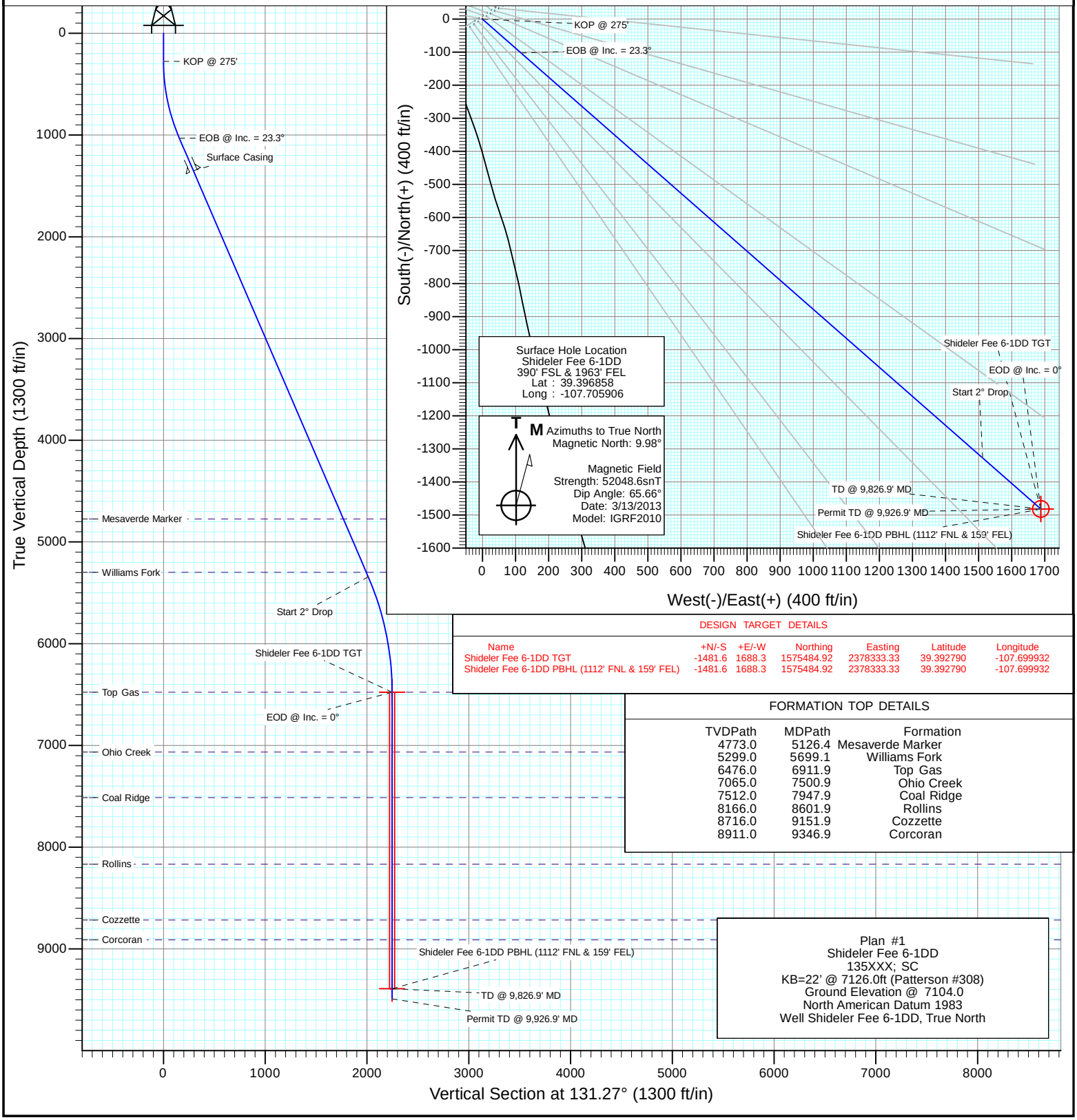
Project: Mamm Creek
Site: O31E Pad (2nd Occupation)
Well: Shideler Fee 6-1DD
Wellbore: OH
Design: Plan #1

CATHEDRAL

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	275.0	0.00	0.00	275.0	0.0	0.0	0.00	0.00	0.0	
3	1051.5	23.30	131.27	1030.3	-102.7	117.0	3.00	131.27	155.7	
4	5747.1	23.30	131.27	5343.0	-1327.6	1512.8	0.00	0.00	2012.7	
5	6911.9	0.00	0.00	6476.0	-1481.6	1688.3	2.00	180.00	2246.3	Shideler Fee 6-1DD TGT
6	9826.9	0.00	0.00	9391.0	-1481.6	1688.3	0.00	0.00	2246.3	Shideler Fee 6-1DD PBHL (1112' FNL & 159' FEL)
7	9926.9	0.00	0.00	9491.0	-1481.6	1688.3	0.00	0.00	2246.3	



DESIGN TARGET DETAILS

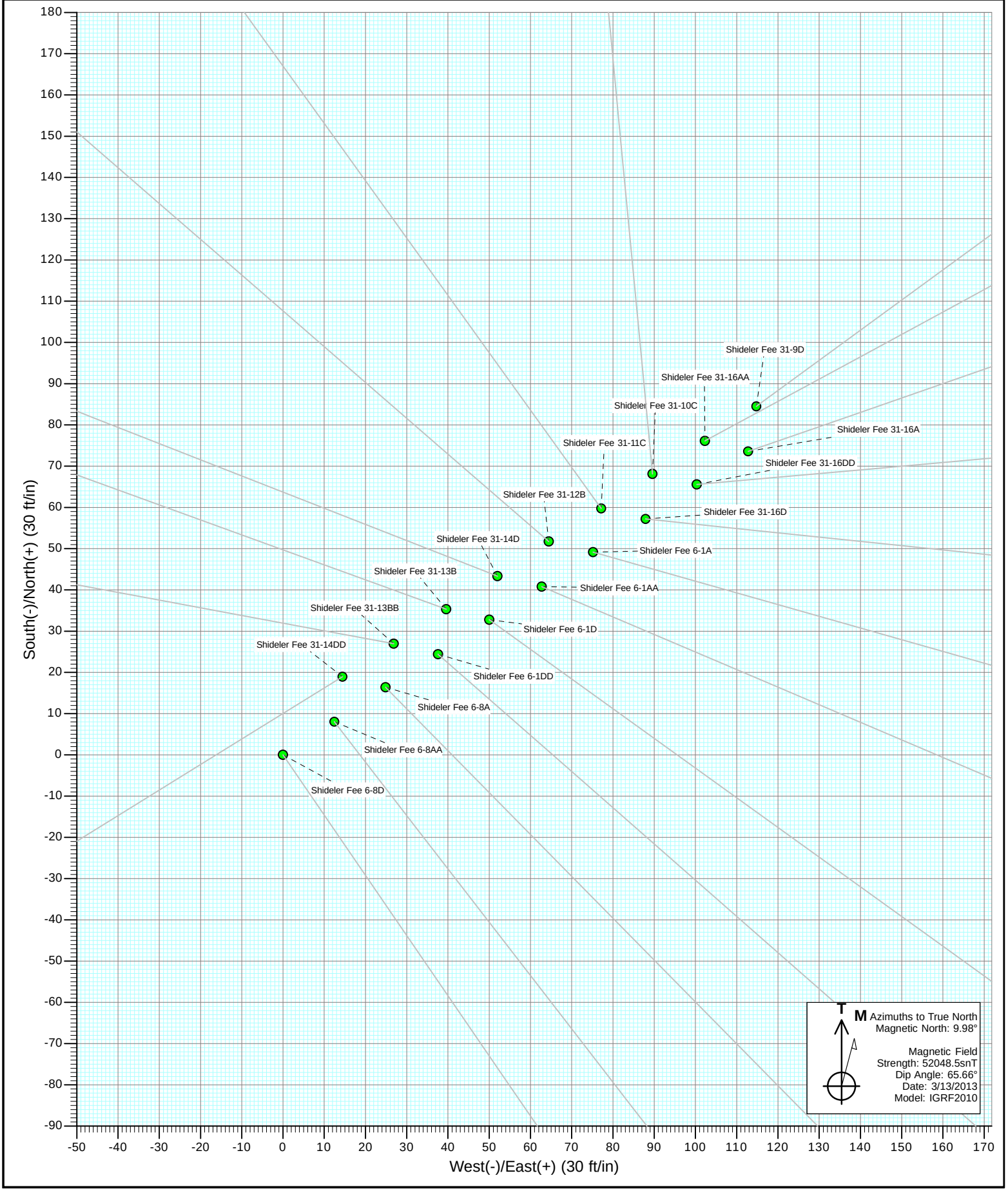
Name	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
Shideler Fee 6-1DD TGT	-1481.6	1688.3	1575484.92	2378333.33	39.392790	-107.699932
Shideler Fee 6-1DD PBHL (1112' FNL & 159' FEL)	-1481.6	1688.3	1575484.92	2378333.33	39.392790	-107.699932

FORMATION TOP DETAILS

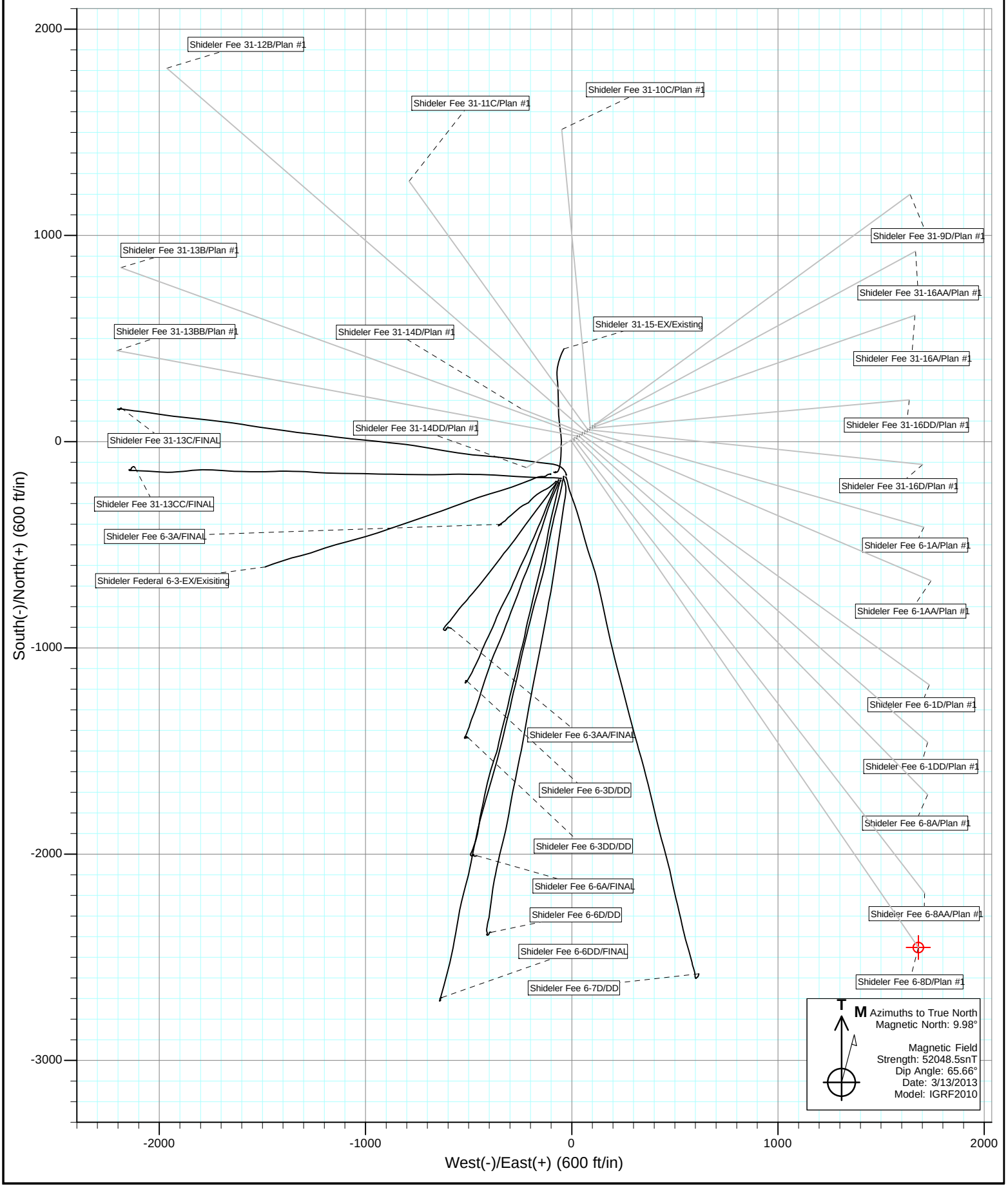
TVDPath	MDPath	Formation
4773.0	5126.4	Mesaverde Marker
5299.0	5699.1	Williams Fork
6476.0	6911.9	Top Gas
7065.0	7500.9	Ohio Creek
7512.0	7947.9	Coal Ridge
8166.0	8601.9	Rollins
8716.0	9151.9	Cozzette
8911.0	9346.9	Corcoran

Plan #1
Shideler Fee 6-1DD
135XXX; SC
KB=22' @ 7126.0ft (Patterson #308)
Ground Elevation @ 7104.0
North American Datum 1983
Well Shideler Fee 6-1DD, True North

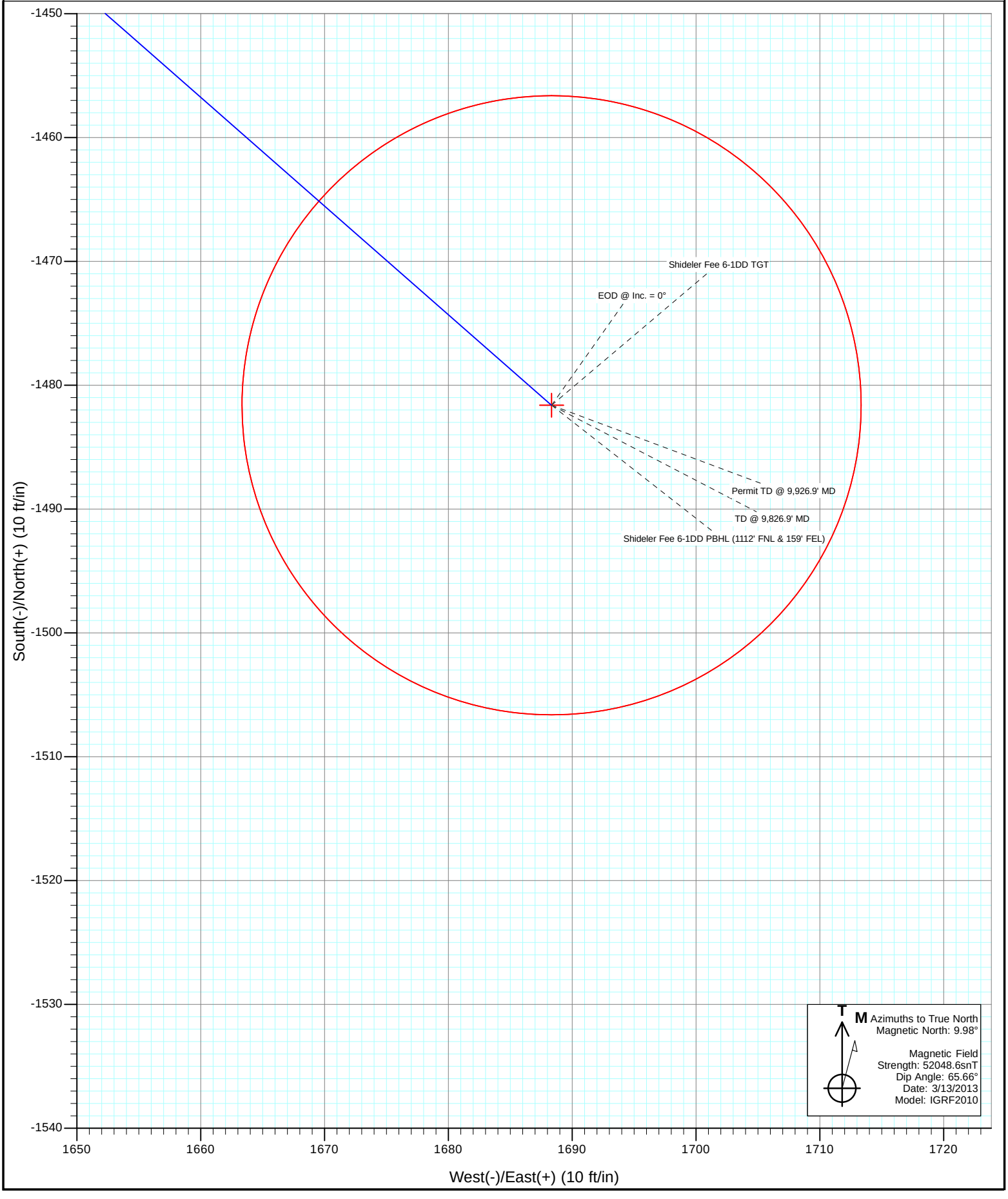
Project: Mamm Creek
Site: O31E Pad (2nd Occupation)



Project: Mamm Creek
Site: O31E Pad (2nd Occupation)



Project: Mamm Creek
Site: O31E Pad (2nd Occupation)
Well: Shideler Fee 6-1DD
Wellbore: OH
Design: Plan #1



Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	**Local Co-ordinate Reference:**	Well Shideler Fee 6-1DD
Company:	EnCana Oil & Gas (USA) Inc	**TVD Reference:**	KB=22' @ 7126.0ft (Patterson #308)
Project:	Mamm Creek	**MD Reference:**	KB=22' @ 7126.0ft (Patterson #308)
Site:	O31E Pad (2nd Occupation)	**North Reference:**	True
Well:	Shideler Fee 6-1DD	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1		

Project Mamm Creek

Map System:	US State Plane 1983	**System Datum:**	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Central Zone		

Site O31E Pad (2nd Occupation)

Site Position:		**Northing:**	1,577,065.31 ft	**Latitude:**	39.397023
From:	Lat/Long	**Easting:**	2,376,760.05 ft	**Longitude:**	-107.705633
Position Uncertainty:	0.0 ft	**Slot Radius:**	13.200 in	**Grid Convergence:**	-1.39 °

Well Shideler Fee 6-1DD

Well Position	**+N/-S**	0.0 ft	**Northing:**	1,577,007.09 ft	**Latitude:**	39.396858
	+E/-W	0.0 ft	**Easting:**	2,376,681.46 ft	**Longitude:**	-107.705906
Position Uncertainty		0.0 ft	**Wellhead Elevation:**	ft	**Ground Level:**	7,104.0 ft

Wellbore OH

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

Design Plan #1

Audit Notes:

Version:		**Phase:**	PLAN	**Tie On Depth:**	0.0

Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.0	0.0	0.0	131.27

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	
275.0	0.00	0.00	275.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,051.5	23.30	131.27	1,030.3	-102.7	117.0	3.00	3.00	0.00	131.27	
5,747.1	23.30	131.27	5,343.0	-1,327.6	1,512.8	0.00	0.00	0.00	0.00	
6,911.9	0.00	0.00	6,476.0	-1,481.6	1,688.3	2.00	-2.00	0.00	180.00	Shideler Fee 6-1DD T
9,826.9	0.00	0.00	9,391.0	-1,481.6	1,688.3	0.00	0.00	0.00	0.00	Shideler Fee 6-1DD F
9,926.9	0.00	0.00	9,491.0	-1,481.6	1,688.3	0.00	0.00	0.00	0.00	

Database:	USA EDM 5000 Multi Users DB	**Local Co-ordinate Reference:**	Well Shideler Fee 6-1DD
Company:	EnCana Oil & Gas (USA) Inc	**TVD Reference:**	KB=22' @ 7126.0ft (Patterson #308)
Project:	Mamm Creek	**MD Reference:**	KB=22' @ 7126.0ft (Patterson #308)
Site:	O31E Pad (2nd Occupation)	**North Reference:**	True
Well:	Shideler Fee 6-1DD	**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	
275.0	0.00	0.00	275.0	0.0	0.0	0.0	0.00	0.00	KOP @ 275'
300.0	0.75	131.27	300.0	-0.1	0.1	0.2	3.00	3.00	
400.0	3.75	131.27	399.9	-2.7	3.1	4.1	3.00	3.00	
500.0	6.75	131.27	499.5	-8.7	10.0	13.2	3.00	3.00	
600.0	9.75	131.27	598.4	-18.2	20.7	27.6	3.00	3.00	
700.0	12.75	131.27	696.5	-31.1	35.4	47.1	3.00	3.00	
800.0	15.75	131.27	793.4	-47.3	53.9	71.7	3.00	3.00	
900.0	18.75	131.27	888.9	-66.9	76.2	101.4	3.00	3.00	
1,000.0	21.75	131.27	982.7	-89.7	102.2	136.0	3.00	3.00	
1,051.5	23.30	131.27	1,030.3	-102.7	117.0	155.7	3.00	3.00	EOB @ Inc. = 23.3°
1,100.0	23.30	131.27	1,074.8	-115.3	131.4	174.9	0.00	0.00	
1,200.0	23.30	131.27	1,166.7	-141.4	161.2	214.4	0.00	0.00	
1,300.0	23.30	131.27	1,258.5	-167.5	190.9	254.0	0.00	0.00	
1,399.6	23.30	131.27	1,350.0	-193.5	220.5	293.4	0.00	0.00	Surface Casing
1,400.0	23.30	131.27	1,350.4	-193.6	220.6	293.5	0.00	0.00	
1,500.0	23.30	131.27	1,442.2	-219.7	250.3	333.1	0.00	0.00	
1,600.0	23.30	131.27	1,534.1	-245.8	280.1	372.6	0.00	0.00	
1,700.0	23.30	131.27	1,625.9	-271.9	309.8	412.2	0.00	0.00	
1,800.0	23.30	131.27	1,717.8	-297.9	339.5	451.7	0.00	0.00	
1,900.0	23.30	131.27	1,809.6	-324.0	369.2	491.3	0.00	0.00	
2,000.0	23.30	131.27	1,901.5	-350.1	399.0	530.8	0.00	0.00	
2,100.0	23.30	131.27	1,993.3	-376.2	428.7	570.4	0.00	0.00	
2,200.0	23.30	131.27	2,085.1	-402.3	458.4	609.9	0.00	0.00	
2,300.0	23.30	131.27	2,177.0	-428.4	488.1	649.5	0.00	0.00	
2,400.0	23.30	131.27	2,268.8	-454.5	517.9	689.0	0.00	0.00	
2,500.0	23.30	131.27	2,360.7	-480.5	547.6	728.5	0.00	0.00	
2,600.0	23.30	131.27	2,452.5	-506.6	577.3	768.1	0.00	0.00	
2,700.0	23.30	131.27	2,544.4	-532.7	607.0	807.6	0.00	0.00	
2,800.0	23.30	131.27	2,636.2	-558.8	636.8	847.2	0.00	0.00	
2,900.0	23.30	131.27	2,728.1	-584.9	666.5	886.7	0.00	0.00	
3,000.0	23.30	131.27	2,819.9	-611.0	696.2	926.3	0.00	0.00	
3,100.0	23.30	131.27	2,911.8	-637.1	725.9	965.8	0.00	0.00	
3,200.0	23.30	131.27	3,003.6	-663.1	755.7	1,005.4	0.00	0.00	
3,300.0	23.30	131.27	3,095.5	-689.2	785.4	1,044.9	0.00	0.00	
3,400.0	23.30	131.27	3,187.3	-715.3	815.1	1,084.5	0.00	0.00	
3,500.0	23.30	131.27	3,279.2	-741.4	844.8	1,124.0	0.00	0.00	
3,600.0	23.30	131.27	3,371.0	-767.5	874.6	1,163.6	0.00	0.00	
3,700.0	23.30	131.27	3,462.9	-793.6	904.3	1,203.1	0.00	0.00	
3,800.0	23.30	131.27	3,554.7	-819.7	934.0	1,242.7	0.00	0.00	
3,900.0	23.30	131.27	3,646.6	-845.7	963.7	1,282.2	0.00	0.00	
4,000.0	23.30	131.27	3,738.4	-871.8	993.5	1,321.8	0.00	0.00	
4,100.0	23.30	131.27	3,830.2	-897.9	1,023.2	1,361.3	0.00	0.00	
4,200.0	23.30	131.27	3,922.1	-924.0	1,052.9	1,400.9	0.00	0.00	
4,300.0	23.30	131.27	4,013.9	-950.1	1,082.7	1,440.4	0.00	0.00	
4,400.0	23.30	131.27	4,105.8	-976.2	1,112.4	1,480.0	0.00	0.00	
4,500.0	23.30	131.27	4,197.6	-1,002.3	1,142.1	1,519.5	0.00	0.00	
4,600.0	23.30	131.27	4,289.5	-1,028.3	1,171.8	1,559.1	0.00	0.00	
4,700.0	23.30	131.27	4,381.3	-1,054.4	1,201.6	1,598.6	0.00	0.00	
4,800.0	23.30	131.27	4,473.2	-1,080.5	1,231.3	1,638.2	0.00	0.00	

Database:	USA EDM 5000 Multi Users DB	**Local Co-ordinate Reference:**	Well Shideler Fee 6-1DD
Company:	EnCana Oil & Gas (USA) Inc	**TVD Reference:**	KB=22' @ 7126.0ft (Patterson #308)
Project:	Mamm Creek	**MD Reference:**	KB=22' @ 7126.0ft (Patterson #308)
Site:	O31E Pad (2nd Occupation)	**North Reference:**	True
Well:	Shideler Fee 6-1DD	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Comments / Formations
4,900.0	23.30	131.27	4,565.0	-1,106.6	1,261.0	1,677.7	0.00	0.00	
5,000.0	23.30	131.27	4,656.9	-1,132.7	1,290.7	1,717.3	0.00	0.00	
5,100.0	23.30	131.27	4,748.7	-1,158.8	1,320.5	1,756.8	0.00	0.00	
5,126.4	23.30	131.27	4,773.0	-1,165.7	1,328.3	1,767.3	0.00	0.00	Mesaverde Marker
5,200.0	23.30	131.27	4,840.6	-1,184.9	1,350.2	1,796.4	0.00	0.00	
5,300.0	23.30	131.27	4,932.4	-1,210.9	1,379.9	1,835.9	0.00	0.00	
5,400.0	23.30	131.27	5,024.3	-1,237.0	1,409.6	1,875.5	0.00	0.00	
5,500.0	23.30	131.27	5,116.1	-1,263.1	1,439.4	1,915.0	0.00	0.00	
5,600.0	23.30	131.27	5,208.0	-1,289.2	1,469.1	1,954.5	0.00	0.00	
5,699.1	23.30	131.27	5,299.0	-1,315.1	1,498.5	1,993.7	0.00	0.00	Williams Fork
5,700.0	23.30	131.27	5,299.8	-1,315.3	1,498.8	1,994.1	0.00	0.00	
5,747.1	23.30	131.27	5,343.0	-1,327.6	1,512.8	2,012.7	0.00	0.00	Start 2° Drop
5,800.0	22.24	131.27	5,391.8	-1,341.1	1,528.2	2,033.2	2.00	-2.00	
5,900.0	20.24	131.27	5,485.0	-1,365.0	1,555.4	2,069.4	2.00	-2.00	
6,000.0	18.24	131.27	5,579.5	-1,386.7	1,580.2	2,102.4	2.00	-2.00	
6,100.0	16.24	131.27	5,675.0	-1,406.2	1,602.5	2,132.0	2.00	-2.00	
6,200.0	14.24	131.27	5,771.4	-1,423.6	1,622.2	2,158.3	2.00	-2.00	
6,300.0	12.24	131.27	5,868.8	-1,438.7	1,639.4	2,181.2	2.00	-2.00	
6,400.0	10.24	131.27	5,966.9	-1,451.5	1,654.1	2,200.7	2.00	-2.00	
6,500.0	8.24	131.27	6,065.6	-1,462.1	1,666.1	2,216.7	2.00	-2.00	
6,600.0	6.24	131.27	6,164.8	-1,470.4	1,675.6	2,229.3	2.00	-2.00	
6,700.0	4.24	131.27	6,264.3	-1,476.5	1,682.5	2,238.4	2.00	-2.00	
6,800.0	2.24	131.27	6,364.2	-1,480.2	1,686.7	2,244.1	2.00	-2.00	
6,900.0	0.24	131.27	6,464.1	-1,481.6	1,688.3	2,246.2	2.00	-2.00	
6,911.9	0.00	0.00	6,476.0	-1,481.6	1,688.3	2,246.3	2.00	-2.00	EOD @ Inc. = 0° - Top Gas
7,000.0	0.00	0.00	6,564.1	-1,481.6	1,688.3	2,246.3	0.00	0.00	
7,100.0	0.00	0.00	6,664.1	-1,481.6	1,688.3	2,246.3	0.00	0.00	
7,200.0	0.00	0.00	6,764.1	-1,481.6	1,688.3	2,246.3	0.00	0.00	
7,300.0	0.00	0.00	6,864.1	-1,481.6	1,688.3	2,246.3	0.00	0.00	
7,400.0	0.00	0.00	6,964.1	-1,481.6	1,688.3	2,246.3	0.00	0.00	
7,500.0	0.00	0.00	7,064.1	-1,481.6	1,688.3	2,246.3	0.00	0.00	
7,500.9	0.00	0.00	7,065.0	-1,481.6	1,688.3	2,246.3	0.00	0.00	Ohio Creek
7,600.0	0.00	0.00	7,164.1	-1,481.6	1,688.3	2,246.3	0.00	0.00	
7,700.0	0.00	0.00	7,264.1	-1,481.6	1,688.3	2,246.3	0.00	0.00	
7,800.0	0.00	0.00	7,364.1	-1,481.6	1,688.3	2,246.3	0.00	0.00	
7,900.0	0.00	0.00	7,464.1	-1,481.6	1,688.3	2,246.3	0.00	0.00	
7,947.9	0.00	0.00	7,512.0	-1,481.6	1,688.3	2,246.3	0.00	0.00	Coal Ridge
8,000.0	0.00	0.00	7,564.1	-1,481.6	1,688.3	2,246.3	0.00	0.00	
8,100.0	0.00	0.00	7,664.1	-1,481.6	1,688.3	2,246.3	0.00	0.00	
8,200.0	0.00	0.00	7,764.1	-1,481.6	1,688.3	2,246.3	0.00	0.00	
8,300.0	0.00	0.00	7,864.1	-1,481.6	1,688.3	2,246.3	0.00	0.00	
8,400.0	0.00	0.00	7,964.1	-1,481.6	1,688.3	2,246.3	0.00	0.00	
8,500.0	0.00	0.00	8,064.1	-1,481.6	1,688.3	2,246.3	0.00	0.00	
8,600.0	0.00	0.00	8,164.1	-1,481.6	1,688.3	2,246.3	0.00	0.00	
8,601.9	0.00	0.00	8,166.0	-1,481.6	1,688.3	2,246.3	0.00	0.00	Rollins
8,700.0	0.00	0.00	8,264.1	-1,481.6	1,688.3	2,246.3	0.00	0.00	
8,800.0	0.00	0.00	8,364.1	-1,481.6	1,688.3	2,246.3	0.00	0.00	
8,900.0	0.00	0.00	8,464.1	-1,481.6	1,688.3	2,246.3	0.00	0.00	
9,000.0	0.00	0.00	8,564.1	-1,481.6	1,688.3	2,246.3	0.00	0.00	
9,100.0	0.00	0.00	8,664.1	-1,481.6	1,688.3	2,246.3	0.00	0.00	
9,151.9	0.00	0.00	8,716.0	-1,481.6	1,688.3	2,246.3	0.00	0.00	Cozzette
9,200.0	0.00	0.00	8,764.1	-1,481.6	1,688.3	2,246.3	0.00	0.00	

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Project:	Mamm Creek	**MD Reference:**	KB=22' @ 7126.0ft (Patterson #308)
Site:	O31E Pad (2nd Occupation)	**North Reference:**	True
Well:	Shideler Fee 6-1DD	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Comments / Formations
9,300.0	0.00	0.00	8,864.1	-1,481.6	1,688.3	2,246.3	0.00	0.00	
9,346.9	0.00	0.00	8,911.0	-1,481.6	1,688.3	2,246.3	0.00	0.00	Corcoran
9,400.0	0.00	0.00	8,964.1	-1,481.6	1,688.3	2,246.3	0.00	0.00	
9,500.0	0.00	0.00	9,064.1	-1,481.6	1,688.3	2,246.3	0.00	0.00	
9,600.0	0.00	0.00	9,164.1	-1,481.6	1,688.3	2,246.3	0.00	0.00	
9,700.0	0.00	0.00	9,264.1	-1,481.6	1,688.3	2,246.3	0.00	0.00	
9,800.0	0.00	0.00	9,364.1	-1,481.6	1,688.3	2,246.3	0.00	0.00	
9,826.9	0.00	0.00	9,391.0	-1,481.6	1,688.3	2,246.3	0.00	0.00	TD @ 9,826.9' MD
9,900.0	0.00	0.00	9,464.1	-1,481.6	1,688.3	2,246.3	0.00	0.00	
9,926.9	0.00	0.00	9,491.0	-1,481.6	1,688.3	2,246.3	0.00	0.00	Permit TD @ 9,926.9' MD

Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
Shideler Fee 6-1DD TGT - plan hits target center - Point	0.00	0.00	6,476.0	-1,481.6	1,688.3	1,575,484.92	2,378,333.33	39.392790	-107.699932
Shideler Fee 6-1DD PBH - plan hits target center - Circle (radius 25.0)	0.00	0.00	9,391.0	-1,481.6	1,688.3	1,575,484.92	2,378,333.33	39.392790	-107.699932

Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)
1,399.6	1,350.0	Surface Casing		

Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
5,126.4	4,773.0	Mesaverde Marker			
5,699.1	5,299.0	Williams Fork			
6,911.9	6,476.0	Top Gas			
7,500.9	7,065.0	Ohio Creek			
7,947.9	7,512.0	Coal Ridge			
8,601.9	8,166.0	Rollins			
9,151.9	8,716.0	Cozzette			
9,346.9	8,911.0	Corcoran			

Database:	USA EDM 5000 Multi Users DB	**Local Co-ordinate Reference:**	Well Shideler Fee 6-1DD
Company:	EnCana Oil & Gas (USA) Inc	**TVD Reference:**	KB=22' @ 7126.0ft (Patterson #308)
Project:	Mamm Creek	**MD Reference:**	KB=22' @ 7126.0ft (Patterson #308)
Site:	O31E Pad (2nd Occupation)	**North Reference:**	True
Well:	Shideler Fee 6-1DD	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1		

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates +N/-S (ft)	Local Coordinates +E/-W (ft)	Comment
275.0	275.0	0.0	0.0	KOP @ 275'
1,051.5	1,030.3	-102.7	117.0	EOB @ Inc. = 23.3°
5,747.1	5,343.0	-1,327.6	1,512.8	Start 2° Drop
6,911.9	6,476.0	-1,481.6	1,688.3	EOD @ Inc. = 0°
9,826.9	9,391.0	-1,481.6	1,688.3	TD @ 9,826.9' MD
9,926.9	9,491.0	-1,481.6	1,688.3	Permit TD @ 9,926.9' MD

EnCana Oil & Gas (USA) Inc

Mamm Creek
O31E Pad (2nd Occupation)
Shideler Fee 6-1DD
OH
Plan #1

Anticollision Report

21 March, 2013

Company:	EnCana Oil & Gas (USA) Inc	**Local Co-ordinate Reference:**	Well Shideler Fee 6-1DD
Project:	Mamm Creek	**TVD Reference:**	KB=22' @ 7126.0ft (Patterson #308)
Reference Site:	O31E Pad (2nd Occupation)	**MD Reference:**	KB=22' @ 7126.0ft (Patterson #308)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Shideler Fee 6-1DD	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Reference	Plan #1

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

Survey Tool Program **Date** 3/14/2013

From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.0	9,926.9	Plan #1 (OH)	MWD	Geolink MWD

Company:	EnCana Oil & Gas (USA) Inc	**Local Co-ordinate Reference:**	Well Shideler Fee 6-1DD
Project:	Mamm Creek	**TVD Reference:**	KB=22' @ 7126.0ft (Patterson #308)
Reference Site:	O31E Pad (2nd Occupation)	**MD Reference:**	KB=22' @ 7126.0ft (Patterson #308)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Shideler Fee 6-1DD	**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 (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
O31E Pad						
Shideler 31-15-EX - Existing - Existing	690.4	669.2	206.2	204.0	97.958	CC
Shideler 31-15-EX - Existing - Existing	700.0	678.4	206.2	204.0	95.988	ES
Shideler 31-15-EX - Existing - Existing	1,200.0	1,146.2	277.2	272.4	57.716	SF
Shideler Federal 6-3-EX - Exisiting - Exisiting	297.3	275.1	228.7	228.0	317.434	CC
Shideler Federal 6-3-EX - Exisiting - Exisiting	500.0	476.1	229.2	227.9	174.769	ES
Shideler Federal 6-3-EX - Exisiting - Exisiting	1,200.0	1,135.7	320.2	315.3	65.639	SF
Shideler Fee 31-13C - OH - FINAL	687.8	690.6	169.5	166.6	59.167	CC, ES
Shideler Fee 31-13C - OH - FINAL	900.0	860.2	203.1	198.8	47.194	SF
Shideler Fee 31-13CC - OH - FINAL	0.0	3.0	220.9			
Shideler Fee 31-13CC - OH - FINAL	100.0	102.4	221.0	220.8	791.008	ES
Shideler Fee 31-13CC - OH - FINAL	1,000.0	905.1	330.5	325.6	67.125	SF
Shideler Fee 6-3A - DD - FINAL	0.0	3.0	245.2			
Shideler Fee 6-3A - DD - FINAL	100.0	102.2	245.4	245.1	878.714	ES
Shideler Fee 6-3A - DD - FINAL	1,400.0	1,339.0	388.0	380.6	52.457	SF
Shideler Fee 6-3AA - DD - FINAL	0.0	0.0	255.8			
Shideler Fee 6-3AA - DD - FINAL	1,500.0	1,397.4	495.4	486.3	54.974	SF
Shideler Fee 6-3D - DD - DD	0.0	3.0	233.1			
Shideler Fee 6-3D - DD - DD	200.0	202.0	233.6	233.0	373.784	ES
Shideler Fee 6-3D - DD - DD	1,600.0	1,499.6	483.2	472.9	46.971	SF
Shideler Fee 6-3DD - DD - DD	0.0	3.0	243.6			
Shideler Fee 6-3DD - DD - DD	100.0	102.2	243.8	243.5	872.556	ES
Shideler Fee 6-3DD - DD - DD	1,500.0	1,392.4	478.6	468.7	48.319	SF
Shideler Fee 6-6A - DD - FINAL	495.0	490.8	229.1	227.4	134.820	CC
Shideler Fee 6-6A - DD - FINAL	500.0	495.5	229.1	227.4	133.286	ES
Shideler Fee 6-6A - DD - FINAL	1,600.0	1,474.1	473.6	462.6	42.843	SF
Shideler Fee 6-6D - DD - DD	131.8	134.9	218.3	217.9	561.843	CC, ES
Shideler Fee 6-6D - DD - DD	1,600.0	1,449.3	493.9	481.8	40.745	SF
Shideler Fee 6-6DD - DD - FINAL	153.1	156.1	208.0	207.6	449.467	CC
Shideler Fee 6-6DD - DD - FINAL	200.0	201.0	208.2	207.5	334.100	ES
Shideler Fee 6-6DD - DD - FINAL	1,400.0	1,236.9	469.8	460.4	49.987	SF
Shideler Fee 6-7D - DD - DD	139.3	139.3	207.1	206.7	499.457	CC, ES
Shideler Fee 6-7D - DD - DD	1,900.0	1,773.0	481.4	464.1	27.812	SF

Company:	EnCana Oil & Gas (USA) Inc	**Local Co-ordinate Reference:**	Well Shideler Fee 6-1DD
Project:	Mamm Creek	**TVD Reference:**	KB=22' @ 7126.0ft (Patterson #308)
Reference Site:	O31E Pad (2nd Occupation)	**MD Reference:**	KB=22' @ 7126.0ft (Patterson #308)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Shideler Fee 6-1DD	**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 (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
O31E Pad (2nd Occupation)						
Shideler Fee 31-10C - OH - Plan #1	200.0	200.0	67.9	67.3	109.325	CC, ES
Shideler Fee 31-10C - OH - Plan #1	600.0	583.1	100.8	98.6	46.197	SF
Shideler Fee 31-11C - OH - Plan #1	215.5	215.5	53.0	52.4	78.539	CC
Shideler Fee 31-11C - OH - Plan #1	300.0	299.8	53.1	52.1	54.705	ES
Shideler Fee 31-11C - OH - Plan #1	500.0	495.7	60.6	58.8	34.199	SF
Shideler Fee 31-12B - OH - Plan #1	284.3	284.3	38.2	37.3	41.446	CC
Shideler Fee 31-12B - OH - Plan #1	300.0	300.0	38.2	37.3	39.054	ES
Shideler Fee 31-12B - OH - Plan #1	500.0	495.4	51.3	49.5	28.673	SF
Shideler Fee 31-13B - OH - Plan #1	200.0	200.0	11.1	10.5	17.879	CC
Shideler Fee 31-13B - OH - Plan #1	216.9	216.9	11.1	10.4	16.330	ES
Shideler Fee 31-13B - OH - Plan #1	300.0	299.8	11.9	11.0	12.224	SF
Shideler Fee 31-13BB - OH - Plan #1	200.0	200.0	11.0	10.4	17.765	CC
Shideler Fee 31-13BB - OH - Plan #1	300.0	300.0	11.2	10.2	11.525	ES, SF
Shideler Fee 31-14D - OH - Plan #1	200.0	200.0	23.8	23.2	38.310	CC
Shideler Fee 31-14D - OH - Plan #1	300.0	300.0	23.8	22.8	24.541	ES
Shideler Fee 31-14D - OH - Plan #1	500.0	499.5	28.0	26.3	16.389	SF
Shideler Fee 31-14DD - OH - Plan #1	200.0	200.0	23.8	23.2	38.316	CC
Shideler Fee 31-14DD - OH - Plan #1	300.0	300.0	23.9	22.9	24.632	ES
Shideler Fee 31-14DD - OH - Plan #1	400.0	398.8	28.7	27.4	21.677	SF
Shideler Fee 31-16A - OH - Plan #1	435.0	433.4	88.6	87.1	60.444	CC, ES
Shideler Fee 31-16A - OH - Plan #1	1,600.0	1,520.2	380.6	369.3	33.651	SF
Shideler Fee 31-16AA - OH - Plan #1	305.5	305.3	82.8	81.8	83.658	CC, ES
Shideler Fee 31-16AA - OH - Plan #1	1,700.0	1,587.3	480.6	468.2	38.848	SF
Shideler Fee 31-16D - OH - Plan #1	350.0	349.4	59.8	58.6	52.060	CC, ES
Shideler Fee 31-16D - OH - Plan #1	1,500.0	1,467.6	231.8	220.4	20.265	SF
Shideler Fee 31-16DD - OH - Plan #1	311.2	310.8	75.0	74.0	74.251	CC, ES
Shideler Fee 31-16DD - OH - Plan #1	1,600.0	1,546.1	315.4	303.3	26.010	SF
Shideler Fee 31-9D - OH - Plan #1	200.0	200.0	97.8	97.2	157.402	CC, ES
Shideler Fee 31-9D - OH - Plan #1	1,500.0	1,375.4	464.1	453.9	45.662	SF
Shideler Fee 6-1A - OH - Plan #1	388.3	387.7	44.5	43.2	34.562	CC
Shideler Fee 6-1A - OH - Plan #1	400.0	399.2	44.5	43.2	33.478	ES
Shideler Fee 6-1A - OH - Plan #1	1,400.0	1,384.0	160.4	150.1	15.479	SF
Shideler Fee 6-1AA - OH - Plan #1	363.9	363.6	29.7	28.5	24.790	CC
Shideler Fee 6-1AA - OH - Plan #1	400.0	399.4	29.9	28.5	22.444	ES
Shideler Fee 6-1AA - OH - Plan #1	1,300.0	1,292.3	105.0	95.4	10.925	SF
Shideler Fee 6-1D - OH - Plan #1	353.6	353.4	14.9	13.7	12.771	CC
Shideler Fee 6-1D - OH - Plan #1	400.0	399.8	14.9	13.6	11.183	ES
Shideler Fee 6-1D - OH - Plan #1	2,100.0	2,098.4	76.1	56.5	3.885	SF
Shideler Fee 6-8A - OH - Plan #1	329.8	329.9	14.9	13.8	13.793	CC
Shideler Fee 6-8A - OH - Plan #1	400.0	400.2	15.0	13.7	11.149	ES
Shideler Fee 6-8A - OH - Plan #1	1,500.0	1,498.4	44.7	32.0	3.525	SF
Shideler Fee 6-8AA - OH - Plan #1	300.0	300.1	30.0	29.0	30.795	CC, ES
Shideler Fee 6-8AA - OH - Plan #1	1,200.0	1,192.6	77.3	68.0	8.310	SF
Shideler Fee 6-8D - OH - Plan #1	200.0	200.0	44.8	44.2	72.120	CC
Shideler Fee 6-8D - OH - Plan #1	300.0	300.0	44.9	43.9	45.822	ES
Shideler Fee 6-8D - OH - Plan #1	1,200.0	1,187.0	108.3	98.9	11.526	SF

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	**Local Co-ordinate Reference:**	Well Shideler Fee 6-1DD
Project:	Mamm Creek	**TVD Reference:**	KB=22' @ 7126.0ft (Patterson #308)
Reference Site:	O31E Pad (2nd Occupation)	**MD Reference:**	KB=22' @ 7126.0ft (Patterson #308)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Shideler Fee 6-1DD	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Offset Design O31E Pad - Shideler 31-15-EX - Existing - Existing

Offset Site Error: 0.0 ft

Survey Program: 100-Gyro

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	-144.55	-172.9	-123.1	213.4				
100.0	100.0	78.2	78.2	0.1	0.1	-144.61	-173.0	-122.9	212.2	212.0	0.20	1,037.908	
200.0	200.0	178.6	178.6	0.3	0.2	-144.80	-173.3	-122.2	212.1	211.6	0.47	454.480	
300.0	300.0	278.5	278.5	0.5	0.2	83.71	-173.6	-121.3	211.8	211.0	0.73	290.302	
400.0	399.9	379.0	379.0	0.7	0.3	84.31	-174.4	-119.6	211.0	210.0	1.00	210.194	
500.0	499.5	479.9	479.8	0.9	0.4	86.33	-174.9	-117.5	209.5	208.1	1.32	158.948	
600.0	598.4	581.1	581.0	1.2	0.5	90.18	-174.1	-115.9	207.4	205.7	1.70	122.286	
690.4	687.1	669.2	669.1	1.5	0.6	95.14	-172.1	-115.2	206.2	204.0	2.10	97.958	CC
700.0	696.5	678.4	678.3	1.6	0.6	95.73	-171.9	-115.1	206.2	204.0	2.15	95.988	ES
800.0	793.4	772.1	772.0	2.0	0.7	102.35	-170.0	-115.3	209.0	206.3	2.67	78.318	
900.0	888.9	866.7	866.6	2.6	0.8	109.57	-169.5	-115.8	217.7	214.5	3.24	67.239	
1,000.0	982.7	961.1	961.0	3.2	0.8	116.79	-169.9	-115.6	232.1	228.3	3.82	60.743	
1,100.0	1,074.8	1,054.2	1,054.1	3.9	0.9	123.85	-170.8	-115.1	252.7	248.3	4.35	58.025	
1,200.0	1,166.7	1,146.2	1,146.1	4.7	1.0	130.12	-171.8	-114.4	277.2	272.4	4.80	57.716	SF
1,300.0	1,258.5	1,237.9	1,237.8	5.4	1.1	135.49	-172.2	-114.0	304.9	299.7	5.18	58.859	
1,400.0	1,350.4	1,331.1	1,331.0	6.1	1.2	140.06	-172.6	-113.4	334.7	329.2	5.51	60.793	
1,500.0	1,442.2	1,424.2	1,424.1	6.8	1.2	143.91	-173.0	-112.6	366.0	360.2	5.79	63.166	
1,600.0	1,534.1	1,517.7	1,517.6	7.6	1.3	147.25	-173.1	-111.5	398.2	392.2	6.05	65.824	
1,700.0	1,625.9	1,610.5	1,610.3	8.3	1.4	150.15	-172.6	-110.0	431.4	425.1	6.28	68.673	
1,800.0	1,717.8	1,704.9	1,704.7	9.0	1.5	152.83	-171.1	-108.0	465.2	458.7	6.49	71.730	
1,900.0	1,809.6	1,799.8	1,799.4	9.8	1.6	155.47	-167.3	-104.6	499.2	492.6	6.65	75.122	

Company:	EnCana Oil & Gas (USA) Inc	**Local Co-ordinate Reference:**	Well Shideler Fee 6-1DD
Project:	Mamm Creek	**TVD Reference:**	KB=22' @ 7126.0ft (Patterson #308)
Reference Site:	O31E Pad (2nd Occupation)	**MD Reference:**	KB=22' @ 7126.0ft (Patterson #308)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Shideler Fee 6-1DD	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Offset Design O31E Pad - Shideler Federal 6-3-EX - Exisiting - Exisiting

Offset Site Error: 0.0 ft

Survey Program: 100-Gyro

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	-142.36	-182.1	-140.4	231.0				
100.0	100.0	79.1	79.1	0.1	0.1	-142.39	-182.0	-140.2	229.7	229.5	0.21	1,119.296	
200.0	200.0	179.4	179.4	0.3	0.2	-142.45	-181.6	-139.6	229.1	228.6	0.47	490.269	
297.3	297.3	275.1	275.1	0.5	0.2	86.44	-181.4	-139.4	228.7	228.0	0.72	317.434	CC
300.0	300.0	277.8	277.8	0.5	0.2	86.32	-181.4	-139.4	228.8	228.0	0.73	314.392	
400.0	399.9	377.0	377.0	0.7	0.3	87.41	-181.4	-140.0	228.9	227.9	1.00	228.987	
500.0	499.5	476.1	476.1	0.9	0.4	89.83	-181.3	-140.8	229.2	227.9	1.31	174.769	ES
600.0	598.4	574.4	574.4	1.2	0.5	93.51	-181.3	-141.9	230.3	228.7	1.69	136.549	
700.0	696.5	671.2	671.2	1.6	0.6	98.23	-181.5	-143.2	233.5	231.4	2.14	109.255	
800.0	793.4	766.2	766.2	2.0	0.7	103.80	-181.8	-145.1	240.2	237.6	2.66	90.381	
900.0	888.9	859.9	859.8	2.6	0.8	109.88	-182.4	-147.5	251.8	248.6	3.23	77.967	
1,000.0	982.7	952.0	951.9	3.2	0.8	116.07	-183.0	-150.3	269.3	265.5	3.83	70.355	
1,100.0	1,074.8	1,043.4	1,043.2	3.9	0.9	122.30	-183.8	-153.2	293.0	288.6	4.39	66.735	
1,200.0	1,166.7	1,135.7	1,135.5	4.7	1.0	127.98	-185.0	-155.9	320.2	315.3	4.88	65.639	SF
1,300.0	1,258.5	1,228.7	1,228.4	5.4	1.1	132.76	-186.6	-158.2	349.7	344.4	5.31	65.836	
1,400.0	1,350.4	1,321.7	1,321.4	6.1	1.2	136.79	-188.4	-160.1	380.8	375.1	5.70	66.783	
1,500.0	1,442.2	1,412.9	1,412.5	6.8	1.3	140.20	-190.0	-161.8	413.3	407.2	6.06	68.223	
1,600.0	1,534.1	1,502.7	1,502.4	7.6	1.3	143.11	-191.3	-163.7	447.2	440.8	6.39	70.025	
1,700.0	1,625.9	1,589.6	1,589.2	8.3	1.4	145.57	-192.4	-166.2	482.8	476.1	6.70	72.070	

Company:	EnCana Oil & Gas (USA) Inc	**Local Co-ordinate Reference:**	Well Shideler Fee 6-1DD
Project:	Mamm Creek	**TVD Reference:**	KB=22' @ 7126.0ft (Patterson #308)
Reference Site:	O31E Pad (2nd Occupation)	**MD Reference:**	KB=22' @ 7126.0ft (Patterson #308)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Shideler Fee 6-1DD	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Offset Design O31E Pad - Shideler Fee 31-13C - OH - FINAL

Offset Site Error: 0.0 ft

Survey Program: 111-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning
0.0	0.0	3.0	3.0	0.0	0.0	-161.03	-185.8	-63.9	196.4				
100.0	100.0	102.4	102.4	0.1	0.1	-161.04	-185.9	-63.9	196.6	196.3	0.28	703.448	
200.0	200.0	203.2	203.2	0.3	0.3	-161.04	-186.1	-64.0	196.8	196.2	0.63	313.890	
300.0	300.0	305.7	305.7	0.5	0.5	67.83	-185.5	-64.0	196.2	195.2	0.98	200.103	
400.0	399.9	412.7	412.6	0.7	0.7	69.80	-181.3	-65.0	191.4	190.1	1.35	141.461	
500.0	499.5	515.5	514.9	0.9	0.9	74.80	-172.9	-68.4	182.4	180.6	1.77	102.822	
600.0	598.4	611.5	610.3	1.2	1.1	82.63	-162.9	-74.3	173.3	171.0	2.30	75.473	
687.8	684.6	690.6	688.5	1.5	1.4	91.49	-153.8	-81.6	169.5	166.6	2.86	59.167	CC, ES
700.0	696.5	701.0	698.7	1.6	1.4	92.80	-152.6	-82.8	169.6	166.6	2.95	57.579	
800.0	793.4	782.6	779.0	2.0	1.7	103.72	-143.9	-95.1	178.5	174.8	3.65	48.949	
900.0	888.9	860.2	854.8	2.6	1.9	113.50	-137.7	-110.5	203.1	198.8	4.30	47.194	SF
1,000.0	982.7	937.0	929.3	3.2	2.3	121.46	-133.5	-128.4	241.4	236.5	4.89	49.325	
1,100.0	1,074.8	1,008.5	998.3	3.9	2.6	127.77	-130.9	-147.1	290.1	284.7	5.40	53.740	
1,200.0	1,166.7	1,078.2	1,064.9	4.7	2.9	132.97	-128.8	-167.3	345.0	339.2	5.82	59.272	
1,300.0	1,258.5	1,143.6	1,126.9	5.4	3.3	136.81	-126.4	-187.9	404.1	397.9	6.21	65.052	
1,400.0	1,350.4	1,202.9	1,182.5	6.1	3.7	139.63	-123.7	-208.5	467.1	460.5	6.59	70.852	

Company:	EnCana Oil & Gas (USA) Inc	**Local Co-ordinate Reference:**	Well Shideler Fee 6-1DD
Project:	Mamm Creek	**TVD Reference:**	KB=22' @ 7126.0ft (Patterson #308)
Reference Site:	O31E Pad (2nd Occupation)	**MD Reference:**	KB=22' @ 7126.0ft (Patterson #308)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Shideler Fee 6-1DD	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Offset Design O31E Pad - Shideler Fee 31-13CC - OH - FINAL

Survey Program: 111-MWD, 1242-MWD

Offset Site Error: 0.0 ft

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning
0.0	0.0	3.0	3.0	0.0	0.0	-156.23	-202.2	-89.0	220.9				
100.0	100.0	102.4	102.4	0.1	0.1	-156.21	-202.3	-89.2	221.0	220.8	0.28	791.008	ES
200.0	200.0	201.8	201.8	0.3	0.3	-156.21	-202.7	-89.3	221.5	220.9	0.62	354.616	
300.0	300.0	300.2	300.1	0.5	0.5	73.17	-202.6	-91.9	222.4	221.5	0.97	228.336	
400.0	399.9	397.4	397.1	0.7	0.7	75.70	-201.5	-98.4	223.2	221.9	1.35	165.587	
500.0	499.5	488.7	487.9	0.9	0.9	80.05	-200.5	-108.4	225.8	224.0	1.78	127.031	
600.0	598.4	580.4	578.6	1.2	1.2	85.92	-200.0	-121.9	232.2	229.9	2.30	100.995	
700.0	696.5	669.0	665.7	1.6	1.5	92.69	-199.4	-138.0	244.0	241.1	2.90	84.138	
800.0	793.4	753.0	747.7	2.0	1.8	99.55	-198.9	-156.1	263.6	260.0	3.55	74.226	
900.0	888.9	830.9	823.1	2.6	2.2	105.79	-198.4	-175.6	292.3	288.1	4.23	69.097	
1,000.0	982.7	905.1	894.3	3.2	2.6	111.26	-198.0	-196.4	330.5	325.6	4.92	67.125	SF
1,100.0	1,074.8	971.4	957.3	3.9	3.0	116.13	-197.6	-216.9	377.7	372.1	5.58	67.645	
1,200.0	1,166.7	1,030.8	1,013.1	4.7	3.4	120.57	-196.7	-237.7	432.0	425.9	6.16	70.141	
1,300.0	1,258.5	1,101.4	1,078.5	5.4	3.9	125.05	-195.0	-264.0	491.1	484.4	6.66	73.677	

Company:	EnCana Oil & Gas (USA) Inc	**Local Co-ordinate Reference:**	Well Shideler Fee 6-1DD
Project:	Mamm Creek	**TVD Reference:**	KB=22' @ 7126.0ft (Patterson #308)
Reference Site:	O31E Pad (2nd Occupation)	**MD Reference:**	KB=22' @ 7126.0ft (Patterson #308)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Shideler Fee 6-1DD	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Offset Design O31E Pad - Shideler Fee 6-3A - DD - FINAL

Offset Site Error: 0.0 ft

Survey Program: 111-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning
0.0	0.0	3.0	3.0	0.0	0.0	-152.47	-217.5	-113.3	245.2				
100.0	100.0	102.2	102.2	0.1	0.1	-152.46	-217.6	-113.4	245.4	245.1	0.28	878.714	ES
200.0	200.0	200.1	200.0	0.3	0.3	-152.35	-218.0	-114.2	246.1	245.5	0.62	396.034	
300.0	300.0	295.0	295.0	0.5	0.5	76.59	-218.9	-115.6	247.7	246.7	0.96	257.346	
400.0	399.9	389.1	389.0	0.7	0.7	77.62	-221.6	-118.6	250.9	249.6	1.31	191.067	
500.0	499.5	487.0	486.7	0.9	0.9	79.85	-225.9	-122.9	255.1	253.3	1.71	149.260	
600.0	598.4	587.8	587.3	1.2	1.1	83.24	-230.0	-127.3	258.7	256.6	2.17	118.976	
700.0	696.5	685.0	684.4	1.6	1.2	87.49	-233.7	-131.3	262.9	260.1	2.72	96.751	
800.0	793.4	781.0	780.2	2.0	1.4	92.64	-237.2	-135.9	269.0	265.7	3.34	80.437	
900.0	888.9	875.9	874.9	2.6	1.6	98.38	-240.6	-140.6	278.3	274.3	4.05	68.800	
1,000.0	982.7	969.4	968.2	3.2	1.8	104.37	-244.1	-145.1	292.1	287.3	4.80	60.845	
1,100.0	1,074.8	1,060.8	1,059.5	3.9	2.0	110.62	-247.0	-149.7	311.0	305.4	5.54	56.127	
1,200.0	1,166.7	1,151.3	1,149.8	4.7	2.2	116.47	-249.9	-154.3	334.2	327.9	6.22	53.748	
1,300.0	1,258.5	1,245.6	1,243.9	5.4	2.4	121.79	-252.9	-158.8	360.3	353.5	6.83	52.722	
1,400.0	1,350.4	1,339.0	1,337.3	6.1	2.5	126.39	-255.5	-162.1	388.0	380.6	7.40	52.457	SF
1,500.0	1,442.2	1,425.5	1,423.7	6.8	2.7	130.21	-257.3	-165.5	418.1	410.2	7.91	52.866	
1,600.0	1,534.1	1,517.9	1,515.9	7.6	2.9	133.83	-258.8	-170.1	450.8	442.4	8.37	53.842	
1,700.0	1,625.9	1,600.2	1,598.1	8.3	3.1	136.60	-260.7	-174.6	485.5	476.6	8.83	54.999	

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	**Local Co-ordinate Reference:**	Well Shideler Fee 6-1DD
Project:	Mamm Creek	**TVD Reference:**	KB=22' @ 7126.0ft (Patterson #308)
Reference Site:	O31E Pad (2nd Occupation)	**MD Reference:**	KB=22' @ 7126.0ft (Patterson #308)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Shideler Fee 6-1DD	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Offset Design O31E Pad - Shideler Fee 6-3AA - DD - FINAL

Offset Site Error: 0.0 ft

Survey Program: 111-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	-153.42	-228.7	-114.5	255.8				
100.0	100.0	97.3	97.3	0.1	0.1	-153.41	-229.2	-114.7	256.3	256.0	0.27	939.759	
200.0	200.0	188.8	188.7	0.3	0.3	-153.33	-231.0	-116.0	258.7	258.1	0.60	427.792	
300.0	300.0	276.9	276.7	0.5	0.5	75.61	-235.6	-119.6	265.2	264.3	0.93	284.721	
400.0	399.9	366.3	365.5	0.7	0.7	76.44	-243.5	-125.7	275.2	273.9	1.27	215.879	
500.0	499.5	457.6	455.9	0.9	1.0	78.08	-253.7	-133.1	287.0	285.4	1.66	173.091	
600.0	598.4	549.3	546.3	1.2	1.3	80.45	-266.0	-142.0	301.1	298.9	2.10	143.044	
700.0	696.5	647.5	643.1	1.6	1.6	83.57	-280.2	-151.6	316.1	313.4	2.65	119.465	
800.0	793.4	748.3	742.5	2.0	1.9	87.50	-293.2	-161.3	330.7	327.4	3.29	100.602	
900.0	888.9	845.2	838.4	2.6	2.2	91.71	-304.9	-169.9	346.1	342.1	4.02	86.030	
1,000.0	982.7	939.3	931.4	3.2	2.5	96.08	-316.2	-178.0	363.9	359.1	4.85	75.052	
1,100.0	1,074.8	1,031.4	1,022.5	3.9	2.8	100.81	-326.8	-186.0	385.0	379.3	5.72	67.339	
1,200.0	1,166.7	1,121.6	1,111.8	4.7	3.1	105.36	-337.3	-193.8	409.1	402.5	6.57	62.258	
1,300.0	1,258.5	1,211.7	1,200.9	5.4	3.4	109.47	-347.5	-202.1	436.1	428.7	7.40	58.905	
1,400.0	1,350.4	1,304.7	1,292.9	6.1	3.7	113.22	-358.3	-210.5	465.1	456.9	8.22	56.586	
1,500.0	1,442.2	1,397.4	1,384.6	6.8	3.9	116.50	-369.3	-218.4	495.4	486.3	9.01	54.974	SF

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	**Local Co-ordinate Reference:**	Well Shideler Fee 6-1DD
Project:	Mamm Creek	**TVD Reference:**	KB=22' @ 7126.0ft (Patterson #308)
Reference Site:	O31E Pad (2nd Occupation)	**MD Reference:**	KB=22' @ 7126.0ft (Patterson #308)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Shideler Fee 6-1DD	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Offset Design O31E Pad - Shideler Fee 6-3D - DD - DD

Offset Site Error: 0.0 ft

Survey Program: 111-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning
0.0	0.0	3.0	3.0	0.0	0.0	-154.36	-210.2	-100.9	233.1				
100.0	100.0	102.3	102.3	0.1	0.1	-154.34	-210.3	-101.0	233.3	233.0	0.28	835.204	
200.0	200.0	202.0	202.0	0.3	0.3	-154.35	-210.6	-101.1	233.6	233.0	0.62	373.784	ES
300.0	300.0	296.9	296.9	0.5	0.5	74.43	-211.6	-101.7	234.8	233.8	0.97	243.322	
400.0	399.9	387.0	386.9	0.7	0.6	75.34	-214.7	-104.2	238.2	236.9	1.31	182.200	
500.0	499.5	476.4	475.9	0.9	0.8	77.19	-221.3	-108.3	244.7	243.0	1.69	145.111	
600.0	598.4	566.3	565.1	1.2	1.1	79.72	-231.4	-113.7	254.7	252.5	2.13	119.513	
700.0	696.5	657.0	654.7	1.6	1.3	82.78	-244.3	-119.8	267.5	264.9	2.66	100.411	
800.0	793.4	752.1	748.3	2.0	1.6	86.33	-259.9	-126.1	282.7	279.4	3.31	85.402	
900.0	888.9	845.3	839.8	2.6	2.0	90.22	-275.9	-132.4	299.8	295.7	4.06	73.823	
1,000.0	982.7	938.8	931.7	3.2	2.3	94.53	-292.0	-139.3	319.6	314.7	4.92	64.983	
1,100.0	1,074.8	1,031.4	1,022.7	3.9	2.6	99.23	-307.9	-146.4	342.5	336.7	5.83	58.718	
1,200.0	1,166.7	1,124.0	1,113.6	4.7	3.0	103.71	-324.2	-153.1	367.8	361.0	6.75	54.459	
1,300.0	1,258.5	1,216.0	1,203.8	5.4	3.3	107.56	-340.6	-159.7	395.2	387.6	7.66	51.568	
1,400.0	1,350.4	1,315.4	1,301.4	6.1	3.7	111.21	-358.1	-166.5	423.8	415.3	8.58	49.422	
1,500.0	1,442.2	1,406.3	1,390.9	6.8	4.0	114.21	-373.2	-172.0	452.6	443.2	9.44	47.950	
1,600.0	1,534.1	1,499.6	1,482.8	7.6	4.3	117.00	-388.4	-178.4	483.2	472.9	10.29	46.971	SF

Company:	EnCana Oil & Gas (USA) Inc	**Local Co-ordinate Reference:**	Well Shideler Fee 6-1DD
Project:	Mamm Creek	**TVD Reference:**	KB=22' @ 7126.0ft (Patterson #308)
Reference Site:	O31E Pad (2nd Occupation)	**MD Reference:**	KB=22' @ 7126.0ft (Patterson #308)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Shideler Fee 6-1DD	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Offset Design O31E Pad - Shideler Fee 6-3DD - DD - DD

Offset Site Error: 0.0 ft

Survey Program: 111-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning
0.0	0.0	3.0	3.0	0.0	0.0	-155.17	-221.1	-102.3	243.6				
100.0	100.0	102.2	102.2	0.1	0.1	-155.21	-221.3	-102.2	243.8	243.5	0.28	872.556	ES
200.0	200.0	200.1	200.1	0.3	0.3	-155.36	-222.3	-101.9	244.6	243.9	0.62	392.756	
300.0	300.0	291.1	291.0	0.5	0.5	73.25	-224.9	-102.6	247.5	246.5	0.96	258.961	
400.0	399.9	381.0	380.7	0.7	0.7	73.77	-230.6	-104.8	253.1	251.8	1.30	195.136	
500.0	499.5	469.6	468.8	0.9	0.9	75.09	-239.6	-108.3	261.6	259.9	1.68	156.107	
600.0	598.4	560.0	558.2	1.2	1.1	77.18	-251.8	-113.1	272.7	270.6	2.12	128.453	
700.0	696.5	645.0	641.8	1.6	1.5	79.71	-266.0	-119.1	287.0	284.4	2.65	108.333	
800.0	793.4	735.1	729.8	2.0	1.8	82.84	-283.8	-127.0	305.1	301.8	3.29	92.768	
900.0	888.9	832.4	824.7	2.6	2.2	86.62	-303.7	-135.7	324.8	320.8	4.06	79.954	
1,000.0	982.7	927.9	917.8	3.2	2.6	90.53	-323.2	-143.2	345.5	340.5	4.96	69.705	
1,100.0	1,074.8	1,021.1	1,008.8	3.9	3.0	94.73	-342.3	-150.0	368.1	362.2	5.93	62.118	
1,200.0	1,166.7	1,112.4	1,097.8	4.7	3.4	98.71	-361.7	-156.5	393.2	386.3	6.92	56.848	
1,300.0	1,258.5	1,204.7	1,187.6	5.4	3.8	102.20	-381.8	-163.0	420.3	412.4	7.91	53.120	
1,400.0	1,350.4	1,297.0	1,277.4	6.1	4.2	105.27	-402.1	-169.6	448.9	440.0	8.91	50.402	
1,500.0	1,442.2	1,392.4	1,370.2	6.8	4.6	108.05	-423.2	-176.3	478.6	468.7	9.90	48.319	SF

Company:	EnCana Oil & Gas (USA) Inc	**Local Co-ordinate Reference:**	Well Shideler Fee 6-1DD
Project:	Mamm Creek	**TVD Reference:**	KB=22' @ 7126.0ft (Patterson #308)
Reference Site:	O31E Pad (2nd Occupation)	**MD Reference:**	KB=22' @ 7126.0ft (Patterson #308)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Shideler Fee 6-1DD	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Offset Design O31E Pad - Shideler Fee 6-6A - DD - FINAL

Offset Site Error: 0.0 ft

Survey Program: 111-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning
0.0	0.0	3.0	3.0	0.0	0.0	-157.00	-213.1	-90.4	231.5				
100.0	100.0	103.1	103.1	0.1	0.1	-156.96	-213.0	-90.6	231.5	231.2	0.28	825.273	
200.0	200.0	203.4	203.4	0.3	0.3	-156.84	-212.7	-91.0	231.3	230.7	0.63	368.713	
300.0	300.0	304.1	304.1	0.5	0.5	72.04	-212.2	-91.2	230.9	229.9	0.98	236.073	
400.0	399.9	401.5	401.5	0.7	0.7	73.15	-212.0	-91.9	229.8	228.5	1.33	172.425	
495.0	494.5	490.8	490.8	0.9	0.8	75.17	-213.2	-92.8	229.1	227.4	1.70	134.820	CC
500.0	499.5	495.5	495.4	0.9	0.8	75.30	-213.3	-92.8	229.1	227.4	1.72	133.286	ES
600.0	598.4	586.3	586.2	1.2	1.0	78.24	-217.4	-94.2	230.4	228.3	2.16	106.477	
700.0	696.5	676.2	675.7	1.6	1.2	81.87	-224.8	-96.5	235.5	232.8	2.69	87.418	
800.0	793.4	764.0	762.8	2.0	1.4	85.88	-235.5	-99.7	245.2	241.9	3.32	73.831	
900.0	888.9	850.8	848.3	2.6	1.7	89.91	-249.8	-103.5	260.1	256.1	4.06	64.131	
1,000.0	982.7	937.0	932.5	3.2	2.0	93.73	-267.7	-107.7	280.3	275.4	4.91	57.109	
1,100.0	1,074.8	1,022.0	1,014.7	3.9	2.3	97.49	-288.7	-112.3	305.6	299.8	5.84	52.310	
1,200.0	1,166.7	1,105.3	1,094.4	4.7	2.8	100.72	-312.4	-117.7	335.6	328.8	6.81	49.264	
1,300.0	1,258.5	1,193.5	1,178.0	5.4	3.3	103.34	-340.0	-124.2	368.8	361.0	7.83	47.110	
1,400.0	1,350.4	1,284.2	1,263.5	6.1	3.8	105.48	-369.3	-131.2	403.4	394.5	8.88	45.431	
1,500.0	1,442.2	1,378.0	1,351.8	6.8	4.3	107.30	-400.1	-138.3	438.6	428.6	9.95	44.057	
1,600.0	1,534.1	1,474.1	1,442.4	7.6	4.9	108.90	-431.3	-145.3	473.6	462.6	11.05	42.843	SF

Company:	EnCana Oil & Gas (USA) Inc	**Local Co-ordinate Reference:**	Well Shideler Fee 6-1DD
Project:	Mamm Creek	**TVD Reference:**	KB=22' @ 7126.0ft (Patterson #308)
Reference Site:	O31E Pad (2nd Occupation)	**MD Reference:**	KB=22' @ 7126.0ft (Patterson #308)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Shideler Fee 6-1DD	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Offset Design O31E Pad - Shideler Fee 6-6D - DD - DD

Offset Site Error: 0.0 ft

Survey Program: 111-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning
0.0	0.0	3.0	3.0	0.0	0.0	-159.07	-204.0	-78.0	218.4				
100.0	100.0	103.2	103.2	0.1	0.1	-159.05	-203.9	-78.1	218.3	218.1	0.28	778.404	
131.8	131.8	134.9	134.9	0.2	0.2	-159.05	-203.9	-78.1	218.3	217.9	0.39	561.843	CC, ES
200.0	200.0	199.1	199.1	0.3	0.3	-159.21	-204.6	-77.7	218.8	218.2	0.62	352.755	
300.0	300.0	290.9	290.8	0.5	0.5	68.76	-208.3	-75.9	222.0	221.0	0.96	231.191	
400.0	399.9	384.6	384.0	0.7	0.7	68.02	-216.3	-72.7	227.4	226.1	1.33	171.485	
500.0	499.5	479.0	477.7	0.9	0.9	68.02	-227.9	-69.0	234.3	232.5	1.74	134.253	
600.0	598.4	566.3	563.8	1.2	1.2	68.90	-241.7	-66.5	242.9	240.7	2.21	109.839	
700.0	696.5	652.8	648.6	1.6	1.5	70.69	-258.5	-65.9	254.1	251.4	2.77	91.884	
800.0	793.4	737.4	730.8	2.0	1.9	73.13	-278.6	-67.3	269.3	265.8	3.42	78.645	
900.0	888.9	820.5	810.6	2.6	2.4	75.98	-301.7	-70.7	288.7	284.5	4.21	68.590	
1,000.0	982.7	904.6	890.2	3.2	2.8	78.97	-328.5	-75.3	312.5	307.3	5.15	60.620	
1,100.0	1,074.8	995.5	975.4	3.9	3.4	82.54	-359.8	-80.4	339.3	333.1	6.23	54.462	
1,200.0	1,166.7	1,089.6	1,063.6	4.7	4.0	86.12	-392.3	-85.3	367.3	359.9	7.38	49.789	
1,300.0	1,258.5	1,180.6	1,148.6	5.4	4.6	89.01	-424.4	-89.7	396.8	388.3	8.55	46.392	
1,400.0	1,350.4	1,270.6	1,232.3	6.1	5.2	91.37	-457.1	-93.9	427.8	418.1	9.73	43.946	
1,500.0	1,442.2	1,359.7	1,314.9	6.8	5.8	93.35	-490.3	-98.6	460.4	449.5	10.92	42.152	
1,600.0	1,534.1	1,449.3	1,397.6	7.6	6.4	95.04	-524.3	-103.3	493.9	481.8	12.12	40.745	SF

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	**Local Co-ordinate Reference:**	Well Shideler Fee 6-1DD
Project:	Mamm Creek	**TVD Reference:**	KB=22' @ 7126.0ft (Patterson #308)
Reference Site:	O31E Pad (2nd Occupation)	**MD Reference:**	KB=22' @ 7126.0ft (Patterson #308)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Shideler Fee 6-1DD	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Offset Design O31E Pad - Shideler Fee 6-6DD - DD - FINAL

Offset Site Error: 0.0 ft

Survey Program: 111-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning
0.0	0.0	3.0	3.0	0.0	0.0	-158.58	-193.8	-76.0	208.2				
100.0	100.0	103.4	103.4	0.1	0.1	-158.62	-193.7	-75.9	208.1	207.8	0.28	740.986	
153.1	153.1	156.1	156.1	0.2	0.2	-158.64	-193.7	-75.8	208.0	207.6	0.46	449.467	CC
200.0	200.0	201.0	201.0	0.3	0.3	-158.63	-193.9	-75.8	208.2	207.5	0.62	334.100	ES
300.0	300.0	292.6	292.5	0.5	0.5	70.14	-196.4	-77.0	211.2	210.2	0.96	220.540	
400.0	399.9	382.3	382.0	0.7	0.7	70.60	-202.9	-78.5	217.2	215.9	1.30	167.275	
500.0	499.5	470.7	469.7	0.9	0.9	71.90	-213.4	-81.1	226.4	224.7	1.68	135.103	
600.0	598.4	559.6	557.3	1.2	1.2	73.78	-228.2	-84.4	239.0	236.8	2.12	112.571	
700.0	696.5	645.7	641.3	1.6	1.5	75.89	-246.4	-87.8	254.8	252.2	2.66	95.781	
800.0	793.4	731.6	724.3	2.0	1.9	78.36	-268.4	-92.4	274.7	271.4	3.32	82.857	
900.0	888.9	816.6	805.4	2.6	2.4	80.98	-293.1	-97.9	298.3	294.2	4.09	72.869	
1,000.0	982.7	901.1	885.2	3.2	2.9	83.79	-320.0	-104.9	325.6	320.6	5.01	65.011	
1,100.0	1,074.8	983.8	962.4	3.9	3.4	86.83	-348.6	-112.4	356.6	350.6	6.03	59.142	
1,200.0	1,166.7	1,064.0	1,036.3	4.7	4.0	89.62	-378.9	-120.1	391.5	384.4	7.10	55.127	
1,300.0	1,258.5	1,145.0	1,109.5	5.4	4.6	91.66	-412.7	-128.0	430.0	421.8	8.21	52.349	
1,400.0	1,350.4	1,236.9	1,191.8	6.1	5.3	93.42	-452.6	-136.5	469.8	460.4	9.40	49.987	SF

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

Company:	EnCana Oil & Gas (USA) Inc	**Local Co-ordinate Reference:**	Well Shideler Fee 6-1DD
Project:	Mamm Creek	**TVD Reference:**	KB=22' @ 7126.0ft (Patterson #308)
Reference Site:	O31E Pad (2nd Occupation)	**MD Reference:**	KB=22' @ 7126.0ft (Patterson #308)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Shideler Fee 6-1DD	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Offset Design O31E Pad - Shideler Fee 6-7D - DD - DD

Offset Site Error: 0.0 ft

Survey Program: 111-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	-161.42	-196.7	-66.1	207.5				
100.0	100.0	101.0	101.0	0.1	0.1	-161.42	-196.5	-66.0	207.3	207.0	0.28	734.143	
139.3	139.3	139.3	139.3	0.2	0.2	-161.42	-196.4	-66.0	207.1	206.7	0.41	499.457	CC, ES
200.0	200.0	194.7	194.7	0.3	0.3	-161.62	-197.2	-65.5	207.9	207.2	0.62	336.302	
300.0	300.0	288.5	288.3	0.5	0.5	66.22	-201.8	-63.6	211.9	210.9	0.96	219.996	
400.0	399.9	379.6	379.0	0.7	0.7	65.55	-210.2	-60.8	218.1	216.8	1.32	164.984	
500.0	499.5	469.2	467.7	0.9	0.9	65.63	-222.2	-57.8	226.2	224.5	1.72	131.266	
600.0	598.4	559.5	556.5	1.2	1.2	66.14	-238.2	-53.8	236.1	233.9	2.20	107.184	
700.0	696.5	653.5	648.2	1.6	1.6	67.32	-258.6	-49.5	247.6	244.8	2.82	87.744	
800.0	793.4	744.0	735.2	2.0	2.1	68.14	-281.8	-41.2	259.6	256.0	3.57	72.703	
900.0	888.9	833.4	820.0	2.6	2.6	69.10	-308.5	-31.5	273.4	268.9	4.47	61.216	
1,000.0	982.7	923.0	903.6	3.2	3.2	70.29	-338.8	-20.7	288.8	283.3	5.52	52.335	
1,100.0	1,074.8	1,012.0	985.5	3.9	3.9	71.93	-371.8	-9.7	306.0	299.3	6.69	45.764	
1,200.0	1,166.7	1,101.3	1,066.8	4.7	4.5	73.60	-407.3	0.9	326.1	318.2	7.91	41.213	
1,300.0	1,258.5	1,193.0	1,149.4	5.4	5.2	75.00	-445.7	11.4	348.6	339.4	9.18	37.956	
1,400.0	1,350.4	1,289.8	1,236.2	6.1	6.0	76.24	-487.2	22.2	372.3	361.8	10.51	35.433	
1,500.0	1,442.2	1,392.1	1,328.2	6.8	6.8	77.37	-530.3	34.4	395.1	383.2	11.89	33.227	
1,600.0	1,534.1	1,494.5	1,420.3	7.6	7.6	78.25	-572.8	48.0	416.8	403.5	13.29	31.359	
1,700.0	1,625.9	1,596.2	1,512.3	8.3	8.4	79.10	-613.9	61.8	437.5	422.8	14.68	29.807	
1,800.0	1,717.8	1,687.1	1,594.9	9.0	9.1	79.95	-650.2	73.1	458.4	442.4	16.02	28.623	
1,900.0	1,809.6	1,773.0	1,672.4	9.8	9.7	80.68	-685.8	82.7	481.4	464.1	17.31	27.812	SF

Company:	EnCana Oil & Gas (USA) Inc	**Local Co-ordinate Reference:**	Well Shideler Fee 6-1DD
Project:	Mamm Creek	**TVD Reference:**	KB=22' @ 7126.0ft (Patterson #308)
Reference Site:	O31E Pad (2nd Occupation)	**MD Reference:**	KB=22' @ 7126.0ft (Patterson #308)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Shideler Fee 6-1DD	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Offset Design O31E Pad (2nd Occupation) - Shideler Fee 31-10C - OH - Plan #1

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	49.95	43.7	52.0	67.9				
100.0	100.0	100.0	100.0	0.1	0.1	49.95	43.7	52.0	67.9	67.7	0.27	249.485	
200.0	200.0	200.0	200.0	0.3	0.3	49.95	43.7	52.0	67.9	67.3	0.62	109.325	CC, ES
300.0	300.0	298.5	298.5	0.5	0.5	-82.41	45.1	51.9	68.7	67.8	0.97	70.896	
400.0	399.9	395.7	395.5	0.7	0.7	-89.29	51.3	51.3	72.5	71.2	1.34	54.108	
500.0	499.5	491.0	490.1	0.9	0.9	-100.80	62.1	50.2	82.0	80.3	1.75	46.837	
600.0	598.4	583.1	581.0	1.2	1.2	-112.94	77.0	48.8	100.8	98.6	2.18	46.197	SF
700.0	696.5	670.9	666.9	1.6	1.6	-122.80	95.3	47.1	130.3	127.7	2.61	49.927	
800.0	793.4	758.2	751.5	2.0	2.0	-130.17	116.6	45.1	169.4	166.3	3.04	55.668	
900.0	888.9	845.4	836.0	2.6	2.4	-135.53	138.0	43.0	214.2	210.7	3.49	61.355	
1,000.0	982.7	930.0	918.0	3.2	2.7	-139.42	158.9	41.0	264.1	260.1	3.96	66.679	
1,100.0	1,074.8	1,012.3	997.7	3.9	3.1	-142.84	179.2	39.1	318.1	313.7	4.42	71.902	
1,200.0	1,166.7	1,094.1	1,077.0	4.7	3.5	-145.81	199.3	37.2	373.6	368.7	4.88	76.529	
1,300.0	1,258.5	1,176.0	1,156.3	5.4	3.9	-148.02	219.5	35.2	429.5	424.2	5.34	80.440	
1,400.0	1,350.4	1,257.9	1,235.6	6.1	4.2	-149.74	239.7	33.3	485.8	480.0	5.80	83.775	

Company:	EnCana Oil & Gas (USA) Inc	**Local Co-ordinate Reference:**	Well Shideler Fee 6-1DD
Project:	Mamm Creek	**TVD Reference:**	KB=22' @ 7126.0ft (Patterson #308)
Reference Site:	O31E Pad (2nd Occupation)	**MD Reference:**	KB=22' @ 7126.0ft (Patterson #308)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Shideler Fee 6-1DD	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Offset Design O31E Pad (2nd Occupation) - Shideler Fee 31-11C - OH - Plan #1

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	48.23	35.3	39.6	53.0				
100.0	100.0	100.0	100.0	0.1	0.1	48.23	35.3	39.6	53.0	52.8	0.27	194.826	
200.0	200.0	200.0	200.0	0.3	0.3	48.23	35.3	39.6	53.0	52.4	0.62	85.373	
215.5	215.5	215.5	215.5	0.3	0.3	-83.05	35.3	39.6	53.0	52.4	0.68	78.539	CC
300.0	300.0	299.8	299.8	0.5	0.5	-83.91	35.9	39.2	53.1	52.1	0.97	54.705	ES
400.0	399.9	398.9	398.7	0.7	0.7	-93.42	40.0	36.2	54.1	52.7	1.35	40.185	
500.0	499.5	495.7	495.0	0.9	0.9	-110.94	48.1	30.3	60.6	58.8	1.77	34.199	SF
600.0	598.4	589.0	587.2	1.2	1.2	-128.80	59.7	22.0	78.7	76.5	2.19	35.991	
700.0	696.5	677.5	673.9	1.6	1.5	-141.60	74.0	11.7	110.0	107.5	2.55	43.221	
800.0	793.4	762.3	756.2	2.0	1.9	-149.75	90.6	-0.2	152.7	149.9	2.86	53.314	
900.0	888.9	847.5	838.7	2.6	2.3	-155.03	108.0	-12.7	202.4	199.3	3.17	63.783	
1,000.0	982.7	929.8	918.4	3.2	2.7	-158.46	124.7	-24.7	257.4	253.9	3.48	73.993	
1,100.0	1,074.8	1,009.5	995.5	3.9	3.0	-161.13	141.0	-36.4	316.5	312.7	3.78	83.787	
1,200.0	1,166.7	1,088.7	1,072.2	4.7	3.4	-163.29	157.1	-48.0	376.6	372.5	4.08	92.285	
1,300.0	1,258.5	1,167.9	1,148.9	5.4	3.8	-164.87	173.3	-59.6	436.9	432.5	4.39	99.605	
1,400.0	1,350.4	1,247.2	1,225.6	6.1	4.1	-166.06	189.4	-71.2	497.4	492.7	4.69	105.964	

Company:	EnCana Oil & Gas (USA) Inc	**Local Co-ordinate Reference:**	Well Shideler Fee 6-1DD
Project:	Mamm Creek	**TVD Reference:**	KB=22' @ 7126.0ft (Patterson #308)
Reference Site:	O31E Pad (2nd Occupation)	**MD Reference:**	KB=22' @ 7126.0ft (Patterson #308)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Shideler Fee 6-1DD	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Offset Design O31E Pad (2nd Occupation) - Shideler Fee 31-12B - OH - Plan #1

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	44.50	27.3	26.8	38.3				
100.0	100.0	100.0	100.0	0.1	0.1	44.50	27.3	26.8	38.3	38.0	0.27	140.685	
200.0	200.0	200.0	200.0	0.3	0.3	44.50	27.3	26.8	38.3	37.7	0.62	61.648	
284.3	284.3	284.3	284.3	0.5	0.5	-90.25	28.5	25.4	38.2	37.3	0.92	41.446	CC
300.0	300.0	300.0	300.0	0.5	0.5	-90.94	29.0	24.9	38.2	37.3	0.98	39.054	ES
400.0	399.9	399.0	398.6	0.7	0.7	-107.69	34.1	19.0	40.1	38.8	1.38	29.147	
500.0	499.5	495.4	494.2	0.9	1.0	-130.91	42.3	9.6	51.3	49.5	1.79	28.673	SF
600.0	598.4	587.8	585.2	1.2	1.3	-148.26	53.0	-2.8	76.2	74.0	2.14	35.635	
700.0	696.5	675.1	670.2	1.6	1.7	-158.32	65.9	-17.6	113.5	111.1	2.44	46.463	
800.0	793.4	756.3	748.5	2.0	2.1	-164.04	80.1	-33.9	161.1	158.4	2.73	59.094	
900.0	888.9	831.0	819.5	2.6	2.6	-167.46	95.0	-51.2	217.3	214.3	2.99	72.667	
1,000.0	982.7	900.0	884.4	3.2	3.0	-169.66	110.5	-69.0	281.1	277.8	3.24	86.786	
1,100.0	1,074.8	959.6	939.7	3.9	3.4	-171.21	125.0	-85.7	351.0	347.5	3.49	100.654	
1,200.0	1,166.7	1,016.4	991.8	4.7	3.9	-172.51	140.0	-102.9	423.7	420.0	3.74	113.306	
1,300.0	1,258.5	1,069.7	1,040.0	5.4	4.3	-173.45	154.9	-120.2	498.5	494.5	3.99	124.966	

Company:	EnCana Oil & Gas (USA) Inc	**Local Co-ordinate Reference:**	Well Shideler Fee 6-1DD
Project:	Mamm Creek	**TVD Reference:**	KB=22' @ 7126.0ft (Patterson #308)
Reference Site:	O31E Pad (2nd Occupation)	**MD Reference:**	KB=22' @ 7126.0ft (Patterson #308)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Shideler Fee 6-1DD	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Offset Design O31E Pad (2nd Occupation) - Shideler Fee 31-13B - OH - Plan #1

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	10.26	10.9	2.0	11.1				
100.0	100.0	100.0	100.0	0.1	0.1	10.26	10.9	2.0	11.1	10.8	0.27	40.801	
200.0	200.0	200.0	200.0	0.3	0.3	10.26	10.9	2.0	11.1	10.5	0.62	17.879	CC
216.9	216.9	216.9	216.9	0.3	0.3	-121.47	11.0	1.9	11.1	10.4	0.68	16.330	ES
300.0	300.0	299.8	299.8	0.5	0.5	-134.11	11.8	-0.5	11.9	11.0	0.98	12.224	SF
400.0	399.9	398.6	398.2	0.7	0.7	-163.33	14.5	-7.7	20.3	19.0	1.34	15.207	
500.0	499.5	494.9	493.7	0.9	1.0	-178.15	18.7	-19.4	40.6	38.9	1.68	24.174	
600.0	598.4	587.4	584.7	1.2	1.3	175.95	24.3	-34.8	71.3	69.3	2.01	35.480	
700.0	696.5	674.9	670.0	1.6	1.7	173.20	31.0	-53.2	111.4	109.1	2.33	47.793	
800.0	793.4	756.5	748.7	2.0	2.1	171.66	38.4	-73.7	160.1	157.4	2.64	60.613	
900.0	888.9	831.7	820.3	2.6	2.6	170.65	46.3	-95.3	216.6	213.7	2.94	73.702	
1,000.0	982.7	900.0	884.4	3.2	3.0	169.88	54.2	-117.3	280.2	277.0	3.22	86.916	
1,100.0	1,074.8	964.7	944.4	3.9	3.5	169.45	62.5	-140.0	349.7	346.2	3.53	99.154	
1,200.0	1,166.7	1,031.9	1,006.3	4.7	4.0	169.30	71.5	-164.6	420.9	417.1	3.86	109.035	
1,300.0	1,258.5	1,102.1	1,071.0	5.4	4.5	169.19	80.8	-190.3	492.1	487.9	4.20	117.174	

Company:	EnCana Oil & Gas (USA) Inc	**Local Co-ordinate Reference:**	Well Shideler Fee 6-1DD
Project:	Mamm Creek	**TVD Reference:**	KB=22' @ 7126.0ft (Patterson #308)
Reference Site:	O31E Pad (2nd Occupation)	**MD Reference:**	KB=22' @ 7126.0ft (Patterson #308)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Shideler Fee 6-1DD	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Offset Design O31E Pad (2nd Occupation) - Shideler Fee 31-13BB - OH - Plan #1

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	-76.62	2.6	-10.7	11.0				
100.0	100.0	100.0	100.0	0.1	0.1	-76.62	2.6	-10.7	11.0	10.8	0.27	40.541	
200.0	200.0	200.0	200.0	0.3	0.3	-76.62	2.6	-10.7	11.0	10.4	0.62	17.765	CC
255.6	255.6	255.6	255.6	0.4	0.4	152.59	2.6	-10.7	11.2	10.4	0.82	13.758	
300.0	300.0	300.0	300.0	0.5	0.5	152.50	2.6	-10.7	11.2	10.2	0.97	11.525	ES, SF
400.0	399.9	399.3	399.3	0.7	0.7	158.54	2.8	-12.2	16.2	14.9	1.32	12.298	
500.0	499.5	497.0	496.8	0.9	0.9	162.61	4.0	-18.3	31.1	29.5	1.66	18.712	
600.0	598.4	591.8	590.9	1.2	1.1	164.03	6.0	-29.0	55.8	53.8	2.01	27.802	
700.0	696.5	682.5	680.4	1.6	1.4	164.45	8.6	-43.5	89.8	87.5	2.35	38.216	
800.0	793.4	768.1	764.2	2.0	1.7	164.48	11.9	-61.1	132.6	129.9	2.69	49.263	
900.0	888.9	847.9	841.4	2.6	2.1	164.31	15.5	-80.7	183.4	180.4	3.03	60.537	
1,000.0	982.7	921.3	911.6	3.2	2.5	164.01	19.4	-101.5	241.8	238.4	3.37	71.767	
1,100.0	1,074.8	988.4	975.1	3.9	2.9	163.92	23.4	-122.9	306.4	302.6	3.72	82.324	
1,200.0	1,166.7	1,051.4	1,034.0	4.7	3.3	163.99	27.5	-144.9	373.9	369.8	4.09	91.364	
1,300.0	1,258.5	1,119.6	1,097.1	5.4	3.8	163.95	32.2	-170.4	443.2	438.8	4.48	98.932	

Company:	EnCana Oil & Gas (USA) Inc	**Local Co-ordinate Reference:**	Well Shideler Fee 6-1DD
Project:	Mamm Creek	**TVD Reference:**	KB=22' @ 7126.0ft (Patterson #308)
Reference Site:	O31E Pad (2nd Occupation)	**MD Reference:**	KB=22' @ 7126.0ft (Patterson #308)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Shideler Fee 6-1DD	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Offset Design O31E Pad (2nd Occupation) - Shideler Fee 31-14D - OH - Plan #1

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	37.26	18.9	14.4	23.8				
100.0	100.0	100.0	100.0	0.1	0.1	37.26	18.9	14.4	23.8	23.5	0.27	87.426	
200.0	200.0	200.0	200.0	0.3	0.3	37.26	18.9	14.4	23.8	23.2	0.62	38.310	CC
256.2	256.2	256.2	256.2	0.4	0.4	-94.50	18.9	14.4	23.8	23.0	0.82	29.135	
300.0	300.0	300.0	300.0	0.5	0.5	-94.40	18.9	14.4	23.8	22.8	0.97	24.541	ES
400.0	399.9	399.9	399.9	0.7	0.7	-103.59	18.9	14.4	24.4	23.1	1.33	18.378	
500.0	499.5	499.5	499.5	0.9	0.8	-121.93	18.9	14.4	28.0	26.3	1.71	16.389	SF
600.0	598.4	597.4	597.3	1.2	1.0	-143.49	19.8	12.1	39.0	37.0	2.07	18.830	
700.0	696.5	694.2	694.1	1.6	1.2	-158.65	21.7	7.3	59.9	57.5	2.39	25.018	
800.0	793.4	789.8	789.4	2.0	1.4	-166.56	23.6	2.5	87.7	85.0	2.70	32.447	
900.0	888.9	883.6	883.2	2.6	1.5	-171.00	25.5	-2.2	121.2	118.2	3.00	40.375	
1,000.0	982.7	975.5	975.0	3.2	1.7	-173.70	27.3	-6.8	160.1	156.8	3.29	48.581	
1,100.0	1,074.8	1,065.6	1,064.8	3.9	1.9	-175.49	29.0	-11.3	203.3	199.7	3.60	56.530	
1,200.0	1,166.7	1,155.3	1,154.4	4.7	2.1	-176.72	30.8	-15.8	247.2	243.3	3.92	63.113	
1,300.0	1,258.5	1,245.0	1,244.0	5.4	2.2	-177.57	32.5	-20.3	291.3	287.0	4.24	68.689	
1,400.0	1,350.4	1,334.7	1,333.6	6.1	2.4	-178.20	34.3	-24.8	335.3	330.8	4.56	73.470	
1,500.0	1,442.2	1,424.4	1,423.2	6.8	2.6	-178.69	36.1	-29.3	379.4	374.5	4.89	77.611	
1,600.0	1,534.1	1,514.1	1,512.8	7.6	2.8	-179.07	37.8	-33.8	423.5	418.3	5.21	81.231	
1,700.0	1,625.9	1,603.9	1,602.4	8.3	2.9	-179.38	39.6	-38.2	467.6	462.1	5.54	84.423	

Company:	EnCana Oil & Gas (USA) Inc	**Local Co-ordinate Reference:**	Well Shideler Fee 6-1DD
Project:	Mamm Creek	**TVD Reference:**	KB=22' @ 7126.0ft (Patterson #308)
Reference Site:	O31E Pad (2nd Occupation)	**MD Reference:**	KB=22' @ 7126.0ft (Patterson #308)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Shideler Fee 6-1DD	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Offset Design O31E Pad (2nd Occupation) - Shideler Fee 31-14DD - OH - Plan #1

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	-103.26	-5.5	-23.2	23.8				
100.0	100.0	100.0	100.0	0.1	0.1	-103.26	-5.5	-23.2	23.8	23.5	0.27	87.440	
200.0	200.0	200.0	200.0	0.3	0.3	-103.26	-5.5	-23.2	23.8	23.2	0.62	38.316	CC
255.6	255.6	255.6	255.6	0.4	0.4	125.87	-5.5	-23.2	23.9	23.1	0.82	29.340	
300.0	300.0	300.0	300.0	0.5	0.5	125.79	-5.5	-23.2	23.9	22.9	0.97	24.632	ES
400.0	399.9	398.8	398.7	0.7	0.7	130.37	-6.8	-25.3	28.7	27.4	1.32	21.677	SF
500.0	499.5	498.1	498.0	0.9	0.8	137.82	-9.1	-29.1	39.0	37.3	1.69	23.058	
600.0	598.4	596.8	596.6	1.2	1.0	145.37	-11.4	-32.8	54.0	51.9	2.07	26.068	
700.0	696.5	694.5	694.2	1.6	1.2	151.52	-13.7	-36.5	74.0	71.5	2.45	30.240	
800.0	793.4	791.0	790.6	2.0	1.4	156.18	-16.0	-40.1	99.2	96.4	2.81	35.232	
900.0	888.9	886.0	885.5	2.6	1.6	159.65	-18.2	-43.7	129.5	126.3	3.17	40.813	
1,000.0	982.7	979.3	978.7	3.2	1.8	162.26	-20.4	-47.3	164.8	161.3	3.52	46.834	
1,100.0	1,074.8	1,070.8	1,070.1	3.9	1.9	164.37	-22.5	-50.7	204.5	200.7	3.87	52.911	
1,200.0	1,166.7	1,162.1	1,161.3	4.7	2.1	165.98	-24.6	-54.2	245.0	240.8	4.22	58.030	
1,300.0	1,258.5	1,253.3	1,252.4	5.4	2.3	167.13	-26.8	-57.6	285.7	281.1	4.58	62.385	
1,400.0	1,350.4	1,344.5	1,343.6	6.1	2.4	167.99	-28.9	-61.1	326.4	321.4	4.94	66.132	
1,500.0	1,442.2	1,435.8	1,434.7	6.8	2.6	168.66	-31.1	-64.5	367.1	361.8	5.29	69.387	
1,600.0	1,534.1	1,527.0	1,525.9	7.6	2.8	169.20	-33.2	-68.0	407.9	402.3	5.65	72.241	
1,700.0	1,625.9	1,618.3	1,617.0	8.3	3.0	169.64	-35.3	-71.5	448.7	442.7	6.00	74.764	
1,800.0	1,717.8	1,709.5	1,708.2	9.0	3.1	170.00	-37.5	-74.9	489.6	483.2	6.36	77.008	

Company:	EnCana Oil & Gas (USA) Inc	**Local Co-ordinate Reference:**	Well Shideler Fee 6-1DD
Project:	Mamm Creek	**TVD Reference:**	KB=22' @ 7126.0ft (Patterson #308)
Reference Site:	O31E Pad (2nd Occupation)	**MD Reference:**	KB=22' @ 7126.0ft (Patterson #308)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Shideler Fee 6-1DD	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Offset Design O31E Pad (2nd Occupation) - Shideler Fee 31-16A - OH - Plan #1

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	56.81	49.2	75.2	89.8				
100.0	100.0	100.0	100.0	0.1	0.1	56.81	49.2	75.2	89.8	89.6	0.27	329.918	
200.0	200.0	200.0	200.0	0.3	0.3	56.81	49.2	75.2	89.8	89.2	0.62	144.571	
300.0	300.0	300.0	300.0	0.5	0.5	-74.56	49.2	75.2	89.8	88.8	0.97	92.519	
400.0	399.9	399.9	399.9	0.7	0.7	-77.03	49.2	75.2	88.8	87.5	1.33	66.806	
435.0	434.8	433.4	433.4	0.7	0.7	-78.56	49.3	75.4	88.6	87.1	1.47	60.444	CC, ES
500.0	499.5	495.4	495.3	0.9	0.8	-82.03	50.0	77.4	89.5	87.8	1.72	52.006	
600.0	598.4	590.4	590.1	1.2	1.0	-88.46	52.3	84.1	95.2	93.0	2.19	43.537	
700.0	696.5	684.8	683.7	1.6	1.3	-95.14	56.1	95.2	106.5	103.7	2.75	38.748	
800.0	793.4	778.0	775.6	2.0	1.6	-101.08	61.4	110.4	123.8	120.4	3.43	36.147	
900.0	888.9	869.9	865.1	2.6	1.9	-105.81	68.1	129.5	147.0	142.8	4.23	34.784	
1,000.0	982.7	960.0	952.0	3.2	2.4	-109.32	75.9	152.2	175.7	170.6	5.15	34.143	
1,100.0	1,074.8	1,052.7	1,040.5	3.9	2.8	-112.60	85.0	178.2	208.5	202.4	6.15	33.916	
1,200.0	1,166.7	1,146.2	1,129.8	4.7	3.3	-115.53	94.1	204.5	242.3	235.2	7.17	33.792	
1,300.0	1,258.5	1,239.7	1,219.0	5.4	3.9	-117.74	103.3	230.8	276.5	268.3	8.20	33.719	
1,400.0	1,350.4	1,333.2	1,308.3	6.1	4.4	-119.47	112.4	257.1	311.0	301.8	9.24	33.678	
1,500.0	1,442.2	1,426.7	1,397.5	6.8	4.9	-120.85	121.5	283.4	345.7	335.5	10.27	33.658	
1,600.0	1,534.1	1,520.2	1,486.8	7.6	5.4	-121.98	130.7	309.7	380.6	369.3	11.31	33.651	SF
1,700.0	1,625.9	1,613.6	1,576.0	8.3	5.9	-122.92	139.8	336.0	415.5	403.2	12.35	33.652	
1,800.0	1,717.8	1,707.1	1,665.2	9.0	6.4	-123.72	149.0	362.3	450.6	437.2	13.39	33.658	
1,900.0	1,809.6	1,800.6	1,754.5	9.8	7.0	-124.40	158.1	388.6	485.7	471.3	14.43	33.667	

Company:	EnCana Oil & Gas (USA) Inc	**Local Co-ordinate Reference:**	Well Shideler Fee 6-1DD
Project:	Mamm Creek	**TVD Reference:**	KB=22' @ 7126.0ft (Patterson #308)
Reference Site:	O31E Pad (2nd Occupation)	**MD Reference:**	KB=22' @ 7126.0ft (Patterson #308)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Shideler Fee 6-1DD	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Offset Design O31E Pad (2nd Occupation) - Shideler Fee 31-16AA - OH - Plan #1

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	51.37	51.7	64.7	82.8				
100.0	100.0	100.0	100.0	0.1	0.1	51.37	51.7	64.7	82.8	82.6	0.27	304.278	
200.0	200.0	200.0	200.0	0.3	0.3	51.37	51.7	64.7	82.8	82.2	0.62	133.336	
300.0	300.0	300.0	300.0	0.5	0.5	-80.02	51.7	64.7	82.8	81.8	0.97	85.341	
305.5	305.5	305.3	305.3	0.5	0.5	-80.07	51.7	64.7	82.8	81.8	0.99	83.658	CC, ES
400.0	399.9	395.8	395.8	0.7	0.7	-82.18	52.9	66.8	84.7	83.3	1.32	63.993	
500.0	499.5	491.1	490.8	0.9	0.9	-86.47	56.3	73.1	91.1	89.3	1.72	52.997	
600.0	598.4	585.5	584.4	1.2	1.1	-91.81	61.9	83.4	102.7	100.5	2.19	46.900	
700.0	696.5	678.4	675.9	1.6	1.4	-97.13	69.5	97.6	120.0	117.3	2.76	43.457	
800.0	793.4	769.5	764.8	2.0	1.8	-101.72	79.1	115.2	143.3	139.9	3.45	41.519	
900.0	888.9	858.5	850.5	2.6	2.2	-105.35	90.3	136.0	172.5	168.2	4.26	40.448	
1,000.0	982.7	947.0	934.8	3.2	2.7	-108.17	103.3	160.0	207.1	201.9	5.19	39.918	
1,100.0	1,074.8	1,038.7	1,021.6	3.9	3.3	-111.38	117.2	185.6	244.6	238.4	6.19	39.501	
1,200.0	1,166.7	1,130.1	1,108.3	4.7	3.8	-114.31	131.1	211.2	283.1	275.9	7.22	39.232	
1,300.0	1,258.5	1,221.5	1,195.0	5.4	4.3	-116.54	144.9	236.8	322.1	313.9	8.25	39.066	
1,400.0	1,350.4	1,313.0	1,281.7	6.1	4.9	-118.30	158.8	262.4	361.4	352.2	9.28	38.964	
1,500.0	1,442.2	1,404.4	1,368.4	6.8	5.4	-119.71	172.6	288.0	401.0	390.7	10.31	38.903	
1,600.0	1,534.1	1,495.8	1,455.1	7.6	6.0	-120.87	186.5	313.6	440.7	429.4	11.34	38.867	
1,700.0	1,625.9	1,587.3	1,541.7	8.3	6.5	-121.84	200.4	339.2	480.6	468.2	12.37	38.848	SF

Company:	EnCana Oil & Gas (USA) Inc	**Local Co-ordinate Reference:**	Well Shideler Fee 6-1DD
Project:	Mamm Creek	**TVD Reference:**	KB=22' @ 7126.0ft (Patterson #308)
Reference Site:	O31E Pad (2nd Occupation)	**MD Reference:**	KB=22' @ 7126.0ft (Patterson #308)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Shideler Fee 6-1DD	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Offset Design O31E Pad (2nd Occupation) - Shideler Fee 31-16D - OH - Plan #1

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	56.91	32.8	50.3	60.0				
100.0	100.0	100.0	100.0	0.1	0.1	56.91	32.8	50.3	60.0	59.8	0.27	220.527	
200.0	200.0	200.0	200.0	0.3	0.3	56.91	32.8	50.3	60.0	59.4	0.62	96.636	
300.0	300.0	300.0	300.0	0.5	0.5	-74.52	32.8	50.3	60.0	59.0	0.97	61.828	
350.0	350.0	349.4	349.4	0.6	0.6	-75.62	32.8	50.5	59.8	58.6	1.15	52.060	CC, ES
400.0	399.9	398.2	398.2	0.7	0.7	-77.20	32.6	51.7	60.1	58.8	1.33	45.300	
500.0	499.5	495.8	495.6	0.9	0.9	-81.26	32.0	57.9	63.0	61.3	1.73	36.340	
600.0	598.4	593.2	592.4	1.2	1.1	-85.91	30.8	69.0	69.1	66.8	2.24	30.824	
700.0	696.5	690.4	688.2	1.6	1.4	-90.43	29.2	85.0	78.5	75.6	2.89	27.164	
800.0	793.4	787.1	782.6	2.0	1.8	-94.33	27.0	105.6	91.2	87.5	3.70	24.654	
900.0	888.9	883.3	875.4	2.6	2.3	-97.46	24.4	130.9	107.3	102.6	4.67	22.954	
1,000.0	982.7	981.3	969.2	3.2	2.8	-100.97	21.5	159.0	125.6	119.8	5.78	21.727	
1,100.0	1,074.8	1,078.6	1,062.4	3.9	3.3	-105.46	18.6	186.9	145.5	138.5	6.93	20.978	
1,200.0	1,166.7	1,175.9	1,155.5	4.7	3.8	-109.32	15.7	214.7	166.4	158.3	8.08	20.589	
1,300.0	1,258.5	1,273.1	1,248.7	5.4	4.3	-112.31	12.8	242.6	187.8	178.6	9.21	20.390	
1,400.0	1,350.4	1,370.4	1,341.8	6.1	4.8	-114.69	9.9	270.5	209.7	199.3	10.33	20.297	
1,500.0	1,442.2	1,467.6	1,434.9	6.8	5.4	-116.62	7.0	298.4	231.8	220.4	11.44	20.265	SF
1,600.0	1,534.1	1,564.9	1,528.0	7.6	5.9	-118.22	4.1	326.2	254.2	241.6	12.54	20.268	
1,700.0	1,625.9	1,662.1	1,621.1	8.3	6.4	-119.55	1.2	354.1	276.7	263.0	13.63	20.292	
1,800.0	1,717.8	1,759.4	1,714.3	9.0	7.0	-120.69	-1.7	382.0	299.3	284.6	14.72	20.328	
1,900.0	1,809.6	1,856.6	1,807.4	9.8	7.5	-121.66	-4.6	409.9	322.0	306.2	15.81	20.370	
2,000.0	1,901.5	1,953.9	1,900.5	10.5	8.0	-122.51	-7.5	437.7	344.8	327.9	16.89	20.416	
2,100.0	1,993.3	2,051.1	1,993.6	11.3	8.6	-123.25	-10.4	465.6	367.6	349.7	17.97	20.462	
2,200.0	2,085.1	2,148.3	2,086.8	12.0	9.1	-123.91	-13.3	493.5	390.5	371.5	19.04	20.509	
2,300.0	2,177.0	2,245.6	2,179.9	12.7	9.6	-124.49	-16.2	521.4	413.5	393.4	20.12	20.555	
2,400.0	2,268.8	2,342.8	2,273.0	13.5	10.2	-125.02	-19.1	549.2	436.5	415.3	21.19	20.600	
2,500.0	2,360.7	2,440.1	2,366.1	14.2	10.7	-125.49	-22.0	577.1	459.5	437.2	22.26	20.643	
2,600.0	2,452.5	2,537.3	2,459.3	14.9	11.2	-125.91	-24.9	605.0	482.6	459.2	23.33	20.684	

Company:	EnCana Oil & Gas (USA) Inc	**Local Co-ordinate Reference:**	Well Shideler Fee 6-1DD
Project:	Mamm Creek	**TVD Reference:**	KB=22' @ 7126.0ft (Patterson #308)
Reference Site:	O31E Pad (2nd Occupation)	**MD Reference:**	KB=22' @ 7126.0ft (Patterson #308)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Shideler Fee 6-1DD	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Offset Design O31E Pad (2nd Occupation) - Shideler Fee 31-16DD - OH - Plan #1

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	56.73	41.2	62.7	75.0				
100.0	100.0	100.0	100.0	0.1	0.1	56.73	41.2	62.7	75.0	74.8	0.27	275.589	
200.0	200.0	200.0	200.0	0.3	0.3	56.73	41.2	62.7	75.0	74.4	0.62	120.764	
300.0	300.0	300.0	300.0	0.5	0.5	-74.66	41.2	62.7	75.0	74.0	0.97	77.277	
311.2	311.2	310.8	310.8	0.5	0.5	-74.78	41.2	62.8	75.0	74.0	1.01	74.251	CC, ES
400.0	399.9	396.6	396.6	0.7	0.7	-76.50	41.4	65.2	76.2	74.9	1.33	57.513	
500.0	499.5	493.0	492.7	0.9	0.9	-79.86	42.0	72.4	80.8	79.1	1.73	46.733	
600.0	598.4	589.0	587.9	1.2	1.1	-84.07	43.1	84.5	89.1	86.8	2.22	40.028	
700.0	696.5	684.4	681.8	1.6	1.4	-88.41	44.6	101.1	101.3	98.4	2.85	35.521	
800.0	793.4	778.9	773.9	2.0	1.8	-92.37	46.5	122.2	117.7	114.0	3.63	32.386	
900.0	888.9	874.3	865.9	2.6	2.3	-95.97	48.7	147.5	137.8	133.2	4.56	30.219	
1,000.0	982.7	971.1	959.0	3.2	2.8	-100.18	51.1	173.8	159.7	154.1	5.62	28.433	
1,100.0	1,074.8	1,067.1	1,051.3	3.9	3.3	-104.89	53.4	199.8	183.6	176.8	6.73	27.278	
1,200.0	1,166.7	1,162.9	1,143.5	4.7	3.7	-108.99	55.7	225.8	208.7	200.9	7.84	26.638	
1,300.0	1,258.5	1,258.7	1,235.7	5.4	4.2	-112.20	58.0	251.8	234.7	225.8	8.93	26.291	
1,400.0	1,350.4	1,354.5	1,327.9	6.1	4.7	-114.78	60.3	277.8	261.3	251.2	10.01	26.112	
1,500.0	1,442.2	1,450.3	1,420.1	6.8	5.2	-116.88	62.7	303.7	288.2	277.1	11.07	26.031	
1,600.0	1,534.1	1,546.1	1,512.3	7.6	5.7	-118.63	65.0	329.7	315.4	303.3	12.13	26.010	SF
1,700.0	1,625.9	1,641.9	1,604.4	8.3	6.2	-120.09	67.3	355.7	342.9	329.7	13.18	26.024	
1,800.0	1,717.8	1,737.7	1,696.6	9.0	6.7	-121.34	69.6	381.7	370.6	356.3	14.22	26.060	
1,900.0	1,809.6	1,833.5	1,788.8	9.8	7.2	-122.42	71.9	407.7	398.4	383.1	15.26	26.109	
2,000.0	1,901.5	1,929.3	1,881.0	10.5	7.7	-123.36	74.2	433.6	426.3	410.0	16.29	26.165	
2,100.0	1,993.3	2,025.1	1,973.2	11.3	8.2	-124.18	76.6	459.6	454.3	436.9	17.32	26.225	
2,200.0	2,085.1	2,120.9	2,065.4	12.0	8.7	-124.91	78.9	485.6	482.3	464.0	18.35	26.287	

Company:	EnCana Oil & Gas (USA) Inc	**Local Co-ordinate Reference:**	Well Shideler Fee 6-1DD
Project:	Mamm Creek	**TVD Reference:**	KB=22' @ 7126.0ft (Patterson #308)
Reference Site:	O31E Pad (2nd Occupation)	**MD Reference:**	KB=22' @ 7126.0ft (Patterson #308)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Shideler Fee 6-1DD	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Offset Design O31E Pad (2nd Occupation) - Shideler Fee 31-9D - OH - Plan #1

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	52.08	60.1	77.1	97.8				
100.0	100.0	100.0	100.0	0.1	0.1	52.08	60.1	77.1	97.8	97.5	0.27	359.200	
200.0	200.0	200.0	200.0	0.3	0.3	52.08	60.1	77.1	97.8	97.2	0.62	157.402	CC, ES
300.0	300.0	295.1	295.0	0.5	0.5	-79.21	61.5	79.1	100.3	99.3	0.96	104.222	
400.0	399.9	389.6	389.3	0.7	0.7	-80.85	65.7	84.7	107.0	105.7	1.31	81.527	
500.0	499.5	483.2	482.2	0.9	1.0	-84.30	72.5	94.1	118.2	116.5	1.70	69.375	
600.0	598.4	575.3	572.9	1.2	1.3	-88.65	81.8	106.8	134.4	132.2	2.17	62.025	
700.0	696.5	665.3	660.7	1.6	1.7	-93.09	93.4	122.7	156.2	153.4	2.73	57.248	
800.0	793.4	753.0	745.3	2.0	2.1	-97.10	107.0	141.3	183.8	180.4	3.40	54.024	
900.0	888.9	837.8	826.0	2.6	2.6	-100.43	122.3	162.4	217.2	213.0	4.19	51.897	
1,000.0	982.7	927.8	910.9	3.2	3.1	-103.60	140.0	186.5	255.0	249.9	5.10	49.992	
1,100.0	1,074.8	1,017.5	995.5	3.9	3.7	-107.13	157.6	210.6	295.1	289.0	6.09	48.437	
1,200.0	1,166.7	1,107.0	1,079.8	4.7	4.2	-110.43	175.2	234.7	336.4	329.3	7.11	47.327	
1,300.0	1,258.5	1,196.4	1,164.2	5.4	4.8	-113.03	192.7	258.7	378.5	370.4	8.13	46.570	
1,400.0	1,350.4	1,285.9	1,248.6	6.1	5.3	-115.12	210.3	282.7	421.1	412.0	9.15	46.040	
1,500.0	1,442.2	1,375.4	1,333.0	6.8	5.9	-116.83	227.8	306.8	464.1	453.9	10.16	45.662	SF

Company:	EnCana Oil & Gas (USA) Inc	**Local Co-ordinate Reference:**	Well Shideler Fee 6-1DD
Project:	Mamm Creek	**TVD Reference:**	KB=22' @ 7126.0ft (Patterson #308)
Reference Site:	O31E Pad (2nd Occupation)	**MD Reference:**	KB=22' @ 7126.0ft (Patterson #308)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Shideler Fee 6-1DD	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Offset Design O31E Pad (2nd Occupation) - Shideler Fee 6-1A - OH - Plan #1

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	56.62	24.8	37.6	45.0				
100.0	100.0	100.0	100.0	0.1	0.1	56.62	24.8	37.6	45.0	44.7	0.27	165.322	
200.0	200.0	200.0	200.0	0.3	0.3	56.62	24.8	37.6	45.0	44.4	0.62	72.444	
300.0	300.0	300.0	300.0	0.5	0.5	-74.85	24.8	37.6	45.0	44.0	0.97	46.340	
388.3	388.3	387.7	387.7	0.6	0.6	-78.45	24.7	37.9	44.5	43.2	1.29	34.562	CC
400.0	399.9	399.2	399.2	0.7	0.7	-79.08	24.6	38.2	44.5	43.2	1.33	33.478	ES
500.0	499.5	497.8	497.7	0.9	0.8	-84.98	23.2	43.1	46.1	44.3	1.74	26.519	
600.0	598.4	596.5	595.8	1.2	1.1	-90.98	20.4	52.9	50.3	48.1	2.25	22.387	
700.0	696.5	695.1	693.2	1.6	1.4	-96.23	16.3	67.5	57.3	54.4	2.90	19.753	
800.0	793.4	793.6	789.6	2.0	1.7	-100.34	10.8	86.9	66.9	63.2	3.72	18.003	
900.0	888.9	892.0	884.8	2.6	2.2	-103.31	3.9	111.1	79.0	74.3	4.70	16.795	
1,000.0	982.7	990.5	978.8	3.2	2.7	-105.77	-4.1	139.3	93.3	87.5	5.82	16.027	
1,100.0	1,074.8	1,088.9	1,072.6	3.9	3.3	-109.67	-12.3	168.0	109.4	102.4	6.98	15.675	
1,200.0	1,166.7	1,187.3	1,166.3	4.7	3.8	-113.04	-20.4	196.7	126.1	118.0	8.12	15.535	
1,300.0	1,258.5	1,285.7	1,260.0	5.4	4.4	-115.61	-28.6	225.4	143.2	133.9	9.25	15.484	
1,400.0	1,350.4	1,384.0	1,353.8	6.1	4.9	-117.64	-36.7	254.1	160.4	150.1	10.37	15.479	SF
1,500.0	1,442.2	1,482.4	1,447.5	6.8	5.5	-119.27	-44.9	282.8	177.9	166.4	11.48	15.498	
1,600.0	1,534.1	1,580.7	1,541.2	7.6	6.0	-120.60	-53.0	311.4	195.4	182.8	12.58	15.530	
1,700.0	1,625.9	1,679.1	1,634.9	8.3	6.6	-121.72	-61.2	340.1	213.1	199.4	13.69	15.569	
1,800.0	1,717.8	1,777.4	1,728.7	9.0	7.2	-122.67	-69.3	368.8	230.8	216.0	14.78	15.610	
1,900.0	1,809.6	1,875.8	1,822.4	9.8	7.7	-123.48	-77.5	397.5	248.5	232.6	15.88	15.651	
2,000.0	1,901.5	1,974.1	1,916.1	10.5	8.3	-124.19	-85.6	426.2	266.3	249.3	16.97	15.692	
2,100.0	1,993.3	2,072.5	2,009.8	11.3	8.9	-124.80	-93.8	454.9	284.1	266.1	18.06	15.732	
2,200.0	2,085.1	2,170.9	2,103.6	12.0	9.4	-125.34	-101.9	483.6	302.0	282.9	19.15	15.770	
2,300.0	2,177.0	2,269.2	2,197.3	12.7	10.0	-125.83	-110.0	512.3	319.9	299.6	20.24	15.805	
2,400.0	2,268.8	2,367.6	2,291.0	13.5	10.6	-126.26	-118.2	541.0	337.8	316.5	21.33	15.839	
2,500.0	2,360.7	2,465.9	2,384.7	14.2	11.1	-126.65	-126.3	569.6	355.7	333.3	22.41	15.872	
2,600.0	2,452.5	2,564.3	2,478.5	14.9	11.7	-127.00	-134.5	598.3	373.6	350.1	23.50	15.902	
2,700.0	2,544.4	2,662.6	2,572.2	15.7	12.3	-127.32	-142.6	627.0	391.6	367.0	24.58	15.931	
2,800.0	2,636.2	2,761.0	2,665.9	16.4	12.8	-127.61	-150.8	655.7	409.5	383.9	25.66	15.958	
2,900.0	2,728.1	2,859.3	2,759.6	17.2	13.4	-127.87	-158.9	684.4	427.5	400.7	26.75	15.983	
3,000.0	2,819.9	2,957.7	2,853.4	17.9	14.0	-128.12	-167.1	713.1	445.5	417.6	27.83	16.007	
3,100.0	2,911.8	3,056.0	2,947.1	18.6	14.5	-128.34	-175.2	741.8	463.4	434.5	28.91	16.030	
3,200.0	3,003.6	3,154.4	3,040.8	19.4	15.1	-128.55	-183.4	770.5	481.4	451.4	29.99	16.052	
3,300.0	3,095.5	3,252.8	3,134.5	20.1	15.7	-128.75	-191.5	799.2	499.4	468.4	31.07	16.072	

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

Company:	EnCana Oil & Gas (USA) Inc	**Local Co-ordinate Reference:**	Well Shideler Fee 6-1DD
Project:	Mamm Creek	**TVD Reference:**	KB=22' @ 7126.0ft (Patterson #308)
Reference Site:	O31E Pad (2nd Occupation)	**MD Reference:**	KB=22' @ 7126.0ft (Patterson #308)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Shideler Fee 6-1DD	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Offset Design O31E Pad (2nd Occupation) - Shideler Fee 6-1AA - OH - Plan #1

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	56.90	16.4	25.2	30.0				
100.0	100.0	100.0	100.0	0.1	0.1	56.90	16.4	25.2	30.0	29.8	0.27	110.268	
200.0	200.0	200.0	200.0	0.3	0.3	56.90	16.4	25.2	30.0	29.4	0.62	48.320	
300.0	300.0	300.0	300.0	0.5	0.5	-74.67	16.4	25.2	30.0	29.0	0.97	30.893	
363.9	363.9	363.6	363.6	0.6	0.6	-77.57	16.2	25.5	29.7	28.5	1.20	24.790	CC
400.0	399.9	399.4	399.4	0.7	0.7	-79.58	15.8	26.5	29.9	28.5	1.33	22.444	ES
500.0	499.5	498.6	498.4	0.9	0.9	-85.52	13.3	32.4	31.5	29.7	1.75	17.996	
600.0	598.4	597.9	597.0	1.2	1.1	-91.22	8.8	43.1	35.0	32.8	2.28	15.348	
700.0	696.5	697.2	694.9	1.6	1.4	-95.94	2.2	58.4	40.5	37.5	2.97	13.647	
800.0	793.4	796.5	791.8	2.0	1.8	-99.45	-6.3	78.4	47.8	44.0	3.82	12.504	
900.0	888.9	895.8	887.3	2.6	2.3	-101.89	-16.8	103.0	56.8	52.0	4.86	11.706	
1,000.0	982.7	995.0	981.5	3.2	2.9	-103.77	-29.1	131.9	67.5	61.5	6.04	11.181	
1,100.0	1,074.8	1,094.2	1,075.2	3.9	3.5	-107.68	-41.7	161.6	79.6	72.3	7.25	10.980	
1,200.0	1,166.7	1,193.2	1,168.9	4.7	4.1	-111.09	-54.3	191.2	92.2	83.7	8.44	10.925	
1,300.0	1,258.5	1,292.3	1,262.6	5.4	4.7	-113.67	-67.0	220.9	105.0	95.4	9.61	10.925	SF
1,400.0	1,350.4	1,391.4	1,356.3	6.1	5.3	-115.69	-79.6	250.6	118.0	107.2	10.78	10.950	
1,500.0	1,442.2	1,490.5	1,449.9	6.8	5.9	-117.30	-92.2	280.2	131.1	119.2	11.94	10.987	
1,600.0	1,534.1	1,589.5	1,543.6	7.6	6.5	-118.63	-104.9	309.9	144.3	131.3	13.09	11.028	
1,700.0	1,625.9	1,688.6	1,637.3	8.3	7.1	-119.73	-117.5	339.6	157.6	143.4	14.24	11.071	
1,800.0	1,717.8	1,787.7	1,731.0	9.0	7.7	-120.65	-130.1	369.2	170.9	155.5	15.38	11.113	
1,900.0	1,809.6	1,886.8	1,824.7	9.8	8.3	-121.45	-142.8	398.9	184.3	167.8	16.52	11.154	
2,000.0	1,901.5	1,985.8	1,918.3	10.5	8.9	-122.14	-155.4	428.6	197.7	180.0	17.66	11.192	
2,100.0	1,993.3	2,084.9	2,012.0	11.3	9.5	-122.74	-168.1	458.2	211.1	192.3	18.80	11.229	
2,200.0	2,085.1	2,184.0	2,105.7	12.0	10.1	-123.26	-180.7	487.9	224.5	204.6	19.93	11.263	
2,300.0	2,177.0	2,283.1	2,199.4	12.7	10.7	-123.73	-193.3	517.6	237.9	216.9	21.07	11.294	
2,400.0	2,268.8	2,382.1	2,293.1	13.5	11.3	-124.15	-206.0	547.2	251.4	229.2	22.20	11.324	
2,500.0	2,360.7	2,481.2	2,386.7	14.2	12.0	-124.53	-218.6	576.9	264.9	241.5	23.33	11.352	
2,600.0	2,452.5	2,580.3	2,480.4	14.9	12.6	-124.87	-231.2	606.6	278.4	253.9	24.46	11.378	
2,700.0	2,544.4	2,679.4	2,574.1	15.7	13.2	-125.17	-243.9	636.3	291.8	266.2	25.60	11.402	
2,800.0	2,636.2	2,778.4	2,667.8	16.4	13.8	-125.45	-256.5	665.9	305.3	278.6	26.73	11.425	
2,900.0	2,728.1	2,877.5	2,761.5	17.2	14.4	-125.71	-269.1	695.6	318.8	291.0	27.86	11.447	
3,000.0	2,819.9	2,976.6	2,855.1	17.9	15.0	-125.95	-281.8	725.3	332.4	303.4	28.98	11.467	
3,100.0	2,911.8	3,075.6	2,948.8	18.6	15.6	-126.17	-294.4	754.9	345.9	315.8	30.11	11.486	
3,200.0	3,003.6	3,174.7	3,042.5	19.4	16.2	-126.37	-307.0	784.6	359.4	328.1	31.24	11.503	
3,300.0	3,095.5	3,273.8	3,136.2	20.1	16.8	-126.55	-319.7	814.3	372.9	340.5	32.37	11.520	
3,400.0	3,187.3	3,372.9	3,229.9	20.9	17.4	-126.73	-332.3	843.9	386.4	352.9	33.50	11.536	
3,500.0	3,279.2	3,471.9	3,323.5	21.6	18.1	-126.89	-344.9	873.6	400.0	365.3	34.63	11.551	
3,600.0	3,371.0	3,571.0	3,417.2	22.3	18.7	-127.04	-357.6	903.3	413.5	377.7	35.75	11.565	
3,700.0	3,462.9	3,670.1	3,510.9	23.1	19.3	-127.18	-370.2	932.9	427.0	390.2	36.88	11.579	
3,800.0	3,554.7	3,769.2	3,604.6	23.8	19.9	-127.32	-382.8	962.6	440.6	402.6	38.01	11.592	
3,900.0	3,646.6	3,868.2	3,698.3	24.6	20.5	-127.44	-395.5	992.3	454.1	415.0	39.13	11.604	
4,000.0	3,738.4	3,967.3	3,791.9	25.3	21.1	-127.56	-408.1	1,021.9	467.7	427.4	40.26	11.616	
4,100.0	3,830.2	4,066.4	3,885.6	26.0	21.7	-127.67	-420.8	1,051.6	481.2	439.8	41.39	11.627	
4,200.0	3,922.1	4,165.5	3,979.3	26.8	22.3	-127.78	-433.4	1,081.3	494.7	452.2	42.51	11.637	

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

Company:	EnCana Oil & Gas (USA) Inc	**Local Co-ordinate Reference:**	Well Shideler Fee 6-1DD
Project:	Mamm Creek	**TVD Reference:**	KB=22' @ 7126.0ft (Patterson #308)
Reference Site:	O31E Pad (2nd Occupation)	**MD Reference:**	KB=22' @ 7126.0ft (Patterson #308)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Shideler Fee 6-1DD	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Offset Design O31E Pad (2nd Occupation) - Shideler Fee 6-1D - OH - Plan #1

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	56.02	8.4	12.4	15.0				
100.0	100.0	100.0	100.0	0.1	0.1	56.02	8.4	12.4	15.0	14.7	0.27	55.076	
200.0	200.0	200.0	200.0	0.3	0.3	56.02	8.4	12.4	15.0	14.4	0.62	24.134	
300.0	300.0	300.0	300.0	0.5	0.5	-75.86	8.4	12.4	15.0	14.0	0.97	15.410	
353.6	353.5	353.4	353.4	0.6	0.6	-78.56	7.9	13.0	14.9	13.7	1.16	12.771	CC
400.0	399.9	399.8	399.7	0.7	0.7	-81.03	6.9	14.5	14.9	13.6	1.34	11.183	ES
500.0	499.5	499.6	499.2	0.9	0.9	-86.41	2.3	20.9	15.5	13.8	1.77	8.768	
600.0	598.4	599.5	598.2	1.2	1.1	-91.39	-5.3	31.4	16.8	14.4	2.33	7.186	
700.0	696.5	699.4	696.5	1.6	1.5	-95.59	-15.9	46.2	18.6	15.5	3.05	6.097	
800.0	793.4	799.4	793.7	2.0	1.9	-98.85	-29.6	65.1	21.0	17.1	3.94	5.335	
900.0	888.9	899.5	889.7	2.6	2.5	-101.23	-46.1	88.2	23.9	18.9	5.00	4.790	
1,000.0	982.7	999.6	984.0	3.2	3.1	-102.87	-65.6	115.3	27.4	21.1	6.24	4.390	
1,100.0	1,074.8	1,099.5	1,077.0	3.9	3.8	-105.70	-87.1	145.1	31.4	23.9	7.52	4.175	
1,200.0	1,166.7	1,199.4	1,169.8	4.7	4.4	-108.78	-108.7	175.0	35.7	26.9	8.78	4.066	
1,300.0	1,258.5	1,299.3	1,262.6	5.4	5.1	-111.19	-130.3	205.0	40.1	30.0	10.02	3.999	
1,400.0	1,350.4	1,399.2	1,355.5	6.1	5.8	-113.13	-151.8	234.9	44.5	33.2	11.24	3.957	
1,500.0	1,442.2	1,499.1	1,448.3	6.8	6.5	-114.72	-173.4	264.9	48.9	36.5	12.45	3.929	
1,600.0	1,534.1	1,599.0	1,541.1	7.6	7.2	-116.04	-194.9	294.8	53.4	39.8	13.66	3.911	
1,700.0	1,625.9	1,698.9	1,634.0	8.3	7.8	-117.15	-216.5	324.7	57.9	43.1	14.86	3.900	
1,800.0	1,717.8	1,798.8	1,726.8	9.0	8.5	-118.11	-238.0	354.7	62.5	46.4	16.05	3.892	
1,900.0	1,809.6	1,898.7	1,819.6	9.8	9.2	-118.93	-259.6	384.6	67.0	49.8	17.23	3.888	
2,000.0	1,901.5	1,998.6	1,912.4	10.5	9.9	-119.65	-281.1	414.6	71.6	53.1	18.42	3.886	
2,100.0	1,993.3	2,098.4	2,005.3	11.3	10.6	-120.28	-302.7	444.5	76.1	56.5	19.60	3.885	SF
2,200.0	2,085.1	2,198.3	2,098.1	12.0	11.3	-120.85	-324.2	474.4	80.7	59.9	20.78	3.885	
2,300.0	2,177.0	2,298.2	2,190.9	12.7	12.0	-121.35	-345.8	504.4	85.3	63.3	21.95	3.886	
2,400.0	2,268.8	2,398.1	2,283.8	13.5	12.7	-121.80	-367.4	534.3	89.9	66.8	23.12	3.887	
2,500.0	2,360.7	2,498.0	2,376.6	14.2	13.4	-122.20	-388.9	564.3	94.5	70.2	24.30	3.889	
2,600.0	2,452.5	2,597.9	2,469.4	14.9	14.1	-122.57	-410.5	594.2	99.1	73.6	25.47	3.891	
2,700.0	2,544.4	2,697.8	2,562.3	15.7	14.8	-122.91	-432.0	624.1	103.7	77.0	26.64	3.893	
2,800.0	2,636.2	2,797.7	2,655.1	16.4	15.4	-123.22	-453.6	654.1	108.3	80.5	27.80	3.895	
2,900.0	2,728.1	2,897.6	2,747.9	17.2	16.1	-123.50	-475.1	684.0	112.9	83.9	28.97	3.897	
3,000.0	2,819.9	2,997.5	2,840.7	17.9	16.8	-123.76	-496.7	713.9	117.5	87.4	30.14	3.899	
3,100.0	2,911.8	3,097.4	2,933.6	18.6	17.5	-124.00	-518.2	743.9	122.1	90.8	31.30	3.902	
3,200.0	3,003.6	3,197.3	3,026.4	19.4	18.2	-124.22	-539.8	773.8	126.7	94.3	32.47	3.904	
3,300.0	3,095.5	3,297.2	3,119.2	20.1	18.9	-124.43	-561.4	803.8	131.4	97.7	33.63	3.906	
3,400.0	3,187.3	3,397.0	3,212.1	20.9	19.6	-124.62	-582.9	833.7	136.0	101.2	34.79	3.908	
3,500.0	3,279.2	3,496.9	3,304.9	21.6	20.3	-124.80	-604.5	863.6	140.6	104.6	35.95	3.910	
3,600.0	3,371.0	3,596.8	3,397.7	22.3	21.0	-124.97	-626.0	893.6	145.2	108.1	37.12	3.912	
3,700.0	3,462.9	3,696.7	3,490.6	23.1	21.7	-125.13	-647.6	923.5	149.8	111.6	38.28	3.914	
3,800.0	3,554.7	3,796.6	3,583.4	23.8	22.4	-125.28	-669.1	953.5	154.5	115.0	39.44	3.916	
3,900.0	3,646.6	3,896.5	3,676.2	24.6	23.1	-125.42	-690.7	983.4	159.1	118.5	40.60	3.918	
4,000.0	3,738.4	3,996.4	3,769.1	25.3	23.8	-125.55	-712.2	1,013.3	163.7	122.0	41.76	3.920	
4,100.0	3,830.2	4,096.3	3,861.9	26.0	24.5	-125.68	-733.8	1,043.3	168.3	125.4	42.92	3.922	
4,200.0	3,922.1	4,196.2	3,954.7	26.8	25.2	-125.80	-755.4	1,073.2	173.0	128.9	44.08	3.924	
4,300.0	4,013.9	4,296.1	4,047.5	27.5	25.9	-125.91	-776.9	1,103.2	177.6	132.4	45.24	3.925	
4,400.0	4,105.8	4,396.0	4,140.4	28.3	26.5	-126.02	-798.5	1,133.1	182.2	135.8	46.40	3.927	
4,500.0	4,197.6	4,495.9	4,233.2	29.0	27.2	-126.12	-820.0	1,163.0	186.9	139.3	47.56	3.929	
4,600.0	4,289.5	4,595.8	4,326.0	29.7	27.9	-126.21	-841.6	1,193.0	191.5	142.8	48.72	3.930	
4,700.0	4,381.3	4,695.6	4,418.9	30.5	28.6	-126.31	-863.1	1,222.9	196.1	146.2	49.88	3.932	
4,800.0	4,473.2	4,795.5	4,511.7	31.2	29.3	-126.39	-884.7	1,252.8	200.7	149.7	51.04	3.933	
4,900.0	4,565.0	4,895.4	4,604.5	32.0	30.0	-126.48	-906.2	1,282.8	205.4	153.2	52.20	3.935	
5,000.0	4,656.9	4,995.3	4,697.4	32.7	30.7	-126.56	-927.8	1,312.7	210.0	156.7	53.36	3.936	

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

Company:	EnCana Oil & Gas (USA) Inc	**Local Co-ordinate Reference:**	Well Shideler Fee 6-1DD
Project:	Mamm Creek	**TVD Reference:**	KB=22' @ 7126.0ft (Patterson #308)
Reference Site:	O31E Pad (2nd Occupation)	**MD Reference:**	KB=22' @ 7126.0ft (Patterson #308)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Shideler Fee 6-1DD	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Offset Design O31E Pad (2nd Occupation) - Shideler Fee 6-1D - OH - Plan #1

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning
5,100.0	4,748.7	5,095.2	4,790.2	33.4	31.4	-126.63	-949.4	1,342.7	214.6	160.1	54.52	3.937	
5,200.0	4,840.6	5,195.1	4,883.0	34.2	32.1	-126.71	-970.9	1,372.6	219.3	163.6	55.67	3.939	
5,300.0	4,932.4	5,295.0	4,975.8	34.9	32.8	-126.78	-992.5	1,402.5	223.9	167.1	56.83	3.940	
5,400.0	5,024.3	5,394.9	5,068.7	35.7	33.5	-126.85	-1,014.0	1,432.5	228.5	170.6	57.99	3.941	
5,500.0	5,116.1	5,494.8	5,161.5	36.4	34.2	-126.91	-1,035.6	1,462.4	233.2	174.0	59.15	3.942	
5,600.0	5,208.0	5,594.7	5,254.3	37.2	34.9	-126.97	-1,057.1	1,492.4	237.8	177.5	60.31	3.943	
5,700.0	5,299.8	5,694.6	5,347.2	37.9	35.6	-127.03	-1,078.7	1,522.3	242.4	181.0	61.46	3.944	
5,800.0	5,391.8	5,791.5	5,437.5	38.6	36.2	-127.19	-1,099.2	1,550.8	247.2	184.7	62.51	3.954	
5,900.0	5,485.0	5,886.9	5,527.5	39.3	36.8	-127.42	-1,117.7	1,576.5	251.8	188.4	63.40	3.971	
6,000.0	5,579.5	5,982.3	5,618.5	39.9	37.3	-127.65	-1,134.5	1,599.8	256.0	191.8	64.18	3.989	
6,100.0	5,675.0	6,077.6	5,710.3	40.4	37.7	-127.88	-1,149.4	1,620.5	259.9	195.0	64.85	4.007	
6,200.0	5,771.4	6,172.9	5,802.8	40.8	38.1	-128.11	-1,162.6	1,638.8	263.4	198.0	65.43	4.026	
6,300.0	5,868.8	6,268.0	5,896.0	41.2	38.5	-128.34	-1,173.9	1,654.6	266.6	200.7	65.91	4.045	
6,400.0	5,966.9	6,363.1	5,989.7	41.6	38.8	-128.57	-1,183.5	1,667.8	269.4	203.1	66.29	4.064	
6,500.0	6,065.6	6,458.2	6,083.8	41.9	39.0	-128.79	-1,191.2	1,678.5	271.9	205.3	66.58	4.083	
6,600.0	6,164.8	6,553.2	6,178.3	42.1	39.2	-129.02	-1,197.0	1,686.7	274.0	207.2	66.77	4.103	
6,700.0	6,264.3	6,648.1	6,272.9	42.3	39.3	-129.25	-1,201.1	1,692.3	275.7	208.8	66.86	4.124	
6,800.0	6,364.2	6,743.0	6,367.7	42.4	39.4	-129.48	-1,203.3	1,695.3	277.1	210.2	66.86	4.144	
6,900.0	6,464.1	6,839.4	6,464.1	42.4	39.5	-129.70	-1,203.7	1,696.0	278.0	211.2	66.80	4.161	
7,000.0	6,564.1	6,939.4	6,564.1	42.5	39.5	1.57	-1,203.7	1,696.0	278.0	211.1	66.92	4.154	
7,100.0	6,664.1	7,039.4	6,664.1	42.5	39.6	1.57	-1,203.7	1,696.0	278.0	211.0	67.05	4.146	
7,200.0	6,764.1	7,139.4	6,764.1	42.6	39.6	1.57	-1,203.7	1,696.0	278.0	210.8	67.18	4.138	
7,300.0	6,864.1	7,239.4	6,864.1	42.6	39.7	1.57	-1,203.7	1,696.0	278.0	210.7	67.31	4.130	
7,400.0	6,964.1	7,339.4	6,964.1	42.7	39.7	1.57	-1,203.7	1,696.0	278.0	210.6	67.44	4.122	
7,500.0	7,064.1	7,439.4	7,064.1	42.7	39.8	1.57	-1,203.7	1,696.0	278.0	210.4	67.58	4.114	
7,600.0	7,164.1	7,539.4	7,164.1	42.8	39.9	1.57	-1,203.7	1,696.0	278.0	210.3	67.71	4.106	
7,700.0	7,264.1	7,639.4	7,264.1	42.9	39.9	1.57	-1,203.7	1,696.0	278.0	210.2	67.85	4.098	
7,800.0	7,364.1	7,739.4	7,364.1	42.9	40.0	1.57	-1,203.7	1,696.0	278.0	210.0	67.99	4.089	
7,900.0	7,464.1	7,839.4	7,464.1	43.0	40.0	1.57	-1,203.7	1,696.0	278.0	209.9	68.12	4.081	
8,000.0	7,564.1	7,939.4	7,564.1	43.0	40.1	1.57	-1,203.7	1,696.0	278.0	209.7	68.27	4.072	
8,100.0	7,664.1	8,039.4	7,664.1	43.1	40.1	1.57	-1,203.7	1,696.0	278.0	209.6	68.41	4.064	
8,200.0	7,764.1	8,139.4	7,764.1	43.1	40.2	1.57	-1,203.7	1,696.0	278.0	209.5	68.55	4.055	
8,300.0	7,864.1	8,239.4	7,864.1	43.2	40.3	1.57	-1,203.7	1,696.0	278.0	209.3	68.70	4.047	
8,400.0	7,964.1	8,339.4	7,964.1	43.3	40.3	1.57	-1,203.7	1,696.0	278.0	209.2	68.85	4.038	
8,500.0	8,064.1	8,439.4	8,064.1	43.3	40.4	1.57	-1,203.7	1,696.0	278.0	209.0	68.99	4.030	
8,600.0	8,164.1	8,539.4	8,164.1	43.4	40.5	1.57	-1,203.7	1,696.0	278.0	208.9	69.14	4.021	
8,700.0	8,264.1	8,639.4	8,264.1	43.4	40.5	1.57	-1,203.7	1,696.0	278.0	208.7	69.29	4.012	
8,800.0	8,364.1	8,739.4	8,364.1	43.5	40.6	1.57	-1,203.7	1,696.0	278.0	208.6	69.45	4.003	
8,830.1	8,394.3	8,769.5	8,394.3	43.5	40.6	1.57	-1,203.7	1,696.0	278.0	208.5	69.49	4.001	
8,900.0	8,464.1	8,787.2	8,412.0	43.6	40.6	1.57	-1,203.7	1,696.0	282.9	213.3	69.56	4.066	
9,000.0	8,564.1	8,787.2	8,412.0	43.6	40.6	1.57	-1,203.7	1,696.0	316.9	247.3	69.64	4.551	
9,100.0	8,664.1	8,787.2	8,412.0	43.7	40.6	1.57	-1,203.7	1,696.0	375.3	305.6	69.72	5.383	
9,200.0	8,764.1	8,787.2	8,412.0	43.7	40.6	1.57	-1,203.7	1,696.0	448.7	378.9	69.80	6.428	

Company:	EnCana Oil & Gas (USA) Inc	**Local Co-ordinate Reference:**	Well Shideler Fee 6-1DD
Project:	Mamm Creek	**TVD Reference:**	KB=22' @ 7126.0ft (Patterson #308)
Reference Site:	O31E Pad (2nd Occupation)	**MD Reference:**	KB=22' @ 7126.0ft (Patterson #308)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Shideler Fee 6-1DD	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Offset Design O31E Pad (2nd Occupation) - Shideler Fee 6-8A - OH - Plan #1

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	-122.20	-8.0	-12.7	15.0				
100.0	100.0	100.0	100.0	0.1	0.1	-122.20	-8.0	-12.7	15.0	14.8	0.27	55.197	
200.0	200.0	200.0	200.0	0.3	0.3	-122.20	-8.0	-12.7	15.0	14.4	0.62	24.187	
300.0	300.0	300.1	300.1	0.5	0.5	104.67	-8.5	-12.3	14.9	14.0	0.97	15.388	
329.8	329.8	329.9	329.9	0.5	0.5	103.16	-9.2	-11.5	14.9	13.8	1.08	13.793	CC
400.0	399.9	400.2	400.0	0.7	0.7	99.49	-12.2	-8.6	15.0	13.7	1.35	11.149	ES
500.0	499.5	500.2	499.5	0.9	0.9	94.34	-19.7	-1.2	15.6	13.8	1.82	8.614	
600.0	598.4	600.2	598.2	1.2	1.2	89.65	-30.8	9.7	16.7	14.3	2.42	6.922	
700.0	696.5	700.0	695.8	1.6	1.6	85.70	-45.6	24.3	18.3	15.1	3.18	5.760	
800.0	793.4	799.8	792.3	2.0	2.1	82.55	-64.0	42.4	20.3	16.2	4.10	4.949	
900.0	888.9	899.6	887.1	2.6	2.7	80.19	-86.0	64.0	22.7	17.5	5.20	4.371	
1,000.0	982.7	999.2	980.1	3.2	3.4	78.49	-111.4	89.1	25.5	19.0	6.46	3.947	
1,100.0	1,074.8	1,098.8	1,071.1	3.9	4.1	76.23	-140.2	117.4	28.8	20.9	7.82	3.678	
1,200.0	1,166.7	1,198.7	1,161.6	4.7	4.9	72.18	-170.4	147.2	32.6	23.5	9.09	3.587	
1,300.0	1,258.5	1,298.6	1,252.0	5.4	5.7	69.00	-200.7	177.0	36.6	26.2	10.32	3.544	
1,400.0	1,350.4	1,398.5	1,342.4	6.1	6.5	66.44	-230.9	206.8	40.6	29.1	11.51	3.527	
1,500.0	1,442.2	1,498.4	1,432.9	6.8	7.2	64.36	-261.2	236.6	44.7	32.0	12.69	3.525	SF
1,600.0	1,534.1	1,598.3	1,523.3	7.6	8.0	62.62	-291.5	266.3	48.9	35.0	13.85	3.531	
1,700.0	1,625.9	1,698.2	1,613.7	8.3	8.8	61.16	-321.7	296.1	53.1	38.1	14.99	3.542	
1,800.0	1,717.8	1,798.1	1,704.2	9.0	9.6	59.92	-352.0	325.9	57.3	41.2	16.12	3.556	
1,900.0	1,809.6	1,898.0	1,794.6	9.8	10.4	58.84	-382.2	355.7	61.6	44.3	17.25	3.571	
2,000.0	1,901.5	1,997.9	1,885.0	10.5	11.2	57.91	-412.5	385.5	65.9	47.5	18.37	3.586	
2,100.0	1,993.3	2,097.8	1,975.5	11.3	12.0	57.09	-442.7	415.3	70.2	50.7	19.48	3.602	
2,200.0	2,085.1	2,197.7	2,065.9	12.0	12.7	56.36	-473.0	445.1	74.5	53.9	20.59	3.617	
2,300.0	2,177.0	2,297.6	2,156.3	12.7	13.5	55.72	-503.2	474.8	78.8	57.1	21.69	3.632	
2,400.0	2,268.8	2,397.5	2,246.8	13.5	14.3	55.14	-533.5	504.6	83.1	60.3	22.79	3.646	
2,500.0	2,360.7	2,497.4	2,337.2	14.2	15.1	54.62	-563.7	534.4	87.4	63.5	23.89	3.660	
2,600.0	2,452.5	2,597.3	2,427.6	14.9	15.9	54.14	-594.0	564.2	91.8	66.8	24.98	3.674	
2,700.0	2,544.4	2,697.2	2,518.1	15.7	16.7	53.71	-624.2	594.0	96.1	70.0	26.07	3.686	
2,800.0	2,636.2	2,797.1	2,608.5	16.4	17.5	53.32	-654.5	623.8	100.5	73.3	27.16	3.698	
2,900.0	2,728.1	2,897.0	2,698.9	17.2	18.3	52.96	-684.7	653.6	104.8	76.6	28.25	3.710	
3,000.0	2,819.9	2,996.9	2,789.4	17.9	19.1	52.63	-715.0	683.3	109.2	79.8	29.34	3.721	
3,100.0	2,911.8	3,096.8	2,879.8	18.6	19.9	52.32	-745.2	713.1	113.5	83.1	30.43	3.731	
3,200.0	3,003.6	3,196.8	2,970.2	19.4	20.7	52.04	-775.5	742.9	117.9	86.4	31.51	3.741	
3,300.0	3,095.5	3,296.7	3,060.7	20.1	21.4	51.78	-805.7	772.7	122.3	89.7	32.59	3.751	
3,400.0	3,187.3	3,396.6	3,151.1	20.9	22.2	51.53	-836.0	802.5	126.6	92.9	33.68	3.760	
3,500.0	3,279.2	3,496.5	3,241.5	21.6	23.0	51.30	-866.2	832.3	131.0	96.2	34.76	3.768	
3,600.0	3,371.0	3,596.4	3,332.0	22.3	23.8	51.09	-896.5	862.0	135.4	99.5	35.84	3.777	
3,700.0	3,462.9	3,696.3	3,422.4	23.1	24.6	50.89	-926.7	891.8	139.7	102.8	36.92	3.784	
3,800.0	3,554.7	3,796.2	3,512.9	23.8	25.4	50.70	-957.0	921.6	144.1	106.1	38.00	3.792	
3,900.0	3,646.6	3,896.1	3,603.3	24.6	26.2	50.52	-987.3	951.4	148.5	109.4	39.08	3.799	
4,000.0	3,738.4	3,996.0	3,693.7	25.3	27.0	50.36	-1,017.5	981.2	152.9	112.7	40.16	3.806	
4,100.0	3,830.2	4,095.9	3,784.2	26.0	27.8	50.20	-1,047.8	1,011.0	157.2	116.0	41.24	3.813	
4,200.0	3,922.1	4,195.8	3,874.6	26.8	28.6	50.05	-1,078.0	1,040.8	161.6	119.3	42.32	3.819	
4,300.0	4,013.9	4,295.7	3,965.0	27.5	29.4	49.91	-1,108.3	1,070.5	166.0	122.6	43.40	3.825	
4,400.0	4,105.8	4,395.6	4,055.5	28.3	30.2	49.77	-1,138.5	1,100.3	170.4	125.9	44.48	3.831	
4,500.0	4,197.6	4,495.5	4,145.9	29.0	31.0	49.65	-1,168.8	1,130.1	174.8	129.2	45.56	3.836	
4,600.0	4,289.5	4,595.4	4,236.3	29.7	31.7	49.53	-1,199.0	1,159.9	179.2	132.5	46.63	3.842	
4,700.0	4,381.3	4,695.3	4,326.8	30.5	32.5	49.41	-1,229.3	1,189.7	183.5	135.8	47.71	3.847	
4,800.0	4,473.2	4,795.2	4,417.2	31.2	33.3	49.30	-1,259.5	1,219.5	187.9	139.1	48.79	3.852	
4,900.0	4,565.0	4,895.1	4,507.6	32.0	34.1	49.20	-1,289.8	1,249.2	192.3	142.4	49.87	3.857	
5,000.0	4,656.9	4,995.0	4,598.1	32.7	34.9	49.10	-1,320.0	1,279.0	196.7	145.8	50.94	3.861	

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

Company:	EnCana Oil & Gas (USA) Inc	**Local Co-ordinate Reference:**	Well Shideler Fee 6-1DD
Project:	Mamm Creek	**TVD Reference:**	KB=22' @ 7126.0ft (Patterson #308)
Reference Site:	O31E Pad (2nd Occupation)	**MD Reference:**	KB=22' @ 7126.0ft (Patterson #308)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Shideler Fee 6-1DD	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Offset Design O31E Pad (2nd Occupation) - Shideler Fee 6-8A - OH - Plan #1

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning
5,100.0	4,748.7	5,094.9	4,688.5	33.4	35.7	49.00	-1,350.3	1,308.8	201.1	149.1	52.02	3.866	
5,200.0	4,840.6	5,194.8	4,778.9	34.2	36.5	48.91	-1,380.5	1,338.6	205.5	152.4	53.09	3.870	
5,300.0	4,932.4	5,294.7	4,869.4	34.9	37.3	48.82	-1,410.8	1,368.4	209.9	155.7	54.17	3.874	
5,400.0	5,024.3	5,394.6	4,959.8	35.7	38.1	48.74	-1,441.0	1,398.2	214.2	159.0	55.25	3.878	
5,500.0	5,116.1	5,494.5	5,050.2	36.4	38.9	48.65	-1,471.3	1,428.0	218.6	162.3	56.32	3.882	
5,600.0	5,208.0	5,594.4	5,140.7	37.2	39.7	48.58	-1,501.5	1,457.7	223.0	165.6	57.40	3.886	
5,700.0	5,299.8	5,694.3	5,231.1	37.9	40.5	48.50	-1,531.8	1,487.5	227.4	168.9	58.47	3.889	
5,800.0	5,391.8	5,798.3	5,325.5	38.6	41.3	48.51	-1,562.7	1,518.0	231.6	172.0	59.60	3.885	
5,900.0	5,485.0	5,904.3	5,423.4	39.3	42.0	48.58	-1,591.9	1,546.7	235.3	174.6	60.66	3.879	
6,000.0	5,579.5	6,010.5	5,522.8	39.9	42.6	48.64	-1,618.4	1,572.8	238.7	177.0	61.62	3.873	
6,100.0	5,675.0	6,116.8	5,623.7	40.4	43.2	48.68	-1,642.4	1,596.4	241.7	179.2	62.49	3.868	
6,200.0	5,771.4	6,223.2	5,725.7	40.8	43.8	48.73	-1,663.7	1,617.4	244.4	181.2	63.26	3.864	
6,300.0	5,868.8	6,329.7	5,829.0	41.2	44.2	48.76	-1,682.2	1,635.7	246.8	182.9	63.93	3.861	
6,400.0	5,966.9	6,436.2	5,933.1	41.6	44.6	48.78	-1,698.1	1,651.3	248.9	184.4	64.50	3.858	
6,500.0	6,065.6	6,542.8	6,038.1	41.9	44.9	48.80	-1,711.2	1,664.1	250.6	185.6	64.98	3.856	
6,600.0	6,164.8	6,649.4	6,143.8	42.1	45.2	48.81	-1,721.5	1,674.3	251.9	186.6	65.36	3.854	
6,700.0	6,264.3	6,756.1	6,249.9	42.3	45.4	48.81	-1,729.0	1,681.6	252.9	187.3	65.64	3.853	
6,800.0	6,364.2	6,862.8	6,356.4	42.4	45.5	48.81	-1,733.6	1,686.2	253.6	187.7	65.84	3.851	
6,900.0	6,464.1	6,969.5	6,463.1	42.4	45.6	48.79	-1,735.5	1,688.0	253.9	187.9	65.94	3.850	
7,000.0	6,564.1	7,070.5	6,564.1	42.5	45.6	-179.94	-1,735.5	1,688.1	253.9	187.8	66.07	3.843	
7,100.0	6,664.1	7,170.5	6,664.1	42.5	45.7	-179.94	-1,735.5	1,688.1	253.9	187.7	66.20	3.835	
7,200.0	6,764.1	7,270.5	6,764.1	42.6	45.7	-179.94	-1,735.5	1,688.1	253.9	187.5	66.33	3.828	
7,300.0	6,864.1	7,370.5	6,864.1	42.6	45.8	-179.94	-1,735.5	1,688.1	253.9	187.4	66.46	3.820	
7,400.0	6,964.1	7,470.5	6,964.1	42.7	45.8	-179.94	-1,735.5	1,688.1	253.9	187.3	66.60	3.812	
7,500.0	7,064.1	7,570.5	7,064.1	42.7	45.9	-179.94	-1,735.5	1,688.1	253.9	187.1	66.73	3.804	
7,600.0	7,164.1	7,670.5	7,164.1	42.8	45.9	-179.94	-1,735.5	1,688.1	253.9	187.0	66.87	3.796	
7,700.0	7,264.1	7,770.5	7,264.1	42.9	46.0	-179.94	-1,735.5	1,688.1	253.9	186.9	67.01	3.789	
7,800.0	7,364.1	7,870.5	7,364.1	42.9	46.0	-179.94	-1,735.5	1,688.1	253.9	186.7	67.15	3.781	
7,900.0	7,464.1	7,970.5	7,464.1	43.0	46.1	-179.94	-1,735.5	1,688.1	253.9	186.6	67.29	3.773	
8,000.0	7,564.1	8,070.5	7,564.1	43.0	46.1	-179.94	-1,735.5	1,688.1	253.9	186.4	67.44	3.765	
8,100.0	7,664.1	8,170.5	7,664.1	43.1	46.2	-179.94	-1,735.5	1,688.1	253.9	186.3	67.58	3.756	
8,200.0	7,764.1	8,270.5	7,764.1	43.1	46.2	-179.94	-1,735.5	1,688.1	253.9	186.1	67.73	3.748	
8,300.0	7,864.1	8,370.5	7,864.1	43.2	46.3	-179.94	-1,735.5	1,688.1	253.9	186.0	67.88	3.740	
8,400.0	7,964.1	8,470.5	7,964.1	43.3	46.3	-179.94	-1,735.5	1,688.1	253.9	185.8	68.03	3.732	
8,500.0	8,064.1	8,570.5	8,064.1	43.3	46.4	-179.94	-1,735.5	1,688.1	253.9	185.7	68.18	3.724	
8,600.0	8,164.1	8,670.5	8,164.1	43.4	46.5	-179.94	-1,735.5	1,688.1	253.9	185.5	68.33	3.715	
8,700.0	8,264.1	8,770.5	8,264.1	43.4	46.5	-179.94	-1,735.5	1,688.1	253.9	185.4	68.49	3.707	
8,800.0	8,364.1	8,870.5	8,364.1	43.5	46.6	-179.94	-1,735.5	1,688.1	253.9	185.2	68.64	3.698	
8,839.1	8,403.2	8,909.7	8,403.2	43.5	46.6	-179.94	-1,735.5	1,688.1	253.9	185.2	68.70	3.695	
8,900.0	8,464.1	8,925.4	8,419.0	43.6	46.6	-179.94	-1,735.5	1,688.1	257.9	189.1	68.76	3.750	
9,000.0	8,564.1	8,925.4	8,419.0	43.6	46.6	-179.94	-1,735.5	1,688.1	292.4	223.6	68.84	4.248	
9,100.0	8,664.1	8,925.4	8,419.0	43.7	46.6	-179.94	-1,735.5	1,688.1	352.9	284.0	68.92	5.120	
9,200.0	8,764.1	8,925.4	8,419.0	43.7	46.6	-179.94	-1,735.5	1,688.1	428.5	359.4	69.00	6.209	

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	**Local Co-ordinate Reference:**	Well Shideler Fee 6-1DD
Project:	Mamm Creek	**TVD Reference:**	KB=22' @ 7126.0ft (Patterson #308)
Reference Site:	O31E Pad (2nd Occupation)	**MD Reference:**	KB=22' @ 7126.0ft (Patterson #308)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Shideler Fee 6-1DD	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Offset Design O31E Pad (2nd Occupation) - Shideler Fee 6-8AA - OH - Plan #1

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	-123.08	-16.4	-25.2	30.0				
100.0	100.0	100.0	100.0	0.1	0.1	-123.08	-16.4	-25.2	30.0	29.7	0.27	110.250	
200.0	200.0	200.0	200.0	0.3	0.3	-123.08	-16.4	-25.2	30.0	29.4	0.62	48.312	
279.2	279.2	279.3	279.3	0.4	0.5	104.94	-17.0	-24.7	30.1	29.2	0.90	33.419	
300.0	300.0	300.1	300.0	0.5	0.5	103.14	-17.6	-24.2	30.0	29.0	0.97	30.795	CC, ES
400.0	399.9	400.0	399.8	0.7	0.7	98.04	-22.7	-20.3	30.7	29.4	1.36	22.556	
500.0	499.5	499.8	498.9	0.9	1.0	93.28	-32.0	-13.1	32.7	30.9	1.85	17.730	
600.0	598.4	599.4	597.0	1.2	1.3	89.26	-45.3	-2.8	35.9	33.5	2.46	14.579	
700.0	696.5	698.9	694.0	1.6	1.7	86.13	-62.7	10.6	40.2	37.0	3.24	12.431	
800.0	793.4	798.1	789.5	2.0	2.2	83.85	-83.9	27.0	45.6	41.4	4.17	10.925	
900.0	888.9	897.1	883.3	2.6	2.8	82.29	-109.0	46.4	51.9	46.6	5.27	9.836	
1,000.0	982.7	996.0	975.2	3.2	3.5	81.28	-137.8	68.7	59.1	52.6	6.55	9.023	
1,100.0	1,074.8	1,094.5	1,064.8	3.9	4.3	80.29	-170.3	93.8	67.3	59.4	7.95	8.466	
1,200.0	1,166.7	1,192.6	1,151.8	4.7	5.1	76.60	-206.2	121.6	77.3	68.0	9.31	8.310	SF
1,300.0	1,258.5	1,291.8	1,238.6	5.4	6.0	72.38	-244.1	150.9	88.7	78.1	10.56	8.395	
1,400.0	1,350.4	1,391.0	1,325.5	6.1	6.9	69.14	-282.0	180.2	100.3	88.6	11.77	8.525	
1,500.0	1,442.2	1,490.2	1,412.3	6.8	7.7	66.57	-319.9	209.5	112.2	99.3	12.95	8.669	
1,600.0	1,534.1	1,589.3	1,499.1	7.6	8.6	64.50	-357.8	238.8	124.4	110.2	14.11	8.815	
1,700.0	1,625.9	1,688.5	1,586.0	8.3	9.5	62.79	-395.6	268.1	136.6	121.3	15.25	8.956	
1,800.0	1,717.8	1,787.7	1,672.8	9.0	10.4	61.37	-433.5	297.4	148.9	132.5	16.38	9.090	
1,900.0	1,809.6	1,886.8	1,759.7	9.8	11.3	60.17	-471.4	326.7	161.3	143.8	17.51	9.215	
2,000.0	1,901.5	1,986.0	1,846.5	10.5	12.2	59.13	-509.3	355.9	173.8	155.2	18.63	9.332	
2,100.0	1,993.3	2,085.2	1,933.4	11.3	13.0	58.24	-547.2	385.2	186.3	166.6	19.74	9.440	
2,200.0	2,085.1	2,184.4	2,020.2	12.0	13.9	57.46	-585.1	414.5	198.9	178.0	20.85	9.540	
2,300.0	2,177.0	2,283.5	2,107.0	12.7	14.8	56.77	-623.0	443.8	211.5	189.5	21.95	9.633	
2,400.0	2,268.8	2,382.7	2,193.9	13.5	15.7	56.16	-660.9	473.1	224.1	201.0	23.06	9.719	
2,500.0	2,360.7	2,481.9	2,280.7	14.2	16.6	55.62	-698.8	502.4	236.7	212.6	24.16	9.800	
2,600.0	2,452.5	2,581.1	2,367.6	14.9	17.5	55.13	-736.6	531.7	249.4	224.2	25.26	9.874	
2,700.0	2,544.4	2,680.2	2,454.4	15.7	18.4	54.68	-774.5	561.0	262.1	235.7	26.36	9.944	
2,800.0	2,636.2	2,779.4	2,541.3	16.4	19.2	54.28	-812.4	590.3	274.8	247.3	27.45	10.009	
2,900.0	2,728.1	2,878.6	2,628.1	17.2	20.1	53.91	-850.3	619.6	287.5	258.9	28.55	10.070	
3,000.0	2,819.9	2,977.8	2,714.9	17.9	21.0	53.58	-888.2	648.9	300.2	270.5	29.64	10.127	
3,100.0	2,911.8	3,076.9	2,801.8	18.6	21.9	53.27	-926.1	678.2	312.9	282.2	30.74	10.180	
3,200.0	3,003.6	3,176.1	2,888.6	19.4	22.8	52.99	-964.0	707.5	325.6	293.8	31.83	10.230	
3,300.0	3,095.5	3,275.3	2,975.5	20.1	23.7	52.72	-1,001.9	736.8	338.4	305.5	32.92	10.278	
3,400.0	3,187.3	3,374.5	3,062.3	20.9	24.6	52.48	-1,039.8	766.1	351.1	317.1	34.02	10.322	
3,500.0	3,279.2	3,473.6	3,149.2	21.6	25.5	52.25	-1,077.6	795.3	363.9	328.8	35.11	10.364	
3,600.0	3,371.0	3,572.8	3,236.0	22.3	26.3	52.04	-1,115.5	824.6	376.6	340.4	36.20	10.404	
3,700.0	3,462.9	3,672.0	3,322.8	23.1	27.2	51.84	-1,153.4	853.9	389.4	352.1	37.29	10.442	
3,800.0	3,554.7	3,771.2	3,409.7	23.8	28.1	51.66	-1,191.3	883.2	402.2	363.8	38.38	10.478	
3,900.0	3,646.6	3,870.3	3,496.5	24.6	29.0	51.49	-1,229.2	912.5	414.9	375.5	39.47	10.512	
4,000.0	3,738.4	3,969.5	3,583.4	25.3	29.9	51.32	-1,267.1	941.8	427.7	387.1	40.56	10.544	
4,100.0	3,830.2	4,068.7	3,670.2	26.0	30.8	51.17	-1,305.0	971.1	440.5	398.8	41.65	10.575	
4,200.0	3,922.1	4,167.8	3,757.1	26.8	31.7	51.02	-1,342.9	1,000.4	453.3	410.5	42.74	10.605	
4,300.0	4,013.9	4,267.0	3,843.9	27.5	32.6	50.89	-1,380.8	1,029.7	466.0	422.2	43.83	10.633	
4,400.0	4,105.8	4,366.2	3,930.8	28.3	33.4	50.76	-1,418.6	1,059.0	478.8	433.9	44.92	10.659	
4,500.0	4,197.6	4,465.4	4,017.6	29.0	34.3	50.63	-1,456.5	1,088.3	491.6	445.6	46.01	10.685	

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	**Local Co-ordinate Reference:**	Well Shideler Fee 6-1DD
Project:	Mamm Creek	**TVD Reference:**	KB=22' @ 7126.0ft (Patterson #308)
Reference Site:	O31E Pad (2nd Occupation)	**MD Reference:**	KB=22' @ 7126.0ft (Patterson #308)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Shideler Fee 6-1DD	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Offset Design O31E Pad (2nd Occupation) - Shideler Fee 6-8D - OH - Plan #1

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	-122.99	-24.4	-37.6	44.8				
100.0	100.0	100.0	100.0	0.1	0.1	-122.99	-24.4	-37.6	44.8	44.5	0.27	164.580	
200.0	200.0	200.0	200.0	0.3	0.3	-122.99	-24.4	-37.6	44.8	44.2	0.62	72.120	CC
250.5	250.5	250.5	250.5	0.4	0.4	105.09	-24.9	-37.2	44.8	44.0	0.80	55.968	
300.0	300.0	300.0	300.0	0.5	0.5	102.60	-26.6	-36.1	44.9	43.9	0.98	45.822	ES
400.0	399.9	399.7	399.3	0.7	0.7	97.59	-33.0	-31.7	46.1	44.7	1.38	33.341	
500.0	499.5	499.2	498.0	0.9	1.0	92.97	-43.7	-24.4	49.0	47.1	1.89	25.993	
600.0	598.4	598.4	595.6	1.2	1.4	89.07	-58.6	-14.2	53.4	50.9	2.52	21.210	
700.0	696.5	697.4	691.8	1.6	1.8	86.01	-77.5	-1.2	59.3	56.0	3.30	17.957	
800.0	793.4	796.1	786.4	2.0	2.3	83.75	-100.5	14.6	66.5	62.3	4.25	15.674	
900.0	888.9	894.4	879.2	2.6	2.9	82.16	-127.4	33.0	75.0	69.7	5.35	14.020	
1,000.0	982.7	992.4	969.9	3.2	3.6	81.11	-158.1	54.0	84.6	78.0	6.62	12.783	
1,100.0	1,074.8	1,090.0	1,058.2	3.9	4.4	80.25	-192.4	77.5	95.5	87.5	8.02	11.913	
1,200.0	1,166.7	1,187.0	1,143.6	4.7	5.3	77.64	-230.1	103.4	108.3	98.9	9.40	11.526	SF
1,300.0	1,258.5	1,284.5	1,227.6	5.4	6.2	73.84	-271.1	131.4	123.4	112.7	10.68	11.545	
1,400.0	1,350.4	1,383.0	1,312.2	6.1	7.1	70.68	-312.7	160.0	139.0	127.1	11.92	11.660	
1,500.0	1,442.2	1,481.5	1,396.7	6.8	8.0	68.16	-354.4	188.5	155.0	141.9	13.13	11.806	
1,600.0	1,534.1	1,580.0	1,481.3	7.6	9.0	66.12	-396.1	217.1	171.3	157.0	14.32	11.964	
1,700.0	1,625.9	1,678.5	1,565.9	8.3	9.9	64.43	-437.7	245.6	187.7	172.2	15.49	12.121	
1,800.0	1,717.8	1,777.0	1,650.4	9.0	10.8	63.01	-479.4	274.2	204.3	187.6	16.64	12.274	
1,900.0	1,809.6	1,875.5	1,735.0	9.8	11.7	61.80	-521.0	302.7	220.9	203.1	17.79	12.419	
2,000.0	1,901.5	1,974.0	1,819.6	10.5	12.7	60.77	-562.7	331.2	237.7	218.7	18.93	12.556	
2,100.0	1,993.3	2,072.5	1,904.2	11.3	13.6	59.87	-604.4	359.8	254.5	234.4	20.06	12.685	
2,200.0	2,085.1	2,171.0	1,988.7	12.0	14.5	59.08	-646.0	388.3	271.3	250.1	21.19	12.805	
2,300.0	2,177.0	2,269.5	2,073.3	12.7	15.5	58.39	-687.7	416.9	288.2	265.9	22.31	12.917	
2,400.0	2,268.8	2,368.0	2,157.9	13.5	16.4	57.77	-729.3	445.4	305.2	281.7	23.44	13.021	
2,500.0	2,360.7	2,466.5	2,242.5	14.2	17.3	57.21	-771.0	474.0	322.1	297.6	24.56	13.119	
2,600.0	2,452.5	2,565.1	2,327.0	14.9	18.3	56.72	-812.7	502.5	339.1	313.5	25.67	13.210	
2,700.0	2,544.4	2,663.6	2,411.6	15.7	19.2	56.27	-854.3	531.1	356.1	329.4	26.79	13.295	
2,800.0	2,636.2	2,762.1	2,496.2	16.4	20.1	55.86	-896.0	559.6	373.2	345.3	27.90	13.375	
2,900.0	2,728.1	2,860.6	2,580.7	17.2	21.0	55.48	-937.7	588.1	390.2	361.2	29.01	13.450	
3,000.0	2,819.9	2,959.1	2,665.3	17.9	22.0	55.14	-979.3	616.7	407.3	377.2	30.12	13.521	
3,100.0	2,911.8	3,057.6	2,749.9	18.6	22.9	54.82	-1,021.0	645.2	424.4	393.2	31.23	13.587	
3,200.0	3,003.6	3,156.1	2,834.5	19.4	23.8	54.53	-1,062.6	673.8	441.5	409.1	32.34	13.650	
3,300.0	3,095.5	3,254.6	2,919.0	20.1	24.8	54.26	-1,104.3	702.3	458.6	425.1	33.45	13.709	
3,400.0	3,187.3	3,353.1	3,003.6	20.9	25.7	54.02	-1,146.0	730.9	475.7	441.2	34.56	13.765	
3,500.0	3,279.2	3,451.6	3,088.2	21.6	26.6	53.78	-1,187.6	759.4	492.8	457.2	35.67	13.817	

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

Company:	EnCana Oil & Gas (USA) Inc	**Local Co-ordinate Reference:**	Well Shideler Fee 6-1DD
Project:	Mamm Creek	**TVD Reference:**	KB=22' @ 7126.0ft (Patterson #308)
Reference Site:	O31E Pad (2nd Occupation)	**MD Reference:**	KB=22' @ 7126.0ft (Patterson #308)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Shideler Fee 6-1DD	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	OH	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Reference Depths are relative to KB=22' @ 7126.0ft (Patterson #308)
Offset Depths are relative to Offset Datum
Central Meridian is -105.500000 °
Coordinates are relative to: Shideler Fee 6-1DD
Coordinate System is US State Plane 1983, Colorado Central Zone
Grid Convergence at Surface is: -1.39°