

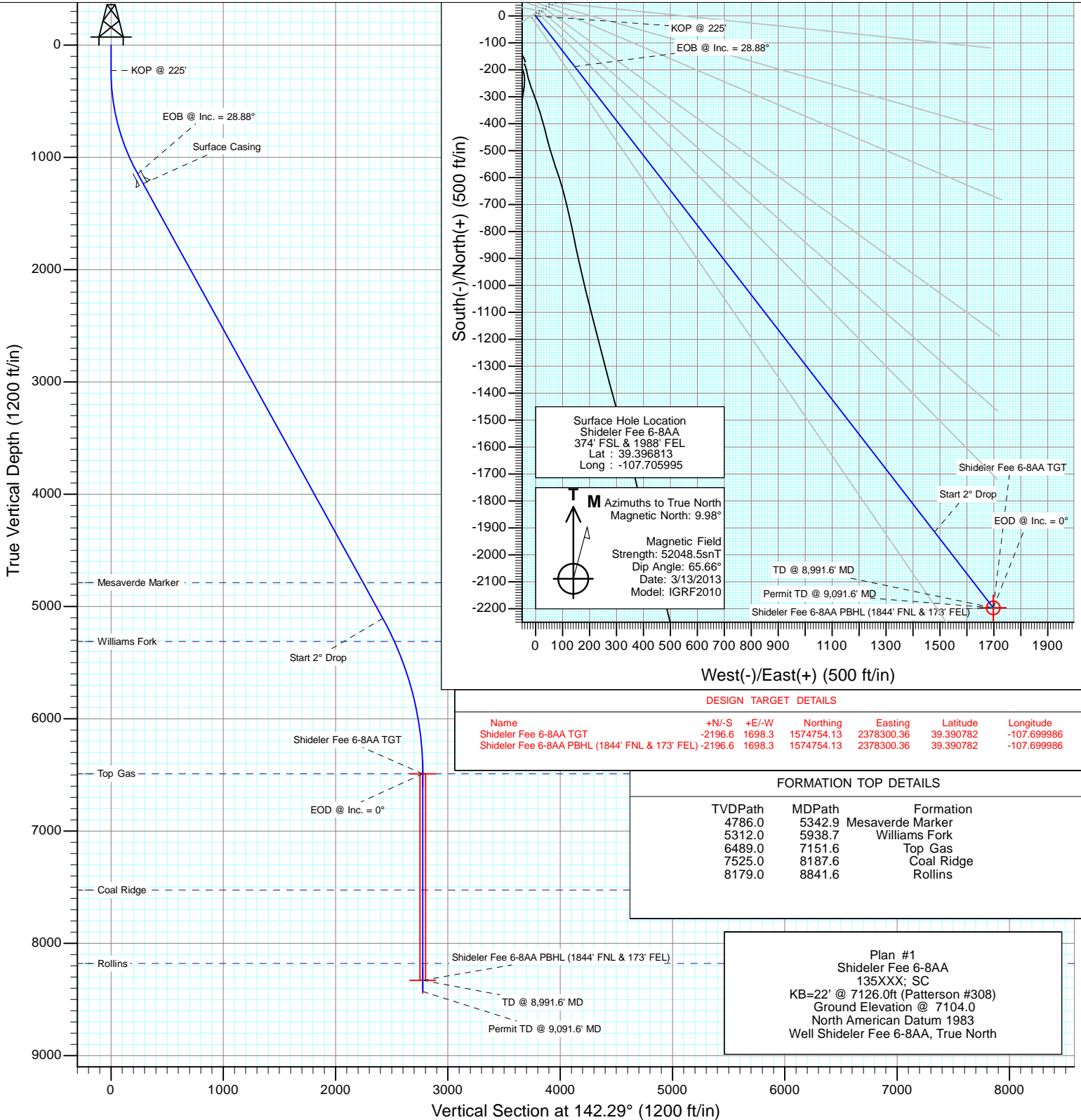


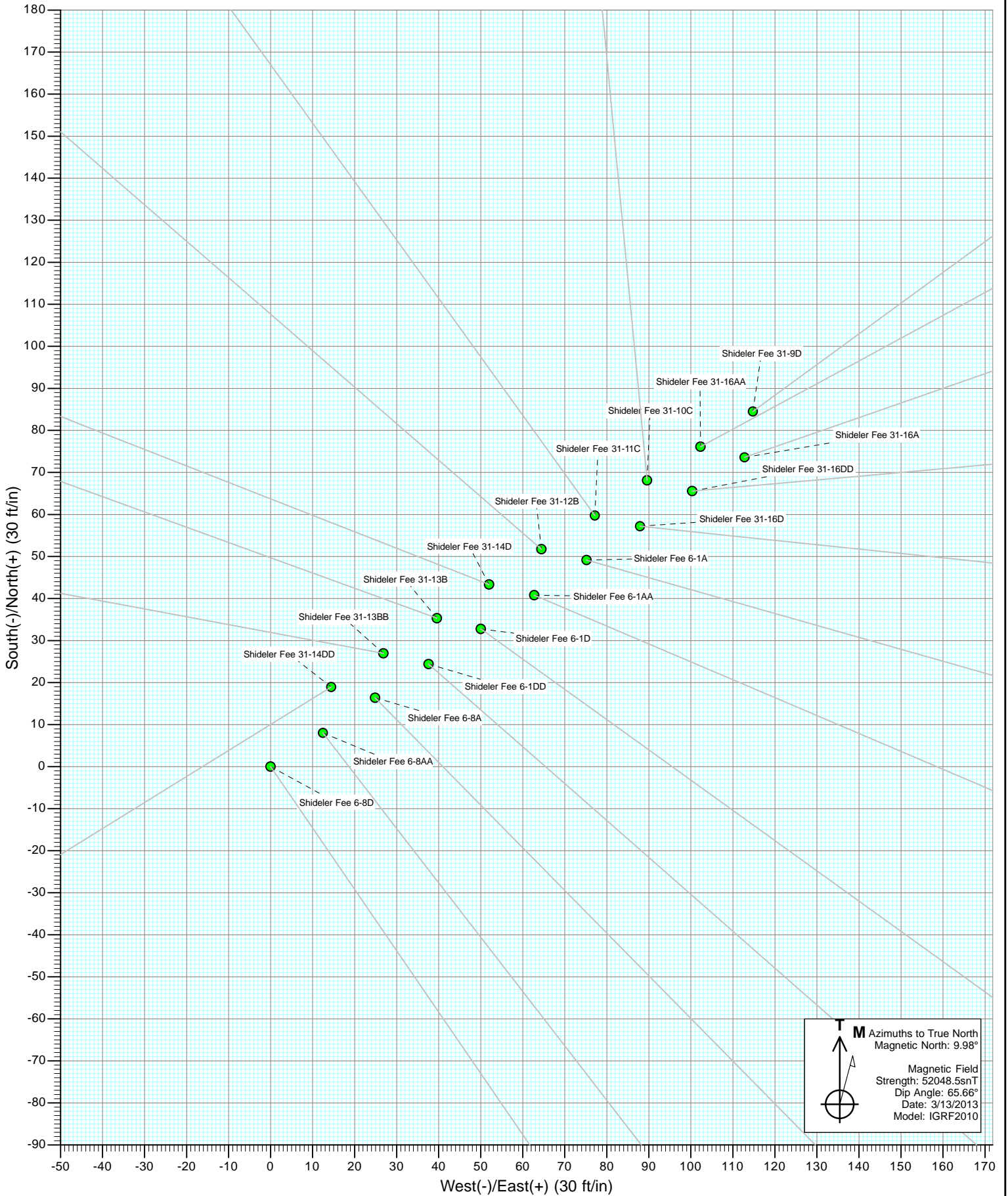
Project: Mamm Creek  
 Site: O31E Pad (2nd Occupation)  
 Well: Shideler Fee 6-8AA  
 Wellbore: OH  
 Design: Plan #1



SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N-/S	+E-/W	Dleg	TFace	VSec	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	225.0	0.00	0.00	225.0	0.0	0.0	0.00	0.00	0.0	
3	1187.5	28.88	142.29	1147.3	-187.9	145.2	3.00	142.29	237.5	
4	5707.8	28.88	142.29	5105.5	-1914.8	1480.4	0.00	0.00	2420.4	
5	7151.6	0.00	0.00	6489.0	-2196.6	1698.3	2.00	180.00	2776.6	Shideler Fee 6-8AA TGT
6	8991.6	0.00	0.00	8329.0	-2196.6	1698.3	0.00	0.00	2776.6	Shideler Fee 6-8AA PBHL (1844' FNL & 173' FEL)
7	9091.6	0.00	0.00	8429.0	-2196.6	1698.3	0.00	0.00	2776.6	

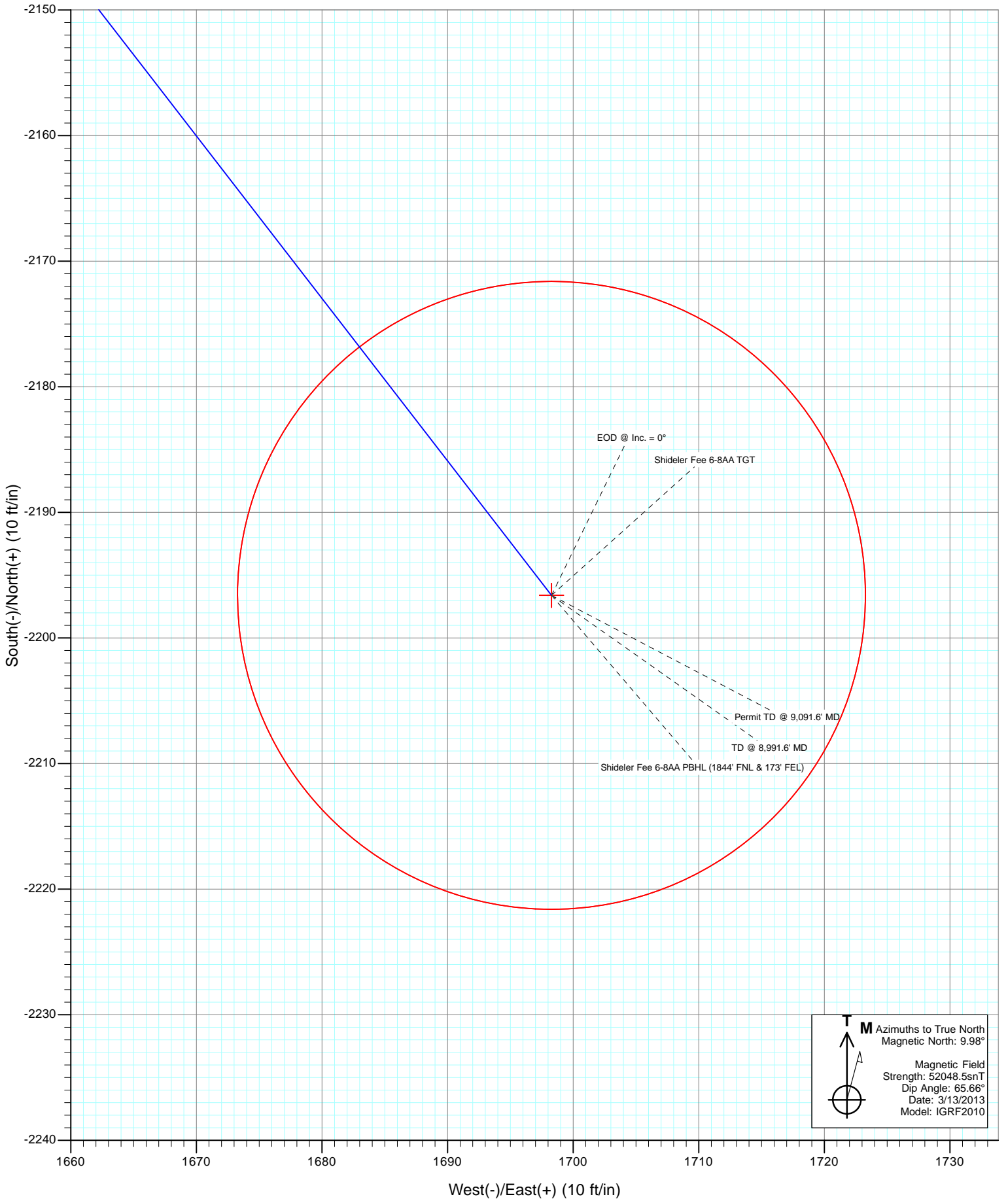








Project: Mamm Creek  
Site: O31E Pad (2nd Occupation)  
Well: Shideler Fee 6-8AA  
Wellbore: OH  
Design: Plan #1



# Cathedral Energy Services

## Planning Report

<b>Database:</b> USA EDM 5000 Multi Users DB	<b>Local Co-ordinate Reference:</b> Well Shideler Fee 6-8AA
<b>Company:</b> EnCana Oil & Gas (USA) Inc	<b>TVD Reference:</b> KB=22' @ 7126.0ft (Patterson #308)
<b>Project:</b> Mamm Creek	<b>MD Reference:</b> KB=22' @ 7126.0ft (Patterson #308)
<b>Site:</b> O31E Pad (2nd Occupation)	<b>North Reference:</b> True
<b>Well:</b> Shideler Fee 6-8AA	<b>Survey Calculation Method:</b> Minimum Curvature
<b>Wellbore:</b> OH	
<b>Design:</b> Plan #1	

<b>Project</b> Mamm Creek		
<b>Map System:</b> US State Plane 1983	<b>System Datum:</b> Mean Sea Level	
<b>Geo Datum:</b> North American Datum 1983		
<b>Map Zone:</b> Colorado Central Zone		

<b>Site</b> O31E Pad (2nd Occupation)					
<b>Site Position:</b>		<b>Northing:</b> 1,577,065.31 ft	<b>Latitude:</b> 39.397023		
<b>From:</b> Lat/Long		<b>Easting:</b> 2,376,760.05 ft	<b>Longitude:</b> -107.705633		
<b>Position Uncertainty:</b> 0.0 ft		<b>Slot Radius:</b> 13.200 in	<b>Grid Convergence:</b> -1.39 °		

<b>Well</b> Shideler Fee 6-8AA					
<b>Well Position</b>	<b>+N/-S</b> 0.0 ft	<b>Northing:</b> 1,576,991.32 ft	<b>Latitude:</b> 39.396813		
	<b>+E/-W</b> 0.0 ft	<b>Easting:</b> 2,376,655.92 ft	<b>Longitude:</b> -107.705995		
<b>Position Uncertainty</b>	0.0 ft	<b>Wellhead Elevation:</b> ft	<b>Ground Level:</b> 7,104.0 ft		

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

<b>Design</b> Plan #1					
<b>Audit Notes:</b>					
<b>Version:</b>	<b>Phase:</b> PLAN	<b>Tie On Depth:</b> 0.0			
<b>Vertical Section:</b>	<b>Depth From (TVD)</b> (ft)	<b>+N/-S</b> (ft)	<b>+E/-W</b> (ft)	<b>Direction</b> (°)	
	0.0	0.0	0.0	142.29	

<b>Plan Sections</b>										
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	
225.0	0.00	0.00	225.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,187.5	28.88	142.29	1,147.3	-187.9	145.2	3.00	3.00	0.00	142.29	
5,707.8	28.88	142.29	5,105.5	-1,914.8	1,480.4	0.00	0.00	0.00	0.00	
7,151.6	0.00	0.00	6,489.0	-2,196.6	1,698.3	2.00	-2.00	0.00	180.00	Shideler Fee 6-8AA T
8,991.6	0.00	0.00	8,329.0	-2,196.6	1,698.3	0.00	0.00	0.00	0.00	Shideler Fee 6-8AA P
9,091.6	0.00	0.00	8,429.0	-2,196.6	1,698.3	0.00	0.00	0.00	0.00	

# Cathedral Energy Services

## Planning Report

<b>Database:</b>	USA EDM 5000 Multi Users DB	<b>Local Co-ordinate Reference:</b>	Well Shideler Fee 6-8AA
<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>TVD Reference:</b>	KB=22' @ 7126.0ft (Patterson #308)
<b>Project:</b>	Mamm Creek	<b>MD Reference:</b>	KB=22' @ 7126.0ft (Patterson #308)
<b>Site:</b>	O31E Pad (2nd Occupation)	<b>North Reference:</b>	True
<b>Well:</b>	Shideler Fee 6-8AA	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	Plan #1		

### Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Comments / Formations
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	
225.0	0.00	0.00	225.0	0.0	0.0	0.0	0.00	0.00	KOP @ 225'
300.0	2.25	142.29	300.0	-1.2	0.9	1.5	3.00	3.00	
400.0	5.25	142.29	399.8	-6.3	4.9	8.0	3.00	3.00	
500.0	8.25	142.29	499.1	-15.6	12.1	19.8	3.00	3.00	
600.0	11.25	142.29	597.6	-29.0	22.4	36.7	3.00	3.00	
700.0	14.25	142.29	695.1	-46.5	35.9	58.8	3.00	3.00	
800.0	17.25	142.29	791.4	-68.0	52.5	85.9	3.00	3.00	
900.0	20.25	142.29	886.0	-93.4	72.2	118.0	3.00	3.00	
1,000.0	23.25	142.29	978.9	-122.7	94.9	155.1	3.00	3.00	
1,100.0	26.25	142.29	1,069.7	-155.8	120.5	197.0	3.00	3.00	
1,187.5	28.88	142.29	1,147.3	-187.9	145.2	237.5	3.00	3.00	EOB @ Inc. = 28.88°
1,200.0	28.88	142.29	1,158.2	-192.6	148.9	243.5	0.00	0.00	
1,287.5	28.88	142.29	1,234.8	-226.1	174.8	285.7	0.00	0.00	Surface Casing
1,300.0	28.88	142.29	1,245.8	-230.8	178.5	291.8	0.00	0.00	
1,400.0	28.88	142.29	1,333.4	-269.0	208.0	340.1	0.00	0.00	
1,500.0	28.88	142.29	1,420.9	-307.2	237.5	388.4	0.00	0.00	
1,600.0	28.88	142.29	1,508.5	-345.4	267.1	436.6	0.00	0.00	
1,700.0	28.88	142.29	1,596.1	-383.6	296.6	484.9	0.00	0.00	
1,800.0	28.88	142.29	1,683.6	-421.9	326.1	533.2	0.00	0.00	
1,900.0	28.88	142.29	1,771.2	-460.1	355.7	581.5	0.00	0.00	
2,000.0	28.88	142.29	1,858.8	-498.3	385.2	629.8	0.00	0.00	
2,100.0	28.88	142.29	1,946.3	-536.5	414.8	678.1	0.00	0.00	
2,200.0	28.88	142.29	2,033.9	-574.7	444.3	726.4	0.00	0.00	
2,300.0	28.88	142.29	2,121.5	-612.9	473.8	774.7	0.00	0.00	
2,400.0	28.88	142.29	2,209.0	-651.1	503.4	823.0	0.00	0.00	
2,500.0	28.88	142.29	2,296.6	-689.3	532.9	871.3	0.00	0.00	
2,600.0	28.88	142.29	2,384.2	-727.5	562.5	919.6	0.00	0.00	
2,700.0	28.88	142.29	2,471.7	-765.7	592.0	967.9	0.00	0.00	
2,800.0	28.88	142.29	2,559.3	-803.9	621.5	1,016.1	0.00	0.00	
2,900.0	28.88	142.29	2,646.9	-842.1	651.1	1,064.4	0.00	0.00	
3,000.0	28.88	142.29	2,734.4	-880.3	680.6	1,112.7	0.00	0.00	
3,100.0	28.88	142.29	2,822.0	-918.5	710.1	1,161.0	0.00	0.00	
3,200.0	28.88	142.29	2,909.6	-956.7	739.7	1,209.3	0.00	0.00	
3,300.0	28.88	142.29	2,997.1	-994.9	769.2	1,257.6	0.00	0.00	
3,400.0	28.88	142.29	3,084.7	-1,033.1	798.8	1,305.9	0.00	0.00	
3,500.0	28.88	142.29	3,172.3	-1,071.3	828.3	1,354.2	0.00	0.00	
3,600.0	28.88	142.29	3,259.8	-1,109.5	857.8	1,402.5	0.00	0.00	
3,700.0	28.88	142.29	3,347.4	-1,147.7	887.4	1,450.8	0.00	0.00	
3,800.0	28.88	142.29	3,435.0	-1,185.9	916.9	1,499.1	0.00	0.00	
3,900.0	28.88	142.29	3,522.5	-1,224.2	946.4	1,547.4	0.00	0.00	
4,000.0	28.88	142.29	3,610.1	-1,262.4	976.0	1,595.6	0.00	0.00	
4,100.0	28.88	142.29	3,697.7	-1,300.6	1,005.5	1,643.9	0.00	0.00	
4,200.0	28.88	142.29	3,785.2	-1,338.8	1,035.1	1,692.2	0.00	0.00	
4,300.0	28.88	142.29	3,872.8	-1,377.0	1,064.6	1,740.5	0.00	0.00	
4,400.0	28.88	142.29	3,960.4	-1,415.2	1,094.1	1,788.8	0.00	0.00	
4,500.0	28.88	142.29	4,047.9	-1,453.4	1,123.7	1,837.1	0.00	0.00	
4,600.0	28.88	142.29	4,135.5	-1,491.6	1,153.2	1,885.4	0.00	0.00	
4,700.0	28.88	142.29	4,223.1	-1,529.8	1,182.7	1,933.7	0.00	0.00	
4,800.0	28.88	142.29	4,310.6	-1,568.0	1,212.3	1,982.0	0.00	0.00	

# Cathedral Energy Services

## Planning Report

<b>Database:</b>	USA EDM 5000 Multi Users DB	<b>Local Co-ordinate Reference:</b>	Well Shideler Fee 6-8AA
<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>TVD Reference:</b>	KB=22' @ 7126.0ft (Patterson #308)
<b>Project:</b>	Mamm Creek	<b>MD Reference:</b>	KB=22' @ 7126.0ft (Patterson #308)
<b>Site:</b>	O31E Pad (2nd Occupation)	<b>North Reference:</b>	True
<b>Well:</b>	Shideler Fee 6-8AA	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	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	28.88	142.29	4,398.2	-1,606.2	1,241.8	2,030.3	0.00	0.00	
5,000.0	28.88	142.29	4,485.8	-1,644.4	1,271.4	2,078.6	0.00	0.00	
5,100.0	28.88	142.29	4,573.3	-1,682.6	1,300.9	2,126.8	0.00	0.00	
5,200.0	28.88	142.29	4,660.9	-1,720.8	1,330.4	2,175.1	0.00	0.00	
5,300.0	28.88	142.29	4,748.5	-1,759.0	1,360.0	2,223.4	0.00	0.00	
5,342.9	28.88	142.29	4,786.0	-1,775.4	1,372.6	2,244.1	0.00	0.00	Mesaverde Marker
5,400.0	28.88	142.29	4,836.0	-1,797.2	1,389.5	2,271.7	0.00	0.00	
5,500.0	28.88	142.29	4,923.6	-1,835.4	1,419.0	2,320.0	0.00	0.00	
5,600.0	28.88	142.29	5,011.2	-1,873.6	1,448.6	2,368.3	0.00	0.00	
5,707.8	28.88	142.29	5,105.5	-1,914.8	1,480.4	2,420.4	0.00	0.00	Start 2° Drop
5,800.0	27.03	142.29	5,187.0	-1,949.0	1,506.9	2,463.6	2.00	-2.00	
5,900.0	25.03	142.29	5,276.8	-1,983.7	1,533.7	2,507.5	2.00	-2.00	
5,938.7	24.26	142.29	5,312.0	-1,996.5	1,543.6	2,523.6	2.00	-2.00	Williams Fork
6,000.0	23.03	142.29	5,368.2	-2,015.9	1,558.6	2,548.2	2.00	-2.00	
6,100.0	21.03	142.29	5,460.9	-2,045.6	1,581.5	2,585.7	2.00	-2.00	
6,200.0	19.03	142.29	5,554.8	-2,072.7	1,602.5	2,620.0	2.00	-2.00	
6,300.0	17.03	142.29	5,649.9	-2,097.2	1,621.4	2,650.9	2.00	-2.00	
6,400.0	15.03	142.29	5,746.0	-2,119.1	1,638.3	2,678.5	2.00	-2.00	
6,500.0	13.03	142.29	5,843.0	-2,138.2	1,653.2	2,702.8	2.00	-2.00	
6,600.0	11.03	142.29	5,940.8	-2,154.7	1,665.9	2,723.6	2.00	-2.00	
6,700.0	9.03	142.29	6,039.3	-2,168.5	1,676.6	2,741.0	2.00	-2.00	
6,800.0	7.03	142.29	6,138.3	-2,179.6	1,685.1	2,755.0	2.00	-2.00	
6,900.0	5.03	142.29	6,237.7	-2,187.9	1,691.5	2,765.5	2.00	-2.00	
7,000.0	3.03	142.29	6,337.5	-2,193.4	1,695.8	2,772.5	2.00	-2.00	
7,100.0	1.03	142.29	6,437.4	-2,196.2	1,698.0	2,776.1	2.00	-2.00	
7,151.6	0.00	0.00	6,489.0	-2,196.6	1,698.3	2,776.6	2.00	-2.00	EOD @ Inc. = 0° - Top Gas
7,200.0	0.00	0.00	6,537.4	-2,196.6	1,698.3	2,776.6	0.00	0.00	
7,300.0	0.00	0.00	6,637.4	-2,196.6	1,698.3	2,776.6	0.00	0.00	
7,400.0	0.00	0.00	6,737.4	-2,196.6	1,698.3	2,776.6	0.00	0.00	
7,500.0	0.00	0.00	6,837.4	-2,196.6	1,698.3	2,776.6	0.00	0.00	
7,600.0	0.00	0.00	6,937.4	-2,196.6	1,698.3	2,776.6	0.00	0.00	
7,700.0	0.00	0.00	7,037.4	-2,196.6	1,698.3	2,776.6	0.00	0.00	
7,800.0	0.00	0.00	7,137.4	-2,196.6	1,698.3	2,776.6	0.00	0.00	
7,900.0	0.00	0.00	7,237.4	-2,196.6	1,698.3	2,776.6	0.00	0.00	
8,000.0	0.00	0.00	7,337.4	-2,196.6	1,698.3	2,776.6	0.00	0.00	
8,100.0	0.00	0.00	7,437.4	-2,196.6	1,698.3	2,776.6	0.00	0.00	
8,187.6	0.00	0.00	7,525.0	-2,196.6	1,698.3	2,776.6	0.00	0.00	Coal Ridge
8,200.0	0.00	0.00	7,537.4	-2,196.6	1,698.3	2,776.6	0.00	0.00	
8,300.0	0.00	0.00	7,637.4	-2,196.6	1,698.3	2,776.6	0.00	0.00	
8,400.0	0.00	0.00	7,737.4	-2,196.6	1,698.3	2,776.6	0.00	0.00	
8,500.0	0.00	0.00	7,837.4	-2,196.6	1,698.3	2,776.6	0.00	0.00	
8,600.0	0.00	0.00	7,937.4	-2,196.6	1,698.3	2,776.6	0.00	0.00	
8,700.0	0.00	0.00	8,037.4	-2,196.6	1,698.3	2,776.6	0.00	0.00	
8,800.0	0.00	0.00	8,137.4	-2,196.6	1,698.3	2,776.6	0.00	0.00	
8,841.6	0.00	0.00	8,179.0	-2,196.6	1,698.3	2,776.6	0.00	0.00	Rollins
8,900.0	0.00	0.00	8,237.4	-2,196.6	1,698.3	2,776.6	0.00	0.00	
8,991.6	0.00	0.00	8,329.0	-2,196.6	1,698.3	2,776.6	0.00	0.00	TD @ 8,991.6' MD
9,000.0	0.00	0.00	8,337.4	-2,196.6	1,698.3	2,776.6	0.00	0.00	
9,091.6	0.00	0.00	8,429.0	-2,196.6	1,698.3	2,776.6	0.00	0.00	Permit TD @ 9,091.6' MD

# Cathedral Energy Services

## Planning Report

<b>Database:</b>	USA EDM 5000 Multi Users DB	<b>Local Co-ordinate Reference:</b>	Well Shideler Fee 6-8AA
<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>TVD Reference:</b>	KB=22' @ 7126.0ft (Patterson #308)
<b>Project:</b>	Mamm Creek	<b>MD Reference:</b>	KB=22' @ 7126.0ft (Patterson #308)
<b>Site:</b>	O31E Pad (2nd Occupation)	<b>North Reference:</b>	True
<b>Well:</b>	Shideler Fee 6-8AA	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	Plan #1		

Targets									
Target Name	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- hit/miss target	(°)	(°)	(ft)	(ft)	(ft)	(ft)	(ft)		
- Shape									
Shideler Fee 6-8AA TGT - plan hits target center - Point	0.00	0.00	6,489.0	-2,196.6	1,698.3	1,574,754.13	2,378,300.36	39.390782	-107.699986
Shideler Fee 6-8AA PBI- - plan hits target center - Circle (radius 25.0)	0.00	0.00	8,329.0	-2,196.6	1,698.3	1,574,754.13	2,378,300.36	39.390782	-107.699986

Casing Points				
Measured Depth	Vertical Depth	Name	Casing Diameter	Hole Diameter
(ft)	(ft)		(in)	(in)
1,287.5	1,234.8	Surface Casing		

Formations					
Measured Depth	Vertical Depth	Name	Lithology	Dip	Dip Direction
(ft)	(ft)			(°)	(°)
5,342.9	4,786.0	Mesaverde Marker			
5,938.7	5,312.0	Williams Fork			
7,151.6	6,489.0	Top Gas			
8,187.6	7,525.0	Coal Ridge			
8,841.6	8,179.0	Rollins			

Plan Annotations					
Measured Depth	Vertical Depth	Local Coordinates		Comment	
(ft)	(ft)	+N/-S	+E/-W		
		(ft)	(ft)		
225.0	225.0	0.0	0.0	KOP @ 225'	
1,187.5	1,147.3	-187.9	145.2	EOB @ Inc. = 28.88°	
5,707.8	5,105.5	-1,914.8	1,480.4	Start 2° Drop	
7,151.6	6,489.0	-2,196.6	1,698.3	EOD @ Inc. = 0°	
8,991.6	8,329.0	-2,196.6	1,698.3	TD @ 8,991.6' MD	
9,091.6	8,429.0	-2,196.6	1,698.3	Permit TD @ 9,091.6' MD	

# **EnCana Oil & Gas (USA) Inc**

**Mamm Creek**

**O31E Pad (2nd Occupation)**

**Shideler Fee 6-8AA**

**OH**

**Plan #1**

## **Anticollision Report**

**21 March, 2013**

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Shideler Fee 6-8AA
<b>Project:</b>	Mamm Creek	<b>TVD Reference:</b>	KB=22' @ 7126.0ft (Patterson #308)
<b>Reference Site:</b>	O31E Pad (2nd Occupation)	<b>MD Reference:</b>	KB=22' @ 7126.0ft (Patterson #308)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Shideler Fee 6-8AA	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OH	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #1	<b>Offset TVD Reference:</b>	Offset Datum

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

<b>Survey Tool Program</b>		<b>Date</b>	3/14/2013		
<b>From (ft)</b>	<b>To (ft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>	
0.0	9,091.6	Plan #1 (OH)	MWD	Geolink MWD	

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Shideler Fee 6-8AA
<b>Project:</b>	Mamm Creek	<b>TVD Reference:</b>	KB=22' @ 7126.0ft (Patterson #308)
<b>Reference Site:</b>	O31E Pad (2nd Occupation)	<b>MD Reference:</b>	KB=22' @ 7126.0ft (Patterson #308)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Shideler Fee 6-8AA	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OH	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #1	<b>Offset TVD Reference:</b>	Offset Datum

Summary						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
<b>Offset Well - Wellbore - Design</b>						
O31E Pad						
Shideler 31-15-EX - Existing - Existing	754.6	727.7	165.7	163.1	63.063	CC, ES
Shideler 31-15-EX - Existing - Existing	1,100.0	1,049.4	210.4	205.8	45.694	SF
Shideler Federal 6-3-EX - Existing - Existing	657.9	629.9	194.1	192.0	93.165	CC, ES
Shideler Federal 6-3-EX - Existing - Existing	1,100.0	1,039.9	248.9	244.1	52.705	SF
Shideler Fee 31-13C - OH - FINAL	710.6	708.2	129.6	126.4	40.757	CC, ES
Shideler Fee 31-13C - OH - FINAL	800.0	781.8	137.1	133.2	35.588	SF
Shideler Fee 31-13CC - OH - FINAL	482.7	475.0	194.0	192.3	111.384	CC
Shideler Fee 31-13CC - OH - FINAL	500.0	491.1	194.1	192.2	106.169	ES
Shideler Fee 31-13CC - OH - FINAL	1,000.0	910.2	286.3	281.1	55.398	SF
Shideler Fee 6-3A - DD - FINAL	0.0	3.0	219.6			
Shideler Fee 6-3A - DD - FINAL	100.0	102.3	219.7	219.4	786.492	ES
Shideler Fee 6-3A - DD - FINAL	1,200.0	1,147.0	281.2	274.5	41.733	SF
Shideler Fee 6-3AA - DD - FINAL	0.0	0.0	230.4			
Shideler Fee 6-3AA - DD - FINAL	1,600.0	1,478.9	469.6	458.6	42.840	SF
Shideler Fee 6-3D - DD - DD	0.0	3.0	208.1			
Shideler Fee 6-3D - DD - DD	200.0	202.1	208.5	207.9	333.623	ES
Shideler Fee 6-3D - DD - DD	1,600.0	1,495.7	422.1	410.7	36.858	SF
Shideler Fee 6-3DD - DD - DD	0.0	3.0	218.8			
Shideler Fee 6-3DD - DD - DD	100.0	102.2	218.9	218.7	783.567	ES
Shideler Fee 6-3DD - DD - DD	1,700.0	1,576.5	467.5	454.2	35.005	SF
Shideler Fee 6-6A - DD - FINAL	645.6	629.3	195.0	192.5	78.289	CC, ES
Shideler Fee 6-6A - DD - FINAL	1,900.0	1,767.4	499.6	483.4	30.726	SF
Shideler Fee 6-6D - DD - DD	130.3	133.4	194.8	194.5	508.029	CC, ES
Shideler Fee 6-6D - DD - DD	1,900.0	1,749.2	492.8	474.4	26.799	SF
Shideler Fee 6-6DD - DD - FINAL	152.9	155.9	184.4	184.0	398.957	CC
Shideler Fee 6-6DD - DD - FINAL	200.0	201.2	184.6	184.0	296.025	ES
Shideler Fee 6-6DD - DD - FINAL	1,700.0	1,551.2	488.2	472.9	31.829	SF
Shideler Fee 6-7D - DD - DD	138.4	138.4	184.5	184.1	448.276	CC, ES
Shideler Fee 6-7D - DD - DD	2,800.0	2,682.7	497.6	462.4	14.145	SF

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

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Shideler Fee 6-8AA
<b>Project:</b>	Mamm Creek	<b>TVD Reference:</b>	KB=22' @ 7126.0ft (Patterson #308)
<b>Reference Site:</b>	O31E Pad (2nd Occupation)	<b>MD Reference:</b>	KB=22' @ 7126.0ft (Patterson #308)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Shideler Fee 6-8AA	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OH	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #1	<b>Offset TVD Reference:</b>	Offset Datum

### Summary

Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
O31E Pad (2nd Occupation)						
Shideler Fee 31-10C - OH - Plan #1	200.0	200.0	97.8	97.2	157.389	CC, ES
Shideler Fee 31-10C - OH - Plan #1	600.0	577.9	133.8	131.5	58.889	SF
Shideler Fee 31-11C - OH - Plan #1	200.0	200.0	82.8	82.2	133.331	CC
Shideler Fee 31-11C - OH - Plan #1	300.0	299.8	82.9	82.0	85.200	ES
Shideler Fee 31-11C - OH - Plan #1	600.0	586.8	108.5	106.2	47.151	SF
Shideler Fee 31-12B - OH - Plan #1	307.9	308.2	67.7	66.7	66.713	CC, ES
Shideler Fee 31-12B - OH - Plan #1	500.0	495.3	77.8	75.9	41.486	SF
Shideler Fee 31-13B - OH - Plan #1	329.5	330.2	37.6	36.5	34.095	CC, ES
Shideler Fee 31-13B - OH - Plan #1	400.0	400.0	39.2	37.8	28.101	SF
Shideler Fee 31-13BB - OH - Plan #1	200.0	200.0	23.8	23.2	38.305	CC, ES
Shideler Fee 31-13BB - OH - Plan #1	400.0	399.9	26.8	25.4	19.951	SF
Shideler Fee 31-14D - OH - Plan #1	200.0	200.0	53.0	52.4	85.369	CC
Shideler Fee 31-14D - OH - Plan #1	300.0	300.0	53.2	52.2	54.639	ES
Shideler Fee 31-14D - OH - Plan #1	600.0	597.1	66.9	64.7	30.579	SF
Shideler Fee 31-14DD - OH - Plan #1	200.0	200.0	11.1	10.5	17.872	CC, ES
Shideler Fee 31-14DD - OH - Plan #1	300.0	300.0	12.1	11.2	12.497	SF
Shideler Fee 31-16A - OH - Plan #1	403.6	403.2	119.5	118.1	87.387	CC, ES
Shideler Fee 31-16A - OH - Plan #1	1,200.0	1,121.0	314.0	306.8	43.873	SF
Shideler Fee 31-16AA - OH - Plan #1	274.4	274.4	112.8	111.9	127.702	CC
Shideler Fee 31-16AA - OH - Plan #1	300.0	300.0	112.8	111.8	115.875	ES
Shideler Fee 31-16AA - OH - Plan #1	1,300.0	1,186.9	402.6	394.5	49.428	SF
Shideler Fee 31-16D - OH - Plan #1	327.2	327.1	89.9	88.8	83.603	CC, ES
Shideler Fee 31-16D - OH - Plan #1	1,300.0	1,252.5	274.1	264.9	29.510	SF
Shideler Fee 31-16DD - OH - Plan #1	306.1	305.8	104.9	103.9	105.434	CC, ES
Shideler Fee 31-16DD - OH - Plan #1	1,400.0	1,325.6	357.4	347.4	35.624	SF
Shideler Fee 31-9D - OH - Plan #1	200.0	200.0	127.7	127.1	205.583	CC, ES
Shideler Fee 31-9D - OH - Plan #1	1,300.0	1,158.7	458.1	450.1	57.019	SF
Shideler Fee 6-1A - OH - Plan #1	352.6	352.4	74.8	73.7	63.895	CC, ES
Shideler Fee 6-1A - OH - Plan #1	1,200.0	1,173.9	201.9	193.7	24.463	SF
Shideler Fee 6-1AA - OH - Plan #1	327.5	327.4	59.9	58.8	55.646	CC, ES
Shideler Fee 6-1AA - OH - Plan #1	1,200.0	1,182.7	168.8	160.1	19.580	SF
Shideler Fee 6-1D - OH - Plan #1	309.3	309.2	44.9	43.9	44.562	CC, ES
Shideler Fee 6-1D - OH - Plan #1	1,200.0	1,194.9	113.2	104.1	12.467	SF
Shideler Fee 6-1DD - OH - Plan #1	284.3	284.3	29.9	29.0	32.627	CC
Shideler Fee 6-1DD - OH - Plan #1	300.0	299.9	30.0	29.0	30.805	ES
Shideler Fee 6-1DD - OH - Plan #1	1,200.0	1,198.7	77.7	68.3	8.319	SF
Shideler Fee 6-8A - OH - Plan #1	256.4	256.4	15.0	14.1	18.261	CC
Shideler Fee 6-8A - OH - Plan #1	300.0	299.9	15.0	14.1	15.449	ES
Shideler Fee 6-8A - OH - Plan #1	1,200.0	1,200.3	45.2	35.6	4.676	SF
Shideler Fee 6-8D - OH - Plan #1	200.0	200.0	14.8	14.2	23.808	CC
Shideler Fee 6-8D - OH - Plan #1	300.0	300.0	14.9	13.9	15.168	ES
Shideler Fee 6-8D - OH - Plan #1	1,400.0	1,396.3	39.3	26.5	3.083	SF

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

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Shideler Fee 6-8AA
<b>Project:</b>	Mamm Creek	<b>TVD Reference:</b>	KB=22' @ 7126.0ft (Patterson #308)
<b>Reference Site:</b>	O31E Pad (2nd Occupation)	<b>MD Reference:</b>	KB=22' @ 7126.0ft (Patterson #308)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Shideler Fee 6-8AA	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OH	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #1	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design													Offset Site Error:	0.0 ft	
Survey Program: 100-Gyro													Offset Well Error:		0.0 ft
Reference				Offset		Semi Major Axis			Distance				Warning		
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor			
0.0	0.0	0.0	0.0	0.0	0.0	-147.96	-156.6	-98.0	186.0						
100.0	100.0	78.1	78.1	0.1	0.1	-148.03	-156.6	-97.8	184.6	184.4	0.20	903.124			
200.0	200.0	178.4	178.4	0.3	0.2	-148.25	-156.9	-97.1	184.5	184.0	0.47	395.464			
300.0	300.0	278.3	278.3	0.5	0.2	69.59	-157.2	-96.1	183.8	183.0	0.73	251.182			
400.0	399.8	378.5	378.5	0.7	0.3	71.04	-158.0	-94.5	181.3	180.3	1.02	177.340			
500.0	499.1	479.0	479.0	1.0	0.4	74.13	-158.5	-92.4	177.0	175.7	1.37	129.487			
600.0	597.6	579.4	579.3	1.3	0.5	79.50	-157.7	-90.8	171.5	169.7	1.79	95.753			
700.0	695.1	676.2	676.1	1.7	0.6	87.16	-155.6	-90.0	166.6	164.3	2.30	72.331			
754.6	747.9	727.7	727.5	2.0	0.6	92.12	-154.4	-90.0	165.7	163.1	2.63	63.063	CC, ES		
800.0	791.4	769.8	769.7	2.2	0.7	96.45	-153.7	-90.1	166.4	163.5	2.89	57.599			
900.0	886.0	863.8	863.7	2.8	0.8	106.51	-153.1	-90.6	173.5	170.0	3.50	49.517			
1,000.0	978.9	957.5	957.4	3.5	0.8	116.35	-153.5	-90.5	187.9	183.8	4.09	45.977			
1,100.0	1,069.7	1,049.4	1,049.3	4.3	0.9	125.27	-154.4	-90.0	210.4	205.8	4.61	45.694	SF		
1,200.0	1,158.2	1,138.2	1,138.1	5.2	1.0	132.97	-155.3	-89.3	241.1	236.0	5.04	47.811			
1,300.0	1,245.8	1,225.1	1,225.0	6.1	1.1	139.78	-155.7	-88.9	277.7	272.4	5.35	51.929			
1,400.0	1,333.4	1,314.2	1,314.1	6.9	1.2	145.22	-156.1	-88.4	317.2	311.6	5.59	56.760			
1,500.0	1,420.9	1,402.6	1,402.5	7.8	1.2	149.50	-156.6	-87.7	358.5	352.7	5.80	61.813			
1,600.0	1,508.5	1,491.4	1,491.2	8.7	1.3	152.98	-156.7	-86.7	401.0	395.0	5.99	66.965			
1,700.0	1,596.1	1,578.9	1,578.7	9.6	1.4	155.86	-156.4	-85.4	444.5	438.3	6.16	72.105			
1,800.0	1,683.6	1,666.6	1,666.5	10.5	1.5	158.35	-155.5	-83.7	488.9	482.5	6.33	77.268			

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

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Shideler Fee 6-8AA
<b>Project:</b>	Mamm Creek	<b>TVD Reference:</b>	KB=22' @ 7126.0ft (Patterson #308)
<b>Reference Site:</b>	O31E Pad (2nd Occupation)	<b>MD Reference:</b>	KB=22' @ 7126.0ft (Patterson #308)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Shideler Fee 6-8AA	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OH	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #1	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design													Offset Site Error:	0.0 ft	
Survey Program: 100-Gyro													Offset Well Error:		0.0 ft
Reference															
Offset				Semi Major Axis			Distance								
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning		
0.0	0.0	0.0	0.0	0.0	0.0	-145.18	-165.7	-115.2	203.0						
100.0	100.0	78.9	78.9	0.1	0.1	-145.21	-165.6	-115.0	201.6	201.4	0.21	983.211			
200.0	200.0	179.2	179.2	0.3	0.2	-145.29	-165.3	-114.5	201.0	200.6	0.47	430.404			
300.0	300.0	277.8	277.8	0.5	0.2	72.83	-165.0	-114.3	200.3	199.5	0.73	274.291			
400.0	399.8	377.0	377.0	0.7	0.3	74.80	-165.0	-114.8	198.8	197.7	1.02	194.951			
500.0	499.1	475.9	475.9	1.0	0.4	78.33	-164.9	-115.7	196.5	195.1	1.36	143.982			
600.0	597.6	573.9	573.9	1.3	0.5	83.42	-164.9	-116.7	194.5	192.7	1.79	108.764			
657.9	654.2	629.9	629.9	1.5	0.6	87.00	-165.0	-117.4	194.1	192.0	2.08	93.165	CC, ES		
700.0	695.1	670.3	670.3	1.7	0.6	89.89	-165.1	-118.0	194.4	192.1	2.30	84.557			
800.0	791.4	765.0	764.9	2.2	0.7	97.48	-165.5	-119.9	198.1	195.2	2.88	68.727			
900.0	886.0	858.2	858.1	2.8	0.8	105.68	-166.0	-122.3	207.7	204.2	3.51	59.220			
1,000.0	978.9	949.7	949.6	3.5	0.8	113.85	-166.6	-125.1	224.4	220.2	4.13	54.327			
1,100.0	1,069.7	1,039.9	1,039.8	4.3	0.9	121.45	-167.4	-128.0	248.9	244.1	4.72	52.705	SF		
1,200.0	1,158.2	1,129.2	1,129.0	5.2	1.0	128.29	-168.5	-130.6	280.7	275.4	5.26	53.389			
1,300.0	1,245.8	1,218.1	1,217.8	6.1	1.1	134.57	-170.0	-132.8	317.2	311.5	5.67	55.955			
1,400.0	1,333.4	1,307.2	1,306.9	6.9	1.2	139.62	-171.8	-134.6	356.2	350.2	6.02	59.194			
1,500.0	1,420.9	1,394.3	1,394.0	7.8	1.2	143.66	-173.3	-136.3	397.1	390.8	6.33	62.761			
1,600.0	1,508.5	1,480.2	1,479.8	8.7	1.3	146.96	-174.6	-138.1	439.7	433.1	6.61	66.519			
1,700.0	1,596.1	1,563.9	1,563.5	9.6	1.4	149.64	-175.7	-140.2	483.9	477.0	6.88	70.325			

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Shideler Fee 6-8AA
<b>Project:</b>	Mamm Creek	<b>TVD Reference:</b>	KB=22' @ 7126.0ft (Patterson #308)
<b>Reference Site:</b>	O31E Pad (2nd Occupation)	<b>MD Reference:</b>	KB=22' @ 7126.0ft (Patterson #308)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Shideler Fee 6-8AA	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OH	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #1	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design													Offset Site Error:	0.0 ft	
Survey Program: 111-MWD													Offset Well Error:		0.0 ft
Reference															
Offset				Semi Major Axis			Distance								
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning		
0.0	0.0	3.0	3.0	0.0	0.0	-167.12	-169.4	-38.7	173.7						
100.0	100.0	102.4	102.4	0.1	0.1	-167.13	-169.5	-38.7	173.9	173.6	0.28	622.140			
200.0	200.0	203.3	203.3	0.3	0.3	-167.12	-169.7	-38.8	174.1	173.5	0.63	277.690			
300.0	300.0	305.4	305.4	0.5	0.5	51.08	-169.1	-38.9	172.6	171.6	0.98	175.875			
400.0	399.8	411.6	411.6	0.7	0.7	53.78	-165.0	-39.8	165.1	163.7	1.36	121.228			
500.0	499.1	513.9	513.4	1.0	0.9	59.90	-156.7	-43.2	151.9	150.1	1.80	84.441			
600.0	597.6	609.5	608.3	1.3	1.1	69.91	-146.7	-49.0	137.9	135.5	2.36	58.330			
700.0	695.1	699.1	696.9	1.7	1.4	83.85	-136.5	-57.5	129.7	126.6	3.09	41.935			
710.6	705.4	708.2	705.8	1.8	1.4	85.47	-135.4	-58.6	129.6	126.4	3.18	40.757	CC, ES		
800.0	791.4	781.8	778.2	2.2	1.7	99.21	-127.6	-69.8	137.1	133.2	3.85	35.588	SF		
900.0	886.0	860.9	855.4	2.8	1.9	112.31	-121.3	-85.5	163.7	159.2	4.49	36.493			
1,000.0	978.9	937.0	929.3	3.5	2.3	121.67	-117.2	-103.3	205.1	200.1	5.01	40.948			
1,100.0	1,069.7	1,011.5	1,001.2	4.3	2.6	128.12	-114.4	-122.8	256.9	251.4	5.50	46.708			
1,200.0	1,158.2	1,079.0	1,065.7	5.2	2.9	132.38	-112.4	-142.4	316.9	310.9	6.02	52.676			
1,300.0	1,245.8	1,141.2	1,124.7	6.1	3.3	136.51	-110.1	-162.0	381.9	375.5	6.43	59.358			
1,400.0	1,333.4	1,197.6	1,177.5	6.9	3.7	139.35	-107.5	-181.4	450.5	443.6	6.87	65.614			

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Shideler Fee 6-8AA
<b>Project:</b>	Mamm Creek	<b>TVD Reference:</b>	KB=22' @ 7126.0ft (Patterson #308)
<b>Reference Site:</b>	O31E Pad (2nd Occupation)	<b>MD Reference:</b>	KB=22' @ 7126.0ft (Patterson #308)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Shideler Fee 6-8AA	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OH	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #1	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design													Offset Site Error:	0.0 ft
Survey Program: 111-MWD, 1242-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance				Total Uncertainty Axis	Separation Factor	Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)				
0.0	0.0	3.0	3.0	0.0	0.0	-161.03	-185.8	-63.9	196.4					
100.0	100.0	102.5	102.5	0.1	0.1	-161.00	-185.9	-64.0	196.6	196.3	0.28	703.179		
200.0	200.0	202.0	202.0	0.3	0.3	-160.98	-186.3	-64.2	197.0	196.4	0.62	315.309		
300.0	300.0	301.2	301.1	0.5	0.5	57.82	-186.2	-66.8	197.0	196.1	0.98	201.449		
400.0	399.8	398.9	398.6	0.7	0.7	61.36	-185.1	-73.3	195.1	193.8	1.37	142.726		
482.7	481.9	475.0	474.2	0.9	0.9	65.91	-184.1	-81.5	194.0	192.3	1.74	111.384 CC		
500.0	499.1	491.1	490.2	1.0	0.9	67.04	-184.1	-83.5	194.1	192.2	1.83	106.169 ES		
600.0	597.6	583.2	581.3	1.3	1.2	74.64	-183.6	-97.2	196.4	194.0	2.40	82.019		
700.0	695.1	672.1	668.7	1.7	1.5	83.39	-183.0	-113.4	204.5	201.5	3.05	67.075		
800.0	791.4	753.0	747.7	2.2	1.8	91.82	-182.5	-131.0	221.3	217.6	3.74	59.174		
900.0	886.0	835.2	827.3	2.8	2.2	100.12	-182.0	-151.6	248.5	244.1	4.46	55.761		
1,000.0	978.9	910.2	899.2	3.5	2.6	106.84	-181.6	-172.8	286.3	281.1	5.17	55.398 SF		
1,100.0	1,069.7	976.6	962.3	4.3	3.0	111.78	-181.1	-193.5	333.8	327.9	5.90	56.531		
1,200.0	1,158.2	1,035.1	1,017.0	5.2	3.4	115.51	-180.2	-214.1	390.8	384.1	6.66	58.640		
1,300.0	1,245.8	1,101.8	1,078.9	6.1	3.9	120.78	-178.7	-239.0	453.7	446.4	7.26	62.521		

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

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Shideler Fee 6-8AA
<b>Project:</b>	Mamm Creek	<b>TVD Reference:</b>	KB=22' @ 7126.0ft (Patterson #308)
<b>Reference Site:</b>	O31E Pad (2nd Occupation)	<b>MD Reference:</b>	KB=22' @ 7126.0ft (Patterson #308)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Shideler Fee 6-8AA	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OH	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #1	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design													Offset Site Error:	0.0 ft	
Survey Program: 111-MWD													Offset Well Error:		0.0 ft
Reference				Offset				Semi Major Axis			Distance		Total Uncertainty Axis	Separation Factor	Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)					
0.0	0.0	3.0	3.0	0.0	0.0	-156.32	-201.1	-88.2	219.6						
100.0	100.0	102.3	102.3	0.1	0.1	-156.31	-201.2	-88.3	219.7	219.4	0.28	786.492 ES			
200.0	200.0	200.5	200.5	0.3	0.3	-156.17	-201.6	-89.1	220.5	219.8	0.62	354.343			
300.0	300.0	295.0	295.0	0.5	0.5	62.06	-202.6	-90.5	221.3	220.3	0.96	229.397			
400.0	399.8	390.7	390.6	0.7	0.7	63.87	-205.3	-93.6	222.3	221.0	1.33	166.852			
500.0	499.1	488.7	488.4	1.0	0.9	67.00	-209.6	-97.8	223.3	221.6	1.75	127.277			
600.0	597.6	588.9	588.4	1.3	1.1	71.48	-213.6	-102.1	223.0	220.8	2.26	98.784			
684.6	680.1	671.0	670.4	1.6	1.2	76.11	-216.8	-105.6	222.6	219.9	2.76	80.727			
700.0	695.1	685.9	685.3	1.7	1.2	77.05	-217.4	-106.2	222.7	219.8	2.85	78.090			
800.0	791.4	781.6	780.8	2.2	1.4	83.82	-220.8	-110.8	224.1	220.6	3.54	63.234			
900.0	886.0	876.0	875.1	2.8	1.6	91.43	-224.3	-115.4	229.2	224.9	4.32	53.044			
1,000.0	978.9	968.9	967.7	3.5	1.8	99.40	-227.7	-119.9	239.5	234.4	5.14	46.558			
1,100.0	1,069.7	1,059.3	1,058.0	4.3	2.0	107.34	-230.6	-124.4	256.5	250.5	5.97	42.996			
1,200.0	1,158.2	1,147.0	1,145.5	5.2	2.2	114.78	-233.4	-128.9	281.2	274.5	6.74	41.733 SF			
1,300.0	1,245.8	1,236.6	1,235.0	6.1	2.4	122.07	-236.2	-133.2	312.0	304.7	7.38	42.281			
1,400.0	1,333.4	1,328.3	1,326.6	6.9	2.5	128.31	-238.8	-136.6	346.1	338.2	7.92	43.721			
1,500.0	1,420.9	1,409.5	1,407.7	7.8	2.7	133.01	-240.6	-139.6	383.3	374.9	8.40	45.659			
1,600.0	1,508.5	1,495.4	1,493.5	8.7	2.9	137.22	-242.1	-143.9	424.1	415.3	8.81	48.149			
1,700.0	1,596.1	1,578.5	1,576.4	9.6	3.0	140.61	-243.7	-148.1	466.7	457.5	9.20	50.713			

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Shideler Fee 6-8AA
<b>Project:</b>	Mamm Creek	<b>TVD Reference:</b>	KB=22' @ 7126.0ft (Patterson #308)
<b>Reference Site:</b>	O31E Pad (2nd Occupation)	<b>MD Reference:</b>	KB=22' @ 7126.0ft (Patterson #308)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Shideler Fee 6-8AA	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OH	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #1	<b>Offset TVD Reference:</b>	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		Offset		Semi Major Axis			Distance				Total Uncertainty Axis	Separation Factor	Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)				
0.0	0.0	0.0	0.0	0.0	0.0	-157.19	-212.4	-89.3	230.4					
100.0	100.0	97.6	97.6	0.1	0.1	-157.17	-212.8	-89.6	230.9	230.6	0.27	846.114		
200.0	200.0	189.9	189.9	0.3	0.3	-157.05	-214.7	-90.9	233.3	232.7	0.61	385.554		
300.0	300.0	279.2	278.9	0.5	0.5	61.17	-219.4	-94.5	239.1	238.2	0.94	254.823		
400.0	399.8	369.7	368.9	0.7	0.7	62.77	-227.4	-100.8	247.0	245.7	1.30	190.185		
500.0	499.1	461.7	460.0	1.0	1.0	65.23	-237.8	-108.4	255.7	254.0	1.71	149.679		
600.0	597.6	554.5	551.5	1.3	1.3	68.51	-250.4	-117.4	265.9	263.7	2.19	121.392		
700.0	695.1	653.2	648.7	1.7	1.6	72.62	-264.6	-127.0	276.2	273.4	2.78	99.499		
800.0	791.4	753.5	747.7	2.2	1.9	77.66	-277.5	-136.6	285.7	282.2	3.48	82.149		
900.0	886.0	850.1	843.2	2.8	2.3	83.09	-289.2	-145.2	295.7	291.4	4.29	68.887		
1,000.0	978.9	944.1	936.2	3.5	2.5	88.77	-300.4	-153.3	308.1	302.9	5.21	59.106		
1,100.0	1,069.7	1,036.0	1,027.1	4.3	2.8	94.61	-311.0	-161.3	324.4	318.2	6.22	52.130		
1,200.0	1,158.2	1,124.3	1,114.5	5.2	3.1	100.31	-321.2	-168.9	345.6	338.4	7.27	47.518		
1,300.0	1,245.8	1,211.7	1,200.9	6.1	3.4	106.15	-331.1	-176.9	372.0	363.7	8.28	44.931		
1,400.0	1,333.4	1,301.9	1,290.1	6.9	3.6	111.42	-341.6	-185.1	402.1	392.9	9.23	43.545		
1,500.0	1,420.9	1,391.6	1,378.9	7.8	3.9	115.94	-352.2	-192.7	434.6	424.5	10.13	42.914		
1,600.0	1,508.5	1,478.9	1,465.3	8.7	4.2	119.83	-362.2	-200.2	469.6	458.6	10.96	42.840 SF		

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Shideler Fee 6-8AA
<b>Project:</b>	Mamm Creek	<b>TVD Reference:</b>	KB=22' @ 7126.0ft (Patterson #308)
<b>Reference Site:</b>	O31E Pad (2nd Occupation)	<b>MD Reference:</b>	KB=22' @ 7126.0ft (Patterson #308)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Shideler Fee 6-8AA	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OH	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #1	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design													Offset Site Error:	0.0 ft
Survey Program: 111-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance				Total Uncertainty Axis	Separation Factor	Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)				
0.0	0.0	3.0	3.0	0.0	0.0	-158.65	-193.8	-75.7	208.1					
100.0	100.0	102.4	102.4	0.1	0.1	-158.63	-193.9	-75.9	208.2	207.9	0.28	745.110		
200.0	200.0	202.1	202.1	0.3	0.3	-158.64	-194.2	-75.9	208.5	207.9	0.62	333.623 ES		
300.0	300.0	297.6	297.6	0.5	0.5	59.45	-195.2	-76.6	209.0	208.1	0.97	215.892		
400.0	399.8	389.6	389.5	0.7	0.7	61.13	-198.5	-79.1	210.1	208.8	1.33	158.374		
500.0	499.1	479.0	478.5	1.0	0.8	63.84	-205.1	-83.3	213.5	211.7	1.73	123.427		
600.0	597.6	571.0	569.8	1.3	1.1	67.44	-215.6	-88.9	219.5	217.2	2.21	99.266		
700.0	695.1	662.0	659.6	1.7	1.4	71.60	-228.7	-95.0	227.7	224.9	2.79	81.653		
800.0	791.4	757.9	754.0	2.2	1.7	76.41	-244.5	-101.3	237.6	234.1	3.50	67.967		
900.0	886.0	851.9	846.4	2.8	2.0	81.70	-260.6	-107.7	249.3	245.0	4.33	57.584		
1,000.0	978.9	945.9	938.7	3.5	2.3	87.51	-276.8	-114.7	263.7	258.4	5.29	49.869		
1,100.0	1,069.7	1,039.1	1,030.2	4.3	2.7	93.51	-292.9	-121.8	281.6	275.2	6.35	44.346		
1,200.0	1,158.2	1,130.4	1,119.8	5.2	3.0	99.38	-308.9	-128.4	303.5	296.1	7.47	40.625		
1,300.0	1,245.8	1,220.5	1,208.3	6.1	3.3	105.20	-325.0	-134.9	329.7	321.2	8.56	38.532		
1,400.0	1,333.4	1,316.6	1,302.6	6.9	3.7	110.55	-341.9	-141.5	358.6	349.0	9.60	37.367		
1,500.0	1,420.9	1,404.9	1,389.6	7.8	4.0	114.89	-356.6	-146.8	389.0	378.4	10.55	36.869		
1,600.0	1,508.5	1,495.7	1,479.0	8.7	4.3	118.79	-371.3	-153.0	422.1	410.7	11.45	36.858 SF		
1,700.0	1,596.1	1,588.6	1,570.4	9.6	4.6	122.24	-386.3	-158.9	456.4	444.1	12.30	37.092		
1,800.0	1,683.6	1,673.1	1,653.7	10.5	4.9	125.02	-399.5	-164.4	492.1	479.0	13.11	37.535		

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

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Shideler Fee 6-8AA
<b>Project:</b>	Mamm Creek	<b>TVD Reference:</b>	KB=22' @ 7126.0ft (Patterson #308)
<b>Reference Site:</b>	O31E Pad (2nd Occupation)	<b>MD Reference:</b>	KB=22' @ 7126.0ft (Patterson #308)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Shideler Fee 6-8AA	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OH	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #1	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design													Offset Site Error:	0.0 ft	
Survey Program: 111-MWD													Offset Well Error:		0.0 ft
Reference		Offset		Semi Major Axis			Distance				Total Uncertainty Axis	Separation Factor	Warning		
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)					
0.0	0.0	3.0	3.0	0.0	0.0	-159.35	-204.7	-77.1	218.8						
100.0	100.0	102.2	102.2	0.1	0.1	-159.40	-204.9	-77.0	218.9	218.7	0.28	783.567	ES		
200.0	200.0	200.3	200.3	0.3	0.3	-159.55	-205.9	-76.8	219.8	219.1	0.62	352.808			
300.0	300.0	292.1	292.1	0.5	0.5	58.33	-208.6	-77.5	222.0	221.0	0.96	231.487			
400.0	399.8	383.0	382.7	0.7	0.7	59.54	-214.4	-79.7	225.5	224.2	1.31	171.529			
500.0	499.1	472.7	471.9	1.0	0.9	61.63	-223.6	-83.3	230.8	229.0	1.72	134.495			
600.0	597.6	564.3	562.4	1.3	1.2	64.60	-236.1	-88.2	237.8	235.6	2.19	108.407			
700.0	695.1	650.8	647.5	1.7	1.5	68.09	-250.7	-94.4	247.5	244.7	2.76	89.643			
800.0	791.4	742.8	737.3	2.2	1.8	72.35	-269.0	-102.6	260.3	256.8	3.46	75.256			
900.0	886.0	841.1	833.1	2.8	2.2	77.37	-289.1	-111.3	274.0	269.7	4.31	63.530			
1,000.0	978.9	936.8	926.5	3.5	2.6	82.55	-308.6	-118.7	288.5	283.2	5.31	54.334			
1,100.0	1,069.7	1,030.4	1,017.8	4.3	3.0	87.82	-327.9	-125.5	305.2	298.7	6.44	47.402			
1,200.0	1,158.2	1,121.3	1,106.4	5.2	3.4	93.06	-347.2	-132.0	325.3	317.6	7.66	42.473			
1,300.0	1,245.8	1,212.4	1,195.1	6.1	3.8	98.41	-367.1	-138.4	349.1	340.2	8.88	39.315			
1,400.0	1,333.4	1,303.3	1,283.6	6.9	4.2	103.10	-387.1	-144.9	375.8	365.8	10.07	37.327			
1,500.0	1,420.9	1,397.4	1,375.1	7.8	4.6	107.30	-407.9	-151.5	404.8	393.5	11.23	36.043			
1,600.0	1,508.5	1,487.3	1,462.7	8.7	5.0	110.84	-427.4	-157.3	435.0	422.7	12.32	35.299			
1,700.0	1,596.1	1,576.5	1,549.7	9.6	5.4	114.08	-445.8	-164.1	467.5	454.2	13.36	35.005	SF		

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Shideler Fee 6-8AA
<b>Project:</b>	Mamm Creek	<b>TVD Reference:</b>	KB=22' @ 7126.0ft (Patterson #308)
<b>Reference Site:</b>	O31E Pad (2nd Occupation)	<b>MD Reference:</b>	KB=22' @ 7126.0ft (Patterson #308)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Shideler Fee 6-8AA	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OH	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #1	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design													Offset Site Error:	0.0 ft	
Survey Program: 111-MWD													Offset Well Error:	0.0 ft	
Reference				Offset		Semi Major Axis			Distance				Total Uncertainty Axis	Separation Factor	Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)					
0.0	0.0	3.0	3.0	0.0	0.0	-161.64	-196.7	-65.3	207.2						
100.0	100.0	103.1	103.1	0.1	0.1	-161.59	-196.6	-65.4	207.2	206.9	0.28	738.610			
200.0	200.0	203.4	203.4	0.3	0.3	-161.46	-196.3	-65.8	207.0	206.4	0.63	329.959			
300.0	300.0	304.0	304.0	0.5	0.5	56.73	-195.8	-66.1	205.8	204.8	0.98	210.092			
400.0	399.8	401.6	401.6	0.7	0.7	58.52	-195.6	-66.7	202.3	201.0	1.35	150.277			
500.0	499.1	495.9	495.9	1.0	0.8	61.48	-197.0	-67.7	198.2	196.4	1.75	112.977			
600.0	597.6	587.6	587.5	1.3	1.0	65.44	-201.1	-69.0	195.3	193.1	2.23	87.496			
645.6	642.3	629.3	629.0	1.5	1.1	67.60	-204.1	-70.0	195.0	192.5	2.49	78.289	CC, ES		
700.0	695.1	678.6	678.1	1.7	1.2	70.37	-208.6	-71.4	195.5	192.7	2.81	69.634			
800.0	791.4	768.0	766.7	2.2	1.4	75.93	-219.6	-74.7	199.9	196.4	3.50	57.175			
900.0	886.0	857.0	854.4	2.8	1.7	81.64	-234.6	-78.7	209.5	205.2	4.31	48.579			
1,000.0	978.9	946.3	941.6	3.5	2.0	87.14	-253.4	-83.0	224.4	219.1	5.27	42.606			
1,100.0	1,069.7	1,033.4	1,025.7	4.3	2.4	92.08	-275.4	-87.8	244.7	238.4	6.35	38.551			
1,200.0	1,158.2	1,121.0	1,109.3	5.2	2.8	96.61	-300.9	-93.7	270.7	263.1	7.55	35.866			
1,300.0	1,245.8	1,209.4	1,192.9	6.1	3.3	101.01	-328.7	-100.3	300.7	291.9	8.77	34.265			
1,400.0	1,333.4	1,301.0	1,279.3	6.9	3.9	104.62	-358.5	-107.3	332.7	322.7	10.03	33.182			
1,500.0	1,420.9	1,394.9	1,367.7	7.8	4.4	107.65	-389.2	-114.4	365.7	354.5	11.28	32.426			
1,600.0	1,508.5	1,490.9	1,458.3	8.7	5.0	110.27	-420.4	-121.3	399.1	386.5	12.54	31.821			
1,700.0	1,596.1	1,587.2	1,549.1	9.6	5.5	112.43	-451.9	-127.2	432.2	418.4	13.80	31.311			
1,800.0	1,683.6	1,679.8	1,636.3	10.5	6.1	114.14	-482.6	-132.5	465.4	450.4	15.05	30.921			
1,900.0	1,771.2	1,767.4	1,718.6	11.4	6.6	115.53	-511.9	-138.1	499.6	483.4	16.26	30.726	SF		

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Shideler Fee 6-8AA
<b>Project:</b>	Mamm Creek	<b>TVD Reference:</b>	KB=22' @ 7126.0ft (Patterson #308)
<b>Reference Site:</b>	O31E Pad (2nd Occupation)	<b>MD Reference:</b>	KB=22' @ 7126.0ft (Patterson #308)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Shideler Fee 6-8AA	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OH	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #1	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design													Offset Site Error:	0.0 ft	
Survey Program: 111-MWD													Offset Well Error:		0.0 ft
Reference		Offset		Semi Major Axis			Distance				Total Uncertainty Axis	Separation Factor	Warning		
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)					
0.0	0.0	3.0	3.0	0.0	0.0	-164.27	-187.6	-52.8	194.9						
100.0	100.0	103.2	103.2	0.1	0.1	-164.25	-187.5	-52.9	194.9	194.6	0.28	694.609			
130.3	130.3	133.4	133.4	0.2	0.2	-164.24	-187.5	-52.9	194.8	194.5	0.38	508.029 CC, ES			
200.0	200.0	199.3	199.3	0.3	0.3	-164.40	-188.2	-52.5	195.4	194.8	0.62	314.875			
300.0	300.0	291.4	291.3	0.5	0.5	52.78	-192.0	-50.8	198.0	197.0	0.96	205.884			
400.0	399.8	385.5	384.9	0.7	0.7	52.60	-200.0	-47.5	201.4	200.0	1.34	150.840			
500.0	499.1	479.0	477.7	1.0	0.9	53.15	-211.5	-43.9	205.1	203.4	1.76	116.582			
600.0	597.6	571.0	568.5	1.3	1.2	54.72	-226.2	-41.3	209.7	207.4	2.24	93.395			
700.0	695.1	662.0	657.7	1.7	1.6	57.41	-244.2	-40.8	215.9	213.1	2.82	76.438			
800.0	791.4	744.8	738.0	2.2	2.0	60.70	-264.1	-42.4	225.1	221.6	3.50	64.257			
900.0	886.0	830.7	820.3	2.8	2.4	64.69	-288.4	-46.1	238.2	233.9	4.35	54.774			
1,000.0	978.9	918.1	902.9	3.5	2.9	68.90	-316.6	-50.9	255.1	249.7	5.39	47.355			
1,100.0	1,069.7	1,012.6	991.4	4.3	3.5	73.52	-349.3	-56.2	274.3	267.7	6.63	41.374			
1,200.0	1,158.2	1,106.7	1,079.5	5.2	4.1	78.35	-381.8	-61.0	294.2	286.1	8.05	36.545			
1,300.0	1,245.8	1,198.7	1,165.5	6.1	4.7	83.12	-414.5	-65.4	316.5	306.9	9.53	33.193			
1,400.0	1,333.4	1,289.6	1,249.9	6.9	5.3	87.09	-447.7	-69.7	341.3	330.3	11.01	30.990			
1,500.0	1,420.9	1,381.2	1,334.8	7.8	5.9	90.49	-482.0	-74.6	368.7	356.2	12.50	29.493			
1,600.0	1,508.5	1,470.2	1,416.8	8.7	6.5	93.29	-515.9	-79.3	397.5	383.6	13.96	28.468			
1,700.0	1,596.1	1,559.4	1,498.6	9.6	7.2	95.62	-551.3	-85.2	428.9	413.5	15.42	27.814			
1,800.0	1,683.6	1,655.4	1,586.5	10.5	7.9	97.79	-589.3	-91.3	460.8	443.9	16.91	27.243			
1,900.0	1,771.2	1,749.2	1,672.4	11.4	8.5	99.60	-626.7	-96.8	492.8	474.4	18.39	26.799 SF			

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Shideler Fee 6-8AA
<b>Project:</b>	Mamm Creek	<b>TVD Reference:</b>	KB=22' @ 7126.0ft (Patterson #308)
<b>Reference Site:</b>	O31E Pad (2nd Occupation)	<b>MD Reference:</b>	KB=22' @ 7126.0ft (Patterson #308)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Shideler Fee 6-8AA	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OH	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #1	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design													Offset Site Error:	0.0 ft	
Survey Program: 111-MWD													Offset Well Error:		0.0 ft
Reference		Offset		Semi Major Axis			Distance				Total Uncertainty Axis	Separation Factor	Warning		
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)					
0.0	0.0	3.0	3.0	0.0	0.0	-164.00	-177.4	-50.9	184.5						
100.0	100.0	103.3	103.3	0.1	0.1	-164.05	-177.4	-50.7	184.5	184.2	0.28	657.203			
152.9	152.9	155.9	155.9	0.2	0.2	-164.07	-177.3	-50.6	184.4	184.0	0.46	398.957 CC			
200.0	200.0	201.2	201.2	0.3	0.3	-164.06	-177.5	-50.7	184.6	184.0	0.62	296.025 ES			
300.0	300.0	293.7	293.7	0.5	0.5	54.06	-180.1	-51.8	186.8	185.8	0.96	194.305			
400.0	399.8	384.4	384.1	0.7	0.7	55.32	-186.7	-53.4	190.5	189.2	1.31	144.947			
500.0	499.1	474.1	473.1	1.0	0.9	57.50	-197.4	-56.1	196.3	194.6	1.71	114.801			
600.0	597.6	564.3	562.0	1.3	1.2	60.32	-212.7	-59.4	204.8	202.6	2.18	93.879			
700.0	695.1	652.2	647.6	1.7	1.5	63.43	-231.6	-62.9	215.8	213.1	2.75	78.474			
800.0	791.4	740.5	732.8	2.2	2.0	66.98	-254.4	-67.7	230.3	226.8	3.45	66.673			
900.0	886.0	827.9	816.2	2.8	2.4	70.76	-280.2	-73.6	247.9	243.6	4.30	57.611			
1,000.0	978.9	915.5	898.8	3.5	3.0	74.74	-308.4	-81.1	269.0	263.7	5.33	50.512			
1,100.0	1,069.7	1,001.1	978.5	4.3	3.5	78.49	-338.5	-88.9	293.4	286.9	6.51	45.087			
1,200.0	1,158.2	1,084.3	1,054.8	5.2	4.2	81.92	-370.7	-96.9	321.7	313.9	7.84	41.039			
1,300.0	1,245.8	1,171.5	1,133.2	6.1	4.8	85.45	-407.9	-105.3	353.9	344.6	9.27	38.182			
1,400.0	1,333.4	1,265.3	1,217.3	6.9	5.6	88.52	-448.5	-114.0	387.4	376.6	10.76	35.997			
1,500.0	1,420.9	1,360.5	1,302.7	7.8	6.3	91.13	-489.7	-122.3	421.3	409.0	12.28	34.304			
1,600.0	1,508.5	1,458.3	1,390.7	8.7	7.1	93.38	-531.7	-129.9	454.9	441.0	13.83	32.901			
1,700.0	1,596.1	1,551.2	1,474.4	9.6	7.8	95.18	-571.7	-136.4	488.2	472.9	15.34	31.829 SF			

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

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Shideler Fee 6-8AA
<b>Project:</b>	Mamm Creek	<b>TVD Reference:</b>	KB=22' @ 7126.0ft (Patterson #308)
<b>Reference Site:</b>	O31E Pad (2nd Occupation)	<b>MD Reference:</b>	KB=22' @ 7126.0ft (Patterson #308)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Shideler Fee 6-8AA	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OH	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #1	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design													Offset Site Error:	0.0 ft	
Survey Program: 111-MWD													Offset Well Error:	0.0 ft	
Reference				Offset		Semi Major Axis			Distance				Total Uncertainty Axis	Separation Factor	Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)					
0.0	0.0	0.0	0.0	0.0	0.0	-167.20	-180.3	-41.0	184.9						
100.0	100.0	100.9	100.9	0.1	0.1	-167.20	-180.1	-40.9	184.7	184.4		0.28	654.592		
138.4	138.4	138.4	138.4	0.2	0.2	-167.22	-180.0	-40.8	184.5	184.1		0.41	448.276 CC, ES		
200.0	200.0	195.0	195.0	0.3	0.3	-167.41	-180.8	-40.4	185.3	184.7		0.62	299.632		
300.0	300.0	288.8	288.6	0.5	0.5	49.67	-185.5	-38.4	188.8	187.8		0.96	195.916		
400.0	399.8	380.8	380.2	0.7	0.7	49.60	-193.9	-35.6	192.9	191.6		1.33	145.146		
500.0	499.1	471.5	470.0	1.0	0.9	50.26	-206.2	-32.6	197.8	196.1		1.74	113.856		
600.0	597.6	562.8	559.8	1.3	1.3	51.35	-222.5	-28.6	203.6	201.4		2.22	91.752		
700.0	695.1	657.6	652.1	1.7	1.7	53.11	-243.1	-24.0	210.0	207.2		2.84	74.033		
800.0	791.4	749.2	740.2	2.2	2.1	54.39	-266.8	-15.5	216.3	212.7		3.58	60.441		
900.0	886.0	840.4	826.6	2.8	2.7	55.84	-294.4	-5.5	223.5	219.0		4.47	50.000		
1,000.0	978.9	932.3	912.2	3.5	3.3	57.57	-325.7	5.6	231.6	226.0		5.53	41.863		
1,100.0	1,069.7	1,023.9	996.4	4.3	3.9	59.77	-360.0	16.9	240.4	233.6		6.77	35.515		
1,200.0	1,158.2	1,116.0	1,080.1	5.2	4.6	62.62	-397.0	27.7	250.1	241.9		8.21	30.468		
1,300.0	1,245.8	1,210.5	1,165.1	6.1	5.4	65.75	-436.7	38.5	261.7	252.0		9.77	26.783		
1,400.0	1,333.4	1,310.2	1,254.5	6.9	6.2	68.68	-479.5	49.7	274.9	263.5		11.43	24.057		
1,500.0	1,420.9	1,412.4	1,346.4	7.8	7.0	71.38	-522.3	62.2	287.4	274.2		13.14	21.863		
1,600.0	1,508.5	1,514.7	1,438.5	8.7	7.8	73.71	-564.7	76.0	299.1	284.2		14.88	20.096		
1,700.0	1,596.1	1,614.6	1,529.0	9.6	8.5	76.02	-604.8	89.3	310.4	293.8		16.60	18.694		
1,800.0	1,683.6	1,707.2	1,613.1	10.5	9.2	78.13	-642.0	100.6	323.0	304.7		18.29	17.656		
1,900.0	1,771.2	1,796.9	1,693.9	11.4	9.9	80.01	-679.5	110.2	338.2	318.3		19.94	16.961		
2,000.0	1,858.8	1,897.7	1,784.9	12.3	10.7	82.03	-721.9	120.0	354.7	333.0		21.69	16.355		
2,100.0	1,946.3	1,996.9	1,874.8	13.2	11.4	83.92	-762.6	130.0	370.6	347.2		23.42	15.827		
2,200.0	2,033.9	2,087.1	1,956.2	14.1	12.1	85.48	-800.6	138.2	388.3	363.2		25.06	15.496		
2,300.0	2,121.5	2,186.5	2,045.9	15.0	12.9	87.09	-842.5	146.6	406.8	380.0		26.76	15.201		
2,400.0	2,209.0	2,285.8	2,135.8	15.8	13.6	88.62	-883.8	155.2	425.2	396.7		28.46	14.938		
2,500.0	2,296.6	2,385.2	2,225.5	16.7	14.4	89.90	-925.7	164.5	443.5	413.3		30.16	14.706		
2,600.0	2,384.2	2,485.8	2,316.5	17.6	15.2	91.14	-967.5	174.1	461.5	429.7		31.84	14.495		
2,700.0	2,471.7	2,583.1	2,404.7	18.5	15.9	92.29	-1,007.5	183.5	479.4	445.9		33.51	14.306		
2,800.0	2,559.3	2,682.7	2,494.4	19.4	16.7	93.24	-1,049.5	193.7	497.6	462.4		35.18	14.145 SF		

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

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Shideler Fee 6-8AA
<b>Project:</b>	Mamm Creek	<b>TVD Reference:</b>	KB=22' @ 7126.0ft (Patterson #308)
<b>Reference Site:</b>	O31E Pad (2nd Occupation)	<b>MD Reference:</b>	KB=22' @ 7126.0ft (Patterson #308)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Shideler Fee 6-8AA	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OH	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #1	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design													Offset Site Error:	0.0 ft	
Survey Program: 0-MWD													Offset Well Error:		0.0 ft
Reference															
Offset				Semi Major Axis			Distance								
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning		
0.0	0.0	0.0	0.0	0.0	0.0	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	359.170			
200.0	200.0	200.0	200.0	0.3	0.3	52.08	60.1	77.1	97.8	97.2	0.62	157.389	CC, ES		
300.0	300.0	297.9	297.9	0.5	0.5	-91.70	61.5	77.0	98.6	97.6	0.97	101.520			
400.0	399.8	394.1	393.8	0.7	0.7	-97.88	67.5	76.4	103.0	101.6	1.36	75.754			
500.0	499.1	487.8	487.0	1.0	0.9	-107.21	78.1	75.4	113.7	111.9	1.80	63.071			
600.0	597.6	577.9	575.9	1.3	1.2	-117.16	92.5	74.1	133.8	131.5	2.27	58.889	SF		
700.0	695.1	663.4	659.5	1.7	1.6	-125.73	110.0	72.4	164.5	161.8	2.73	60.265			
800.0	791.4	747.7	741.3	2.2	1.9	-132.60	130.3	70.4	205.3	202.1	3.17	64.739			
900.0	886.0	832.7	823.7	2.8	2.3	-137.87	151.3	68.5	252.5	248.9	3.61	70.012			
1,000.0	978.9	914.9	903.4	3.5	2.7	-141.77	171.6	66.5	305.1	301.1	4.05	75.393			
1,100.0	1,069.7	994.2	980.1	4.3	3.0	-144.68	191.1	64.7	362.6	358.1	4.50	80.612			
1,200.0	1,158.2	1,070.2	1,053.8	5.2	3.4	-147.02	209.8	62.9	424.6	419.6	4.95	85.715			
1,300.0	1,245.8	1,144.9	1,126.2	6.1	3.7	-149.81	228.2	61.1	488.7	483.3	5.35	91.350			

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Shideler Fee 6-8AA
<b>Project:</b>	Mamm Creek	<b>TVD Reference:</b>	KB=22' @ 7126.0ft (Patterson #308)
<b>Reference Site:</b>	O31E Pad (2nd Occupation)	<b>MD Reference:</b>	KB=22' @ 7126.0ft (Patterson #308)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Shideler Fee 6-8AA	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OH	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #1	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design													Offset Site Error:	0.0 ft	
Survey Program: 0-MWD													Offset Well Error:		0.0 ft
Reference															
Offset				Semi Major Axis			Distance								
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning		
0.0	0.0	0.0	0.0	0.0	0.0	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	304.268			
200.0	200.0	200.0	200.0	0.3	0.3	51.37	51.7	64.7	82.8	82.2	0.62	133.331 CC			
232.3	232.3	232.3	232.3	0.4	0.4	-91.07	51.7	64.7	82.8	82.1	0.73	112.743			
300.0	300.0	299.8	299.8	0.5	0.5	-92.38	52.2	64.3	82.9	82.0	0.97	85.200 ES			
400.0	399.8	398.5	398.4	0.7	0.7	-100.19	56.4	61.3	84.4	83.0	1.37	61.761			
500.0	499.1	494.6	494.0	1.0	0.9	-113.13	64.4	55.6	91.3	89.4	1.83	49.928			
600.0	597.6	586.8	585.0	1.3	1.2	-127.30	75.8	47.4	108.5	106.2	2.30	47.151 SF			
700.0	695.1	673.8	670.4	1.7	1.5	-139.11	89.7	37.4	138.5	135.8	2.72	50.963			
800.0	791.4	756.6	750.7	2.2	1.9	-147.74	105.8	25.8	180.5	177.4	3.06	58.917			
900.0	886.0	840.2	831.6	2.8	2.3	-153.91	122.9	13.5	230.6	227.2	3.37	68.375			
1,000.0	978.9	920.8	909.7	3.5	2.6	-158.11	139.3	1.7	286.6	282.9	3.66	78.269			
1,100.0	1,069.7	998.2	984.6	4.3	3.0	-161.07	155.1	-9.6	347.6	343.6	3.94	88.240			
1,200.0	1,158.2	1,072.2	1,056.2	5.2	3.3	-163.29	170.1	-20.5	413.1	408.9	4.21	98.171			
1,300.0	1,245.8	1,144.9	1,126.6	6.1	3.7	-165.52	184.9	-31.1	480.6	476.2	4.46	107.658			

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Shideler Fee 6-8AA
<b>Project:</b>	Mamm Creek	<b>TVD Reference:</b>	KB=22' @ 7126.0ft (Patterson #308)
<b>Reference Site:</b>	O31E Pad (2nd Occupation)	<b>MD Reference:</b>	KB=22' @ 7126.0ft (Patterson #308)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Shideler Fee 6-8AA	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OH	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #1	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design													Offset Site Error:	0.0 ft	
Survey Program: 0-MWD													Offset Well Error:		0.0 ft
Reference															
Offset															
Semi Major Axis															
Distance															
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning		
0.0	0.0	0.0	0.0	0.0	0.0	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			
300.0	300.0	300.4	300.3	0.5	0.5	-95.80	45.4	50.0	67.7	66.7	0.98	68.916			
307.9	307.8	308.2	308.2	0.5	0.5	-96.43	45.7	49.7	67.7	66.7	1.01	66.713 CC, ES			
400.0	399.8	399.3	399.0	0.7	0.7	-107.55	50.5	44.2	69.1	67.7	1.40	49.286			
500.0	499.1	495.3	494.1	1.0	1.0	-124.59	58.6	34.8	77.8	75.9	1.88	41.486 SF			
600.0	597.6	587.0	584.4	1.3	1.3	-140.76	69.3	22.5	99.2	96.9	2.31	42.965			
700.0	695.1	673.3	668.5	1.7	1.7	-152.54	81.9	7.9	134.1	131.5	2.66	50.372			
800.0	791.4	753.4	745.7	2.2	2.1	-160.28	95.9	-8.1	180.6	177.6	2.96	61.009			
900.0	886.0	826.7	815.5	2.8	2.5	-165.33	110.5	-25.0	236.6	233.4	3.22	73.411			
1,000.0	978.9	893.1	878.0	3.5	3.0	-168.70	125.2	-41.9	300.6	297.2	3.46	86.829			
1,100.0	1,069.7	952.4	933.1	4.3	3.4	-171.01	139.6	-58.5	371.4	367.7	3.69	100.718			
1,200.0	1,158.2	1,000.0	976.8	5.2	3.7	-172.52	151.9	-72.7	448.0	444.2	3.89	115.156			

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Shideler Fee 6-8AA
<b>Project:</b>	Mamm Creek	<b>TVD Reference:</b>	KB=22' @ 7126.0ft (Patterson #308)
<b>Reference Site:</b>	O31E Pad (2nd Occupation)	<b>MD Reference:</b>	KB=22' @ 7126.0ft (Patterson #308)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Shideler Fee 6-8AA	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OH	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #1	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design													Offset Site Error:	0.0 ft	
Survey Program: 0-MWD													Offset Well Error:		0.0 ft
Reference															
Offset				Semi Major Axis			Distance								
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning		
0.0	0.0	0.0	0.0	0.0	0.0	44.80	27.3	27.1	38.5						
100.0	100.0	100.0	100.0	0.1	0.1	44.80	27.3	27.1	38.5	38.2	0.27	141.402			
200.0	200.0	200.0	200.0	0.3	0.3	44.80	27.3	27.1	38.5	37.9	0.62	61.963			
300.0	300.0	300.7	300.6	0.5	0.5	-103.39	28.2	24.6	37.8	36.8	0.98	38.473			
329.5	329.4	330.2	330.1	0.5	0.6	-108.01	28.8	23.0	37.6	36.5	1.10	34.095 CC, ES			
400.0	399.8	400.0	399.6	0.7	0.7	-123.75	30.9	17.3	39.2	37.8	1.40	28.101 SF			
500.0	499.1	496.6	495.4	1.0	1.0	-149.08	35.2	5.5	51.4	49.5	1.82	28.238			
600.0	597.6	589.1	586.4	1.3	1.3	-166.58	40.8	-10.0	77.8	75.6	2.18	35.771			
700.0	695.1	676.5	671.5	1.7	1.7	-176.41	47.5	-28.4	116.3	113.8	2.50	46.514			
800.0	791.4	758.0	750.0	2.2	2.1	177.91	54.9	-48.9	164.7	161.8	2.82	58.416			
900.0	886.0	833.0	821.5	2.8	2.6	174.33	62.8	-70.6	221.2	218.1	3.13	70.694			
1,000.0	978.9	900.0	884.4	3.5	3.0	171.90	70.6	-92.1	285.1	281.6	3.43	83.116			
1,100.0	1,069.7	964.7	944.4	4.3	3.5	169.94	78.9	-114.9	355.2	351.5	3.74	94.978			
1,200.0	1,158.2	1,028.8	1,003.5	5.2	3.9	168.42	87.4	-138.3	430.0	425.9	4.07	105.678			

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Shideler Fee 6-8AA
<b>Project:</b>	Mamm Creek	<b>TVD Reference:</b>	KB=22' @ 7126.0ft (Patterson #308)
<b>Reference Site:</b>	O31E Pad (2nd Occupation)	<b>MD Reference:</b>	KB=22' @ 7126.0ft (Patterson #308)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Shideler Fee 6-8AA	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OH	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #1	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design													Offset Site Error:	0.0 ft	
Survey Program: 0-MWD													Offset Well Error:		0.0 ft
Reference															
Offset				Semi Major Axis			Distance								
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning		
0.0	0.0	0.0	0.0	0.0	0.0	37.27	18.9	14.4	23.8						
100.0	100.0	100.0	100.0	0.1	0.1	37.27	18.9	14.4	23.8	23.5	0.27	87.413			
200.0	200.0	200.0	200.0	0.3	0.3	37.27	18.9	14.4	23.8	23.2	0.62	38.305 CC, ES			
300.0	300.0	300.0	300.0	0.5	0.5	-108.37	18.9	14.4	24.2	23.3	0.97	24.902			
400.0	399.8	399.9	399.9	0.7	0.7	-124.67	19.2	13.0	26.8	25.4	1.34	19.951 SF			
500.0	499.1	498.2	498.0	1.0	0.9	-150.43	20.4	6.7	36.4	34.7	1.71	21.271			
600.0	597.6	593.5	592.6	1.3	1.1	-169.22	22.4	-4.1	58.1	56.0	2.06	28.216			
700.0	695.1	684.5	682.4	1.7	1.4	-179.65	25.1	-18.8	91.0	88.6	2.40	37.848			
800.0	791.4	770.4	766.4	2.2	1.7	174.43	28.4	-36.4	133.5	130.7	2.76	48.381			
900.0	886.0	850.5	843.9	2.8	2.1	170.72	32.1	-56.2	184.4	181.3	3.12	59.049			
1,000.0	978.9	924.4	914.6	3.5	2.5	168.16	36.0	-77.3	242.8	239.3	3.49	69.500			
1,100.0	1,069.7	991.7	978.2	4.3	2.9	166.20	40.0	-98.8	307.9	304.0	3.87	79.483			
1,200.0	1,158.2	1,052.4	1,035.0	5.2	3.3	164.66	43.9	-120.2	378.9	374.6	4.27	88.681			
1,300.0	1,245.8	1,116.3	1,094.1	6.1	3.8	163.93	48.4	-144.0	452.7	448.0	4.74	95.526			

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Shideler Fee 6-8AA
<b>Project:</b>	Mamm Creek	<b>TVD Reference:</b>	KB=22' @ 7126.0ft (Patterson #308)
<b>Reference Site:</b>	O31E Pad (2nd Occupation)	<b>MD Reference:</b>	KB=22' @ 7126.0ft (Patterson #308)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Shideler Fee 6-8AA	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OH	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #1	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design													Offset Site Error:	0.0 ft	
Survey Program: 0-MWD													Offset Well Error:		0.0 ft
Reference															
Offset				Semi Major Axis			Distance								
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning		
0.0	0.0	0.0	0.0	0.0	0.0	48.24	35.3	39.6	53.0						
100.0	100.0	100.0	100.0	0.1	0.1	48.24	35.3	39.6	53.0	52.8	0.27	194.815			
200.0	200.0	200.0	200.0	0.3	0.3	48.24	35.3	39.6	53.0	52.4	0.62	85.369 CC			
200.5	200.5	200.5	200.5	0.3	0.3	-94.06	35.3	39.6	53.0	52.4	0.62	85.121			
300.0	300.0	300.0	300.0	0.5	0.5	-95.63	35.3	39.6	53.2	52.2	0.97	54.639 ES			
400.0	399.8	399.8	399.8	0.7	0.7	-102.48	35.3	39.6	54.2	52.9	1.35	40.137			
500.0	499.1	499.1	499.1	1.0	0.8	-113.74	35.3	39.6	57.9	56.1	1.77	32.770			
600.0	597.6	597.1	597.1	1.3	1.0	-128.89	36.2	37.3	66.9	64.7	2.19	30.579 SF			
700.0	695.1	693.5	693.3	1.7	1.2	-143.62	38.1	32.5	84.7	82.1	2.56	33.144			
800.0	791.4	788.3	788.0	2.2	1.4	-154.00	40.0	27.7	110.8	107.9	2.87	38.550			
900.0	886.0	881.4	880.9	2.8	1.5	-160.94	41.8	23.1	143.9	140.8	3.17	45.457			
1,000.0	978.9	972.4	971.8	3.5	1.7	-165.61	43.6	18.5	183.1	179.7	3.44	53.184			
1,100.0	1,069.7	1,061.1	1,060.4	4.3	1.9	-168.85	45.3	14.1	227.7	224.0	3.71	61.415			
1,200.0	1,158.2	1,147.4	1,146.5	5.2	2.1	-171.18	47.0	9.7	277.4	273.4	3.97	69.912			
1,300.0	1,245.8	1,232.6	1,231.6	6.1	2.2	-173.04	48.7	5.5	329.0	324.7	4.26	77.210			
1,400.0	1,333.4	1,317.8	1,316.7	6.9	2.4	-174.40	50.4	1.2	380.8	376.3	4.56	83.522			
1,500.0	1,420.9	1,403.0	1,401.8	7.8	2.6	-175.44	52.0	-3.0	432.8	427.9	4.86	89.016			
1,600.0	1,508.5	1,488.2	1,486.9	8.7	2.7	-176.25	53.7	-7.3	484.8	479.7	5.17	93.829			

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

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Shideler Fee 6-8AA
<b>Project:</b>	Mamm Creek	<b>TVD Reference:</b>	KB=22' @ 7126.0ft (Patterson #308)
<b>Reference Site:</b>	O31E Pad (2nd Occupation)	<b>MD Reference:</b>	KB=22' @ 7126.0ft (Patterson #308)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Shideler Fee 6-8AA	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OH	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #1	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design													Offset Site Error:	0.0 ft	
Survey Program: 0-MWD													Offset Well Error:		0.0 ft
Reference															
Offset				Semi Major Axis			Distance								
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning		
0.0	0.0	0.0	0.0	0.0	0.0	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	40.785			
200.0	200.0	200.0	200.0	0.3	0.3	10.26	10.9	2.0	11.1	10.5	0.62	17.872 CC, ES			
300.0	300.0	300.0	300.0	0.5	0.5	-137.18	10.9	2.0	12.1	11.2	0.97	12.497 SF			
400.0	399.8	400.0	399.9	0.7	0.7	-159.99	9.6	-0.2	16.7	15.4	1.33	12.616			
500.0	499.1	499.1	499.0	1.0	0.8	-177.27	7.3	-3.9	28.0	26.3	1.67	16.714			
600.0	597.6	597.5	597.3	1.3	1.0	176.08	5.0	-7.7	45.4	43.4	2.02	22.476			
700.0	695.1	694.8	694.5	1.7	1.2	173.61	2.7	-11.4	68.2	65.9	2.37	28.819			
800.0	791.4	790.8	790.4	2.2	1.4	172.73	0.4	-15.0	96.1	93.4	2.71	35.470			
900.0	886.0	885.3	884.7	2.8	1.6	172.49	-1.8	-18.6	129.0	125.9	3.05	42.350			
1,000.0	978.9	977.9	977.3	3.5	1.7	172.52	-3.9	-22.1	166.7	163.3	3.37	49.435			
1,100.0	1,069.7	1,068.4	1,067.7	4.3	1.9	172.66	-6.1	-25.5	209.1	205.4	3.69	56.718			
1,200.0	1,158.2	1,156.6	1,155.8	5.2	2.1	172.86	-8.1	-28.8	256.2	252.2	4.00	64.090			
1,300.0	1,245.8	1,243.9	1,243.0	6.1	2.3	173.17	-10.2	-32.1	305.0	300.7	4.35	70.188			
1,400.0	1,333.4	1,331.1	1,330.1	6.9	2.4	173.40	-12.2	-35.4	353.9	349.2	4.69	75.383			
1,500.0	1,420.9	1,418.4	1,417.3	7.8	2.6	173.57	-14.3	-38.7	402.7	397.7	5.04	79.862			
1,600.0	1,508.5	1,505.6	1,504.5	8.7	2.8	173.70	-16.3	-42.0	451.6	446.2	5.39	83.765			

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

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Shideler Fee 6-8AA
<b>Project:</b>	Mamm Creek	<b>TVD Reference:</b>	KB=22' @ 7126.0ft (Patterson #308)
<b>Reference Site:</b>	O31E Pad (2nd Occupation)	<b>MD Reference:</b>	KB=22' @ 7126.0ft (Patterson #308)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Shideler Fee 6-8AA	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OH	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #1	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design													Offset Site Error:	0.0 ft	
Survey Program: 0-MWD													Offset Well Error:		0.0 ft
Reference															
Offset				Semi Major Axis			Distance								
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning		
0.0	0.0	0.0	0.0	0.0	0.0	56.83	65.6	100.3	119.8						
100.0	100.0	100.0	100.0	0.1	0.1	56.83	65.6	100.3	119.8	119.6	0.27	440.168			
200.0	200.0	200.0	200.0	0.3	0.3	56.83	65.6	100.3	119.8	119.2	0.62	192.883			
300.0	300.0	300.0	300.0	0.5	0.5	-86.16	65.6	100.3	119.7	118.8	0.97	123.051			
400.0	399.8	399.8	399.8	0.7	0.7	-89.29	65.6	100.3	119.5	118.1	1.35	88.367			
403.6	403.3	403.2	403.2	0.7	0.7	-89.44	65.6	100.3	119.5	118.1	1.37	87.387	CC, ES		
500.0	499.1	493.6	493.5	1.0	0.8	-94.07	66.3	102.5	122.1	120.4	1.78	68.726			
600.0	597.6	586.7	586.4	1.3	1.0	-99.60	68.6	108.9	130.9	128.6	2.28	57.492			
700.0	695.1	678.8	677.8	1.7	1.2	-105.02	72.2	119.5	146.2	143.4	2.86	51.139			
800.0	791.4	769.3	767.0	2.2	1.5	-109.73	77.2	133.9	168.2	164.7	3.53	47.625			
900.0	886.0	857.8	853.4	2.8	1.9	-113.45	83.5	151.9	196.7	192.4	4.30	45.709			
1,000.0	978.9	944.1	936.8	3.5	2.3	-116.19	90.8	173.0	231.3	226.1	5.17	44.720			
1,100.0	1,069.7	1,032.1	1,020.9	4.3	2.7	-118.36	99.3	197.5	271.0	264.9	6.14	44.160			
1,200.0	1,158.2	1,121.0	1,105.7	5.2	3.2	-120.65	108.0	222.5	314.0	306.8	7.16	43.873	SF		
1,300.0	1,245.8	1,209.2	1,189.9	6.1	3.7	-123.51	116.7	247.4	358.6	350.5	8.17	43.905			
1,400.0	1,333.4	1,297.3	1,274.0	6.9	4.2	-125.75	125.3	272.2	403.9	394.7	9.18	44.002			
1,500.0	1,420.9	1,385.5	1,358.2	7.8	4.7	-127.54	133.9	297.0	449.5	439.3	10.19	44.131			
1,600.0	1,508.5	1,473.7	1,442.4	8.7	5.1	-129.01	142.5	321.8	495.5	484.3	11.19	44.272			

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

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Shideler Fee 6-8AA
<b>Project:</b>	Mamm Creek	<b>TVD Reference:</b>	KB=22' @ 7126.0ft (Patterson #308)
<b>Reference Site:</b>	O31E Pad (2nd Occupation)	<b>MD Reference:</b>	KB=22' @ 7126.0ft (Patterson #308)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Shideler Fee 6-8AA	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OH	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #1	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design													Offset Site Error:	0.0 ft	
Survey Program: 0-MWD													Offset Well Error:		0.0 ft
Reference															
Offset				Semi Major Axis			Distance								
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning		
0.0	0.0	0.0	0.0	0.0	0.0	52.84	68.1	89.9	112.8						
100.0	100.0	100.0	100.0	0.1	0.1	52.84	68.1	89.9	112.8	112.5	0.27	414.149			
200.0	200.0	200.0	200.0	0.3	0.3	52.84	68.1	89.9	112.8	112.1	0.62	181.481			
274.4	274.4	274.4	274.4	0.4	0.4	-90.00	68.1	89.9	112.8	111.9	0.88	127.702 CC			
300.0	300.0	300.0	300.0	0.5	0.5	-90.20	68.1	89.9	112.8	111.8	0.97	115.875 ES			
400.0	399.8	394.2	394.2	0.7	0.7	-93.00	69.2	91.9	115.4	114.0	1.34	85.923			
500.0	499.1	487.8	487.5	1.0	0.9	-97.18	72.5	98.0	123.6	121.8	1.77	69.890			
600.0	597.6	580.0	579.0	1.3	1.1	-101.92	77.9	107.9	138.1	135.8	2.27	60.840			
700.0	695.1	670.4	668.1	1.7	1.4	-106.42	85.2	121.3	159.2	156.4	2.86	55.719			
800.0	791.4	758.4	754.1	2.2	1.8	-110.25	94.2	138.0	187.1	183.5	3.54	52.858			
900.0	886.0	843.8	836.5	2.8	2.2	-113.23	104.7	157.5	221.3	217.0	4.31	51.297			
1,000.0	978.9	926.8	915.7	3.5	2.6	-115.43	116.6	179.5	261.6	256.5	5.18	50.549			
1,100.0	1,069.7	1,015.1	999.3	4.3	3.1	-117.55	130.0	204.2	306.1	299.9	6.13	49.907			
1,200.0	1,158.2	1,101.4	1,081.1	5.2	3.6	-119.67	143.1	228.3	353.5	346.4	7.14	49.529			
1,300.0	1,245.8	1,186.9	1,162.1	6.1	4.1	-122.52	156.1	252.3	402.6	394.5	8.15	49.428 SF			
1,400.0	1,333.4	1,272.3	1,243.2	6.9	4.6	-124.76	169.0	276.2	452.4	443.2	9.15	49.441			

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

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Shideler Fee 6-8AA
<b>Project:</b>	Mamm Creek	<b>TVD Reference:</b>	KB=22' @ 7126.0ft (Patterson #308)
<b>Reference Site:</b>	O31E Pad (2nd Occupation)	<b>MD Reference:</b>	KB=22' @ 7126.0ft (Patterson #308)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Shideler Fee 6-8AA	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OH	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #1	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design													Offset Site Error:	0.0 ft	
Survey Program: 0-MWD													Offset Well Error:		0.0 ft
Reference															
Offset				Semi Major Axis			Distance								
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning		
0.0	0.0	0.0	0.0	0.0	0.0	56.91	49.2	75.5	90.1						
100.0	100.0	100.0	100.0	0.1	0.1	56.91	49.2	75.5	90.1	89.8	0.27	330.778			
200.0	200.0	200.0	200.0	0.3	0.3	56.91	49.2	75.5	90.1	89.4	0.62	144.948			
300.0	300.0	300.0	300.0	0.5	0.5	-86.32	49.2	75.5	90.0	89.0	0.97	92.444			
327.2	327.2	327.1	327.1	0.5	0.5	-87.12	49.2	75.5	89.9	88.8	1.08	83.603 CC, ES			
400.0	399.8	397.3	397.3	0.7	0.7	-89.74	49.0	76.8	90.8	89.4	1.35	67.321			
500.0	499.1	493.6	493.4	1.0	0.8	-93.90	48.4	82.9	95.6	93.8	1.79	53.408			
600.0	597.6	589.7	588.8	1.3	1.1	-98.16	47.3	93.7	104.7	102.4	2.33	44.869			
700.0	695.1	685.2	683.0	1.7	1.4	-102.01	45.7	109.1	118.3	115.3	3.01	39.331			
800.0	791.4	780.0	775.7	2.2	1.8	-105.17	43.6	129.1	136.2	132.4	3.82	35.612			
900.0	886.0	873.8	866.3	2.8	2.2	-107.58	41.1	153.3	158.3	153.5	4.78	33.105			
1,000.0	978.9	969.8	958.2	3.5	2.7	-109.97	38.2	180.8	183.6	177.8	5.85	31.374			
1,100.0	1,069.7	1,065.1	1,049.4	4.3	3.2	-112.87	35.4	208.1	211.3	204.3	6.99	30.236			
1,200.0	1,158.2	1,159.1	1,139.4	5.2	3.7	-116.08	32.6	235.1	241.8	233.7	8.15	29.659			
1,300.0	1,245.8	1,252.5	1,228.9	6.1	4.2	-119.54	29.8	261.9	274.1	264.9	9.29	29.510 SF			
1,400.0	1,333.4	1,346.0	1,318.4	6.9	4.7	-122.28	27.0	288.7	307.2	296.8	10.40	29.526			
1,500.0	1,420.9	1,439.4	1,407.9	7.8	5.2	-124.49	24.2	315.4	340.7	329.2	11.50	29.629			
1,600.0	1,508.5	1,532.9	1,497.4	8.7	5.7	-126.31	21.4	342.2	374.6	362.1	12.58	29.775			
1,700.0	1,596.1	1,626.3	1,586.9	9.6	6.2	-127.82	18.6	369.0	408.8	395.2	13.65	29.941			
1,800.0	1,683.6	1,719.8	1,676.4	10.5	6.7	-129.11	15.8	395.8	443.3	428.5	14.72	30.114			
1,900.0	1,771.2	1,813.3	1,765.9	11.4	7.3	-130.21	13.1	422.6	477.8	462.1	15.78	30.288			

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

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Shideler Fee 6-8AA
<b>Project:</b>	Mamm Creek	<b>TVD Reference:</b>	KB=22' @ 7126.0ft (Patterson #308)
<b>Reference Site:</b>	O31E Pad (2nd Occupation)	<b>MD Reference:</b>	KB=22' @ 7126.0ft (Patterson #308)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Shideler Fee 6-8AA	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OH	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #1	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design													Offset Site Error:	0.0 ft	
Survey Program: 0-MWD													Offset Well Error:		0.0 ft
Reference															
Offset				Semi Major Axis			Distance								
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning		
0.0	0.0	0.0	0.0	0.0	0.0	56.78	57.5	87.9	105.1						
100.0	100.0	100.0	100.0	0.1	0.1	56.78	57.5	87.9	105.1	104.8	0.27	385.839			
200.0	200.0	200.0	200.0	0.3	0.3	56.78	57.5	87.9	105.1	104.4	0.62	169.076			
300.0	300.0	300.0	300.0	0.5	0.5	-86.31	57.5	87.9	104.9	104.0	0.97	107.852			
306.1	306.0	305.8	305.8	0.5	0.5	-86.44	57.5	87.9	104.9	103.9	1.00	105.434 CC, ES			
400.0	399.8	395.3	395.2	0.7	0.7	-88.98	57.8	90.3	106.8	105.5	1.35	79.380			
500.0	499.1	490.2	489.9	1.0	0.9	-92.57	58.4	97.3	113.3	111.5	1.78	63.462			
600.0	597.6	584.5	583.5	1.3	1.1	-96.51	59.4	109.0	124.5	122.2	2.32	53.665			
700.0	695.1	677.9	675.4	1.7	1.4	-100.27	60.9	125.0	140.9	137.9	2.98	47.330			
800.0	791.4	770.0	765.3	2.2	1.8	-103.52	62.7	145.2	162.3	158.5	3.76	43.113			
900.0	886.0	862.6	854.6	2.8	2.2	-106.27	64.8	169.5	188.4	183.7	4.67	40.330			
1,000.0	978.9	957.4	945.8	3.5	2.7	-109.32	67.1	195.2	217.2	211.6	5.68	38.223			
1,100.0	1,069.7	1,051.0	1,035.8	4.3	3.2	-112.50	69.4	220.6	248.8	242.0	6.76	36.790			
1,200.0	1,158.2	1,142.9	1,124.3	5.2	3.6	-115.77	71.6	245.5	283.4	275.5	7.87	35.985			
1,300.0	1,245.8	1,234.3	1,212.2	6.1	4.1	-119.35	73.8	270.3	320.0	311.0	8.97	35.687			
1,400.0	1,333.4	1,325.6	1,300.1	6.9	4.6	-122.21	76.0	295.1	357.4	347.4	10.03	35.624 SF			
1,500.0	1,420.9	1,417.0	1,388.0	7.8	5.0	-124.53	78.2	319.9	395.5	384.4	11.08	35.690			
1,600.0	1,508.5	1,508.3	1,475.9	8.7	5.5	-126.46	80.4	344.6	434.1	422.0	12.12	35.826			
1,700.0	1,596.1	1,599.7	1,563.8	9.6	6.0	-128.07	82.7	369.4	473.0	459.9	13.14	35.999			

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Shideler Fee 6-8AA
<b>Project:</b>	Mamm Creek	<b>TVD Reference:</b>	KB=22' @ 7126.0ft (Patterson #308)
<b>Reference Site:</b>	O31E Pad (2nd Occupation)	<b>MD Reference:</b>	KB=22' @ 7126.0ft (Patterson #308)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Shideler Fee 6-8AA	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OH	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #1	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design													Offset Site Error:	0.0 ft	
Survey Program: 0-MWD													Offset Well Error:		0.0 ft
Reference															
Offset															
Semi Major Axis															
Distance															
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning		
0.0	0.0	0.0	0.0	0.0	0.0	53.21	76.5	102.3	127.7						
100.0	100.0	100.0	100.0	0.1	0.1	53.21	76.5	102.3	127.7	127.5	0.27	469.150			
200.0	200.0	200.0	200.0	0.3	0.3	53.21	76.5	102.3	127.7	127.1	0.62	205.583 CC, ES			
300.0	300.0	293.6	293.6	0.5	0.5	-89.60	77.8	104.2	130.2	129.2	0.96	135.285			
400.0	399.8	386.7	386.4	0.7	0.7	-91.87	81.9	109.7	137.6	136.3	1.33	103.456			
500.0	499.1	478.4	477.4	1.0	0.9	-95.36	88.4	118.7	150.5	148.8	1.75	85.873			
600.0	597.6	568.2	565.9	1.3	1.2	-99.35	97.4	130.9	169.5	167.3	2.25	75.352			
700.0	695.1	655.6	651.3	1.7	1.6	-103.23	108.4	146.0	195.0	192.1	2.83	68.870			
800.0	791.4	740.1	732.9	2.2	2.0	-106.62	121.2	163.5	227.0	223.5	3.50	64.829			
900.0	886.0	821.2	810.3	2.8	2.5	-109.36	135.6	183.2	265.5	261.2	4.26	62.349			
1,000.0	978.9	905.8	890.1	3.5	3.0	-111.81	152.1	205.7	309.3	304.2	5.11	60.507			
1,100.0	1,069.7	991.8	971.2	4.3	3.5	-114.13	168.9	228.9	356.2	350.2	6.05	58.920			
1,200.0	1,158.2	1,075.7	1,050.3	5.2	4.0	-116.38	185.4	251.4	406.3	399.2	7.03	57.754			
1,300.0	1,245.8	1,158.7	1,128.6	6.1	4.5	-119.47	201.7	273.7	458.1	450.1	8.03	57.019 SF			

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Shideler Fee 6-8AA
<b>Project:</b>	Mamm Creek	<b>TVD Reference:</b>	KB=22' @ 7126.0ft (Patterson #308)
<b>Reference Site:</b>	O31E Pad (2nd Occupation)	<b>MD Reference:</b>	KB=22' @ 7126.0ft (Patterson #308)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Shideler Fee 6-8AA	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OH	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #1	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design													Offset Site Error:	0.0 ft	
Survey Program: 0-MWD													Offset Well Error:		0.0 ft
Reference															
Offset				Semi Major Axis			Distance								
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning		
0.0	0.0	0.0	0.0	0.0	0.0	56.74	41.2	62.7	75.0						
100.0	100.0	100.0	100.0	0.1	0.1	56.74	41.2	62.7	75.0	74.8	0.27	275.571			
200.0	200.0	200.0	200.0	0.3	0.3	56.74	41.2	62.7	75.0	74.4	0.62	120.756			
300.0	300.0	300.0	300.0	0.5	0.5	-86.68	41.2	62.7	74.9	74.0	0.97	77.004			
352.6	352.5	352.4	352.4	0.6	0.6	-88.81	41.2	62.7	74.8	73.7	1.17	63.895 CC, ES			
400.0	399.8	398.7	398.7	0.7	0.7	-91.21	41.0	63.3	75.2	73.8	1.35	55.688			
500.0	499.1	496.2	496.1	1.0	0.8	-96.52	39.6	68.1	78.8	77.0	1.79	43.971			
600.0	597.6	593.7	593.1	1.3	1.1	-101.54	36.9	77.7	86.1	83.8	2.33	36.899			
700.0	695.1	691.1	689.3	1.7	1.4	-105.76	32.9	92.0	97.3	94.3	3.01	32.347			
800.0	791.4	788.2	784.3	2.2	1.7	-108.98	27.5	110.9	112.1	108.2	3.83	29.272			
900.0	886.0	884.8	877.8	2.8	2.2	-111.27	20.8	134.3	130.3	125.5	4.81	27.110			
1,000.0	978.9	981.5	970.2	3.5	2.7	-112.96	13.0	161.8	151.6	145.7	5.91	25.669			
1,100.0	1,069.7	1,078.2	1,062.4	4.3	3.2	-115.36	5.0	190.0	175.4	168.3	7.07	24.798			
1,200.0	1,158.2	1,173.9	1,153.6	5.2	3.7	-118.39	-2.9	217.9	201.9	193.7	8.25	24.463 SF			
1,300.0	1,245.8	1,269.2	1,244.3	6.1	4.3	-121.64	-10.8	245.7	230.1	220.7	9.40	24.485			
1,400.0	1,333.4	1,364.4	1,335.1	6.9	4.8	-124.18	-18.7	273.5	258.8	248.2	10.52	24.601			
1,500.0	1,420.9	1,459.6	1,425.8	7.8	5.3	-126.22	-26.6	301.3	287.8	276.2	11.63	24.759			
1,600.0	1,508.5	1,554.8	1,516.5	8.7	5.9	-127.88	-34.5	329.0	317.2	304.5	12.72	24.933			
1,700.0	1,596.1	1,650.1	1,607.3	9.6	6.4	-129.27	-42.4	356.8	346.7	332.9	13.81	25.111			
1,800.0	1,683.6	1,745.3	1,698.0	10.5	7.0	-130.44	-50.3	384.6	376.4	361.5	14.89	25.285			
1,900.0	1,771.2	1,840.5	1,788.8	11.4	7.5	-131.43	-58.1	412.4	406.3	390.3	15.96	25.451			
2,000.0	1,858.8	1,935.7	1,879.5	12.3	8.1	-132.29	-66.0	440.1	436.2	419.2	17.03	25.608			
2,100.0	1,946.3	2,031.0	1,970.3	13.2	8.6	-133.04	-73.9	467.9	466.2	448.1	18.10	25.756			
2,200.0	2,033.9	2,126.2	2,061.0	14.1	9.2	-133.71	-81.8	495.7	496.3	477.1	19.16	25.895			

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

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Shideler Fee 6-8AA
<b>Project:</b>	Mamm Creek	<b>TVD Reference:</b>	KB=22' @ 7126.0ft (Patterson #308)
<b>Reference Site:</b>	O31E Pad (2nd Occupation)	<b>MD Reference:</b>	KB=22' @ 7126.0ft (Patterson #308)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Shideler Fee 6-8AA	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OH	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #1	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design													Offset Site Error:	0.0 ft	
Survey Program: 0-MWD													Offset Well Error:		0.0 ft
Reference															
Offset				Semi Major Axis			Distance								
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning		
0.0	0.0	0.0	0.0	0.0	0.0	56.91	32.8	50.3	60.0						
100.0	100.0	100.0	100.0	0.1	0.1	56.91	32.8	50.3	60.0	59.8	0.27	220.519			
200.0	200.0	200.0	200.0	0.3	0.3	56.91	32.8	50.3	60.0	59.4	0.62	96.632			
300.0	300.0	300.0	300.0	0.5	0.5	-86.79	32.8	50.3	59.9	59.0	0.97	61.599			
327.5	327.4	327.4	327.4	0.5	0.5	-88.01	32.8	50.3	59.9	58.8	1.08	55.646 CC, ES			
400.0	399.8	398.7	398.7	0.7	0.7	-91.73	32.2	51.6	60.6	59.2	1.35	44.817			
500.0	499.1	497.1	496.9	1.0	0.9	-96.96	29.7	57.4	64.2	62.4	1.80	35.594			
600.0	597.6	595.6	594.7	1.3	1.1	-101.68	25.3	67.9	70.9	68.5	2.37	29.913			
700.0	695.1	694.0	691.7	1.7	1.4	-105.47	18.9	83.0	80.6	77.5	3.08	26.181			
800.0	791.4	792.2	787.5	2.2	1.8	-108.26	10.5	102.6	93.2	89.2	3.94	23.620			
900.0	886.0	890.2	881.9	2.8	2.3	-110.15	0.3	126.7	108.4	103.4	4.97	21.797			
1,000.0	978.9	988.0	974.8	3.5	2.9	-111.43	-11.8	154.9	126.2	120.1	6.14	20.545			
1,100.0	1,069.7	1,085.8	1,067.3	4.3	3.4	-113.65	-24.2	184.2	146.2	138.8	7.38	19.818			
1,200.0	1,158.2	1,182.7	1,158.9	5.2	4.0	-116.83	-36.6	213.2	168.8	160.1	8.62	19.580 SF			
1,300.0	1,245.8	1,279.2	1,250.2	6.1	4.6	-120.20	-48.9	242.1	192.8	183.0	9.81	19.650			
1,400.0	1,333.4	1,375.7	1,341.4	6.9	5.2	-122.82	-61.2	271.0	217.3	206.3	10.98	19.791			
1,500.0	1,420.9	1,472.2	1,432.7	7.8	5.8	-124.91	-73.5	299.9	242.2	230.0	12.13	19.962			
1,600.0	1,508.5	1,568.7	1,523.9	8.7	6.3	-126.61	-85.8	328.8	267.3	254.0	13.27	20.140			
1,700.0	1,596.1	1,665.2	1,615.2	9.6	6.9	-128.02	-98.1	357.7	292.6	278.2	14.40	20.317			
1,800.0	1,683.6	1,761.8	1,706.5	10.5	7.5	-129.20	-110.5	386.6	318.0	302.5	15.52	20.486			
1,900.0	1,771.2	1,858.3	1,797.7	11.4	8.1	-130.21	-122.8	415.5	343.6	326.9	16.64	20.646			
2,000.0	1,858.8	1,954.8	1,889.0	12.3	8.7	-131.08	-135.1	444.4	369.2	351.5	17.76	20.795			
2,100.0	1,946.3	2,051.3	1,980.2	13.2	9.3	-131.84	-147.4	473.3	394.9	376.1	18.86	20.935			
2,200.0	2,033.9	2,147.8	2,071.5	14.1	9.9	-132.50	-159.7	502.2	420.7	400.7	19.97	21.065			
2,300.0	2,121.5	2,244.3	2,162.8	15.0	10.5	-133.09	-172.0	531.1	446.5	425.4	21.07	21.186			
2,400.0	2,209.0	2,340.9	2,254.0	15.8	11.1	-133.62	-184.3	560.0	472.4	450.2	22.18	21.299			
2,500.0	2,296.6	2,437.4	2,345.3	16.7	11.7	-134.09	-196.6	588.9	498.2	475.0	23.28	21.404			

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

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Shideler Fee 6-8AA
<b>Project:</b>	Mamm Creek	<b>TVD Reference:</b>	KB=22' @ 7126.0ft (Patterson #308)
<b>Reference Site:</b>	O31E Pad (2nd Occupation)	<b>MD Reference:</b>	KB=22' @ 7126.0ft (Patterson #308)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Shideler Fee 6-8AA	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OH	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #1	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design													Offset Site Error:	0.0 ft	
Survey Program: 0-MWD													Offset Well Error:		0.0 ft
Reference															
Offset				Semi Major Axis			Distance								
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning		
0.0	0.0	0.0	0.0	0.0	0.0	56.62	24.8	37.6	45.0						
100.0	100.0	100.0	100.0	0.1	0.1	56.62	24.8	37.6	45.0	44.7	0.27	165.322			
200.0	200.0	200.0	200.0	0.3	0.3	56.62	24.8	37.6	45.0	44.4	0.62	72.444			
300.0	300.0	300.0	300.0	0.5	0.5	-87.55	24.8	37.6	44.9	44.0	0.97	46.168			
309.3	309.3	309.2	309.2	0.5	0.5	-88.01	24.8	37.6	44.9	43.9	1.01	44.562 CC, ES			
400.0	399.8	399.2	399.2	0.7	0.7	-92.62	23.3	39.7	45.7	44.3	1.36	33.658			
500.0	499.1	498.6	498.3	1.0	0.9	-97.50	18.7	46.0	48.3	46.4	1.83	26.430			
600.0	597.6	598.2	597.0	1.3	1.1	-101.74	11.2	56.4	52.7	50.2	2.42	21.745			
700.0	695.1	697.8	694.9	1.7	1.5	-105.09	0.7	71.1	58.8	55.6	3.17	18.555			
800.0	791.4	797.5	791.9	2.2	1.9	-107.53	-12.9	89.9	66.5	62.5	4.08	16.318			
900.0	886.0	897.2	887.5	2.8	2.5	-109.18	-29.3	112.7	75.8	70.7	5.16	14.703			
1,000.0	978.9	996.9	981.5	3.5	3.1	-110.19	-48.7	139.6	86.5	80.1	6.41	13.500			
1,100.0	1,069.7	1,096.2	1,073.9	4.3	3.7	-111.54	-70.0	169.3	98.8	91.0	7.75	12.738			
1,200.0	1,158.2	1,194.9	1,165.6	5.2	4.4	-114.86	-91.3	198.9	113.2	104.1	9.08	12.467 SF			
1,300.0	1,245.8	1,293.4	1,257.1	6.1	5.1	-118.48	-112.6	228.4	128.8	118.5	10.32	12.481			
1,400.0	1,333.4	1,391.9	1,348.7	6.9	5.7	-121.32	-133.8	257.9	144.9	133.4	11.54	12.561			
1,500.0	1,420.9	1,490.4	1,440.2	7.8	6.4	-123.59	-155.1	287.4	161.3	148.5	12.73	12.671			
1,600.0	1,508.5	1,588.8	1,531.7	8.7	7.1	-125.44	-176.3	316.9	177.8	163.9	13.90	12.793			
1,700.0	1,596.1	1,687.3	1,623.2	9.6	7.8	-126.97	-197.6	346.4	194.5	179.5	15.06	12.916			
1,800.0	1,683.6	1,785.8	1,714.7	10.5	8.4	-128.26	-218.8	375.9	211.3	195.1	16.21	13.037			
1,900.0	1,771.2	1,884.2	1,806.2	11.4	9.1	-129.36	-240.1	405.5	228.2	210.9	17.35	13.153			
2,000.0	1,858.8	1,982.7	1,897.7	12.3	9.8	-130.31	-261.3	435.0	245.2	226.7	18.49	13.262			
2,100.0	1,946.3	2,081.2	1,989.2	13.2	10.5	-131.13	-282.6	464.5	262.2	242.6	19.62	13.365			
2,200.0	2,033.9	2,179.7	2,080.7	14.1	11.2	-131.86	-303.8	494.0	279.3	258.6	20.75	13.461			
2,300.0	2,121.5	2,278.1	2,172.3	15.0	11.8	-132.50	-325.1	523.5	296.4	274.6	21.87	13.551			
2,400.0	2,209.0	2,376.6	2,263.8	15.8	12.5	-133.07	-346.3	553.0	313.6	290.6	23.00	13.636			
2,500.0	2,296.6	2,475.1	2,355.3	16.7	13.2	-133.58	-367.6	582.5	330.8	306.6	24.12	13.715			
2,600.0	2,384.2	2,573.6	2,446.8	17.6	13.9	-134.05	-388.8	612.0	348.0	322.7	25.24	13.788			
2,700.0	2,471.7	2,672.0	2,538.3	18.5	14.6	-134.46	-410.1	641.6	365.2	338.8	26.35	13.858			
2,800.0	2,559.3	2,770.5	2,629.8	19.4	15.3	-134.84	-431.3	671.1	382.4	354.9	27.47	13.922			
2,900.0	2,646.9	2,869.0	2,721.3	20.3	15.9	-135.19	-452.6	700.6	399.7	371.1	28.58	13.983			
3,000.0	2,734.4	2,967.4	2,812.8	21.2	16.6	-135.51	-473.8	730.1	416.9	387.2	29.69	14.040			
3,100.0	2,822.0	3,065.9	2,904.4	22.1	17.3	-135.80	-495.1	759.6	434.2	403.4	30.81	14.094			
3,200.0	2,909.6	3,164.4	2,995.9	23.0	18.0	-136.07	-516.3	789.1	451.5	419.6	31.92	14.145			
3,300.0	2,997.1	3,262.9	3,087.4	23.9	18.7	-136.33	-537.6	818.6	468.8	435.8	33.03	14.193			
3,400.0	3,084.7	3,361.3	3,178.9	24.8	19.4	-136.56	-558.8	848.2	486.1	451.9	34.14	14.238			

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

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Shideler Fee 6-8AA
<b>Project:</b>	Mamm Creek	<b>TVD Reference:</b>	KB=22' @ 7126.0ft (Patterson #308)
<b>Reference Site:</b>	O31E Pad (2nd Occupation)	<b>MD Reference:</b>	KB=22' @ 7126.0ft (Patterson #308)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Shideler Fee 6-8AA	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OH	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #1	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design													Offset Site Error:	0.0 ft	
Survey Program: O-MWD													Offset Well Error:		0.0 ft
Reference															
Offset				Semi Major Axis			Distance								
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning		
0.0	0.0	0.0	0.0	0.0	0.0	56.92	16.4	25.2	30.0						
100.0	100.0	100.0	100.0	0.1	0.1	56.92	16.4	25.2	30.0	29.7	0.27	110.250			
200.0	200.0	200.0	200.0	0.3	0.3	56.92	16.4	25.2	30.0	29.4	0.62	48.312			
284.3	284.3	284.3	284.3	0.5	0.5	-88.00	16.4	25.2	29.9	29.0	0.92	32.627 CC			
300.0	300.0	299.9	299.9	0.5	0.5	-87.88	16.3	25.3	30.0	29.0	0.97	30.805 ES			
400.0	399.8	399.6	399.5	0.7	0.7	-92.93	13.7	28.2	30.7	29.4	1.36	22.567			
500.0	499.1	499.3	498.8	1.0	0.9	-97.63	7.7	35.0	32.7	30.9	1.85	17.737			
600.0	597.6	599.2	597.7	1.3	1.2	-101.57	-1.7	45.8	35.9	33.5	2.46	14.583			
700.0	695.1	699.2	695.7	1.7	1.6	-104.59	-14.6	60.4	40.2	37.0	3.24	12.433			
800.0	791.4	799.2	792.7	2.2	2.0	-106.73	-30.8	78.9	45.6	41.4	4.17	10.924			
900.0	886.0	899.3	888.3	2.8	2.6	-108.11	-50.3	101.2	51.9	46.7	5.28	9.833			
1,000.0	978.9	999.5	982.2	3.5	3.2	-108.91	-73.2	127.2	59.2	52.7	6.57	9.019			
1,100.0	1,069.7	1,099.4	1,074.3	4.3	3.9	-109.78	-98.8	156.4	67.6	59.6	7.98	8.464			
1,200.0	1,158.2	1,198.7	1,165.5	5.2	4.6	-113.47	-124.7	185.9	77.7	68.3	9.34	8.319 SF			
1,300.0	1,245.8	1,297.9	1,256.6	6.1	5.4	-117.64	-150.6	215.4	89.0	78.4	10.59	8.407			
1,400.0	1,333.4	1,397.1	1,347.7	6.9	6.1	-120.87	-176.5	244.9	100.7	88.9	11.79	8.537			
1,500.0	1,420.9	1,496.3	1,438.8	7.8	6.8	-123.42	-202.3	274.4	112.6	99.6	12.97	8.682			
1,600.0	1,508.5	1,595.4	1,529.9	8.7	7.5	-125.48	-228.2	303.9	124.7	110.6	14.13	8.828			
1,700.0	1,596.1	1,694.6	1,621.0	9.6	8.3	-127.17	-254.1	333.3	137.0	121.7	15.27	8.969			
1,800.0	1,683.6	1,793.8	1,712.1	10.5	9.0	-128.59	-279.9	362.8	149.3	132.9	16.40	9.102			
1,900.0	1,771.2	1,893.0	1,803.1	11.4	9.7	-129.78	-305.8	392.3	161.7	144.2	17.53	9.227			
2,000.0	1,858.8	1,992.1	1,894.2	12.3	10.5	-130.81	-331.7	421.8	174.2	155.6	18.64	9.343			
2,100.0	1,946.3	2,091.3	1,985.3	13.2	11.2	-131.70	-357.5	451.3	186.7	167.0	19.76	9.451			
2,200.0	2,033.9	2,190.5	2,076.4	14.1	11.9	-132.48	-383.4	480.7	199.3	178.4	20.87	9.551			
2,300.0	2,121.5	2,289.7	2,167.5	15.0	12.7	-133.16	-409.3	510.2	211.9	189.9	21.97	9.643			
2,400.0	2,209.0	2,388.8	2,258.6	15.8	13.4	-133.77	-435.2	539.7	224.5	201.4	23.07	9.729			
2,500.0	2,296.6	2,488.0	2,349.7	16.7	14.1	-134.32	-461.0	569.2	237.1	213.0	24.18	9.809			
2,600.0	2,384.2	2,587.2	2,440.8	17.6	14.9	-134.81	-486.9	598.7	249.8	224.5	25.28	9.883			
2,700.0	2,471.7	2,686.4	2,531.9	18.5	15.6	-135.25	-512.8	628.1	262.5	236.1	26.37	9.952			
2,800.0	2,559.3	2,785.5	2,622.9	19.4	16.3	-135.65	-538.6	657.6	275.2	247.7	27.47	10.017			
2,900.0	2,646.9	2,884.7	2,714.0	20.3	17.1	-136.01	-564.5	687.1	287.9	259.3	28.57	10.078			
3,000.0	2,734.4	2,983.9	2,805.1	21.2	17.8	-136.35	-590.4	716.6	300.6	270.9	29.66	10.134			
3,100.0	2,822.0	3,083.0	2,896.2	22.1	18.5	-136.66	-616.3	746.1	313.3	282.6	30.75	10.187			
3,200.0	2,909.6	3,182.2	2,987.3	23.0	19.3	-136.94	-642.1	775.5	326.0	294.2	31.85	10.237			
3,300.0	2,997.1	3,281.4	3,078.4	23.9	20.0	-137.20	-668.0	805.0	338.8	305.8	32.94	10.285			
3,400.0	3,084.7	3,380.6	3,169.5	24.8	20.7	-137.45	-693.9	834.5	351.5	317.5	34.03	10.329			
3,500.0	3,172.3	3,479.7	3,260.6	25.7	21.5	-137.67	-719.7	864.0	364.3	329.1	35.12	10.371			
3,600.0	3,259.8	3,578.9	3,351.6	26.6	22.2	-137.88	-745.6	893.5	377.0	340.8	36.22	10.411			
3,700.0	3,347.4	3,678.1	3,442.7	27.5	22.9	-138.08	-771.5	922.9	389.8	352.5	37.31	10.448			
3,800.0	3,435.0	3,777.3	3,533.8	28.4	23.7	-138.26	-797.3	952.4	402.6	364.2	38.40	10.484			
3,900.0	3,522.5	3,876.4	3,624.9	29.3	24.4	-138.44	-823.2	981.9	415.3	375.8	39.49	10.518			
4,000.0	3,610.1	3,975.6	3,716.0	30.2	25.1	-138.60	-849.1	1,011.4	428.1	387.5	40.58	10.550			
4,100.0	3,697.7	4,074.8	3,807.1	31.1	25.9	-138.75	-875.0	1,040.9	440.9	399.2	41.67	10.581			
4,200.0	3,785.2	4,174.0	3,898.2	32.0	26.6	-138.90	-900.8	1,070.3	453.6	410.9	42.76	10.610			
4,300.0	3,872.8	4,273.1	3,989.3	32.9	27.3	-139.04	-926.7	1,099.8	466.4	422.6	43.85	10.638			
4,400.0	3,960.4	4,372.3	4,080.4	33.7	28.1	-139.16	-952.6	1,129.3	479.2	434.3	44.94	10.664			
4,500.0	4,047.9	4,471.5	4,171.4	34.6	28.8	-139.29	-978.4	1,158.8	492.0	446.0	46.02	10.690			

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

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Shideler Fee 6-8AA
<b>Project:</b>	Mamm Creek	<b>TVD Reference:</b>	KB=22' @ 7126.0ft (Patterson #308)
<b>Reference Site:</b>	O31E Pad (2nd Occupation)	<b>MD Reference:</b>	KB=22' @ 7126.0ft (Patterson #308)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Shideler Fee 6-8AA	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OH	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #1	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design														Offset Site Error:	0.0 ft	
Survey Program: O-MWD														Offset Well Error:		0.0 ft
Reference																
Offset				Semi Major Axis			Distance									
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning			
0.0	0.0	0.0	0.0	0.0	0.0	56.03	8.4	12.4	15.0							
100.0	100.0	100.0	100.0	0.1	0.1	56.03	8.4	12.4	15.0	14.7	0.27	55.067				
200.0	200.0	200.0	200.0	0.3	0.3	56.03	8.4	12.4	15.0	14.4	0.62	24.130				
256.4	256.4	256.4	256.4	0.4	0.4	-88.61	8.4	12.4	15.0	14.1	0.82	18.261 CC				
300.0	300.0	299.9	299.9	0.5	0.5	-89.41	7.9	12.9	15.0	14.1	0.97	15.449 ES				
400.0	399.8	399.9	399.7	0.7	0.7	-94.34	4.2	16.6	15.7	14.3	1.37	11.456				
500.0	499.1	499.8	499.1	1.0	0.9	-98.64	-3.3	23.9	17.1	15.2	1.87	9.140				
600.0	597.6	599.9	597.9	1.3	1.2	-101.96	-14.4	34.9	19.2	16.7	2.51	7.645				
700.0	695.1	699.9	695.8	1.7	1.6	-104.27	-29.2	49.4	21.9	18.6	3.31	6.632				
800.0	791.4	800.1	792.5	2.2	2.1	-105.73	-47.7	67.6	25.3	21.0	4.27	5.919				
900.0	886.0	900.2	887.7	2.8	2.7	-106.51	-69.7	89.3	29.3	23.8	5.42	5.400				
1,000.0	978.9	1,000.4	981.3	3.5	3.4	-106.82	-95.3	114.5	33.8	27.0	6.74	5.011				
1,100.0	1,069.7	1,100.6	1,072.8	4.3	4.1	-106.85	-124.4	143.1	38.9	30.6	8.24	4.719				
1,200.0	1,158.2	1,200.3	1,163.1	5.2	4.9	-110.63	-154.6	172.9	45.2	35.6	9.67	4.676 SF				
1,300.0	1,245.8	1,300.0	1,253.3	6.1	5.7	-115.59	-184.7	202.6	52.5	41.6	10.94	4.803				
1,400.0	1,333.4	1,399.6	1,343.5	6.9	6.5	-119.32	-214.9	232.3	60.2	48.0	12.16	4.949				
1,500.0	1,420.9	1,499.3	1,433.7	7.8	7.2	-122.20	-245.1	262.0	68.0	54.7	13.34	5.096				
1,600.0	1,508.5	1,598.9	1,523.9	8.7	8.0	-124.49	-275.3	291.7	75.9	61.4	14.51	5.236				
1,700.0	1,596.1	1,698.6	1,614.1	9.6	8.8	-126.34	-305.4	321.4	84.0	68.3	15.65	5.366				
1,800.0	1,683.6	1,798.2	1,704.3	10.5	9.6	-127.86	-335.6	351.1	92.1	75.3	16.79	5.486				
1,900.0	1,771.2	1,897.8	1,794.5	11.4	10.4	-129.14	-365.8	380.8	100.3	82.4	17.93	5.596				
2,000.0	1,858.8	1,997.5	1,884.6	12.3	11.2	-130.22	-395.9	410.5	108.5	89.5	19.05	5.696				
2,100.0	1,946.3	2,097.1	1,974.8	13.2	12.0	-131.15	-426.1	440.2	116.8	96.6	20.18	5.788				
2,200.0	2,033.9	2,196.8	2,065.0	14.1	12.7	-131.96	-456.3	469.9	125.1	103.8	21.30	5.873				
2,300.0	2,121.5	2,296.4	2,155.2	15.0	13.5	-132.67	-486.5	499.6	133.4	111.0	22.41	5.950				
2,400.0	2,209.0	2,396.1	2,245.4	15.8	14.3	-133.29	-516.6	529.3	141.7	118.2	23.53	6.022				
2,500.0	2,296.6	2,495.7	2,335.6	16.7	15.1	-133.85	-546.8	559.0	150.0	125.4	24.64	6.087				
2,600.0	2,384.2	2,595.3	2,425.8	17.6	15.9	-134.34	-577.0	588.8	158.4	132.6	25.76	6.148				
2,700.0	2,471.7	2,695.0	2,516.0	18.5	16.7	-134.79	-607.2	618.5	166.7	139.9	26.87	6.205				
2,800.0	2,559.3	2,794.6	2,606.2	19.4	17.5	-135.19	-637.3	648.2	175.1	147.1	27.98	6.257				
2,900.0	2,646.9	2,894.3	2,696.4	20.3	18.3	-135.56	-667.5	677.9	183.5	154.4	29.10	6.306				
3,000.0	2,734.4	2,993.9	2,786.6	21.2	19.1	-135.90	-697.7	707.6	191.9	161.6	30.21	6.351				
3,100.0	2,822.0	3,093.5	2,876.8	22.1	19.8	-136.20	-727.8	737.3	200.2	168.9	31.32	6.394				
3,200.0	2,909.6	3,193.2	2,967.0	23.0	20.6	-136.49	-758.0	767.0	208.6	176.2	32.43	6.434				
3,300.0	2,997.1	3,292.8	3,057.2	23.9	21.4	-136.75	-788.2	796.7	217.0	183.5	33.54	6.471				
3,400.0	3,084.7	3,392.5	3,147.4	24.8	22.2	-136.99	-818.4	826.4	225.4	190.8	34.65	6.506				
3,500.0	3,172.3	3,492.1	3,237.6	25.7	23.0	-137.21	-848.5	856.1	233.8	198.1	35.76	6.540				
3,600.0	3,259.8	3,591.8	3,327.8	26.6	23.8	-137.42	-878.7	885.8	242.3	205.4	36.87	6.571				
3,700.0	3,347.4	3,691.4	3,418.0	27.5	24.6	-137.61	-908.9	915.5	250.7	212.7	37.98	6.601				
3,800.0	3,435.0	3,791.0	3,508.2	28.4	25.4	-137.80	-939.1	945.2	259.1	220.0	39.09	6.629				
3,900.0	3,522.5	3,890.7	3,598.4	29.3	26.2	-137.97	-969.2	974.9	267.5	227.3	40.19	6.655				
4,000.0	3,610.1	3,990.3	3,688.6	30.2	26.9	-138.13	-999.4	1,004.7	275.9	234.6	41.30	6.680				
4,100.0	3,697.7	4,090.0	3,778.8	31.1	27.7	-138.28	-1,029.6	1,034.4	284.3	241.9	42.41	6.704				
4,200.0	3,785.2	4,189.6	3,869.0	32.0	28.5	-138.42	-1,059.8	1,064.1	292.8	249.2	43.52	6.727				
4,300.0	3,872.8	4,289.3	3,959.2	32.9	29.3	-138.55	-1,089.9	1,093.8	301.2	256.6	44.63	6.749				
4,400.0	3,960.4	4,388.9	4,049.4	33.7	30.1	-138.68	-1,120.1	1,123.5	309.6	263.9	45.74	6.769				
4,500.0	4,047.9	4,488.5	4,139.6	34.6	30.9	-138.80	-1,150.3	1,153.2	318.0	271.2	46.85	6.789				
4,600.0	4,135.5	4,588.2	4,229.8	35.5	31.7	-138.91	-1,180.4	1,182.9	326.5	278.5	47.95	6.808				
4,700.0	4,223.1	4,687.8	4,320.0	36.4	32.5	-139.02	-1,210.6	1,212.6	334.9	285.8	49.06	6.826				
4,800.0	4,310.6	4,787.5	4,410.2	37.3	33.3	-139.12	-1,240.8	1,242.3	343.3	293.2	50.17	6.843				
4,900.0	4,398.2	4,887.1	4,500.4	38.2	34.1	-139.22	-1,271.0	1,272.0	351.8	300.5	51.28	6.860				
5,000.0	4,485.8	4,986.7	4,590.6	39.1	34.8	-139.31	-1,301.1	1,301.7	360.2	307.8	52.39	6.876				

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

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Shideler Fee 6-8AA
<b>Project:</b>	Mamm Creek	<b>TVD Reference:</b>	KB=22' @ 7126.0ft (Patterson #308)
<b>Reference Site:</b>	O31E Pad (2nd Occupation)	<b>MD Reference:</b>	KB=22' @ 7126.0ft (Patterson #308)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Shideler Fee 6-8AA	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OH	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #1	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design													Offset Site Error:	0.0 ft	
Survey Program: 0-MWD													Offset Well Error:		0.0 ft
Reference															
Offset				Semi Major Axis			Distance								
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning		
5,100.0	4,573.3	5,086.4	4,680.8	40.0	35.6	-139.40	-1,331.3	1,331.4	368.6	315.1	53.50	6.891			
5,200.0	4,660.9	5,186.0	4,771.0	40.9	36.4	-139.49	-1,361.5	1,361.1	377.1	322.5	54.60	6.906			
5,300.0	4,748.5	5,285.7	4,861.2	41.8	37.2	-139.57	-1,391.7	1,390.8	385.5	329.8	55.71	6.920			
5,400.0	4,836.0	5,385.3	4,951.4	42.7	38.0	-139.65	-1,421.8	1,420.5	393.9	337.1	56.82	6.933			
5,500.0	4,923.6	5,485.0	5,041.6	43.6	38.8	-139.72	-1,452.0	1,450.3	402.4	344.5	57.93	6.946			
5,600.0	5,011.2	5,584.6	5,131.8	44.5	39.6	-139.79	-1,482.2	1,480.0	410.8	351.8	59.04	6.959			
5,700.0	5,098.7	5,684.2	5,222.0	45.4	40.4	-139.86	-1,512.3	1,509.7	419.3	359.1	60.14	6.971			
5,800.0	5,187.0	5,778.7	5,307.7	46.2	41.1	-139.94	-1,540.7	1,537.6	426.9	365.7	61.22	6.973			
5,900.0	5,276.8	5,869.1	5,390.7	47.0	41.7	-139.99	-1,566.1	1,562.6	433.9	371.7	62.22	6.973			
6,000.0	5,368.2	5,959.4	5,474.8	47.7	42.3	-140.05	-1,589.6	1,585.7	440.3	377.2	63.14	6.975			
6,100.0	5,460.9	6,049.6	5,559.7	48.4	42.9	-140.10	-1,611.1	1,606.9	446.3	382.3	63.98	6.976			
6,200.0	5,554.8	6,139.7	5,645.5	49.0	43.4	-140.14	-1,630.8	1,626.3	451.8	387.0	64.74	6.978			
6,300.0	5,649.9	6,229.7	5,732.0	49.5	43.8	-140.19	-1,648.5	1,643.7	456.7	391.3	65.42	6.981			
6,400.0	5,746.0	6,319.7	5,819.2	50.0	44.2	-140.24	-1,664.2	1,659.2	461.2	395.1	66.03	6.984			
6,500.0	5,843.0	6,409.6	5,907.0	50.5	44.5	-140.28	-1,678.0	1,672.8	465.1	398.5	66.56	6.987			
6,600.0	5,940.8	6,500.0	5,995.9	50.8	44.8	-140.32	-1,689.9	1,684.4	468.5	401.5	67.02	6.990			
6,700.0	6,039.3	6,589.2	6,084.1	51.1	45.1	-140.36	-1,699.6	1,694.0	471.4	404.0	67.39	6.994			
6,800.0	6,138.3	6,679.0	6,173.2	51.4	45.3	-140.39	-1,707.4	1,701.7	473.7	406.0	67.69	6.998			
6,900.0	6,237.7	6,768.7	6,262.5	51.6	45.4	-140.42	-1,713.3	1,707.5	475.5	407.6	67.92	7.001			
7,000.0	6,337.5	6,858.4	6,352.0	51.7	45.5	-140.46	-1,717.1	1,711.3	476.8	408.7	68.07	7.004			
7,100.0	6,437.4	6,948.1	6,441.7	51.7	45.6	-140.49	-1,718.9	1,713.1	477.6	409.4	68.16	7.007			
7,200.0	6,537.4	7,043.8	6,537.4	51.8	45.6	1.79	-1,719.1	1,713.2	477.7	409.5	68.25	7.000			
7,300.0	6,637.4	7,143.8	6,637.4	51.8	45.7	1.79	-1,719.1	1,713.2	477.7	409.4	68.37	6.987			
7,400.0	6,737.4	7,243.8	6,737.4	51.9	45.7	1.79	-1,719.1	1,713.2	477.7	409.2	68.50	6.974			
7,500.0	6,837.4	7,343.8	6,837.4	51.9	45.8	1.79	-1,719.1	1,713.2	477.7	409.1	68.63	6.961			
7,600.0	6,937.4	7,443.8	6,937.4	52.0	45.8	1.79	-1,719.1	1,713.2	477.7	409.0	68.77	6.947			
7,700.0	7,037.4	7,543.8	7,037.4	52.0	45.9	1.79	-1,719.1	1,713.2	477.7	408.8	68.90	6.934			
7,800.0	7,137.4	7,643.8	7,137.4	52.1	45.9	1.79	-1,719.1	1,713.2	477.7	408.7	69.03	6.920			
7,900.0	7,237.4	7,743.8	7,237.4	52.1	46.0	1.79	-1,719.1	1,713.2	477.7	408.6	69.17	6.907			
8,000.0	7,337.4	7,843.8	7,337.4	52.1	46.0	1.79	-1,719.1	1,713.2	477.7	408.4	69.31	6.893			
8,100.0	7,437.4	7,943.8	7,437.4	52.2	46.1	1.79	-1,719.1	1,713.2	477.7	408.3	69.45	6.879			
8,200.0	7,537.4	8,043.8	7,537.4	52.2	46.1	1.79	-1,719.1	1,713.2	477.7	408.2	69.59	6.865			
8,300.0	7,637.4	8,143.8	7,637.4	52.3	46.2	1.79	-1,719.1	1,713.2	477.7	408.0	69.73	6.851			
8,400.0	7,737.4	8,243.8	7,737.4	52.3	46.2	1.79	-1,719.1	1,713.2	477.7	407.9	69.88	6.837			
8,500.0	7,837.4	8,343.8	7,837.4	52.4	46.3	1.79	-1,719.1	1,713.2	477.7	407.7	70.02	6.823			
8,600.0	7,937.4	8,443.8	7,937.4	52.4	46.3	1.79	-1,719.1	1,713.2	477.7	407.6	70.17	6.808			
8,700.0	8,037.4	8,543.8	8,037.4	52.5	46.4	1.79	-1,719.1	1,713.2	477.7	407.4	70.32	6.794			
8,800.0	8,137.4	8,643.8	8,137.4	52.5	46.4	1.79	-1,719.1	1,713.2	477.7	407.3	70.47	6.780			
8,900.0	8,237.4	8,743.8	8,237.4	52.6	46.5	1.79	-1,719.1	1,713.2	477.7	407.1	70.62	6.765			
9,000.0	8,337.4	8,843.8	8,337.4	52.6	46.6	1.79	-1,719.1	1,713.2	477.7	407.0	70.77	6.751			
9,057.3	8,394.7	8,901.1	8,394.7	52.7	46.6	1.79	-1,719.1	1,713.2	477.7	406.9	70.86	6.742			
9,091.6	8,429.0	8,925.4	8,419.0	52.7	46.6	1.79	-1,719.1	1,713.2	477.8	406.9	70.90	6.739			

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

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Shideler Fee 6-8AA
<b>Project:</b>	Mamm Creek	<b>TVD Reference:</b>	KB=22' @ 7126.0ft (Patterson #308)
<b>Reference Site:</b>	O31E Pad (2nd Occupation)	<b>MD Reference:</b>	KB=22' @ 7126.0ft (Patterson #308)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Shideler Fee 6-8AA	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OH	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #1	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design													Offset Site Error:	0.0 ft	
Survey Program: 0-MWD													Offset Well Error:		0.0 ft
Reference															
Offset				Semi Major Axis			Distance								
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning		
0.0	0.0	0.0	0.0	0.0	0.0	-122.80	-8.0	-12.4	14.8						
100.0	100.0	100.0	100.0	0.1	0.1	-122.80	-8.0	-12.4	14.8	14.5	0.27	54.330			
200.0	200.0	200.0	200.0	0.3	0.3	-122.80	-8.0	-12.4	14.8	14.2	0.62	23.808 CC			
300.0	300.0	300.0	300.0	0.5	0.5	90.48	-10.2	-11.0	14.9	13.9	0.98	15.168 ES			
400.0	399.8	399.9	399.5	0.7	0.7	85.63	-16.6	-6.5	15.4	14.0	1.41	10.943			
500.0	499.1	499.8	498.5	1.0	1.0	81.32	-27.4	0.8	16.3	14.3	1.94	8.378			
600.0	597.6	599.5	596.6	1.3	1.4	77.73	-42.4	11.1	17.5	14.9	2.62	6.701			
700.0	695.1	699.2	693.6	1.7	1.8	74.91	-61.5	24.2	19.1	15.7	3.44	5.565			
800.0	791.4	798.9	789.1	2.2	2.3	72.83	-84.8	40.2	21.0	16.6	4.41	4.768			
900.0	886.0	898.4	883.0	2.8	3.0	71.37	-112.2	58.9	23.2	17.7	5.54	4.190			
1,000.0	978.9	997.9	974.9	3.5	3.7	70.43	-143.5	80.4	25.7	18.8	6.83	3.756			
1,100.0	1,069.7	1,097.3	1,064.7	4.3	4.5	69.89	-178.7	104.5	28.4	20.1	8.29	3.420			
1,200.0	1,158.2	1,196.7	1,152.1	5.2	5.4	69.61	-217.7	131.3	31.3	21.4	9.91	3.159			
1,300.0	1,245.8	1,296.4	1,237.8	6.1	6.3	66.55	-259.7	160.0	35.2	23.8	11.36	3.098			
1,400.0	1,333.4	1,396.3	1,323.6	6.9	7.2	63.76	-302.0	189.0	39.3	26.5	12.74	3.083 SF			
1,500.0	1,420.9	1,496.2	1,409.3	7.8	8.2	61.50	-344.2	217.9	43.4	29.3	14.08	3.084			
1,600.0	1,508.5	1,596.1	1,495.1	8.7	9.1	59.64	-386.5	246.9	47.6	32.2	15.41	3.093			
1,700.0	1,596.1	1,696.0	1,580.9	9.6	10.0	58.08	-428.7	275.8	51.9	35.2	16.71	3.106			
1,800.0	1,683.6	1,795.9	1,666.6	10.5	11.0	56.76	-471.0	304.8	56.2	38.2	18.00	3.122			
1,900.0	1,771.2	1,895.8	1,752.4	11.4	11.9	55.63	-513.2	333.7	60.5	41.2	19.28	3.139			
2,000.0	1,858.8	1,995.7	1,838.2	12.3	12.9	54.65	-555.5	362.7	64.8	44.3	20.54	3.156			
2,100.0	1,946.3	2,095.6	1,924.0	13.2	13.8	53.79	-597.7	391.6	69.2	47.4	21.80	3.174			
2,200.0	2,033.9	2,195.5	2,009.7	14.1	14.8	53.03	-640.0	420.6	73.6	50.5	23.06	3.190			
2,300.0	2,121.5	2,295.4	2,095.5	15.0	15.7	52.36	-682.2	449.5	77.9	53.6	24.31	3.207			
2,400.0	2,209.0	2,395.3	2,181.3	15.8	16.6	51.76	-724.5	478.5	82.3	56.8	25.55	3.222			
2,500.0	2,296.6	2,495.2	2,267.0	16.7	17.6	51.22	-766.7	507.4	86.7	59.9	26.79	3.237			
2,600.0	2,384.2	2,595.1	2,352.8	17.6	18.5	50.73	-809.0	536.4	91.1	63.1	28.03	3.251			
2,700.0	2,471.7	2,695.0	2,438.6	18.5	19.5	50.29	-851.2	565.3	95.5	66.3	29.26	3.265			
2,800.0	2,559.3	2,794.9	2,524.4	19.4	20.4	49.89	-893.5	594.3	99.9	69.5	30.49	3.278			
2,900.0	2,646.9	2,894.8	2,610.1	20.3	21.4	49.52	-935.7	623.2	104.4	72.6	31.72	3.290			
3,000.0	2,734.4	2,994.7	2,695.9	21.2	22.3	49.18	-978.0	652.2	108.8	75.8	32.95	3.301			
3,100.0	2,822.0	3,094.6	2,781.7	22.1	23.3	48.87	-1,020.2	681.1	113.2	79.0	34.18	3.312			
3,200.0	2,909.6	3,194.5	2,867.4	23.0	24.2	48.58	-1,062.5	710.1	117.6	82.2	35.41	3.323			
3,300.0	2,997.1	3,294.4	2,953.2	23.9	25.2	48.31	-1,104.7	739.0	122.1	85.4	36.63	3.332			
3,400.0	3,084.7	3,394.3	3,039.0	24.8	26.1	48.06	-1,147.0	768.0	126.5	88.7	37.85	3.342			
3,500.0	3,172.3	3,494.2	3,124.8	25.7	27.0	47.83	-1,189.3	796.9	130.9	91.9	39.08	3.351			
3,600.0	3,259.8	3,594.1	3,210.5	26.6	28.0	47.61	-1,231.5	825.9	135.4	95.1	40.30	3.359			
3,700.0	3,347.4	3,694.0	3,296.3	27.5	28.9	47.40	-1,273.8	854.8	139.8	98.3	41.52	3.368			
3,800.0	3,435.0	3,793.9	3,382.1	28.4	29.9	47.21	-1,316.0	883.8	144.3	101.5	42.74	3.375			
3,900.0	3,522.5	3,893.8	3,467.8	29.3	30.8	47.03	-1,358.3	912.7	148.7	104.7	43.96	3.383			
4,000.0	3,610.1	3,993.7	3,553.6	30.2	31.8	46.87	-1,400.5	941.7	153.1	108.0	45.18	3.390			
4,100.0	3,697.7	4,093.6	3,639.4	31.1	32.7	46.71	-1,442.8	970.6	157.6	111.2	46.39	3.397			
4,200.0	3,785.2	4,193.5	3,725.2	32.0	33.7	46.55	-1,485.0	999.6	162.0	114.4	47.61	3.403			
4,300.0	3,872.8	4,293.4	3,810.9	32.9	34.6	46.41	-1,527.3	1,028.5	166.5	117.7	48.83	3.410			
4,400.0	3,960.4	4,393.3	3,896.7	33.7	35.6	46.28	-1,569.5	1,057.5	170.9	120.9	50.05	3.416			
4,500.0	4,047.9	4,493.2	3,982.5	34.6	36.5	46.15	-1,611.8	1,086.4	175.4	124.1	51.26	3.421			
4,600.0	4,135.5	4,593.1	4,068.2	35.5	37.5	46.03	-1,654.0	1,115.4	179.8	127.4	52.48	3.427			
4,700.0	4,223.1	4,693.0	4,154.0	36.4	38.4	45.91	-1,696.3	1,144.3	184.3	130.6	53.70	3.432			
4,800.0	4,310.6	4,792.9	4,239.8	37.3	39.3	45.80	-1,738.5	1,173.3	188.7	133.8	54.91	3.437			
4,900.0	4,398.2	4,892.8	4,325.6	38.2	40.3	45.69	-1,780.8	1,202.2	193.2	137.1	56.13	3.442			
5,000.0	4,485.8	4,992.7	4,411.3	39.1	41.2	45.59	-1,823.0	1,231.2	197.6	140.3	57.34	3.447			
5,100.0	4,573.3	5,092.6	4,497.1	40.0	42.2	45.50	-1,865.3	1,260.1	202.1	143.5	58.56	3.451			

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

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Shideler Fee 6-8AA
<b>Project:</b>	Mamm Creek	<b>TVD Reference:</b>	KB=22' @ 7126.0ft (Patterson #308)
<b>Reference Site:</b>	O31E Pad (2nd Occupation)	<b>MD Reference:</b>	KB=22' @ 7126.0ft (Patterson #308)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Shideler Fee 6-8AA	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OH	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #1	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design													Offset Site Error:	0.0 ft								
Survey Program: 0-MWD													Offset Well Error:		0.0 ft							
Reference													Offset		Semi Major Axis		Distance				Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning									
5,200.0	4,660.9	5,192.5	4,582.9	40.9	43.1	45.40	-1,907.5	1,289.1	206.6	146.8	59.77	3.456										
5,300.0	4,748.5	5,292.4	4,668.6	41.8	44.1	45.32	-1,949.8	1,318.0	211.0	150.0	60.98	3.460										
5,400.0	4,836.0	5,392.3	4,754.4	42.7	45.0	45.23	-1,992.0	1,347.0	215.5	153.3	62.20	3.464										
5,500.0	4,923.6	5,492.2	4,840.2	43.6	46.0	45.15	-2,034.3	1,375.9	219.9	156.5	63.41	3.468										
5,600.0	5,011.2	5,592.1	4,926.0	44.5	46.9	45.07	-2,076.5	1,404.9	224.4	159.7	64.63	3.472										
5,700.0	5,098.7	5,692.0	5,011.7	45.4	47.9	45.00	-2,118.8	1,433.8	228.8	163.0	65.84	3.476										
5,800.0	5,187.0	5,791.1	5,102.6	46.2	48.8	44.92	-2,162.3	1,463.6	233.4	166.4	67.00	3.484										
5,900.0	5,276.8	5,903.5	5,196.6	47.0	49.7	44.85	-2,203.6	1,491.9	237.8	169.7	68.06	3.493										
6,000.0	5,368.2	6,010.1	5,292.4	47.7	50.5	44.79	-2,242.0	1,518.2	241.8	172.7	69.05	3.502										
6,100.0	5,460.9	6,116.8	5,390.0	48.4	51.3	44.73	-2,277.5	1,542.5	245.5	175.6	69.95	3.510										
6,200.0	5,554.8	6,223.6	5,489.3	49.0	52.0	44.67	-2,310.0	1,564.8	249.0	178.2	70.77	3.518										
6,300.0	5,649.9	6,330.6	5,590.2	49.5	52.6	44.61	-2,339.4	1,585.0	252.1	180.6	71.50	3.526										
6,400.0	5,746.0	6,437.6	5,692.3	50.0	53.2	44.56	-2,365.8	1,603.0	254.9	182.8	72.16	3.533										
6,500.0	5,843.0	6,544.8	5,795.7	50.5	53.7	44.51	-2,389.0	1,618.9	257.5	184.7	72.72	3.540										
6,600.0	5,940.8	6,652.1	5,900.2	50.8	54.1	44.47	-2,409.0	1,632.7	259.6	186.4	73.21	3.546										
6,700.0	6,039.3	6,759.4	6,005.6	51.1	54.4	44.42	-2,425.8	1,644.2	261.5	187.9	73.61	3.552										
6,800.0	6,138.3	6,866.8	6,111.7	51.4	54.7	44.38	-2,439.3	1,653.4	263.0	189.1	73.93	3.558										
6,900.0	6,237.7	6,974.2	6,218.4	51.6	54.9	44.34	-2,449.6	1,660.4	264.2	190.1	74.17	3.562										
7,000.0	6,337.5	7,081.7	6,325.6	51.7	55.1	44.30	-2,456.5	1,665.2	265.1	190.8	74.33	3.567										
7,100.0	6,437.4	7,189.2	6,433.0	51.7	55.2	44.26	-2,460.1	1,667.7	265.6	191.2	74.41	3.570										
7,200.0	6,537.4	7,293.6	6,537.4	51.8	55.2	-173.47	-2,460.7	1,668.1	265.8	191.3	74.48	3.568										
7,300.0	6,637.4	7,393.6	6,637.4	51.8	55.2	-173.47	-2,460.7	1,668.1	265.8	191.2	74.60	3.563										
7,400.0	6,737.4	7,493.6	6,737.4	51.9	55.3	-173.47	-2,460.7	1,668.1	265.8	191.1	74.72	3.557										
7,500.0	6,837.4	7,593.6	6,837.4	51.9	55.3	-173.47	-2,460.7	1,668.1	265.8	190.9	74.85	3.551										
7,600.0	6,937.4	7,693.6	6,937.4	52.0	55.4	-173.47	-2,460.7	1,668.1	265.8	190.8	74.97	3.545										
7,700.0	7,037.4	7,793.6	7,037.4	52.0	55.4	-173.47	-2,460.7	1,668.1	265.8	190.7	75.09	3.539										
7,800.0	7,137.4	7,893.6	7,137.4	52.1	55.5	-173.47	-2,460.7	1,668.1	265.8	190.6	75.22	3.534										
7,900.0	7,237.4	7,993.6	7,237.4	52.1	55.5	-173.47	-2,460.7	1,668.1	265.8	190.4	75.35	3.528										
8,000.0	7,337.4	8,093.6	7,337.4	52.1	55.5	-173.47	-2,460.7	1,668.1	265.8	190.3	75.48	3.522										
8,100.0	7,437.4	8,193.6	7,437.4	52.2	55.6	-173.47	-2,460.7	1,668.1	265.8	190.2	75.61	3.515										
8,200.0	7,537.4	8,293.6	7,537.4	52.2	55.6	-173.47	-2,460.7	1,668.1	265.8	190.1	75.74	3.509										
8,300.0	7,637.4	8,393.6	7,637.4	52.3	55.7	-173.47	-2,460.7	1,668.1	265.8	189.9	75.87	3.503										
8,400.0	7,737.4	8,493.6	7,737.4	52.3	55.7	-173.47	-2,460.7	1,668.1	265.8	189.8	76.01	3.497										
8,500.0	7,837.4	8,593.6	7,837.4	52.4	55.8	-173.47	-2,460.7	1,668.1	265.8	189.7	76.14	3.491										
8,600.0	7,937.4	8,693.6	7,937.4	52.4	55.8	-173.47	-2,460.7	1,668.1	265.8	189.5	76.28	3.485										
8,700.0	8,037.4	8,793.6	8,037.4	52.5	55.9	-173.47	-2,460.7	1,668.1	265.8	189.4	76.42	3.478										
8,800.0	8,137.4	8,893.6	8,137.4	52.5	55.9	-173.47	-2,460.7	1,668.1	265.8	189.2	76.56	3.472										
8,900.0	8,237.4	8,993.6	8,237.4	52.6	56.0	-173.47	-2,460.7	1,668.1	265.8	189.1	76.70	3.465										
9,000.0	8,337.4	9,093.6	8,337.4	52.6	56.0	-173.47	-2,460.7	1,668.1	265.8	189.0	76.84	3.459										
9,091.6	8,429.0	9,185.2	8,429.0	52.7	56.1	-173.47	-2,460.7	1,668.1	265.8	188.8	76.97	3.453										

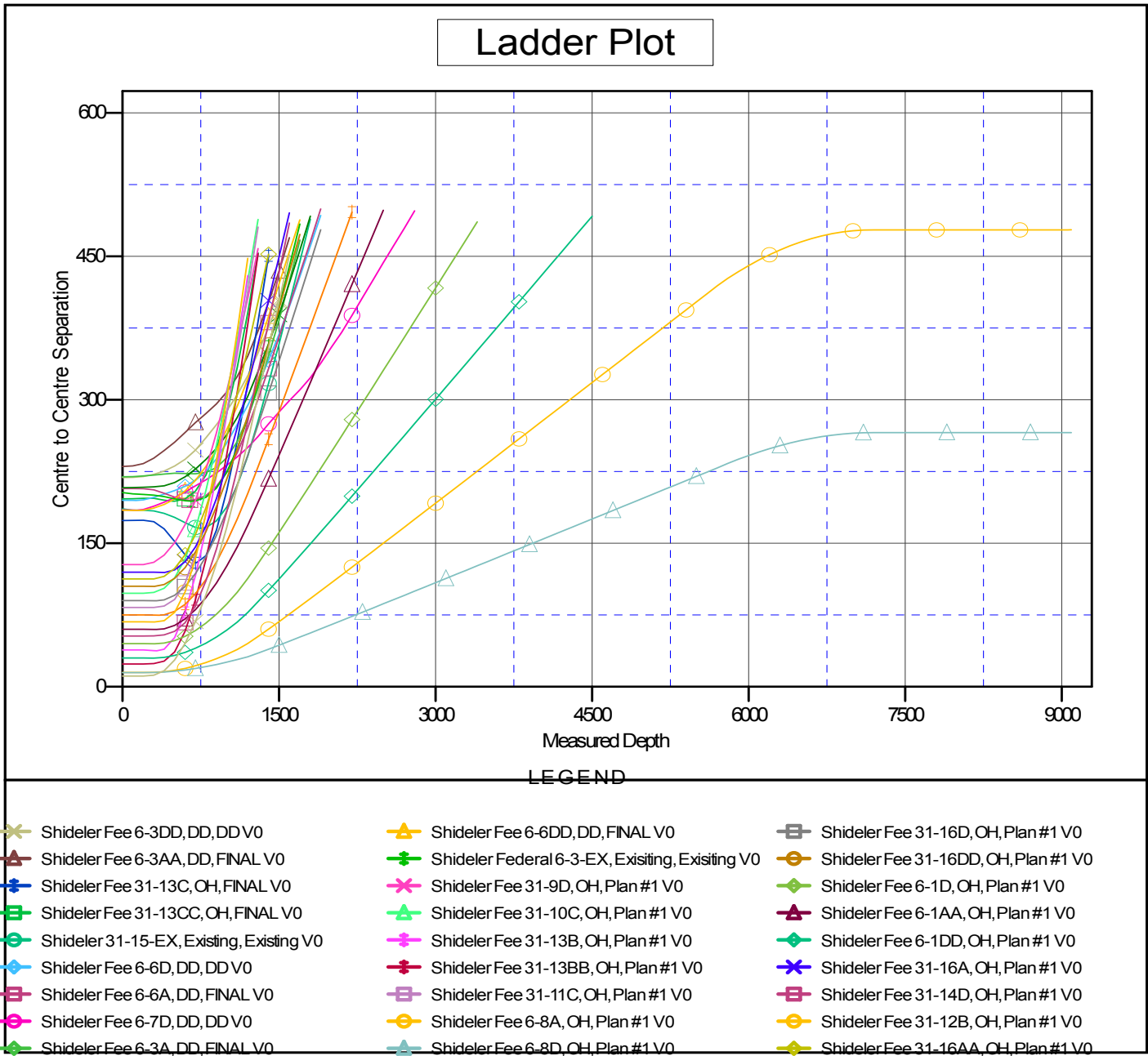
CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b> EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b> Well Shideler Fee 6-8AA
<b>Project:</b> Mamm Creek	<b>TVD Reference:</b> KB=22' @ 7126.0ft (Patterson #308)
<b>Reference Site:</b> O31E Pad (2nd Occupation)	<b>MD Reference:</b> KB=22' @ 7126.0ft (Patterson #308)
<b>Site Error:</b> 0.0ft	<b>North Reference:</b> True
<b>Reference Well:</b> Shideler Fee 6-8AA	<b>Survey Calculation Method:</b> Minimum Curvature
<b>Well Error:</b> 0.0ft	<b>Output errors are at</b> 2.00 sigma
<b>Reference Wellbore</b> OH	<b>Database:</b> USA EDM 5000 Multi Users DB
<b>Reference Design:</b> Plan #1	<b>Offset TVD Reference:</b> Offset Datum

Reference Depths are relative to KB=22' @ 7126.0ft (Patterson #308)      Coordinates are relative to: Shideler Fee 6-8AA  
 Offset Depths are relative to Offset Datum      Coordinate System is US State Plane 1983, Colorado Central Zone  
 Central Meridian is -105.500000 °      Grid Convergence at Surface is: -1.39°



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