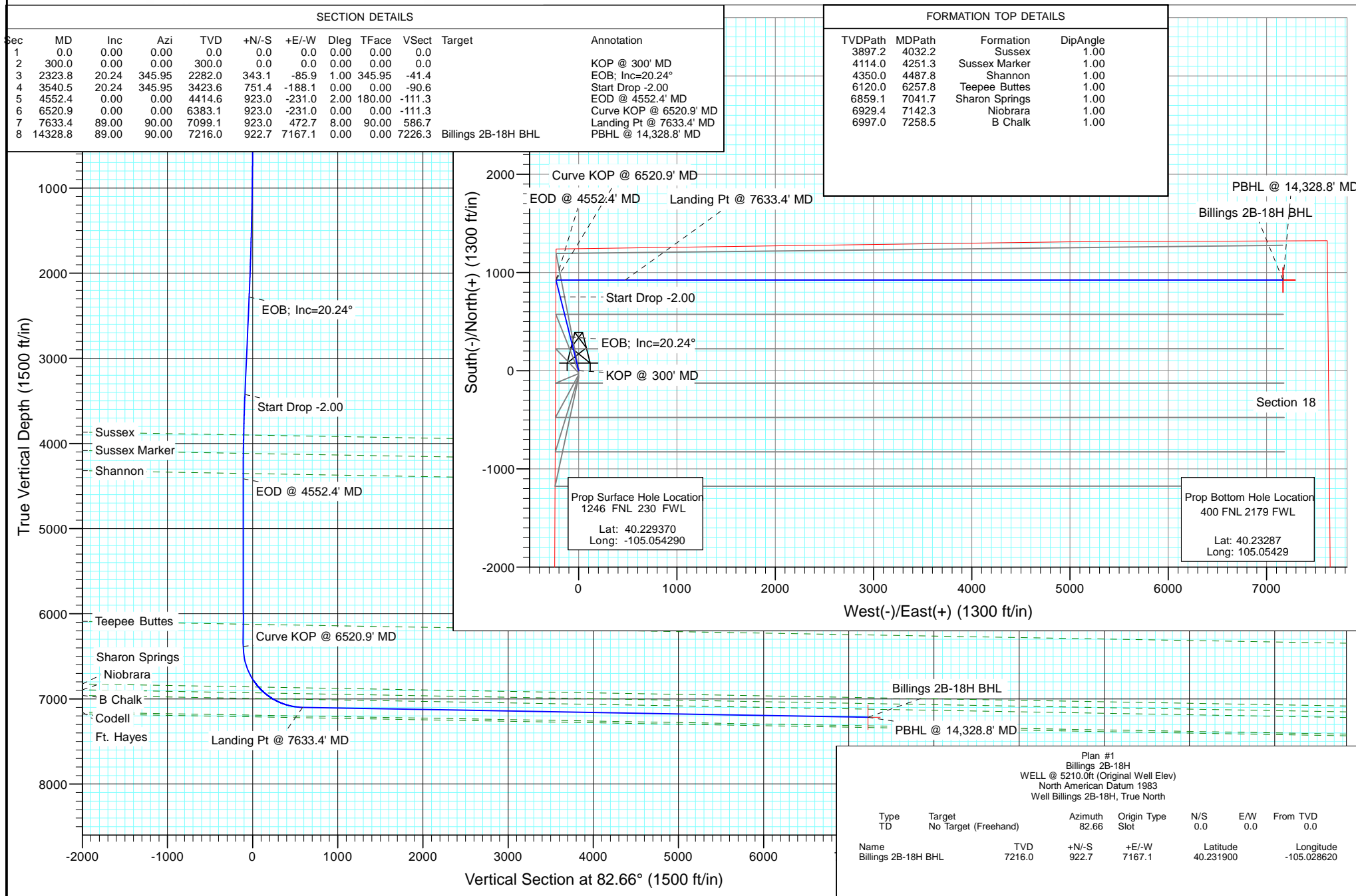




Project: DJ Wattenberg  
Site: S18-T3N-R68W (Billings)  
Well: Billings 2B-18H  
Wellbore: HZ  
Design: Plan #1



# Cathedral Energy Services

## Planning Report

<b>Database:</b>	USA EDM 5000 Multi Users DB	<b>Local Co-ordinate Reference:</b>	Well Billings 2B-18H
<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>TVD Reference:</b>	WELL @ 5210.0ft (Original Well Elev)
<b>Project:</b>	DJ Wattenberg	<b>MD Reference:</b>	WELL @ 5210.0ft (Original Well Elev)
<b>Site:</b>	S18-T3N-R68W (Billings)	<b>North Reference:</b>	True
<b>Well:</b>	Billings 2B-18H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	HZ		
<b>Design:</b>	Plan #1		

<b>Project</b>	DJ Wattenberg		
<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 Northern Zone		

Site		S18-T3N-R68W (Billings)			
Site Position:		Northing:	1,326,724.18 ft	Latitude:	40.229390
From:	Lat/Long	Easting:	3,124,452.97 ft	Longitude:	-105.054290
Position Uncertainty:	0.0 ft	Slot Radius:	13.200 in	Grid Convergence:	0.29 °

Well	Billings 2B-18H					
Well Position	+N/-S	0.0 ft	Northing:	1,326,716.88 ft	Latitude:	40.229370
	+E/-W	0.0 ft	Easting:	3,124,453.01 ft	Longitude:	-105.054290
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	5,197.0 ft

<b>Wellbore</b>	HZ				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF200510	11/16/2012	8.77	66.83	52,884

<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) (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Direction (°)</b>	
	0.0	0.0	0.0	82.66	

<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	
300.0	0.00	0.00	300.0	0.0	0.0	0.00	0.00	0.00	0.00	
2,323.8	20.24	345.95	2,282.0	343.1	-85.9	1.00	1.00	0.00	345.95	
3,540.5	20.24	345.95	3,423.6	751.4	-188.1	0.00	0.00	0.00	0.00	
4,552.4	0.00	0.00	4,414.6	923.0	-231.0	2.00	-2.00	0.00	180.00	
6,520.9	0.00	0.00	6,383.1	923.0	-231.0	0.00	0.00	0.00	0.00	
7,633.4	89.00	90.00	7,099.1	923.0	472.7	8.00	8.00	0.00	90.00	
14,328.8	89.00	90.00	7,216.0	922.7	7,167.1	0.00	0.00	0.00	0.00	Billings 2B-18H BHL

# Cathedral Energy Services

## Planning Report

<b>Database:</b>	USA EDM 5000 Multi Users DB	<b>Local Co-ordinate Reference:</b>	Well Billings 2B-18H
<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>TVD Reference:</b>	WELL @ 5210.0ft (Original Well Elev)
<b>Project:</b>	DJ Wattenberg	<b>MD Reference:</b>	WELL @ 5210.0ft (Original Well Elev)
<b>Site:</b>	S18-T3N-R68W (Billings)	<b>North Reference:</b>	True
<b>Well:</b>	Billings 2B-18H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	HZ		
<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	
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	KOP @ 300' MD
400.0	1.00	345.95	400.0	0.8	-0.2	-0.1	1.00	1.00	
500.0	2.00	345.95	500.0	3.4	-0.8	-0.4	1.00	1.00	
600.0	3.00	345.95	599.9	7.6	-1.9	-0.9	1.00	1.00	
700.0	4.00	345.95	699.7	13.5	-3.4	-1.6	1.00	1.00	
800.0	5.00	345.95	799.4	21.2	-5.3	-2.5	1.00	1.00	
900.0	6.00	345.95	898.9	30.4	-7.6	-3.7	1.00	1.00	
1,000.0	7.00	345.95	998.3	41.4	-10.4	-5.0	1.00	1.00	
1,100.0	8.00	345.95	1,097.4	54.1	-13.5	-6.5	1.00	1.00	
1,200.0	9.00	345.95	1,196.3	68.4	-17.1	-8.2	1.00	1.00	
1,300.0	10.00	345.95	1,294.9	84.4	-21.1	-10.2	1.00	1.00	
1,400.0	11.00	345.95	1,393.3	102.1	-25.6	-12.3	1.00	1.00	
1,500.0	12.00	345.95	1,491.2	121.5	-30.4	-14.6	1.00	1.00	
1,600.0	13.00	345.95	1,588.9	142.5	-35.7	-17.2	1.00	1.00	
1,700.0	14.00	345.95	1,686.1	165.1	-41.3	-19.9	1.00	1.00	
1,800.0	15.00	345.95	1,782.9	189.4	-47.4	-22.8	1.00	1.00	
1,900.0	16.00	345.95	1,879.3	215.3	-53.9	-26.0	1.00	1.00	
2,000.0	17.00	345.95	1,975.2	242.9	-60.8	-29.3	1.00	1.00	
2,100.0	18.00	345.95	2,070.5	272.0	-68.1	-32.8	1.00	1.00	
2,200.0	19.00	345.95	2,165.4	302.8	-75.8	-36.5	1.00	1.00	
2,300.0	20.00	345.95	2,259.6	335.2	-83.9	-40.4	1.00	1.00	
2,323.8	20.24	345.95	2,282.0	343.1	-85.9	-41.4	1.00	1.00	EOB; Inc=20.24°
2,400.0	20.24	345.95	2,353.5	368.7	-92.3	-44.4	0.00	0.00	
2,500.0	20.24	345.95	2,447.3	402.3	-100.7	-48.5	0.00	0.00	
2,600.0	20.24	345.95	2,541.1	435.8	-109.1	-52.5	0.00	0.00	
2,700.0	20.24	345.95	2,635.0	469.4	-117.5	-56.6	0.00	0.00	
2,800.0	20.24	345.95	2,728.8	502.9	-125.9	-60.6	0.00	0.00	
2,900.0	20.24	345.95	2,822.6	536.5	-134.3	-64.7	0.00	0.00	
3,000.0	20.24	345.95	2,916.4	570.1	-142.7	-68.7	0.00	0.00	
3,100.0	20.24	345.95	3,010.3	603.6	-151.1	-72.8	0.00	0.00	
3,200.0	20.24	345.95	3,104.1	637.2	-159.5	-76.8	0.00	0.00	
3,300.0	20.24	345.95	3,197.9	670.7	-167.9	-80.8	0.00	0.00	
3,400.0	20.24	345.95	3,291.7	704.3	-176.3	-84.9	0.00	0.00	
3,500.0	20.24	345.95	3,385.6	737.8	-184.7	-88.9	0.00	0.00	
3,540.5	20.24	345.95	3,423.6	751.4	-188.1	-90.6	0.00	0.00	Start Drop -2.00
3,600.0	19.05	345.95	3,479.6	770.8	-192.9	-92.9	2.00	-2.00	
3,700.0	17.05	345.95	3,574.7	800.9	-200.4	-96.5	2.00	-2.00	
3,800.0	15.05	345.95	3,670.8	827.7	-207.1	-99.8	2.00	-2.00	
3,900.0	13.05	345.95	3,767.8	851.2	-213.0	-102.6	2.00	-2.00	
4,000.0	11.05	345.95	3,865.6	871.5	-218.1	-105.0	2.00	-2.00	
4,032.2	10.40	345.95	3,897.2	877.3	-219.6	-105.7	2.00	-2.00	Sussex
4,100.0	9.05	345.95	3,964.0	888.4	-222.3	-107.1	2.00	-2.00	
4,200.0	7.05	345.95	4,063.0	902.0	-225.7	-108.7	2.00	-2.00	
4,251.3	6.02	345.95	4,114.0	907.7	-227.2	-109.4	2.00	-2.00	Sussex Marker
4,300.0	5.05	345.95	4,162.5	912.2	-228.3	-110.0	2.00	-2.00	
4,400.0	3.05	345.95	4,262.2	919.1	-230.0	-110.8	2.00	-2.00	
4,487.8	1.29	345.95	4,350.0	922.3	-230.8	-111.2	2.00	-2.00	Shannon
4,500.0	1.05	345.95	4,362.2	922.5	-230.9	-111.2	2.00	-2.00	
4,552.4	0.00	0.00	4,414.6	923.0	-231.0	-111.3	2.00	-2.00	EOD @ 4552.4' MD

# Cathedral Energy Services

## Planning Report

<b>Database:</b>	USA EDM 5000 Multi Users DB	<b>Local Co-ordinate Reference:</b>	Well Billings 2B-18H
<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>TVD Reference:</b>	WELL @ 5210.0ft (Original Well Elev)
<b>Project:</b>	DJ Wattenberg	<b>MD Reference:</b>	WELL @ 5210.0ft (Original Well Elev)
<b>Site:</b>	S18-T3N-R68W (Billings)	<b>North Reference:</b>	True
<b>Well:</b>	Billings 2B-18H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	HZ		
<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
4,600.0	0.00	0.00	4,462.2	923.0	-231.0	-111.3	0.00	0.00	
4,700.0	0.00	0.00	4,562.2	923.0	-231.0	-111.3	0.00	0.00	
4,800.0	0.00	0.00	4,662.2	923.0	-231.0	-111.3	0.00	0.00	
4,900.0	0.00	0.00	4,762.2	923.0	-231.0	-111.3	0.00	0.00	
5,000.0	0.00	0.00	4,862.2	923.0	-231.0	-111.3	0.00	0.00	
5,100.0	0.00	0.00	4,962.2	923.0	-231.0	-111.3	0.00	0.00	
5,200.0	0.00	0.00	5,062.2	923.0	-231.0	-111.3	0.00	0.00	
5,300.0	0.00	0.00	5,162.2	923.0	-231.0	-111.3	0.00	0.00	
5,400.0	0.00	0.00	5,262.2	923.0	-231.0	-111.3	0.00	0.00	
5,500.0	0.00	0.00	5,362.2	923.0	-231.0	-111.3	0.00	0.00	
5,600.0	0.00	0.00	5,462.2	923.0	-231.0	-111.3	0.00	0.00	
5,700.0	0.00	0.00	5,562.2	923.0	-231.0	-111.3	0.00	0.00	
5,800.0	0.00	0.00	5,662.2	923.0	-231.0	-111.3	0.00	0.00	
5,900.0	0.00	0.00	5,762.2	923.0	-231.0	-111.3	0.00	0.00	
6,000.0	0.00	0.00	5,862.2	923.0	-231.0	-111.3	0.00	0.00	
6,100.0	0.00	0.00	5,962.2	923.0	-231.0	-111.3	0.00	0.00	
6,200.0	0.00	0.00	6,062.2	923.0	-231.0	-111.3	0.00	0.00	
6,257.8	0.00	0.00	6,120.0	923.0	-231.0	-111.3	0.00	0.00	Teepee Buttes
6,300.0	0.00	0.00	6,162.2	923.0	-231.0	-111.3	0.00	0.00	
6,400.0	0.00	0.00	6,262.2	923.0	-231.0	-111.3	0.00	0.00	
6,500.0	0.00	0.00	6,362.2	923.0	-231.0	-111.3	0.00	0.00	
6,520.9	0.00	0.00	6,383.1	923.0	-231.0	-111.3	0.00	0.00	Curve KOP @ 6520.9' MD
6,600.0	6.33	90.00	6,462.0	923.0	-226.6	-106.9	8.00	8.00	
6,700.0	14.33	90.00	6,560.3	923.0	-208.7	-89.2	8.00	8.00	
6,800.0	22.33	90.00	6,655.1	923.0	-177.3	-58.0	8.00	8.00	
6,900.0	30.33	90.00	6,744.7	923.0	-133.0	-14.0	8.00	8.00	
7,000.0	38.33	90.00	6,827.2	923.0	-76.6	41.8	8.00	8.00	
7,041.7	41.66	90.00	6,859.1	923.0	-49.9	68.4	8.00	8.00	Sharon Springs
7,100.0	46.33	90.00	6,901.1	923.0	-9.4	108.6	8.00	8.00	
7,142.3	49.71	90.00	6,929.4	923.0	22.1	139.8	8.00	8.00	Niobrara
7,200.0	54.33	90.00	6,964.9	923.0	67.5	184.8	8.00	8.00	
7,258.5	59.01	90.00	6,997.0	923.0	116.4	233.3	8.00	8.00	B Chalk
7,300.0	62.33	90.00	7,017.3	923.0	152.6	269.2	8.00	8.00	
7,400.0	70.33	90.00	7,057.5	923.0	244.1	359.9	8.00	8.00	
7,500.0	78.33	90.00	7,084.4	923.0	340.3	455.4	8.00	8.00	
7,600.0	86.33	90.00	7,097.8	923.0	439.3	553.6	8.00	8.00	
7,633.4	89.00	90.00	7,099.1	923.0	472.7	586.7	8.00	8.00	Landing Pt @ 7633.4' MD
7,700.0	89.00	90.00	7,100.3	923.0	539.3	652.7	0.00	0.00	
7,800.0	89.00	90.00	7,102.1	923.0	639.3	751.9	0.00	0.00	
7,900.0	89.00	90.00	7,103.8	923.0	739.3	851.0	0.00	0.00	
8,000.0	89.00	90.00	7,105.5	923.0	839.2	950.2	0.00	0.00	
8,100.0	89.00	90.00	7,107.3	923.0	939.2	1,049.4	0.00	0.00	
8,200.0	89.00	90.00	7,109.0	922.9	1,039.2	1,148.5	0.00	0.00	
8,300.0	89.00	90.00	7,110.8	922.9	1,139.2	1,247.7	0.00	0.00	
8,400.0	89.00	90.00	7,112.5	922.9	1,239.2	1,346.9	0.00	0.00	
8,500.0	89.00	90.00	7,114.3	922.9	1,339.2	1,446.0	0.00	0.00	
8,600.0	89.00	90.00	7,116.0	922.9	1,439.1	1,545.2	0.00	0.00	
8,700.0	89.00	90.00	7,117.8	922.9	1,539.1	1,644.4	0.00	0.00	
8,800.0	89.00	90.00	7,119.5	922.9	1,639.1	1,743.5	0.00	0.00	
8,900.0	89.00	90.00	7,121.3	922.9	1,739.1	1,842.7	0.00	0.00	
9,000.0	89.00	90.00	7,123.0	922.9	1,839.1	1,941.9	0.00	0.00	
9,100.0	89.00	90.00	7,124.7	922.9	1,939.1	2,041.0	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 Billings 2B-18H
<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>TVD Reference:</b>	WELL @ 5210.0ft (Original Well Elev)
<b>Project:</b>	DJ Wattenberg	<b>MD Reference:</b>	WELL @ 5210.0ft (Original Well Elev)
<b>Site:</b>	S18-T3N-R68W (Billings)	<b>North Reference:</b>	True
<b>Well:</b>	Billings 2B-18H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	HZ		
<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
9,200.0	89.00	90.00	7,126.5	922.9	2,039.1	2,140.2	0.00	0.00	
9,300.0	89.00	90.00	7,128.2	922.9	2,139.0	2,239.4	0.00	0.00	
9,400.0	89.00	90.00	7,130.0	922.9	2,239.0	2,338.5	0.00	0.00	
9,500.0	89.00	90.00	7,131.7	922.9	2,339.0	2,437.7	0.00	0.00	
9,600.0	89.00	90.00	7,133.5	922.9	2,439.0	2,536.9	0.00	0.00	
9,700.0	89.00	90.00	7,135.2	922.9	2,539.0	2,636.0	0.00	0.00	
9,800.0	89.00	90.00	7,137.0	922.9	2,639.0	2,735.2	0.00	0.00	
9,900.0	89.00	90.00	7,138.7	922.9	2,738.9	2,834.4	0.00	0.00	
10,000.0	89.00	90.00	7,140.5	922.9	2,838.9	2,933.5	0.00	0.00	
10,100.0	89.00	90.00	7,142.2	922.9	2,938.9	3,032.7	0.00	0.00	
10,200.0	89.00	90.00	7,143.9	922.9	3,038.9	3,131.9	0.00	0.00	
10,300.0	89.00	90.00	7,145.7	922.9	3,138.9	3,231.0	0.00	0.00	
10,400.0	89.00	90.00	7,147.4	922.9	3,238.9	3,330.2	0.00	0.00	
10,500.0	89.00	90.00	7,149.2	922.9	3,338.9	3,429.4	0.00	0.00	
10,600.0	89.00	90.00	7,150.9	922.8	3,438.8	3,528.5	0.00	0.00	
10,700.0	89.00	90.00	7,152.7	922.8	3,538.8	3,627.7	0.00	0.00	
10,800.0	89.00	90.00	7,154.4	922.8	3,638.8	3,726.9	0.00	0.00	
10,900.0	89.00	90.00	7,156.2	922.8	3,738.8	3,826.0	0.00	0.00	
11,000.0	89.00	90.00	7,157.9	922.8	3,838.8	3,925.2	0.00	0.00	
11,100.0	89.00	90.00	7,159.6	922.8	3,938.8	4,024.4	0.00	0.00	
11,200.0	89.00	90.00	7,161.4	922.8	4,038.7	4,123.5	0.00	0.00	
11,300.0	89.00	90.00	7,163.1	922.8	4,138.7	4,222.7	0.00	0.00	
11,400.0	89.00	90.00	7,164.9	922.8	4,238.7	4,321.9	0.00	0.00	
11,500.0	89.00	90.00	7,166.6	922.8	4,338.7	4,421.0	0.00	0.00	
11,600.0	89.00	90.00	7,168.4	922.8	4,438.7	4,520.2	0.00	0.00	
11,700.0	89.00	90.00	7,170.1	922.8	4,538.7	4,619.3	0.00	0.00	
11,800.0	89.00	90.00	7,171.9	922.8	4,638.7	4,718.5	0.00	0.00	
11,900.0	89.00	90.00	7,173.6	922.8	4,738.6	4,817.7	0.00	0.00	
12,000.0	89.00	90.00	7,175.4	922.8	4,838.6	4,916.8	0.00	0.00	
12,100.0	89.00	90.00	7,177.1	922.8	4,938.6	5,016.0	0.00	0.00	
12,200.0	89.00	90.00	7,178.8	922.8	5,038.6	5,115.2	0.00	0.00	
12,300.0	89.00	90.00	7,180.6	922.8	5,138.6	5,214.3	0.00	0.00	
12,400.0	89.00	90.00	7,182.3	922.8	5,238.6	5,313.5	0.00	0.00	
12,500.0	89.00	90.00	7,184.1	922.8	5,338.5	5,412.7	0.00	0.00	
12,600.0	89.00	90.00	7,185.8	922.8	5,438.5	5,511.8	0.00	0.00	
12,700.0	89.00	90.00	7,187.6	922.8	5,538.5	5,611.0	0.00	0.00	
12,800.0	89.00	90.00	7,189.3	922.8	5,638.5	5,710.2	0.00	0.00	
12,900.0	89.00	90.00	7,191.1	922.8	5,738.5	5,809.3	0.00	0.00	
13,000.0	89.00	90.00	7,192.8	922.7	5,838.5	5,908.5	0.00	0.00	
13,100.0	89.00	90.00	7,194.6	922.7	5,938.5	6,007.7	0.00	0.00	
13,200.0	89.00	90.00	7,196.3	922.7	6,038.4	6,106.8	0.00	0.00	
13,300.0	89.00	90.00	7,198.0	922.7	6,138.4	6,206.0	0.00	0.00	
13,400.0	89.00	90.00	7,199.8	922.7	6,238.4	6,305.2	0.00	0.00	
13,500.0	89.00	90.00	7,201.5	922.7	6,338.4	6,404.3	0.00	0.00	
13,600.0	89.00	90.00	7,203.3	922.7	6,438.4	6,503.5	0.00	0.00	
13,700.0	89.00	90.00	7,205.0	922.7	6,538.4	6,602.7	0.00	0.00	
13,800.0	89.00	90.00	7,206.8	922.7	6,638.4	6,701.8	0.00	0.00	
13,900.0	89.00	90.00	7,208.5	922.7	6,738.3	6,801.0	0.00	0.00	
14,000.0	89.00	90.00	7,210.3	922.7	6,838.3	6,900.2	0.00	0.00	
14,100.0	89.00	90.00	7,212.0	922.7	6,938.3	6,999.3	0.00	0.00	
14,200.0	89.00	90.00	7,213.8	922.7	7,038.3	7,098.5	0.00	0.00	
14,300.0	89.00	90.00	7,215.5	922.7	7,138.3	7,197.7	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 Billings 2B-18H
<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>TVD Reference:</b>	WELL @ 5210.0ft (Original Well Elev)
<b>Project:</b>	DJ Wattenberg	<b>MD Reference:</b>	WELL @ 5210.0ft (Original Well Elev)
<b>Site:</b>	S18-T3N-R68W (Billings)	<b>North Reference:</b>	True
<b>Well:</b>	Billings 2B-18H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	HZ		
<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
14,328.8	89.00	90.00	7,216.0	922.7	7,167.1	7,226.3	0.00	0.00	PBHL @ 14,328.8' MD

### Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
Billings 2B-18H BHL - plan hits target center - Point	0.00	0.00	7,216.0	922.7	7,167.1	1,327,675.59	3,131,615.38	40.231900	-105.028620
Interp @ 4414.6 (Billings) - plan hits target center - Point	0.00	0.00	4,414.6	923.0	-231.0	1,327,638.71	3,124,217.37	40.231904	-105.055117
Billings 2B-18H PP - plan misses target center by 170.6ft at 7433.7ft MD (7068.0 TVD, 923.0 N, 276.0 E) - Point	0.00	0.00	7,216.0	848.8	234.5	1,327,566.85	3,124,683.27	40.231700	-105.053450

### Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
4,032.2	3,901.0	Sussex		1.00	90.00
4,251.3	4,118.0	Sussex Marker		1.00	90.00
4,487.8	4,354.0	Shannon		1.00	90.00
6,257.8	6,124.0	Teepee Buttes		1.00	90.00
7,041.7	6,860.0	Sharon Springs		1.00	90.00
7,142.3	6,929.0	Niobrara		1.00	90.00
7,258.5	6,995.0	B Chalk		1.00	90.00

### Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Comment
300.0	300.0	0.0	0.0	KOP @ 300' MD
2,323.8	2,282.0	343.1	-85.9	EOB; Inc=20.24°
3,540.5	3,423.6	751.4	-188.1	Start Drop -2.00
4,552.4	4,414.6	923.0	-231.0	EOD @ 4552.4' MD
6,520.9	6,383.1	923.0	-231.0	Curve KOP @ 6520.9' MD
7,633.4	7,099.1	923.0	472.7	Landing Pt @ 7633.4' MD
14,328.8	7,216.0	922.7	7,167.1	PBHL @ 14,328.8' MD

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

**DJ Wattenberg**

**S18-T3N-R68W (Billings)**

**Billings 2B-18H**

**HZ**

**Plan #1**

## **Anticollision Report**

**29 November, 2012**

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Billings 2B-18H
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	WELL @ 5210.0ft (Original Well Elev)
<b>Reference Site:</b>	S18-T3N-R68W (Billings)	<b>MD Reference:</b>	WELL @ 5210.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Billings 2B-18H	<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>	HZ	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #1	<b>Offset TVD Reference:</b>	Offset Datum

Reference	Plan #1		
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	MD Interval 100.0ft	Error Model:	Systematic Ellipse
Depth Range:	Unlimited	Scan Method:	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 1,626.7ft	Error Surface:	Elliptical Conic
Warning Levels Evaluated at:	2.00 Sigma		

Survey Tool Program		Date	11/28/2012		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
0.0	14,328.8	Plan #1 (HZ)	MWD	Geolink MWD	

Summary						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
S18-T3N-R68W (Billings)						
Billings 2A-18H - Hz - Plan #1	166.3	167.3	7.3	6.8	13.584	CC
Billings 2A-18H - Hz - Plan #1	200.0	201.0	7.3	6.6	11.145	ES
Billings 2A-18H - Hz - Plan #1	14,328.8	14,266.5	363.3	13.0	1.037	Level 2, SF
Billings 2C-18H - HZ - Plan #1	300.0	300.0	10.9	9.9	10.905	CC, ES
Billings 2C-18H - HZ - Plan #1	14,328.8	14,068.6	396.1	77.4	1.243	Level 2, SF
Billings 2D-18H - Hz - Plan #1	474.8	475.5	20.1	18.4	12.344	CC
Billings 2D-18H - Hz - Plan #1	500.0	500.7	20.1	18.4	11.705	ES
Billings 2D-18H - Hz - Plan #1	14,328.8	14,238.8	699.6	339.8	1.945	SF
Billings 2E-18H - HZ - Plan #1	300.0	300.0	29.1	28.1	29.086	CC, ES
Billings 2E-18H - HZ - Plan #1	14,328.8	14,025.2	1,065.5	711.0	3.005	SF
Billings 2F-18H - HZ - Plan #1	300.0	300.0	40.1	39.1	39.995	CC, ES
Billings 2F-18H - HZ - Plan #1	14,328.8	14,343.6	1,403.5	1,044.6	3.911	SF
Billings 2G-18H - Hz - Plan #1	300.0	300.0	51.0	50.0	50.903	CC, ES
Billings 2G-18H - Hz - Plan #1	700.0	696.3	72.0	69.6	30.085	SF
Billings 2H-18H - Hz - Plan #1	200.0	200.0	61.9	61.3	94.866	CC, ES
Billings 2H-18H - Hz - Plan #1	700.0	692.2	96.5	94.1	40.431	SF



# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Billings 2B-18H
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	WELL @ 5210.0ft (Original Well Elev)
<b>Reference Site:</b>	S18-T3N-R68W (Billings)	<b>MD Reference:</b>	WELL @ 5210.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Billings 2B-18H	<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>	HZ	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #1	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S18-T3N-R68W (Billings) - Billings 2A-18H - Hz - Plan #1													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance				Total 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	1.0	1.0	0.0	0.0	0.00	7.3	0.0	7.3					
100.0	100.0	101.0	101.0	0.2	0.2	0.00	7.3	0.0	7.3	7.0	0.31	23.881		
166.3	166.3	167.3	167.3	0.3	0.3	0.00	7.3	0.0	7.3	6.8	0.54	13.584 CC		
200.0	200.0	201.0	201.0	0.3	0.3	0.00	7.3	0.0	7.3	6.6	0.65	11.145 ES		
300.0	300.0	300.9	300.9	0.5	0.5	-1.19	8.2	-0.2	8.2	7.2	1.00	8.140		
400.0	400.0	400.7	400.7	0.7	0.7	11.40	10.7	-0.7	9.9	8.6	1.35	7.332		
500.0	500.0	500.5	500.4	0.9	0.9	10.83	15.0	-1.5	11.7	10.0	1.70	6.864		
600.0	599.9	600.3	599.9	1.0	1.1	10.80	21.0	-2.7	13.4	11.4	2.05	6.560		
700.0	699.7	700.0	699.4	1.2	1.3	11.13	28.7	-4.2	15.2	12.8	2.40	6.348		
800.0	799.4	799.7	798.6	1.4	1.5	11.70	38.1	-6.0	17.0	14.3	2.75	6.191		
900.0	898.9	899.4	897.6	1.7	1.8	12.44	49.1	-8.1	18.8	15.7	3.10	6.070		
1,000.0	998.3	999.0	996.4	1.9	2.0	13.31	61.9	-10.6	20.7	17.2	3.46	5.971		
1,100.0	1,097.4	1,098.6	1,095.0	2.2	2.3	14.26	76.3	-13.4	22.5	18.7	3.82	5.888		
1,200.0	1,196.3	1,198.2	1,193.2	2.5	2.7	15.29	92.4	-16.5	24.4	20.2	4.19	5.813		
1,300.0	1,294.9	1,297.8	1,291.1	2.8	3.0	16.36	110.2	-20.0	26.3	21.7	4.57	5.742		
1,400.0	1,393.3	1,397.3	1,388.6	3.1	3.4	17.48	129.7	-23.7	28.2	23.2	4.97	5.671		
1,500.0	1,491.2	1,496.8	1,485.7	3.5	3.8	18.62	150.7	-27.8	30.1	24.7	5.38	5.597		
1,600.0	1,588.9	1,596.2	1,582.5	3.9	4.2	19.78	173.5	-32.2	32.1	26.3	5.81	5.518		
1,700.0	1,686.1	1,695.7	1,678.7	4.3	4.7	20.95	197.9	-37.0	34.1	27.8	6.28	5.431		
1,800.0	1,782.9	1,795.1	1,774.5	4.8	5.1	22.13	223.9	-42.0	36.1	29.4	6.77	5.337		
1,900.0	1,879.3	1,894.4	1,869.8	5.3	5.7	23.32	251.5	-47.4	38.2	30.9	7.30	5.234		
2,000.0	1,975.2	1,994.3	1,965.4	5.8	6.2	24.86	280.3	-52.9	39.7	31.8	7.89	5.030		
2,100.0	2,070.5	2,094.3	2,060.9	6.3	6.7	27.40	309.1	-58.5	39.7	31.1	8.63	4.598		
2,200.0	2,165.4	2,194.3	2,156.5	6.9	7.2	31.25	337.9	-64.1	38.3	28.7	9.60	3.984		
2,300.0	2,259.6	2,294.2	2,252.0	7.5	7.8	37.01	366.7	-69.7	35.6	24.6	10.95	3.251		
2,400.0	2,353.5	2,394.0	2,347.4	8.1	8.3	45.11	395.4	-75.3	32.5	19.7	12.79	2.538		
2,500.0	2,447.3	2,493.8	2,442.8	8.7	8.8	54.77	424.2	-80.9	30.1	15.1	14.96	2.010		
2,600.0	2,541.1	2,593.7	2,538.3	9.3	9.3	65.72	453.0	-86.4	28.7	11.4	17.26	1.661		
2,673.2	2,609.8	2,666.7	2,608.1	9.8	9.7	74.19	474.0	-90.5	28.4	9.5	18.83	1.506		
2,700.0	2,635.0	2,693.5	2,633.7	9.9	9.9	77.32	481.8	-92.0	28.4	9.0	19.35	1.468 Level 3		
2,800.0	2,728.8	2,793.3	2,729.1	10.6	10.4	88.67	510.5	-97.6	29.3	8.3	20.94	1.398 Level 3		
2,900.0	2,822.6	2,893.2	2,824.6	11.2	10.9	98.98	539.3	-103.2	31.2	9.3	21.96	1.422 Level 3		
3,000.0	2,916.4	2,993.0	2,920.0	11.8	11.5	107.83	568.1	-108.7	34.1	11.6	22.51	1.514		
3,100.0	3,010.3	3,092.8	3,015.4	12.4	12.0	115.18	596.8	-114.3	37.6	14.8	22.77	1.651		
3,200.0	3,104.1	3,192.7	3,110.9	13.0	12.6	121.20	625.6	-119.9	41.6	18.7	22.87	1.819		
3,300.0	3,197.9	3,292.5	3,206.3	13.7	13.1	126.11	654.4	-125.5	46.0	23.1	22.93	2.007		
3,400.0	3,291.7	3,392.3	3,301.8	14.3	13.6	130.14	683.1	-131.1	50.7	27.7	22.98	2.206		
3,500.0	3,385.6	3,492.2	3,397.2	14.9	14.2	133.48	711.9	-136.6	55.6	32.5	23.05	2.411		
3,600.0	3,479.6	3,592.0	3,492.6	15.5	14.7	135.90	740.7	-142.2	60.2	36.9	23.26	2.587		
3,700.0	3,574.7	3,692.0	3,588.2	16.1	15.2	136.01	769.5	-147.8	62.5	38.5	24.05	2.600		
3,800.0	3,670.8	3,792.0	3,683.8	16.5	15.8	133.85	798.3	-153.4	62.4	36.9	25.48	2.450		
3,900.0	3,767.8	3,891.8	3,779.2	17.0	16.3	129.18	827.1	-159.0	60.1	32.5	27.61	2.177		
4,000.0	3,865.6	3,991.4	3,874.4	17.3	16.9	121.25	855.8	-164.5	56.4	25.9	30.48	1.849		
4,100.0	3,964.0	4,090.7	3,969.3	17.7	17.4	108.93	884.4	-170.1	52.6	18.9	33.72	1.559		
4,180.8	4,044.0	4,170.5	4,045.6	17.9	17.8	95.39	907.4	-174.6	51.2	15.6	35.63	1.437 Level 3		
4,200.0	4,063.0	4,189.4	4,063.7	17.9	17.9	91.77	912.9	-175.6	51.3	15.4	35.85	1.431 Level 3		
4,300.0	4,162.5	4,287.5	4,157.5	18.1	18.5	72.10	941.1	-181.1	55.7	20.8	34.86	1.597		
4,400.0	4,262.2	4,385.0	4,250.6	18.3	19.0	54.54	969.2	-186.5	67.6	36.4	31.14	2.169		
4,500.0	4,362.2	4,481.5	4,343.0	18.4	19.5	41.48	997.1	-191.9	86.5	59.4	27.06	3.196		
4,600.0	4,462.2	4,577.3	4,434.5	18.5	20.0	18.35	1,024.6	-197.3	110.9	76.8	34.05	3.256		
4,700.0	4,562.2	4,672.9	4,525.9	18.6	20.5	12.38	1,052.2	-202.6	137.4	101.3	36.13	3.804		
4,800.0	4,662.2	4,770.5	4,619.3	18.6	21.1	8.31	1,080.1	-208.0	164.7	127.1	37.57	4.384		

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 Billings 2B-18H
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	WELL @ 5210.0ft (Original Well Elev)
<b>Reference Site:</b>	S18-T3N-R68W (Billings)	<b>MD Reference:</b>	WELL @ 5210.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Billings 2B-18H	<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>	HZ	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #1	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S18-T3N-R68W (Billings) - Billings 2A-18H - Hz - Plan #1												Offset Site Error:	0.0 ft
Survey Program: O-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)			
4,900.0	4,762.2	4,873.1	4,718.2	18.7	21.5	5.54	1,106.6	-213.2	189.9	151.3	38.64	4.915	
5,000.0	4,862.2	4,977.5	4,819.9	18.8	22.0	3.66	1,130.1	-217.7	212.0	172.5	39.45	5.373	
5,100.0	4,962.2	5,083.6	4,924.0	18.9	22.3	2.36	1,150.1	-221.6	230.7	190.6	40.10	5.753	
5,200.0	5,062.2	5,191.1	5,030.1	19.0	22.6	1.45	1,166.6	-224.8	245.9	205.3	40.62	6.054	
5,300.0	5,162.2	5,299.7	5,138.0	19.0	22.9	0.83	1,179.3	-227.3	257.5	216.5	41.04	6.274	
5,400.0	5,262.2	5,409.2	5,247.1	19.1	23.1	0.44	1,187.9	-229.0	265.4	224.1	41.37	6.416	
5,500.0	5,362.2	5,519.2	5,357.0	19.2	23.2	0.24	1,192.5	-229.9	269.6	228.0	41.60	6.480	
5,600.0	5,462.2	5,625.4	5,463.2	19.3	23.3	0.21	1,193.3	-230.0	270.3	228.5	41.78	6.470	
5,700.0	5,562.2	5,725.4	5,563.2	19.4	23.4	0.21	1,193.3	-230.0	270.3	228.4	41.94	6.444	
5,800.0	5,662.2	5,825.4	5,663.2	19.5	23.4	0.21	1,193.3	-230.0	270.3	228.2	42.11	6.419	
5,900.0	5,762.2	5,925.4	5,763.2	19.6	23.5	0.21	1,193.3	-230.0	270.3	228.0	42.28	6.393	
6,000.0	5,862.2	6,025.4	5,863.2	19.7	23.6	0.21	1,193.3	-230.0	270.3	227.8	42.45	6.367	
6,100.0	5,962.2	6,125.4	5,963.2	19.8	23.7	0.21	1,193.3	-230.0	270.3	227.7	42.63	6.341	
6,200.0	6,062.2	6,225.4	6,063.2	19.9	23.7	0.21	1,193.3	-230.0	270.3	227.5	42.81	6.315	
6,300.0	6,162.2	6,325.4	6,163.2	19.9	23.8	0.21	1,193.3	-230.0	270.3	227.3	42.98	6.288	
6,400.0	6,262.2	6,425.4	6,263.2	20.0	23.9	0.21	1,193.3	-230.0	270.3	227.1	43.17	6.262	
6,427.7	6,289.8	6,453.0	6,290.8	20.1	23.9	0.21	1,193.3	-230.0	270.3	227.1	43.22	6.255	
6,500.0	6,362.2	6,524.8	6,362.6	20.1	24.0	0.80	1,193.3	-227.2	270.4	227.1	43.28	6.247	
6,600.0	6,462.0	6,622.5	6,459.0	20.2	24.0	-86.85	1,193.5	-212.1	270.9	246.1	24.82	10.913	
6,700.0	6,560.3	6,718.7	6,551.1	20.2	24.0	-84.51	1,193.8	-184.5	272.1	246.7	25.36	10.728	
6,800.0	6,655.1	6,813.6	6,637.5	20.2	24.0	-82.32	1,194.2	-145.4	273.7	248.1	25.64	10.676	
6,900.0	6,744.7	6,907.3	6,717.0	20.2	24.0	-80.30	1,194.8	-96.0	275.8	250.1	25.68	10.741	
7,000.0	6,827.2	7,000.0	6,788.6	20.3	24.1	-78.50	1,195.5	-37.3	278.1	252.5	25.58	10.871	
7,100.0	6,901.1	7,091.8	6,851.5	20.4	24.2	-76.94	1,196.2	29.5	280.6	255.0	25.57	10.972	
7,200.0	6,964.9	7,182.8	6,904.9	20.5	24.4	-75.63	1,197.0	103.1	283.0	257.1	25.90	10.925	
7,300.0	7,017.3	7,273.2	6,948.4	20.8	24.7	-74.59	1,197.9	182.3	285.2	258.4	26.88	10.613	
7,400.0	7,057.5	7,363.2	6,981.3	21.3	25.1	-73.83	1,198.8	265.9	287.3	258.6	28.71	10.008	
7,500.0	7,084.4	7,452.8	7,003.5	22.1	25.7	-73.35	1,199.8	352.7	289.0	257.6	31.44	9.193	
7,600.0	7,097.8	7,542.3	7,014.6	23.1	26.4	-73.15	1,200.8	441.5	290.3	255.4	34.96	8.304	
7,700.0	7,100.3	7,638.5	7,017.0	24.3	27.3	-73.19	1,201.9	537.6	291.4	252.7	38.67	7.535	
7,800.0	7,102.1	7,738.5	7,018.8	25.8	28.5	-73.26	1,203.0	637.6	292.5	250.0	42.45	6.890	
7,900.0	7,103.8	7,838.5	7,020.5	27.4	29.9	-73.32	1,204.1	737.6	293.5	247.1	46.40	6.326	
8,000.0	7,105.5	7,938.5	7,022.3	29.2	31.5	-73.38	1,205.2	837.5	294.6	244.1	50.50	5.834	
8,100.0	7,107.3	8,038.5	7,024.0	31.1	33.2	-73.45	1,206.4	937.5	295.7	241.0	54.70	5.405	
8,200.0	7,109.0	8,138.5	7,025.8	33.1	35.0	-73.51	1,207.5	1,037.5	296.8	237.8	59.00	5.030	
8,300.0	7,110.8	8,238.5	7,027.5	35.2	36.9	-73.57	1,208.6	1,137.5	297.8	234.5	63.36	4.701	
8,400.0	7,112.5	8,338.5	7,029.2	37.3	38.9	-73.63	1,209.7	1,237.4	298.9	231.1	67.78	4.410	
8,500.0	7,114.3	8,438.5	7,031.0	39.5	41.0	-73.69	1,210.8	1,337.4	300.0	227.7	72.24	4.153	
8,600.0	7,116.0	8,538.5	7,032.7	41.7	43.1	-73.75	1,212.0	1,437.4	301.1	224.3	76.75	3.923	
8,700.0	7,117.8	8,638.5	7,034.5	44.0	45.3	-73.81	1,213.1	1,537.4	302.1	220.9	81.28	3.717	
8,800.0	7,119.5	8,738.4	7,036.2	46.2	47.5	-73.87	1,214.2	1,637.3	303.2	217.4	85.85	3.532	
8,900.0	7,121.3	8,838.4	7,038.0	48.5	49.7	-73.93	1,215.3	1,737.3	304.3	213.9	90.44	3.365	
9,000.0	7,123.0	8,938.4	7,039.7	50.8	51.9	-73.99	1,216.4	1,837.3	305.4	210.3	95.05	3.213	
9,100.0	7,124.7	9,038.4	7,041.5	53.2	54.2	-74.04	1,217.5	1,937.2	306.5	206.8	99.68	3.075	
9,200.0	7,126.5	9,138.4	7,043.2	55.5	56.5	-74.10	1,218.7	2,037.2	307.5	203.2	104.32	2.948	
9,300.0	7,128.2	9,238.4	7,044.9	57.9	58.8	-74.16	1,219.8	2,137.2	308.6	199.6	108.98	2.832	
9,400.0	7,130.0	9,338.4	7,046.7	60.2	61.1	-74.22	1,220.9	2,237.2	309.7	196.0	113.66	2.725	
9,500.0	7,131.7	9,438.4	7,048.4	62.6	63.5	-74.27	1,222.0	2,337.1	310.8	192.4	118.34	2.626	
9,600.0	7,133.5	9,538.4	7,050.2	65.0	65.8	-74.33	1,223.1	2,437.1	311.9	188.8	123.04	2.535	
9,700.0	7,135.2	9,638.4	7,051.9	67.3	68.2	-74.38	1,224.3	2,537.1	312.9	185.2	127.74	2.450	
9,800.0	7,137.0	9,738.4	7,053.7	69.7	70.5	-74.44	1,225.4	2,637.0	314.0	181.6	132.46	2.371	
9,900.0	7,138.7	9,838.4	7,055.4	72.1	72.9	-74.49	1,226.5	2,737.0	315.1	177.9	137.18	2.297	

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 Billings 2B-18H
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	WELL @ 5210.0ft (Original Well Elev)
<b>Reference Site:</b>	S18-T3N-R68W (Billings)	<b>MD Reference:</b>	WELL @ 5210.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Billings 2B-18H	<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>	HZ	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #1	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S18-T3N-R68W (Billings) - Billings 2A-18H - Hz - Plan #1													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance				Total		Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Uncertainty Axis	Separation Factor		
10,000.0	7,140.5	9,938.4	7,057.2	74.5	75.3	-74.55	1,227.6	2,837.0	316.2	174.3	141.91	2.228		
10,100.0	7,142.2	10,038.4	7,058.9	76.9	77.7	-74.60	1,228.7	2,937.0	317.3	170.6	146.64	2.164		
10,200.0	7,143.9	10,138.4	7,060.7	79.4	80.1	-74.66	1,229.9	3,036.9	318.4	167.0	151.39	2.103		
10,300.0	7,145.7	10,238.4	7,062.4	81.8	82.5	-74.71	1,231.0	3,136.9	319.4	163.3	156.13	2.046		
10,400.0	7,147.4	10,338.3	7,064.1	84.2	84.9	-74.76	1,232.1	3,236.9	320.5	159.6	160.89	1.992		
10,500.0	7,149.2	10,438.3	7,065.9	86.6	87.3	-74.81	1,233.2	3,336.9	321.6	156.0	165.65	1.942		
10,600.0	7,150.9	10,538.3	7,067.6	89.0	89.7	-74.87	1,234.3	3,436.8	322.7	152.3	170.41	1.894		
10,700.0	7,152.7	10,638.3	7,069.4	91.5	92.1	-74.92	1,235.5	3,536.8	323.8	148.6	175.18	1.848		
10,800.0	7,154.4	10,738.3	7,071.1	93.9	94.5	-74.97	1,236.6	3,636.8	324.9	144.9	179.96	1.805		
10,900.0	7,156.2	10,838.3	7,072.9	96.3	96.9	-75.02	1,237.7	3,736.7	325.9	141.2	184.74	1.764		
11,000.0	7,157.9	10,938.3	7,074.6	98.8	99.4	-75.07	1,238.8	3,836.7	327.0	137.5	189.52	1.726		
11,100.0	7,159.6	11,038.3	7,076.4	101.2	101.8	-75.12	1,239.9	3,936.7	328.1	133.8	194.30	1.689		
11,200.0	7,161.4	11,138.3	7,078.1	103.6	104.2	-75.17	1,241.0	4,036.7	329.2	130.1	199.09	1.654		
11,300.0	7,163.1	11,238.3	7,079.9	106.1	106.6	-75.22	1,242.2	4,136.6	330.3	126.4	203.89	1.620		
11,400.0	7,164.9	11,338.3	7,081.6	108.5	109.1	-75.27	1,243.3	4,236.6	331.4	122.7	208.68	1.588		
11,500.0	7,166.6	11,438.3	7,083.3	111.0	111.5	-75.32	1,244.4	4,336.6	332.5	119.0	213.48	1.557		
11,600.0	7,168.4	11,538.3	7,085.1	113.4	113.9	-75.37	1,245.5	4,436.5	333.5	115.3	218.29	1.528		
11,700.0	7,170.1	11,638.3	7,086.8	115.8	116.4	-75.42	1,246.6	4,536.5	334.6	111.5	223.09	1.500 Level 3		
11,800.0	7,171.9	11,738.3	7,088.6	118.3	118.8	-75.47	1,247.8	4,636.5	335.7	107.8	227.90	1.473 Level 3		
11,900.0	7,173.6	11,838.3	7,090.3	120.7	121.3	-75.52	1,248.9	4,736.5	336.8	104.1	232.71	1.447 Level 3		
12,000.0	7,175.4	11,938.2	7,092.1	123.2	123.7	-75.56	1,250.0	4,836.4	337.9	100.4	237.53	1.423 Level 3		
12,100.0	7,177.1	12,038.2	7,093.8	125.6	126.1	-75.61	1,251.1	4,936.4	339.0	96.6	242.34	1.399 Level 3		
12,200.0	7,178.8	12,138.2	7,095.6	128.1	128.6	-75.66	1,252.2	5,036.4	340.1	92.9	247.16	1.376 Level 3		
12,300.0	7,180.6	12,238.2	7,097.3	130.5	131.0	-75.70	1,253.4	5,136.4	341.2	89.2	251.99	1.354 Level 3		
12,400.0	7,182.3	12,338.2	7,099.0	133.0	133.5	-75.75	1,254.5	5,236.3	342.2	85.4	256.81	1.333 Level 3		
12,500.0	7,184.1	12,438.2	7,100.8	135.4	135.9	-75.80	1,255.6	5,336.3	343.3	81.7	261.64	1.312 Level 3		
12,600.0	7,185.8	12,538.2	7,102.5	137.9	138.4	-75.84	1,256.7	5,436.3	344.4	78.0	266.47	1.293 Level 3		
12,700.0	7,187.6	12,638.2	7,104.3	140.4	140.8	-75.89	1,257.8	5,536.2	345.5	74.2	271.30	1.274 Level 3		
12,800.0	7,189.3	12,738.2	7,106.0	142.8	143.3	-75.93	1,258.9	5,636.2	346.6	70.5	276.13	1.255 Level 3		
12,900.0	7,191.1	12,838.2	7,107.8	145.3	145.7	-75.98	1,260.1	5,736.2	347.7	66.7	280.97	1.238 Level 2		
13,000.0	7,192.8	12,938.2	7,109.5	147.7	148.2	-76.02	1,261.2	5,836.2	348.8	63.0	285.80	1.220 Level 2		
13,100.0	7,194.6	13,038.2	7,111.3	150.2	150.6	-76.07	1,262.3	5,936.1	349.9	59.2	290.64	1.204 Level 2		
13,200.0	7,196.3	13,138.2	7,113.0	152.6	153.1	-76.11	1,263.4	6,036.1	351.0	55.5	295.48	1.188 Level 2		
13,300.0	7,198.0	13,238.2	7,114.8	155.1	155.5	-76.16	1,264.5	6,136.1	352.1	51.7	300.33	1.172 Level 2		
13,400.0	7,199.8	13,338.2	7,116.5	157.6	158.0	-76.20	1,265.7	6,236.0	353.1	48.0	305.17	1.157 Level 2		
13,500.0	7,201.5	13,438.2	7,118.2	160.0	160.4	-76.24	1,266.8	6,336.0	354.2	44.2	310.02	1.143 Level 2		
13,600.0	7,203.3	13,538.1	7,120.0	162.5	162.9	-76.29	1,267.9	6,436.0	355.3	40.5	314.86	1.129 Level 2		
13,700.0	7,205.0	13,638.1	7,121.7	164.9	165.3	-76.33	1,269.0	6,536.0	356.4	36.7	319.71	1.115 Level 2		
13,800.0	7,206.8	13,738.1	7,123.5	167.4	167.8	-76.37	1,270.1	6,635.9	357.5	32.9	324.57	1.102 Level 2		
13,900.0	7,208.5	13,838.1	7,125.2	169.9	170.3	-76.41	1,271.3	6,735.9	358.6	29.2	329.42	1.089 Level 2		
14,000.0	7,210.3	13,938.1	7,127.0	172.3	172.7	-76.46	1,272.4	6,835.9	359.7	25.4	334.27	1.076 Level 2		
14,100.0	7,212.0	14,038.1	7,128.7	174.8	175.2	-76.50	1,273.5	6,935.9	360.8	21.7	339.13	1.064 Level 2		
14,200.0	7,213.8	14,138.1	7,130.5	177.2	177.6	-76.54	1,274.6	7,035.8	361.9	17.9	343.99	1.052 Level 2		
14,300.0	7,215.5	14,238.1	7,132.2	179.7	180.1	-76.58	1,275.7	7,135.8	363.0	14.1	348.85	1.040 Level 2		
14,328.8	7,216.0	14,266.5	7,132.7	180.4	180.8	-76.59	1,276.0	7,164.2	363.3	13.0	350.24	1.037 Level 2, 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 Billings 2B-18H
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	WELL @ 5210.0ft (Original Well Elev)
<b>Reference Site:</b>	S18-T3N-R68W (Billings)	<b>MD Reference:</b>	WELL @ 5210.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Billings 2B-18H	<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>	HZ	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #1	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S18-T3N-R68W (Billings) - Billings 2C-18H - HZ - Plan #1													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance					Total 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	-180.00	-10.9	0.0	10.9					
100.0	100.0	100.0	100.0	0.2	0.2	-180.00	-10.9	0.0	10.9	10.6	0.30	35.973		
200.0	200.0	200.0	200.0	0.3	0.3	-180.00	-10.9	0.0	10.9	10.3	0.65	16.736		
300.0	300.0	300.0	300.0	0.5	0.5	-180.00	-10.9	0.0	10.9	9.9	1.00	10.905 CC, ES		
400.0	400.0	400.0	400.0	0.7	0.7	-166.98	-10.9	0.0	11.8	10.4	1.35	8.716		
500.0	500.0	500.2	500.2	0.9	0.9	-168.17	-10.1	-0.3	13.5	11.8	1.70	7.946		
600.0	599.9	600.4	600.4	1.0	1.0	-168.24	-7.7	-1.3	15.3	13.3	2.05	7.468		
700.0	699.7	700.7	700.5	1.2	1.2	-167.54	-3.6	-2.9	17.2	14.8	2.40	7.150		
800.0	799.4	800.9	800.6	1.4	1.4	-166.30	2.1	-5.2	19.1	16.3	2.75	6.931		
900.0	898.9	901.2	900.6	1.7	1.6	-164.68	9.4	-8.1	21.1	18.0	3.11	6.776		
1,000.0	998.3	1,001.6	1,000.5	1.9	1.8	-162.79	18.4	-11.7	23.2	19.7	3.48	6.662		
1,100.0	1,097.4	1,101.9	1,100.2	2.2	2.1	-160.73	29.0	-15.9	25.4	21.5	3.86	6.573		
1,200.0	1,196.3	1,202.3	1,199.7	2.5	2.4	-158.55	41.2	-20.7	27.7	23.4	4.26	6.498		
1,300.0	1,294.9	1,302.7	1,299.0	2.8	2.6	-156.31	55.0	-26.2	30.1	25.5	4.69	6.427		
1,400.0	1,393.3	1,403.1	1,398.0	3.1	3.0	-154.05	70.5	-32.4	32.7	27.6	5.15	6.352		
1,500.0	1,491.2	1,503.6	1,496.8	3.5	3.3	-151.79	87.5	-39.2	35.5	29.8	5.66	6.270		
1,600.0	1,588.9	1,604.0	1,595.1	3.9	3.7	-149.60	106.1	-46.6	38.4	32.2	6.22	6.183		
1,700.0	1,686.1	1,703.9	1,692.9	4.3	4.0	-148.44	125.2	-54.2	42.4	35.7	6.77	6.263		
1,800.0	1,782.9	1,803.7	1,790.6	4.8	4.4	-148.60	144.3	-61.8	47.9	40.6	7.30	6.566		
1,900.0	1,879.3	1,903.5	1,888.2	5.3	4.8	-149.65	163.4	-69.4	54.9	47.1	7.78	7.059		
2,000.0	1,975.2	2,003.1	1,985.7	5.8	5.2	-151.23	182.5	-77.0	63.4	55.2	8.21	7.721		
2,100.0	2,070.5	2,102.5	2,083.0	6.3	5.5	-153.06	201.5	-84.6	73.5	64.9	8.61	8.536		
2,200.0	2,165.4	2,201.8	2,180.2	6.9	5.9	-154.93	220.5	-92.1	85.3	76.3	8.98	9.490		
2,300.0	2,259.6	2,300.9	2,277.1	7.5	6.3	-156.74	239.4	-99.7	98.6	89.3	9.33	10.572		
2,400.0	2,353.5	2,399.8	2,373.9	8.1	6.7	-158.39	258.3	-107.2	113.3	103.6	9.68	11.702		
2,500.0	2,447.3	2,498.6	2,470.6	8.7	7.1	-159.67	277.2	-114.7	128.0	117.9	10.04	12.745		
2,600.0	2,541.1	2,597.5	2,567.4	9.3	7.5	-160.69	296.1	-122.2	142.8	132.3	10.42	13.707		
2,700.0	2,635.0	2,696.4	2,664.2	9.9	7.9	-161.52	315.0	-129.8	157.6	146.8	10.80	14.595		
2,800.0	2,728.8	2,795.3	2,760.9	10.6	8.3	-162.20	333.9	-137.3	172.4	161.2	11.18	15.418		
2,900.0	2,822.6	2,894.1	2,857.7	11.2	8.6	-162.78	352.8	-144.8	187.3	175.7	11.57	16.182		
3,000.0	2,916.4	2,993.0	2,954.4	11.8	9.0	-163.27	371.7	-152.3	202.2	190.2	11.97	16.893		
3,100.0	3,010.3	3,091.9	3,051.2	12.4	9.4	-163.70	390.6	-159.9	217.0	204.7	12.36	17.556		
3,200.0	3,104.1	3,190.7	3,147.9	13.0	9.8	-164.07	409.6	-167.4	231.9	219.2	12.76	18.176		
3,300.0	3,197.9	3,289.6	3,244.7	13.7	10.2	-164.39	428.5	-174.9	246.8	233.7	13.16	18.756		
3,400.0	3,291.7	3,388.5	3,341.5	14.3	10.6	-164.68	447.4	-182.5	261.8	248.2	13.56	19.301		
3,500.0	3,385.6	3,487.4	3,438.2	14.9	11.0	-164.94	466.3	-190.0	276.7	262.7	13.96	19.813		
3,600.0	3,479.6	3,586.3	3,535.1	15.5	11.4	-165.18	485.2	-197.5	291.0	276.6	14.39	20.224		
3,700.0	3,574.7	3,685.7	3,632.3	16.1	11.8	-165.26	504.2	-205.1	302.3	287.4	14.85	20.360		
3,800.0	3,670.8	3,782.0	3,726.5	16.5	12.2	-165.19	522.4	-212.3	310.4	295.1	15.31	20.271		
3,900.0	3,767.8	3,872.5	3,815.6	17.0	12.4	-165.13	537.4	-218.3	317.5	301.7	15.73	20.180		
4,000.0	3,865.6	3,962.9	3,905.1	17.3	12.7	-165.12	549.8	-223.2	324.1	308.0	16.12	20.112		
4,100.0	3,964.0	4,053.2	3,994.7	17.7	12.9	-165.15	559.6	-227.1	330.3	313.8	16.46	20.066		
4,200.0	4,063.0	4,143.4	4,084.5	17.9	13.1	-165.24	566.7	-230.0	336.0	319.3	16.77	20.039		
4,300.0	4,162.5	4,233.4	4,174.4	18.1	13.2	-165.36	571.2	-231.7	341.3	324.2	17.04	20.028		
4,400.0	4,262.2	4,323.3	4,264.3	18.3	13.3	-165.53	573.0	-232.5	346.1	328.8	17.28	20.029		
4,500.0	4,362.2	4,421.1	4,362.2	18.4	13.4	-165.68	573.1	-232.5	349.5	332.0	17.51	19.956		
4,600.0	4,462.2	4,521.1	4,462.2	18.5	13.5	-179.75	573.1	-232.5	349.9	319.0	30.90	11.323		
4,700.0	4,562.2	4,621.1	4,562.2	18.6	13.6	-179.75	573.1	-232.5	349.9	318.8	31.09	11.255		
4,800.0	4,662.2	4,721.1	4,662.2	18.6	13.7	-179.75	573.1	-232.5	349.9	318.6	31.28	11.188		
4,900.0	4,762.2	4,821.1	4,762.2	18.7	13.8	-179.75	573.1	-232.5	349.9	318.5	31.47	11.120		
5,000.0	4,862.2	4,921.1	4,862.2	18.8	13.9	-179.75	573.1	-232.5	349.9	318.3	31.66	11.052		
5,100.0	4,962.2	5,021.1	4,962.2	18.9	14.1	-179.75	573.1	-232.5	349.9	318.1	31.86	10.984		

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 Billings 2B-18H
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	WELL @ 5210.0ft (Original Well Elev)
<b>Reference Site:</b>	S18-T3N-R68W (Billings)	<b>MD Reference:</b>	WELL @ 5210.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Billings 2B-18H	<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>	HZ	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #1	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S18-T3N-R68W (Billings) - Billings 2C-18H - HZ - Plan #1													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor		
5,200.0	5,062.2	5,121.1	5,062.2	19.0	14.2	-179.75	573.1	-232.5	349.9	317.9	32.06	10.915		
5,300.0	5,162.2	5,221.1	5,162.2	19.0	14.3	-179.75	573.1	-232.5	349.9	317.7	32.26	10.847		
5,400.0	5,262.2	5,321.1	5,262.2	19.1	14.4	-179.75	573.1	-232.5	349.9	317.5	32.46	10.779		
5,500.0	5,362.2	5,421.1	5,362.2	19.2	14.5	-179.75	573.1	-232.5	349.9	317.3	32.67	10.711		
5,600.0	5,462.2	5,521.1	5,462.2	19.3	14.6	-179.75	573.1	-232.5	349.9	317.0	32.88	10.643		
5,700.0	5,562.2	5,621.1	5,562.2	19.4	14.7	-179.75	573.1	-232.5	349.9	316.8	33.09	10.575		
5,800.0	5,662.2	5,721.1	5,662.2	19.5	14.8	-179.75	573.1	-232.5	349.9	316.6	33.30	10.507		
5,900.0	5,762.2	5,821.1	5,762.2	19.6	15.0	-179.75	573.1	-232.5	349.9	316.4	33.52	10.440		
6,000.0	5,862.2	5,921.1	5,862.2	19.7	15.1	-179.75	573.1	-232.5	349.9	316.2	33.74	10.372		
6,100.0	5,962.2	6,021.1	5,962.2	19.8	15.2	-179.75	573.1	-232.5	349.9	316.0	33.96	10.305		
6,200.0	6,062.2	6,121.1	6,062.2	19.9	15.3	-179.75	573.1	-232.5	349.9	315.7	34.18	10.238		
6,300.0	6,162.2	6,221.1	6,162.2	19.9	15.4	-179.75	573.1	-232.5	349.9	315.5	34.40	10.172		
6,371.9	6,234.0	6,293.0	6,234.0	20.0	15.5	-179.91	573.1	-231.5	349.9	315.3	34.58	10.119		
6,400.0	6,262.2	6,321.1	6,262.0	20.0	15.5	179.76	573.1	-229.5	349.9	315.2	34.68	10.090		
6,500.0	6,362.2	6,418.6	6,358.2	20.1	15.6	177.24	573.1	-214.1	350.4	315.2	35.14	9.971		
6,600.0	6,462.0	6,511.7	6,447.3	20.2	15.6	83.36	573.1	-187.3	352.4	329.3	23.09	15.265		
6,700.0	6,560.3	6,600.0	6,527.9	20.2	15.6	79.71	573.1	-151.4	356.1	333.0	23.05	15.450		
6,800.0	6,655.1	6,690.0	6,605.0	20.2	15.6	76.19	573.1	-104.9	360.8	337.5	23.29	15.496		
6,900.0	6,744.7	6,776.1	6,672.6	20.2	15.6	73.07	573.1	-51.8	366.4	342.6	23.80	15.395		
7,000.0	6,827.2	6,860.4	6,732.2	20.3	15.7	70.32	573.1	7.8	372.3	347.8	24.50	15.196		
7,100.0	6,901.1	6,943.4	6,783.6	20.4	16.0	67.95	573.1	72.9	378.2	352.8	25.39	14.894		
7,200.0	6,964.9	7,025.3	6,826.7	20.5	16.3	65.98	573.1	142.4	383.6	357.2	26.43	14.513		
7,300.0	7,017.3	7,106.2	6,861.1	20.8	16.8	64.40	573.1	215.6	388.4	360.7	27.62	14.059		
7,400.0	7,057.5	7,186.5	6,886.9	21.3	17.6	63.23	573.1	291.6	392.1	363.1	29.01	13.518		
7,500.0	7,084.4	7,266.2	6,904.0	22.1	18.5	62.44	573.1	369.4	394.8	364.2	30.61	12.896		
7,600.0	7,097.8	7,350.0	6,912.5	23.1	19.8	62.04	573.1	452.7	396.2	363.6	32.53	12.180		
7,615.0	7,098.7	7,357.6	6,912.8	23.2	19.9	62.01	573.1	460.4	396.3	363.4	32.86	12.061		
7,700.0	7,100.3	7,439.8	6,914.3	24.3	21.3	62.00	573.1	542.5	396.3	360.8	35.43	11.185		
7,800.0	7,102.1	7,539.8	6,916.1	25.8	23.1	62.00	573.1	642.5	396.3	357.3	38.99	10.163		
7,900.0	7,103.8	7,639.8	6,917.8	27.4	25.1	62.00	573.1	742.5	396.3	353.6	42.71	9.278		
8,000.0	7,105.5	7,739.8	6,919.6	29.2	27.1	62.00	573.1	842.5	396.3	349.7	46.54	8.515		
8,100.0	7,107.3	7,839.8	6,921.3	31.1	29.2	62.00	573.1	942.5	396.3	345.8	50.46	7.853		
8,200.0	7,109.0	7,939.8	6,923.0	33.1	31.4	62.00	573.1	1,042.4	396.3	341.8	54.45	7.278		
8,300.0	7,110.8	8,039.8	6,924.8	35.2	33.6	62.00	573.1	1,142.4	396.3	337.8	58.49	6.775		
8,400.0	7,112.5	8,139.8	6,926.5	37.3	35.9	62.00	573.1	1,242.4	396.3	333.7	62.58	6.332		
8,500.0	7,114.3	8,239.8	6,928.3	39.5	38.2	62.00	573.1	1,342.4	396.3	329.6	66.70	5.941		
8,600.0	7,116.0	8,339.8	6,930.0	41.7	40.5	62.00	573.1	1,442.4	396.3	325.4	70.86	5.592		
8,700.0	7,117.8	8,439.8	6,931.8	44.0	42.8	62.00	573.1	1,542.4	396.3	321.2	75.03	5.281		
8,800.0	7,119.5	8,539.8	6,933.5	46.2	45.1	62.00	573.1	1,642.4	396.3	317.0	79.23	5.001		
8,900.0	7,121.3	8,639.8	6,935.3	48.5	47.5	62.00	573.0	1,742.3	396.2	312.8	83.45	4.748		
9,000.0	7,123.0	8,739.8	6,937.0	50.8	49.9	62.00	573.0	1,842.3	396.2	308.6	87.68	4.519		
9,100.0	7,124.7	8,839.8	6,938.8	53.2	52.2	62.00	573.0	1,942.3	396.2	304.3	91.93	4.310		
9,200.0	7,126.5	8,939.8	6,940.5	55.5	54.6	62.00	573.0	2,042.3	396.2	300.1	96.18	4.120		
9,300.0	7,128.2	9,039.8	6,942.2	57.9	57.0	62.00	573.0	2,142.3	396.2	295.8	100.45	3.945		
9,400.0	7,130.0	9,139.8	6,944.0	60.2	59.4	62.00	573.0	2,242.3	396.2	291.5	104.73	3.784		
9,500.0	7,131.7	9,239.8	6,945.7	62.6	61.8	62.00	573.0	2,342.2	396.2	287.2	109.01	3.635		
9,600.0	7,133.5	9,339.8	6,947.5	65.0	64.2	62.00	573.0	2,442.2	396.2	282.9	113.30	3.497		
9,700.0	7,135.2	9,439.8	6,949.2	67.3	66.7	62.00	573.0	2,542.2	396.2	278.6	117.60	3.369		
9,800.0	7,137.0	9,539.8	6,951.0	69.7	69.1	62.00	573.0	2,642.2	396.2	274.3	121.90	3.250		
9,900.0	7,138.7	9,639.8	6,952.7	72.1	71.5	62.00	573.0	2,742.2	396.2	270.0	126.20	3.140		
10,000.0	7,140.5	9,739.8	6,954.5	74.5	73.9	62.00	573.0	2,842.2	396.2	265.7	130.51	3.036		
10,100.0	7,142.2	9,839.8	6,956.2	76.9	76.4	62.00	573.0	2,942.2	396.2	261.4	134.83	2.939		

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 Billings 2B-18H
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	WELL @ 5210.0ft (Original Well Elev)
<b>Reference Site:</b>	S18-T3N-R68W (Billings)	<b>MD Reference:</b>	WELL @ 5210.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Billings 2B-18H	<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>	HZ	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #1	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S18-T3N-R68W (Billings) - Billings 2C-18H - HZ - Plan #1													Offset Site Error: 0.0 ft	
Survey Program: 0-MWD													Offset Well Error: 0.0 ft	
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor		
10,200.0	7,143.9	9,939.8	6,957.9	79.4	78.8	62.00	573.0	3,042.1	396.2	257.1	139.15	2.847		
10,300.0	7,145.7	10,039.8	6,959.7	81.8	81.2	62.00	573.0	3,142.1	396.2	252.7	143.47	2.762		
10,400.0	7,147.4	10,139.8	6,961.4	84.2	83.7	62.00	573.0	3,242.1	396.2	248.4	147.79	2.681		
10,500.0	7,149.2	10,239.8	6,963.2	86.6	86.1	62.00	573.0	3,342.1	396.2	244.1	152.12	2.605		
10,600.0	7,150.9	10,339.8	6,964.9	89.0	88.5	62.00	573.0	3,442.1	396.2	239.8	156.45	2.532		
10,700.0	7,152.7	10,439.8	6,966.7	91.5	91.0	62.00	573.0	3,542.1	396.2	235.4	160.78	2.464		
10,800.0	7,154.4	10,539.8	6,968.4	93.9	93.4	62.00	573.0	3,642.1	396.2	231.1	165.11	2.400		
10,900.0	7,156.2	10,639.8	6,970.2	96.3	95.9	62.00	573.0	3,742.0	396.2	226.7	169.45	2.338		
11,000.0	7,157.9	10,739.8	6,971.9	98.8	98.3	62.00	573.0	3,842.0	396.2	222.4	173.79	2.280		
11,100.0	7,159.6	10,839.8	6,973.7	101.2	100.8	62.00	573.0	3,942.0	396.2	218.1	178.13	2.224		
11,200.0	7,161.4	10,939.8	6,975.4	103.6	103.2	62.00	573.0	4,042.0	396.2	213.7	182.47	2.171		
11,300.0	7,163.1	11,039.8	6,977.1	106.1	105.7	62.00	573.0	4,142.0	396.2	209.4	186.81	2.121		
11,400.0	7,164.9	11,139.8	6,978.9	108.5	108.1	62.00	573.0	4,242.0	396.2	205.0	191.15	2.073		
11,500.0	7,166.6	11,239.8	6,980.6	111.0	110.6	62.00	573.0	4,341.9	396.2	200.7	195.50	2.027		
11,600.0	7,168.4	11,339.8	6,982.4	113.4	113.0	62.00	573.0	4,441.9	396.2	196.3	199.85	1.982		
11,700.0	7,170.1	11,439.8	6,984.1	115.8	115.5	62.00	573.0	4,541.9	396.2	192.0	204.19	1.940		
11,800.0	7,171.9	11,539.8	6,985.9	118.3	117.9	62.00	573.0	4,641.9	396.2	187.6	208.54	1.900		
11,900.0	7,173.6	11,639.8	6,987.6	120.7	120.4	61.99	573.0	4,741.9	396.2	183.3	212.89	1.861		
12,000.0	7,175.4	11,739.8	6,989.4	123.2	122.8	61.99	573.0	4,841.9	396.2	178.9	217.24	1.824		
12,100.0	7,177.1	11,839.8	6,991.1	125.6	125.3	61.99	573.0	4,941.9	396.2	174.6	221.59	1.788		
12,200.0	7,178.8	11,939.8	6,992.9	128.1	127.8	61.99	573.0	5,041.8	396.2	170.2	225.94	1.753		
12,300.0	7,180.6	12,039.8	6,994.6	130.5	130.2	61.99	573.0	5,141.8	396.2	165.9	230.29	1.720		
12,400.0	7,182.3	12,139.8	6,996.3	133.0	132.7	61.99	573.0	5,241.8	396.2	161.5	234.65	1.688		
12,500.0	7,184.1	12,239.8	6,998.1	135.4	135.1	61.99	573.0	5,341.8	396.2	157.2	239.00	1.658		
12,600.0	7,185.8	12,339.8	6,999.8	137.9	137.6	61.99	573.0	5,441.8	396.2	152.8	243.36	1.628		
12,700.0	7,187.6	12,439.8	7,001.6	140.4	140.1	61.99	573.0	5,541.8	396.2	148.4	247.71	1.599		
12,800.0	7,189.3	12,539.8	7,003.3	142.8	142.5	61.99	573.0	5,641.7	396.1	144.1	252.07	1.572		
12,900.0	7,191.1	12,639.8	7,005.1	145.3	145.0	61.99	573.0	5,741.7	396.1	139.7	256.42	1.545		
13,000.0	7,192.8	12,739.8	7,006.8	147.7	147.4	61.99	573.0	5,841.7	396.1	135.4	260.78	1.519		
13,100.0	7,194.6	12,839.8	7,008.6	150.2	149.9	61.99	573.0	5,941.7	396.1	131.0	265.14	1.494 Level 3		
13,200.0	7,196.3	12,939.8	7,010.3	152.6	152.4	61.99	573.0	6,041.7	396.1	126.6	269.49	1.470 Level 3		
13,300.0	7,198.0	13,039.8	7,012.1	155.1	154.8	61.99	573.0	6,141.7	396.1	122.3	273.85	1.447 Level 3		
13,400.0	7,199.8	13,139.8	7,013.8	157.6	157.3	61.99	573.0	6,241.7	396.1	117.9	278.21	1.424 Level 3		
13,500.0	7,201.5	13,239.8	7,015.5	160.0	159.8	61.99	573.0	6,341.6	396.1	113.6	282.57	1.402 Level 3		
13,600.0	7,203.3	13,339.8	7,017.3	162.5	162.2	61.99	573.0	6,441.6	396.1	109.2	286.93	1.381 Level 3		
13,700.0	7,205.0	13,439.8	7,019.0	164.9	164.7	61.99	573.0	6,541.6	396.1	104.8	291.29	1.360 Level 3		
13,800.0	7,206.8	13,539.8	7,020.8	167.4	167.2	61.99	573.0	6,641.6	396.1	100.5	295.65	1.340 Level 3		
13,900.0	7,208.5	13,639.8	7,022.5	169.9	169.6	61.99	573.0	6,741.6	396.1	96.1	300.01	1.320 Level 3		
14,000.0	7,210.3	13,739.8	7,024.3	172.3	172.1	61.99	573.0	6,841.6	396.1	91.8	304.37	1.301 Level 3		
14,100.0	7,212.0	13,839.8	7,026.0	174.8	174.6	61.99	573.0	6,941.5	396.1	87.4	308.73	1.283 Level 3		
14,200.0	7,213.8	13,939.8	7,027.8	177.2	177.0	61.99	573.0	7,041.5	396.1	83.0	313.09	1.265 Level 3		
14,300.0	7,215.5	14,039.8	7,029.5	179.7	179.5	61.99	573.0	7,141.5	396.1	78.7	317.45	1.248 Level 2		
14,328.8	7,216.0	14,068.6	7,030.0	180.4	180.2	61.99	573.0	7,170.3	396.1	77.4	318.71	1.243 Level 2, SF		

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Billings 2B-18H
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	WELL @ 5210.0ft (Original Well Elev)
<b>Reference Site:</b>	S18-T3N-R68W (Billings)	<b>MD Reference:</b>	WELL @ 5210.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Billings 2B-18H	<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>	HZ	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #1	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S18-T3N-R68W (Billings) - Billings 2D-18H - Hz - Plan #1													Offset Site Error: 0.0 ft	
Survey Program: 0-MWD													Offset Well Error: 0.0 ft	
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor		
0.0	0.0	0.0	0.0	0.0	0.0	180.00	-21.9	0.0	21.9					
100.0	100.0	100.0	100.0	0.2	0.2	180.00	-21.9	0.0	21.9	21.5	0.30	71.959		
200.0	200.0	200.0	200.0	0.3	0.3	180.00	-21.9	0.0	21.9	21.2	0.65	33.478		
300.0	300.0	300.3	300.3	0.5	0.5	-178.36	-21.2	-0.6	21.2	20.2	1.00	21.166		
400.0	400.0	400.5	400.5	0.7	0.7	-159.69	-19.3	-2.4	20.3	18.9	1.36	14.970		
474.8	474.8	475.5	475.3	0.8	0.8	-154.66	-17.1	-4.6	20.1	18.4	1.62	12.344 CC		
500.0	500.0	500.7	500.5	0.9	0.9	-152.70	-16.2	-5.5	20.1	18.4	1.72	11.705 ES		
600.0	599.9	600.8	600.5	1.0	1.1	-144.06	-11.7	-9.7	20.9	18.8	2.09	9.968		
700.0	699.7	700.8	700.2	1.2	1.3	-135.02	-6.0	-15.1	22.8	20.3	2.50	9.147		
800.0	799.4	800.8	799.7	1.4	1.5	-126.81	0.9	-21.8	26.1	23.2	2.93	8.894		
900.0	898.9	900.7	898.9	1.7	1.8	-120.05	9.1	-29.6	30.6	27.2	3.41	8.983		
1,000.0	998.3	1,000.5	997.8	1.9	2.0	-114.83	18.5	-38.6	36.4	32.4	3.93	9.260		
1,100.0	1,097.4	1,100.1	1,096.4	2.2	2.3	-110.90	29.1	-48.8	43.2	38.7	4.48	9.630		
1,200.0	1,196.3	1,199.6	1,194.6	2.5	2.7	-107.98	41.0	-60.1	51.0	45.9	5.08	10.035		
1,300.0	1,294.9	1,299.0	1,292.3	2.8	3.0	-105.80	54.1	-72.6	59.8	54.1	5.73	10.440		
1,400.0	1,393.3	1,398.2	1,389.5	3.1	3.4	-104.18	68.4	-86.3	69.6	63.1	6.42	10.828		
1,500.0	1,491.2	1,497.3	1,486.3	3.5	3.8	-102.95	83.8	-101.1	80.2	73.1	7.17	11.190		
1,600.0	1,588.9	1,596.2	1,582.4	3.9	4.2	-102.02	100.5	-117.0	91.8	83.8	7.96	11.521		
1,700.0	1,686.1	1,695.3	1,678.5	4.3	4.7	-101.55	118.1	-133.8	104.0	95.2	8.80	11.824		
1,800.0	1,782.9	1,794.5	1,774.7	4.8	5.1	-101.97	135.7	-150.6	116.7	107.0	9.67	12.067		
1,900.0	1,879.3	1,893.6	1,870.8	5.3	5.6	-103.03	153.3	-167.5	129.7	119.1	10.57	12.269		
2,000.0	1,975.2	1,993.4	1,967.7	5.8	6.0	-104.87	170.5	-183.9	143.0	131.6	11.48	12.457		
2,100.0	2,070.5	2,093.2	2,065.3	6.3	6.4	-108.17	185.4	-198.2	156.4	144.1	12.34	12.672		
2,200.0	2,165.4	2,192.1	2,162.7	6.9	6.7	-112.59	197.7	-209.9	170.5	157.4	13.11	13.005		
2,300.0	2,259.6	2,289.8	2,259.5	7.5	6.9	-117.77	207.5	-219.3	186.1	172.4	13.73	13.554		
2,400.0	2,353.5	2,386.0	2,355.1	8.1	7.2	-123.35	214.8	-226.3	204.1	189.9	14.18	14.397		
2,500.0	2,447.3	2,480.8	2,449.6	8.7	7.3	-128.81	219.7	-231.0	224.3	209.9	14.44	15.530		
2,600.0	2,541.1	2,573.9	2,542.7	9.3	7.5	-133.99	222.3	-233.5	247.1	232.6	14.56	16.975		
2,700.0	2,635.0	2,666.2	2,635.0	9.9	7.6	-138.85	222.8	-234.0	272.7	258.1	14.56	18.725		
2,800.0	2,728.8	2,760.0	2,728.8	10.6	7.7	-143.10	222.8	-234.0	300.2	285.7	14.54	20.651		
2,900.0	2,822.6	2,853.8	2,822.6	11.2	7.8	-146.66	222.8	-234.0	329.1	314.6	14.53	22.647		
3,000.0	2,916.4	2,947.7	2,916.4	11.8	7.9	-149.64	222.8	-234.0	359.0	344.5	14.55	24.668		
3,100.0	3,010.3	3,041.5	3,010.3	12.4	8.0	-152.18	222.8	-234.0	389.7	375.1	14.60	26.685		
3,200.0	3,104.1	3,135.3	3,104.1	13.0	8.1	-154.35	222.8	-234.0	421.0	406.3	14.68	28.674		
3,300.0	3,197.9	3,229.1	3,197.9	13.7	8.2	-156.23	222.8	-234.0	452.7	438.0	14.78	30.622		
3,400.0	3,291.7	3,323.0	3,291.7	14.3	8.3	-157.86	222.8	-234.0	484.9	470.0	14.91	32.519		
3,500.0	3,385.6	3,416.8	3,385.6	14.9	8.4	-159.30	222.8	-234.0	517.4	502.3	15.06	34.357		
3,600.0	3,479.6	3,510.8	3,479.6	15.5	8.5	-160.68	222.8	-234.0	549.5	534.3	15.23	36.072		
3,700.0	3,574.7	3,605.9	3,574.7	16.1	8.7	-161.88	222.8	-234.0	579.0	563.6	15.44	37.501		
3,800.0	3,670.8	3,702.0	3,670.8	16.5	8.8	-162.85	222.8	-234.0	605.5	589.8	15.67	38.646		
3,900.0	3,767.8	3,799.0	3,767.8	17.0	8.9	-163.64	222.8	-234.0	628.8	612.8	15.91	39.522		
4,000.0	3,865.6	3,896.8	3,865.6	17.3	9.0	-164.27	222.8	-234.0	648.8	632.7	16.16	40.145		
4,100.0	3,964.0	3,995.3	3,964.0	17.7	9.2	-164.77	222.8	-234.0	665.7	649.3	16.42	40.532		
4,200.0	4,063.0	4,094.3	4,063.0	17.9	9.3	-165.15	222.8	-234.0	679.2	662.5	16.69	40.697		
4,300.0	4,162.5	4,193.7	4,162.5	18.1	9.4	-165.42	222.8	-234.0	689.4	672.4	16.96	40.655		
4,400.0	4,262.2	4,293.4	4,262.2	18.3	9.6	-165.60	222.8	-234.0	696.2	679.0	17.23	40.418		
4,500.0	4,362.2	4,393.4	4,362.2	18.4	9.7	-165.69	222.8	-234.0	699.7	682.2	17.49	39.998		
4,600.0	4,462.2	4,493.4	4,462.2	18.5	9.8	-179.75	222.8	-234.0	700.2	673.2	26.93	25.997		
4,700.0	4,562.2	4,593.4	4,562.2	18.6	10.0	-179.75	222.8	-234.0	700.2	673.0	27.16	25.775		
4,800.0	4,662.2	4,693.4	4,662.2	18.6	10.1	-179.75	222.8	-234.0	700.2	672.8	27.40	25.555		
4,900.0	4,762.2	4,793.4	4,762.2	18.7	10.3	-179.75	222.8	-234.0	700.2	672.5	27.63	25.337		
5,000.0	4,862.2	4,893.4	4,862.2	18.8	10.4	-179.75	222.8	-234.0	700.2	672.3	27.87	25.121		

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 Billings 2B-18H
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	WELL @ 5210.0ft (Original Well Elev)
<b>Reference Site:</b>	S18-T3N-R68W (Billings)	<b>MD Reference:</b>	WELL @ 5210.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Billings 2B-18H	<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>	HZ	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #1	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S18-T3N-R68W (Billings) - Billings 2D-18H - Hz - Plan #1													Offset Site Error:	0.0 ft
Survey Program: O-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Total Uncertainty Axis	Separation Factor	Warning			
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)		Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)						
5,100.0	4,962.2	4,993.4	4,962.2	18.9	10.5	-179.75	222.8	-234.0	700.2	672.0	28.11	24.906		
5,200.0	5,062.2	5,093.4	5,062.2	19.0	10.7	-179.75	222.8	-234.0	700.2	671.8	28.35	24.694		
5,300.0	5,162.2	5,193.4	5,162.2	19.0	10.8	-179.75	222.8	-234.0	700.2	671.6	28.60	24.484		
5,400.0	5,262.2	5,293.4	5,262.2	19.1	11.0	-179.75	222.8	-234.0	700.2	671.3	28.84	24.276		
5,500.0	5,362.2	5,393.4	5,362.2	19.2	11.1	-179.75	222.8	-234.0	700.2	671.1	29.09	24.070		
5,600.0	5,462.2	5,493.4	5,462.2	19.3	11.3	-179.75	222.8	-234.0	700.2	670.8	29.34	23.866		
5,700.0	5,562.2	5,593.4	5,562.2	19.4	11.4	-179.75	222.8	-234.0	700.2	670.6	29.59	23.664		
5,800.0	5,662.2	5,693.4	5,662.2	19.5	11.6	-179.75	222.8	-234.0	700.2	670.3	29.84	23.464		
5,900.0	5,762.2	5,793.4	5,762.2	19.6	11.7	-179.75	222.8	-234.0	700.2	670.1	30.09	23.266		
6,000.0	5,862.2	5,893.4	5,862.2	19.7	11.9	-179.75	222.8	-234.0	700.2	669.8	30.35	23.071		
6,100.0	5,962.2	5,993.4	5,962.2	19.8	12.0	-179.75	222.8	-234.0	700.2	669.6	30.61	22.877		
6,200.0	6,062.2	6,093.4	6,062.2	19.9	12.2	-179.75	222.8	-234.0	700.2	669.3	30.86	22.686		
6,300.0	6,162.2	6,193.4	6,162.2	19.9	12.3	-179.75	222.8	-234.0	700.2	669.0	31.12	22.497		
6,400.0	6,262.2	6,293.4	6,262.2	20.0	12.5	-179.75	222.8	-234.0	700.2	668.8	31.38	22.309		
6,500.0	6,362.2	6,393.4	6,362.2	20.1	12.6	-179.75	222.8	-234.0	700.2	668.5	31.65	22.124		
6,600.0	6,462.0	6,493.7	6,462.4	20.2	12.8	90.36	222.8	-231.0	700.2	676.0	24.15	28.992		
6,700.0	6,560.3	6,594.4	6,561.7	20.2	12.8	90.51	222.8	-214.8	700.2	675.9	24.27	28.852		
6,800.0	6,655.1	6,695.4	6,658.1	20.2	12.8	90.65	222.8	-184.7	700.2	675.9	24.28	28.840		
6,900.0	6,744.7	6,796.7	6,749.4	20.2	12.8	90.78	222.9	-141.3	700.2	675.9	24.27	28.852		
7,000.0	6,827.2	6,898.1	6,833.9	20.3	12.8	90.89	222.9	-85.3	700.2	675.9	24.37	28.728		
7,100.0	6,901.1	6,999.7	6,909.7	20.4	12.9	90.98	222.9	-17.8	700.2	675.5	24.77	28.268		
7,200.0	6,964.9	7,101.5	6,975.4	20.5	13.3	91.06	222.9	59.9	700.2	674.6	25.66	27.292		
7,300.0	7,017.3	7,203.4	7,029.4	20.8	13.9	91.12	222.9	146.2	700.3	673.1	27.19	25.756		
7,400.0	7,057.5	7,305.4	7,070.7	21.3	15.0	91.15	222.9	239.4	700.2	670.8	29.43	23.793		
7,500.0	7,084.4	7,407.4	7,098.3	22.1	16.4	91.16	222.9	337.5	700.2	667.9	32.34	21.650		
7,600.0	7,097.8	7,509.4	7,111.8	23.1	18.1	91.15	222.9	438.5	700.2	664.4	35.79	19.562		
7,700.0	7,100.3	7,610.0	7,114.2	24.3	20.0	91.14	222.9	539.1	700.2	660.7	39.56	17.699		
7,800.0	7,102.1	7,710.0	7,116.0	25.8	21.9	91.14	222.9	639.1	700.2	656.7	43.55	16.079		
7,900.0	7,103.8	7,810.0	7,117.7	27.4	24.0	91.14	222.9	739.0	700.2	652.5	47.71	14.675		
8,000.0	7,105.5	7,910.0	7,119.4	29.2	26.1	91.14	222.9	839.0	700.2	648.2	52.02	13.461		
8,100.0	7,107.3	8,010.0	7,121.2	31.1	28.3	91.14	222.9	939.0	700.2	643.8	56.42	12.409		
8,200.0	7,109.0	8,110.0	7,122.9	33.1	30.6	91.14	222.9	1,039.0	700.2	639.3	60.91	11.494		
8,300.0	7,110.8	8,210.0	7,124.7	35.2	32.8	91.14	222.9	1,139.0	700.2	634.7	65.47	10.694		
8,400.0	7,112.5	8,310.0	7,126.4	37.3	35.1	91.14	222.9	1,239.0	700.1	630.1	70.08	9.991		
8,500.0	7,114.3	8,410.0	7,128.2	39.5	37.4	91.14	222.9	1,339.0	700.1	625.4	74.73	9.368		
8,600.0	7,116.0	8,510.0	7,129.9	41.7	39.8	91.14	222.9	1,438.9	700.1	620.7	79.42	8.815		
8,700.0	7,117.8	8,610.0	7,131.7	44.0	42.1	91.14	222.9	1,538.9	700.1	616.0	84.14	8.321		
8,800.0	7,119.5	8,710.0	7,133.4	46.2	44.5	91.14	223.0	1,638.9	700.1	611.2	88.88	7.877		
8,900.0	7,121.3	8,810.0	7,135.1	48.5	46.9	91.14	223.0	1,738.9	700.1	606.5	93.65	7.476		
9,000.0	7,123.0	8,910.0	7,136.9	50.8	49.3	91.14	223.0	1,838.9	700.1	601.7	98.43	7.113		
9,100.0	7,124.7	9,010.0	7,138.6	53.2	51.6	91.14	223.0	1,938.9	700.1	596.9	103.23	6.782		
9,200.0	7,126.5	9,110.0	7,140.4	55.5	54.0	91.14	223.0	2,038.8	700.1	592.0	108.04	6.480		
9,300.0	7,128.2	9,210.0	7,142.1	57.9	56.5	91.14	223.0	2,138.8	700.1	587.2	112.86	6.203		
9,400.0	7,130.0	9,310.0	7,143.9	60.2	58.9	91.14	223.0	2,238.8	700.0	582.4	117.69	5.948		
9,500.0	7,131.7	9,410.0	7,145.6	62.6	61.3	91.14	223.0	2,338.8	700.0	577.5	122.54	5.713		
9,600.0	7,133.5	9,510.0	7,147.4	65.0	63.7	91.14	223.0	2,438.8	700.0	572.6	127.39	5.495		
9,700.0	7,135.2	9,610.0	7,149.1	67.3	66.1	91.14	223.0	2,538.8	700.0	567.8	132.24	5.293		
9,800.0	7,137.0	9,710.0	7,150.9	69.7	68.6	91.14	223.0	2,638.8	700.0	562.9	137.11	5.106		
9,900.0	7,138.7	9,810.0	7,152.6	72.1	71.0	91.14	223.0	2,738.7	700.0	558.0	141.98	4.930		
10,000.0	7,140.5	9,910.0	7,154.3	74.5	73.4	91.14	223.0	2,838.7	700.0	553.1	146.85	4.767		
10,100.0	7,142.2	10,010.0	7,156.1	76.9	75.9	91.14	223.0	2,938.7	700.0	548.3	151.73	4.613		
10,200.0	7,143.9	10,110.0	7,157.8	79.4	78.3	91.14	223.0	3,038.7	700.0	543.4	156.61	4.469		

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 Billings 2B-18H
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	WELL @ 5210.0ft (Original Well Elev)
<b>Reference Site:</b>	S18-T3N-R68W (Billings)	<b>MD Reference:</b>	WELL @ 5210.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Billings 2B-18H	<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>	HZ	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #1	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S18-T3N-R68W (Billings) - Billings 2D-18H - Hz - Plan #1													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance							
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning	
10,300.0	7,145.7	10,210.0	7,159.6	81.8	80.8	91.14	223.0	3,138.7	700.0	538.5	161.50	4.334		
10,400.0	7,147.4	10,310.0	7,161.3	84.2	83.2	91.14	223.0	3,238.7	700.0	533.6	166.39	4.207		
10,500.0	7,149.2	10,410.0	7,163.1	86.6	85.6	91.14	223.0	3,338.7	699.9	528.7	171.29	4.086		
10,600.0	7,150.9	10,510.0	7,164.8	89.0	88.1	91.14	223.1	3,438.6	699.9	523.7	176.18	3.973		
10,700.0	7,152.7	10,610.0	7,166.6	91.5	90.5	91.14	223.1	3,538.6	699.9	518.8	181.08	3.865		
10,800.0	7,154.4	10,710.0	7,168.3	93.9	93.0	91.14	223.1	3,638.6	699.9	513.9	185.99	3.763		
10,900.0	7,156.2	10,810.0	7,170.1	96.3	95.4	91.14	223.1	3,738.6	699.9	509.0	190.89	3.667		
11,000.0	7,157.9	10,910.0	7,171.8	98.8	97.9	91.14	223.1	3,838.6	699.9	504.1	195.80	3.575		
11,100.0	7,159.6	11,010.0	7,173.5	101.2	100.3	91.14	223.1	3,938.6	699.9	499.2	200.71	3.487		
11,200.0	7,161.4	11,110.0	7,175.3	103.6	102.8	91.14	223.1	4,038.5	699.9	494.3	205.62	3.404		
11,300.0	7,163.1	11,210.0	7,177.0	106.1	105.3	91.14	223.1	4,138.5	699.9	489.3	210.53	3.324		
11,400.0	7,164.9	11,310.0	7,178.8	108.5	107.7	91.14	223.1	4,238.5	699.9	484.4	215.44	3.248		
11,500.0	7,166.6	11,410.0	7,180.5	111.0	110.2	91.14	223.1	4,338.5	699.8	479.5	220.36	3.176		
11,600.0	7,168.4	11,510.0	7,182.3	113.4	112.6	91.14	223.1	4,438.5	699.8	474.6	225.27	3.107		
11,700.0	7,170.1	11,610.0	7,184.0	115.8	115.1	91.14	223.1	4,538.5	699.8	469.6	230.19	3.040		
11,800.0	7,171.9	11,710.0	7,185.8	118.3	117.5	91.14	223.1	4,638.5	699.8	464.7	235.11	2.977		
11,900.0	7,173.6	11,810.0	7,187.5	120.7	120.0	91.14	223.1	4,738.4	699.8	459.8	240.03	2.915		
12,000.0	7,175.4	11,910.0	7,189.3	123.2	122.5	91.14	223.1	4,838.4	699.8	454.8	244.95	2.857		
12,100.0	7,177.1	12,010.0	7,191.0	125.6	124.9	91.14	223.1	4,938.4	699.8	449.9	249.87	2.801		
12,200.0	7,178.8	12,110.0	7,192.7	128.1	127.4	91.14	223.1	5,038.4	699.8	445.0	254.80	2.746		
12,300.0	7,180.6	12,210.0	7,194.5	130.5	129.9	91.14	223.2	5,138.4	699.8	440.0	259.72	2.694		
12,400.0	7,182.3	12,310.0	7,196.2	133.0	132.3	91.14	223.2	5,238.4	699.8	435.1	264.65	2.644		
12,500.0	7,184.1	12,410.0	7,198.0	135.4	134.8	91.14	223.2	5,338.3	699.7	430.2	269.57	2.596		
12,600.0	7,185.8	12,510.0	7,199.7	137.9	137.2	91.14	223.2	5,438.3	699.7	425.2	274.50	2.549		
12,700.0	7,187.6	12,610.0	7,201.5	140.4	139.7	91.14	223.2	5,538.3	699.7	420.3	279.43	2.504		
12,800.0	7,189.3	12,710.0	7,203.2	142.8	142.2	91.14	223.2	5,638.3	699.7	415.4	284.35	2.461		
12,900.0	7,191.1	12,810.0	7,205.0	145.3	144.6	91.14	223.2	5,738.3	699.7	410.4	289.28	2.419		
13,000.0	7,192.8	12,910.0	7,206.7	147.7	147.1	91.14	223.2	5,838.3	699.7	405.5	294.21	2.378		
13,100.0	7,194.6	13,010.0	7,208.4	150.2	149.6	91.14	223.2	5,938.3	699.7	400.5	299.14	2.339		
13,200.0	7,196.3	13,110.0	7,210.2	152.6	152.0	91.14	223.2	6,038.2	699.7	395.6	304.07	2.301		
13,300.0	7,198.0	13,210.0	7,211.9	155.1	154.5	91.14	223.2	6,138.2	699.7	390.7	309.00	2.264		
13,400.0	7,199.8	13,310.0	7,213.7	157.6	157.0	91.14	223.2	6,238.2	699.7	385.7	313.93	2.229		
13,500.0	7,201.5	13,410.0	7,215.4	160.0	159.4	91.14	223.2	6,338.2	699.6	380.8	318.87	2.194		
13,600.0	7,203.3	13,510.0	7,217.2	162.5	161.9	91.14	223.2	6,438.2	699.6	375.8	323.80	2.161		
13,700.0	7,205.0	13,610.0	7,218.9	164.9	164.4	91.14	223.2	6,538.2	699.6	370.9	328.73	2.128		
13,800.0	7,206.8	13,710.0	7,220.7	167.4	166.8	91.14	223.2	6,638.1	699.6	366.0	333.66	2.097		
13,900.0	7,208.5	13,810.0	7,222.4	169.9	169.3	91.14	223.2	6,738.1	699.6	361.0	338.60	2.066		
14,000.0	7,210.3	13,910.0	7,224.2	172.3	171.8	91.14	223.2	6,838.1	699.6	356.1	343.53	2.036		
14,100.0	7,212.0	14,010.0	7,225.9	174.8	174.2	91.14	223.3	6,938.1	699.6	351.1	348.47	2.008		
14,200.0	7,213.8	14,110.0	7,227.6	177.2	176.7	91.14	223.3	7,038.1	699.6	346.2	353.40	1.980		
14,300.0	7,215.5	14,210.0	7,229.4	179.7	179.2	91.14	223.3	7,138.1	699.6	341.2	358.34	1.952		
14,328.8	7,216.0	14,238.8	7,229.9	180.4	179.9	91.14	223.3	7,166.9	699.6	339.8	359.76	1.945 SF		

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Billings 2B-18H
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	WELL @ 5210.0ft (Original Well Elev)
<b>Reference Site:</b>	S18-T3N-R68W (Billings)	<b>MD Reference:</b>	WELL @ 5210.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Billings 2B-18H	<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>	HZ	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #1	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S18-T3N-R68W (Billings) - Billings 2E-18H - HZ - Plan #1													Offset Site Error: 0.0 ft	
Survey Program: 0-MWD													Offset Well Error: 0.0 ft	
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor		
0.0	0.0	0.0	0.0	0.0	0.0	-180.00	-29.1	0.0	29.1					
100.0	100.0	100.0	100.0	0.2	0.2	-180.00	-29.1	0.0	29.1	28.8	0.30	95.950		
200.0	200.0	200.0	200.0	0.3	0.3	-180.00	-29.1	0.0	29.1	28.5	0.65	44.640		
300.0	300.0	300.0	300.0	0.5	0.5	-180.00	-29.1	0.0	29.1	28.1	1.00	29.086	CC, ES	
400.0	400.0	400.0	400.0	0.7	0.7	-166.35	-29.1	0.0	30.0	28.6	1.35	22.199		
500.0	500.0	499.7	499.7	0.9	0.8	-166.02	-29.5	-0.8	32.9	31.2	1.70	19.332		
600.0	599.9	599.4	599.3	1.0	1.0	-163.97	-30.5	-3.2	38.1	36.1	2.05	18.582		
700.0	699.7	698.7	698.6	1.2	1.2	-161.12	-32.1	-7.2	45.8	43.4	2.41	19.036		
800.0	799.4	797.7	797.4	1.4	1.4	-158.17	-34.4	-12.7	56.1	53.3	2.77	20.234		
900.0	898.9	896.3	895.7	1.7	1.6	-155.50	-37.4	-19.8	69.0	65.8	3.15	21.903		
1,000.0	998.3	994.3	993.2	1.9	1.8	-153.22	-41.0	-28.4	84.5	80.9	3.54	23.860		
1,100.0	1,097.4	1,092.1	1,090.4	2.2	2.1	-151.36	-45.1	-38.4	102.5	98.6	3.95	25.983		
1,200.0	1,196.3	1,190.1	1,187.8	2.5	2.3	-150.30	-49.4	-48.8	122.3	117.9	4.36	28.046		
1,300.0	1,294.9	1,287.8	1,284.8	2.8	2.5	-149.86	-53.7	-59.0	143.6	138.8	4.78	30.012		
1,400.0	1,393.3	1,385.2	1,381.6	3.1	2.8	-149.81	-57.9	-69.3	166.3	161.1	5.21	31.897		
1,500.0	1,491.2	1,482.2	1,478.0	3.5	3.0	-150.01	-62.2	-79.5	190.5	184.9	5.65	33.717		
1,600.0	1,588.9	1,578.8	1,574.0	3.9	3.3	-150.36	-66.4	-89.7	216.2	210.1	6.09	35.485		
1,700.0	1,686.1	1,675.0	1,669.5	4.3	3.5	-150.82	-70.6	-99.8	243.4	236.9	6.54	37.214		
1,800.0	1,782.9	1,770.8	1,764.7	4.8	3.8	-151.33	-74.8	-109.9	272.1	265.1	6.99	38.915		
1,900.0	1,879.3	1,866.0	1,859.3	5.3	4.0	-151.87	-79.0	-119.9	302.3	294.8	7.45	40.597		
2,000.0	1,975.2	1,960.8	1,953.5	5.8	4.3	-152.43	-83.1	-129.9	333.9	326.0	7.90	42.265		
2,100.0	2,070.5	2,055.1	2,047.1	6.3	4.5	-152.99	-87.2	-139.8	367.1	358.7	8.36	43.926		
2,200.0	2,165.4	2,148.7	2,140.2	6.9	4.7	-153.54	-91.3	-149.7	401.8	393.0	8.81	45.583		
2,300.0	2,259.6	2,241.8	2,232.7	7.5	5.0	-154.08	-95.4	-159.5	438.0	428.7	9.27	47.239		
2,400.0	2,353.5	2,334.5	2,324.7	8.1	5.2	-154.71	-99.4	-169.3	475.3	465.6	9.74	48.796		
2,500.0	2,447.3	2,427.1	2,416.7	8.7	5.5	-155.29	-103.5	-179.0	512.7	502.5	10.21	50.198		
2,600.0	2,541.1	2,519.7	2,508.8	9.3	5.7	-155.78	-107.5	-188.8	550.1	539.5	10.69	51.481		
2,700.0	2,635.0	2,612.4	2,600.8	9.9	6.0	-156.22	-111.6	-198.5	587.6	576.4	11.16	52.659		
2,800.0	2,728.8	2,705.0	2,692.8	10.6	6.2	-156.60	-115.7	-208.3	625.1	613.5	11.63	53.744		
2,900.0	2,822.6	2,798.3	2,785.5	11.2	6.4	-156.94	-119.7	-218.1	662.6	650.5	12.10	54.741		
3,000.0	2,916.4	2,903.7	2,890.4	11.8	6.7	-157.45	-123.5	-227.2	699.2	686.6	12.56	55.689		
3,100.0	3,010.3	3,010.1	2,996.7	12.4	6.9	-158.19	-125.8	-232.8	734.1	721.2	12.95	56.693		
3,200.0	3,104.1	3,117.2	3,103.8	13.0	7.0	-159.13	-126.6	-234.7	767.5	754.2	13.29	57.760		
3,300.0	3,197.9	3,211.4	3,197.9	13.7	7.1	-160.01	-126.6	-234.7	800.2	786.6	13.60	58.837		
3,400.0	3,291.7	3,305.2	3,291.7	14.3	7.3	-160.82	-126.6	-234.7	833.0	819.1	13.91	59.888		
3,500.0	3,385.6	3,399.0	3,385.6	14.9	7.4	-161.57	-126.6	-234.7	865.9	851.7	14.22	60.912		
3,600.0	3,479.6	3,493.1	3,479.6	15.5	7.5	-162.37	-126.6	-234.7	898.4	883.9	14.55	61.739		
3,700.0	3,574.7	3,588.1	3,574.7	16.1	7.7	-163.13	-126.6	-234.7	928.2	913.3	14.90	62.284		
3,800.0	3,670.8	3,684.2	3,670.8	16.5	7.8	-163.76	-126.6	-234.7	954.7	939.5	15.25	62.624		
3,900.0	3,767.8	3,781.2	3,767.8	17.0	7.9	-164.29	-126.6	-234.7	978.1	962.5	15.58	62.770		
4,000.0	3,865.6	3,879.0	3,865.6	17.3	8.1	-164.72	-126.6	-234.7	998.3	982.4	15.91	62.732		
4,100.0	3,964.0	3,977.5	3,964.0	17.7	8.2	-165.07	-126.6	-234.7	1,015.1	998.9	16.24	62.523		
4,200.0	4,063.0	4,076.5	4,063.0	17.9	8.4	-165.34	-126.6	-234.7	1,028.7	1,012.1	16.55	62.151		
4,300.0	4,162.5	4,175.9	4,162.5	18.1	8.5	-165.54	-126.6	-234.7	1,038.9	1,022.0	16.86	61.625		
4,400.0	4,262.2	4,275.7	4,262.2	18.3	8.7	-165.67	-126.6	-234.7	1,045.7	1,028.6	17.16	60.955		
4,500.0	4,362.2	4,375.6	4,362.2	18.4	8.8	-165.74	-126.6	-234.7	1,049.2	1,031.7	17.44	60.148		
4,600.0	4,462.2	4,475.6	4,462.2	18.5	9.0	-179.80	-126.6	-234.7	1,049.6	1,023.7	25.99	40.385		
4,700.0	4,562.2	4,575.6	4,562.2	18.6	9.1	-179.80	-126.6	-234.7	1,049.6	1,023.4	26.24	40.002		
4,800.0	4,662.2	4,675.6	4,662.2	18.6	9.3	-179.80	-126.6	-234.7	1,049.6	1,023.2	26.49	39.624		
4,900.0	4,762.2	4,775.6	4,762.2	18.7	9.4	-179.80	-126.6	-234.7	1,049.6	1,022.9	26.74	39.251		
5,000.0	4,862.2	4,875.6	4,862.2	18.8	9.6	-179.80	-126.6	-234.7	1,049.6	1,022.6	27.00	38.882		
5,100.0	4,962.2	4,975.6	4,962.2	18.9	9.7	-179.80	-126.6	-234.7	1,049.6	1,022.4	27.25	38.519		

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 Billings 2B-18H
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	WELL @ 5210.0ft (Original Well Elev)
<b>Reference Site:</b>	S18-T3N-R68W (Billings)	<b>MD Reference:</b>	WELL @ 5210.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Billings 2B-18H	<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>	HZ	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #1	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S18-T3N-R68W (Billings) - Billings 2E-18H - HZ - Plan #1												Offset Site Error: 0.0 ft	
Survey Program: 0-MWD												Offset Well Error: 0.0 ft	
Reference		Offset		Semi Major Axis			Distance					Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis		Separation Factor
5,200.0	5,062.2	5,075.6	5,062.2	19.0	9.9	-179.80	-126.6	-234.7	1,049.6	1,022.1	27.51	38.160	
5,300.0	5,162.2	5,175.6	5,162.2	19.0	10.1	-179.80	-126.6	-234.7	1,049.6	1,021.9	27.76	37.807	
5,400.0	5,262.2	5,275.6	5,262.2	19.1	10.2	-179.80	-126.6	-234.7	1,049.6	1,021.6	28.02	37.457	
5,500.0	5,362.2	5,375.6	5,362.2	19.2	10.4	-179.80	-126.6	-234.7	1,049.6	1,021.4	28.28	37.113	
5,600.0	5,462.2	5,475.6	5,462.2	19.3	10.5	-179.80	-126.6	-234.7	1,049.6	1,021.1	28.54	36.773	
5,700.0	5,562.2	5,575.6	5,562.2	19.4	10.7	-179.80	-126.6	-234.7	1,049.6	1,020.8	28.81	36.438	
5,800.0	5,662.2	5,675.6	5,662.2	19.5	10.8	-179.80	-126.6	-234.7	1,049.6	1,020.6	29.07	36.107	
5,900.0	5,762.2	5,775.6	5,762.2	19.6	11.0	-179.80	-126.6	-234.7	1,049.6	1,020.3	29.34	35.781	
6,000.0	5,862.2	5,875.6	5,862.2	19.7	11.2	-179.80	-126.6	-234.7	1,049.6	1,020.0	29.60	35.459	
6,100.0	5,962.2	5,975.6	5,962.2	19.8	11.3	-179.80	-126.6	-234.7	1,049.6	1,019.8	29.87	35.141	
6,200.0	6,062.2	6,075.6	6,062.2	19.9	11.5	-179.80	-126.6	-234.7	1,049.6	1,019.5	30.14	34.827	
6,300.0	6,162.2	6,175.6	6,162.2	19.9	11.6	-179.80	-126.6	-234.7	1,049.6	1,019.2	30.41	34.518	
6,400.0	6,262.2	6,275.8	6,262.2	20.0	11.8	-179.96	-126.6	-231.7	1,049.6	1,019.0	30.69	34.204	
6,408.0	6,270.2	6,283.8	6,270.2	20.1	11.8	180.00	-126.6	-231.0	1,049.6	1,018.9	30.71	34.178	
6,500.0	6,362.2	6,373.6	6,358.7	20.1	11.8	179.19	-126.6	-216.2	1,049.7	1,018.8	31.00	33.867	
6,600.0	6,462.0	6,466.9	6,448.0	20.2	11.8	87.89	-126.6	-189.3	1,050.4	1,026.8	23.63	44.448	
6,700.0	6,560.3	6,557.5	6,530.6	20.2	11.8	86.61	-126.6	-152.2	1,051.6	1,028.0	23.60	44.554	
6,800.0	6,655.1	6,645.7	6,605.9	20.2	11.8	85.41	-126.6	-106.4	1,053.2	1,029.6	23.61	44.610	
6,900.0	6,744.7	6,731.8	6,673.5	20.2	11.9	84.29	-126.6	-53.1	1,055.1	1,031.3	23.76	44.413	
7,000.0	6,827.2	6,816.3	6,733.1	20.3	12.1	83.27	-126.6	6.7	1,057.1	1,033.0	24.15	43.777	
7,100.0	6,901.1	6,900.0	6,784.8	20.4	12.5	82.37	-126.6	72.5	1,059.2	1,034.3	24.88	42.569	
7,200.0	6,964.9	6,981.3	6,827.3	20.5	13.2	81.60	-126.6	141.7	1,061.2	1,035.1	26.06	40.720	
7,300.0	7,017.3	7,062.3	6,861.6	20.8	14.1	80.96	-126.6	215.0	1,062.9	1,035.2	27.71	38.361	
7,400.0	7,057.5	7,142.6	6,887.3	21.3	15.1	80.48	-126.6	291.1	1,064.3	1,034.5	29.83	35.676	
7,500.0	7,084.4	7,222.4	6,904.2	22.1	16.4	80.14	-126.6	369.0	1,065.4	1,033.0	32.39	32.888	
7,600.0	7,097.8	7,300.0	6,912.2	23.1	17.8	79.97	-126.6	446.2	1,065.9	1,030.6	35.26	30.231	
7,700.0	7,100.3	7,396.4	6,914.2	24.3	19.6	79.94	-126.6	542.6	1,066.0	1,027.1	38.87	27.426	
7,800.0	7,102.1	7,496.4	6,916.0	25.8	21.6	79.94	-126.6	642.5	1,066.0	1,023.1	42.83	24.889	
7,900.0	7,103.8	7,596.4	6,917.7	27.4	23.7	79.94	-126.6	742.5	1,065.9	1,019.0	46.96	22.698	
8,000.0	7,105.5	7,696.4	6,919.5	29.2	25.9	79.94	-126.6	842.5	1,065.9	1,014.7	51.22	20.809	
8,100.0	7,107.3	7,796.4	6,921.2	31.1	28.1	79.94	-126.6	942.5	1,065.9	1,010.3	55.59	19.176	
8,200.0	7,109.0	7,896.4	6,922.9	33.1	30.4	79.94	-126.6	1,042.5	1,065.9	1,005.9	60.03	17.757	
8,300.0	7,110.8	7,996.4	6,924.7	35.2	32.7	79.94	-126.6	1,142.5	1,065.9	1,001.4	64.53	16.517	
8,400.0	7,112.5	8,096.4	6,926.4	37.3	35.0	79.94	-126.6	1,242.4	1,065.9	996.8	69.09	15.428	
8,500.0	7,114.3	8,196.4	6,928.2	39.5	37.3	79.94	-126.6	1,342.4	1,065.9	992.2	73.68	14.466	
8,600.0	7,116.0	8,296.4	6,929.9	41.7	39.7	79.94	-126.6	1,442.4	1,065.9	987.6	78.31	13.611	
8,700.0	7,117.8	8,396.4	6,931.7	44.0	42.0	79.94	-126.6	1,542.4	1,065.9	982.9	82.97	12.847	
8,800.0	7,119.5	8,496.4	6,933.4	46.2	44.4	79.94	-126.6	1,642.4	1,065.9	978.2	87.65	12.161	
8,900.0	7,121.3	8,596.4	6,935.2	48.5	46.8	79.94	-126.6	1,742.4	1,065.9	973.5	92.35	11.542	
9,000.0	7,123.0	8,696.4	6,936.9	50.8	49.2	79.94	-126.6	1,842.4	1,065.9	968.8	97.06	10.981	
9,100.0	7,124.7	8,796.4	6,938.6	53.2	51.6	79.94	-126.6	1,942.3	1,065.9	964.1	101.79	10.471	
9,200.0	7,126.5	8,896.4	6,940.4	55.5	54.0	79.94	-126.6	2,042.3	1,065.9	959.3	106.54	10.005	
9,300.0	7,128.2	8,996.4	6,942.1	57.9	56.4	79.94	-126.6	2,142.3	1,065.9	954.6	111.29	9.577	
9,400.0	7,130.0	9,096.4	6,943.9	60.2	58.9	79.94	-126.6	2,242.3	1,065.8	949.8	116.06	9.184	
9,500.0	7,131.7	9,196.4	6,945.6	62.6	61.3	79.94	-126.6	2,342.3	1,065.8	945.0	120.83	8.821	
9,600.0	7,133.5	9,296.4	6,947.4	65.0	63.7	79.94	-126.6	2,442.3	1,065.8	940.2	125.61	8.485	
9,700.0	7,135.2	9,396.4	6,949.1	67.3	66.1	79.94	-126.6	2,542.3	1,065.8	935.4	130.40	8.174	
9,800.0	7,137.0	9,496.4	6,950.9	69.7	68.6	79.94	-126.6	2,642.2	1,065.8	930.6	135.19	7.884	
9,900.0	7,138.7	9,596.4	6,952.6	72.1	71.0	79.94	-126.6	2,742.2	1,065.8	925.8	139.99	7.613	
10,000.0	7,140.5	9,696.4	6,954.4	74.5	73.5	79.94	-126.6	2,842.2	1,065.8	921.0	144.80	7.361	
10,100.0	7,142.2	9,796.4	6,956.1	76.9	75.9	79.94	-126.6	2,942.2	1,065.8	916.2	149.60	7.124	
10,200.0	7,143.9	9,896.4	6,957.8	79.4	78.3	79.94	-126.6	3,042.2	1,065.8	911.4	154.42	6.902	

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 Billings 2B-18H
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	WELL @ 5210.0ft (Original Well Elev)
<b>Reference Site:</b>	S18-T3N-R68W (Billings)	<b>MD Reference:</b>	WELL @ 5210.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Billings 2B-18H	<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>	HZ	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #1	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S18-T3N-R68W (Billings) - Billings 2E-18H - HZ - Plan #1													Offset Site Error: 0.0 ft	
Survey Program: 0-MWD													Offset Well Error: 0.0 ft	
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor		
10,300.0	7,145.7	9,996.4	6,959.6	81.8	80.8	79.94	-126.6	3,142.2	1,065.8	906.6	159.23	6.693		
10,400.0	7,147.4	10,096.4	6,961.3	84.2	83.2	79.94	-126.5	3,242.1	1,065.8	901.7	164.05	6.497		
10,500.0	7,149.2	10,196.4	6,963.1	86.6	85.7	79.94	-126.5	3,342.1	1,065.8	896.9	168.87	6.311		
10,600.0	7,150.9	10,296.4	6,964.8	89.0	88.1	79.94	-126.5	3,442.1	1,065.8	892.1	173.70	6.136		
10,700.0	7,152.7	10,396.4	6,966.6	91.5	90.6	79.94	-126.5	3,542.1	1,065.8	887.2	178.53	5.970		
10,800.0	7,154.4	10,496.4	6,968.3	93.9	93.0	79.94	-126.5	3,642.1	1,065.8	882.4	183.36	5.812		
10,900.0	7,156.2	10,596.4	6,970.1	96.3	95.5	79.94	-126.5	3,742.1	1,065.7	877.6	188.19	5.663		
11,000.0	7,157.9	10,696.4	6,971.8	98.8	98.0	79.94	-126.5	3,842.1	1,065.7	872.7	193.02	5.521		
11,100.0	7,159.6	10,796.4	6,973.6	101.2	100.4	79.94	-126.5	3,942.0	1,065.7	867.9	197.86	5.386		
11,200.0	7,161.4	10,896.4	6,975.3	103.6	102.9	79.94	-126.5	4,042.0	1,065.7	863.0	202.70	5.258		
11,300.0	7,163.1	10,996.4	6,977.0	106.1	105.3	79.94	-126.5	4,142.0	1,065.7	858.2	207.54	5.135		
11,400.0	7,164.9	11,096.4	6,978.8	108.5	107.8	79.94	-126.5	4,242.0	1,065.7	853.3	212.38	5.018		
11,500.0	7,166.6	11,196.4	6,980.5	111.0	110.2	79.94	-126.5	4,342.0	1,065.7	848.5	217.22	4.906		
11,600.0	7,168.4	11,296.4	6,982.3	113.4	112.7	79.94	-126.5	4,442.0	1,065.7	843.6	222.06	4.799		
11,700.0	7,170.1	11,396.4	6,984.0	115.8	115.2	79.94	-126.5	4,541.9	1,065.7	838.8	226.91	4.697		
11,800.0	7,171.9	11,496.4	6,985.8	118.3	117.6	79.94	-126.5	4,641.9	1,065.7	833.9	231.76	4.598		
11,900.0	7,173.6	11,596.4	6,987.5	120.7	120.1	79.94	-126.5	4,741.9	1,065.7	829.1	236.60	4.504		
12,000.0	7,175.4	11,696.4	6,989.3	123.2	122.5	79.94	-126.5	4,841.9	1,065.7	824.2	241.45	4.414		
12,100.0	7,177.1	11,796.4	6,991.0	125.6	125.0	79.94	-126.5	4,941.9	1,065.7	819.4	246.30	4.327		
12,200.0	7,178.8	11,896.4	6,992.8	128.1	127.5	79.94	-126.5	5,041.9	1,065.7	814.5	251.15	4.243		
12,300.0	7,180.6	11,996.4	6,994.5	130.5	129.9	79.94	-126.5	5,141.9	1,065.7	809.7	256.00	4.163		
12,400.0	7,182.3	12,096.4	6,996.2	133.0	132.4	79.94	-126.5	5,241.8	1,065.7	804.8	260.85	4.085		
12,500.0	7,184.1	12,196.4	6,998.0	135.4	134.9	79.94	-126.5	5,341.8	1,065.6	799.9	265.70	4.011		
12,600.0	7,185.8	12,296.4	6,999.7	137.9	137.3	79.94	-126.5	5,441.8	1,065.6	795.1	270.56	3.939		
12,700.0	7,187.6	12,396.4	7,001.5	140.4	139.8	79.94	-126.5	5,541.8	1,065.6	790.2	275.41	3.869		
12,800.0	7,189.3	12,496.4	7,003.2	142.8	142.3	79.94	-126.5	5,641.8	1,065.6	785.4	280.26	3.802		
12,900.0	7,191.1	12,596.4	7,005.0	145.3	144.7	79.94	-126.5	5,741.8	1,065.6	780.5	285.12	3.737		
13,000.0	7,192.8	12,696.4	7,006.7	147.7	147.2	79.94	-126.5	5,841.7	1,065.6	775.6	289.97	3.675		
13,100.0	7,194.6	12,796.4	7,008.5	150.2	149.7	79.94	-126.5	5,941.7	1,065.6	770.8	294.83	3.614		
13,200.0	7,196.3	12,896.4	7,010.2	152.6	152.1	79.94	-126.5	6,041.7	1,065.6	765.9	299.69	3.556		
13,300.0	7,198.0	12,996.4	7,012.0	155.1	154.6	79.94	-126.5	6,141.7	1,065.6	761.0	304.54	3.499		
13,400.0	7,199.8	13,096.4	7,013.7	157.6	157.1	79.94	-126.5	6,241.7	1,065.6	756.2	309.40	3.444		
13,500.0	7,201.5	13,196.4	7,015.4	160.0	159.5	79.94	-126.5	6,341.7	1,065.6	751.3	314.26	3.391		
13,600.0	7,203.3	13,296.4	7,017.2	162.5	162.0	79.94	-126.5	6,441.7	1,065.6	746.5	319.12	3.339		
13,700.0	7,205.0	13,396.4	7,018.9	164.9	164.5	79.94	-126.5	6,541.6	1,065.6	741.6	323.98	3.289		
13,800.0	7,206.8	13,496.4	7,020.7	167.4	166.9	79.94	-126.5	6,641.6	1,065.6	736.7	328.84	3.240		
13,900.0	7,208.5	13,596.4	7,022.4	169.9	169.4	79.94	-126.5	6,741.6	1,065.6	731.9	333.70	3.193		
14,000.0	7,210.3	13,696.4	7,024.2	172.3	171.9	79.94	-126.5	6,841.6	1,065.5	727.0	338.56	3.147		
14,100.0	7,212.0	13,796.4	7,025.9	174.8	174.3	79.94	-126.5	6,941.6	1,065.5	722.1	343.42	3.103		
14,200.0	7,213.8	13,896.4	7,027.7	177.2	176.8	79.94	-126.5	7,041.6	1,065.5	717.3	348.28	3.059		
14,300.0	7,215.5	13,996.4	7,029.4	179.7	179.3	79.94	-126.4	7,141.6	1,065.5	712.4	353.14	3.017		
14,328.8	7,216.0	14,025.2	7,029.9	180.4	180.0	79.94	-126.4	7,170.4	1,065.5	711.0	354.54	3.005 SF		

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Billings 2B-18H
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	WELL @ 5210.0ft (Original Well Elev)
<b>Reference Site:</b>	S18-T3N-R68W (Billings)	<b>MD Reference:</b>	WELL @ 5210.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Billings 2B-18H	<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>	HZ	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #1	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S18-T3N-R68W (Billings) - Billings 2F-18H - HZ - Plan #1													Offset Site Error: 0.0 ft	
Survey Program: 0-MWD													Offset Well Error: 0.0 ft	
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor		
0.0	0.0	0.0	0.0	0.0	0.0	180.00	-40.1	0.0	40.1					
100.0	100.0	100.0	100.0	0.2	0.2	180.00	-40.1	0.0	40.1	39.8	0.30	131.936		
200.0	200.0	200.0	200.0	0.3	0.3	180.00	-40.1	0.0	40.1	39.4	0.65	61.382		
300.0	300.0	300.0	300.0	0.5	0.5	180.00	-40.1	0.0	40.1	39.1	1.00	39.995	CC, ES	
400.0	400.0	399.4	399.4	0.7	0.7	-165.67	-40.8	-0.4	41.7	40.3	1.35	30.875		
500.0	500.0	498.6	498.5	0.9	0.9	-164.95	-43.1	-1.6	46.5	44.8	1.70	27.386		
600.0	599.9	597.5	597.3	1.0	1.0	-164.02	-46.9	-3.7	54.6	52.5	2.05	26.648		
700.0	699.7	695.9	695.6	1.2	1.2	-163.10	-52.1	-6.5	65.8	63.4	2.40	27.454		
800.0	799.4	793.7	793.1	1.4	1.4	-162.30	-58.8	-10.1	80.3	77.5	2.75	29.201		
900.0	898.9	890.8	889.7	1.7	1.7	-161.62	-66.8	-14.5	97.9	94.8	3.10	31.554		
1,000.0	998.3	986.9	985.3	1.9	1.9	-161.07	-76.2	-19.6	118.7	115.3	3.46	34.309		
1,100.0	1,097.4	1,082.0	1,079.6	2.2	2.1	-160.63	-86.9	-25.4	142.6	138.8	3.82	37.335		
1,200.0	1,196.3	1,176.1	1,172.7	2.5	2.4	-160.25	-98.8	-31.9	169.6	165.4	4.18	40.549		
1,300.0	1,294.9	1,271.7	1,267.2	2.8	2.7	-160.04	-111.6	-38.8	198.7	194.2	4.55	43.678		
1,400.0	1,393.3	1,366.9	1,361.3	3.1	3.0	-160.00	-124.2	-45.7	229.5	224.6	4.92	46.636		
1,500.0	1,491.2	1,461.5	1,454.8	3.5	3.3	-160.08	-136.9	-52.5	261.8	256.5	5.29	49.455		
1,600.0	1,588.9	1,555.6	1,547.8	3.9	3.5	-160.23	-149.4	-59.3	295.7	290.0	5.67	52.160		
1,700.0	1,686.1	1,649.1	1,640.2	4.3	3.8	-160.42	-161.9	-66.1	331.1	325.1	6.04	54.773		
1,800.0	1,782.9	1,742.0	1,732.0	4.8	4.1	-160.65	-174.2	-72.8	368.1	361.6	6.42	57.310		
1,900.0	1,879.3	1,834.2	1,823.2	5.3	4.4	-160.89	-186.5	-79.5	406.6	399.8	6.80	59.786		
2,000.0	1,975.2	1,925.8	1,913.8	5.8	4.7	-161.14	-198.8	-86.1	446.6	439.4	7.18	62.210		
2,100.0	2,070.5	2,016.8	2,003.6	6.3	5.0	-161.39	-210.9	-92.7	488.1	480.6	7.56	64.593		
2,200.0	2,165.4	2,106.9	2,092.8	6.9	5.2	-161.64	-222.9	-99.2	531.2	523.3	7.94	66.942		
2,300.0	2,259.6	2,196.4	2,181.2	7.5	5.5	-161.89	-234.8	-105.7	575.8	567.5	8.31	69.262		
2,400.0	2,353.5	2,285.3	2,269.0	8.1	5.8	-162.23	-246.7	-112.1	621.4	612.7	8.71	71.364		
2,500.0	2,447.3	2,374.2	2,356.9	8.7	6.1	-162.57	-258.5	-118.5	667.2	658.1	9.11	73.242		
2,600.0	2,541.1	2,463.0	2,444.7	9.3	6.4	-162.86	-270.3	-125.0	712.9	703.4	9.51	74.963		
2,700.0	2,635.0	2,551.9	2,532.6	9.9	6.6	-163.11	-282.2	-131.4	758.6	748.7	9.91	76.545		
2,800.0	2,728.8	2,640.8	2,620.4	10.6	6.9	-163.34	-294.0	-137.8	804.4	794.1	10.31	78.005		
2,900.0	2,822.6	2,729.7	2,708.3	11.2	7.2	-163.54	-305.9	-144.3	850.2	839.4	10.71	79.355		
3,000.0	2,916.4	2,818.5	2,796.1	11.8	7.5	-163.72	-317.7	-150.7	895.9	884.8	11.11	80.609		
3,100.0	3,010.3	2,907.4	2,884.0	12.4	7.8	-163.88	-329.6	-157.1	941.7	930.2	11.52	81.775		
3,200.0	3,104.1	2,996.3	2,971.8	13.0	8.0	-164.03	-341.4	-163.5	987.5	975.6	11.92	82.863		
3,300.0	3,197.9	3,085.2	3,059.7	13.7	8.3	-164.16	-353.3	-170.0	1,033.3	1,021.0	12.32	83.880		
3,400.0	3,291.7	3,174.0	3,147.5	14.3	8.6	-164.29	-365.1	-176.4	1,079.1	1,066.4	12.72	84.833		
3,500.0	3,385.6	3,262.9	3,235.4	14.9	8.9	-164.40	-377.0	-182.8	1,124.9	1,111.7	13.12	85.727		
3,600.0	3,479.6	3,352.1	3,323.5	15.5	9.2	-164.66	-388.8	-189.3	1,170.1	1,156.6	13.56	86.286		
3,700.0	3,574.7	3,442.6	3,413.0	16.1	9.4	-164.95	-400.9	-195.8	1,212.6	1,198.6	14.02	86.489		
3,800.0	3,670.8	3,534.5	3,503.8	16.5	9.7	-165.16	-413.2	-202.5	1,252.0	1,237.6	14.47	86.508		
3,900.0	3,767.8	3,627.7	3,595.9	17.0	10.0	-165.32	-425.6	-209.2	1,288.3	1,273.4	14.92	86.361		
4,000.0	3,865.6	3,722.0	3,689.1	17.3	10.3	-165.41	-438.1	-216.0	1,321.5	1,306.1	15.35	86.066		
4,100.0	3,964.0	3,838.2	3,804.1	17.7	10.7	-165.42	-453.3	-224.2	1,351.2	1,335.4	15.82	85.415		
4,200.0	4,063.0	4,005.9	3,970.8	17.9	11.1	-165.44	-468.8	-232.7	1,373.9	1,357.5	16.34	84.080		
4,300.0	4,162.5	4,178.1	4,142.8	18.1	11.3	-165.54	-475.7	-236.4	1,388.1	1,371.3	16.80	82.603		
4,400.0	4,262.2	4,297.5	4,262.2	18.3	11.5	-165.66	-476.1	-236.6	1,395.2	1,378.0	17.15	81.331		
4,500.0	4,362.2	4,397.5	4,362.2	18.4	11.6	-165.71	-476.1	-236.6	1,398.6	1,381.2	17.46	80.109		
4,600.0	4,462.2	4,497.5	4,462.2	18.5	11.7	-179.77	-476.1	-236.6	1,399.1	1,370.1	28.96	48.317		
4,700.0	4,562.2	4,597.5	4,562.2	18.6	11.8	-179.77	-476.1	-236.6	1,399.1	1,369.9	29.16	47.979		
4,800.0	4,662.2	4,697.5	4,662.2	18.6	11.9	-179.77	-476.1	-236.6	1,399.1	1,369.7	29.37	47.642		
4,900.0	4,762.2	4,797.5	4,762.2	18.7	12.0	-179.77	-476.1	-236.6	1,399.1	1,369.5	29.58	47.305		
5,000.0	4,862.2	4,897.5	4,862.2	18.8	12.2	-179.77	-476.1	-236.6	1,399.1	1,369.3	29.79	46.969		
5,100.0	4,962.2	4,997.5	4,962.2	18.9	12.3	-179.77	-476.1	-236.6	1,399.1	1,369.1	30.00	46.634		

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 Billings 2B-18H
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	WELL @ 5210.0ft (Original Well Elev)
<b>Reference Site:</b>	S18-T3N-R68W (Billings)	<b>MD Reference:</b>	WELL @ 5210.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Billings 2B-18H	<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>	HZ	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #1	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S18-T3N-R68W (Billings) - Billings 2F-18H - HZ - Plan #1													Offset Site Error: 0.0 ft	
Survey Program: 0-MWD													Offset Well Error: 0.0 ft	
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor		
5,200.0	5,062.2	5,097.5	5,062.2	19.0	12.4	-179.77	-476.1	-236.6	1,399.1	1,368.9	30.22	46.300		
5,300.0	5,162.2	5,197.5	5,162.2	19.0	12.5	-179.77	-476.1	-236.6	1,399.1	1,368.6	30.44	45.967		
5,400.0	5,262.2	5,297.5	5,262.2	19.1	12.7	-179.77	-476.1	-236.6	1,399.1	1,368.4	30.66	45.636		
5,500.0	5,362.2	5,397.5	5,362.2	19.2	12.8	-179.77	-476.1	-236.6	1,399.1	1,368.2	30.88	45.306		
5,600.0	5,462.2	5,497.5	5,462.2	19.3	12.9	-179.77	-476.1	-236.6	1,399.1	1,368.0	31.11	44.977		
5,700.0	5,562.2	5,597.5	5,562.2	19.4	13.1	-179.77	-476.1	-236.6	1,399.1	1,367.7	31.33	44.650		
5,800.0	5,662.2	5,697.5	5,662.2	19.5	13.2	-179.77	-476.1	-236.6	1,399.1	1,367.5	31.56	44.325		
5,900.0	5,762.2	5,797.5	5,762.2	19.6	13.3	-179.77	-476.1	-236.6	1,399.1	1,367.3	31.80	44.002		
6,000.0	5,862.2	5,897.5	5,862.2	19.7	13.4	-179.77	-476.1	-236.6	1,399.1	1,367.0	32.03	43.681		
6,100.0	5,962.2	5,997.5	5,962.2	19.8	13.6	-179.77	-476.1	-236.6	1,399.1	1,366.8	32.27	43.361		
6,200.0	6,062.2	6,097.5	6,062.2	19.9	13.7	-179.77	-476.1	-236.6	1,399.1	1,366.6	32.50	43.044		
6,300.0	6,162.2	6,197.5	6,162.2	19.9	13.9	-179.77	-476.1	-236.6	1,399.1	1,366.3	32.74	42.729		
6,400.0	6,262.2	6,297.5	6,262.2	20.0	14.0	-179.77	-476.1	-236.6	1,399.1	1,366.1	32.98	42.416		
6,500.0	6,362.2	6,397.5	6,362.2	20.1	14.1	-179.77	-476.1	-236.6	1,399.1	1,365.9	33.23	42.106		
6,507.2	6,369.4	6,404.7	6,369.4	20.1	14.1	90.23	-476.1	-236.6	1,399.1	1,375.2	23.88	58.577		
6,600.0	6,462.0	6,497.3	6,462.0	20.2	14.3	90.40	-476.1	-236.6	1,399.1	1,374.9	24.16	57.906		
6,700.0	6,560.3	6,598.0	6,560.3	20.2	14.4	91.01	-476.1	-233.6	1,399.3	1,374.9	24.37	57.415		
6,800.0	6,655.1	6,701.5	6,654.6	20.2	14.4	91.64	-476.1	-216.7	1,399.7	1,375.2	24.45	57.253		
6,900.0	6,744.7	6,807.5	6,765.5	20.2	14.4	92.24	-476.1	-184.3	1,400.2	1,375.7	24.45	57.260		
7,000.0	6,827.2	6,916.0	6,862.6	20.3	14.4	92.81	-476.1	-136.2	1,400.8	1,376.3	24.51	57.156		
7,100.0	6,901.1	7,026.9	6,953.2	20.4	14.5	93.32	-476.1	-72.4	1,401.4	1,376.7	24.79	56.530		
7,200.0	6,964.9	7,140.1	7,034.4	20.5	14.6	93.77	-476.1	6.4	1,402.1	1,376.6	25.52	54.942		
7,300.0	7,017.3	7,255.4	7,103.2	20.8	15.0	94.13	-476.1	98.6	1,402.7	1,375.8	26.93	52.097		
7,400.0	7,057.5	7,372.3	7,157.1	21.3	15.8	94.41	-476.1	202.2	1,403.2	1,374.1	29.15	48.139		
7,500.0	7,084.4	7,490.4	7,193.6	22.1	17.1	94.58	-476.1	314.4	1,403.5	1,371.4	32.17	43.623		
7,600.0	7,097.8	7,609.1	7,211.4	23.1	18.9	94.65	-476.1	431.7	1,403.7	1,367.8	35.87	39.133		
7,700.0	7,100.3	7,714.8	7,214.1	24.3	20.8	94.65	-476.1	537.3	1,403.7	1,363.9	39.72	35.339		
7,800.0	7,102.1	7,814.8	7,215.8	25.8	22.7	94.65	-476.1	637.3	1,403.7	1,360.0	43.69	32.130		
7,900.0	7,103.8	7,914.8	7,217.6	27.4	24.7	94.65	-476.1	737.2	1,403.7	1,355.8	47.83	29.345		
8,000.0	7,105.5	8,014.8	7,219.3	29.2	26.8	94.65	-476.1	837.2	1,403.7	1,351.5	52.12	26.932		
8,100.0	7,107.3	8,114.8	7,221.1	31.1	28.9	94.65	-476.1	937.2	1,403.7	1,347.1	56.51	24.840		
8,200.0	7,109.0	8,214.8	7,222.8	33.1	31.1	94.65	-476.1	1,037.2	1,403.6	1,342.7	60.98	23.018		
8,300.0	7,110.8	8,314.8	7,224.5	35.2	33.4	94.65	-476.1	1,137.2	1,403.6	1,338.1	65.52	21.423		
8,400.0	7,112.5	8,414.8	7,226.3	37.3	35.6	94.65	-476.1	1,237.2	1,403.6	1,333.5	70.11	20.020		
8,500.0	7,114.3	8,514.8	7,228.0	39.5	37.9	94.65	-476.1	1,337.2	1,403.6	1,328.9	74.75	18.779		
8,600.0	7,116.0	8,614.8	7,229.8	41.7	40.3	94.65	-476.1	1,437.1	1,403.6	1,324.2	79.42	17.674		
8,700.0	7,117.8	8,714.8	7,231.5	44.0	42.6	94.65	-476.1	1,537.1	1,403.6	1,319.5	84.12	16.687		
8,800.0	7,119.5	8,814.8	7,233.3	46.2	44.9	94.65	-476.1	1,637.1	1,403.6	1,314.8	88.84	15.799		
8,900.0	7,121.3	8,914.8	7,235.0	48.5	47.3	94.65	-476.1	1,737.1	1,403.6	1,310.0	93.59	14.998		
9,000.0	7,123.0	9,014.8	7,236.8	50.8	49.7	94.65	-476.1	1,837.1	1,403.6	1,305.3	98.36	14.271		
9,100.0	7,124.7	9,114.8	7,238.5	53.2	52.1	94.65	-476.1	1,937.1	1,403.6	1,300.5	103.14	13.609		
9,200.0	7,126.5	9,214.8	7,240.3	55.5	54.5	94.65	-476.1	2,037.0	1,403.6	1,295.7	107.93	13.005		
9,300.0	7,128.2	9,314.8	7,242.0	57.9	56.8	94.65	-476.1	2,137.0	1,403.6	1,290.9	112.74	12.450		
9,400.0	7,130.0	9,414.8	7,243.7	60.2	59.3	94.65	-476.1	2,237.0	1,403.6	1,286.1	117.55	11.940		
9,500.0	7,131.7	9,514.8	7,245.5	62.6	61.7	94.65	-476.1	2,337.0	1,403.6	1,281.2	122.38	11.469		
9,600.0	7,133.5	9,614.8	7,247.2	65.0	64.1	94.65	-476.1	2,437.0	1,403.6	1,276.4	127.21	11.034		
9,700.0	7,135.2	9,714.8	7,249.0	67.3	66.5	94.65	-476.1	2,537.0	1,403.6	1,271.6	132.05	10.629		
9,800.0	7,137.0	9,814.8	7,250.7	69.7	68.9	94.65	-476.1	2,637.0	1,403.6	1,266.7	136.90	10.253		
9,900.0	7,138.7	9,914.8	7,252.5	72.1	71.3	94.65	-476.1	2,736.9	1,403.6	1,261.8	141.76	9.902		
10,000.0	7,140.5	10,014.8	7,254.2	74.5	73.8	94.65	-476.1	2,836.9	1,403.6	1,257.0	146.61	9.573		
10,100.0	7,142.2	10,114.8	7,256.0	76.9	76.2	94.65	-476.1	2,936.9	1,403.6	1,252.1	151.48	9.266		
10,200.0	7,143.9	10,214.8	7,257.7	79.4	78.6	94.65	-476.1	3,036.9	1,403.6	1,247.2	156.34	8.978		

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 Billings 2B-18H
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	WELL @ 5210.0ft (Original Well Elev)
<b>Reference Site:</b>	S18-T3N-R68W (Billings)	<b>MD Reference:</b>	WELL @ 5210.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Billings 2B-18H	<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>	HZ	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #1	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S18-T3N-R68W (Billings) - Billings 2F-18H - HZ - Plan #1													Offset Site Error: 0.0 ft	
Survey Program: 0-MWD													Offset Well Error: 0.0 ft	
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor		
10,300.0	7,145.7	10,314.8	7,259.5	81.8	81.1	94.65	-476.1	3,136.9	1,403.6	1,242.4	161.22	8.706		
10,400.0	7,147.4	10,414.8	7,261.2	84.2	83.5	94.65	-476.1	3,236.9	1,403.6	1,237.5	166.09	8.451		
10,500.0	7,149.2	10,514.8	7,262.9	86.6	86.0	94.65	-476.1	3,336.9	1,403.6	1,232.6	170.97	8.210		
10,600.0	7,150.9	10,614.8	7,264.7	89.0	88.4	94.65	-476.1	3,436.8	1,403.6	1,227.7	175.85	7.982		
10,700.0	7,152.7	10,714.8	7,266.4	91.5	90.9	94.65	-476.1	3,536.8	1,403.6	1,222.8	180.73	7.766		
10,800.0	7,154.4	10,814.8	7,268.2	93.9	93.3	94.65	-476.1	3,636.8	1,403.6	1,218.0	185.62	7.562		
10,900.0	7,156.2	10,914.8	7,269.9	96.3	95.7	94.65	-476.1	3,736.8	1,403.6	1,213.1	190.51	7.367		
11,000.0	7,157.9	11,014.8	7,271.7	98.8	98.2	94.65	-476.1	3,836.8	1,403.6	1,208.2	195.40	7.183		
11,100.0	7,159.6	11,114.8	7,273.4	101.2	100.6	94.65	-476.1	3,936.8	1,403.6	1,203.3	200.29	7.008		
11,200.0	7,161.4	11,214.8	7,275.2	103.6	103.1	94.65	-476.1	4,036.7	1,403.6	1,198.4	205.19	6.840		
11,300.0	7,163.1	11,314.8	7,276.9	106.1	105.6	94.65	-476.1	4,136.7	1,403.6	1,193.5	210.08	6.681		
11,400.0	7,164.9	11,414.8	7,278.6	108.5	108.0	94.65	-476.1	4,236.7	1,403.6	1,188.6	214.98	6.529		
11,500.0	7,166.6	11,514.8	7,280.4	111.0	110.5	94.65	-476.1	4,336.7	1,403.6	1,183.7	219.88	6.383		
11,600.0	7,168.4	11,614.8	7,282.1	113.4	112.9	94.65	-476.1	4,436.7	1,403.6	1,178.8	224.78	6.244		
11,700.0	7,170.1	11,714.8	7,283.9	115.8	115.4	94.65	-476.1	4,536.7	1,403.5	1,173.9	229.69	6.111		
11,800.0	7,171.9	11,814.8	7,285.6	118.3	117.8	94.65	-476.1	4,636.7	1,403.5	1,169.0	234.59	5.983		
11,900.0	7,173.6	11,914.8	7,287.4	120.7	120.3	94.65	-476.1	4,736.6	1,403.5	1,164.0	239.49	5.860		
12,000.0	7,175.4	12,014.8	7,289.1	123.2	122.7	94.65	-476.1	4,836.6	1,403.5	1,159.1	244.40	5.743		
12,100.0	7,177.1	12,114.8	7,290.9	125.6	125.2	94.65	-476.1	4,936.6	1,403.5	1,154.2	249.31	5.630		
12,200.0	7,178.8	12,214.8	7,292.6	128.1	127.7	94.65	-476.1	5,036.6	1,403.5	1,149.3	254.21	5.521		
12,300.0	7,180.6	12,314.8	7,294.4	130.5	130.1	94.65	-476.1	5,136.6	1,403.5	1,144.4	259.12	5.416		
12,400.0	7,182.3	12,414.8	7,296.1	133.0	132.6	94.65	-476.1	5,236.6	1,403.5	1,139.5	264.03	5.316		
12,500.0	7,184.1	12,514.8	7,297.8	135.4	135.0	94.65	-476.1	5,336.5	1,403.5	1,134.6	268.94	5.219		
12,600.0	7,185.8	12,614.8	7,299.6	137.9	137.5	94.65	-476.1	5,436.5	1,403.5	1,129.7	273.85	5.125		
12,700.0	7,187.6	12,714.8	7,301.3	140.4	140.0	94.65	-476.1	5,536.5	1,403.5	1,124.8	278.77	5.035		
12,800.0	7,189.3	12,814.8	7,303.1	142.8	142.4	94.65	-476.1	5,636.5	1,403.5	1,119.8	283.68	4.948		
12,900.0	7,191.1	12,914.8	7,304.8	145.3	144.9	94.65	-476.1	5,736.5	1,403.5	1,114.9	288.59	4.863		
13,000.0	7,192.8	13,014.8	7,306.6	147.7	147.4	94.65	-476.1	5,836.5	1,403.5	1,110.0	293.51	4.782		
13,100.0	7,194.6	13,114.8	7,308.3	150.2	149.8	94.65	-476.1	5,936.5	1,403.5	1,105.1	298.42	4.703		
13,200.0	7,196.3	13,214.8	7,310.1	152.6	152.3	94.65	-476.1	6,036.4	1,403.5	1,100.2	303.33	4.627		
13,300.0	7,198.0	13,314.8	7,311.8	155.1	154.7	94.65	-476.1	6,136.4	1,403.5	1,095.3	308.25	4.553		
13,400.0	7,199.8	13,414.8	7,313.6	157.6	157.2	94.65	-476.1	6,236.4	1,403.5	1,090.3	313.17	4.482		
13,500.0	7,201.5	13,514.8	7,315.3	160.0	159.7	94.65	-476.2	6,336.4	1,403.5	1,085.4	318.08	4.412		
13,600.0	7,203.3	13,614.8	7,317.0	162.5	162.1	94.65	-476.2	6,436.4	1,403.5	1,080.5	323.00	4.345		
13,700.0	7,205.0	13,714.8	7,318.8	164.9	164.6	94.65	-476.2	6,536.4	1,403.5	1,075.6	327.92	4.280		
13,800.0	7,206.8	13,814.8	7,320.5	167.4	167.1	94.65	-476.2	6,636.3	1,403.5	1,070.7	332.83	4.217		
13,900.0	7,208.5	13,914.8	7,322.3	169.9	169.5	94.65	-476.2	6,736.3	1,403.5	1,065.7	337.75	4.155		
14,000.0	7,210.3	14,014.8	7,324.0	172.3	172.0	94.65	-476.2	6,836.3	1,403.5	1,060.8	342.67	4.096		
14,100.0	7,212.0	14,114.8	7,325.8	174.8	174.5	94.65	-476.2	6,936.3	1,403.5	1,055.9	347.59	4.038		
14,200.0	7,213.8	14,214.8	7,327.5	177.2	176.9	94.65	-476.2	7,036.3	1,403.5	1,051.0	352.51	3.981		
14,300.0	7,215.5	14,314.8	7,329.3	179.7	179.4	94.65	-476.2	7,136.3	1,403.5	1,046.0	357.43	3.927		
14,328.8	7,216.0	14,343.6	7,329.8	180.4	180.1	94.65	-476.2	7,165.1	1,403.5	1,044.6	358.85	3.911 SF		



# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Billings 2B-18H
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	WELL @ 5210.0ft (Original Well Elev)
<b>Reference Site:</b>	S18-T3N-R68W (Billings)	<b>MD Reference:</b>	WELL @ 5210.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Billings 2B-18H	<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>	HZ	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #1	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S18-T3N-R68W (Billings) - Billings 2G-18H - Hz - Plan #1													Offset Site Error:	0.0 ft
Survey Program: O-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor		
				(ft)	(ft)	(°)								
0.0	0.0	0.0	0.0	0.0	0.0	180.00	-51.0	0.0	51.0					
100.0	100.0	100.0	100.0	0.2	0.2	180.00	-51.0	0.0	51.0	50.7	0.30	167.922		
200.0	200.0	200.0	200.0	0.3	0.3	180.00	-51.0	0.0	51.0	50.3	0.65	78.124		
300.0	300.0	300.0	300.0	0.5	0.5	180.00	-51.0	0.0	51.0	50.0	1.00	50.903 CC, ES		
400.0	400.0	400.0	400.0	0.7	0.7	-166.18	-51.0	0.0	51.8	50.5	1.35	38.379		
500.0	500.0	499.1	499.1	0.9	0.8	-166.55	-51.8	-0.3	55.2	53.5	1.70	32.514		
600.0	599.9	597.9	597.8	1.0	1.0	-166.74	-54.3	-1.0	61.9	59.9	2.04	30.278		
700.0	699.7	696.3	696.1	1.2	1.2	-166.78	-58.3	-2.2	72.0	69.6	2.39	30.085 SF		
800.0	799.4	794.1	793.8	1.4	1.4	-166.71	-63.9	-4.0	85.3	82.6	2.74	31.151		
900.0	898.9	891.2	890.6	1.7	1.6	-166.58	-71.1	-6.2	101.9	98.8	3.08	33.043		
1,000.0	998.3	987.4	986.4	1.9	1.8	-166.41	-79.8	-8.8	121.8	118.3	3.43	35.503		
1,100.0	1,097.4	1,082.6	1,081.0	2.2	2.0	-166.24	-89.8	-11.9	144.9	141.1	3.78	38.365		
1,200.0	1,196.3	1,176.6	1,174.3	2.5	2.3	-166.07	-101.2	-15.4	171.1	167.0	4.12	41.518		
1,300.0	1,294.9	1,269.4	1,266.0	2.8	2.5	-165.91	-113.9	-19.3	200.5	196.0	4.47	44.885		
1,400.0	1,393.3	1,360.6	1,356.2	3.1	2.8	-165.75	-127.8	-23.6	232.9	228.1	4.81	48.409		
1,500.0	1,491.2	1,452.7	1,446.8	3.5	3.1	-165.61	-142.9	-28.3	268.1	263.0	5.16	51.974		
1,600.0	1,588.9	1,545.6	1,538.3	3.9	3.4	-165.56	-158.4	-33.0	305.1	299.5	5.51	55.373		
1,700.0	1,686.1	1,637.9	1,629.2	4.3	3.7	-165.57	-173.7	-37.7	343.6	337.7	5.86	58.636		
1,800.0	1,782.9	1,729.5	1,719.4	4.8	4.0	-165.62	-188.9	-42.4	383.6	377.4	6.21	61.786		
1,900.0	1,879.3	1,820.4	1,809.0	5.3	4.3	-165.70	-204.0	-47.0	425.2	418.7	6.56	64.842		
2,000.0	1,975.2	1,910.6	1,897.8	5.8	4.6	-165.80	-219.0	-51.6	468.3	461.4	6.91	67.820		
2,100.0	2,070.5	2,000.1	1,985.9	6.3	4.9	-165.91	-233.8	-56.2	513.0	505.8	7.25	70.733		
2,200.0	2,165.4	2,088.8	2,073.2	6.9	5.2	-166.03	-248.5	-60.7	559.2	551.6	7.60	73.591		
2,300.0	2,259.6	2,176.6	2,159.8	7.5	5.5	-166.15	-263.1	-65.2	606.9	598.9	7.94	76.404		
2,400.0	2,353.5	2,263.9	2,245.7	8.1	5.8	-166.36	-277.6	-69.6	655.6	647.3	8.31	78.942		
2,500.0	2,447.3	2,351.2	2,331.6	8.7	6.1	-166.57	-292.1	-74.1	704.4	695.7	8.67	81.214		
2,600.0	2,541.1	2,438.4	2,417.6	9.3	6.4	-166.76	-306.6	-78.5	753.2	744.2	9.04	83.298		
2,700.0	2,635.0	2,525.7	2,503.5	9.9	6.7	-166.92	-321.1	-83.0	802.0	792.6	9.41	85.217		
2,800.0	2,728.8	2,612.9	2,589.4	10.6	7.0	-167.06	-335.5	-87.4	850.8	841.1	9.78	86.989		
2,900.0	2,822.6	2,700.2	2,675.4	11.2	7.3	-167.19	-350.0	-91.9	899.7	889.5	10.15	88.630		
3,000.0	2,916.4	2,787.5	2,761.3	11.8	7.6	-167.30	-364.5	-96.3	948.5	938.0	10.52	90.155		
3,100.0	3,010.3	2,874.7	2,847.2	12.4	7.9	-167.41	-379.0	-100.8	997.3	986.4	10.89	91.574		
3,200.0	3,104.1	2,962.0	2,933.2	13.0	8.2	-167.50	-393.5	-105.2	1,046.1	1,034.9	11.26	92.899		
3,300.0	3,197.9	3,049.2	3,019.1	13.7	8.5	-167.58	-408.0	-109.7	1,094.9	1,083.3	11.63	94.139		
3,400.0	3,291.7	3,136.5	3,105.0	14.3	8.8	-167.66	-422.4	-114.1	1,143.8	1,131.8	12.00	95.301		
3,500.0	3,385.6	3,223.8	3,191.0	14.9	9.1	-167.73	-436.9	-118.6	1,192.6	1,180.2	12.37	96.393		
3,600.0	3,479.6	3,311.3	3,277.2	15.5	9.4	-167.93	-451.5	-123.1	1,240.9	1,228.1	12.78	97.070		
3,700.0	3,574.7	3,400.3	3,364.9	16.1	9.7	-168.16	-466.2	-127.6	1,286.4	1,273.2	13.22	97.328		
3,800.0	3,670.8	3,490.9	3,454.0	16.5	10.1	-168.34	-481.3	-132.2	1,328.9	1,315.3	13.65	97.383		
3,900.0	3,767.8	3,582.8	3,544.6	17.0	10.4	-168.46	-496.5	-136.9	1,368.2	1,354.2	14.07	97.258		
4,000.0	3,865.6	3,676.0	3,636.3	17.3	10.7	-168.54	-512.0	-141.7	1,404.4	1,389.9	14.48	96.971		
4,100.0	3,964.0	3,770.4	3,729.3	17.7	11.0	-168.58	-527.7	-146.5	1,437.4	1,422.5	14.89	96.540		
4,200.0	4,063.0	3,865.8	3,823.3	17.9	11.4	-168.58	-543.5	-151.3	1,467.1	1,451.8	15.29	95.980		
4,300.0	4,162.5	3,962.2	3,918.2	18.1	11.7	-168.54	-559.5	-156.3	1,493.6	1,477.9	15.67	95.303		
4,400.0	4,262.2	4,059.3	4,013.9	18.3	12.0	-168.47	-575.6	-161.2	1,516.7	1,500.7	16.05	94.522		
4,500.0	4,362.2	4,157.2	4,110.3	18.4	12.4	-168.36	-591.9	-166.2	1,536.6	1,520.2	16.41	93.648		
4,600.0	4,462.2	4,255.6	4,207.2	18.5	12.7	177.76	-608.2	-171.2	1,553.4	1,523.0	30.41	51.087		
4,700.0	4,562.2	4,354.1	4,304.2	18.6	13.1	177.97	-624.5	-176.2	1,569.9	1,539.0	30.81	50.948		
4,800.0	4,662.2	4,452.6	4,401.1	18.6	13.4	178.18	-640.9	-181.3	1,586.3	1,555.1	31.22	50.811		
4,900.0	4,762.2	4,551.1	4,498.1	18.7	13.7	178.38	-657.2	-186.3	1,602.8	1,571.1	31.63	50.675		
5,000.0	4,862.2	4,649.5	4,595.1	18.8	14.1	178.58	-673.6	-191.3	1,619.3	1,587.2	32.04	50.540		

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 Billings 2B-18H
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	WELL @ 5210.0ft (Original Well Elev)
<b>Reference Site:</b>	S18-T3N-R68W (Billings)	<b>MD Reference:</b>	WELL @ 5210.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Billings 2B-18H	<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>	HZ	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #1	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S18-T3N-R68W (Billings) - Billings 2H-18H - Hz - Plan #1													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis		Distance		Total		Separation		Warning		
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Uncertainty Axis			
0.0	0.0	0.0	0.0	0.0	0.0	-180.00	-61.9	0.0	61.9					
100.0	100.0	100.0	100.0	0.2	0.2	-180.00	-61.9	0.0	61.9	61.6	0.30	203.908		
200.0	200.0	200.0	200.0	0.3	0.3	-180.00	-61.9	0.0	61.9	61.3	0.65	94.866 CC, ES		
300.0	300.0	298.9	298.9	0.5	0.5	-179.84	-62.8	-0.2	62.8	61.8	1.00	62.770		
400.0	400.0	397.8	397.8	0.7	0.7	-165.50	-65.3	-0.7	66.1	64.8	1.35	49.101		
500.0	500.0	496.4	496.3	0.9	0.9	-165.31	-69.4	-1.6	72.9	71.2	1.69	43.036		
600.0	599.9	594.6	594.3	1.0	1.1	-165.22	-75.2	-2.9	83.0	81.0	2.04	40.688		
700.0	699.7	692.2	691.6	1.2	1.3	-165.20	-82.6	-4.5	96.5	94.1	2.39	40.431 SF		
800.0	799.4	789.0	788.0	1.4	1.5	-165.22	-91.5	-6.4	113.2	110.5	2.73	41.462		
900.0	898.9	885.0	883.3	1.7	1.7	-165.26	-101.9	-8.6	133.3	130.2	3.07	43.340		
1,000.0	998.3	979.9	977.5	1.9	2.0	-165.31	-113.7	-11.2	156.5	153.1	3.42	45.802		
1,100.0	1,097.4	1,073.6	1,070.2	2.2	2.3	-165.36	-126.9	-14.0	183.0	179.3	3.76	48.679		
1,200.0	1,196.3	1,166.0	1,161.4	2.5	2.6	-165.40	-141.3	-17.1	212.7	208.6	4.10	51.859		
1,300.0	1,294.9	1,256.9	1,250.9	2.8	2.9	-165.44	-156.9	-20.5	245.4	240.9	4.44	55.266		
1,400.0	1,393.3	1,346.3	1,338.7	3.1	3.2	-165.46	-173.6	-24.1	281.1	276.3	4.78	58.842		
1,500.0	1,491.2	1,434.0	1,424.5	3.5	3.5	-165.47	-191.3	-27.9	319.8	314.7	5.11	62.547		
1,600.0	1,588.9	1,519.9	1,508.3	3.9	3.9	-165.46	-209.9	-31.9	361.5	356.0	5.45	66.350		
1,700.0	1,686.1	1,604.0	1,590.0	4.3	4.2	-165.45	-229.2	-36.1	405.9	400.1	5.78	70.226		
1,800.0	1,782.9	1,686.1	1,669.5	4.8	4.6	-165.42	-249.3	-40.4	453.1	447.0	6.11	74.152		
1,900.0	1,879.3	1,771.5	1,751.9	5.3	5.0	-165.40	-270.9	-45.0	502.7	496.3	6.45	77.963		
2,000.0	1,975.2	1,857.4	1,834.9	5.8	5.4	-165.41	-292.7	-49.7	553.8	547.0	6.79	81.593		
2,100.0	2,070.5	1,942.5	1,917.1	6.3	5.8	-165.43	-314.4	-54.4	606.3	599.2	7.13	85.090		
2,200.0	2,165.4	2,026.7	1,998.4	6.9	6.2	-165.47	-335.7	-59.0	660.2	652.8	7.46	88.474		
2,300.0	2,259.6	2,109.9	2,078.8	7.5	6.6	-165.51	-356.9	-63.6	715.6	707.8	7.80	91.758		
2,400.0	2,353.5	2,192.5	2,158.5	8.1	7.0	-165.67	-377.8	-68.1	772.0	763.8	8.15	94.674		
2,500.0	2,447.3	2,275.1	2,238.2	8.7	7.4	-165.85	-398.8	-72.6	828.4	819.9	8.52	97.272		
2,600.0	2,541.1	2,357.6	2,317.9	9.3	7.8	-166.00	-419.8	-77.1	884.8	875.9	8.88	99.652		
2,700.0	2,635.0	2,440.1	2,397.7	9.9	8.2	-166.14	-440.7	-81.6	941.2	932.0	9.24	101.840		
2,800.0	2,728.8	2,522.7	2,477.4	10.6	8.6	-166.26	-461.7	-86.1	997.6	988.0	9.61	103.859		
2,900.0	2,822.6	2,605.2	2,557.1	11.2	9.0	-166.37	-482.6	-90.7	1,054.1	1,044.1	9.97	105.726		
3,000.0	2,916.4	2,687.8	2,636.8	11.8	9.4	-166.46	-503.6	-95.2	1,110.5	1,100.2	10.33	107.458		
3,100.0	3,010.3	2,770.3	2,716.5	12.4	9.8	-166.55	-524.6	-99.7	1,166.9	1,156.2	10.70	109.069		
3,200.0	3,104.1	2,852.9	2,796.2	13.0	10.2	-166.63	-545.5	-104.2	1,223.4	1,212.3	11.06	110.571		
3,300.0	3,197.9	2,935.4	2,875.9	13.7	10.6	-166.70	-566.5	-108.7	1,279.8	1,268.4	11.43	111.975		
3,400.0	3,291.7	3,017.9	2,955.6	14.3	11.0	-166.77	-587.5	-113.3	1,336.2	1,324.4	11.79	113.290		
3,500.0	3,385.6	3,100.5	3,035.3	14.9	11.4	-166.83	-608.4	-117.8	1,392.7	1,380.5	12.16	114.524		
3,600.0	3,479.6	3,183.4	3,115.4	15.5	11.8	-167.06	-629.5	-122.3	1,448.6	1,436.0	12.57	115.242		
3,700.0	3,574.7	3,268.0	3,197.1	16.1	12.2	-167.35	-650.9	-126.9	1,501.9	1,488.9	13.01	115.486		
3,800.0	3,670.8	3,354.3	3,280.4	16.5	12.6	-167.58	-672.9	-131.7	1,552.3	1,538.9	13.44	115.539		
3,900.0	3,767.8	3,442.3	3,365.4	17.0	13.0	-167.76	-695.2	-136.5	1,599.8	1,585.9	13.86	115.423		

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 Billings 2B-18H
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	WELL @ 5210.0ft (Original Well Elev)
<b>Reference Site:</b>	S18-T3N-R68W (Billings)	<b>MD Reference:</b>	WELL @ 5210.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Billings 2B-18H	<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>	HZ	<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 WELL @ 5210.0ft (Original Well Elev)  
Offset Depths are relative to Offset Datum  
Central Meridian is -105.500000 °

Coordinates are relative to: Billings 2B-18H  
Coordinate System is US State Plane 1983, Colorado Northern Zone  
Grid Convergence at Surface is: 0.29°

