	119.51	4,486.8	-498.8	881.3	0.00	0.00	0.00	0.00	
5,331.9	0.00	0.00	5,199.0	-543.0	959.6	2.00	-2.00	0.00	180.00	Shideler 19-16CC TG
7,588.9	0.00	0.00	7,456.0	-543.0	959.6	0.00	0.00	0.00	0.00	Shideler 19-16CC PB
7,688.9	0.00	0.00	7,556.0	-543.0	959.6	0.00	0.00	0.00	0.00	

Cathedral Energy Services

Planning Report

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Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	KB = 24' @ 6533.0ft (Original Well Elev)
Project:	Mamm Creek	MD Reference:	KB = 24' @ 6533.0ft (Original Well Elev)
Site:	O19EB Pad	North Reference:	True
Well:	Shideler 19-16CC	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #2		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Comments / Formations
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	KOP @ 300'
400.0	3.00	119.51	400.0	-1.3	2.3	2.6	3.00	3.00	
500.0	6.00	119.51	499.6	-5.2	9.1	10.5	3.00	3.00	
600.0	9.00	119.51	598.8	-11.6	20.5	23.5	3.00	3.00	
700.0	12.00	119.51	697.1	-20.6	36.3	41.7	3.00	3.00	
779.8	14.39	119.51	774.8	-29.5	52.2	60.0	3.00	3.00	EOB @ Inc. = 14.39°
800.0	14.39	119.51	794.3	-32.0	56.5	65.0	0.00	0.00	
900.0	14.39	119.51	891.2	-44.2	78.2	89.8	0.00	0.00	
1,000.0	14.39	119.51	988.1	-56.5	99.8	114.7	0.00	0.00	
1,100.0	14.39	119.51	1,084.9	-68.7	121.5	139.6	0.00	0.00	
1,100.1	14.39	119.51	1,085.0	-68.7	121.5	139.6	0.00	0.00	Surface Casing
1,200.0	14.39	119.51	1,181.8	-81.0	143.1	164.4	0.00	0.00	
1,300.0	14.39	119.51	1,278.6	-93.2	164.7	189.3	0.00	0.00	
1,400.0	14.39	119.51	1,375.5	-105.5	186.4	214.1	0.00	0.00	
1,500.0	14.39	119.51	1,472.4	-117.7	208.0	239.0	0.00	0.00	
1,600.0	14.39	119.51	1,569.2	-130.0	229.6	263.9	0.00	0.00	
1,700.0	14.39	119.51	1,666.1	-142.2	251.3	288.7	0.00	0.00	
1,800.0	14.39	119.51	1,762.9	-154.4	272.9	313.6	0.00	0.00	
1,900.0	14.39	119.51	1,859.8	-166.7	294.5	338.4	0.00	0.00	
2,000.0	14.39	119.51	1,956.7	-178.9	316.2	363.3	0.00	0.00	
2,100.0	14.39	119.51	2,053.5	-191.2	337.8	388.2	0.00	0.00	
2,200.0	14.39	119.51	2,150.4	-203.4	359.4	413.0	0.00	0.00	
2,300.0	14.39	119.51	2,247.2	-215.7	381.1	437.9	0.00	0.00	
2,400.0	14.39	119.51	2,344.1	-227.9	402.7	462.7	0.00	0.00	
2,500.0	14.39	119.51	2,441.0	-240.1	424.4	487.6	0.00	0.00	
2,600.0	14.39	119.51	2,537.8	-252.4	446.0	512.5	0.00	0.00	
2,700.0	14.39	119.51	2,634.7	-264.6	467.6	537.3	0.00	0.00	
2,800.0	14.39	119.51	2,731.5	-276.9	489.3	562.2	0.00	0.00	
2,900.0	14.39	119.51	2,828.4	-289.1	510.9	587.0	0.00	0.00	
3,000.0	14.39	119.51	2,925.3	-301.4	532.5	611.9	0.00	0.00	
3,100.0	14.39	119.51	3,022.1	-313.6	554.2	636.8	0.00	0.00	
3,200.0	14.39	119.51	3,119.0	-325.8	575.8	661.6	0.00	0.00	
3,300.0	14.39	119.51	3,215.9	-338.1	597.4	686.5	0.00	0.00	
3,400.0	14.39	119.51	3,312.7	-350.3	619.1	711.3	0.00	0.00	
3,500.0	14.39	119.51	3,409.6	-362.6	640.7	736.2	0.00	0.00	
3,600.0	14.39	119.51	3,506.4	-374.8	662.3	761.1	0.00	0.00	
3,700.0	14.39	119.51	3,603.3	-387.1	684.0	785.9	0.00	0.00	
3,800.0	14.39	119.51	3,700.2	-399.3	705.6	810.8	0.00	0.00	
3,900.0	14.39	119.51	3,797.0	-411.6	727.3	835.6	0.00	0.00	
3,926.8	14.39	119.51	3,823.0	-414.8	733.1	842.3	0.00	0.00	Mesaverde Marker
4,000.0	14.39	119.51	3,893.9	-423.8	748.9	860.5	0.00	0.00	
4,100.0	14.39	119.51	3,990.7	-436.0	770.5	885.3	0.00	0.00	
4,200.0	14.39	119.51	4,087.6	-448.3	792.2	910.2	0.00	0.00	
4,300.0	14.39	119.51	4,184.5	-460.5	813.8	935.1	0.00	0.00	
4,400.0	14.39	119.51	4,281.3	-472.8	835.4	959.9	0.00	0.00	
4,427.5	14.39	119.51	4,308.0	-476.1	841.4	966.8	0.00	0.00	Williams Fork
4,500.0	14.39	119.51	4,378.2	-485.0	857.1	984.8	0.00	0.00	
4,600.0	14.39	119.51	4,475.0	-497.3	878.7	1,009.6	0.00	0.00	
4,612.2	14.39	119.51	4,486.8	-498.8	881.3	1,012.7	0.00	0.00	Start 2° Drop

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Shideler 19-16CC
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	KB = 24' @ 6533.0ft (Original Well Elev)
Project:	Mamm Creek	MD Reference:	KB = 24' @ 6533.0ft (Original Well Elev)
Site:	O19EB Pad	North Reference:	True
Well:	Shideler 19-16CC	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #2		

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	12.64	119.51	4,572.2	-508.9	899.2	1,033.2	2.00	-2.00	
4,800.0	10.64	119.51	4,670.2	-518.8	916.8	1,053.4	2.00	-2.00	
4,900.0	8.64	119.51	4,768.7	-527.0	931.3	1,070.1	2.00	-2.00	
5,000.0	6.64	119.51	4,867.9	-533.6	942.9	1,083.4	2.00	-2.00	
5,100.0	4.64	119.51	4,967.4	-538.4	951.4	1,093.2	2.00	-2.00	
5,200.0	2.64	119.51	5,067.2	-541.5	957.0	1,099.6	2.00	-2.00	
5,300.0	0.64	119.51	5,167.1	-543.0	959.5	1,102.4	2.00	-2.00	
5,331.9	0.00	0.00	5,199.0	-543.0	959.6	1,102.6	2.00	-2.00	EOD @ Inc. = 0° - Top Gas
5,400.0	0.00	0.00	5,267.1	-543.0	959.6	1,102.6	0.00	0.00	
5,500.0	0.00	0.00	5,367.1	-543.0	959.6	1,102.6	0.00	0.00	
5,600.0	0.00	0.00	5,467.1	-543.0	959.6	1,102.6	0.00	0.00	
5,700.0	0.00	0.00	5,567.1	-543.0	959.6	1,102.6	0.00	0.00	
5,800.0	0.00	0.00	5,667.1	-543.0	959.6	1,102.6	0.00	0.00	
5,900.0	0.00	0.00	5,767.1	-543.0	959.6	1,102.6	0.00	0.00	
6,000.0	0.00	0.00	5,867.1	-543.0	959.6	1,102.6	0.00	0.00	
6,100.0	0.00	0.00	5,967.1	-543.0	959.6	1,102.6	0.00	0.00	
6,200.0	0.00	0.00	6,067.1	-543.0	959.6	1,102.6	0.00	0.00	
6,300.0	0.00	0.00	6,167.1	-543.0	959.6	1,102.6	0.00	0.00	
6,400.0	0.00	0.00	6,267.1	-543.0	959.6	1,102.6	0.00	0.00	
6,500.0	0.00	0.00	6,367.1	-543.0	959.6	1,102.6	0.00	0.00	
6,600.0	0.00	0.00	6,467.1	-543.0	959.6	1,102.6	0.00	0.00	
6,700.0	0.00	0.00	6,567.1	-543.0	959.6	1,102.6	0.00	0.00	
6,757.9	0.00	0.00	6,625.0	-543.0	959.6	1,102.6	0.00	0.00	Coal Ridge
6,800.0	0.00	0.00	6,667.1	-543.0	959.6	1,102.6	0.00	0.00	
6,900.0	0.00	0.00	6,767.1	-543.0	959.6	1,102.6	0.00	0.00	
7,000.0	0.00	0.00	6,867.1	-543.0	959.6	1,102.6	0.00	0.00	
7,100.0	0.00	0.00	6,967.1	-543.0	959.6	1,102.6	0.00	0.00	
7,200.0	0.00	0.00	7,067.1	-543.0	959.6	1,102.6	0.00	0.00	
7,300.0	0.00	0.00	7,167.1	-543.0	959.6	1,102.6	0.00	0.00	
7,400.0	0.00	0.00	7,267.1	-543.0	959.6	1,102.6	0.00	0.00	
7,438.9	0.00	0.00	7,306.0	-543.0	959.6	1,102.6	0.00	0.00	Rollins
7,500.0	0.00	0.00	7,367.1	-543.0	959.6	1,102.6	0.00	0.00	
7,588.9	0.00	0.00	7,456.0	-543.0	959.6	1,102.6	0.00	0.00	TD @ 7,588.9' MD
7,600.0	0.00	0.00	7,467.1	-543.0	959.6	1,102.6	0.00	0.00	
7,688.9	0.00	0.00	7,556.0	-543.0	959.6	1,102.6	0.00	0.00	Permit TD @ 7,688.9' 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 19-16CC TGT	0.00	0.00	5,199.0	-543.0	959.6	1,587,148.28	2,378,131.22	39.424789	-107.701647
- plan hits target center									
- Point									
Shideler 19-16CC PBHL	0.00	0.00	7,456.0	-543.0	959.6	1,587,148.28	2,378,131.22	39.424789	-107.701647
- plan hits target center									
- Circle (radius 25.0)									

Cathedral Energy Services

Planning Report

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Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	KB = 24' @ 6533.0ft (Original Well Elev)
Project:	Mamm Creek	MD Reference:	KB = 24' @ 6533.0ft (Original Well Elev)
Site:	O19EB Pad	North Reference:	True
Well:	Shideler 19-16CC	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #2		

Casing Points				
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)
1,100.1	1,085.0	Surface Casing		

Formations					
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
3,926.8	3,823.0	Mesaverde Marker			
4,427.5	4,308.0	Williams Fork			
5,331.9	5,199.0	Top Gas			
6,757.9	6,625.0	Coal Ridge			
7,438.9	7,306.0	Rollins			

Plan Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
300.0	300.0	0.0	0.0	KOP @ 300'
779.8	774.8	-29.5	52.2	EOB @ Inc. = 14.39°
4,612.2	4,486.8	-498.8	881.3	Start 2° Drop
5,331.9	5,199.0	-543.0	959.6	EOD @ Inc. = 0°
7,588.9	7,456.0	-543.0	959.6	TD @ 7,588.9' MD
7,688.9	7,556.0	-543.0	959.6	Permit TD @ 7,688.9' MD

EnCana Oil & Gas (USA) Inc

Mamm Creek

O19EB Pad

Shideler 19-16CC

OH

Plan #2

Anticollision Report

13 November, 2012

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Shideler 19-16CC
Project:	Mamm Creek	TVD Reference:	KB = 24' @ 6533.0ft (Original Well Elev)
Reference Site:	O19EB Pad	MD Reference:	KB = 24' @ 6533.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Shideler 19-16CC	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 #2	Offset TVD Reference:	Offset Datum

Reference	Plan #2		
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	11/13/2012		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
0.0	7,688.9	Plan #2 (OH)	MWD	Geolink MWD	

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						
(Existing Offset) Shideler 19-6D - Existing - Existing						Out of range
Shideler 19-14D - OH - Plan #2	233.3	233.3	42.1	41.4	57.617	CC, ES
Shideler 19-14D - OH - Plan #2	500.0	492.4	62.3	60.6	37.038	SF
Shideler 19-16C - OH - Plan #2	235.1	235.1	16.3	15.5	22.061	CC, ES
Shideler 19-16C - OH - Plan #2	7,688.9	7,652.3	459.0	415.9	10.664	SF
Shideler 30-1B - OH - Plan #2	300.0	300.0	16.7	15.8	17.353	CC, ES
Shideler 30-1B - OH - Plan #2	1,100.0	1,099.0	50.2	43.6	7.592	SF
Shideler 30-1C - OH - Plan #2	200.0	200.0	26.1	25.5	42.535	CC
Shideler 30-1C - OH - Plan #2	300.0	299.8	26.5	25.5	27.396	ES
Shideler 30-1C - OH - Plan #2	800.0	792.0	69.7	65.7	17.607	SF
Shideler 30-2C - OH - Plan #2	200.0	200.0	66.1	65.5	107.598	CC, ES
Shideler 30-2C - OH - Plan #2	1,800.0	1,697.7	497.5	485.9	42.949	SF
Shideler 30-3A - OH - Plan #2	200.0	200.0	74.7	74.1	121.608	CC, ES
Shideler 30-3A - OH - Plan #2	1,200.0	1,154.1	282.3	276.7	50.673	SF
Shideler 30-3B - OH - Plan #2	200.0	200.0	58.4	57.8	95.039	CC, ES
Shideler 30-3B - OH - Plan #2	500.0	488.0	84.5	82.8	50.361	SF
Shideler 30-4A - OH - Plan #2	200.0	200.0	11.4	10.8	18.629	CC, ES
Shideler 30-4A - OH - Plan #2	300.0	299.5	12.9	11.9	13.357	SF
Shideler 30-7A - OH - Plan #2	233.7	233.7	49.7	49.0	67.877	CC, ES
Shideler 30-7A - OH - Plan #2	1,000.0	969.5	156.0	150.5	28.785	SF
Shideler 30-8B - OH - Plan #2	200.0	200.0	33.1	32.5	53.936	CC, ES
Shideler 30-8B - OH - Plan #2	900.0	883.0	102.2	97.5	21.558	SF
Shideler Federal 19-13D - OH - Plan #2	200.0	200.0	11.4	10.8	18.578	CC
Shideler Federal 19-13D - OH - Plan #2	223.9	223.9	11.4	10.7	16.344	ES
Shideler Federal 19-13D - OH - Plan #2	300.0	299.9	11.7	10.8	12.131	SF

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Shideler 19-16CC
Project:	Mamm Creek	TVD Reference:	KB = 24' @ 6533.0ft (Original Well Elev)
Reference Site:	O19EB Pad	MD Reference:	KB = 24' @ 6533.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Shideler 19-16CC	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 #2	Offset TVD Reference:	Offset Datum

Offset Design O19EB Pad - Shideler 19-14D - OH - Plan #2												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	-132.44	-28.4	-31.1	42.1				
100.0	100.0	100.0	100.0	0.1	0.1	-132.44	-28.4	-31.1	42.1	41.8	0.27	158.705	
200.0	200.0	200.0	200.0	0.3	0.3	-132.44	-28.4	-31.1	42.1	41.5	0.61	68.532	
233.3	233.3	233.3	233.3	0.4	0.4	-132.44	-28.4	-31.1	42.1	41.4	0.73	57.617	CC, ES
300.0	300.0	298.9	298.9	0.5	0.5	-132.30	-28.8	-31.6	42.7	41.8	0.96	44.430	
400.0	400.0	396.4	396.2	0.7	0.7	111.82	-31.5	-35.8	48.7	47.4	1.31	37.133	
500.0	499.6	492.4	491.8	0.9	0.9	118.85	-36.8	-43.9	62.3	60.6	1.68	37.038	SF
600.0	598.8	589.5	588.0	1.1	1.2	125.96	-43.8	-54.6	82.4	80.4	2.08	39.568	
700.0	697.1	685.9	683.5	1.5	1.4	132.15	-50.8	-65.3	106.9	104.4	2.52	42.453	
800.0	794.3	780.9	777.7	1.9	1.7	137.40	-57.7	-75.8	135.8	132.9	2.97	45.716	
900.0	891.2	875.4	871.4	2.4	2.0	141.51	-64.5	-86.2	166.8	163.4	3.43	48.703	
1,000.0	988.1	969.9	965.1	2.8	2.2	144.33	-71.3	-96.7	198.4	194.5	3.88	51.147	
1,100.0	1,084.9	1,064.4	1,058.7	3.3	2.5	146.38	-78.2	-107.1	230.3	225.9	4.33	53.165	
1,200.0	1,181.8	1,158.9	1,152.4	3.7	2.8	147.93	-85.0	-117.6	262.3	257.6	4.78	54.852	
1,300.0	1,278.6	1,253.4	1,246.1	4.2	3.0	149.14	-91.9	-128.0	294.6	289.3	5.23	56.280	
1,400.0	1,375.5	1,347.9	1,339.8	4.7	3.3	150.12	-98.7	-138.5	326.9	321.2	5.68	57.503	
1,500.0	1,472.4	1,442.4	1,433.4	5.2	3.6	150.92	-105.5	-148.9	359.2	353.1	6.13	58.559	
1,600.0	1,569.2	1,536.9	1,527.1	5.6	3.8	151.59	-112.4	-159.4	391.7	385.1	6.58	59.481	
1,700.0	1,666.1	1,631.4	1,620.8	6.1	4.1	152.15	-119.2	-169.8	424.1	417.1	7.03	60.292	
1,800.0	1,762.9	1,725.9	1,714.5	6.6	4.4	152.64	-126.0	-180.3	456.6	449.1	7.48	61.011	
1,900.0	1,859.8	1,820.4	1,808.2	7.0	4.7	153.06	-132.9	-190.7	489.2	481.2	7.93	61.652	

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Shideler 19-16CC
Project:	Mamm Creek	TVD Reference:	KB = 24' @ 6533.0ft (Original Well Elev)
Reference Site:	O19EB Pad	MD Reference:	KB = 24' @ 6533.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Shideler 19-16CC	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 #2	Offset TVD Reference:	Offset Datum

Offset Design O19EB Pad - Shideler 19-16C - OH - Plan #2														Offset Site Error:	0.0 ft
Survey Program: O-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	36.22	13.1	9.6	16.3						
100.0	100.0	100.0	100.0	0.1	0.1	36.22	13.1	9.6	16.3	16.0	0.27	61.267			
200.0	200.0	200.0	200.0	0.3	0.3	36.22	13.1	9.6	16.3	15.6	0.61	26.456			
235.1	235.1	235.1	235.1	0.4	0.4	36.22	13.1	9.6	16.3	15.5	0.74	22.061	CC, ES		
300.0	300.0	299.8	299.8	0.5	0.5	38.15	13.0	10.2	16.6	15.6	0.96	17.229			
400.0	400.0	399.2	399.0	0.7	0.7	-75.84	12.5	15.4	19.1	17.7	1.33	14.347			
500.0	499.6	498.4	497.7	0.9	0.9	-74.23	11.5	25.7	23.5	21.8	1.75	13.429			
600.0	598.8	597.3	595.4	1.1	1.2	-75.06	9.9	40.9	29.9	27.6	2.28	13.096			
700.0	697.1	696.5	692.5	1.5	1.6	-77.64	7.9	60.7	37.7	34.8	2.94	12.828			
800.0	794.3	796.0	789.9	1.9	2.0	-84.89	5.7	81.4	45.4	41.6	3.76	12.057			
900.0	891.2	895.5	887.2	2.4	2.4	-91.91	3.6	102.0	53.6	49.0	4.63	11.575			
1,000.0	988.1	995.0	984.5	2.8	2.8	-97.01	1.5	122.6	62.4	56.9	5.49	11.361			
1,100.0	1,084.9	1,094.5	1,081.8	3.3	3.2	-100.83	-0.6	143.2	71.6	65.2	6.34	11.279			
1,200.0	1,181.8	1,193.9	1,179.1	3.7	3.6	-103.78	-2.8	163.8	81.0	73.8	7.19	11.264			
1,300.0	1,278.6	1,293.4	1,276.4	4.2	4.0	-106.10	-4.9	184.4	90.5	82.5	8.02	11.284			
1,400.0	1,375.5	1,392.9	1,373.7	4.7	4.4	-107.98	-7.0	205.0	100.2	91.4	8.85	11.321			
1,500.0	1,472.4	1,492.4	1,471.0	5.2	4.8	-109.53	-9.1	225.6	110.0	100.3	9.68	11.367			
1,600.0	1,569.2	1,591.9	1,568.3	5.6	5.2	-110.83	-11.2	246.2	119.9	109.4	10.50	11.415			
1,700.0	1,666.1	1,691.3	1,665.6	6.1	5.6	-111.92	-13.4	266.8	129.8	118.5	11.32	11.464			
1,800.0	1,762.9	1,790.8	1,762.9	6.6	6.0	-112.87	-15.5	287.4	139.7	127.6	12.14	11.512			
1,900.0	1,859.8	1,890.3	1,860.2	7.0	6.4	-113.68	-17.6	308.1	149.7	136.7	12.95	11.558			
2,000.0	1,956.7	1,989.8	1,957.5	7.5	6.8	-114.40	-19.7	328.7	159.7	145.9	13.77	11.601			
2,100.0	2,053.5	2,089.3	2,054.8	8.0	7.2	-115.03	-21.8	349.3	169.7	155.1	14.58	11.643			
2,200.0	2,150.4	2,188.7	2,152.1	8.5	7.6	-115.59	-24.0	369.9	179.8	164.4	15.39	11.682			
2,300.0	2,247.2	2,288.2	2,249.4	8.9	8.0	-116.09	-26.1	390.5	189.8	173.6	16.20	11.718			
2,400.0	2,344.1	2,387.7	2,346.7	9.4	8.4	-116.54	-28.2	411.1	199.9	182.9	17.01	11.753			
2,500.0	2,441.0	2,487.2	2,444.0	9.9	8.8	-116.94	-30.3	431.7	210.0	192.2	17.82	11.785			
2,600.0	2,537.8	2,586.7	2,541.3	10.4	9.2	-117.31	-32.4	452.3	220.1	201.4	18.62	11.816			
2,700.0	2,634.7	2,686.1	2,638.6	10.9	9.6	-117.65	-34.6	472.9	230.2	210.7	19.43	11.844			
2,800.0	2,731.5	2,785.6	2,735.9	11.3	10.1	-117.96	-36.7	493.5	240.3	220.0	20.24	11.871			
2,900.0	2,828.4	2,885.1	2,833.2	11.8	10.5	-118.24	-38.8	514.1	250.4	229.3	21.05	11.897			
3,000.0	2,925.3	2,984.6	2,930.5	12.3	10.9	-118.50	-40.9	534.7	260.5	238.7	21.85	11.921			
3,100.0	3,022.1	3,084.1	3,027.8	12.8	11.3	-118.75	-43.0	555.3	270.6	248.0	22.66	11.943			
3,200.0	3,119.0	3,183.5	3,125.1	13.2	11.7	-118.97	-45.2	576.0	280.8	257.3	23.47	11.965			
3,300.0	3,215.9	3,283.0	3,222.4	13.7	12.1	-119.18	-47.3	596.6	290.9	266.6	24.27	11.985			
3,400.0	3,312.7	3,382.5	3,319.7	14.2	12.5	-119.38	-49.4	617.2	301.0	275.9	25.08	12.004			
3,500.0	3,409.6	3,482.0	3,417.0	14.7	12.9	-119.56	-51.5	637.8	311.2	285.3	25.88	12.022			
3,600.0	3,506.4	3,581.5	3,514.3	15.1	13.3	-119.73	-53.6	658.4	321.3	294.6	26.69	12.040			
3,700.0	3,603.3	3,680.9	3,611.6	15.6	13.7	-119.89	-55.8	679.0	331.4	304.0	27.49	12.056			
3,800.0	3,700.2	3,780.4	3,708.9	16.1	14.1	-120.04	-57.9	699.6	341.6	313.3	28.30	12.072			
3,900.0	3,797.0	3,879.9	3,806.2	16.6	14.5	-120.18	-60.0	720.2	351.7	322.6	29.10	12.087			
4,000.0	3,893.9	3,979.4	3,903.5	17.0	14.9	-120.32	-62.1	740.8	361.9	332.0	29.91	12.101			
4,100.0	3,990.7	4,078.9	4,000.8	17.5	15.4	-120.44	-64.2	761.4	372.0	341.3	30.71	12.115			
4,200.0	4,087.6	4,178.3	4,098.1	18.0	15.8	-120.56	-66.4	782.0	382.2	350.7	31.51	12.128			
4,300.0	4,184.5	4,277.8	4,195.4	18.5	16.2	-120.68	-68.5	802.6	392.4	360.0	32.32	12.140			
4,400.0	4,281.3	4,377.3	4,292.7	18.9	16.6	-120.78	-70.6	823.2	402.5	369.4	33.12	12.152			
4,500.0	4,378.2	4,476.8	4,390.0	19.4	17.0	-120.89	-72.7	843.9	412.7	378.7	33.93	12.163			
4,600.0	4,475.0	4,576.3	4,487.3	19.9	17.4	-120.99	-74.8	864.5	422.8	388.1	34.73	12.174			
4,700.0	4,572.2	4,675.8	4,584.6	20.3	17.8	-121.07	-77.0	885.1	432.3	396.8	35.53	12.169			
4,800.0	4,670.2	4,774.1	4,680.9	20.7	18.2	-120.86	-79.0	904.7	440.1	403.8	36.28	12.130			
4,900.0	4,768.7	4,871.9	4,777.3	21.0	18.5	-120.66	-80.7	921.2	446.6	409.6	36.93	12.093			
5,000.0	4,867.9	4,969.9	4,874.4	21.3	18.7	-120.50	-82.0	934.4	451.7	414.2	37.46	12.057			

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 19-16CC
Project:	Mamm Creek	TVD Reference:	KB = 24' @ 6533.0ft (Original Well Elev)
Reference Site:	O19EB Pad	MD Reference:	KB = 24' @ 6533.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Shideler 19-16CC	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 #2	Offset TVD Reference:	Offset Datum

Offset Design O19EB Pad - Shideler 19-16C - OH - Plan #2													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor		
5,100.0	4,967.4	5,067.9	4,971.9	21.5	18.9	-120.36	-83.1	944.3	455.4	417.6	37.89	12.020		
5,200.0	5,067.2	5,166.1	5,069.8	21.6	19.1	-120.25	-83.7	950.9	457.9	419.6	38.21	11.983		
5,300.0	5,167.1	5,264.3	5,168.0	21.7	19.2	-120.17	-84.1	954.1	458.9	420.5	38.42	11.943		
5,400.0	5,267.1	5,363.4	5,267.1	21.8	19.3	-0.64	-84.1	954.5	459.0	420.4	38.60	11.891		
5,500.0	5,367.1	5,463.4	5,367.1	21.9	19.4	-0.64	-84.1	954.5	459.0	420.2	38.77	11.839		
5,600.0	5,467.1	5,563.4	5,467.1	21.9	19.5	-0.64	-84.1	954.5	459.0	420.0	38.94	11.786		
5,700.0	5,567.1	5,663.4	5,567.1	22.0	19.5	-0.64	-84.1	954.5	459.0	419.8	39.12	11.734		
5,800.0	5,667.1	5,763.4	5,667.1	22.1	19.6	-0.64	-84.1	954.5	459.0	419.7	39.29	11.681		
5,900.0	5,767.1	5,863.4	5,767.1	22.2	19.7	-0.64	-84.1	954.5	459.0	419.5	39.47	11.627		
6,000.0	5,867.1	5,963.4	5,867.1	22.2	19.8	-0.64	-84.1	954.5	459.0	419.3	39.65	11.574		
6,100.0	5,967.1	6,063.4	5,967.1	22.3	19.9	-0.64	-84.1	954.5	459.0	419.1	39.84	11.521		
6,200.0	6,067.1	6,163.4	6,067.1	22.4	20.0	-0.64	-84.1	954.5	459.0	418.9	40.02	11.467		
6,300.0	6,167.1	6,263.4	6,167.1	22.5	20.1	-0.64	-84.1	954.5	459.0	418.7	40.21	11.413		
6,400.0	6,267.1	6,363.4	6,267.1	22.6	20.2	-0.64	-84.1	954.5	459.0	418.6	40.40	11.359		
6,500.0	6,367.1	6,463.4	6,367.1	22.7	20.3	-0.64	-84.1	954.5	459.0	418.4	40.60	11.305		
6,600.0	6,467.1	6,563.4	6,467.1	22.8	20.4	-0.64	-84.1	954.5	459.0	418.2	40.79	11.251		
6,700.0	6,567.1	6,663.4	6,567.1	22.8	20.5	-0.64	-84.1	954.5	459.0	418.0	40.99	11.197		
6,800.0	6,667.1	6,763.4	6,667.1	22.9	20.6	-0.64	-84.1	954.5	459.0	417.8	41.19	11.143		
6,900.0	6,767.1	6,863.4	6,767.1	23.0	20.7	-0.64	-84.1	954.5	459.0	417.6	41.39	11.089		
7,000.0	6,867.1	6,963.4	6,867.1	23.1	20.8	-0.64	-84.1	954.5	459.0	417.4	41.59	11.035		
7,100.0	6,967.1	7,063.4	6,967.1	23.2	20.9	-0.64	-84.1	954.5	459.0	417.2	41.80	10.981		
7,200.0	7,067.1	7,163.4	7,067.1	23.3	21.0	-0.64	-84.1	954.5	459.0	417.0	42.00	10.927		
7,300.0	7,167.1	7,263.4	7,167.1	23.4	21.1	-0.64	-84.1	954.5	459.0	416.8	42.21	10.873		
7,400.0	7,267.1	7,363.4	7,267.1	23.5	21.2	-0.64	-84.1	954.5	459.0	416.5	42.42	10.819		
7,500.0	7,367.1	7,463.4	7,367.1	23.6	21.3	-0.64	-84.1	954.5	459.0	416.3	42.63	10.765		
7,600.0	7,467.1	7,563.4	7,467.1	23.7	21.4	-0.64	-84.1	954.5	459.0	416.1	42.85	10.711		
7,688.9	7,556.0	7,652.3	7,556.0	23.8	21.5	-0.64	-84.1	954.5	459.0	415.9	43.04	10.664 SF		

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Shideler 19-16CC
Project:	Mamm Creek	TVD Reference:	KB = 24' @ 6533.0ft (Original Well Elev)
Reference Site:	O19EB Pad	MD Reference:	KB = 24' @ 6533.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Shideler 19-16CC	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 #2	Offset TVD Reference:	Offset Datum

Offset Design O19EB Pad - Shideler 30-1B - OH - Plan #2													Offset Site Error:	0.0 ft
Survey Program: O-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	-143.74	-13.5	-9.9	16.7					
100.0	100.0	100.0	100.0	0.1	0.1	-143.74	-13.5	-9.9	16.7	16.5	0.27	63.017		
200.0	200.0	200.0	200.0	0.3	0.3	-143.74	-13.5	-9.9	16.7	16.1	0.61	27.212		
300.0	300.0	300.0	300.0	0.5	0.5	-143.74	-13.5	-9.9	16.7	15.8	0.96	17.353 CC, ES		
400.0	400.0	399.9	399.9	0.7	0.7	100.52	-14.5	-8.8	17.2	15.9	1.32	13.046		
500.0	499.6	499.9	499.7	0.9	0.9	104.05	-18.9	-4.0	19.0	17.3	1.73	10.986		
600.0	598.8	599.9	599.0	1.1	1.1	106.37	-26.9	4.6	22.0	19.8	2.24	9.819		
700.0	697.1	699.9	697.5	1.5	1.4	107.56	-38.3	17.1	26.2	23.3	2.89	9.051		
800.0	794.3	799.9	795.0	1.9	1.8	107.77	-53.3	33.3	31.5	27.8	3.71	8.505		
900.0	891.2	899.8	891.1	2.4	2.3	102.39	-71.6	53.2	37.0	32.4	4.67	7.936		
1,000.0	988.1	999.4	986.0	2.8	2.9	93.73	-92.3	75.6	43.2	37.6	5.66	7.633		
1,100.0	1,084.9	1,099.0	1,080.8	3.3	3.4	87.22	-113.0	98.1	50.2	43.6	6.61	7.592 SF		
1,200.0	1,181.8	1,198.6	1,175.6	3.7	4.0	82.33	-133.7	120.6	57.6	50.1	7.52	7.668		
1,300.0	1,278.6	1,298.2	1,270.4	4.2	4.5	78.58	-154.3	143.0	65.4	57.0	8.39	7.794		
1,400.0	1,375.5	1,397.9	1,365.3	4.7	5.1	75.64	-175.0	165.5	73.4	64.1	9.24	7.938		
1,500.0	1,472.4	1,497.5	1,460.1	5.2	5.7	73.27	-195.7	187.9	81.5	71.4	10.08	8.085		
1,600.0	1,569.2	1,597.1	1,554.9	5.6	6.2	71.34	-216.4	210.4	89.7	78.8	10.91	8.228		
1,700.0	1,666.1	1,696.7	1,649.7	6.1	6.8	69.73	-237.1	232.9	98.1	86.3	11.73	8.364		
1,800.0	1,762.9	1,796.3	1,744.5	6.6	7.4	68.38	-257.8	255.3	106.5	93.9	12.54	8.491		
1,900.0	1,859.8	1,895.9	1,839.4	7.0	7.9	67.23	-278.5	277.8	114.9	101.6	13.35	8.609		
2,000.0	1,956.7	1,995.6	1,934.2	7.5	8.5	66.23	-299.2	300.3	123.4	109.2	14.15	8.718		
2,100.0	2,053.5	2,095.2	2,029.0	8.0	9.1	65.36	-319.9	322.7	131.9	117.0	14.96	8.819		
2,200.0	2,150.4	2,194.8	2,123.8	8.5	9.6	64.60	-340.6	345.2	140.5	124.7	15.76	8.913		
2,300.0	2,247.2	2,294.4	2,218.6	8.9	10.2	63.92	-361.3	367.7	149.0	132.5	16.56	9.000		
2,400.0	2,344.1	2,394.0	2,313.5	9.4	10.8	63.32	-382.0	390.1	157.6	140.3	17.36	9.081		
2,500.0	2,441.0	2,493.6	2,408.3	9.9	11.4	62.78	-402.7	412.6	166.2	148.1	18.15	9.156		
2,600.0	2,537.8	2,593.3	2,503.1	10.4	11.9	62.29	-423.4	435.0	174.8	155.9	18.95	9.226		
2,700.0	2,634.7	2,692.9	2,597.9	10.9	12.5	61.85	-444.1	457.5	183.5	163.7	19.74	9.292		
2,800.0	2,731.5	2,792.5	2,692.7	11.3	13.1	61.45	-464.8	480.0	192.1	171.6	20.54	9.353		
2,900.0	2,828.4	2,892.1	2,787.6	11.8	13.6	61.08	-485.5	502.4	200.7	179.4	21.33	9.410		
3,000.0	2,925.3	2,991.7	2,882.4	12.3	14.2	60.75	-506.2	524.9	209.4	187.3	22.13	9.463		
3,100.0	3,022.1	3,091.4	2,977.2	12.8	14.8	60.44	-526.9	547.4	218.0	195.1	22.92	9.514		
3,200.0	3,119.0	3,191.0	3,072.0	13.2	15.4	60.15	-547.6	569.8	226.7	203.0	23.71	9.561		
3,300.0	3,215.9	3,290.6	3,166.8	13.7	15.9	59.89	-568.2	592.3	235.4	210.9	24.50	9.606		
3,400.0	3,312.7	3,390.2	3,261.7	14.2	16.5	59.64	-588.9	614.8	244.0	218.8	25.30	9.648		
3,500.0	3,409.6	3,489.8	3,356.5	14.7	17.1	59.41	-609.6	637.2	252.7	226.6	26.09	9.688		
3,600.0	3,506.4	3,589.4	3,451.3	15.1	17.7	59.20	-630.3	659.7	261.4	234.5	26.88	9.725		
3,700.0	3,603.3	3,689.1	3,546.1	15.6	18.2	59.00	-651.0	682.2	270.1	242.4	27.67	9.761		
3,800.0	3,700.2	3,788.7	3,640.9	16.1	18.8	58.81	-671.7	704.6	278.8	250.3	28.46	9.795		
3,900.0	3,797.0	3,888.3	3,735.8	16.6	19.4	58.63	-692.4	727.1	287.5	258.2	29.25	9.827		
4,000.0	3,893.9	3,987.9	3,830.6	17.0	19.9	58.47	-713.1	749.5	296.2	266.1	30.04	9.858		
4,100.0	3,990.7	4,087.5	3,925.4	17.5	20.5	58.31	-733.8	772.0	304.9	274.0	30.83	9.887		
4,200.0	4,087.6	4,187.2	4,020.2	18.0	21.1	58.16	-754.5	794.5	313.6	281.9	31.62	9.915		
4,300.0	4,184.5	4,286.8	4,115.0	18.5	21.7	58.02	-775.2	816.9	322.3	289.8	32.41	9.942		
4,400.0	4,281.3	4,386.4	4,209.9	18.9	22.2	57.89	-795.9	839.4	331.0	297.7	33.20	9.967		
4,500.0	4,378.2	4,486.0	4,304.7	19.4	22.8	57.76	-816.6	861.9	339.7	305.7	33.99	9.992		
4,600.0	4,475.0	4,588.2	4,402.0	19.9	23.4	57.66	-837.7	884.8	348.3	313.5	34.80	10.009		
4,700.0	4,572.2	4,697.4	4,506.9	20.3	23.9	57.81	-858.3	907.2	356.6	320.0	35.62	9.983		
4,800.0	4,670.2	4,806.9	4,613.1	20.7	24.4	57.92	-876.2	926.6	362.1	325.8	36.33	9.968		
4,900.0	4,768.7	4,916.6	4,720.5	21.0	24.8	57.97	-891.4	943.1	367.8	330.8	36.92	9.961		
5,000.0	4,867.9	5,026.5	4,828.9	21.3	25.1	57.96	-903.8	956.6	372.6	335.2	37.40	9.962		
5,100.0	4,967.4	5,136.7	4,938.1	21.5	25.4	57.90	-913.4	967.0	376.5	338.7	37.76	9.970		

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 19-16CC
Project:	Mamm Creek	TVD Reference:	KB = 24' @ 6533.0ft (Original Well Elev)
Reference Site:	O19EB Pad	MD Reference:	KB = 24' @ 6533.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Shideler 19-16CC	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 #2	Offset TVD Reference:	Offset Datum

Offset Design O19EB Pad - Shideler 30-1B - OH - Plan #2												Offset Site Error:	0.0 ft
Survey Program: 0-MWD												Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance				Separation Factor	Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)			
5,200.0	5,067.2	5,246.9	5,047.9	21.6	25.6	57.78	-920.2	974.3	379.5	341.5	38.01	9.984	
5,300.0	5,167.1	5,357.4	5,158.2	21.7	25.7	57.62	-924.1	978.5	381.7	343.6	38.16	10.004	
5,400.0	5,267.1	5,466.3	5,267.1	21.8	25.8	176.99	-925.1	979.7	382.6	344.3	38.28	9.995	
5,500.0	5,367.1	5,566.3	5,367.1	21.9	25.9	176.99	-925.1	979.7	382.6	344.2	38.46	9.949	
5,600.0	5,467.1	5,666.3	5,467.1	21.9	25.9	176.99	-925.1	979.7	382.6	344.0	38.63	9.904	
5,700.0	5,567.1	5,766.3	5,567.1	22.0	26.0	176.99	-925.1	979.7	382.6	343.8	38.81	9.859	
5,800.0	5,667.1	5,866.3	5,667.1	22.1	26.1	176.99	-925.1	979.7	382.6	343.6	38.99	9.813	
5,900.0	5,767.1	5,966.3	5,767.1	22.2	26.2	176.99	-925.1	979.7	382.6	343.4	39.17	9.767	
6,000.0	5,867.1	6,066.3	5,867.1	22.2	26.2	176.99	-925.1	979.7	382.6	343.3	39.36	9.721	
6,100.0	5,967.1	6,166.3	5,967.1	22.3	26.3	176.99	-925.1	979.7	382.6	343.1	39.54	9.675	
6,200.0	6,067.1	6,266.3	6,067.1	22.4	26.4	176.99	-925.1	979.7	382.6	342.9	39.73	9.629	
6,300.0	6,167.1	6,366.3	6,167.1	22.5	26.4	176.99	-925.1	979.7	382.6	342.7	39.93	9.583	
6,400.0	6,267.1	6,466.3	6,267.1	22.6	26.5	176.99	-925.1	979.7	382.6	342.5	40.12	9.537	
6,500.0	6,367.1	6,566.3	6,367.1	22.7	26.6	176.99	-925.1	979.7	382.6	342.3	40.31	9.491	
6,600.0	6,467.1	6,666.3	6,467.1	22.8	26.7	176.99	-925.1	979.7	382.6	342.1	40.51	9.444	
6,700.0	6,567.1	6,766.3	6,567.1	22.8	26.7	176.99	-925.1	979.7	382.6	341.9	40.71	9.398	
6,800.0	6,667.1	6,866.3	6,667.1	22.9	26.8	176.99	-925.1	979.7	382.6	341.7	40.91	9.352	
6,900.0	6,767.1	6,966.3	6,767.1	23.0	26.9	176.99	-925.1	979.7	382.6	341.5	41.12	9.305	
7,000.0	6,867.1	7,066.3	6,867.1	23.1	27.0	176.99	-925.1	979.7	382.6	341.3	41.32	9.259	
7,100.0	6,967.1	7,166.3	6,967.1	23.2	27.1	176.99	-925.1	979.7	382.6	341.1	41.53	9.213	
7,200.0	7,067.1	7,266.3	7,067.1	23.3	27.1	176.99	-925.1	979.7	382.6	340.9	41.74	9.166	
7,300.0	7,167.1	7,366.3	7,167.1	23.4	27.2	176.99	-925.1	979.7	382.6	340.7	41.95	9.120	
7,400.0	7,267.1	7,466.3	7,267.1	23.5	27.3	176.99	-925.1	979.7	382.6	340.4	42.17	9.074	
7,500.0	7,367.1	7,566.3	7,367.1	23.6	27.4	176.99	-925.1	979.7	382.6	340.2	42.38	9.028	
7,600.0	7,467.1	7,666.3	7,467.1	23.7	27.5	176.99	-925.1	979.7	382.6	340.0	42.60	8.982	
7,651.7	7,518.8	7,718.0	7,518.8	23.7	27.5	176.99	-925.1	979.7	382.6	339.9	42.71	8.958	
7,688.9	7,556.0	7,737.2	7,538.0	23.8	27.5	176.99	-925.1	979.7	383.0	340.3	42.77	8.955	

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Shideler 19-16CC
Project:	Mamm Creek	TVD Reference:	KB = 24' @ 6533.0ft (Original Well Elev)
Reference Site:	O19EB Pad	MD Reference:	KB = 24' @ 6533.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Shideler 19-16CC	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 #2	Offset TVD Reference:	Offset Datum

Offset Design O19EB Pad - Shideler 30-1C - OH - Plan #2													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	-125.83	-15.3	-21.2	26.1					
100.0	100.0	100.0	100.0	0.1	0.1	-125.83	-15.3	-21.2	26.1	25.9	0.27	98.503		
200.0	200.0	200.0	200.0	0.3	0.3	-125.83	-15.3	-21.2	26.1	25.5	0.61	42.535 CC		
300.0	300.0	299.8	299.7	0.5	0.5	-131.46	-17.5	-19.8	26.5	25.5	0.97	27.396 ES		
400.0	400.0	399.2	398.9	0.7	0.7	98.72	-24.2	-15.8	29.2	27.9	1.37	21.414		
500.0	499.6	498.3	497.1	0.9	1.0	91.41	-35.2	-9.2	35.3	33.5	1.83	19.287		
600.0	598.8	596.8	594.0	1.1	1.3	87.33	-50.5	-0.1	44.3	41.9	2.40	18.427		
700.0	697.1	694.7	689.2	1.5	1.8	85.47	-69.9	11.6	55.8	52.7	3.11	17.941		
800.0	794.3	792.0	782.6	1.9	2.3	84.90	-93.4	25.6	69.7	65.7	3.96	17.607 SF		
900.0	891.2	888.4	873.6	2.4	2.9	83.08	-120.5	41.9	86.3	81.4	4.86	17.767		
1,000.0	988.1	983.4	961.6	2.8	3.6	79.75	-151.2	60.3	105.9	100.2	5.74	18.444		
1,100.0	1,084.9	1,076.6	1,046.1	3.3	4.3	75.89	-184.8	80.5	129.1	122.5	6.59	19.573		
1,200.0	1,181.8	1,171.5	1,130.7	3.7	5.1	72.21	-221.7	102.6	155.1	147.7	7.39	20.994		
1,300.0	1,278.6	1,267.6	1,216.3	4.2	5.9	69.50	-259.2	125.1	181.7	173.5	8.17	22.236		
1,400.0	1,375.5	1,363.7	1,301.8	4.7	6.7	67.49	-296.7	147.6	208.6	199.6	8.95	23.307		
1,500.0	1,472.4	1,459.8	1,387.4	5.2	7.5	65.94	-334.2	170.1	235.7	226.0	9.73	24.233		
1,600.0	1,569.2	1,555.9	1,473.0	5.6	8.2	64.71	-371.8	192.6	262.9	252.4	10.50	25.038		
1,700.0	1,666.1	1,651.9	1,558.5	6.1	9.0	63.71	-409.3	215.1	290.2	278.9	11.27	25.743		
1,800.0	1,762.9	1,748.0	1,644.1	6.6	9.8	62.88	-446.8	237.6	317.5	305.5	12.04	26.364		
1,900.0	1,859.8	1,844.1	1,729.6	7.0	10.6	62.18	-484.3	260.1	345.0	332.1	12.82	26.915		
2,000.0	1,956.7	1,940.2	1,815.2	7.5	11.4	61.59	-521.8	282.6	372.4	358.8	13.59	27.407		
2,100.0	2,053.5	2,036.3	1,900.8	8.0	12.2	61.07	-559.3	305.1	399.9	385.5	14.36	27.848		
2,200.0	2,150.4	2,132.4	1,986.3	8.5	13.0	60.62	-596.8	327.6	427.4	412.3	15.13	28.246		
2,300.0	2,247.2	2,228.5	2,071.9	8.9	13.8	60.23	-634.3	350.0	454.9	439.0	15.90	28.607		
2,400.0	2,344.1	2,324.6	2,157.4	9.4	14.6	59.88	-671.8	372.5	482.5	465.8	16.68	28.935		

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Shideler 19-16CC
Project:	Mamm Creek	TVD Reference:	KB = 24' @ 6533.0ft (Original Well Elev)
Reference Site:	O19EB Pad	MD Reference:	KB = 24' @ 6533.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Shideler 19-16CC	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 #2	Offset TVD Reference:	Offset Datum

Offset Design O19EB Pad - Shideler 30-2C - OH - Plan #2													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	-143.56	-53.2	-39.3	66.1					
100.0	100.0	100.0	100.0	0.1	0.1	-143.56	-53.2	-39.3	66.1	65.8	0.27	249.173		
200.0	200.0	200.0	200.0	0.3	0.3	-143.56	-53.2	-39.3	66.1	65.5	0.61	107.598 CC, ES		
300.0	300.0	296.9	296.9	0.5	0.5	-144.48	-55.6	-39.7	68.4	67.4	0.97	70.770		
400.0	400.0	393.4	393.0	0.7	0.7	95.32	-62.8	-41.0	75.5	74.2	1.32	57.351		
500.0	499.6	488.9	487.8	0.9	1.0	96.53	-74.7	-43.1	87.7	86.0	1.72	51.076		
600.0	598.8	583.1	580.5	1.1	1.3	98.74	-90.9	-45.9	105.0	102.8	2.20	47.801		
700.0	697.1	675.5	670.6	1.5	1.7	101.16	-111.2	-49.5	127.6	124.8	2.78	45.834		
800.0	794.3	765.7	757.5	1.9	2.2	103.52	-135.1	-53.7	155.4	151.9	3.48	44.667		
900.0	891.2	854.0	841.3	2.4	2.7	105.29	-162.4	-58.5	187.5	183.2	4.22	44.392		
1,000.0	988.1	946.8	928.5	2.8	3.2	106.15	-193.6	-64.1	221.8	216.8	5.01	44.290		
1,100.0	1,084.9	1,040.7	1,016.7	3.3	3.8	106.79	-225.2	-69.6	256.2	250.4	5.81	44.094		
1,200.0	1,181.8	1,134.5	1,104.9	3.7	4.4	107.28	-256.8	-75.2	290.7	284.0	6.62	43.886		
1,300.0	1,278.6	1,228.4	1,193.1	4.2	4.9	107.66	-288.4	-80.8	325.1	317.7	7.44	43.688		
1,400.0	1,375.5	1,322.3	1,281.3	4.7	5.5	107.97	-320.0	-86.4	359.6	351.3	8.27	43.507		
1,500.0	1,472.4	1,416.1	1,369.5	5.2	6.1	108.23	-351.7	-92.0	394.1	385.0	9.09	43.344		
1,600.0	1,569.2	1,510.0	1,457.7	5.6	6.7	108.44	-383.3	-97.6	428.5	418.6	9.92	43.197		
1,700.0	1,666.1	1,603.8	1,545.9	6.1	7.3	108.63	-414.9	-103.1	463.0	452.3	10.75	43.066		
1,800.0	1,762.9	1,697.7	1,634.1	6.6	7.8	108.78	-446.5	-108.7	497.5	485.9	11.58	42.949 SF		

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Shideler 19-16CC
Project:	Mamm Creek	TVD Reference:	KB = 24' @ 6533.0ft (Original Well Elev)
Reference Site:	O19EB Pad	MD Reference:	KB = 24' @ 6533.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Shideler 19-16CC	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 #2	Offset TVD Reference:	Offset Datum

Offset Design O19EB Pad - Shideler 30-3A - OH - Plan #2													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance					Separation Factor	Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis			
0.0	0.0	0.0	0.0	0.0	0.0	-137.41	-55.0	-50.6	74.7					
100.0	100.0	100.0	100.0	0.1	0.1	-137.41	-55.0	-50.6	74.7	74.4	0.27	281.617		
200.0	200.0	200.0	200.0	0.3	0.3	-137.41	-55.0	-50.6	74.7	74.1	0.61	121.608 CC, ES		
300.0	300.0	297.2	297.2	0.5	0.5	-137.58	-56.1	-51.3	76.1	75.1	0.96	79.209		
400.0	400.0	393.0	392.8	0.7	0.7	103.69	-61.2	-54.5	82.9	81.6	1.31	63.395		
500.0	499.6	487.7	486.9	0.9	0.9	106.48	-70.2	-60.3	96.0	94.3	1.69	56.882		
600.0	598.8	581.5	579.5	1.1	1.2	110.07	-82.9	-68.4	115.5	113.4	2.12	54.458		
700.0	697.1	678.1	674.6	1.5	1.5	114.24	-97.2	-77.5	139.1	136.5	2.63	52.794		
800.0	794.3	773.6	768.6	1.9	1.8	118.68	-111.4	-86.6	165.7	162.5	3.21	51.664		
900.0	891.2	868.7	862.2	2.4	2.2	122.74	-125.5	-95.6	194.0	190.2	3.79	51.132		
1,000.0	988.1	963.9	955.8	2.8	2.5	125.77	-139.6	-104.6	223.0	218.7	4.39	50.853		
1,100.0	1,084.9	1,059.0	1,049.5	3.3	2.8	128.10	-153.8	-113.6	252.5	247.5	4.98	50.721		
1,200.0	1,181.8	1,154.1	1,143.1	3.7	3.2	129.94	-167.9	-122.7	282.3	276.7	5.57	50.673 SF		
1,300.0	1,278.6	1,249.2	1,236.7	4.2	3.5	131.44	-182.0	-131.7	312.2	306.1	6.16	50.674		
1,400.0	1,375.5	1,344.3	1,330.3	4.7	3.8	132.67	-196.1	-140.7	342.4	335.6	6.75	50.704		
1,500.0	1,472.4	1,439.4	1,424.0	5.2	4.2	133.71	-210.2	-149.7	372.6	365.3	7.34	50.750		
1,600.0	1,569.2	1,534.5	1,517.6	5.6	4.5	134.59	-224.3	-158.7	403.0	395.1	7.93	50.805		
1,700.0	1,666.1	1,629.6	1,611.2	6.1	4.8	135.34	-238.5	-167.7	433.4	424.9	8.52	50.865		
1,800.0	1,762.9	1,724.8	1,704.8	6.6	5.2	136.00	-252.6	-176.8	463.9	454.8	9.11	50.926		
1,900.0	1,859.8	1,819.9	1,798.5	7.0	5.5	136.58	-266.7	-185.8	494.4	484.7	9.70	50.987		

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Shideler 19-16CC
Project:	Mamm Creek	TVD Reference:	KB = 24' @ 6533.0ft (Original Well Elev)
Reference Site:	O19EB Pad	MD Reference:	KB = 24' @ 6533.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Shideler 19-16CC	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 #2	Offset TVD Reference:	Offset Datum

Offset Design O19EB Pad - Shideler 30-3B - OH - Plan #2													Offset Site Error: 0.0 ft
Survey Program: 0-MWD													Offset Well Error: 0.0 ft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	-135.84	-41.9	-40.7	58.4				
100.0	100.0	100.0	100.0	0.1	0.1	-135.84	-41.9	-40.7	58.4	58.1	0.27	220.090	
200.0	200.0	200.0	200.0	0.3	0.3	-135.84	-41.9	-40.7	58.4	57.8	0.61	95.039 CC, ES	
300.0	300.0	297.0	296.9	0.5	0.5	-135.54	-43.4	-42.6	60.9	59.9	0.96	63.214	
400.0	400.0	393.3	393.0	0.7	0.7	107.50	-48.0	-48.3	69.2	67.9	1.31	52.940	
500.0	499.6	488.0	486.9	0.9	1.0	112.60	-55.4	-57.7	84.5	82.8	1.68	50.361 SF	
600.0	598.8	580.2	577.7	1.1	1.3	117.96	-65.3	-70.2	107.5	105.4	2.09	51.527	
700.0	697.1	669.0	664.3	1.5	1.7	122.40	-77.5	-85.6	138.5	135.9	2.54	54.419	
800.0	794.3	753.7	746.0	1.9	2.1	125.87	-91.4	-103.1	177.1	174.1	3.05	58.059	
900.0	891.2	835.0	823.4	2.4	2.6	128.62	-106.9	-122.7	221.0	217.4	3.58	61.772	
1,000.0	988.1	913.3	896.9	2.8	3.1	130.17	-123.7	-143.9	268.7	264.6	4.12	65.243	
1,100.0	1,084.9	994.2	971.7	3.3	3.6	131.10	-142.7	-167.9	319.4	314.7	4.68	68.206	
1,200.0	1,181.8	1,080.1	1,051.0	3.7	4.3	131.79	-163.2	-193.7	370.5	365.2	5.27	70.307	
1,300.0	1,278.6	1,166.0	1,130.3	4.2	4.9	132.31	-183.6	-219.5	421.7	415.8	5.86	71.906	
1,400.0	1,375.5	1,251.8	1,209.6	4.7	5.5	132.72	-204.1	-245.3	472.8	466.4	6.46	73.152	

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Shideler 19-16CC
Project:	Mamm Creek	TVD Reference:	KB = 24' @ 6533.0ft (Original Well Elev)
Reference Site:	O19EB Pad	MD Reference:	KB = 24' @ 6533.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Shideler 19-16CC	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 #2	Offset TVD Reference:	Offset Datum

Offset Design O19EB Pad - Shideler 30-4A - OH - Plan #2												Offset Site Error:	0.0 ft
Survey Program: 0-MWD												Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	-99.16	-1.8	-11.3	11.4				
100.0	100.0	100.0	100.0	0.1	0.1	-99.16	-1.8	-11.3	11.4	11.2	0.27	43.142	
200.0	200.0	200.0	200.0	0.3	0.3	-99.16	-1.8	-11.3	11.4	10.8	0.61	18.629 CC, ES	
300.0	300.0	299.5	299.5	0.5	0.5	-100.28	-2.3	-12.7	12.9	11.9	0.96	13.357 SF	
400.0	400.0	398.3	398.1	0.7	0.7	141.87	-4.4	-18.7	21.3	20.0	1.31	16.242	
500.0	499.6	495.2	494.3	0.9	0.9	145.52	-8.1	-29.3	38.9	37.2	1.67	23.298	
600.0	598.8	589.1	586.9	1.1	1.3	147.88	-13.2	-44.0	65.6	63.5	2.04	32.086	
700.0	697.1	678.9	674.7	1.5	1.6	149.19	-19.4	-62.0	100.9	98.4	2.44	41.418	
800.0	794.3	763.9	756.7	1.9	2.1	149.99	-26.6	-82.6	144.3	141.4	2.85	50.628	
900.0	891.2	844.7	833.9	2.4	2.5	150.55	-34.5	-105.5	192.6	189.3	3.29	58.580	
1,000.0	988.1	922.1	906.7	2.8	3.0	150.56	-43.1	-130.1	244.3	240.6	3.73	65.411	
1,100.0	1,084.9	1,000.0	978.9	3.3	3.6	150.30	-52.7	-157.8	299.1	294.9	4.20	71.273	
1,200.0	1,181.8	1,067.2	1,040.2	3.7	4.1	149.96	-61.8	-183.9	356.8	352.2	4.64	76.835	
1,300.0	1,278.6	1,148.0	1,113.3	4.2	4.7	149.59	-73.0	-216.2	415.8	410.6	5.13	81.037	
1,400.0	1,375.5	1,228.7	1,186.5	4.7	5.4	149.31	-84.2	-248.6	474.7	469.1	5.62	84.478	

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Shideler 19-16CC
Project:	Mamm Creek	TVD Reference:	KB = 24' @ 6533.0ft (Original Well Elev)
Reference Site:	O19EB Pad	MD Reference:	KB = 24' @ 6533.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Shideler 19-16CC	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 #2	Offset TVD Reference:	Offset Datum

Offset Design O19EB Pad - Shideler 30-7A - OH - Plan #2													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	-143.75	-40.1	-29.4	49.7					
100.0	100.0	100.0	100.0	0.1	0.1	-143.75	-40.1	-29.4	49.7	49.4	0.27	187.275		
200.0	200.0	200.0	200.0	0.3	0.3	-143.75	-40.1	-29.4	49.7	49.1	0.61	80.869		
233.7	233.7	233.7	233.7	0.4	0.4	-143.75	-40.1	-29.4	49.7	49.0	0.73	67.877 CC, ES		
300.0	300.0	299.1	299.1	0.5	0.5	-144.29	-40.7	-29.2	50.1	49.1	0.96	52.065		
400.0	400.0	397.3	397.1	0.7	0.7	94.80	-45.6	-28.1	53.8	52.5	1.32	40.655		
500.0	499.6	495.0	494.3	0.9	0.9	94.87	-55.4	-26.0	61.5	59.7	1.74	35.306		
600.0	598.8	592.0	590.2	1.1	1.2	95.89	-69.9	-22.7	73.1	70.8	2.26	32.368		
700.0	697.1	688.1	684.3	1.5	1.6	97.29	-88.9	-18.5	88.5	85.6	2.90	30.507		
800.0	794.3	783.2	776.3	1.9	2.0	98.78	-112.2	-13.3	107.9	104.2	3.68	29.309		
900.0	891.2	877.0	865.8	2.4	2.5	99.14	-139.6	-7.2	130.5	125.9	4.53	28.802		
1,000.0	988.1	969.5	952.6	2.8	3.1	98.03	-170.8	-0.2	156.0	150.5	5.42	28.785 SF		
1,100.0	1,084.9	1,060.0	1,036.0	3.3	3.8	96.13	-205.2	7.5	184.4	178.1	6.32	29.164		
1,200.0	1,181.8	1,148.5	1,115.7	3.7	4.5	93.88	-242.5	15.8	216.0	208.8	7.23	29.885		
1,300.0	1,278.6	1,234.4	1,191.4	4.2	5.2	91.52	-282.2	24.7	250.9	242.8	8.12	30.905		
1,400.0	1,375.5	1,318.5	1,263.6	4.7	6.0	89.18	-324.2	34.1	289.1	280.1	8.98	32.192		
1,500.0	1,472.4	1,409.6	1,341.0	5.2	6.8	87.01	-371.1	44.5	328.9	319.0	9.85	33.390		
1,600.0	1,569.2	1,500.7	1,418.4	5.6	7.7	85.30	-418.0	55.0	369.0	358.3	10.71	34.456		
1,700.0	1,666.1	1,591.8	1,495.9	6.1	8.5	83.93	-464.8	65.5	409.4	397.8	11.56	35.402		
1,800.0	1,762.9	1,682.9	1,573.3	6.6	9.4	82.80	-511.7	75.9	449.9	437.5	12.41	36.245		
1,900.0	1,859.8	1,774.0	1,650.7	7.0	10.2	81.86	-558.6	86.4	490.5	477.3	13.26	36.999		

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Shideler 19-16CC
Project:	Mamm Creek	TVD Reference:	KB = 24' @ 6533.0ft (Original Well Elev)
Reference Site:	O19EB Pad	MD Reference:	KB = 24' @ 6533.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Shideler 19-16CC	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 #2	Offset TVD Reference:	Offset Datum

Offset Design O19EB Pad - Shideler 30-8B - OH - Plan #2													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	-143.36	-26.6	-19.8	33.1					
100.0	100.0	100.0	100.0	0.1	0.1	-143.36	-26.6	-19.8	33.1	32.9	0.27	124.903		
200.0	200.0	200.0	200.0	0.3	0.3	-143.36	-26.6	-19.8	33.1	32.5	0.61	53.936 CC, ES		
300.0	300.0	299.1	299.1	0.5	0.5	-147.21	-28.9	-18.6	34.4	33.4	0.97	35.490		
400.0	400.0	397.9	397.6	0.7	0.7	87.11	-35.7	-15.1	38.6	37.3	1.35	28.610		
500.0	499.6	496.3	495.1	0.9	1.0	83.72	-47.0	-9.3	46.0	44.2	1.80	25.583		
600.0	598.8	594.1	591.3	1.1	1.3	82.50	-62.7	-1.3	56.1	53.7	2.35	23.897		
700.0	697.1	691.3	685.9	1.5	1.8	82.60	-82.5	8.8	68.7	65.7	3.03	22.692		
800.0	794.3	787.6	778.4	1.9	2.3	83.39	-106.5	21.0	84.0	80.2	3.86	21.781		
900.0	891.2	883.0	868.6	2.4	2.9	82.95	-134.2	35.2	102.2	97.5	4.74	21.558 SF		
1,000.0	988.1	977.0	955.8	2.8	3.5	80.93	-165.4	51.1	123.6	118.0	5.63	21.950		
1,100.0	1,084.9	1,069.3	1,039.6	3.3	4.2	78.20	-199.7	68.7	148.4	141.9	6.50	22.824		
1,200.0	1,181.8	1,159.3	1,119.5	3.7	5.0	75.24	-236.7	87.5	176.7	169.3	7.33	24.099		
1,300.0	1,278.6	1,246.9	1,195.3	4.2	5.8	72.34	-275.8	107.5	208.7	200.6	8.12	25.704		
1,400.0	1,375.5	1,334.0	1,268.6	4.7	6.7	69.58	-317.6	128.8	244.4	235.5	8.86	27.588		
1,500.0	1,472.4	1,426.3	1,345.8	5.2	7.6	67.24	-362.7	151.9	281.4	271.8	9.59	29.339		
1,600.0	1,569.2	1,518.7	1,423.0	5.6	8.5	65.44	-407.9	174.9	318.8	308.5	10.32	30.883		
1,700.0	1,666.1	1,611.0	1,500.2	6.1	9.4	64.02	-453.0	198.0	356.4	345.3	11.05	32.247		
1,800.0	1,762.9	1,703.4	1,577.4	6.6	10.3	62.86	-498.2	221.1	394.1	382.3	11.78	33.458		
1,900.0	1,859.8	1,795.7	1,654.5	7.0	11.3	61.91	-543.3	244.1	431.9	419.4	12.51	34.538		
2,000.0	1,956.7	1,888.1	1,731.7	7.5	12.2	61.11	-588.5	267.2	469.8	456.6	13.23	35.505		

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Shideler 19-16CC
Project:	Mamm Creek	TVD Reference:	KB = 24' @ 6533.0ft (Original Well Elev)
Reference Site:	O19EB Pad	MD Reference:	KB = 24' @ 6533.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Shideler 19-16CC	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 #2	Offset TVD Reference:	Offset Datum

Offset Design O19EB Pad - Shideler Federal 19-13D - OH - Plan #2												Offset Site Error:	0.0 ft
Survey Program: 0-MWD												Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	-8.54	11.3	-1.7	11.4				
100.0	100.0	100.0	100.0	0.1	0.1	-8.54	11.3	-1.7	11.4	11.1	0.27	43.022	
200.0	200.0	200.0	200.0	0.3	0.3	-8.54	11.3	-1.7	11.4	10.8	0.61	18.578 CC	
223.9	223.9	223.9	223.9	0.3	0.3	-9.29	11.3	-1.8	11.4	10.7	0.70	16.344 ES	
300.0	300.0	299.9	299.9	0.5	0.5	-21.40	10.9	-4.3	11.7	10.8	0.97	12.131 SF	
400.0	400.0	399.0	398.6	0.7	0.7	-171.42	9.8	-12.0	18.1	16.8	1.34	13.536	
500.0	499.6	495.9	494.7	0.9	1.0	171.95	8.1	-24.4	36.3	34.6	1.69	21.494	
600.0	598.8	589.4	586.7	1.1	1.3	165.72	5.8	-40.9	64.9	62.8	2.04	31.778	
700.0	697.1	678.3	673.3	1.5	1.7	162.96	3.0	-60.7	102.6	100.2	2.40	42.793	
800.0	794.3	761.9	753.8	1.9	2.2	161.54	-0.1	-83.0	148.7	146.0	2.76	53.812	
900.0	891.2	841.1	829.1	2.4	2.6	160.78	-3.5	-107.2	199.7	196.6	3.15	63.357	
1,000.0	988.1	916.5	899.9	2.8	3.1	160.05	-7.2	-133.3	254.0	250.5	3.54	71.668	
1,100.0	1,084.9	988.3	966.1	3.3	3.7	159.39	-11.0	-160.5	311.4	307.4	3.94	79.056	
1,200.0	1,181.8	1,060.0	1,031.3	3.7	4.3	158.76	-15.2	-190.1	371.5	367.1	4.34	85.638	
1,300.0	1,278.6	1,139.3	1,103.1	4.2	4.9	158.21	-19.8	-223.5	432.3	427.6	4.76	90.861	
1,400.0	1,375.5	1,218.6	1,174.9	4.7	5.5	157.80	-24.5	-256.8	493.2	488.0	5.18	95.204	

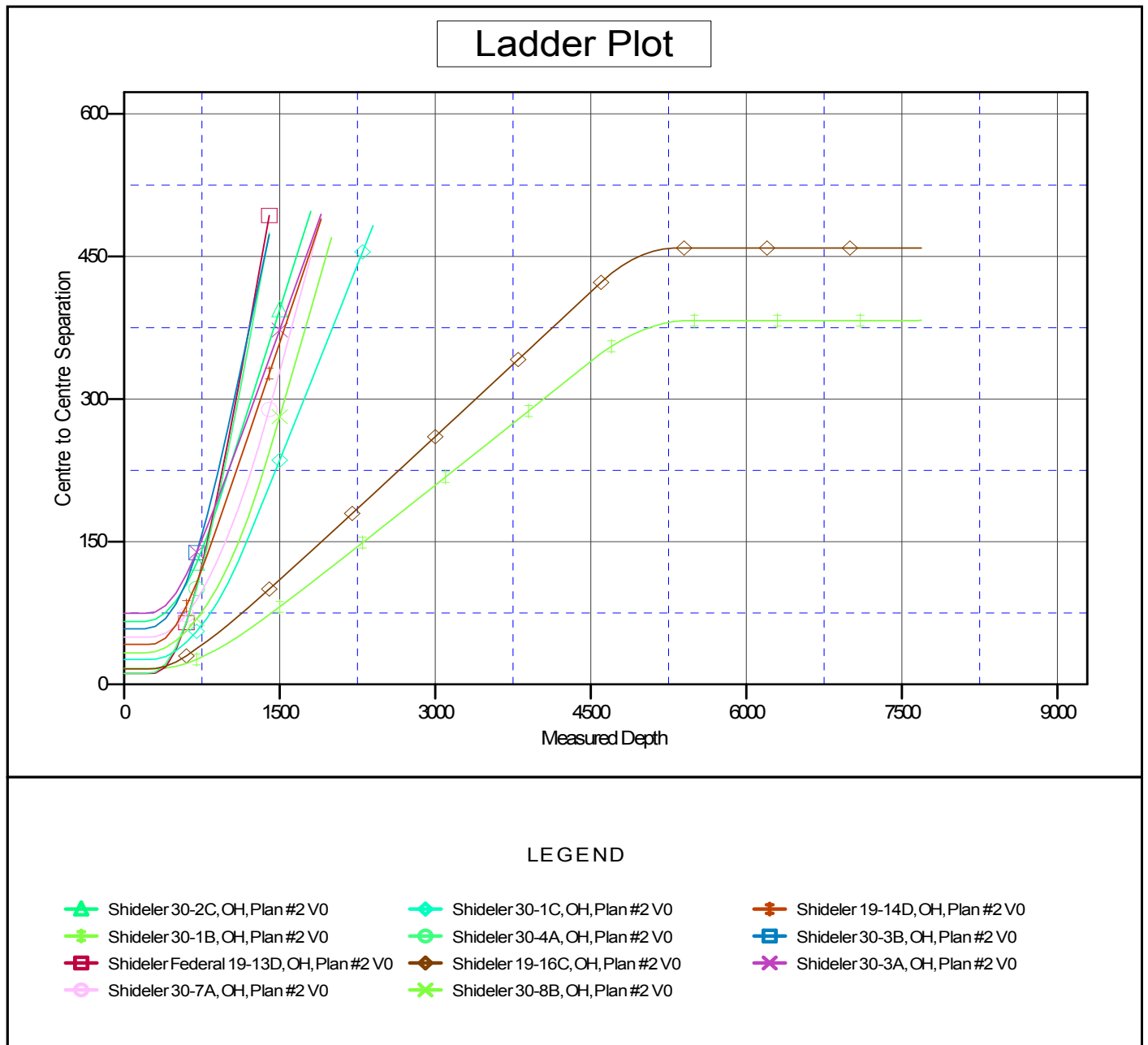
Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Shideler 19-16CC
Project:	Mamm Creek	TVD Reference:	KB = 24' @ 6533.0ft (Original Well Elev)
Reference Site:	O19EB Pad	MD Reference:	KB = 24' @ 6533.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Shideler 19-16CC	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 #2	Offset TVD Reference:	Offset Datum

Reference Depths are relative to KB = 24' @ 6533.0ft (Original Well Ele
Offset Depths are relative to Offset Datum
Central Meridian is -105.500000 °

Coordinates are relative to: Shideler 19-16CC
Coordinate System is US State Plane 1983, Colorado Central Zone
Grid Convergence at Surface is: -1.39°



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