

# Cathedral Energy Services

## Planning Report

<b>Database:</b>	USA EDM 5000 Multi Users DB	<b>Local Co-ordinate Reference:</b>	Well lone 3A-2H
<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>TVD Reference:</b>	WELL @ 5044.0ft (Original Well Elev)
<b>Project:</b>	DJ Wattenberg	<b>MD Reference:</b>	WELL @ 5044.0ft (Original Well Elev)
<b>Site:</b>	NWSW S2-T2N-R66W (lone)	<b>North Reference:</b>	True
<b>Well:</b>	lone 3A-2H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Hz		
<b>Design:</b>	Plan #1B		

<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		NWSW S2-T2N-R66W (lone)			
Site Position:		Northing:	1,304,189.98 ft	Latitude:	40.165970
From:	Lat/Long	Easting:	3,209,020.89 ft	Longitude:	-104.752100
Position Uncertainty:	0.0 ft	Slot Radius:	13.200 in	Grid Convergence:	0.48 °

Well	lone 3A-2H					
Well Position	+N/-S	0.0 ft	Northing:	1,304,189.98 ft	Latitude:	40.165970
	+E/-W	0.0 ft	Easting:	3,209,020.89 ft	Longitude:	-104.752100
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	5,030.0 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</b>
			(°)	(°)	(nT)
	IGRF200510	4/19/2011	8.82	66.88	53,047

<b>Design</b>	Plan #1B			
<b>Audit Notes:</b>				
<b>Version:</b>	<b>Phase:</b>	PROTOTYPE	<b>Tie On Depth:</b>	0.0
<b>Vertical Section:</b>	<b>Depth From (TVD)</b>	<b>+N/-S</b>	<b>+E/-W</b>	<b>Direction</b>
	(ft)	(ft)	(ft)	(°)
	0.0	0.0	0.0	84.00

<b>Plan Sections</b>										
<b>Measured</b>	<b>Inclination</b>	<b>Azimuth</b>	<b>Vertical</b>	<b>+N/-S</b>	<b>+E/-W</b>	<b>Dogleg</b>	<b>Build</b>	<b>Turn</b>	<b>TFO</b>	<b>Target</b>
<b>Depth</b>	(°)	(°)	<b>Depth</b>	(ft)	(ft)	<b>Rate</b>	<b>Rate</b>	<b>Rate</b>	(°)	
(ft)			(ft)			(°/100ft)	(°/100ft)	(°/100ft)		
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
4,000.0	0.00	0.00	4,000.0	0.0	0.0	0.00	0.00	0.00	0.00	
4,135.9	10.87	263.99	4,135.1	-1.3	-12.8	8.00	8.00	0.00	263.99	
6,443.8	10.87	263.99	6,401.5	-47.0	-445.8	0.00	0.00	0.00	0.00	
7,710.9	90.50	84.00	7,252.8	27.2	259.9	8.00	6.28	-14.20	-179.99	
11,810.9	90.50	84.00	7,217.0	455.7	4,337.3	0.00	0.00	0.00	0.00	lone 3A-2H PBHL

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<b>Project:</b>	DJ Wattenberg	<b>MD Reference:</b>	WELL @ 5044.0ft (Original Well Elev)
<b>Site:</b>	NWSW S2-T2N-R66W (Ione)	<b>North Reference:</b>	True
<b>Well:</b>	Ione 3A-2H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Hz		
<b>Design:</b>	Plan #1B		

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	
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	
700.0	0.00	0.00	700.0	0.0	0.0	0.0	0.00	0.00	
800.0	0.00	0.00	800.0	0.0	0.0	0.0	0.00	0.00	
900.0	0.00	0.00	900.0	0.0	0.0	0.0	0.00	0.00	
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.0	0.00	0.00	
1,100.0	0.00	0.00	1,100.0	0.0	0.0	0.0	0.00	0.00	
1,200.0	0.00	0.00	1,200.0	0.0	0.0	0.0	0.00	0.00	
1,300.0	0.00	0.00	1,300.0	0.0	0.0	0.0	0.00	0.00	
1,400.0	0.00	0.00	1,400.0	0.0	0.0	0.0	0.00	0.00	
1,500.0	0.00	0.00	1,500.0	0.0	0.0	0.0	0.00	0.00	
1,600.0	0.00	0.00	1,600.0	0.0	0.0	0.0	0.00	0.00	
1,700.0	0.00	0.00	1,700.0	0.0	0.0	0.0	0.00	0.00	
1,800.0	0.00	0.00	1,800.0	0.0	0.0	0.0	0.00	0.00	
1,900.0	0.00	0.00	1,900.0	0.0	0.0	0.0	0.00	0.00	
2,000.0	0.00	0.00	2,000.0	0.0	0.0	0.0	0.00	0.00	
2,100.0	0.00	0.00	2,100.0	0.0	0.0	0.0	0.00	0.00	
2,200.0	0.00	0.00	2,200.0	0.0	0.0	0.0	0.00	0.00	
2,300.0	0.00	0.00	2,300.0	0.0	0.0	0.0	0.00	0.00	
2,400.0	0.00	0.00	2,400.0	0.0	0.0	0.0	0.00	0.00	
2,500.0	0.00	0.00	2,500.0	0.0	0.0	0.0	0.00	0.00	
2,600.0	0.00	0.00	2,600.0	0.0	0.0	0.0	0.00	0.00	
2,700.0	0.00	0.00	2,700.0	0.0	0.0	0.0	0.00	0.00	
2,800.0	0.00	0.00	2,800.0	0.0	0.0	0.0	0.00	0.00	
2,900.0	0.00	0.00	2,900.0	0.0	0.0	0.0	0.00	0.00	
3,000.0	0.00	0.00	3,000.0	0.0	0.0	0.0	0.00	0.00	
3,100.0	0.00	0.00	3,100.0	0.0	0.0	0.0	0.00	0.00	
3,200.0	0.00	0.00	3,200.0	0.0	0.0	0.0	0.00	0.00	
3,300.0	0.00	0.00	3,300.0	0.0	0.0	0.0	0.00	0.00	
3,400.0	0.00	0.00	3,400.0	0.0	0.0	0.0	0.00	0.00	
3,500.0	0.00	0.00	3,500.0	0.0	0.0	0.0	0.00	0.00	
3,600.0	0.00	0.00	3,600.0	0.0	0.0	0.0	0.00	0.00	
3,700.0	0.00	0.00	3,700.0	0.0	0.0	0.0	0.00	0.00	
3,800.0	0.00	0.00	3,800.0	0.0	0.0	0.0	0.00	0.00	
3,900.0	0.00	0.00	3,900.0	0.0	0.0	0.0	0.00	0.00	
4,000.0	0.00	0.00	4,000.0	0.0	0.0	0.0	0.00	0.00	KOP @ 4000' MD
4,050.0	4.00	263.99	4,050.0	-0.2	-1.7	-1.7	8.00	8.00	
4,100.0	8.00	263.99	4,099.7	-0.7	-6.9	-7.0	8.00	8.00	
4,135.9	10.87	263.99	4,135.1	-1.3	-12.8	-12.9	8.00	8.00	EOB; Inc=10.87°
4,200.0	10.87	263.99	4,198.0	-2.6	-24.8	-24.9	0.00	0.00	
4,300.0	10.87	263.99	4,296.2	-4.6	-43.6	-43.8	0.00	0.00	
4,400.0	10.87	263.99	4,394.4	-6.6	-62.3	-62.7	0.00	0.00	
4,500.0	10.87	263.99	4,492.6	-8.5	-81.1	-81.5	0.00	0.00	
4,508.2	10.87	263.99	4,500.7	-8.7	-82.6	-83.1	0.00	0.00	Sussex
4,600.0	10.87	263.99	4,590.9	-10.5	-99.9	-100.4	0.00	0.00	
4,700.0	10.87	263.99	4,689.1	-12.5	-118.6	-119.3	0.00	0.00	
4,800.0	10.87	263.99	4,787.3	-14.5	-137.4	-138.1	0.00	0.00	

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<b>Site:</b>	NWSW S2-T2N-R66W (lone)	<b>North Reference:</b>	True
<b>Well:</b>	lone 3A-2H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Hz		
<b>Design:</b>	Plan #1B		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Comments / Formations
4,900.0	10.87	263.99	4,885.5	-16.4	-156.1	-157.0	0.00	0.00	
5,000.0	10.87	263.99	4,983.7	-18.4	-174.9	-175.9	0.00	0.00	
5,100.0	10.87	263.99	5,081.9	-20.4	-193.7	-194.7	0.00	0.00	
5,180.4	10.87	263.99	5,160.8	-22.0	-208.7	-209.9	0.00	0.00	Sharon Springs
5,200.0	10.87	263.99	5,180.1	-22.4	-212.4	-213.6	0.00	0.00	
5,300.0	10.87	263.99	5,278.3	-24.3	-231.2	-232.5	0.00	0.00	
5,400.0	10.87	263.99	5,376.5	-26.3	-249.9	-251.3	0.00	0.00	
5,500.0	10.87	263.99	5,474.7	-28.3	-268.7	-270.2	0.00	0.00	
5,600.0	10.87	263.99	5,572.9	-30.3	-287.5	-289.1	0.00	0.00	
5,700.0	10.87	263.99	5,671.1	-32.3	-306.2	-307.9	0.00	0.00	
5,800.0	10.87	263.99	5,769.3	-34.2	-325.0	-326.8	0.00	0.00	
5,900.0	10.87	263.99	5,867.5	-36.2	-343.7	-345.6	0.00	0.00	
6,000.0	10.87	263.99	5,965.7	-38.2	-362.5	-364.5	0.00	0.00	
6,100.0	10.87	263.99	6,063.9	-40.2	-381.3	-383.4	0.00	0.00	
6,200.0	10.87	263.99	6,162.1	-42.1	-400.0	-402.2	0.00	0.00	
6,300.0	10.87	263.99	6,260.3	-44.1	-418.8	-421.1	0.00	0.00	
6,400.0	10.87	263.99	6,358.5	-46.1	-437.5	-440.0	0.00	0.00	
6,443.8	10.87	263.99	6,401.5	-47.0	-445.8	-448.2	0.00	0.00	Begin 2nd 8° Build
6,450.0	10.37	263.99	6,407.6	-47.1	-446.9	-449.4	8.00	-8.00	
6,500.0	6.37	263.98	6,457.1	-47.8	-454.1	-456.7	8.00	-8.00	
6,550.0	2.37	263.94	6,506.9	-48.2	-457.9	-460.5	8.00	-8.00	
6,600.0	1.63	84.09	6,556.9	-48.3	-458.3	-460.8	8.00	-1.50	
6,650.0	5.63	84.02	6,606.8	-47.9	-455.1	-457.6	8.00	8.00	
6,700.0	9.63	84.01	6,656.4	-47.3	-448.5	-451.0	8.00	8.00	
6,750.0	13.63	84.01	6,705.3	-46.2	-438.5	-440.9	8.00	8.00	
6,800.0	17.63	84.01	6,753.5	-44.8	-425.1	-427.5	8.00	8.00	
6,850.0	21.63	84.01	6,800.6	-43.0	-408.4	-410.7	8.00	8.00	
6,900.0	25.63	84.01	6,846.4	-40.9	-388.5	-390.6	8.00	8.00	
6,950.0	29.63	84.00	6,890.7	-38.5	-365.4	-367.5	8.00	8.00	
7,000.0	33.63	84.00	6,933.2	-35.8	-339.4	-341.2	8.00	8.00	
7,050.0	37.63	84.00	6,973.9	-32.7	-310.4	-312.1	8.00	8.00	
7,100.0	41.63	84.00	7,012.4	-29.4	-278.7	-280.2	8.00	8.00	
7,150.0	45.63	84.00	7,048.5	-25.8	-244.4	-245.8	8.00	8.00	
7,200.0	49.63	84.00	7,082.2	-22.0	-207.7	-208.8	8.00	8.00	
7,250.0	53.63	84.00	7,113.3	-17.9	-168.7	-169.6	8.00	8.00	
7,300.0	57.63	84.00	7,141.5	-13.5	-127.7	-128.4	8.00	8.00	
7,350.0	61.63	84.00	7,166.8	-9.0	-84.8	-85.2	8.00	8.00	
7,400.0	65.63	84.00	7,189.0	-4.4	-40.2	-40.5	8.00	8.00	
7,450.0	69.63	84.00	7,208.0	0.5	5.8	5.8	8.00	8.00	
7,500.0	73.63	84.00	7,223.8	5.4	52.9	53.2	8.00	8.00	
7,502.7	73.84	84.00	7,224.5	5.7	55.5	55.8	8.00	8.00	Niobara
7,550.0	77.63	84.00	7,236.2	10.5	101.1	101.6	8.00	8.00	
7,600.0	81.63	84.00	7,245.2	15.6	150.0	150.8	8.00	8.00	
7,650.0	85.63	84.00	7,250.7	20.8	199.4	200.5	8.00	8.00	
7,700.0	89.63	84.00	7,252.8	26.0	249.1	250.4	8.00	8.00	
7,701.7	89.76	84.00	7,252.8	26.2	250.7	252.1	8.00	8.00	B Bench
7,710.9	90.50	84.00	7,252.8	27.2	259.9	261.4	8.00	8.00	LP @ 7252.8' TVD; 90.5°
7,800.0	90.50	84.00	7,252.0	36.5	348.5	350.4	0.00	0.00	
7,900.0	90.50	84.00	7,251.1	46.9	448.0	450.4	0.00	0.00	
8,000.0	90.50	84.00	7,250.3	57.4	547.4	550.4	0.00	0.00	
8,100.0	90.50	84.00	7,249.4	67.9	646.9	650.4	0.00	0.00	
8,200.0	90.50	84.00	7,248.5	78.3	746.3	750.4	0.00	0.00	

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<b>Project:</b>	DJ Wattenberg	<b>MD Reference:</b>	WELL @ 5044.0ft (Original Well Elev)
<b>Site:</b>	NWSW S2-T2N-R66W (lone)	<b>North Reference:</b>	True
<b>Well:</b>	lone 3A-2H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Hz		
<b>Design:</b>	Plan #1B		

### 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
8,300.0	90.50	84.00	7,247.6	88.8	845.8	850.4	0.00	0.00	
8,400.0	90.50	84.00	7,246.8	99.2	945.2	950.4	0.00	0.00	
8,500.0	90.50	84.00	7,245.9	109.7	1,044.7	1,050.4	0.00	0.00	
8,600.0	90.50	84.00	7,245.0	120.1	1,144.1	1,150.4	0.00	0.00	
8,700.0	90.50	84.00	7,244.1	130.6	1,243.6	1,250.4	0.00	0.00	
8,800.0	90.50	84.00	7,243.3	141.0	1,343.0	1,350.4	0.00	0.00	
8,900.0	90.50	84.00	7,242.4	151.5	1,442.5	1,450.4	0.00	0.00	
9,000.0	90.50	84.00	7,241.5	161.9	1,541.9	1,550.4	0.00	0.00	
9,100.0	90.50	84.00	7,240.7	172.4	1,641.4	1,650.4	0.00	0.00	
9,200.0	90.50	84.00	7,239.8	182.8	1,740.8	1,750.4	0.00	0.00	
9,300.0	90.50	84.00	7,238.9	193.3	1,840.3	1,850.4	0.00	0.00	
9,400.0	90.50	84.00	7,238.0	203.7	1,939.7	1,950.4	0.00	0.00	
9,500.0	90.50	84.00	7,237.2	214.2	2,039.2	2,050.4	0.00	0.00	
9,600.0	90.50	84.00	7,236.3	224.6	2,138.6	2,150.4	0.00	0.00	
9,700.0	90.50	84.00	7,235.4	235.1	2,238.1	2,250.4	0.00	0.00	
9,800.0	90.50	84.00	7,234.5	245.5	2,337.5	2,350.4	0.00	0.00	
9,900.0	90.50	84.00	7,233.7	256.0	2,436.9	2,450.4	0.00	0.00	
10,000.0	90.50	84.00	7,232.8	266.5	2,536.4	2,550.4	0.00	0.00	
10,100.0	90.50	84.00	7,231.9	276.9	2,635.8	2,650.3	0.00	0.00	
10,200.0	90.50	84.00	7,231.1	287.4	2,735.3	2,750.3	0.00	0.00	
10,300.0	90.50	84.00	7,230.2	297.8	2,834.7	2,850.3	0.00	0.00	
10,400.0	90.50	84.00	7,229.3	308.3	2,934.2	2,950.3	0.00	0.00	
10,500.0	90.50	84.00	7,228.4	318.7	3,033.6	3,050.3	0.00	0.00	
10,600.0	90.50	84.00	7,227.6	329.2	3,133.1	3,150.3	0.00	0.00	
10,700.0	90.50	84.00	7,226.7	339.6	3,232.5	3,250.3	0.00	0.00	
10,800.0	90.50	84.00	7,225.8	350.1	3,332.0	3,350.3	0.00	0.00	
10,900.0	90.50	84.00	7,224.9	360.5	3,431.4	3,450.3	0.00	0.00	
11,000.0	90.50	84.00	7,224.1	371.0	3,530.9	3,550.3	0.00	0.00	
11,100.0	90.50	84.00	7,223.2	381.4	3,630.3	3,650.3	0.00	0.00	
11,200.0	90.50	84.00	7,222.3	391.9	3,729.8	3,750.3	0.00	0.00	
11,300.0	90.50	84.00	7,221.5	402.3	3,829.2	3,850.3	0.00	0.00	
11,400.0	90.50	84.00	7,220.6	412.8	3,928.7	3,950.3	0.00	0.00	
11,500.0	90.50	84.00	7,219.7	423.2	4,028.1	4,050.3	0.00	0.00	
11,600.0	90.50	84.00	7,218.8	433.7	4,127.6	4,150.3	0.00	0.00	
11,700.0	90.50	84.00	7,218.0	444.1	4,227.0	4,250.3	0.00	0.00	
11,800.0	90.50	84.00	7,217.1	454.6	4,326.5	4,350.3	0.00	0.00	
11,810.9	90.50	84.00	7,217.0	455.7	4,337.3	4,361.2	0.00	0.00	TD at 11810.9

# Cathedral Energy Services

## Planning Report

<b>Database:</b>	USA EDM 5000 Multi Users DB	<b>Local Co-ordinate Reference:</b>	Well lone 3A-2H
<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>TVD Reference:</b>	WELL @ 5044.0ft (Original Well Elev)
<b>Project:</b>	DJ Wattenberg	<b>MD Reference:</b>	WELL @ 5044.0ft (Original Well Elev)
<b>Site:</b>	NWSW S2-T2N-R66W (lone)	<b>North Reference:</b>	True
<b>Well:</b>	lone 3A-2H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Hz		
<b>Design:</b>	Plan #1B		

Targets									
Target Name									
- hit/miss target	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- Shape	(°)	(°)	(ft)	(ft)	(ft)	(ft)	(ft)		
lone 3A-2H LP	0.00	0.00	7,255.1	-1.2	-10.0	1,304,188.71	3,209,010.94	40.165967	-104.752136
- plan misses target center by 49.7ft at 7450.0ft MD (7208.0 TVD, 0.5 N, 5.8 E)									
- Point									
lone 23-2	0.00	0.00	2.0	-296.5	1,508.0	1,303,906.22	3,210,531.37	40.165156	-104.746704
- plan misses target center by 1536.9ft at 2.0ft MD (2.0 TVD, 0.0 N, 0.0 E)									
- Point									
lone 13-2	0.00	0.00	2.0	-350.9	206.5	1,303,840.82	3,209,230.33	40.165007	-104.751361
- plan misses target center by 407.2ft at 2.0ft MD (2.0 TVD, 0.0 N, 0.0 E)									
- Point									
lone 3A-2H PBHL	0.00	0.00	7,217.0	455.7	4,337.3	1,304,682.28	3,213,354.22	40.167220	-104.736580
- plan hits target center									
- Point									
LP lone 3A-2H	0.00	0.00	7,252.8	27.2	259.9	1,304,219.37	3,209,280.55	40.166045	-104.751170
- plan hits target center									
- Point									
lone 33-2	0.00	0.00	2.0	-211.8	2,829.8	1,304,002.02	3,211,852.38	40.165388	-104.741975
- plan misses target center by 2837.7ft at 2.0ft MD (2.0 TVD, 0.0 N, 0.0 E)									
- Point									
lone 43-2	0.00	0.00	2.0	74.3	4,320.9	1,304,300.69	3,213,340.97	40.166173	-104.736639
- plan misses target center by 4321.5ft at 2.0ft MD (2.0 TVD, 0.0 N, 0.0 E)									
- Point									

Formations						
Measured Depth	Vertical Depth	Name	Lithology	Dip	Dip Direction	
(ft)	(ft)			(°)	(°)	
4,508.2	4,500.0	Sussex		-0.50	84.00	
5,180.4	5,159.0	Sharon Springs		-0.50	84.00	
7,502.7	7,225.0	Niobara		-0.50	84.00	
7,701.7	7,255.0	B Bench		-0.50	84.00	

Plan Annotations					
Measured Depth	Vertical Depth	Local Coordinates			
(ft)	(ft)	+N/-S	+E/-W	Comment	
(ft)	(ft)	(ft)	(ft)		
4,000.0	4,000.0	0.0	0.0	KOP @ 4000' MD	
4,135.9	4,135.1	-1.3	-12.8	EOB; Inc=10.87°	
6,443.8	6,401.5	-47.0	-445.8	Begin 2nd 8° Build	
7,710.9	7,252.8	27.2	259.9	LP @ 7252.8' TVD; 90.5°	
11,810.9	7,217.0	455.7	4,337.3	TD at 11810.9	

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

**DJ Wattenberg**

**NWSW S2-T2N-R66W (lone)**

**lone 3A-2H**

**Hz**

**Plan #1B**

## **Anticollision Report**

**19 April, 2011**

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well lone 3A-2H
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	WELL @ 5044.0ft (Original Well Elev)
<b>Reference Site:</b>	NWSW S2-T2N-R66W (lone)	<b>MD Reference:</b>	WELL @ 5044.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	lone 3A-2H	<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 #1B	<b>Offset TVD Reference:</b>	Offset Datum

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

<b>Survey Tool Program</b>	<b>Date</b> 4/19/2011			
<b>From (ft)</b>	<b>To (ft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>
0.0	11,810.9	Plan #1B (Hz)	MWD	Geolink MWD

<b>Summary</b>						
<b>Site Name</b>	<b>Reference Measured Depth (ft)</b>	<b>Offset Measured Depth (ft)</b>	<b>Distance Between Centres (ft)</b>	<b>Distance Between Ellipses (ft)</b>	<b>Separation Factor</b>	<b>Warning</b>
<b>Offset Well - Wellbore - Design</b>						
NWSW S2-T2N-R66W (lone)						
lone 0-6-2 - Wellbore #1 - Design #1	865.6	868.6	378.7	375.7	127.232	CC
lone 0-6-2 - Wellbore #1 - Design #1	900.0	902.9	378.7	375.6	122.311	ES
lone 0-6-2 - Wellbore #1 - Design #1	2,800.0	2,771.0	500.0	489.4	47.262	SF
lone 13-2 - Wellbore #1 - Wellbore #1	7,618.0	7,250.6	370.5	348.6	16.983	CC, ES
lone 13-2 - Wellbore #1 - Wellbore #1	7,700.0	7,255.8	379.4	356.4	16.509	SF
lone 23-2 - Wellbore #1 - Wellbore #1	8,918.4	7,245.2	452.4	403.5	9.264	CC, ES
lone 23-2 - Wellbore #1 - Wellbore #1	9,000.0	7,244.5	459.7	408.9	9.057	SF
lone 33-2 - Wellbore #1 - Wellbore #1						Out of range
lone 43-2 - Wellbore #1 - Wellbore #1	11,754.7	7,219.5	377.7	260.1	3.214	CC, ES
lone 43-2 - Wellbore #1 - Wellbore #1	11,800.0	7,219.1	380.4	261.7	3.206	SF
lone 4-4-2 - Wellbore #1 - Plan #1	9,586.4	7,717.2	251.8	160.5	2.758	CC, ES
lone 4-4-2 - Wellbore #1 - Plan #1	9,600.0	7,717.0	252.2	160.5	2.752	SF



# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well lone 3A-2H
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	WELL @ 5044.0ft (Original Well Elev)
<b>Reference Site:</b>	NWSW S2-T2N-R66W (lone)	<b>MD Reference:</b>	WELL @ 5044.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	lone 3A-2H	<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 #1B	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design NWSW S2-T2N-R66W (lone) - lone 0-6-2 - Wellbore #1 - Design #1													Offset Site Error: 0.0 ft	
Survey Program: 0-MWD													Offset Well Error: 0.0 ft	
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Total Uncertainty	Separation		
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	Axis	Factor		
0.0	0.0	3.0	3.0	0.0	0.0	156.05	-346.1	153.7	378.7					
100.0	100.0	103.0	103.0	0.2	0.2	156.05	-346.1	153.7	378.7	378.4	0.30	1,246.927		
200.0	200.0	203.0	203.0	0.3	0.3	156.05	-346.1	153.7	378.7	378.0	0.65	580.122		
300.0	300.0	303.0	303.0	0.5	0.5	156.05	-346.1	153.7	378.7	377.7	1.00	377.989		
400.0	400.0	403.0	403.0	0.7	0.7	156.05	-346.1	153.7	378.7	377.3	1.35	280.317		
500.0	500.0	503.0	503.0	0.8	0.9	156.05	-346.1	153.7	378.7	377.0	1.70	222.757		
600.0	600.0	603.0	603.0	1.0	1.0	156.05	-346.1	153.7	378.7	376.6	2.05	184.809		
700.0	700.0	703.0	703.0	1.2	1.2	156.05	-346.1	153.7	378.7	376.3	2.40	157.908		
800.0	800.0	803.0	803.0	1.4	1.4	156.05	-346.1	153.7	378.7	375.9	2.75	137.843		
865.6	865.6	868.6	868.6	1.5	1.5	156.05	-346.1	153.7	378.7	375.7	2.98	127.232 CC		
900.0	900.0	902.9	902.9	1.5	1.5	156.05	-346.1	153.7	378.7	375.6	3.10	122.311 ES		
1,000.0	1,000.0	1,000.0	1,000.0	1.7	1.7	156.30	-347.3	152.4	379.2	375.8	3.44	110.239		
1,100.0	1,100.0	1,094.5	1,094.3	1.9	1.9	156.99	-350.5	148.8	380.9	377.1	3.78	100.745		
1,200.0	1,200.0	1,189.8	1,189.3	2.1	2.1	158.12	-356.0	142.9	383.8	379.7	4.13	93.019		
1,300.0	1,300.0	1,284.4	1,283.3	2.2	2.3	159.66	-363.5	134.7	388.2	383.7	4.48	86.720		
1,400.0	1,400.0	1,383.5	1,381.5	2.4	2.5	161.45	-372.4	125.0	393.4	388.6	4.84	81.277		
1,500.0	1,500.0	1,482.6	1,479.7	2.6	2.8	163.19	-381.4	115.2	399.1	393.9	5.21	76.579		
1,600.0	1,600.0	1,581.7	1,577.9	2.8	3.0	164.88	-390.3	105.5	405.1	399.5	5.59	72.483		
1,700.0	1,700.0	1,680.8	1,676.1	2.9	3.3	166.52	-399.3	95.7	411.5	405.5	5.97	68.885		
1,800.0	1,800.0	1,779.9	1,774.4	3.1	3.5	168.11	-408.2	86.0	418.2	411.8	6.36	65.705		
1,900.0	1,900.0	1,879.0	1,872.6	3.3	3.8	169.64	-417.2	76.2	425.2	418.4	6.76	62.879		
2,000.0	2,000.0	1,978.2	1,970.8	3.5	4.1	171.13	-426.1	66.5	432.5	425.3	7.17	60.356		
2,100.0	2,100.0	2,077.3	2,069.0	3.6	4.3	172.57	-435.1	56.7	440.1	432.5	7.57	58.094		
2,200.0	2,200.0	2,176.4	2,167.2	3.8	4.6	173.96	-444.0	47.0	447.9	439.9	7.99	56.059		
2,300.0	2,300.0	2,275.5	2,265.4	4.0	4.9	175.30	-453.0	37.2	456.0	447.6	8.41	54.221		
2,400.0	2,400.0	2,374.6	2,363.7	4.2	5.2	176.60	-461.9	27.5	464.4	455.5	8.84	52.557		
2,500.0	2,500.0	2,473.7	2,461.9	4.3	5.4	177.84	-470.8	17.7	473.0	463.7	9.27	51.045		
2,600.0	2,600.0	2,572.8	2,560.1	4.5	5.7	179.05	-479.8	8.0	481.8	472.1	9.70	49.669		
2,700.0	2,700.0	2,671.9	2,658.3	4.7	6.0	-179.79	-488.7	-1.8	490.8	480.6	10.14	48.412		
2,800.0	2,800.0	2,771.0	2,756.5	4.9	6.3	-178.67	-497.7	-11.5	500.0	489.4	10.58	47.262 SF		

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well lone 3A-2H
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	WELL @ 5044.0ft (Original Well Elev)
<b>Reference Site:</b>	NWSW S2-T2N-R66W (lone)	<b>MD Reference:</b>	WELL @ 5044.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	lone 3A-2H	<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 #1B	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design NWSW S2-T2N-R66W (lone) - lone 13-2 - Wellbore #1 - Wellbore #1													Offset Site Error: 0.0 ft	
Survey Program: 8083-Gyro													Offset Well Error: 0.0 ft	
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre		Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor		
							+N/-S (ft)	+E/-W (ft)						
0.0	0.0	3.0	3.0	0.0	0.0	149.53	-350.9	206.5	407.2					
100.0	100.0	103.0	103.0	0.2	0.1	149.53	-350.9	206.5	407.2	406.9	0.24	1,697.832		
200.0	200.0	203.0	203.0	0.3	0.2	149.53	-350.9	206.5	407.2	406.7	0.50	811.974		
300.0	300.0	303.0	303.0	0.5	0.3	149.53	-350.9	206.5	407.2	406.4	0.76	533.576		
400.0	400.0	403.0	403.0	0.7	0.4	149.53	-350.9	206.5	407.2	406.1	1.02	397.342		
500.0	500.0	503.0	503.0	0.8	0.4	149.53	-350.9	206.5	407.2	405.9	1.29	316.525		
600.0	600.0	603.0	603.0	1.0	0.5	149.53	-350.9	206.5	407.2	405.6	1.55	263.027		
700.0	700.0	703.0	703.0	1.2	0.6	149.53	-350.9	206.5	407.2	405.4	1.81	224.999		
800.0	800.0	803.0	803.0	1.4	0.7	149.53	-350.9	206.5	407.2	405.1	2.07	196.578		
900.0	900.0	903.0	903.0	1.5	0.8	149.53	-350.9	206.5	407.2	404.8	2.33	174.532		
1,000.0	1,000.0	1,003.0	1,003.0	1.7	0.9	149.53	-350.9	206.5	407.2	404.6	2.59	156.932		
1,100.0	1,100.0	1,103.0	1,103.0	1.9	1.0	149.53	-350.9	206.5	407.2	404.3	2.86	142.556		
1,200.0	1,200.0	1,203.0	1,203.0	2.1	1.0	149.53	-350.9	206.5	407.2	404.0	3.12	130.593		
1,300.0	1,300.0	1,303.0	1,303.0	2.2	1.1	149.53	-350.9	206.5	407.2	403.8	3.38	120.483		
1,400.0	1,400.0	1,403.0	1,403.0	2.4	1.2	149.53	-350.9	206.5	407.2	403.5	3.64	111.825		
1,500.0	1,500.0	1,503.0	1,503.0	2.6	1.3	149.53	-350.9	206.5	407.2	403.3	3.90	104.329		
1,600.0	1,600.0	1,603.0	1,603.0	2.8	1.4	149.53	-350.9	206.5	407.2	403.0	4.16	97.774		
1,700.0	1,700.0	1,703.0	1,703.0	2.9	1.5	149.53	-350.9	206.5	407.2	402.7	4.43	91.994		
1,800.0	1,800.0	1,803.0	1,803.0	3.1	1.6	149.53	-350.9	206.5	407.2	402.5	4.69	86.860		
1,900.0	1,900.0	1,903.0	1,903.0	3.3	1.7	149.53	-350.9	206.5	407.2	402.2	4.95	82.268		
2,000.0	2,000.0	2,003.0	2,003.0	3.5	1.7	149.53	-350.9	206.5	407.2	402.0	5.21	78.137		
2,100.0	2,100.0	2,103.0	2,103.0	3.6	1.8	149.53	-350.9	206.5	407.2	401.7	5.47	74.402		
2,200.0	2,200.0	2,203.0	2,203.0	3.8	1.9	149.53	-350.9	206.5	407.2	401.4	5.73	71.007		
2,300.0	2,300.0	2,303.0	2,303.0	4.0	2.0	149.53	-350.9	206.5	407.2	401.2	6.00	67.908		
2,400.0	2,400.0	2,403.0	2,403.0	4.2	2.1	149.53	-350.9	206.5	407.2	400.9	6.26	65.069		
2,500.0	2,500.0	2,503.0	2,503.0	4.3	2.2	149.53	-350.9	206.5	407.2	400.6	6.52	62.457		
2,600.0	2,600.0	2,603.0	2,603.0	4.5	2.3	149.53	-350.9	206.5	407.2	400.4	6.78	60.048		
2,700.0	2,700.0	2,703.0	2,703.0	4.7	2.4	149.53	-350.9	206.5	407.2	400.1	7.04	57.817		
2,800.0	2,800.0	2,803.0	2,803.0	4.9	2.4	149.53	-350.9	206.5	407.2	399.9	7.30	55.746		
2,900.0	2,900.0	2,903.0	2,903.0	5.0	2.5	149.53	-350.9	206.5	407.2	399.6	7.57	53.818		
3,000.0	3,000.0	3,003.0	3,003.0	5.2	2.6	149.53	-350.9	206.5	407.2	399.3	7.83	52.019		
3,100.0	3,100.0	3,103.0	3,103.0	5.4	2.7	149.53	-350.9	206.5	407.2	399.1	8.09	50.336		
3,200.0	3,200.0	3,203.0	3,203.0	5.6	2.8	149.53	-350.9	206.5	407.2	398.8	8.35	48.759		
3,300.0	3,300.0	3,303.0	3,303.0	5.7	2.9	149.53	-350.9	206.5	407.2	398.6	8.61	47.278		
3,400.0	3,400.0	3,403.0	3,403.0	5.9	3.0	149.53	-350.9	206.5	407.2	398.3	8.87	45.884		
3,500.0	3,500.0	3,503.0	3,503.0	6.1	3.1	149.53	-350.9	206.5	407.2	398.0	9.14	44.570		
3,600.0	3,600.0	3,603.0	3,603.0	6.3	3.1	149.53	-350.9	206.5	407.2	397.8	9.40	43.329		
3,700.0	3,700.0	3,703.0	3,703.0	6.4	3.2	149.53	-350.9	206.5	407.2	397.5	9.66	42.155		
3,800.0	3,800.0	3,803.0	3,803.0	6.6	3.3	149.53	-350.9	206.5	407.2	397.2	9.92	41.043		
3,900.0	3,900.0	3,903.0	3,903.0	6.8	3.4	149.53	-350.9	206.5	407.2	397.0	10.18	39.989		
4,000.0	4,000.0	4,003.0	4,003.0	7.0	3.5	149.53	-350.9	206.5	407.2	396.7	10.44	38.987		
4,100.0	4,099.7	4,102.7	4,102.7	7.1	3.6	-115.13	-350.9	206.5	410.1	399.4	10.70	38.325		
4,200.0	4,198.0	4,201.0	4,201.0	7.3	3.7	-117.15	-350.9	206.5	418.1	407.1	10.97	38.125		
4,300.0	4,296.2	4,299.2	4,299.2	7.5	3.7	-119.37	-350.9	206.5	427.2	415.9	11.25	37.978		
4,400.0	4,394.4	4,397.4	4,397.4	7.7	3.8	-121.50	-350.9	206.5	436.9	425.3	11.54	37.867		
4,500.0	4,492.6	4,495.6	4,495.6	8.0	3.9	-123.54	-350.9	206.5	447.1	435.3	11.83	37.792		
4,600.0	4,590.9	4,593.9	4,593.9	8.2	4.0	-125.48	-350.9	206.5	458.0	445.8	12.13	37.754		
4,700.0	4,689.1	4,692.1	4,692.1	8.5	4.1	-127.33	-350.9	206.5	469.3	456.9	12.43	37.749		
4,800.0	4,787.3	4,790.3	4,790.3	8.7	4.2	-129.10	-350.9	206.5	481.1	468.4	12.73	37.778		
4,900.0	4,885.5	4,888.5	4,888.5	9.0	4.3	-130.79	-350.9	206.5	493.3	480.3	13.04	37.837		
7,300.0	7,141.5	7,144.5	7,144.5	13.1	6.2	66.76	-350.9	206.5	474.8	456.0	18.87	25.167		
7,400.0	7,189.0	7,192.0	7,192.0	13.4	6.3	76.89	-350.9	206.5	425.4	405.9	19.51	21.800		

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 lone 3A-2H
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	WELL @ 5044.0ft (Original Well Elev)
<b>Reference Site:</b>	NWSW S2-T2N-R66W (lone)	<b>MD Reference:</b>	WELL @ 5044.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	lone 3A-2H	<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 #1B	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design										NWSW S2-T2N-R66W (lone) - lone 13-2 - Wellbore #1 - Wellbore #1				Offset Site Error:		0.0 ft
Survey Program: 8083-Gyro												Offset Well Error:		0.0 ft		
Reference		Offset		Semi Major Axis			Distance							Warning		
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre +N/-S	+E/-W	Between Centres	Between Ellipses	Total Uncertainty Axis	Separation Factor				
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	(ft)	(ft)	(ft)	(ft)						
7,500.0	7,223.8	7,226.8	7,226.8	14.1	6.3	84.98	-350.9	206.5	388.0	367.6	20.40	19.018				
7,600.0	7,245.2	7,248.2	7,248.2	15.2	6.3	89.60	-350.9	206.5	370.9	349.3	21.55	17.206				
7,618.0	7,247.6	7,250.6	7,250.6	15.5	6.3	90.00	-350.9	206.5	370.5	348.6	21.81	16.983 CC, ES				
7,700.0	7,252.8	7,255.8	7,255.8	16.7	6.3	90.08	-350.9	206.5	379.4	356.4	22.98	16.509 SF				
7,800.0	7,252.0	7,255.0	7,255.0	18.3	6.3	89.75	-350.9	206.5	412.6	388.0	24.62	16.758				
7,900.0	7,251.1	7,254.1	7,254.1	20.1	6.3	89.62	-350.9	206.5	465.4	439.0	26.44	17.605				

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well lone 3A-2H
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	WELL @ 5044.0ft (Original Well Elev)
<b>Reference Site:</b>	NWSW S2-T2N-R66W (lone)	<b>MD Reference:</b>	WELL @ 5044.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	lone 3A-2H	<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 #1B	<b>Offset TVD Reference:</b>	Offset Datum

<b>Offset Design</b> NWSW S2-T2N-R66W (lone) - lone 23-2 - Wellbore #1 - Wellbore #1												<b>Offset Site Error:</b>	0.0 ft
Survey Program: 8083-Gyro												<b>Offset Well Error:</b>	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
8,800.0	7,243.3	7,246.3	7,246.3	39.7	6.3	90.13	-296.5	1,508.0	467.6	421.5	46.06	10.152	
8,900.0	7,242.4	7,245.4	7,245.4	42.1	6.3	90.02	-296.5	1,508.0	452.7	404.3	48.40	9.355	
8,918.4	7,242.2	7,245.2	7,245.2	42.5	6.3	90.00	-296.5	1,508.0	452.4	403.5	48.83	9.264 CC, ES	
9,000.0	7,241.5	7,244.5	7,244.5	44.4	6.3	89.91	-296.5	1,508.0	459.7	408.9	50.75	9.057 SF	
9,100.0	7,240.7	7,243.7	7,243.7	46.8	6.3	89.80	-296.5	1,508.0	487.5	434.4	53.12	9.177	

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well lone 3A-2H
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	WELL @ 5044.0ft (Original Well Elev)
<b>Reference Site:</b>	NWSW S2-T2N-R66W (lone)	<b>MD Reference:</b>	WELL @ 5044.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	lone 3A-2H	<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 #1B	<b>Offset TVD Reference:</b>	Offset Datum

<b>Offset Design</b> NWSW S2-T2N-R66W (lone) - lone 43-2 - Wellbore #1 - Wellbore #1												<b>Offset Site Error:</b>	0.0 ft
Survey Program: 8083-Gyro												<b>Offset Well Error:</b>	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
11,500.0	7,219.7	7,221.7	7,221.7	105.0	6.3	90.34	74.3	4,320.9	455.5	344.2	111.28	4.093	
11,600.0	7,218.8	7,220.8	7,220.8	107.4	6.3	90.20	74.3	4,320.9	408.1	294.4	113.73	3.588	
11,700.0	7,218.0	7,220.0	7,220.0	109.9	6.3	90.07	74.3	4,320.9	381.6	265.4	116.18	3.284	
11,754.7	7,217.5	7,219.5	7,219.5	111.2	6.3	90.00	74.3	4,320.9	377.7	260.1	117.52	3.214 CC, ES	
11,800.0	7,217.1	7,219.1	7,219.1	112.3	6.3	89.94	74.3	4,320.9	380.4	261.7	118.63	3.206 SF	
11,810.9	7,217.0	7,219.0	7,219.0	112.6	6.3	89.93	74.3	4,320.9	381.8	262.9	118.90	3.211	

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well lone 3A-2H
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	WELL @ 5044.0ft (Original Well Elev)
<b>Reference Site:</b>	NWSW S2-T2N-R66W (lone)	<b>MD Reference:</b>	WELL @ 5044.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	lone 3A-2H	<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 #1B	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design													NWSW S2-T2N-R66W (lone) - lone 4-4-2 - Wellbore #1 - 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						
9,200.0	7,239.8	7,720.5	7,255.8	49.2	43.8	-90.77	473.7	2,098.8	461.2	379.2	82.04	5.622						
9,300.0	7,238.9	7,719.7	7,254.9	51.6	43.8	-90.57	473.7	2,098.8	381.4	296.9	84.43	4.517						
9,400.0	7,238.0	7,718.8	7,254.0	54.0	43.8	-90.37	473.7	2,098.8	313.3	226.5	86.83	3.608						
9,500.0	7,237.2	7,717.9	7,253.2	56.4	43.8	-90.17	473.7	2,098.8	266.2	177.0	89.23	2.984						
9,586.4	7,236.4	7,717.2	7,252.4	58.4	43.8	-90.00	473.7	2,098.8	251.8	160.5	91.31	2.758	CC, ES					
9,600.0	7,236.3	7,717.0	7,252.3	58.8	43.8	-89.97	473.7	2,098.8	252.2	160.5	91.64	2.752	SF					
9,700.0	7,235.4	7,716.2	7,251.4	61.2	43.8	-89.77	473.7	2,098.8	276.2	182.2	94.05	2.937						
9,800.0	7,234.5	7,715.3	7,250.5	63.6	43.8	-89.58	473.7	2,098.8	330.2	233.7	96.46	3.423						
9,900.0	7,233.7	7,714.4	7,249.7	66.0	43.8	-89.38	473.7	2,098.8	402.2	303.3	98.88	4.067						
10,000.0	7,232.8	7,713.5	7,248.8	68.4	43.8	-89.18	473.7	2,098.8	484.2	382.9	101.30	4.780						

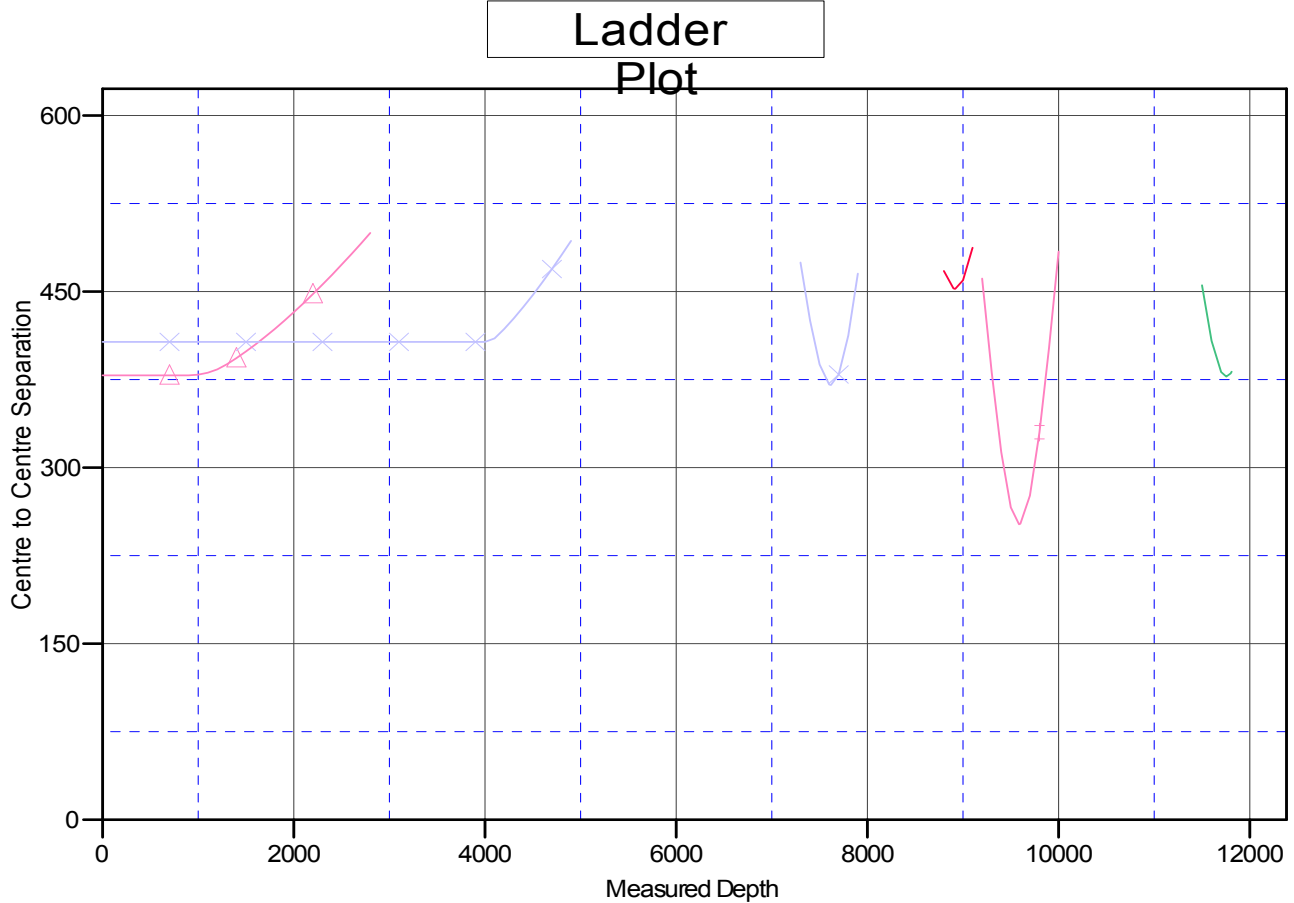
# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well lone 3A-2H
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	WELL @ 5044.0ft (Original Well Elev)
<b>Reference Site:</b>	NWSW S2-T2N-R66W (lone)	<b>MD Reference:</b>	WELL @ 5044.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	lone 3A-2H	<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 #1B	<b>Offset TVD Reference:</b>	Offset Datum

Reference Depths are relative to WELL @ 5044.0ft (Original Well Elev)  
 Offset Depths are relative to Offset Datum  
 Central Meridian is -105.500000 °

Coordinates are relative to: lone 3A-2H  
 Coordinate System is US State Plane 1983, Colorado Northern Zone  
 Grid Convergence at Surface is: 0.48°



### LEGEND

- ▲ lone 0-6-2, Wellbore #1, Design #1 V0
- ✕ lone 13-2, Wellbore #1, Wellbore #1 V0
- lone 43-2, Wellbore #1, Wellbore #1 V0
- ◆ lone 4-4-2, Wellbore #1, Plan #1 V0
- ◆ lone 23-2, Wellbore #1, Wellbore #1 V0