



Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Sprague 3B-9H-N267
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	WELL @ 5011.0ft (Original Well Elev)
Project:	DJ Wattenberg	MD Reference:	WELL @ 5011.0ft (Original Well Elev)
Site:	S9-T2N-R67W (Sprague)	North Reference:	True
Well:	Sprague 3B-9H-N267	Survey Calculation Method:	Minimum Curvature
Wellbore:	Hz		
Design:	Plan #4		

Project	DJ Wattenberg		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Northern Zone		

Site		S9-T2N-R67W (Sprague)			
Site Position:		Northing:	1,298,443.90 ft	Latitude:	40.151070
From:	Lat/Long	Easting:	3,167,093.12 ft	Longitude:	-104.902260
Position Uncertainty:	0.0 ft	Slot Radius:	13.200 in	Grid Convergence:	0.39 °

Well	Sprague 3B-9H-N267					
Well Position	+N/-S	0.0 ft	Northing:	1,296,975.52 ft	Latitude:	40.147020
	+E/-W	0.0 ft	Easting:	3,168,128.99 ft	Longitude:	-104.898590
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,981.0 ft

Wellbore	Hz				
Magnetics	Model Name	Sample Date	Declination	Dip Angle	Field Strength
			(°)	(°)	(nT)
	IGRF2010	11/5/2013	8.59	66.74	52,731

Design	Plan #4			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W	Direction
	(ft)	(ft)	(ft)	(°)
	0.0	0.0	0.0	0.00

Plan Sections										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
300.0	0.00	0.00	300.0	0.0	0.0	0.00	0.00	0.00	0.00	
797.6	9.95	245.01	795.1	-18.2	-39.1	2.00	2.00	0.00	245.01	
7,017.9	9.95	245.01	6,921.8	-472.4	-1,013.4	0.00	0.00	0.00	0.00	
7,959.8	90.00	0.00	7,529.0	99.0	-1,110.0	10.00	8.50	12.21	114.66	
9,360.8	90.00	0.00	7,529.0	1,500.0	-1,110.0	0.00	0.00	0.00	0.00	Interp @ 7529.0 (Sprague 3B-9H-N267)
9,492.0	90.00	2.62	7,529.0	1,631.2	-1,107.0	2.00	0.00	2.00	90.00	
11,594.0	90.00	2.62	7,529.0	3,730.9	-1,010.7	0.00	0.00	0.00	0.00	
11,900.2	90.00	356.50	7,529.0	4,037.0	-1,013.1	2.00	0.00	-2.00	-90.00	
13,100.2	90.00	356.50	7,529.0	5,234.8	-1,086.3	0.00	0.00	0.00	0.00	Sprague 3B-9H-N267

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Well:	Sprague 3B-9H-N267	Survey Calculation Method:	Minimum Curvature
Wellbore:	Hz		
Design:	Plan #4		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Comments / Formations
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	KOP @ 300'
400.0	2.00	245.01	400.0	-0.7	-1.6	-0.7	2.00	2.00	
461.1	3.22	245.01	461.0	-1.9	-4.1	-1.9	2.00	2.00	Fox Hills - BASE
500.0	4.00	245.01	499.8	-2.9	-6.3	-2.9	2.00	2.00	
600.0	6.00	245.01	599.5	-6.6	-14.2	-6.6	2.00	2.00	
700.0	8.00	245.01	698.7	-11.8	-25.3	-11.8	2.00	2.00	
797.6	9.95	245.01	795.1	-18.2	-39.1	-18.2	2.00	2.00	EOB; Inc=9.95°
800.0	9.95	245.01	797.5	-18.4	-39.4	-18.4	0.00	0.00	
900.0	9.95	245.01	896.0	-25.7	-55.1	-25.7	0.00	0.00	
1,000.0	9.95	245.01	994.5	-33.0	-70.8	-33.0	0.00	0.00	
1,100.0	9.95	245.01	1,093.0	-40.3	-86.4	-40.3	0.00	0.00	
1,200.0	9.95	245.01	1,191.4	-47.6	-102.1	-47.6	0.00	0.00	
1,300.0	9.95	245.01	1,289.9	-54.9	-117.8	-54.9	0.00	0.00	
1,400.0	9.95	245.01	1,388.4	-62.2	-133.4	-62.2	0.00	0.00	
1,500.0	9.95	245.01	1,486.9	-69.5	-149.1	-69.5	0.00	0.00	
1,600.0	9.95	245.01	1,585.4	-76.8	-164.8	-76.8	0.00	0.00	
1,700.0	9.95	245.01	1,683.9	-84.1	-180.4	-84.1	0.00	0.00	
1,800.0	9.95	245.01	1,782.4	-91.4	-196.1	-91.4	0.00	0.00	
1,900.0	9.95	245.01	1,880.9	-98.7	-211.8	-98.7	0.00	0.00	
2,000.0	9.95	245.01	1,979.4	-106.0	-227.4	-106.0	0.00	0.00	
2,100.0	9.95	245.01	2,077.9	-113.3	-243.1	-113.3	0.00	0.00	
2,200.0	9.95	245.01	2,176.4	-120.6	-258.7	-120.6	0.00	0.00	
2,300.0	9.95	245.01	2,274.9	-127.9	-274.4	-127.9	0.00	0.00	
2,400.0	9.95	245.01	2,373.4	-135.2	-290.1	-135.2	0.00	0.00	
2,500.0	9.95	245.01	2,471.9	-142.5	-305.7	-142.5	0.00	0.00	
2,600.0	9.95	245.01	2,570.4	-149.8	-321.4	-149.8	0.00	0.00	
2,700.0	9.95	245.01	2,668.9	-157.1	-337.1	-157.1	0.00	0.00	
2,800.0	9.95	245.01	2,767.4	-164.4	-352.7	-164.4	0.00	0.00	
2,900.0	9.95	245.01	2,865.9	-171.7	-368.4	-171.7	0.00	0.00	
3,000.0	9.95	245.01	2,964.4	-179.0	-384.1	-179.0	0.00	0.00	
3,100.0	9.95	245.01	3,062.9	-186.3	-399.7	-186.3	0.00	0.00	
3,200.0	9.95	245.01	3,161.4	-193.6	-415.4	-193.6	0.00	0.00	
3,300.0	9.95	245.01	3,259.8	-200.9	-431.1	-200.9	0.00	0.00	
3,400.0	9.95	245.01	3,358.3	-208.2	-446.7	-208.2	0.00	0.00	
3,500.0	9.95	245.01	3,456.8	-215.5	-462.4	-215.5	0.00	0.00	
3,600.0	9.95	245.01	3,555.3	-222.8	-478.0	-222.8	0.00	0.00	
3,700.0	9.95	245.01	3,653.8	-230.1	-493.7	-230.1	0.00	0.00	
3,800.0	9.95	245.01	3,752.3	-237.5	-509.4	-237.5	0.00	0.00	
3,900.0	9.95	245.01	3,850.8	-244.8	-525.0	-244.8	0.00	0.00	
4,000.0	9.95	245.01	3,949.3	-252.1	-540.7	-252.1	0.00	0.00	
4,100.0	9.95	245.01	4,047.8	-259.4	-556.4	-259.4	0.00	0.00	
4,200.0	9.95	245.01	4,146.3	-266.7	-572.0	-266.7	0.00	0.00	
4,300.0	9.95	245.01	4,244.8	-274.0	-587.7	-274.0	0.00	0.00	
4,400.0	9.95	245.01	4,343.3	-281.3	-603.4	-281.3	0.00	0.00	
4,475.8	9.95	245.01	4,418.0	-286.8	-615.2	-286.8	0.00	0.00	Sussex
4,500.0	9.95	245.01	4,441.8	-288.6	-619.0	-288.6	0.00	0.00	
4,600.0	9.95	245.01	4,540.3	-295.9	-634.7	-295.9	0.00	0.00	
4,700.0	9.95	245.01	4,638.8	-303.2	-650.4	-303.2	0.00	0.00	
4,726.6	9.95	245.01	4,665.0	-305.1	-654.5	-305.1	0.00	0.00	Sussex Marker

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Well:	Sprague 3B-9H-N267	Survey Calculation Method:	Minimum Curvature
Wellbore:	Hz		
Design:	Plan #4		

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
4,800.0	9.95	245.01	4,737.3	-310.5	-666.0	-310.5	0.00	0.00	
4,900.0	9.95	245.01	4,835.8	-317.8	-681.7	-317.8	0.00	0.00	
5,000.0	9.95	245.01	4,934.3	-325.1	-697.3	-325.1	0.00	0.00	
5,029.2	9.95	245.01	4,963.0	-327.2	-701.9	-327.2	0.00	0.00	Shannon
5,100.0	9.95	245.01	5,032.8	-332.4	-713.0	-332.4	0.00	0.00	
5,200.0	9.95	245.01	5,131.3	-339.7	-728.7	-339.7	0.00	0.00	
5,300.0	9.95	245.01	5,229.8	-347.0	-744.3	-347.0	0.00	0.00	
5,400.0	9.95	245.01	5,328.2	-354.3	-760.0	-354.3	0.00	0.00	
5,500.0	9.95	245.01	5,426.7	-361.6	-775.7	-361.6	0.00	0.00	
5,600.0	9.95	245.01	5,525.2	-368.9	-791.3	-368.9	0.00	0.00	
5,700.0	9.95	245.01	5,623.7	-376.2	-807.0	-376.2	0.00	0.00	
5,800.0	9.95	245.01	5,722.2	-383.5	-822.7	-383.5	0.00	0.00	
5,900.0	9.95	245.01	5,820.7	-390.8	-838.3	-390.8	0.00	0.00	
6,000.0	9.95	245.01	5,919.2	-398.1	-854.0	-398.1	0.00	0.00	
6,100.0	9.95	245.01	6,017.7	-405.4	-869.7	-405.4	0.00	0.00	
6,200.0	9.95	245.01	6,116.2	-412.7	-885.3	-412.7	0.00	0.00	
6,300.0	9.95	245.01	6,214.7	-420.0	-901.0	-420.0	0.00	0.00	
6,397.8	9.95	245.01	6,311.0	-427.1	-916.3	-427.1	0.00	0.00	Teepee Buttes (*if present)
6,400.0	9.95	245.01	6,313.2	-427.3	-916.6	-427.3	0.00	0.00	
6,500.0	9.95	245.01	6,411.7	-434.6	-932.3	-434.6	0.00	0.00	
6,600.0	9.95	245.01	6,510.2	-441.9	-948.0	-441.9	0.00	0.00	
6,700.0	9.95	245.01	6,608.7	-449.2	-963.6	-449.2	0.00	0.00	
6,800.0	9.95	245.01	6,707.2	-456.5	-979.3	-456.5	0.00	0.00	
6,900.0	9.95	245.01	6,805.7	-463.8	-995.0	-463.8	0.00	0.00	
7,000.0	9.95	245.01	6,904.2	-471.1	-1,010.6	-471.1	0.00	0.00	
7,017.9	9.95	245.01	6,921.8	-472.4	-1,013.4	-472.4	0.00	0.00	Start build/turn @ 7017' MD
7,050.0	9.09	263.78	6,953.5	-473.9	-1,018.5	-473.9	10.00	-2.69	
7,100.0	9.88	294.10	7,002.8	-472.5	-1,026.3	-472.5	10.00	1.59	
7,150.0	12.74	315.30	7,051.9	-466.9	-1,034.1	-466.9	10.00	5.72	
7,200.0	16.63	327.83	7,100.2	-456.9	-1,041.8	-456.9	10.00	7.78	
7,250.0	20.98	335.50	7,147.6	-442.7	-1,049.3	-442.7	10.00	8.71	
7,289.5	24.60	339.67	7,184.0	-428.5	-1,055.1	-428.5	10.00	9.13	Sharon Springs
7,300.0	25.57	340.58	7,193.5	-424.3	-1,056.6	-424.3	10.00	9.29	
7,350.0	30.28	344.19	7,237.6	-402.0	-1,063.7	-402.0	10.00	9.42	
7,363.2	31.54	344.98	7,249.0	-395.5	-1,065.5	-395.5	10.00	9.52	Niobrara
7,400.0	35.06	346.90	7,279.7	-375.9	-1,070.4	-375.9	10.00	9.58	
7,421.4	37.12	347.87	7,297.0	-363.6	-1,073.1	-363.6	10.00	9.64	B Chalk
7,450.0	39.89	349.03	7,319.4	-346.2	-1,076.7	-346.2	10.00	9.68	
7,462.6	41.11	349.50	7,329.0	-338.1	-1,078.2	-338.1	10.00	9.70	B Marl
7,500.0	44.75	350.77	7,356.4	-313.0	-1,082.5	-313.0	10.00	9.73	
7,521.0	46.80	351.41	7,371.0	-298.2	-1,084.9	-298.2	10.00	9.76	C Chalk
7,550.0	49.63	352.23	7,390.3	-276.8	-1,087.9	-276.8	10.00	9.78	
7,600.0	54.53	353.49	7,421.0	-237.6	-1,092.8	-237.6	10.00	9.80	
7,650.0	59.45	354.61	7,448.3	-195.9	-1,097.2	-195.9	10.00	9.82	
7,651.4	59.59	354.64	7,449.0	-194.7	-1,097.3	-194.7	10.00	9.83	C Marl
7,700.0	64.37	355.62	7,471.8	-152.0	-1,100.9	-152.0	10.00	9.84	
7,750.0	69.29	356.55	7,491.5	-106.2	-1,104.0	-106.2	10.00	9.85	
7,760.2	70.30	356.73	7,495.0	-96.6	-1,104.6	-96.6	10.00	9.86	Ft. Hayes
7,800.0	74.22	357.42	7,507.1	-58.7	-1,106.5	-58.7	10.00	9.86	
7,850.0	79.16	358.25	7,518.6	-10.1	-1,108.4	-10.1	10.00	9.87	
7,851.9	79.35	358.29	7,519.0	-8.2	-1,108.4	-8.2	10.00	9.87	Codell
7,900.0	84.09	359.06	7,525.9	39.3	-1,109.5	39.3	10.00	9.87	

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Wellbore:	Hz		
Design:	Plan #4		

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
7,950.0	89.03	359.85	7,528.9	89.2	-1,110.0	89.2	10.00	9.88	
7,959.8	90.00	0.00	7,529.0	99.0	-1,110.0	99.0	10.00	9.88	LP @ 7529' TVD; 90°
8,000.0	90.00	0.00	7,529.0	139.2	-1,110.0	139.2	0.00	0.00	
8,100.0	90.00	0.00	7,529.0	239.2	-1,110.0	239.2	0.00	0.00	
8,200.0	90.00	0.00	7,529.0	339.2	-1,110.0	339.2	0.00	0.00	
8,300.0	90.00	0.00	7,529.0	439.2	-1,110.0	439.2	0.00	0.00	
8,400.0	90.00	0.00	7,529.0	539.2	-1,110.0	539.2	0.00	0.00	
8,500.0	90.00	0.00	7,529.0	639.2	-1,110.0	639.2	0.00	0.00	
8,600.0	90.00	0.00	7,529.0	739.2	-1,110.0	739.2	0.00	0.00	
8,700.0	90.00	0.00	7,529.0	839.2	-1,110.0	839.2	0.00	0.00	
8,800.0	90.00	0.00	7,529.0	939.2	-1,110.0	939.2	0.00	0.00	
8,900.0	90.00	0.00	7,529.0	1,039.2	-1,110.0	1,039.2	0.00	0.00	
9,000.0	90.00	0.00	7,529.0	1,139.2	-1,110.0	1,139.2	0.00	0.00	
9,100.0	90.00	0.00	7,529.0	1,239.2	-1,110.0	1,239.2	0.00	0.00	
9,200.0	90.00	0.00	7,529.0	1,339.2	-1,110.0	1,339.2	0.00	0.00	
9,300.0	90.00	0.00	7,529.0	1,439.2	-1,110.0	1,439.2	0.00	0.00	
9,360.8	90.00	0.00	7,529.0	1,500.0	-1,110.0	1,500.0	0.00	0.00	Start turn @ 9360' MD
9,400.0	90.00	0.78	7,529.0	1,539.2	-1,109.7	1,539.2	2.00	0.00	
9,492.0	90.00	2.62	7,529.0	1,631.2	-1,107.0	1,631.2	2.00	0.00	End of turn @ 9492' MD
9,500.0	90.00	2.62	7,529.0	1,639.1	-1,106.6	1,639.1	0.00	0.00	
9,600.0	90.00	2.62	7,529.0	1,739.0	-1,102.1	1,739.0	0.00	0.00	
9,700.0	90.00	2.62	7,529.0	1,838.9	-1,097.5	1,838.9	0.00	0.00	
9,800.0	90.00	2.62	7,529.0	1,938.8	-1,092.9	1,938.8	0.00	0.00	
9,900.0	90.00	2.62	7,529.0	2,038.7	-1,088.3	2,038.7	0.00	0.00	
10,000.0	90.00	2.62	7,529.0	2,138.6	-1,083.7	2,138.6	0.00	0.00	
10,100.0	90.00	2.62	7,529.0	2,238.5	-1,079.2	2,238.5	0.00	0.00	
10,200.0	90.00	2.62	7,529.0	2,338.4	-1,074.6	2,338.4	0.00	0.00	
10,300.0	90.00	2.62	7,529.0	2,438.3	-1,070.0	2,438.3	0.00	0.00	
10,400.0	90.00	2.62	7,529.0	2,538.2	-1,065.4	2,538.2	0.00	0.00	
10,500.0	90.00	2.62	7,529.0	2,638.1	-1,060.8	2,638.1	0.00	0.00	
10,600.0	90.00	2.62	7,529.0	2,738.0	-1,056.3	2,738.0	0.00	0.00	
10,700.0	90.00	2.62	7,529.0	2,837.9	-1,051.7	2,837.9	0.00	0.00	
10,800.0	90.00	2.62	7,529.0	2,937.8	-1,047.1	2,937.8	0.00	0.00	
10,900.0	90.00	2.62	7,529.0	3,037.7	-1,042.5	3,037.7	0.00	0.00	
11,000.0	90.00	2.62	7,529.0	3,137.6	-1,037.9	3,137.6	0.00	0.00	
11,100.0	90.00	2.62	7,529.0	3,237.5	-1,033.4	3,237.5	0.00	0.00	
11,200.0	90.00	2.62	7,529.0	3,337.4	-1,028.8	3,337.4	0.00	0.00	
11,300.0	90.00	2.62	7,529.0	3,437.2	-1,024.2	3,437.2	0.00	0.00	
11,400.0	90.00	2.62	7,529.0	3,537.1	-1,019.6	3,537.1	0.00	0.00	
11,500.0	90.00	2.62	7,529.0	3,637.0	-1,015.1	3,637.0	0.00	0.00	
11,594.0	90.00	2.62	7,529.0	3,730.9	-1,010.7	3,730.9	0.00	0.00	Start turn @ 11594' MD
11,600.0	90.00	2.50	7,529.0	3,736.9	-1,010.5	3,736.9	2.00	0.00	
11,700.0	90.00	0.50	7,529.0	3,836.9	-1,007.9	3,836.9	2.00	0.00	
11,800.0	90.00	358.50	7,529.0	3,936.9	-1,008.7	3,936.9	2.00	0.00	
11,900.2	90.00	356.50	7,529.0	4,037.0	-1,013.1	4,037.0	2.00	0.00	End of turn @ 11900' MD
12,000.0	90.00	356.50	7,529.0	4,136.6	-1,019.2	4,136.6	0.00	0.00	
12,100.0	90.00	356.50	7,529.0	4,236.4	-1,025.3	4,236.4	0.00	0.00	
12,200.0	90.00	356.50	7,529.0	4,336.2	-1,031.4	4,336.2	0.00	0.00	
12,300.0	90.00	356.50	7,529.0	4,436.0	-1,037.5	4,436.0	0.00	0.00	
12,400.0	90.00	356.50	7,529.0	4,535.9	-1,043.6	4,535.9	0.00	0.00	
12,500.0	90.00	356.50	7,529.0	4,635.7	-1,049.7	4,635.7	0.00	0.00	
12,600.0	90.00	356.50	7,529.0	4,735.5	-1,055.8	4,735.5	0.00	0.00	

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Sprague 3B-9H-N267
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	WELL @ 5011.0ft (Original Well Elev)
Project:	DJ Wattenberg	MD Reference:	WELL @ 5011.0ft (Original Well Elev)
Site:	S9-T2N-R67W (Sprague)	North Reference:	True
Well:	Sprague 3B-9H-N267	Survey Calculation Method:	Minimum Curvature
Wellbore:	Hz		
Design:	Plan #4		

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
12,700.0	90.00	356.50	7,529.0	4,835.3	-1,061.9	4,835.3	0.00	0.00	
12,800.0	90.00	356.50	7,529.0	4,935.1	-1,068.0	4,935.1	0.00	0.00	
12,900.0	90.00	356.50	7,529.0	5,034.9	-1,074.1	5,034.9	0.00	0.00	
13,000.0	90.00	356.50	7,529.0	5,134.7	-1,080.2	5,134.7	0.00	0.00	
13,100.2	90.00	356.50	7,529.0	5,234.8	-1,086.3	5,234.8	0.00	0.00	TD at 13100.2

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
Sprague 3B-9H-N267 PI - plan hits target center - Point	0.00	0.00	7,529.0	5,234.8	-1,086.3	1,302,202.79	3,167,007.17	40.161390	-104.902477
Sprague 3B-9H-N267 PI - plan misses target center by 90.3ft at 13100.2ft MD (7529.0 TVD, 5234.8 N, -1086.3 E) - Point	0.00	0.00	7,529.0	5,234.8	-1,176.7	1,302,202.18	3,166,916.86	40.161390	-104.902800
Interp @ 7529.0 (Sprague) - plan hits target center - Point	0.00	0.00	7,529.0	1,500.0	-1,110.0	1,298,467.95	3,167,008.84	40.151138	-104.902561

Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
461.1	461.0	Fox Hills - BASE			
4,475.8	4,418.0	Sussex			
4,726.6	4,665.0	Sussex Marker			
5,029.2	4,963.0	Shannon			
6,397.8	6,311.0	Teepee Buttes (*if present)			
7,289.5	7,184.0	Sharon Springs			
7,363.2	7,249.0	Niobrara			
7,421.4	7,297.0	B Chalk			
7,462.6	7,329.0	B Marl			
7,521.0	7,371.0	C Chalk			
7,651.4	7,449.0	C Marl			
7,760.2	7,495.0	Ft. Hayes			
7,851.9	7,519.0	Codell			

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Sprague 3B-9H-N267
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	WELL @ 5011.0ft (Original Well Elev)
Project:	DJ Wattenberg	MD Reference:	WELL @ 5011.0ft (Original Well Elev)
Site:	S9-T2N-R67W (Sprague)	North Reference:	True
Well:	Sprague 3B-9H-N267	Survey Calculation Method:	Minimum Curvature
Wellbore:	Hz		
Design:	Plan #4		

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
300.0	300.0	0.0	0.0	KOP @ 300'
797.6	795.1	-18.2	-39.1	EOB; Inc=9.95°
7,017.9	6,921.8	-472.4	-1,013.4	Start buid/turn @ 7017' MD
7,959.8	7,529.0	99.0	-1,110.0	LP @ 7529' TVD; 90°
9,360.8	7,529.0	1,500.0	-1,110.0	Start turn @ 9360' MD
9,492.0	7,529.0	1,631.2	-1,107.0	End of turn @ 9492' MD
11,594.0	7,529.0	3,730.9	-1,010.7	Start turn @ 11594' MD
11,900.2	7,529.0	4,037.0	-1,013.1	End of turn @ 11900' MD
13,100.2	7,529.0	5,234.8	-1,086.3	TD at 13100.2

EnCana Oil & Gas (USA) Inc

DJ Wattenberg

S9-T2N-R67W (Sprague)

Sprague 3B-9H-N267

Hz

Plan #4

Anticollision Report

06 August, 2014

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Sprague 3B-9H-N267
Project:	DJ Wattenberg	TVD Reference:	WELL @ 5011.0ft (Original Well Elev)
Reference Site:	S9-T2N-R67W (Sprague)	MD Reference:	WELL @ 5011.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Sprague 3B-9H-N267	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #4	Offset TVD Reference:	Offset Datum

Reference	Plan #4		
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	MD Interval 100.0ft	Error Model:	Systematic Ellipse
Depth Range:	Unlimited	Scan Method:	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 500.0ft	Error Surface:	Elliptical Conic
Warning Levels Evaluated at:	2.00 Sigma		

Survey Tool Program	Date	8/6/2014		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.0	13,100.2	Plan #4 (Hz)	Geolink MWD	Geolink MWD

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Sprague 3B-9H-N267
Project:	DJ Wattenberg	TVD Reference:	WELL @ 5011.0ft (Original Well Elev)
Reference Site:	S9-T2N-R67W (Sprague)	MD Reference:	WELL @ 5011.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Sprague 3B-9H-N267	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #4	Offset TVD Reference:	Offset Datum

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						
S9-T2N-R67W (Sprague)						
BARNES 34-4 (EXISTING) - ENCANA WELL - EXISTING						Out of range
DIER 1 (EXISTING) - ENCANA WELL - EXISTING - VES						Out of range
DIER 8-4-8 (EXISTING) - ENCANA WELL - SURVEYS						Out of range
DIER 8-6-8 (EXISTING) - ENCANA WELL - SURVEYS						Out of range
ECKSTINE V 9-15 (EXISTING) - NOBLE WELL - NO SU						Out of range
ECKSTINE V 9-16 (EXISTING) - ANADARKO WELL - E						Out of range
KATHERINE 1 (EXISTING) - MACEY-MERSHON WELL						Out of range
LUHMAN 1 (EXISTING) - ENCANA WELL - SURVEYS						Out of range
LUHMAN 44-4 (EXISTING) - ENCANA WELL - SURVEY						Out of range
SATER 40N-5HZ (EXISTING) - KERR-MCGEE WELL - B						Out of range
SHELEY 1 (EXISTING) - ENCANA WELL - SURVEYS						Out of range
SHELEY 14-4 (EXISTING) - ENCANA WELL - SURVEYS						Out of range
SHELEY 24-4 (EXISTING MR) - MACHII-ROSS WELL -						Out of range
SHELEY 24-4 (EXISTING) - ENCANA WELL - SURVEYS						Out of range
SHELEY 3A-4H (EXISTING) - ENCANA WELL - SURVE	13,100.2	7,579.7	400.7	353.9	8.560	CC, ES, SF
SHELEY 3B-4H (EXISTING) - ENCANA WELL - SURVE						Out of range
SHELEY 4-6-4 (EXISTING) - ENCANA WELL - SURVEY						Out of range
SPRAGUE 1 (EXISTING) - ENCANA WELL - EXISTING						Out of range
SPRAGUE 1 (EXISTING) MACHII - MACHII-ROSS WEL						Out of range
SPRAGUE 11-9 (EXISTING) - ENCANA WELL - SURVE	11,957.0	7,460.2	95.7	6.9	1.078	Level 2, CC, ES, SF
SPRAGUE 13-9 (EXISTING) - ENCANA WELL - SURVE	9,381.1	7,491.8	62.5	18.1	1.408	Level 3, CC, ES, SF
SPRAGUE 14-9 (EXISTING) - ENCANA WELL - EXISTIN	8,046.2	7,487.9	37.2	16.2	1.769	CC, ES, SF
SPRAGUE 1-9 (EXISTING) - MACHII-ROSS WELL - NO						Out of range
SPRAGUE 2 (EXISTING) - MACHII-ROSS WELL - NO S						Out of range
SPRAGUE 21-9 (EXISTING) - DD - Plan #1						Out of range
SPRAGUE 22-9 J (EXISTING) - MACHII-ROSS WELL -						Out of range
SPRAGUE 23-9 J (EXISTING) - MACHII-ROSS WELL -						Out of range
SPRAGUE 24-9 (EXISTING) - ENCANA WELL - EXISTIN	100.0	68.4	165.2	165.0	907.777	CC, ES
SPRAGUE 24-9 (EXISTING) - ENCANA WELL - EXISTIN	2,500.0	2,441.1	491.4	484.9	75.026	SF
SPRAGUE 2-4-9 (EXISTING) - ENCANA WELL - SURVE						Out of range
SPRAGUE 24-9 J (EXISTING) - MACHII-ROSS WELL -	300.0	276.0	234.3	233.3	245.787	CC, ES
SPRAGUE 24-9 J (EXISTING) - MACHII-ROSS WELL -	2,000.0	1,955.4	485.0	478.2	71.073	SF
SPRAGUE 2-8-9 (EXISTING) - ENCANA WELL - SURVE	3,225.5	3,248.3	209.9	188.5	9.828	CC
SPRAGUE 2-8-9 (EXISTING) - ENCANA WELL - SURVE	4,000.0	4,022.1	214.6	187.2	7.834	ES
SPRAGUE 2-8-9 (EXISTING) - ENCANA WELL - SURVE	4,300.0	4,318.9	219.2	190.4	7.621	SF
SPRAGUE 31-9 (EXISTING) - ENCANA WELL - SURVE						Out of range
SPRAGUE 32-9 (EXISTING) - ENCANA WELL - SURVE						Out of range
SPRAGUE 33-9 (EXISTING) - ENCANA WELL - SURVE						Out of range
SPRAGUE 34-9 (EXISTING) - ENCANA WELL - SURVE						Out of range
SPRAGUE 3-9 (EXISTING) - ENCANA WELL - SURVEY						Out of range
Sprague 3A-9H-N267 - Hz - Plan #3	233.5	233.5	11.2	10.5	15.740	CC, ES
Sprague 3A-9H-N267 - Hz - Plan #3	13,100.2	12,919.8	312.3	174.5	2.266	SF
Sprague 3AA-9H-N267 - Hz - Plan #3	200.0	200.0	21.1	20.6	35.640	CC, ES
Sprague 3AA-9H-N267 - Hz - Plan #3	13,100.2	13,083.6	439.7	248.2	2.296	SF
Sprague 3C-9H-N267 - Hz - Plan #2	300.0	300.0	8.4	7.4	8.898	CC, ES
Sprague 3C-9H-N267 - Hz - Plan #2	13,100.0	12,840.5	341.2	194.5	2.325	SF
Sprague 3D-9H-N267 - Hz - Plan #3	300.0	300.0	19.6	18.6	20.763	CC, ES
Sprague 3D-9H-N267 - Hz - Plan #3	5,800.0	5,802.1	257.0	235.2	11.747	SF
Sprague 3E-9H-N267 - Hz - Plan #3	323.8	324.0	27.6	26.5	26.811	CC, ES
Sprague 3E-9H-N267 - Hz - Plan #3	600.0	600.4	37.4	35.3	18.222	SF
Sprague 3F-9H-N267 - Hz - Plan #3	300.0	300.0	39.1	38.2	41.526	CC, ES
Sprague 3F-9H-N267 - Hz - Plan #3	600.0	599.4	53.8	51.8	27.030	SF
Sprague 3G-9H-N267 - Hz - Plan #2	300.0	300.0	50.3	49.4	53.390	CC, ES

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

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Sprague 3B-9H-N267
Project:	DJ Wattenberg	TVD Reference:	WELL @ 5011.0ft (Original Well Elev)
Reference Site:	S9-T2N-R67W (Sprague)	MD Reference:	WELL @ 5011.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Sprague 3B-9H-N267	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #4	Offset TVD Reference:	Offset Datum

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						
S9-T2N-R67W (Sprague)						
Sprague 3G-9H-N267 - Hz - Plan #2	600.0	597.9	67.2	65.2	33.707	SF
Sprague 3H-9H-N267 - Hz - Plan #3	300.0	300.0	58.7	57.8	62.289	CC, ES
Sprague 3H-9H-N267 - Hz - Plan #3	600.0	595.2	78.7	76.8	39.549	SF
Sprague 3I-9H-N267 - Hz - Plan #3	300.0	300.0	70.0	69.0	74.253	CC, ES
Sprague 3I-9H-N267 - Hz - Plan #3	600.0	590.7	98.2	96.2	49.363	SF
Sprague 3J-9H-N267 - Hz - Plan #3	200.0	200.0	78.4	77.8	132.048	CC, ES
Sprague 3J-9H-N267 - Hz - Plan #3	600.0	584.6	119.4	117.4	60.707	SF
SPRAGUE 41-9 (EXISTING) - ENCANA WELL - SURVE						Out of range
SPRAGUE 42-9 (EXISTING) - ENCANA WELL - EXISTIN						Out of range
SPRAGUE 43-9 (EXISTING) - ENCANA WELL - GYRO						Out of range
SPRAGUE 44-9 (EXISTING) - ENCANA WELL - SURVE						Out of range
SPRAGUE 4-6-9 (EXISTING) - ENCANA WELL - SURVE	168.8	151.2	273.3	272.8	558.649	CC
SPRAGUE 4-6-9 (EXISTING) - ENCANA WELL - SURVE	200.0	181.5	273.3	272.7	458.226	ES
SPRAGUE 4-6-9 (EXISTING) - ENCANA WELL - SURVE	1,300.0	1,192.3	495.7	491.0	106.260	SF
SPRAGUE 4-8-9 (EXISTING) - ENCANA WELL - SURVE	310.1	293.3	267.3	266.3	271.221	CC, ES
SPRAGUE 4-8-9 (EXISTING) - ENCANA WELL - SURVE	1,600.0	1,491.0	466.1	460.2	79.436	SF
SPRAGUE 6-0-9 (EXISTING) - ENCANA WELL - PLAN O						Out of range
SPRAGUE 6-4-9 (EXISTING) - ENCANA WELL - SURVE						Out of range
SPRAGUE 8-6-9 (EXISTING) - ENCANA WELL - NO SU						Out of range
SPRAGUE V 9-1 (EXISTING) - ANADARKO WELL - EXI						Out of range
SPRAGUE V 9-7 (EXISTING) - NOBLE WELL - NO SUR						Out of range
SPRAGUE V 9-8 (EXISTING) - ANADARKO WELL - EXI						Out of range

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Sprague 3B-9H-N267
Project:	DJ Wattenberg	TVD Reference:	WELL @ 5011.0ft (Original Well Elev)
Reference Site:	S9-T2N-R67W (Sprague)	MD Reference:	WELL @ 5011.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Sprague 3B-9H-N267	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #4	Offset TVD Reference:	Offset Datum

Offset Design S9-T2N-R67W (Sprague) - SHELEY 3A-4H (EXISTING) - ENCANA WELL - SURVEYS												Offset Site Error:	0.0 ft
Survey Program: 162-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
13,000.0	7,529.0	7,586.8	7,198.5	94.8	14.8	21.50	5,542.8	-1,008.7	481.0	432.8	48.23	9.974	
13,100.0	7,529.0	7,579.7	7,197.1	96.5	14.8	19.99	5,543.2	-1,015.6	400.9	354.1	46.82	8.563	
13,100.2	7,529.0	7,579.7	7,197.1	96.5	14.8	19.99	5,543.2	-1,015.6	400.7	353.9	46.81	8.560 CC, ES, SF	

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Sprague 3B-9H-N267
Project:	DJ Wattenberg	TVD Reference:	WELL @ 5011.0ft (Original Well Elev)
Reference Site:	S9-T2N-R67W (Sprague)	MD Reference:	WELL @ 5011.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Sprague 3B-9H-N267	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #4	Offset TVD Reference:	Offset Datum

Offset Design S9-T2N-R67W (Sprague) - SPRAGUE 11-9 (EXISTING) - ENCANA WELL - SURVEYS													Offset Site Error:	0.0 ft
Survey Program: 100-Geolink 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		
11,500.0	7,529.0	7,456.5	7,454.2	69.3	13.2	-87.15	4,087.8	-1,111.9	461.1	382.1	79.05	5.833		
11,600.0	7,529.0	7,457.2	7,454.9	70.9	13.2	-87.48	4,087.8	-1,111.9	365.3	284.5	80.83	4.520		
11,700.0	7,529.0	7,457.9	7,455.6	72.6	13.2	-87.64	4,087.8	-1,111.9	271.7	188.5	83.20	3.266		
11,800.0	7,529.0	7,458.8	7,456.4	74.3	13.2	-87.94	4,087.8	-1,112.0	182.9	97.4	85.51	2.139		
11,900.0	7,529.0	7,459.7	7,457.3	76.0	13.2	-88.40	4,087.8	-1,112.0	111.3	23.6	87.75	1.269 Level 3		
11,957.0	7,529.0	7,460.2	7,457.9	76.9	13.2	-88.72	4,087.8	-1,112.0	95.7	6.9	88.74	1.078 Level 2, CC, ES, SF		
12,000.0	7,529.0	7,460.6	7,458.3	77.7	13.2	-88.96	4,087.8	-1,112.0	104.9	15.4	89.49	1.172 Level 2		
12,100.0	7,529.0	7,461.5	7,459.2	79.4	13.2	-89.52	4,087.9	-1,112.0	172.0	80.8	91.23	1.886		
12,200.0	7,529.0	7,462.5	7,460.1	81.1	13.2	-90.08	4,087.9	-1,112.1	261.1	168.2	92.96	2.809		
12,300.0	7,529.0	7,463.4	7,461.1	82.8	13.2	-90.64	4,087.9	-1,112.1	356.1	261.4	94.69	3.761		
12,400.0	7,529.0	7,464.3	7,462.0	84.5	13.2	-91.19	4,087.9	-1,112.1	453.2	356.8	96.40	4.701		

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Sprague 3B-9H-N267
Project:	DJ Wattenberg	TVD Reference:	WELL @ 5011.0ft (Original Well Elev)
Reference Site:	S9-T2N-R67W (Sprague)	MD Reference:	WELL @ 5011.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Sprague 3B-9H-N267	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #4	Offset TVD Reference:	Offset Datum

Offset Design S9-T2N-R67W (Sprague) - SPRAGUE 13-9 (EXISTING) - ENCANA WELL - SURVEYS													Offset Site Error:	0.0 ft
Survey Program: 100-Geolink MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis		Distance		Total		Separation		Warning		
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Uncertainty Axis	Factor		
8,900.0	7,529.0	7,484.1	7,483.1	31.1	13.1	83.73	1,519.5	-1,047.0	484.5	447.5	36.94	13.116		
9,000.0	7,529.0	7,485.7	7,484.7	32.2	13.1	85.16	1,519.5	-1,047.0	385.6	347.1	38.50	10.015		
9,100.0	7,529.0	7,487.3	7,486.3	33.4	13.1	86.61	1,519.6	-1,047.0	287.4	247.3	40.08	7.171		
9,200.0	7,529.0	7,488.9	7,487.9	34.7	13.1	88.06	1,519.6	-1,047.0	191.1	149.4	41.67	4.586		
9,300.0	7,529.0	7,490.5	7,489.5	36.0	13.1	89.53	1,519.6	-1,047.1	102.1	58.9	43.26	2.361		
9,381.1	7,529.0	7,491.8	7,490.8	37.0	13.1	90.73	1,519.6	-1,047.1	62.5	18.1	44.37	1.408	Level 3, CC, ES, SF	
9,400.0	7,529.0	7,492.1	7,491.1	37.3	13.1	91.01	1,519.6	-1,047.1	65.6	21.0	44.62	1.471	Level 3	
9,500.0	7,529.0	7,493.7	7,492.7	38.6	13.1	92.38	1,519.7	-1,047.1	133.5	87.9	45.64	2.925		
9,600.0	7,529.0	7,495.3	7,494.3	40.0	13.1	93.77	1,519.7	-1,047.1	226.2	178.9	47.21	4.791		
9,700.0	7,529.0	7,496.9	7,495.9	41.4	13.1	95.16	1,519.7	-1,047.1	323.2	274.4	48.76	6.628		
9,800.0	7,529.0	7,498.5	7,497.5	42.8	13.1	96.56	1,519.7	-1,047.2	421.6	371.3	50.29	8.383		

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Sprague 3B-9H-N267
Project:	DJ Wattenberg	TVD Reference:	WELL @ 5011.0ft (Original Well Elev)
Reference Site:	S9-T2N-R67W (Sprague)	MD Reference:	WELL @ 5011.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Sprague 3B-9H-N267	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #4	Offset TVD Reference:	Offset Datum

Offset Design S9-T2N-R67W (Sprague) - SPRAGUE 14-9 (EXISTING) - ENCANA WELL - EXISTING - VES GYRO													Offset Site Error:	0.0 ft
Survey Program: 100-Gyro													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor		
7,600.0	7,421.0	7,384.2	7,382.5	23.8	6.5	-0.12	187.1	-1,141.8	427.5	405.2	22.26	19.209		
7,700.0	7,471.8	7,435.9	7,434.1	23.8	6.6	-6.92	186.4	-1,144.4	341.2	321.1	20.08	16.992		
7,800.0	7,507.1	7,470.9	7,469.1	23.9	6.6	-24.12	185.7	-1,146.2	247.7	229.0	18.69	13.251		
7,900.0	7,525.9	7,488.1	7,486.2	24.0	6.6	-68.62	185.3	-1,147.1	150.8	130.6	20.24	7.450		
8,000.0	7,529.0	7,488.9	7,487.1	24.2	6.6	-88.54	185.3	-1,147.2	59.3	38.5	20.71	2.861		
8,046.2	7,529.0	7,487.9	7,486.0	24.4	6.6	-86.92	185.3	-1,147.1	37.2	16.2	21.02	1.769	CC, ES, SF	
8,100.0	7,529.0	7,486.6	7,484.8	24.6	6.6	-85.04	185.4	-1,147.1	65.4	44.1	21.37	3.061		
8,200.0	7,529.0	7,484.4	7,482.6	25.1	6.6	-81.64	185.4	-1,146.9	158.2	136.1	22.16	7.141		
8,300.0	7,529.0	7,482.3	7,480.4	25.6	6.6	-78.35	185.5	-1,146.8	256.5	233.4	23.05	11.129		
8,400.0	7,529.0	7,480.1	7,478.3	26.3	6.6	-75.20	185.5	-1,146.7	355.7	331.7	24.00	14.819		
8,500.0	7,529.0	7,478.1	7,476.2	27.1	6.6	-72.18	185.6	-1,146.6	455.3	430.3	24.99	18.214		

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Sprague 3B-9H-N267
Project:	DJ Wattenberg	TVD Reference:	WELL @ 5011.0ft (Original Well Elev)
Reference Site:	S9-T2N-R67W (Sprague)	MD Reference:	WELL @ 5011.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Sprague 3B-9H-N267	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #4	Offset TVD Reference:	Offset Datum

Offset Design		S9-T2N-R67W (Sprague) - SPRAGUE 24-9 (EXISTING) - ENCANA WELL - EXISTING - VES GYRO										Offset Site Error: 0.0 ft	
Survey Program: 100-Gyro												Offset Well Error: 0.0 ft	
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	
0.0	0.0	0.0	0.0	0.0	0.0	92.53	-7.3	164.9	168.0				
100.0	100.0	68.4	68.4	0.1	0.1	92.53	-7.3	165.1	165.2	165.0	0.18	907.777	CC, ES
200.0	200.0	167.8	167.8	0.3	0.1	92.53	-7.3	165.6	165.8	165.3	0.44	373.940	
300.0	300.0	268.6	268.6	0.5	0.2	92.46	-7.1	166.3	166.4	165.7	0.71	235.788	
400.0	400.0	369.5	369.5	0.6	0.3	-152.99	-6.6	166.2	167.9	166.9	0.97	173.307	
500.0	499.8	469.2	469.2	0.8	0.4	-153.95	-6.0	165.9	172.2	171.0	1.23	139.639	
600.0	599.5	568.7	568.7	1.1	0.5	-155.18	-5.7	165.7	180.0	178.5	1.50	119.810	
700.0	698.7	668.0	668.0	1.3	0.6	-156.70	-5.5	165.6	191.0	189.2	1.78	107.554	
800.0	797.5	767.6	767.5	1.6	0.7	-158.48	-5.0	165.3	205.2	203.1	2.05	99.936	
900.0	896.0	865.8	865.7	1.9	0.8	-160.19	-4.7	164.7	220.8	218.5	2.33	94.833	
1,000.0	994.5	963.8	963.8	2.3	0.8	-161.67	-4.5	164.5	237.0	234.4	2.60	91.099	
1,100.0	1,093.0	1,061.2	1,061.2	2.6	0.9	-162.95	-4.2	164.5	253.5	250.6	2.87	88.286	
1,200.0	1,191.4	1,158.8	1,158.8	3.0	1.0	-164.04	-4.0	165.0	270.6	267.5	3.14	86.192	
1,300.0	1,289.9	1,257.4	1,257.4	3.3	1.1	-165.03	-3.7	165.5	287.9	284.5	3.41	84.508	
1,400.0	1,388.4	1,357.3	1,357.3	3.6	1.2	-166.05	-2.7	165.7	305.0	301.3	3.67	83.067	
1,500.0	1,486.9	1,455.7	1,455.7	4.0	1.3	-166.88	-2.3	165.5	321.7	317.8	3.94	81.755	
1,600.0	1,585.4	1,553.8	1,553.8	4.3	1.4	-167.61	-1.8	165.7	338.8	334.6	4.20	80.711	
1,700.0	1,683.9	1,653.3	1,653.3	4.7	1.4	-168.29	-1.3	165.6	355.8	351.3	4.46	79.763	
1,800.0	1,782.4	1,752.0	1,752.0	5.0	1.5	-168.82	-1.4	165.4	372.5	367.8	4.72	78.872	
1,900.0	1,880.9	1,850.8	1,850.8	5.4	1.6	-169.37	-1.1	165.2	389.4	384.4	4.98	78.118	
2,000.0	1,979.4	1,949.0	1,948.9	5.7	1.7	-169.82	-1.2	164.9	406.1	400.9	5.25	77.415	
2,100.0	2,077.9	2,047.5	2,047.5	6.1	1.8	-170.20	-1.4	165.0	423.2	417.6	5.51	76.824	
2,200.0	2,176.4	2,146.2	2,146.2	6.4	1.9	-170.59	-1.4	164.7	439.9	434.1	5.77	76.248	
2,300.0	2,274.9	2,242.8	2,242.7	6.8	2.0	-170.95	-1.3	164.8	457.0	451.0	6.03	75.813	
2,400.0	2,373.4	2,341.8	2,341.8	7.1	2.0	-171.27	-1.3	165.1	474.4	468.1	6.29	75.422	
2,500.0	2,471.9	2,441.1	2,441.0	7.5	2.1	-171.64	-0.9	164.8	491.4	484.9	6.55	75.026	SF

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Sprague 3B-9H-N267
Project:	DJ Wattenberg	TVD Reference:	WELL @ 5011.0ft (Original Well Elev)
Reference Site:	S9-T2N-R67W (Sprague)	MD Reference:	WELL @ 5011.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Sprague 3B-9H-N267	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #4	Offset TVD Reference:	Offset Datum

Offset Design S9-T2N-R67W (Sprague) - SPRAGUE 24-9 J (EXISTING) - MACHII-ROSS WELL - NO SURVEYS													Offset Site Error: 0.0 ft
Survey Program: 8120-Geolink MWD													Offset Well Error: 0.0 ft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Total Uncertainty Axis	Separation Factor	Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)		+N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)			
0.0	0.0	0.0	0.0	0.0	0.0	68.18	87.1	217.5	235.5				
100.0	100.0	76.0	76.0	0.1	0.1	68.18	87.1	217.5	234.3	234.0	0.26	918.647	
200.0	200.0	176.0	176.0	0.3	0.3	68.18	87.1	217.5	234.3	233.7	0.60	387.813	
300.0	300.0	276.0	276.0	0.5	0.5	68.18	87.1	217.5	234.3	233.3	0.95	245.787 CC, ES	
400.0	400.0	376.0	376.0	0.6	0.7	-176.85	87.1	217.5	236.0	234.7	1.30	181.312	
500.0	499.8	475.8	475.8	0.8	0.8	-176.91	87.1	217.5	241.2	239.6	1.65	146.310	
600.0	599.5	575.5	575.5	1.1	1.0	-177.01	87.1	217.5	249.9	247.9	1.99	125.356	
700.0	698.7	674.7	674.7	1.3	1.2	-177.13	87.1	217.5	262.1	259.8	2.34	112.199	
800.0	797.5	773.5	773.5	1.6	1.4	-177.28	87.1	217.5	277.7	275.1	2.68	103.817	
900.0	896.0	872.0	872.0	1.9	1.5	-177.44	87.1	217.5	295.0	292.0	3.02	97.636	
1,000.0	994.5	970.5	970.5	2.3	1.7	-177.58	87.1	217.5	312.3	308.9	3.37	92.730	
1,100.0	1,093.0	1,069.0	1,069.0	2.6	1.9	-177.71	87.1	217.5	329.5	325.8	3.71	88.742	
1,200.0	1,191.4	1,167.4	1,167.4	3.0	2.0	-177.82	87.1	217.5	346.8	342.7	4.06	85.436	
1,300.0	1,289.9	1,265.9	1,265.9	3.3	2.2	-177.93	87.1	217.5	364.1	359.7	4.40	82.651	
1,400.0	1,388.4	1,364.4	1,364.4	3.6	2.4	-178.02	87.1	217.5	381.3	376.6	4.75	80.273	
1,500.0	1,486.9	1,462.9	1,462.9	4.0	2.6	-178.11	87.1	217.5	398.6	393.5	5.10	78.218	
1,600.0	1,585.4	1,561.4	1,561.4	4.3	2.7	-178.18	87.1	217.5	415.9	410.5	5.44	76.425	
1,700.0	1,683.9	1,659.9	1,659.9	4.7	2.9	-178.26	87.1	217.5	433.2	427.4	5.79	74.846	
1,800.0	1,782.4	1,758.4	1,758.4	5.0	3.1	-178.32	87.1	217.5	450.4	444.3	6.13	73.446	
1,900.0	1,880.9	1,856.9	1,856.9	5.4	3.2	-178.39	87.1	217.5	467.7	461.2	6.48	72.196	
2,000.0	1,979.4	1,955.4	1,955.4	5.7	3.4	-178.44	87.1	217.5	485.0	478.2	6.82	71.073 SF	

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Sprague 3B-9H-N267
Project:	DJ Wattenberg	TVD Reference:	WELL @ 5011.0ft (Original Well Elev)
Reference Site:	S9-T2N-R67W (Sprague)	MD Reference:	WELL @ 5011.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Sprague 3B-9H-N267	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #4	Offset TVD Reference:	Offset Datum

Offset Design S9-T2N-R67W (Sprague) - SPRAGUE 2-8-9 (EXISTING) - ENCANA WELL - SURVEYS													Offset Site Error: 0.0 ft	
Survey Program: 79-Geolink 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	105.60	-73.2	262.2	272.8					
100.0	100.0	83.6	83.6	0.1	0.1	105.65	-73.4	262.0	272.0	271.8	0.25	1,083.472		
200.0	200.0	182.8	182.8	0.3	0.3	105.78	-73.9	261.5	271.8	271.2	0.60	454.016		
300.0	300.0	284.3	284.3	0.5	0.5	106.04	-75.0	260.9	271.4	270.5	0.95	285.635		
400.0	400.0	390.1	390.1	0.6	0.7	-138.94	-75.9	259.0	271.3	270.0	1.31	206.469		
500.0	499.8	501.5	501.3	0.8	0.9	-139.57	-75.3	253.5	270.3	268.6	1.69	159.968		
600.0	599.5	610.4	609.8	1.1	1.1	-140.53	-74.4	243.7	268.1	266.0	2.08	129.176		
700.0	698.7	717.3	715.8	1.3	1.4	-141.28	-76.0	230.3	265.8	263.3	2.48	106.985		
800.0	797.5	818.7	815.8	1.6	1.7	-141.48	-81.6	215.0	264.7	261.7	2.93	90.436		
900.0	896.0	924.1	919.4	1.9	2.1	-141.22	-90.2	197.3	263.7	260.3	3.42	77.040		
1,000.0	994.5	1,029.5	1,022.3	2.3	2.5	-140.48	-100.3	176.6	260.4	256.5	3.97	65.618		
1,100.0	1,093.0	1,130.0	1,120.1	2.6	2.9	-139.54	-110.6	155.7	256.1	251.5	4.54	56.408		
1,200.0	1,191.4	1,229.0	1,216.1	3.0	3.4	-138.32	-121.8	134.8	251.8	246.7	5.15	48.861		
1,300.0	1,289.9	1,327.8	1,311.9	3.3	3.8	-136.80	-134.2	114.1	248.2	242.4	5.82	42.647		
1,400.0	1,388.4	1,426.7	1,407.8	3.6	4.2	-135.12	-147.1	93.4	245.0	238.5	6.53	37.550		
1,500.0	1,486.9	1,525.2	1,503.4	4.0	4.7	-133.43	-160.1	73.2	242.5	235.2	7.25	33.428		
1,600.0	1,585.4	1,627.4	1,602.7	4.3	5.1	-131.97	-172.2	52.7	240.0	232.0	7.98	30.069		
1,700.0	1,683.9	1,729.2	1,701.7	4.7	5.6	-130.73	-182.9	31.6	236.5	227.8	8.71	27.148		
1,800.0	1,782.4	1,828.2	1,797.9	5.0	6.0	-129.39	-193.6	10.6	232.9	223.5	9.46	24.614		
1,900.0	1,880.9	1,926.8	1,893.8	5.4	6.5	-128.08	-204.2	-9.6	230.1	219.9	10.22	22.516		
2,000.0	1,979.4	2,028.7	1,993.0	5.7	6.9	-126.80	-214.8	-30.4	227.2	216.2	11.00	20.659		
2,100.0	2,077.9	2,127.1	2,088.7	6.1	7.4	-125.50	-224.8	-51.1	223.8	212.0	11.78	19.006		
2,200.0	2,176.4	2,224.1	2,183.4	6.4	7.8	-124.46	-234.4	-69.9	221.9	209.3	12.52	17.718		
2,300.0	2,274.9	2,326.7	2,283.5	6.8	8.2	-123.43	-244.3	-89.4	220.1	206.8	13.30	16.546		
2,400.0	2,373.4	2,426.5	2,380.9	7.1	8.6	-122.29	-254.0	-109.3	217.7	203.6	14.09	15.445		
2,500.0	2,471.9	2,525.6	2,477.6	7.5	9.0	-121.24	-263.3	-128.7	215.6	200.7	14.88	14.483		
2,600.0	2,570.4	2,623.8	2,573.3	7.8	9.5	-119.83	-274.0	-148.2	214.1	198.3	15.74	13.603		
2,700.0	2,668.9	2,724.1	2,671.0	8.2	9.9	-118.27	-285.6	-167.8	213.4	196.7	16.63	12.831		
2,800.0	2,767.4	2,824.3	2,768.2	8.5	10.4	-116.43	-297.4	-188.6	212.1	194.5	17.56	12.077		
2,900.0	2,865.9	2,922.9	2,864.2	8.9	10.8	-114.76	-308.9	-208.3	211.4	192.9	18.47	11.448		
3,000.0	2,964.4	3,023.0	2,961.7	9.2	11.2	-113.18	-320.4	-227.9	211.2	191.8	19.37	10.905		
3,100.0	3,062.9	3,123.8	3,060.0	9.6	11.7	-111.80	-331.2	-247.3	210.8	190.6	20.24	10.417		
3,200.0	3,161.4	3,223.8	3,157.4	9.9	12.1	-110.27	-342.0	-267.4	210.0	188.8	21.14	9.933		
3,225.5	3,186.5	3,248.3	3,181.2	10.0	12.2	-109.90	-344.7	-272.2	209.9	188.5	21.36	9.828 CC		
3,300.0	3,259.8	3,320.5	3,251.8	10.3	12.5	-108.94	-352.7	-285.6	210.4	188.4	21.98	9.571		
3,400.0	3,358.3	3,421.6	3,350.7	10.6	12.9	-107.98	-363.4	-303.1	211.6	188.8	22.80	9.282		
3,500.0	3,456.8	3,522.1	3,449.1	11.0	13.3	-107.03	-373.2	-321.3	211.8	188.2	23.62	8.969		
3,600.0	3,555.3	3,620.5	3,545.4	11.3	13.7	-106.13	-383.2	-338.6	212.6	188.2	24.41	8.711		
3,700.0	3,653.8	3,721.1	3,643.9	11.7	14.1	-105.18	-393.7	-356.2	213.8	188.6	25.24	8.470		
3,800.0	3,752.3	3,823.5	3,744.1	12.0	14.5	-104.17	-403.8	-374.9	214.1	188.0	26.06	8.216		
3,831.9	3,783.7	3,855.1	3,775.0	12.1	14.6	-103.98	-406.5	-380.4	214.1	187.8	26.29	8.142		
3,900.0	3,850.8	3,922.6	3,841.5	12.4	14.9	-103.82	-411.9	-391.4	214.2	187.4	26.77	8.001		
4,000.0	3,949.3	4,022.1	3,939.6	12.7	15.2	-104.13	-418.8	-405.8	214.6	187.2	27.39	7.834 ES		
4,100.0	4,047.8	4,120.8	4,037.4	13.1	15.5	-105.03	-424.4	-418.3	215.3	187.4	27.93	7.709		
4,200.0	4,146.3	4,218.9	4,134.8	13.4	15.7	-106.33	-429.6	-428.9	217.0	188.6	28.40	7.639		
4,300.0	4,244.8	4,318.9	4,234.3	13.8	15.9	-108.18	-433.9	-437.9	219.2	190.4	28.76	7.621 SF		
4,400.0	4,343.3	4,416.3	4,331.4	14.1	16.1	-110.52	-436.6	-444.9	222.0	193.0	29.00	7.654		
4,500.0	4,441.8	4,512.6	4,427.6	14.5	16.3	-113.30	-438.7	-449.5	226.5	197.4	29.08	7.786		
4,600.0	4,540.3	4,612.2	4,527.1	14.8	16.4	-116.41	-440.1	-452.9	232.1	203.0	29.06	7.986		
4,700.0	4,638.8	4,711.2	4,626.0	15.2	16.5	-119.44	-441.1	-456.1	238.3	209.3	28.98	8.223		
4,800.0	4,737.3	4,810.6	4,725.4	15.5	16.7	-122.39	-441.9	-459.2	245.1	216.3	28.85	8.495		
4,900.0	4,835.8	4,911.4	4,826.1	15.9	16.8	-125.21	-442.4	-462.6	252.1	223.4	28.69	8.787		

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

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Sprague 3B-9H-N267
Project:	DJ Wattenberg	TVD Reference:	WELL @ 5011.0ft (Original Well Elev)
Reference Site:	S9-T2N-R67W (Sprague)	MD Reference:	WELL @ 5011.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Sprague 3B-9H-N267	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #4	Offset TVD Reference:	Offset Datum

Offset Design S9-T2N-R67W (Sprague) - SPRAGUE 2-8-9 (EXISTING) - ENCANA WELL - SURVEYS											Offset Site Error: 0.0 ft		
Survey Program: 79-Geolink 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
5,000.0	4,934.3	5,011.1	4,925.7	16.2	16.9	-127.95	-442.3	-466.4	259.1	230.6	28.50	9.091	
5,100.0	5,032.8	5,109.3	5,023.9	16.6	17.1	-130.54	-442.0	-470.0	266.7	238.4	28.29	9.429	
5,200.0	5,131.3	5,207.2	5,121.8	17.0	17.2	-133.08	-441.4	-473.1	275.2	247.2	28.04	9.814	
5,300.0	5,229.8	5,306.0	5,220.5	17.3	17.3	-135.52	-440.7	-475.9	284.4	256.6	27.80	10.233	
5,400.0	5,328.2	5,404.9	5,319.3	17.7	17.4	-137.79	-440.1	-478.8	294.1	266.6	27.57	10.669	
5,500.0	5,426.7	5,503.8	5,418.2	18.0	17.6	-139.93	-439.5	-481.7	304.3	276.9	27.36	11.122	
5,600.0	5,525.2	5,602.6	5,517.0	18.4	17.7	-141.94	-438.8	-484.5	314.8	287.6	27.17	11.587	
5,700.0	5,623.7	5,701.5	5,615.8	18.7	17.8	-143.81	-438.1	-487.4	325.7	298.7	27.01	12.060	
5,800.0	5,722.2	5,800.8	5,715.1	19.1	17.9	-145.56	-437.5	-490.3	336.9	310.0	26.88	12.533	
5,900.0	5,820.7	5,900.4	5,814.6	19.4	18.1	-147.18	-436.9	-493.4	348.1	321.4	26.78	13.000	
6,000.0	5,919.2	5,997.6	5,911.8	19.8	18.2	-148.66	-436.3	-496.4	359.8	333.1	26.72	13.467	
6,100.0	6,017.7	6,094.9	6,009.0	20.1	18.3	-150.05	-435.9	-498.9	372.1	345.4	26.68	13.950	
6,200.0	6,116.2	6,192.8	6,107.0	20.5	18.5	-151.40	-435.2	-501.1	385.0	358.3	26.65	14.448	
6,300.0	6,214.7	6,290.9	6,205.0	20.8	18.6	-152.71	-434.1	-503.1	398.3	371.6	26.63	14.958	
6,400.0	6,313.2	6,389.2	6,303.3	21.2	18.7	-153.99	-432.8	-504.9	411.8	385.2	26.62	15.472	
6,500.0	6,411.7	6,488.2	6,402.2	21.5	18.8	-155.22	-431.1	-506.8	425.6	399.0	26.62	15.987	
6,600.0	6,510.2	6,587.5	6,501.5	21.9	18.9	-156.40	-429.4	-508.7	439.5	412.9	26.65	16.490	
6,700.0	6,608.7	6,689.3	6,603.3	22.2	19.1	-157.55	-427.5	-511.2	453.1	426.4	26.70	16.974	
6,800.0	6,707.2	6,791.4	6,705.3	22.6	19.2	-158.65	-425.5	-514.4	466.2	439.4	26.76	17.421	
6,900.0	6,805.7	6,891.8	6,805.6	22.9	19.4	-159.68	-423.6	-518.1	478.9	452.0	26.85	17.835	
7,000.0	6,904.2	6,990.8	6,904.5	23.3	19.5	-160.60	-421.9	-522.0	491.4	464.5	26.97	18.219	

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Sprague 3B-9H-N267
Project:	DJ Wattenberg	TVD Reference:	WELL @ 5011.0ft (Original Well Elev)
Reference Site:	S9-T2N-R67W (Sprague)	MD Reference:	WELL @ 5011.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Sprague 3B-9H-N267	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #4	Offset TVD Reference:	Offset Datum

Offset Design S9-T2N-R67W (Sprague) - Sprague 3A-9H-N267 - Hz - Plan #3													Offset Site Error: 0.0 ft	
Survey Program: O-Geolink 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	-89.96	0.0	-11.2	11.2					
100.0	100.0	100.0	100.0	0.1	0.1	-89.96	0.0	-11.2	11.2	10.9	0.24	45.763		
200.0	200.0	200.0	200.0	0.3	0.3	-89.96	0.0	-11.2	11.2	10.6	0.59	18.844		
233.5	233.5	233.5	233.5	0.4	0.4	-89.96	0.0	-11.2	11.2	10.5	0.71	15.740	CC, ES	
300.0	300.0	299.8	299.8	0.5	0.5	-90.77	-0.2	-11.6	11.6	10.6	0.94	12.295		
400.0	400.0	399.4	399.3	0.6	0.7	21.80	-1.5	-14.8	13.2	11.9	1.29	10.252		
500.0	499.8	498.9	498.6	0.8	0.9	20.54	-4.1	-21.2	15.0	13.3	1.64	9.097		
600.0	599.5	598.4	597.5	1.1	1.1	20.09	-8.0	-30.8	16.7	14.7	2.00	8.346		
700.0	698.7	697.8	696.0	1.3	1.4	20.22	-13.2	-43.5	18.5	16.1	2.37	7.804		
800.0	797.5	797.1	793.8	1.6	1.7	20.77	-19.7	-59.4	20.3	17.6	2.75	7.376		
900.0	896.0	896.8	891.5	1.9	2.1	20.55	-27.3	-77.9	23.2	20.1	3.15	7.383		
1,000.0	994.5	996.8	989.4	2.3	2.5	20.21	-35.0	-96.6	26.4	22.8	3.54	7.453		
1,100.0	1,093.0	1,096.7	1,087.2	2.6	2.8	19.95	-42.6	-115.3	29.5	25.6	3.94	7.507		
1,200.0	1,191.4	1,196.7	1,185.1	3.0	3.2	19.73	-50.3	-134.1	32.7	28.4	4.33	7.550		
1,300.0	1,289.9	1,296.6	1,283.0	3.3	3.6	19.55	-58.0	-152.8	35.9	31.1	4.73	7.585		
1,400.0	1,388.4	1,396.6	1,380.9	3.6	4.0	19.41	-65.7	-171.5	39.0	33.9	5.12	7.615		
1,500.0	1,486.9	1,496.5	1,478.7	4.0	4.4	19.28	-73.3	-190.3	42.2	36.6	5.52	7.640		
1,600.0	1,585.4	1,596.5	1,576.6	4.3	4.8	19.17	-81.0	-209.0	45.3	39.4	5.92	7.662		
1,700.0	1,683.9	1,696.4	1,674.5	4.7	5.2	19.08	-88.7	-227.8	48.5	42.2	6.31	7.681		
1,800.0	1,782.4	1,796.4	1,772.4	5.0	5.6	19.00	-96.4	-246.5	51.6	44.9	6.71	7.697		
1,900.0	1,880.9	1,896.3	1,870.3	5.4	6.0	18.92	-104.0	-265.2	54.8	47.7	7.10	7.712		
2,000.0	1,979.4	1,996.3	1,968.1	5.7	6.4	18.86	-111.7	-284.0	57.9	50.4	7.50	7.725		
2,100.0	2,077.9	2,096.2	2,066.0	6.1	6.8	18.80	-119.4	-302.7	61.1	53.2	7.90	7.736		
2,200.0	2,176.4	2,196.2	2,163.9	6.4	7.2	18.75	-127.1	-321.4	64.3	56.0	8.29	7.747		
2,300.0	2,274.9	2,296.1	2,261.8	6.8	7.6	18.70	-134.7	-340.2	67.4	58.7	8.69	7.757		
2,400.0	2,373.4	2,396.1	2,359.6	7.1	8.0	18.66	-142.4	-358.9	70.6	61.5	9.09	7.765		
2,500.0	2,471.9	2,496.0	2,457.5	7.5	8.4	18.62	-150.1	-377.7	73.7	64.2	9.48	7.773		
2,600.0	2,570.4	2,596.0	2,555.4	7.8	8.8	18.58	-157.8	-396.4	76.9	67.0	9.88	7.781		
2,700.0	2,668.9	2,695.9	2,653.3	8.2	9.2	18.55	-165.4	-415.1	80.0	69.8	10.28	7.787		
2,800.0	2,767.4	2,795.9	2,751.2	8.5	9.6	18.52	-173.1	-433.9	83.2	72.5	10.68	7.794		
2,900.0	2,865.9	2,895.8	2,849.0	8.9	10.0	18.49	-180.8	-452.6	86.4	75.3	11.07	7.800		
3,000.0	2,964.4	2,995.8	2,946.9	9.2	10.4	18.46	-188.5	-471.3	89.5	78.0	11.47	7.805		
3,100.0	3,062.9	3,095.7	3,044.8	9.6	10.8	18.43	-196.1	-490.1	92.7	80.8	11.87	7.810		
3,200.0	3,161.4	3,195.7	3,142.7	9.9	11.2	18.41	-203.8	-508.8	95.8	83.6	12.26	7.815		
3,300.0	3,259.8	3,295.6	3,240.5	10.3	11.6	18.39	-211.5	-527.6	99.0	86.3	12.66	7.819		
3,400.0	3,358.3	3,395.6	3,338.4	10.6	12.0	18.37	-219.2	-546.3	102.1	89.1	13.06	7.823		
3,500.0	3,456.8	3,495.5	3,436.3	11.0	12.4	18.35	-226.8	-565.0	105.3	91.8	13.45	7.827		
3,600.0	3,555.3	3,595.5	3,534.2	11.3	12.8	18.33	-234.5	-583.8	108.5	94.6	13.85	7.831		
3,700.0	3,653.8	3,695.4	3,632.1	11.7	13.2	18.32	-242.2	-602.5	111.6	97.4	14.25	7.834		
3,800.0	3,752.3	3,795.4	3,729.9	12.0	13.6	18.30	-249.9	-621.2	114.8	100.1	14.64	7.838		
3,900.0	3,850.8	3,895.3	3,827.8	12.4	14.0	18.28	-257.5	-640.0	117.9	102.9	15.04	7.841		
4,000.0	3,949.3	3,995.3	3,925.7	12.7	14.4	18.27	-265.2	-658.7	121.1	105.6	15.44	7.844		
4,100.0	4,047.8	4,095.2	4,023.6	13.1	14.8	18.26	-272.9	-677.5	124.2	108.4	15.83	7.847		
4,200.0	4,146.3	4,195.2	4,121.4	13.4	15.2	18.24	-280.6	-696.2	127.4	111.2	16.23	7.849		
4,300.0	4,244.8	4,295.1	4,219.3	13.8	15.6	18.23	-288.2	-714.9	130.6	113.9	16.63	7.852		
4,400.0	4,343.3	4,395.1	4,317.2	14.1	16.0	18.22	-295.9	-733.7	133.7	116.7	17.02	7.854		
4,500.0	4,441.8	4,495.0	4,415.1	14.5	16.4	18.21	-303.6	-752.4	136.9	119.4	17.42	7.857		
4,600.0	4,540.3	4,595.0	4,513.0	14.8	16.8	18.20	-311.3	-771.2	140.0	122.2	17.82	7.859		
4,700.0	4,638.8	4,694.9	4,610.8	15.2	17.2	18.19	-318.9	-789.9	143.2	125.0	18.21	7.861		
4,800.0	4,737.3	4,794.9	4,708.7	15.5	17.6	18.18	-326.6	-808.6	146.3	127.7	18.61	7.863		
4,900.0	4,835.8	4,894.8	4,806.6	15.9	18.0	18.17	-334.3	-827.4	149.5	130.5	19.01	7.865		
5,000.0	4,934.3	4,994.8	4,904.5	16.2	18.3	18.16	-342.0	-846.1	152.7	133.2	19.40	7.867		

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

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Sprague 3B-9H-N267
Project:	DJ Wattenberg	TVD Reference:	WELL @ 5011.0ft (Original Well Elev)
Reference Site:	S9-T2N-R67W (Sprague)	MD Reference:	WELL @ 5011.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Sprague 3B-9H-N267	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #4	Offset TVD Reference:	Offset Datum

Offset Design S9-T2N-R67W (Sprague) - Sprague 3A-9H-N267 - Hz - Plan #3														Offset Site Error:	0.0 ft
Survey Program: 0-Geolink 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			
5,100.0	5,032.8	5,094.7	5,002.3	16.6	18.7	18.15	-349.6	-864.8	155.8	136.0	19.80	7.868			
5,200.0	5,131.3	5,194.7	5,100.2	17.0	19.1	18.14	-357.3	-883.6	159.0	138.8	20.20	7.870			
5,300.0	5,229.8	5,294.6	5,198.1	17.3	19.5	18.13	-365.0	-902.3	162.1	141.5	20.60	7.872			
5,400.0	5,328.2	5,394.6	5,296.0	17.7	19.9	18.12	-372.7	-921.1	165.3	144.3	20.99	7.873			
5,500.0	5,426.7	5,494.5	5,393.9	18.0	20.3	18.12	-380.3	-939.8	168.4	147.0	21.39	7.875			
5,600.0	5,525.2	5,594.5	5,491.7	18.4	20.7	18.11	-388.0	-958.5	171.6	149.8	21.79	7.876			
5,700.0	5,623.7	5,694.4	5,589.6	18.7	21.1	18.10	-395.7	-977.3	174.7	152.6	22.18	7.878			
5,800.0	5,722.2	5,794.4	5,687.5	19.1	21.5	18.10	-403.4	-996.0	177.9	155.3	22.58	7.879			
5,900.0	5,820.7	5,894.3	5,785.4	19.4	21.9	18.09	-411.0	-1,014.7	181.1	158.1	22.98	7.881			
6,000.0	5,919.2	5,994.3	5,883.2	19.8	22.3	18.08	-418.7	-1,033.5	184.2	160.8	23.37	7.882			
6,100.0	6,017.7	6,094.2	5,981.1	20.1	22.7	18.08	-426.4	-1,052.2	187.4	163.6	23.77	7.883			
6,200.0	6,116.2	6,194.2	6,079.0	20.5	23.1	18.07	-434.1	-1,071.0	190.5	166.4	24.17	7.884			
6,300.0	6,214.7	6,294.1	6,176.9	20.8	23.5	18.07	-441.7	-1,089.7	193.7	169.1	24.56	7.885			
6,400.0	6,313.2	6,394.1	6,274.7	21.2	23.9	18.06	-449.4	-1,108.4	196.8	171.9	24.96	7.887			
6,500.0	6,411.7	6,494.0	6,372.6	21.5	24.3	18.06	-457.1	-1,127.2	200.0	174.6	25.36	7.888			
6,600.0	6,510.2	6,594.0	6,470.5	21.9	24.7	18.05	-464.8	-1,145.9	203.2	177.4	25.75	7.889			
6,700.0	6,608.7	6,693.9	6,568.4	22.2	25.1	18.05	-472.4	-1,164.6	206.3	180.2	26.15	7.890			
6,800.0	6,707.2	6,793.9	6,666.3	22.6	25.5	18.04	-480.1	-1,183.4	209.5	182.9	26.55	7.891			
6,900.0	6,805.7	6,896.3	6,766.7	22.9	25.9	19.08	-484.1	-1,202.6	212.2	185.0	27.24	7.792			
7,000.0	6,904.2	6,996.2	6,863.9	23.3	26.2	24.45	-471.4	-1,221.2	214.4	185.0	29.37	7.301			
7,100.0	7,002.8	7,089.0	6,951.0	23.6	26.3	-16.10	-444.5	-1,237.9	219.6	187.1	32.51	6.756			
7,200.0	7,100.2	7,177.6	7,029.2	23.8	26.4	-41.75	-405.7	-1,252.9	228.5	193.6	34.92	6.544			
7,300.0	7,193.5	7,263.0	7,098.1	23.8	26.4	-47.38	-357.1	-1,266.0	239.7	203.8	35.97	6.664			
7,400.0	7,279.7	7,345.7	7,157.3	23.9	26.4	-47.58	-300.7	-1,277.4	252.0	216.5	35.51	7.097			
7,500.0	7,356.4	7,426.3	7,206.8	23.8	26.4	-46.30	-237.9	-1,286.9	264.1	230.4	33.68	7.843			
7,600.0	7,421.0	7,505.2	7,246.5	23.8	26.5	-44.75	-170.1	-1,294.5	275.1	244.2	30.88	8.909			
7,700.0	7,471.8	7,582.9	7,276.2	23.8	26.5	-43.37	-98.6	-1,300.1	284.3	256.6	27.73	10.254			
7,800.0	7,507.1	7,659.8	7,296.0	23.9	26.6	-42.32	-24.5	-1,303.9	291.1	266.1	25.04	11.626			
7,900.0	7,525.9	7,736.0	7,305.8	24.0	26.7	-41.65	51.0	-1,305.8	295.2	271.4	23.80	12.402			
8,000.0	7,529.0	7,824.2	7,307.0	24.2	26.9	-41.45	139.2	-1,306.0	296.2	271.8	24.34	12.167			
8,100.0	7,529.0	7,924.2	7,307.0	24.6	27.2	-41.45	239.2	-1,306.0	296.2	271.0	25.20	11.753			
8,200.0	7,529.0	8,024.2	7,307.0	25.1	27.6	-41.45	339.2	-1,306.0	296.2	269.9	26.24	11.288			
8,300.0	7,529.0	8,124.2	7,307.0	25.6	28.1	-41.45	439.2	-1,306.0	296.2	268.7	27.44	10.794			
8,400.0	7,529.0	8,224.2	7,307.0	26.3	28.8	-41.45	539.2	-1,306.0	296.2	267.4	28.78	10.291			
8,500.0	7,529.0	8,324.2	7,307.0	27.1	29.5	-41.45	639.2	-1,306.0	296.2	265.9	30.24	9.793			
8,600.0	7,529.0	8,424.2	7,307.0	28.0	30.3	-41.45	739.2	-1,306.0	296.2	264.4	31.81	9.310			
8,700.0	7,529.0	8,524.2	7,307.0	28.9	31.1	-41.45	839.2	-1,306.0	296.2	262.7	33.47	8.849			
8,800.0	7,529.0	8,624.2	7,307.0	30.0	32.1	-41.45	939.2	-1,306.0	296.2	261.0	35.21	8.413			
8,900.0	7,529.0	8,724.2	7,307.0	31.1	33.1	-41.45	1,039.2	-1,306.0	296.2	259.2	37.01	8.003			
9,000.0	7,529.0	8,824.2	7,307.0	32.2	34.2	-41.45	1,139.2	-1,306.0	296.2	257.3	38.87	7.620			
9,100.0	7,529.0	8,924.2	7,307.0	33.4	35.3	-41.45	1,239.2	-1,306.0	296.2	255.4	40.78	7.263			
9,200.0	7,529.0	9,024.2	7,307.0	34.7	36.5	-41.45	1,339.2	-1,306.0	296.2	253.4	42.73	6.931			
9,300.0	7,529.0	9,124.2	7,307.0	36.0	37.7	-41.45	1,439.2	-1,306.0	296.2	251.5	44.72	6.623			
9,339.6	7,529.0	9,163.9	7,307.0	36.5	38.2	-41.46	1,478.8	-1,306.0	296.2	250.8	45.42	6.523			
9,400.0	7,529.0	9,224.2	7,307.0	37.3	39.0	-41.48	1,539.2	-1,306.0	296.4	249.9	46.48	6.376			
9,500.0	7,529.0	9,324.2	7,307.0	38.6	40.3	-41.90	1,639.1	-1,306.0	298.4	250.3	48.10	6.204			
9,600.0	7,529.0	9,424.0	7,307.0	40.0	41.6	-42.55	1,739.0	-1,306.0	301.5	250.9	50.62	5.956			
9,700.0	7,529.0	9,523.9	7,307.0	41.4	43.0	-43.18	1,838.9	-1,306.0	304.6	251.4	53.20	5.726			
9,800.0	7,529.0	9,623.8	7,307.0	42.8	44.4	-43.81	1,938.8	-1,306.0	307.8	251.9	55.85	5.511			
9,900.0	7,529.0	9,723.7	7,307.0	44.2	45.8	-44.41	2,038.7	-1,306.0	311.0	252.4	58.55	5.311			
10,000.0	7,529.0	9,823.6	7,307.0	45.7	47.2	-45.01	2,138.6	-1,306.0	314.2	252.9	61.31	5.124			
10,100.0	7,529.0	9,923.5	7,307.0	47.2	48.7	-45.59	2,238.5	-1,306.0	317.4	253.3	64.12	4.951			

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

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Sprague 3B-9H-N267
Project:	DJ Wattenberg	TVD Reference:	WELL @ 5011.0ft (Original Well Elev)
Reference Site:	S9-T2N-R67W (Sprague)	MD Reference:	WELL @ 5011.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Sprague 3B-9H-N267	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #4	Offset TVD Reference:	Offset Datum

Offset Design S9-T2N-R67W (Sprague) - Sprague 3A-9H-N267 - Hz - Plan #3													Offset Site Error:	0.0 ft
Survey Program: 0-Geolink 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		
10,200.0	7,529.0	10,023.4	7,307.0	48.7	50.2	-46.17	2,338.4	-1,306.0	320.7	253.7	66.98	4.789		
10,300.0	7,529.0	10,123.3	7,307.0	50.2	51.7	-46.73	2,438.3	-1,306.0	324.0	254.2	69.88	4.637		
10,400.0	7,529.0	10,223.2	7,307.0	51.7	53.2	-47.28	2,538.2	-1,306.0	327.4	254.6	72.82	4.496		
10,500.0	7,529.0	10,323.1	7,307.0	53.3	54.7	-47.81	2,638.1	-1,306.0	330.8	255.0	75.80	4.364		
10,600.0	7,529.0	10,423.0	7,307.0	54.8	56.3	-48.34	2,738.0	-1,306.0	334.2	255.4	78.82	4.240		
10,700.0	7,529.0	10,522.9	7,307.0	56.4	57.8	-48.86	2,837.9	-1,306.0	337.6	255.7	81.87	4.124		
10,800.0	7,529.0	10,622.8	7,307.0	58.0	59.4	-49.36	2,937.8	-1,306.0	341.1	256.1	84.95	4.015		
10,900.0	7,529.0	10,722.7	7,307.0	59.6	61.0	-49.86	3,037.7	-1,306.0	344.6	256.5	88.06	3.913		
11,000.0	7,529.0	10,822.6	7,307.0	61.2	62.6	-50.34	3,137.6	-1,306.0	348.1	256.9	91.20	3.817		
11,100.0	7,529.0	10,922.5	7,307.0	62.8	64.1	-50.82	3,237.5	-1,306.0	351.6	257.2	94.37	3.726		
11,200.0	7,529.0	11,022.4	7,307.0	64.4	65.7	-51.29	3,337.4	-1,306.0	355.2	257.6	97.56	3.640		
11,300.0	7,529.0	11,122.3	7,307.0	66.0	67.4	-51.74	3,437.2	-1,306.0	358.8	258.0	100.78	3.560		
11,400.0	7,529.0	11,222.2	7,307.0	67.6	69.0	-52.19	3,537.1	-1,306.0	362.4	258.4	104.02	3.484		
11,500.0	7,529.0	11,322.1	7,307.0	69.3	70.6	-52.63	3,637.0	-1,306.0	366.0	258.7	107.28	3.412		
11,600.0	7,529.0	11,421.9	7,307.0	70.9	72.2	-53.06	3,736.9	-1,306.0	369.7	259.0	110.63	3.341		
11,700.0	7,529.0	11,521.9	7,307.0	72.6	73.9	-53.33	3,836.9	-1,306.0	371.8	256.9	114.85	3.237		
11,800.0	7,529.0	11,621.9	7,307.0	74.3	75.5	-53.24	3,936.9	-1,306.0	371.1	252.6	118.49	3.132		
11,900.0	7,529.0	11,721.8	7,307.0	76.0	77.1	-52.80	4,036.8	-1,306.0	367.6	246.1	121.48	3.026		
12,000.0	7,529.0	11,821.6	7,307.0	77.7	78.8	-52.21	4,136.6	-1,306.0	362.7	239.4	123.35	2.941		
12,100.0	7,529.0	11,921.4	7,307.0	79.4	80.4	-51.61	4,236.4	-1,306.0	357.9	232.8	125.14	2.860		
12,200.0	7,529.0	12,021.2	7,307.0	81.1	82.1	-51.00	4,336.2	-1,306.0	353.2	226.3	126.86	2.784		
12,300.0	7,529.0	12,121.1	7,307.0	82.8	83.8	-50.37	4,436.0	-1,306.0	348.4	219.9	128.48	2.712		
12,400.0	7,529.0	12,220.9	7,307.0	84.5	85.4	-49.72	4,535.9	-1,306.0	343.7	213.7	130.02	2.644		
12,500.0	7,529.0	12,320.7	7,307.0	86.2	87.1	-49.05	4,635.7	-1,306.0	339.1	207.6	131.46	2.580		
12,600.0	7,529.0	12,420.5	7,307.0	87.9	88.8	-48.37	4,735.5	-1,306.0	334.5	201.7	132.81	2.519		
12,700.0	7,529.0	12,520.3	7,307.0	89.6	90.4	-47.67	4,835.3	-1,306.0	330.0	195.9	134.04	2.462		
12,800.0	7,529.0	12,620.1	7,307.0	91.3	92.1	-46.94	4,935.1	-1,306.0	325.5	190.3	135.17	2.408		
12,900.0	7,529.0	12,719.9	7,307.0	93.1	93.8	-46.20	5,034.9	-1,306.0	321.0	184.9	136.17	2.358		
13,000.0	7,529.0	12,819.7	7,307.0	94.8	95.5	-45.44	5,134.7	-1,306.0	316.7	179.6	137.06	2.310		
13,100.0	7,529.0	12,919.6	7,307.0	96.5	97.2	-44.65	5,234.5	-1,306.0	312.3	174.5	137.81	2.266		
13,100.2	7,529.0	12,919.8	7,307.0	96.5	97.2	-44.65	5,234.8	-1,306.0	312.3	174.5	137.81	2.266 SF		

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Sprague 3B-9H-N267
Project:	DJ Wattenberg	TVD Reference:	WELL @ 5011.0ft (Original Well Elev)
Reference Site:	S9-T2N-R67W (Sprague)	MD Reference:	WELL @ 5011.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Sprague 3B-9H-N267	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #4	Offset TVD Reference:	Offset Datum

Offset Design S9-T2N-R67W (Sprague) - Sprague 3AA-9H-N267 - Hz - Plan #3													Offset Site Error: 0.0 ft	
Survey Program: 0-Geolink 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	-90.00	0.0	-21.1	21.1					
100.0	100.0	100.0	100.0	0.1	0.1	-90.00	0.0	-21.1	21.1	20.9	0.24	86.554		
200.0	200.0	200.0	200.0	0.3	0.3	-90.00	0.0	-21.1	21.1	20.6	0.59	35.640	CC, ES	
300.0	300.0	299.3	299.2	0.5	0.5	-91.39	-0.6	-22.8	22.8	21.9	0.94	24.166		
400.0	400.0	398.4	398.2	0.6	0.7	21.73	-2.2	-27.7	26.2	24.9	1.29	20.275		
500.0	499.8	497.4	496.9	0.8	0.9	20.99	-5.0	-35.8	29.6	28.0	1.64	18.045		
600.0	599.5	596.3	595.0	1.1	1.2	21.04	-8.8	-47.1	33.2	31.2	2.00	16.591		
700.0	698.7	695.1	692.6	1.3	1.5	21.64	-13.7	-61.6	36.8	34.5	2.37	15.534		
800.0	797.5	793.7	789.5	1.6	1.8	22.65	-19.7	-79.2	40.6	37.8	2.76	14.685		
900.0	896.0	892.9	886.3	1.9	2.2	23.24	-26.6	-99.7	45.6	42.4	3.17	14.377		
1,000.0	994.5	992.8	983.7	2.3	2.6	23.59	-33.7	-120.6	51.0	47.4	3.59	14.209		
1,100.0	1,093.0	1,092.7	1,081.1	2.6	3.1	23.88	-40.8	-141.5	56.3	52.3	4.01	14.058		
1,200.0	1,191.4	1,192.5	1,178.5	3.0	3.5	24.12	-47.9	-162.4	61.7	57.3	4.43	13.924		
1,300.0	1,289.9	1,292.4	1,275.8	3.3	3.9	24.32	-55.0	-183.3	67.1	62.2	4.86	13.804		
1,400.0	1,388.4	1,392.2	1,373.2	3.6	4.3	24.49	-62.1	-204.3	72.5	67.2	5.29	13.698		
1,500.0	1,486.9	1,492.1	1,470.6	4.0	4.8	24.63	-69.2	-225.2	77.8	72.1	5.72	13.603		
1,600.0	1,585.4	1,591.9	1,568.0	4.3	5.2	24.76	-76.3	-246.1	83.2	77.1	6.16	13.518		
1,700.0	1,683.9	1,691.8	1,665.4	4.7	5.6	24.87	-83.4	-267.0	88.6	82.0	6.59	13.441		
1,800.0	1,782.4	1,791.6	1,762.7	5.0	6.0	24.97	-90.5	-288.0	94.0	86.9	7.03	13.372		
1,900.0	1,880.9	1,891.5	1,860.1	5.4	6.5	25.06	-97.6	-308.9	99.3	91.9	7.46	13.310		
2,000.0	1,979.4	1,991.3	1,957.5	5.7	6.9	25.14	-104.7	-329.8	104.7	96.8	7.90	13.253		
2,100.0	2,077.9	2,091.2	2,054.9	6.1	7.3	25.21	-111.8	-350.7	110.1	101.8	8.34	13.201		
2,200.0	2,176.4	2,191.1	2,152.3	6.4	7.8	25.28	-118.9	-371.7	115.5	106.7	8.78	13.153		
2,300.0	2,274.9	2,290.9	2,249.6	6.8	8.2	25.33	-126.0	-392.6	120.9	111.6	9.22	13.109		
2,400.0	2,373.4	2,390.8	2,347.0	7.1	8.6	25.39	-133.1	-413.5	126.2	116.6	9.66	13.069		
2,500.0	2,471.9	2,490.6	2,444.4	7.5	9.0	25.44	-140.2	-434.4	131.6	121.5	10.10	13.031		
2,600.0	2,570.4	2,590.5	2,541.8	7.8	9.5	25.48	-147.3	-455.3	137.0	126.4	10.54	12.997		
2,700.0	2,668.9	2,690.3	2,639.2	8.2	9.9	25.53	-154.4	-476.3	142.4	131.4	10.98	12.964		
2,800.0	2,767.4	2,790.2	2,736.5	8.5	10.3	25.57	-161.5	-497.2	147.7	136.3	11.42	12.934		
2,900.0	2,865.9	2,890.0	2,833.9	8.9	10.8	25.60	-168.6	-518.1	153.1	141.3	11.86	12.906		
3,000.0	2,964.4	2,989.9	2,931.3	9.2	11.2	25.64	-175.7	-539.0	158.5	146.2	12.31	12.880		
3,100.0	3,062.9	3,089.8	3,028.7	9.6	11.6	25.67	-182.8	-560.0	163.9	151.1	12.75	12.855		
3,200.0	3,161.4	3,189.6	3,126.1	9.9	12.0	25.70	-189.9	-580.9	169.3	156.1	13.19	12.832		
3,300.0	3,259.8	3,289.5	3,223.4	10.3	12.5	25.73	-197.0	-601.8	174.6	161.0	13.63	12.810		
3,400.0	3,358.3	3,389.3	3,320.8	10.6	12.9	25.75	-204.1	-622.7	180.0	165.9	14.07	12.790		
3,500.0	3,456.8	3,489.2	3,418.2	11.0	13.3	25.78	-211.2	-643.7	185.4	170.9	14.52	12.770		
3,600.0	3,555.3	3,589.0	3,515.6	11.3	13.8	25.80	-218.3	-664.6	190.8	175.8	14.96	12.752		
3,700.0	3,653.8	3,688.9	3,613.0	11.7	14.2	25.82	-225.4	-685.5	196.1	180.7	15.40	12.735		
3,800.0	3,752.3	3,788.7	3,710.3	12.0	14.6	25.84	-232.5	-706.4	201.5	185.7	15.85	12.718		
3,900.0	3,850.8	3,888.6	3,807.7	12.4	15.1	25.86	-239.6	-727.3	206.9	190.6	16.29	12.702		
4,000.0	3,949.3	3,988.5	3,905.1	12.7	15.5	25.88	-246.7	-748.3	212.3	195.6	16.73	12.687		
4,100.0	4,047.8	4,088.3	4,002.5	13.1	15.9	25.90	-253.8	-769.2	217.7	200.5	17.18	12.673		
4,200.0	4,146.3	4,188.2	4,099.9	13.4	16.4	25.92	-260.9	-790.1	223.0	205.4	17.62	12.660		
4,300.0	4,244.8	4,288.0	4,197.2	13.8	16.8	25.93	-268.0	-811.0	228.4	210.4	18.06	12.647		
4,400.0	4,343.3	4,387.9	4,294.6	14.1	17.2	25.95	-275.1	-832.0	233.8	215.3	18.51	12.634		
4,500.0	4,441.8	4,487.7	4,392.0	14.5	17.6	25.96	-282.2	-852.9	239.2	220.2	18.95	12.623		
4,600.0	4,540.3	4,587.6	4,489.4	14.8	18.1	25.98	-289.3	-873.8	244.6	225.2	19.39	12.611		
4,700.0	4,638.8	4,687.4	4,586.8	15.2	18.5	25.99	-296.4	-894.7	249.9	230.1	19.84	12.600		
4,800.0	4,737.3	4,787.3	4,684.1	15.5	18.9	26.00	-303.5	-915.6	255.3	235.0	20.28	12.590		
4,900.0	4,835.8	4,887.2	4,781.5	15.9	19.4	26.02	-310.6	-936.6	260.7	240.0	20.72	12.580		
5,000.0	4,934.3	4,987.0	4,878.9	16.2	19.8	26.03	-317.7	-957.5	266.1	244.9	21.17	12.570		
5,100.0	5,032.8	5,086.9	4,976.3	16.6	20.2	26.04	-324.8	-978.4	271.5	249.8	21.61	12.561		

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

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Sprague 3B-9H-N267
Project:	DJ Wattenberg	TVD Reference:	WELL @ 5011.0ft (Original Well Elev)
Reference Site:	S9-T2N-R67W (Sprague)	MD Reference:	WELL @ 5011.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Sprague 3B-9H-N267	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #4	Offset TVD Reference:	Offset Datum

Offset Design S9-T2N-R67W (Sprague) - Sprague 3AA-9H-N267 - Hz - Plan #3													Offset Site Error:	0.0 ft
Survey Program: O-Geolink 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)				
5,200.0	5,131.3	5,186.7	5,073.7	17.0	20.7	26.05	-331.9	-999.3	276.8	254.8	22.05	12.552		
5,300.0	5,229.8	5,286.6	5,171.0	17.3	21.1	26.06	-339.0	-1,020.3	282.2	259.7	22.50	12.544		
5,400.0	5,328.2	5,386.4	5,268.4	17.7	21.5	26.07	-346.1	-1,041.2	287.6	264.7	22.94	12.535		
5,500.0	5,426.7	5,486.3	5,365.8	18.0	21.9	26.08	-353.2	-1,062.1	293.0	269.6	23.39	12.528		
5,600.0	5,525.2	5,586.1	5,463.2	18.4	22.4	26.09	-360.3	-1,083.0	298.4	274.5	23.83	12.520		
5,700.0	5,623.7	5,686.0	5,560.6	18.7	22.8	26.10	-367.4	-1,104.0	303.7	279.5	24.27	12.512		
5,800.0	5,722.2	5,785.8	5,657.9	19.1	23.2	26.11	-374.5	-1,124.9	309.1	284.4	24.72	12.505		
5,900.0	5,820.7	5,885.7	5,755.3	19.4	23.7	26.12	-381.6	-1,145.8	314.5	289.3	25.16	12.498		
6,000.0	5,919.2	5,985.6	5,852.7	19.8	24.1	26.12	-388.7	-1,166.7	319.9	294.3	25.61	12.492		
6,100.0	6,017.7	6,085.4	5,950.1	20.1	24.5	26.13	-395.8	-1,187.6	325.2	299.2	26.05	12.485		
6,200.0	6,116.2	6,185.3	6,047.5	20.5	25.0	26.14	-402.9	-1,208.6	330.6	304.1	26.49	12.479		
6,300.0	6,214.7	6,285.1	6,144.8	20.8	25.4	26.15	-410.0	-1,229.5	336.0	309.1	26.94	12.473		
6,400.0	6,313.2	6,385.0	6,242.2	21.2	25.8	26.15	-417.1	-1,250.4	341.4	314.0	27.38	12.467		
6,500.0	6,411.7	6,484.8	6,339.6	21.5	26.3	26.16	-424.2	-1,271.3	346.8	318.9	27.83	12.461		
6,600.0	6,510.2	6,584.7	6,437.0	21.9	26.7	26.17	-431.3	-1,292.3	352.1	323.9	28.27	12.456		
6,700.0	6,608.7	6,684.5	6,534.4	22.2	27.1	26.17	-438.4	-1,313.2	357.5	328.8	28.72	12.451		
6,800.0	6,707.2	6,784.4	6,631.7	22.6	27.5	26.18	-445.5	-1,334.1	362.9	333.7	29.16	12.445		
6,900.0	6,805.7	6,884.3	6,729.1	22.9	28.0	26.19	-452.6	-1,355.0	368.3	338.7	29.60	12.440		
7,000.0	6,904.2	6,983.2	6,825.7	23.3	28.4	26.48	-457.8	-1,375.8	373.7	343.6	30.13	12.403		
7,100.0	7,002.8	7,080.3	6,920.3	23.6	28.7	-20.29	-451.1	-1,396.1	379.5	348.5	31.02	12.234		
7,200.0	7,100.2	7,176.8	7,012.6	23.8	29.0	-52.04	-431.5	-1,415.9	385.1	353.8	31.31	12.299		
7,300.0	7,193.5	7,273.0	7,101.3	23.8	29.2	-63.43	-399.6	-1,435.0	390.2	359.2	30.96	12.604		
7,400.0	7,279.7	7,369.4	7,185.1	23.9	29.3	-68.98	-355.7	-1,453.0	394.7	364.6	30.11	13.109		
7,500.0	7,356.4	7,466.3	7,262.8	23.8	29.5	-72.63	-300.3	-1,469.7	398.5	369.5	29.01	13.735		
7,600.0	7,421.0	7,564.1	7,333.1	23.8	29.6	-75.67	-234.2	-1,484.8	401.7	373.7	27.99	14.352		
7,700.0	7,471.8	7,663.2	7,394.7	23.8	29.7	-78.56	-157.7	-1,498.0	404.6	377.2	27.34	14.801		
7,800.0	7,507.1	7,764.1	7,446.2	23.9	29.9	-81.52	-71.7	-1,509.1	407.4	380.2	27.21	14.972		
7,900.0	7,525.9	7,867.4	7,486.1	24.0	30.1	-84.60	23.0	-1,517.7	410.4	382.9	27.56	14.892		
8,000.0	7,529.0	7,973.8	7,512.9	24.2	30.3	-87.77	125.8	-1,523.4	414.0	385.7	28.25	14.651		
8,100.0	7,529.0	8,085.5	7,524.7	24.6	30.6	-89.40	236.7	-1,526.0	416.0	386.5	29.46	14.119		
8,200.0	7,529.0	8,188.0	7,525.0	25.1	31.0	-89.45	339.2	-1,526.0	416.0	385.0	31.06	13.393		
8,300.0	7,529.0	8,288.0	7,525.0	25.6	31.5	-89.45	439.2	-1,526.0	416.0	383.1	32.94	12.629		
8,400.0	7,529.0	8,388.0	7,525.0	26.3	32.1	-89.45	539.2	-1,526.0	416.0	381.0	35.07	11.862		
8,500.0	7,529.0	8,488.0	7,525.0	27.1	32.7	-89.45	639.2	-1,526.0	416.0	378.6	37.41	11.120		
8,600.0	7,529.0	8,588.0	7,525.0	28.0	33.4	-89.45	739.2	-1,526.0	416.0	376.1	39.92	10.421		
8,700.0	7,529.0	8,688.0	7,525.0	28.9	34.2	-89.45	839.2	-1,526.0	416.0	373.5	42.57	9.772		
8,800.0	7,529.0	8,788.0	7,525.0	30.0	35.1	-89.45	939.2	-1,526.0	416.0	370.7	45.34	9.176		
8,900.0	7,529.0	8,888.0	7,525.0	31.1	36.0	-89.45	1,039.2	-1,526.0	416.0	367.8	48.21	8.630		
9,000.0	7,529.0	8,988.0	7,525.0	32.2	37.0	-89.45	1,139.2	-1,526.0	416.0	364.9	51.15	8.134		
9,100.0	7,529.0	9,088.0	7,525.0	33.4	38.0	-89.45	1,239.2	-1,526.0	416.0	361.9	54.16	7.681		
9,200.0	7,529.0	9,188.0	7,525.0	34.7	39.1	-89.45	1,339.2	-1,526.0	416.0	358.8	57.23	7.269		
9,300.0	7,529.0	9,288.0	7,525.0	36.0	40.3	-89.45	1,439.2	-1,526.0	416.0	355.7	60.35	6.894		
9,339.6	7,529.0	9,327.7	7,525.0	36.5	40.7	-89.45	1,478.8	-1,526.0	416.2	354.8	61.39	6.779		
9,400.0	7,529.0	9,388.0	7,525.0	37.3	41.4	-89.45	1,539.2	-1,526.0	416.3	353.3	62.96	6.612		
9,500.0	7,529.0	9,488.0	7,525.0	38.6	42.7	-89.45	1,639.1	-1,526.0	419.4	354.6	64.82	6.470		
9,600.0	7,529.0	9,587.9	7,525.0	40.0	43.9	-89.46	1,739.0	-1,526.0	424.0	356.0	68.02	6.233		
9,700.0	7,529.0	9,687.7	7,525.0	41.4	45.2	-89.46	1,838.9	-1,526.0	428.6	357.3	71.25	6.015		
9,800.0	7,529.0	9,787.6	7,525.0	42.8	46.5	-89.47	1,938.8	-1,526.0	433.1	358.7	74.50	5.814		
9,900.0	7,529.0	9,887.5	7,525.0	44.2	47.9	-89.48	2,038.7	-1,526.0	437.7	360.0	77.77	5.629		
10,000.0	7,529.0	9,987.4	7,525.0	45.7	49.3	-89.48	2,138.6	-1,526.0	442.3	361.2	81.06	5.457		
10,100.0	7,529.0	10,087.3	7,525.0	47.2	50.7	-89.49	2,238.5	-1,526.0	446.9	362.5	84.37	5.297		
10,200.0	7,529.0	10,187.2	7,525.0	48.7	52.1	-89.49	2,338.4	-1,526.0	451.5	363.8	87.69	5.148		

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

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Sprague 3B-9H-N267
Project:	DJ Wattenberg	TVD Reference:	WELL @ 5011.0ft (Original Well Elev)
Reference Site:	S9-T2N-R67W (Sprague)	MD Reference:	WELL @ 5011.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Sprague 3B-9H-N267	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #4	Offset TVD Reference:	Offset Datum

Offset Design S9-T2N-R67W (Sprague) - Sprague 3AA-9H-N267 - Hz - Plan #3												Offset Site Error:	0.0 ft
Survey Program: 0-Geolink 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	7,529.0	10,287.1	7,525.0	50.2	53.5	-89.50	2,438.3	-1,526.0	456.0	365.0		91.03	5.010
10,400.0	7,529.0	10,387.0	7,525.0	51.7	55.0	-89.50	2,538.2	-1,526.0	460.6	366.2		94.38	4.880
10,500.0	7,529.0	10,486.9	7,525.0	53.3	56.5	-89.51	2,638.1	-1,526.0	465.2	367.5		97.74	4.759
10,600.0	7,529.0	10,586.8	7,525.0	54.8	58.0	-89.51	2,738.0	-1,526.0	469.8	368.7		101.12	4.646
10,700.0	7,529.0	10,686.7	7,525.0	56.4	59.5	-89.52	2,837.9	-1,526.0	474.4	369.9		104.50	4.539
10,800.0	7,529.0	10,786.6	7,525.0	58.0	61.0	-89.52	2,937.8	-1,526.0	478.9	371.1		107.88	4.439
10,900.0	7,529.0	10,886.5	7,525.0	59.6	62.5	-89.53	3,037.7	-1,526.0	483.5	372.2		111.28	4.345
11,000.0	7,529.0	10,986.4	7,525.0	61.2	64.1	-89.53	3,137.6	-1,526.0	488.1	373.4		114.68	4.256
11,100.0	7,529.0	11,086.3	7,525.0	62.8	65.6	-89.53	3,237.5	-1,526.0	492.7	374.6		118.09	4.172
11,200.0	7,529.0	11,186.2	7,525.0	64.4	67.2	-89.54	3,337.4	-1,526.0	497.3	375.7		121.50	4.092
12,200.0	7,529.0	12,185.0	7,525.0	81.1	83.3	-89.54	4,336.2	-1,526.0	494.7	334.3		160.31	3.086
12,300.0	7,529.0	12,284.9	7,525.0	82.8	84.9	-89.53	4,436.0	-1,526.0	488.5	324.8		163.77	2.983
12,400.0	7,529.0	12,384.7	7,525.0	84.5	86.6	-89.52	4,535.9	-1,526.0	482.4	315.2		167.23	2.885
12,500.0	7,529.0	12,484.5	7,525.0	86.2	88.2	-89.52	4,635.7	-1,526.0	476.3	305.7		170.68	2.791
12,600.0	7,529.0	12,584.3	7,525.0	87.9	89.9	-89.51	4,735.5	-1,526.0	470.2	296.1		174.15	2.700
12,700.0	7,529.0	12,684.1	7,525.0	89.6	91.5	-89.51	4,835.3	-1,526.0	464.1	286.5		177.61	2.613
12,800.0	7,529.0	12,783.9	7,525.0	91.3	93.2	-89.50	4,935.1	-1,526.0	458.0	276.9		181.07	2.529
12,900.0	7,529.0	12,883.7	7,525.0	93.1	94.8	-89.49	5,034.9	-1,526.0	451.9	267.4		184.54	2.449
13,000.0	7,529.0	12,983.6	7,525.0	94.8	96.5	-89.48	5,134.7	-1,526.0	445.8	257.8		188.01	2.371
13,100.0	7,529.0	13,083.4	7,525.0	96.5	98.2	-89.48	5,234.5	-1,526.0	439.7	248.2		191.48	2.296
13,100.2	7,529.0	13,083.6	7,525.0	96.5	98.2	-89.48	5,234.8	-1,526.0	439.7	248.2		191.48	2.296 SF

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Sprague 3B-9H-N267
Project:	DJ Wattenberg	TVD Reference:	WELL @ 5011.0ft (Original Well Elev)
Reference Site:	S9-T2N-R67W (Sprague)	MD Reference:	WELL @ 5011.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Sprague 3B-9H-N267	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #4	Offset TVD Reference:	Offset Datum

Offset Design S9-T2N-R67W (Sprague) - Sprague 3C-9H-N267 - Hz - Plan #2														Offset Site Error:	0.0 ft
Survey Program: O-Geolink 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	90.06	0.0	8.4	8.4						
100.0	100.0	100.0	100.0	0.1	0.1	90.06	0.0	8.4	8.4	8.1	0.24	34.322			
200.0	200.0	200.0	200.0	0.3	0.3	90.06	0.0	8.4	8.4	7.8	0.59	14.133			
300.0	300.0	300.0	300.0	0.5	0.5	90.06	0.0	8.4	8.4	7.4	0.94	8.898 CC, ES			
400.0	400.0	400.0	400.0	0.6	0.6	-159.18	0.0	8.4	10.0	8.7	1.29	7.739			
500.0	499.8	500.1	500.1	0.8	0.8	-165.02	-0.5	7.6	14.2	12.6	1.64	8.653			
600.0	599.5	600.2	600.1	1.1	1.0	-168.58	-1.9	5.4	20.2	18.2	1.99	10.179			
700.0	698.7	700.2	700.1	1.3	1.2	-170.63	-4.2	1.7	28.1	25.7	2.33	12.030			
800.0	797.5	800.3	800.0	1.6	1.4	-171.82	-7.5	-3.4	37.7	35.0	2.68	14.072			
900.0	896.0	900.6	899.9	1.9	1.6	-172.27	-11.7	-10.1	47.3	44.3	3.04	15.590			
1,000.0	994.5	1,001.1	1,000.0	2.3	1.8	-172.10	-16.9	-18.2	55.2	51.8	3.39	16.275			
1,100.0	1,093.0	1,101.9	1,100.2	2.6	2.1	-171.54	-23.0	-27.9	61.5	57.7	3.76	16.355			
1,200.0	1,191.4	1,202.9	1,200.3	3.0	2.3	-170.65	-30.0	-39.1	66.0	61.9	4.13	15.984			
1,300.0	1,289.9	1,303.6	1,299.9	3.3	2.6	-169.47	-38.0	-51.6	69.0	64.5	4.51	15.291			
1,400.0	1,388.4	1,403.5	1,398.7	3.6	2.9	-168.29	-46.0	-64.4	71.7	66.8	4.90	14.619			
1,500.0	1,486.9	1,503.5	1,497.5	4.0	3.2	-167.20	-54.1	-77.1	74.3	69.0	5.30	14.030			
1,600.0	1,585.4	1,603.5	1,596.3	4.3	3.5	-166.19	-62.2	-89.9	77.1	71.4	5.70	13.510			
1,700.0	1,683.9	1,703.4	1,695.1	4.7	3.8	-165.24	-70.3	-102.6	79.8	73.7	6.12	13.047			
1,800.0	1,782.4	1,803.4	1,793.9	5.0	4.1	-164.36	-78.3	-115.4	82.5	76.0	6.53	12.632			
1,900.0	1,880.9	1,903.3	1,892.7	5.4	4.4	-163.54	-86.4	-128.2	85.3	78.4	6.96	12.259			
2,000.0	1,979.4	2,003.3	1,991.5	5.7	4.7	-162.76	-94.5	-140.9	88.1	80.7	7.39	11.921			
2,100.0	2,077.9	2,103.2	2,090.3	6.1	5.0	-162.04	-102.6	-153.7	90.9	83.1	7.83	11.614			
2,200.0	2,176.4	2,203.2	2,189.1	6.4	5.3	-161.35	-110.6	-166.4	93.7	85.4	8.27	11.333			
2,300.0	2,274.9	2,303.1	2,287.9	6.8	5.7	-160.71	-118.7	-179.2	96.5	87.8	8.72	11.077			
2,400.0	2,373.4	2,403.1	2,386.7	7.1	6.0	-160.11	-126.8	-192.0	99.4	90.2	9.17	10.841			
2,500.0	2,471.9	2,503.0	2,485.6	7.5	6.3	-159.54	-134.9	-204.7	102.2	92.6	9.62	10.624			
2,600.0	2,570.4	2,603.0	2,584.4	7.8	6.6	-158.99	-142.9	-217.5	105.1	95.0	10.08	10.424			
2,700.0	2,668.9	2,703.0	2,683.2	8.2	6.9	-158.48	-151.0	-230.2	108.0	97.4	10.54	10.238			
2,800.0	2,767.4	2,802.9	2,782.0	8.5	7.2	-158.00	-159.1	-243.0	110.8	99.8	11.01	10.066			
2,900.0	2,865.9	2,902.9	2,880.8	8.9	7.5	-157.54	-167.1	-255.7	113.7	102.2	11.48	9.906			
3,000.0	2,964.4	3,002.8	2,979.6	9.2	7.8	-157.10	-175.2	-268.5	116.6	104.7	11.95	9.756			
3,100.0	3,062.9	3,102.8	3,078.4	9.6	8.2	-156.68	-183.3	-281.3	119.5	107.1	12.43	9.617			
3,200.0	3,161.4	3,202.7	3,177.2	9.9	8.5	-156.28	-191.4	-294.0	122.4	109.5	12.91	9.486			
3,300.0	3,259.8	3,302.7	3,276.0	10.3	8.8	-155.91	-199.4	-306.8	125.3	111.9	13.38	9.363			
3,400.0	3,358.3	3,402.6	3,374.8	10.6	9.1	-155.54	-207.5	-319.5	128.2	114.4	13.87	9.248			
3,500.0	3,456.8	3,502.6	3,473.6	11.0	9.4	-155.20	-215.6	-332.3	131.2	116.8	14.35	9.140			
3,600.0	3,555.3	3,602.5	3,572.4	11.3	9.7	-154.87	-223.7	-345.1	134.1	119.2	14.84	9.038			
3,700.0	3,653.8	3,702.5	3,671.2	11.7	10.1	-154.55	-231.7	-357.8	137.0	121.7	15.32	8.941			
3,800.0	3,752.3	3,802.5	3,770.1	12.0	10.4	-154.25	-239.8	-370.6	139.9	124.1	15.81	8.850			
3,900.0	3,850.8	3,902.4	3,868.9	12.4	10.7	-153.96	-247.9	-383.3	142.9	126.6	16.30	8.764			
4,000.0	3,949.3	4,002.4	3,967.7	12.7	11.0	-153.68	-256.0	-396.1	145.8	129.0	16.80	8.682			
4,100.0	4,047.8	4,102.3	4,066.5	13.1	11.3	-153.41	-264.0	-408.9	148.8	131.5	17.29	8.605			
4,200.0	4,146.3	4,202.3	4,165.3	13.4	11.6	-153.15	-272.1	-421.6	151.7	133.9	17.78	8.531			
4,300.0	4,244.8	4,302.2	4,264.1	13.8	12.0	-152.91	-280.2	-434.4	154.7	136.4	18.28	8.461			
4,400.0	4,343.3	4,402.2	4,362.9	14.1	12.3	-152.67	-288.2	-447.1	157.6	138.8	18.78	8.394			
4,500.0	4,441.8	4,502.1	4,461.7	14.5	12.6	-152.44	-296.3	-459.9	160.6	141.3	19.27	8.330			
4,600.0	4,540.3	4,602.1	4,560.5	14.8	12.9	-152.22	-304.4	-472.6	163.5	143.7	19.77	8.270			
4,700.0	4,638.8	4,702.0	4,659.3	15.2	13.2	-152.00	-312.5	-485.4	166.5	146.2	20.27	8.212			
4,800.0	4,737.3	4,802.0	4,758.1	15.5	13.5	-151.80	-320.5	-498.2	169.4	148.7	20.77	8.156			
4,900.0	4,835.8	4,901.9	4,856.9	15.9	13.9	-151.60	-328.6	-510.9	172.4	151.1	21.28	8.103			
5,000.0	4,934.3	5,001.9	4,955.7	16.2	14.2	-151.41	-336.7	-523.7	175.4	153.6	21.78	8.053			
5,100.0	5,032.8	5,101.9	5,054.5	16.6	14.5	-151.22	-344.8	-536.4	178.3	156.1	22.28	8.004			

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

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Sprague 3B-9H-N267
Project:	DJ Wattenberg	TVD Reference:	WELL @ 5011.0ft (Original Well Elev)
Reference Site:	S9-T2N-R67W (Sprague)	MD Reference:	WELL @ 5011.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Sprague 3B-9H-N267	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #4	Offset TVD Reference:	Offset Datum

Offset Design S9-T2N-R67W (Sprague) - Sprague 3C-9H-N267 - Hz - Plan #2												Offset Site Error:	0.0 ft
Survey Program: O-Geolink MWD												Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning
5,200.0	5,131.3	5,201.8	5,153.4	17.0	14.8	-151.04	-352.8	-549.2	181.3	158.5	22.79	7.957	
5,300.0	5,229.8	5,301.8	5,252.2	17.3	15.1	-150.87	-360.9	-562.0	184.3	161.0	23.29	7.912	
5,400.0	5,328.2	5,401.7	5,351.0	17.7	15.4	-150.70	-369.0	-574.7	187.3	163.5	23.79	7.869	
5,500.0	5,426.7	5,501.7	5,449.8	18.0	15.8	-150.54	-377.0	-587.5	190.2	165.9	24.30	7.828	
5,600.0	5,525.2	5,601.6	5,548.6	18.4	16.1	-150.38	-385.1	-600.2	193.2	168.4	24.81	7.788	
5,700.0	5,623.7	5,701.6	5,647.4	18.7	16.4	-150.22	-393.2	-613.0	196.2	170.9	25.31	7.750	
5,800.0	5,722.2	5,801.5	5,746.2	19.1	16.7	-150.08	-401.3	-625.8	199.2	173.3	25.82	7.713	
5,900.0	5,820.7	5,901.5	5,845.0	19.4	17.0	-149.93	-409.3	-638.5	202.1	175.8	26.33	7.677	
6,000.0	5,919.2	6,001.4	5,943.8	19.8	17.3	-149.79	-417.4	-651.3	205.1	178.3	26.84	7.643	
6,100.0	6,017.7	6,101.4	6,042.6	20.1	17.7	-149.66	-425.5	-664.0	208.1	180.8	27.35	7.610	
6,200.0	6,116.2	6,201.4	6,141.4	20.5	18.0	-149.52	-433.6	-676.8	211.1	183.2	27.86	7.578	
6,300.0	6,214.7	6,301.3	6,240.2	20.8	18.3	-149.39	-441.6	-689.5	214.1	185.7	28.37	7.547	
6,400.0	6,313.2	6,401.3	6,339.0	21.2	18.6	-149.27	-449.7	-702.3	217.1	188.2	28.88	7.517	
6,500.0	6,411.7	6,501.2	6,437.9	21.5	18.9	-149.15	-457.8	-715.1	220.0	190.7	29.39	7.488	
6,600.0	6,510.2	6,601.2	6,536.7	21.9	19.2	-149.03	-465.9	-727.8	223.0	193.1	29.90	7.460	
6,700.0	6,608.7	6,701.1	6,635.5	22.2	19.6	-148.91	-473.9	-740.6	226.0	195.6	30.41	7.433	
6,800.0	6,707.2	6,803.0	6,736.2	22.6	19.9	-149.22	-480.5	-753.6	228.8	198.1	30.75	7.441	
6,900.0	6,805.7	6,904.7	6,836.6	22.9	20.0	-153.23	-471.9	-766.6	230.6	200.9	29.70	7.765	
7,000.0	6,904.2	6,998.1	6,926.2	23.3	20.1	-160.62	-448.4	-778.1	234.7	207.1	27.60	8.502	
7,100.0	7,002.8	7,082.6	7,003.0	23.6	20.0	141.86	-414.8	-788.0	245.2	219.5	25.64	9.562	
7,200.0	7,100.2	7,162.9	7,070.7	23.8	20.0	100.81	-372.6	-796.8	260.8	235.8	24.99	10.438	
7,300.0	7,193.5	7,240.1	7,129.6	23.8	19.9	82.08	-323.4	-804.4	279.1	253.9	25.23	11.061	
7,400.0	7,279.7	7,314.9	7,180.0	23.9	19.8	71.13	-268.6	-810.9	298.0	272.4	25.60	11.638	
7,500.0	7,356.4	7,387.8	7,221.8	23.8	19.7	63.86	-209.3	-816.3	315.8	290.2	25.60	12.336	
7,600.0	7,421.0	7,459.2	7,255.3	23.8	19.7	58.85	-146.3	-820.6	331.5	306.4	25.13	13.193	
7,700.0	7,471.8	7,529.7	7,280.5	23.8	19.7	55.42	-80.6	-823.9	344.2	319.9	24.33	14.145	
7,800.0	7,507.1	7,600.0	7,297.4	23.9	19.8	53.22	-12.5	-826.1	353.3	329.8	23.48	15.048	
7,900.0	7,525.9	7,668.7	7,305.8	24.0	19.9	52.08	55.7	-827.1	358.4	335.5	22.92	15.638	
8,000.0	7,529.0	7,752.2	7,307.0	24.2	20.2	51.86	139.2	-827.3	359.5	336.3	23.20	15.491	
8,100.0	7,529.0	7,852.2	7,307.0	24.6	20.6	51.86	239.2	-827.3	359.5	335.2	24.28	14.805	
8,200.0	7,529.0	7,952.2	7,307.0	25.1	21.2	51.86	339.2	-827.3	359.5	333.8	25.61	14.037	
8,300.0	7,529.0	8,052.2	7,307.0	25.6	21.8	51.86	439.2	-827.3	359.5	332.3	27.15	13.237	
8,400.0	7,529.0	8,152.2	7,307.0	26.3	22.7	51.86	539.2	-827.3	359.5	330.6	28.88	12.444	
8,500.0	7,529.0	8,252.2	7,307.0	27.1	23.6	51.86	639.2	-827.3	359.5	328.7	30.77	11.683	
8,600.0	7,529.0	8,352.2	7,307.0	28.0	24.6	51.86	739.2	-827.3	359.5	326.7	32.78	10.967	
8,700.0	7,529.0	8,452.2	7,307.0	28.9	25.6	51.86	839.2	-827.3	359.5	324.6	34.89	10.302	
8,800.0	7,529.0	8,552.2	7,307.0	30.0	26.8	51.86	939.2	-827.3	359.5	322.4	37.09	9.691	
8,900.0	7,529.0	8,652.2	7,307.0	31.1	28.0	51.86	1,039.2	-827.3	359.5	320.1	39.36	9.132	
9,000.0	7,529.0	8,752.2	7,307.0	32.2	29.3	51.86	1,139.2	-827.3	359.5	317.8	41.70	8.621	
9,100.0	7,529.0	8,852.2	7,307.0	33.4	30.6	51.86	1,239.2	-827.3	359.5	315.4	44.08	8.155	
9,200.0	7,529.0	8,952.2	7,307.0	34.7	32.0	51.86	1,339.2	-827.3	359.5	312.9	46.50	7.729	
9,300.0	7,529.0	9,052.2	7,307.0	36.0	33.4	51.86	1,439.2	-827.3	359.5	310.5	48.97	7.341	
9,400.0	7,529.0	9,152.2	7,307.0	37.3	34.8	51.83	1,539.2	-827.3	359.2	308.1	51.12	7.027	
9,500.0	7,529.0	9,252.2	7,307.0	38.6	36.3	51.50	1,639.1	-827.3	356.8	304.2	52.65	6.777	
9,600.0	7,529.0	9,352.1	7,307.0	40.0	37.7	51.03	1,739.0	-827.3	353.2	298.4	54.88	6.437	
9,700.0	7,529.0	9,452.0	7,307.0	41.4	39.3	50.56	1,838.9	-827.3	349.7	292.6	57.08	6.126	
9,800.0	7,529.0	9,551.9	7,307.0	42.8	40.8	50.08	1,938.8	-827.3	346.2	286.9	59.26	5.841	
9,900.0	7,529.0	9,651.8	7,307.0	44.2	42.3	49.59	2,038.7	-827.3	342.7	281.2	61.41	5.580	
10,000.0	7,529.0	9,751.7	7,307.0	45.7	43.9	49.09	2,138.6	-827.3	339.2	275.7	63.53	5.339	
10,100.0	7,529.0	9,851.6	7,307.0	47.2	45.5	48.58	2,238.5	-827.3	335.7	270.1	65.61	5.117	
10,200.0	7,529.0	9,951.4	7,307.0	48.7	47.0	48.05	2,338.4	-827.3	332.3	264.7	67.65	4.913	
10,300.0	7,529.0	10,051.3	7,307.0	50.2	48.6	47.52	2,438.3	-827.3	328.9	259.3	69.64	4.723	

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

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Sprague 3B-9H-N267
Project:	DJ Wattenberg	TVD Reference:	WELL @ 5011.0ft (Original Well Elev)
Reference Site:	S9-T2N-R67W (Sprague)	MD Reference:	WELL @ 5011.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Sprague 3B-9H-N267	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #4	Offset TVD Reference:	Offset Datum

Offset Design S9-T2N-R67W (Sprague) - Sprague 3C-9H-N267 - Hz - Plan #2													Offset Site Error:	0.0 ft
Survey Program: 0-Geolink 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	
10,400.0	7,529.0	10,151.2	7,307.0	51.7	50.2	46.98	2,538.2	-827.3	325.6	254.0	71.58	4.548		
10,500.0	7,529.0	10,251.1	7,307.0	53.3	51.9	46.42	2,638.1	-827.3	322.2	248.7	73.48	4.385		
10,600.0	7,529.0	10,351.0	7,307.0	54.8	53.5	45.86	2,738.0	-827.3	318.9	243.6	75.32	4.234		
10,700.0	7,529.0	10,450.9	7,307.0	56.4	55.1	45.28	2,837.9	-827.3	315.6	238.6	77.09	4.094		
10,800.0	7,529.0	10,550.8	7,307.0	58.0	56.8	44.69	2,937.8	-827.3	312.4	233.6	78.81	3.964		
10,900.0	7,529.0	10,650.7	7,307.0	59.6	58.4	44.08	3,037.7	-827.3	309.2	228.7	80.46	3.843		
11,000.0	7,529.0	10,750.6	7,307.0	61.2	60.1	43.47	3,137.6	-827.3	306.0	224.0	82.04	3.730		
11,100.0	7,529.0	10,850.5	7,307.0	62.8	61.7	42.84	3,237.5	-827.3	302.9	219.4	83.55	3.625		
11,200.0	7,529.0	10,950.4	7,307.0	64.4	63.4	42.20	3,337.4	-827.3	299.8	214.8	84.99	3.528		
11,300.0	7,529.0	11,050.3	7,307.0	66.0	65.0	41.54	3,437.2	-827.3	296.7	210.4	86.34	3.437		
11,400.0	7,529.0	11,150.2	7,307.0	67.6	66.7	40.88	3,537.1	-827.3	293.7	206.1	87.61	3.353		
11,500.0	7,529.0	11,250.1	7,307.0	69.3	68.4	40.19	3,637.0	-827.3	290.8	202.0	88.79	3.274		
11,600.0	7,529.0	11,350.0	7,307.0	70.9	70.1	39.50	3,736.9	-827.3	287.8	197.9	89.94	3.200		
11,700.0	7,529.0	11,449.9	7,307.0	72.6	71.8	39.12	3,836.9	-827.3	286.2	193.9	92.27	3.101		
11,725.2	7,529.0	11,475.2	7,307.0	73.0	72.2	39.11	3,862.1	-827.3	286.1	193.1	92.98	3.077		
11,800.0	7,529.0	11,549.9	7,307.0	74.3	73.4	39.25	3,936.9	-827.3	286.7	191.3	95.36	3.007		
11,900.0	7,529.0	11,649.8	7,307.0	76.0	75.1	39.87	4,036.8	-827.3	289.5	190.2	99.27	2.916		
12,000.0	7,529.0	11,749.6	7,307.0	77.7	76.8	40.79	4,136.6	-827.3	293.4	190.3	103.18	2.844		
12,100.0	7,529.0	11,849.5	7,307.0	79.4	78.5	41.67	4,236.4	-827.3	297.5	190.4	107.11	2.777		
12,200.0	7,529.0	11,949.3	7,307.0	81.1	80.2	42.54	4,336.2	-827.3	301.6	190.5	111.06	2.715		
12,300.0	7,529.0	12,049.1	7,307.0	82.8	81.9	43.38	4,436.0	-827.3	305.7	190.7	115.02	2.658		
12,400.0	7,529.0	12,148.9	7,307.0	84.5	83.6	44.20	4,535.9	-827.3	310.0	191.0	118.99	2.605		
12,500.0	7,529.0	12,248.7	7,307.0	86.2	85.3	45.00	4,635.7	-827.3	314.2	191.3	122.97	2.555		
12,600.0	7,529.0	12,348.5	7,307.0	87.9	87.0	45.77	4,735.5	-827.3	318.6	191.6	126.96	2.509		
12,700.0	7,529.0	12,448.3	7,307.0	89.6	88.7	46.53	4,835.3	-827.3	323.0	192.0	130.95	2.467		
12,800.0	7,529.0	12,548.2	7,307.0	91.3	90.4	47.26	4,935.1	-827.3	327.5	192.5	134.95	2.427		
12,900.0	7,529.0	12,648.0	7,307.0	93.1	92.1	47.98	5,034.9	-827.3	332.0	193.0	138.95	2.389		
13,000.0	7,529.0	12,747.8	7,307.0	94.8	93.9	48.67	5,134.7	-827.3	336.5	193.6	142.95	2.354		
13,100.0	7,529.0	12,840.5	7,307.0	96.5	95.4	49.30	5,227.5	-827.3	341.2	194.5	146.77	2.325 SF		
13,100.2	7,529.0	12,840.5	7,307.0	96.5	95.4	49.30	5,227.5	-827.3	341.2	194.5	146.77	2.325		

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Sprague 3B-9H-N267
Project:	DJ Wattenberg	TVD Reference:	WELL @ 5011.0ft (Original Well Elev)
Reference Site:	S9-T2N-R67W (Sprague)	MD Reference:	WELL @ 5011.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Sprague 3B-9H-N267	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #4	Offset TVD Reference:	Offset Datum

Offset Design S9-T2N-R67W (Sprague) - Sprague 3D-9H-N267 - Hz - Plan #3													Offset Site Error:	0.0 ft
Survey Program: O-Geolink 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	90.05	0.0	19.6	19.6					
100.0	100.0	100.0	100.0	0.1	0.1	90.05	0.0	19.6	19.6	19.3	0.24	80.085		
200.0	200.0	200.0	200.0	0.3	0.3	90.05	0.0	19.6	19.6	19.0	0.59	32.976		
300.0	300.0	300.0	300.0	0.5	0.5	90.05	0.0	19.6	19.6	18.6	0.94	20.763 CC, ES		
400.0	400.0	400.0	400.0	0.6	0.6	-156.95	0.0	19.6	21.2	19.9	1.29	16.385		
500.0	499.8	499.8	499.8	0.8	0.8	-161.42	0.0	19.6	26.1	24.4	1.64	15.886		
600.0	599.5	600.0	600.0	1.1	1.0	-165.55	-0.5	18.8	33.6	31.6	1.99	16.903		
700.0	698.7	700.2	700.1	1.3	1.2	-168.42	-1.8	16.5	43.0	40.7	2.34	18.420		
800.0	797.5	800.4	800.2	1.6	1.4	-170.41	-4.0	12.8	54.2	51.5	2.68	20.233		
900.0	896.0	900.7	900.4	1.9	1.6	-171.60	-7.0	7.4	65.4	62.4	3.03	21.571		
1,000.0	994.5	1,001.5	1,000.8	2.3	1.8	-172.15	-11.0	0.6	74.9	71.6	3.39	22.120		
1,100.0	1,093.0	1,102.5	1,101.4	2.6	2.0	-172.31	-15.8	-7.8	82.7	79.0	3.75	22.093		
1,200.0	1,191.4	1,203.8	1,202.1	3.0	2.2	-172.19	-21.6	-17.8	88.8	84.7	4.11	21.636		
1,300.0	1,289.9	1,305.2	1,302.6	3.3	2.5	-171.84	-28.3	-29.4	93.2	88.7	4.47	20.848		
1,400.0	1,388.4	1,405.2	1,401.5	3.6	2.8	-171.42	-35.2	-41.4	96.8	92.0	4.84	20.019		
1,500.0	1,486.9	1,505.1	1,500.5	4.0	3.0	-171.03	-42.2	-53.4	100.4	95.2	5.20	19.299		
1,600.0	1,585.4	1,605.0	1,599.5	4.3	3.3	-170.67	-49.1	-65.5	104.0	98.4	5.57	18.669		
1,700.0	1,683.9	1,705.0	1,698.4	4.7	3.6	-170.33	-56.1	-77.5	107.6	101.7	5.94	18.112		
1,800.0	1,782.4	1,804.9	1,797.4	5.0	3.9	-170.01	-63.0	-89.6	111.2	104.9	6.31	17.617		
1,900.0	1,880.9	1,904.8	1,896.3	5.4	4.2	-169.71	-70.0	-101.6	114.9	108.2	6.69	17.173		
2,000.0	1,979.4	2,004.8	1,995.3	5.7	4.5	-169.43	-76.9	-113.7	118.5	111.4	7.06	16.773		
2,100.0	2,077.9	2,104.7	2,094.3	6.1	4.7	-169.17	-83.9	-125.7	122.1	114.7	7.44	16.410		
2,200.0	2,176.4	2,204.6	2,193.2	6.4	5.0	-168.92	-90.8	-137.8	125.7	117.9	7.82	16.081		
2,300.0	2,274.9	2,304.6	2,292.2	6.8	5.3	-168.69	-97.8	-149.8	129.4	121.2	8.20	15.779		
2,400.0	2,373.4	2,404.5	2,391.1	7.1	5.6	-168.47	-104.8	-161.8	133.0	124.4	8.58	15.503		
2,500.0	2,471.9	2,504.4	2,490.1	7.5	5.9	-168.26	-111.7	-173.9	136.6	127.7	8.96	15.248		
2,600.0	2,570.4	2,604.3	2,589.1	7.8	6.2	-168.06	-118.7	-185.9	140.3	130.9	9.34	15.013		
2,700.0	2,668.9	2,704.3	2,688.0	8.2	6.5	-167.87	-125.6	-198.0	143.9	134.2	9.73	14.795		
2,800.0	2,767.4	2,804.2	2,787.0	8.5	6.8	-167.70	-132.6	-210.0	147.5	137.4	10.11	14.592		
2,900.0	2,865.9	2,904.1	2,885.9	8.9	7.1	-167.52	-139.5	-222.1	151.2	140.7	10.50	14.403		
3,000.0	2,964.4	3,004.1	2,984.9	9.2	7.4	-167.36	-146.5	-234.1	154.8	143.9	10.88	14.227		
3,100.0	3,062.9	3,104.0	3,083.9	9.6	7.7	-167.21	-153.4	-246.2	158.5	147.2	11.27	14.062		
3,200.0	3,161.4	3,203.9	3,182.8	9.9	8.0	-167.06	-160.4	-258.2	162.1	150.4	11.66	13.907		
3,300.0	3,259.8	3,303.9	3,281.8	10.3	8.3	-166.92	-167.3	-270.2	165.7	153.7	12.04	13.762		
3,400.0	3,358.3	3,403.8	3,380.7	10.6	8.6	-166.78	-174.3	-282.3	169.4	157.0	12.43	13.625		
3,500.0	3,456.8	3,503.7	3,479.7	11.0	8.9	-166.65	-181.2	-294.3	173.0	160.2	12.82	13.495		
3,600.0	3,555.3	3,603.7	3,578.7	11.3	9.2	-166.53	-188.2	-306.4	176.7	163.5	13.21	13.373		
3,700.0	3,653.8	3,703.6	3,677.6	11.7	9.5	-166.41	-195.2	-318.4	180.3	166.7	13.60	13.257		
3,800.0	3,752.3	3,803.5	3,776.6	12.0	9.8	-166.29	-202.1	-330.5	184.0	170.0	13.99	13.148		
3,900.0	3,850.8	3,903.5	3,875.5	12.4	10.1	-166.18	-209.1	-342.5	187.6	173.2	14.38	13.044		
4,000.0	3,949.3	4,003.4	3,974.5	12.7	10.4	-166.08	-216.0	-354.6	191.3	176.5	14.78	12.945		
4,100.0	4,047.8	4,103.3	4,073.5	13.1	10.7	-165.98	-223.0	-366.6	194.9	179.8	15.17	12.851		
4,200.0	4,146.3	4,203.3	4,172.4	13.4	11.0	-165.88	-229.9	-378.6	198.6	183.0	15.56	12.761		
4,300.0	4,244.8	4,303.2	4,271.4	13.8	11.3	-165.78	-236.9	-390.7	202.2	186.3	15.95	12.676		
4,400.0	4,343.3	4,403.1	4,370.3	14.1	11.6	-165.69	-243.8	-402.7	205.9	189.5	16.35	12.594		
4,500.0	4,441.8	4,503.1	4,469.3	14.5	11.9	-165.60	-250.8	-414.8	209.5	192.8	16.74	12.516		
4,600.0	4,540.3	4,603.0	4,568.3	14.8	12.2	-165.52	-257.7	-426.8	213.2	196.0	17.13	12.442		
4,700.0	4,638.8	4,702.9	4,667.2	15.2	12.5	-165.44	-264.7	-438.9	216.8	199.3	17.53	12.370		
4,800.0	4,737.3	4,802.9	4,766.2	15.5	12.8	-165.36	-271.6	-450.9	220.5	202.6	17.92	12.302		
4,900.0	4,835.8	4,902.8	4,865.1	15.9	13.1	-165.28	-278.6	-463.0	224.1	205.8	18.32	12.236		
5,000.0	4,934.3	5,002.7	4,964.1	16.2	13.4	-165.21	-285.6	-475.0	227.8	209.1	18.71	12.173		
5,100.0	5,032.8	5,102.7	5,063.1	16.6	13.7	-165.13	-292.5	-487.0	231.4	212.3	19.11	12.113		

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

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Sprague 3B-9H-N267
Project:	DJ Wattenberg	TVD Reference:	WELL @ 5011.0ft (Original Well Elev)
Reference Site:	S9-T2N-R67W (Sprague)	MD Reference:	WELL @ 5011.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Sprague 3B-9H-N267	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #4	Offset TVD Reference:	Offset Datum

Offset Design S9-T2N-R67W (Sprague) - Sprague 3D-9H-N267 - Hz - Plan #3													Offset Site Error:	0.0 ft
Survey Program: 0-Geolink 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		
5,200.0	5,131.3	5,202.6	5,162.0	17.0	14.0	-165.06	-299.5	-499.1	235.1	215.6	19.50	12.054		
5,300.0	5,229.8	5,302.5	5,261.0	17.3	14.3	-165.00	-306.4	-511.1	238.8	218.9	19.90	11.998		
5,400.0	5,328.2	5,402.5	5,359.9	17.7	14.6	-164.93	-313.4	-523.2	242.4	222.1	20.30	11.944		
5,500.0	5,426.7	5,502.4	5,458.9	18.0	14.9	-164.87	-320.3	-535.2	246.1	225.4	20.69	11.892		
5,600.0	5,525.2	5,602.3	5,557.9	18.4	15.2	-164.81	-327.3	-547.3	249.7	228.6	21.09	11.842		
5,700.0	5,623.7	5,702.3	5,656.8	18.7	15.5	-164.75	-334.2	-559.3	253.4	231.9	21.48	11.793		
5,800.0	5,722.2	5,802.1	5,755.7	19.1	15.8	-164.69	-341.2	-571.3	257.0	235.2	21.88	11.747 SF		
5,900.0	5,820.7	5,897.9	5,850.7	19.4	16.0	-164.70	-347.4	-582.2	261.5	239.3	22.25	11.751		
6,000.0	5,919.2	5,993.6	5,945.8	19.8	16.3	-164.82	-352.9	-591.6	267.6	245.0	22.60	11.838		
6,100.0	6,017.7	6,089.1	6,040.8	20.1	16.5	-165.06	-357.5	-599.7	275.2	252.2	22.92	12.004		
6,200.0	6,116.2	6,184.3	6,135.6	20.5	16.7	-165.39	-361.4	-606.3	284.3	261.1	23.22	12.245		
6,300.0	6,214.7	6,279.1	6,230.3	20.8	16.9	-165.80	-364.4	-611.6	295.1	271.6	23.50	12.557		
6,400.0	6,313.2	6,373.6	6,324.7	21.2	17.0	-166.28	-366.7	-615.5	307.4	283.6	23.76	12.936		
6,500.0	6,411.7	6,467.7	6,418.7	21.5	17.1	-166.81	-368.2	-618.1	321.3	297.3	24.01	13.380		
6,600.0	6,510.2	6,561.3	6,512.4	21.9	17.3	-167.37	-368.9	-619.3	336.7	312.5	24.25	13.883		
6,700.0	6,608.7	6,657.7	6,608.7	22.2	17.4	-167.96	-368.9	-619.4	353.5	329.0	24.50	14.430		
6,800.0	6,707.2	6,756.2	6,707.2	22.6	17.5	-168.52	-368.9	-619.4	370.4	345.7	24.75	14.965		
6,900.0	6,805.7	6,854.7	6,805.7	22.9	17.6	-169.03	-368.9	-619.4	387.4	362.4	25.02	15.485		
7,000.0	6,904.2	6,953.2	6,904.2	23.3	17.7	-169.49	-368.9	-619.4	404.4	379.1	25.29	15.989		
7,100.0	7,002.8	7,043.9	6,994.9	23.6	17.8	140.90	-367.6	-619.3	420.4	394.9	25.44	16.526		
7,200.0	7,100.2	7,126.0	7,076.1	23.8	17.8	107.17	-356.2	-619.0	435.3	409.7	25.55	17.038		
7,300.0	7,193.5	7,208.4	7,155.1	23.8	17.8	94.81	-333.2	-618.4	449.3	423.6	25.65	17.514		
7,400.0	7,279.7	7,291.4	7,230.7	23.9	17.6	89.30	-298.8	-617.4	462.1	436.3	25.76	17.940		
7,500.0	7,356.4	7,375.6	7,301.3	23.8	17.5	86.65	-253.3	-616.1	473.5	447.6	25.88	18.296		
7,600.0	7,421.0	7,461.2	7,365.5	23.8	17.4	85.55	-196.8	-614.5	483.3	457.2	26.04	18.558		
7,700.0	7,471.8	7,550.0	7,422.5	23.8	17.3	85.51	-128.8	-612.6	491.4	465.1	26.28	18.700		
7,800.0	7,507.1	7,638.4	7,468.1	23.9	17.3	86.19	-53.2	-610.4	497.6	471.0	26.63	18.685		

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Sprague 3B-9H-N267
Project:	DJ Wattenberg	TVD Reference:	WELL @ 5011.0ft (Original Well Elev)
Reference Site:	S9-T2N-R67W (Sprague)	MD Reference:	WELL @ 5011.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Sprague 3B-9H-N267	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #4	Offset TVD Reference:	Offset Datum

Offset Design S9-T2N-R67W (Sprague) - Sprague 3E-9H-N267 - Hz - Plan #3													Offset Site Error: 0.0 ft	
Survey Program: 0-Geolink 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	90.05	0.0	28.0	28.0					
100.0	100.0	100.0	100.0	0.1	0.1	90.05	0.0	28.0	28.0	27.7	0.24	114.407		
200.0	200.0	200.0	200.0	0.3	0.3	90.05	0.0	28.0	28.0	27.4	0.59	47.109		
300.0	300.0	300.2	300.2	0.5	0.5	91.73	-0.8	27.6	27.6	26.7	0.94	29.311		
323.8	323.8	324.0	324.0	0.5	0.5	-152.46	-1.3	27.4	27.6	26.5	1.03	26.811 CC, ES		
400.0	400.0	400.3	400.3	0.6	0.7	-149.89	-3.3	26.6	28.3	27.0	1.30	21.808		
500.0	499.8	500.4	500.3	0.8	0.8	-147.05	-7.3	25.0	31.6	29.9	1.66	18.971		
600.0	599.5	600.4	600.0	1.1	1.0	-145.18	-12.9	22.6	37.4	35.3	2.05	18.222 SF		
700.0	698.7	700.2	699.5	1.3	1.3	-144.21	-20.2	19.6	45.7	43.2	2.47	18.517		
800.0	797.5	799.7	798.7	1.6	1.5	-143.87	-29.0	16.0	56.5	53.5	2.92	19.352		
900.0	896.0	899.3	897.5	1.9	1.7	-143.11	-39.4	11.7	68.2	64.8	3.40	20.038		
1,000.0	994.5	998.8	996.2	2.3	2.0	-141.35	-51.4	6.8	79.7	75.8	3.93	20.257		
1,100.0	1,093.0	1,098.3	1,094.6	2.6	2.3	-138.95	-65.0	1.2	91.0	86.5	4.51	20.176		
1,200.0	1,191.4	1,197.7	1,192.7	3.0	2.6	-136.12	-80.1	-5.1	102.3	97.2	5.14	19.922		
1,300.0	1,289.9	1,296.9	1,290.3	3.3	3.0	-133.09	-96.6	-11.9	113.8	108.0	5.80	19.630		
1,400.0	1,388.4	1,396.1	1,387.8	3.6	3.3	-130.50	-113.3	-18.8	125.5	119.1	6.47	19.410		
1,500.0	1,486.9	1,495.3	1,485.3	4.0	3.7	-128.36	-130.0	-25.7	137.5	130.3	7.14	19.250		
1,600.0	1,585.4	1,594.4	1,582.8	4.3	4.0	-126.57	-146.7	-32.6	149.6	141.8	7.82	19.133		
1,700.0	1,683.9	1,693.6	1,680.3	4.7	4.4	-125.04	-163.4	-39.5	161.8	153.3	8.49	19.047		
1,800.0	1,782.4	1,792.8	1,777.8	5.0	4.7	-123.73	-180.1	-46.4	174.1	164.9	9.17	18.982		
1,900.0	1,880.9	1,891.9	1,875.3	5.4	5.1	-122.59	-196.9	-53.3	186.5	176.7	9.85	18.935		
2,000.0	1,979.4	1,991.1	1,972.8	5.7	5.4	-121.60	-213.6	-60.1	199.0	188.4	10.53	18.899		
2,100.0	2,077.9	2,090.2	2,070.3	6.1	5.8	-120.72	-230.3	-67.0	211.5	200.3	11.21	18.873		
2,200.0	2,176.4	2,189.4	2,167.8	6.4	6.1	-119.94	-247.0	-73.9	224.0	212.2	11.88	18.854		
2,300.0	2,274.9	2,288.6	2,265.3	6.8	6.5	-119.24	-263.7	-80.8	236.6	224.1	12.56	18.840		
2,400.0	2,373.4	2,387.7	2,362.8	7.1	6.8	-118.61	-280.4	-87.7	249.3	236.0	13.24	18.830		
2,500.0	2,471.9	2,486.9	2,460.3	7.5	7.2	-118.05	-297.1	-94.6	261.9	248.0	13.91	18.823		
2,600.0	2,570.4	2,586.1	2,557.8	7.8	7.6	-117.53	-313.8	-101.5	274.6	260.0	14.59	18.819		
2,700.0	2,668.9	2,685.2	2,655.3	8.2	7.9	-117.07	-330.5	-108.4	287.3	272.0	15.27	18.817		
2,800.0	2,767.4	2,784.4	2,752.8	8.5	8.3	-116.64	-347.2	-115.3	300.0	284.1	15.94	18.817		
2,900.0	2,865.9	2,883.6	2,850.3	8.9	8.6	-116.24	-363.9	-122.2	312.7	296.1	16.62	18.817		
3,000.0	2,964.4	2,982.7	2,947.8	9.2	9.0	-115.88	-380.6	-129.1	325.5	308.2	17.29	18.819		
3,100.0	3,062.9	3,081.9	3,045.4	9.6	9.3	-115.54	-397.3	-136.0	338.2	320.2	17.97	18.821		
3,200.0	3,161.4	3,182.5	3,144.4	9.9	9.7	-115.32	-413.7	-142.7	350.8	332.2	18.63	18.831		
3,300.0	3,259.8	3,283.6	3,244.2	10.3	10.0	-115.38	-428.6	-148.9	362.9	343.7	19.26	18.840		
3,400.0	3,358.3	3,384.7	3,344.3	10.6	10.3	-115.70	-441.9	-154.3	374.5	354.7	19.87	18.852		
3,500.0	3,456.8	3,485.9	3,444.7	11.0	10.6	-116.25	-453.5	-159.1	385.7	365.2	20.44	18.868		
3,600.0	3,555.3	3,587.0	3,545.2	11.3	10.8	-117.03	-463.5	-163.3	396.4	375.4	20.98	18.891		
3,700.0	3,653.8	3,688.1	3,645.9	11.7	11.0	-118.00	-471.9	-166.7	406.7	385.2	21.49	18.928		
3,800.0	3,752.3	3,788.9	3,746.4	12.0	11.2	-119.16	-478.5	-169.5	416.8	394.8	21.95	18.984		
3,900.0	3,850.8	3,889.5	3,846.9	12.4	11.4	-120.50	-483.6	-171.6	426.6	404.2	22.38	19.064		
4,000.0	3,949.3	3,989.9	3,947.2	12.7	11.5	-122.00	-487.0	-173.0	436.4	413.6	22.76	19.175		
4,100.0	4,047.8	4,089.8	4,047.1	13.1	11.7	-123.65	-488.8	-173.7	446.2	423.1	23.09	19.325		
4,200.0	4,146.3	4,189.0	4,146.3	13.4	11.8	-125.41	-489.1	-173.8	456.1	432.7	23.38	19.510		
4,300.0	4,244.8	4,287.5	4,244.8	13.8	11.9	-127.13	-489.1	-173.8	466.4	442.8	23.65	19.722		
4,400.0	4,343.3	4,386.0	4,343.3	14.1	12.0	-128.77	-489.1	-173.8	477.2	453.3	23.91	19.956		
4,500.0	4,441.8	4,484.5	4,441.8	14.5	12.1	-130.33	-489.1	-173.8	488.3	464.1	24.16	20.210		
4,600.0	4,540.3	4,583.0	4,540.3	14.8	12.2	-131.83	-489.1	-173.8	499.7	475.3	24.40	20.479		

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

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Sprague 3B-9H-N267
Project:	DJ Wattenberg	TVD Reference:	WELL @ 5011.0ft (Original Well Elev)
Reference Site:	S9-T2N-R67W (Sprague)	MD Reference:	WELL @ 5011.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Sprague 3B-9H-N267	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #4	Offset TVD Reference:	Offset Datum

Offset Design S9-T2N-R67W (Sprague) - Sprague 3F-9H-N267 - Hz - Plan #3													Offset Site Error: 0.0 ft	
Survey Program: 0-Geolink 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	90.05	0.0	39.1	39.1					
100.0	100.0	100.0	100.0	0.1	0.1	90.05	0.0	39.1	39.1	38.9	0.24	160.170		
200.0	200.0	200.0	200.0	0.3	0.3	90.05	0.0	39.1	39.1	38.5	0.59	65.953		
300.0	300.0	300.0	300.0	0.5	0.5	90.05	0.0	39.1	39.1	38.2	0.94	41.526 CC, ES		
400.0	400.0	400.0	400.0	0.6	0.6	-155.98	0.0	39.1	40.7	39.4	1.29	31.531		
500.0	499.8	499.8	499.8	0.8	0.8	-158.63	0.0	39.1	45.6	43.9	1.64	27.759		
600.0	599.5	599.4	599.4	1.1	1.0	-161.04	-0.9	39.3	53.8	51.8	1.99	27.030 SF		
700.0	698.7	698.6	698.6	1.3	1.2	-162.16	-3.4	39.7	65.5	63.2	2.34	27.955		
800.0	797.5	797.4	797.3	1.6	1.4	-162.42	-7.6	40.5	80.6	77.9	2.71	29.804		
900.0	896.0	895.9	895.6	1.9	1.5	-161.93	-13.5	41.5	97.4	94.3	3.09	31.547		
1,000.0	994.5	994.4	993.8	2.3	1.7	-160.73	-21.0	42.8	114.2	110.8	3.49	32.750		
1,100.0	1,093.0	1,092.7	1,091.6	2.6	2.0	-159.10	-30.2	44.5	131.3	127.4	3.91	33.541		
1,200.0	1,191.4	1,190.8	1,189.1	3.0	2.2	-157.18	-41.0	46.4	148.6	144.3	4.37	34.020		
1,300.0	1,289.9	1,288.7	1,286.2	3.3	2.4	-155.10	-53.4	48.5	166.4	161.5	4.85	34.287		
1,400.0	1,388.4	1,386.9	1,383.5	3.6	2.7	-153.19	-66.5	50.9	184.4	179.1	5.35	34.453		
1,500.0	1,486.9	1,485.1	1,480.8	4.0	3.0	-151.63	-79.6	53.2	202.6	196.8	5.86	34.573		
1,600.0	1,585.4	1,583.2	1,578.0	4.3	3.2	-150.32	-92.8	55.5	221.0	214.6	6.37	34.660		
1,700.0	1,683.9	1,681.4	1,675.3	4.7	3.5	-149.22	-105.9	57.8	239.4	232.5	6.89	34.726		
1,800.0	1,782.4	1,779.6	1,772.6	5.0	3.8	-148.27	-119.0	60.1	257.9	250.5	7.42	34.777		
1,900.0	1,880.9	1,877.8	1,869.9	5.4	4.1	-147.45	-132.1	62.4	276.4	268.5	7.94	34.818		
2,000.0	1,979.4	1,976.0	1,967.2	5.7	4.3	-146.73	-145.3	64.7	295.0	286.6	8.47	34.851		
2,100.0	2,077.9	2,074.2	2,064.4	6.1	4.6	-146.10	-158.4	67.1	313.7	304.7	8.99	34.878		
2,200.0	2,176.4	2,172.4	2,161.7	6.4	4.9	-145.54	-171.5	69.4	332.4	322.8	9.52	34.901		
2,300.0	2,274.9	2,270.6	2,259.0	6.8	5.2	-145.04	-184.6	71.7	351.1	341.0	10.05	34.921		
2,400.0	2,373.4	2,368.8	2,356.3	7.1	5.5	-144.58	-197.8	74.0	369.8	359.2	10.58	34.938		
2,500.0	2,471.9	2,467.0	2,453.6	7.5	5.7	-144.18	-210.9	76.3	388.6	377.4	11.12	34.953		
2,600.0	2,570.4	2,565.2	2,550.9	7.8	6.0	-143.81	-224.0	78.6	407.3	395.7	11.65	34.966		
2,700.0	2,668.9	2,663.3	2,648.1	8.2	6.3	-143.47	-237.1	80.9	426.1	413.9	12.18	34.978		
2,800.0	2,767.4	2,761.5	2,745.4	8.5	6.6	-143.16	-250.3	83.3	444.9	432.2	12.72	34.988		
2,900.0	2,865.9	2,859.7	2,842.7	8.9	6.9	-142.88	-263.4	85.6	463.7	450.5	13.25	34.998		
3,000.0	2,964.4	2,957.9	2,940.0	9.2	7.2	-142.61	-276.5	87.9	482.5	468.7	13.78	35.007		

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Sprague 3B-9H-N267
Project:	DJ Wattenberg	TVD Reference:	WELL @ 5011.0ft (Original Well Elev)
Reference Site:	S9-T2N-R67W (Sprague)	MD Reference:	WELL @ 5011.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Sprague 3B-9H-N267	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #4	Offset TVD Reference:	Offset Datum

Offset Design S9-T2N-R67W (Sprague) - Sprague 3G-9H-N267 - Hz - Plan #2													Offset Site Error:	0.0 ft
Survey Program: 0-Geolink MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis		Distance		Total		Separation		Warning		
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Uncertainty Axis	Factor		
0.0	0.0	0.0	0.0	0.0	0.0	90.05	0.0	50.3	50.3					
100.0	100.0	100.0	100.0	0.1	0.1	90.05	0.0	50.3	50.3	50.1	0.24	205.933		
200.0	200.0	200.0	200.0	0.3	0.3	90.05	0.0	50.3	50.3	49.7	0.59	84.796		
300.0	300.0	300.0	300.0	0.5	0.5	90.05	0.0	50.3	50.3	49.4	0.94	53.390 CC, ES		
400.0	400.0	400.0	400.0	0.6	0.6	-155.76	0.0	50.3	51.9	50.6	1.29	40.187		
500.0	499.8	499.2	499.2	0.8	0.8	-157.25	-0.6	50.9	57.3	55.7	1.64	34.934		
600.0	599.5	597.9	597.9	1.1	1.0	-158.45	-2.4	52.8	67.2	65.2	1.99	33.707 SF		
700.0	698.7	696.0	695.9	1.3	1.2	-159.26	-5.4	55.8	81.4	79.0	2.35	34.653		
800.0	797.5	793.3	793.0	1.6	1.4	-159.73	-9.4	60.0	100.0	97.3	2.71	36.854		
900.0	896.0	889.8	889.2	1.9	1.6	-159.81	-14.6	65.4	121.2	118.1	3.09	39.187		
1,000.0	994.5	985.8	984.8	2.3	1.8	-159.36	-20.8	71.8	143.5	140.0	3.48	41.177		
1,100.0	1,093.0	1,081.3	1,079.7	2.6	2.0	-158.61	-28.1	79.4	166.8	162.9	3.89	42.898		
1,200.0	1,191.4	1,176.2	1,173.8	3.0	2.3	-157.69	-36.5	88.1	191.3	187.0	4.31	44.411		
1,300.0	1,289.9	1,272.4	1,269.1	3.3	2.5	-156.74	-45.8	97.7	216.6	211.9	4.74	45.722		
1,400.0	1,388.4	1,369.0	1,364.8	3.6	2.8	-155.97	-55.1	107.4	242.0	236.9	5.17	46.783		
1,500.0	1,486.9	1,465.7	1,460.5	4.0	3.1	-155.35	-64.5	117.0	267.5	261.9	5.61	47.660		
1,600.0	1,585.4	1,562.4	1,556.3	4.3	3.3	-154.84	-73.8	126.7	292.9	286.9	6.05	48.395		
1,700.0	1,683.9	1,659.1	1,652.0	4.7	3.6	-154.41	-83.2	136.4	318.4	311.9	6.50	49.020		
1,800.0	1,782.4	1,755.7	1,747.7	5.0	3.9	-154.04	-92.5	146.1	343.9	337.0	6.94	49.557		
1,900.0	1,880.9	1,852.4	1,843.5	5.4	4.2	-153.73	-101.8	155.7	369.4	362.0	7.38	50.023		
2,000.0	1,979.4	1,949.1	1,939.2	5.7	4.4	-153.45	-111.2	165.4	394.9	387.1	7.83	50.431		
2,100.0	2,077.9	2,045.7	2,034.9	6.1	4.7	-153.21	-120.5	175.1	420.4	412.2	8.28	50.792		
2,200.0	2,176.4	2,142.4	2,130.7	6.4	5.0	-152.99	-129.9	184.8	446.0	437.2	8.73	51.112		
2,300.0	2,274.9	2,239.1	2,226.4	6.8	5.3	-152.80	-139.2	194.5	471.5	462.3	9.17	51.399		
2,400.0	2,373.4	2,335.8	2,322.1	7.1	5.6	-152.63	-148.6	204.1	497.0	487.4	9.62	51.657		

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Sprague 3B-9H-N267
Project:	DJ Wattenberg	TVD Reference:	WELL @ 5011.0ft (Original Well Elev)
Reference Site:	S9-T2N-R67W (Sprague)	MD Reference:	WELL @ 5011.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Sprague 3B-9H-N267	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #4	Offset TVD Reference:	Offset Datum

Offset Design S9-T2N-R67W (Sprague) - Sprague 3H-9H-N267 - Hz - Plan #3													Offset Site Error:	0.0 ft
Survey Program: 0-Geolink 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	90.05	0.0	58.7	58.7					
100.0	100.0	100.0	100.0	0.1	0.1	90.05	0.0	58.7	58.7	58.5	0.24	240.255		
200.0	200.0	200.0	200.0	0.3	0.3	90.05	0.0	58.7	58.7	58.1	0.59	98.929		
300.0	300.0	300.0	300.0	0.5	0.5	90.05	0.0	58.7	58.7	57.8	0.94	62.289 CC, ES		
400.0	400.0	400.0	400.0	0.6	0.6	-155.65	0.0	58.7	60.3	59.0	1.29	46.680		
500.0	499.8	498.0	497.9	0.8	0.8	-156.64	-0.9	60.1	66.5	64.9	1.64	40.578		
600.0	599.5	595.2	595.0	1.1	1.0	-156.99	-3.6	64.3	78.7	76.8	1.99	39.549 SF		
700.0	698.7	691.1	690.6	1.3	1.2	-156.86	-7.9	71.2	96.9	94.6	2.35	41.196		
800.0	797.5	785.2	784.0	1.6	1.4	-156.46	-13.8	80.6	120.9	118.2	2.73	44.324		
900.0	896.0	877.5	875.3	1.9	1.7	-155.90	-21.1	92.4	149.0	145.9	3.12	47.694		
1,000.0	994.5	971.9	968.3	2.3	2.0	-155.11	-29.7	106.2	178.9	175.4	3.53	50.623		
1,100.0	1,093.0	1,067.3	1,062.2	2.6	2.3	-154.53	-38.5	120.2	209.0	205.0	3.95	52.862		
1,200.0	1,191.4	1,162.7	1,156.1	3.0	2.6	-154.09	-47.3	134.3	239.0	234.6	4.38	54.624		
1,300.0	1,289.9	1,258.0	1,250.0	3.3	2.9	-153.76	-56.1	148.3	269.1	264.3	4.80	56.042		
1,400.0	1,388.4	1,353.4	1,344.0	3.6	3.3	-153.48	-64.8	162.4	299.1	293.9	5.23	57.206		
1,500.0	1,486.9	1,448.7	1,437.9	4.0	3.6	-153.26	-73.6	176.4	329.2	323.6	5.66	58.176		
1,600.0	1,585.4	1,544.1	1,531.8	4.3	3.9	-153.08	-82.4	190.5	359.3	353.2	6.09	58.997		
1,700.0	1,683.9	1,639.5	1,625.7	4.7	4.2	-152.92	-91.2	204.5	389.4	382.9	6.52	59.699		
1,800.0	1,782.4	1,734.8	1,719.6	5.0	4.6	-152.79	-99.9	218.6	419.5	412.5	6.96	60.307		
1,900.0	1,880.9	1,830.2	1,813.5	5.4	4.9	-152.67	-108.7	232.6	449.5	442.2	7.39	60.838		
2,000.0	1,979.4	1,925.6	1,907.4	5.7	5.2	-152.57	-117.5	246.6	479.6	471.8	7.82	61.305		

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Sprague 3B-9H-N267
Project:	DJ Wattenberg	TVD Reference:	WELL @ 5011.0ft (Original Well Elev)
Reference Site:	S9-T2N-R67W (Sprague)	MD Reference:	WELL @ 5011.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Sprague 3B-9H-N267	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #4	Offset TVD Reference:	Offset Datum

Offset Design S9-T2N-R67W (Sprague) - Sprague 3I-9H-N267 - Hz - Plan #3													Offset Site Error: 0.0 ft	
Survey Program: 0-Geolink 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	92.98	-3.6	69.9	70.0					
100.0	100.0	100.0	100.0	0.1	0.1	92.98	-3.6	69.9	70.0	69.7	0.24	286.406		
200.0	200.0	200.0	200.0	0.3	0.3	92.98	-3.6	69.9	70.0	69.4	0.59	117.932		
300.0	300.0	300.0	300.0	0.5	0.5	92.98	-3.6	69.9	70.0	69.0	0.94	74.253 CC, ES		
400.0	400.0	397.7	397.6	0.6	0.6	-152.19	-4.3	71.4	73.1	71.8	1.29	56.777		
500.0	499.8	494.7	494.6	0.8	0.8	-152.58	-6.2	76.0	82.6	80.9	1.64	50.460		
600.0	599.5	590.7	590.2	1.1	1.0	-153.06	-9.3	83.5	98.2	96.2	1.99	49.363 SF		
700.0	698.7	684.9	683.8	1.3	1.3	-153.48	-13.6	93.7	119.9	117.6	2.35	51.039		
800.0	797.5	777.0	774.8	1.6	1.6	-153.79	-18.9	106.5	147.7	144.9	2.72	54.271		
900.0	896.0	867.0	863.3	1.9	1.9	-154.04	-25.1	121.5	179.6	176.5	3.10	57.852		
1,000.0	994.5	960.2	954.5	2.3	2.2	-154.01	-32.4	138.9	213.4	209.9	3.50	60.934		
1,100.0	1,093.0	1,054.3	1,046.7	2.6	2.6	-153.98	-39.7	156.4	247.2	243.3	3.91	63.304		
1,200.0	1,191.4	1,148.4	1,138.9	3.0	2.9	-153.96	-47.0	174.0	281.1	276.8	4.31	65.182		
1,300.0	1,289.9	1,242.5	1,231.0	3.3	3.3	-153.94	-54.3	191.6	314.9	310.2	4.72	66.704		
1,400.0	1,388.4	1,336.6	1,323.2	3.6	3.6	-153.93	-61.6	209.1	348.7	343.6	5.13	67.960		
1,500.0	1,486.9	1,430.7	1,415.3	4.0	4.0	-153.92	-68.9	226.7	382.6	377.0	5.54	69.013		
1,600.0	1,585.4	1,524.8	1,507.5	4.3	4.4	-153.91	-76.3	244.3	416.4	410.4	5.96	69.908		
1,700.0	1,683.9	1,618.9	1,599.7	4.7	4.7	-153.90	-83.6	261.8	450.2	443.9	6.37	70.677		
1,800.0	1,782.4	1,713.0	1,691.8	5.0	5.1	-153.89	-90.9	279.4	484.1	477.3	6.78	71.345		

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Sprague 3B-9H-N267
Project:	DJ Wattenberg	TVD Reference:	WELL @ 5011.0ft (Original Well Elev)
Reference Site:	S9-T2N-R67W (Sprague)	MD Reference:	WELL @ 5011.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Sprague 3B-9H-N267	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #4	Offset TVD Reference:	Offset Datum

Offset Design S9-T2N-R67W (Sprague) - Sprague 3J-9H-N267 - Hz - Plan #3														Offset Site Error:	0.0 ft
Survey Program: 0-Geolink MWD														Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis		Distance									
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning		
0.0	0.0	0.0	0.0	0.0	0.0	92.66	-3.6	78.3	78.4						
100.0	100.0	100.0	100.0	0.1	0.1	92.66	-3.6	78.3	78.4	78.1	0.24	320.687			
200.0	200.0	200.0	200.0	0.3	0.3	92.66	-3.6	78.3	78.4	77.8	0.59	132.048	CC, ES		
300.0	300.0	297.3	297.3	0.5	0.5	92.61	-3.6	79.9	80.1	79.1	0.94	85.095			
400.0	400.0	394.3	394.1	0.6	0.7	-153.01	-3.6	84.9	86.7	85.4	1.28	67.639			
500.0	499.8	490.2	489.7	0.8	0.9	-154.38	-3.6	93.0	99.8	98.2	1.62	61.428			
600.0	599.5	584.6	583.5	1.1	1.1	-156.01	-3.6	104.1	119.4	117.4	1.97	60.707	SF		
700.0	698.7	676.9	674.7	1.3	1.4	-157.55	-3.6	117.9	145.4	143.1	2.31	63.020			
800.0	797.5	766.4	762.7	1.6	1.7	-158.86	-3.6	134.1	177.6	174.9	2.64	67.154			
900.0	896.0	853.4	847.8	1.9	2.1	-160.01	-3.6	152.5	214.2	211.3	2.99	71.745			
1,000.0	994.5	938.4	930.2	2.3	2.5	-160.75	-3.6	172.9	253.7	250.4	3.33	76.287			
1,100.0	1,093.0	1,023.2	1,011.9	2.6	2.9	-161.23	-3.7	195.7	295.8	292.1	3.67	80.669			
1,200.0	1,191.4	1,116.4	1,101.5	3.0	3.4	-161.24	-5.7	221.3	338.2	334.2	4.04	83.805			
1,300.0	1,289.9	1,210.3	1,191.8	3.3	3.9	-160.76	-10.9	246.6	379.9	375.5	4.42	85.922			
1,400.0	1,388.4	1,302.3	1,280.2	3.6	4.3	-160.05	-18.1	271.1	421.1	416.3	4.81	87.477			
1,500.0	1,486.9	1,393.4	1,367.7	4.0	4.8	-159.46	-25.4	295.3	462.2	457.0	5.21	88.767			

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Sprague 3B-9H-N267
Project:	DJ Wattenberg	TVD Reference:	WELL @ 5011.0ft (Original Well Elev)
Reference Site:	S9-T2N-R67W (Sprague)	MD Reference:	WELL @ 5011.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Sprague 3B-9H-N267	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #4	Offset TVD Reference:	Offset Datum

Offset Design S9-T2N-R67W (Sprague) - SPRAGUE 4-6-9 (EXISTING) - ENCANA WELL - SURVEYS													Offset Site Error:	0.0 ft
Survey Program: 136-Geolink MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis		Distance		Total		Separation		Warning		
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Uncertainty Axis	Factor		
0.0	0.0	0.0	0.0	0.0	0.0	107.84	-83.8	260.3	274.0					
100.0	100.0	82.7	82.7	0.1	0.1	107.85	-83.8	260.2	273.4	273.1	0.26	1,067.627		
168.8	168.8	151.2	151.2	0.2	0.2	107.86	-83.8	260.1	273.3	272.8	0.49	558.649 CC		
200.0	200.0	181.5	181.5	0.3	0.3	107.87	-83.9	260.2	273.3	272.7	0.60	458.226 ES		
300.0	300.0	279.7	279.7	0.5	0.5	107.90	-84.2	260.8	274.1	273.1	0.94	290.774		
400.0	400.0	378.0	378.0	0.6	0.6	-137.54	-83.6	262.3	276.6	275.3	1.29	214.321		
500.0	499.8	468.6	468.5	0.8	0.8	-138.67	-81.6	265.4	283.3	281.6	1.63	173.432		
600.0	599.5	554.7	554.4	1.1	1.0	-139.93	-81.0	272.0	297.0	295.0	1.98	150.236		
700.0	698.7	642.7	641.8	1.3	1.2	-141.30	-81.6	281.9	317.4	315.1	2.34	135.848		
800.0	797.5	735.2	733.4	1.6	1.5	-143.13	-81.1	294.5	342.9	340.2	2.72	126.080		
900.0	896.0	827.8	825.0	1.9	1.7	-145.56	-78.1	307.9	370.6	367.5	3.11	119.290		
1,000.0	994.5	917.4	913.4	2.3	2.0	-147.87	-73.6	322.1	400.1	396.6	3.49	114.697		
1,100.0	1,093.0	1,007.8	1,002.0	2.6	2.3	-150.40	-65.4	337.7	431.1	427.3	3.87	111.300		
1,200.0	1,191.4	1,103.0	1,094.8	3.0	2.7	-153.23	-52.8	354.4	463.3	459.0	4.27	108.434		
1,300.0	1,289.9	1,192.3	1,181.5	3.3	3.1	-156.01	-37.2	369.2	495.7	491.0	4.66	106.260 SF		

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Sprague 3B-9H-N267
Project:	DJ Wattenberg	TVD Reference:	WELL @ 5011.0ft (Original Well Elev)
Reference Site:	S9-T2N-R67W (Sprague)	MD Reference:	WELL @ 5011.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Sprague 3B-9H-N267	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #4	Offset TVD Reference:	Offset Datum

Offset Design S9-T2N-R67W (Sprague) - SPRAGUE 4-8-9 (EXISTING) - ENCANA WELL - SURVEYS												Offset Site Error: 0.0 ft	
Survey Program: 74-Geolink 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	98.85	-41.2	264.5	268.2				
100.0	100.0	82.5	82.5	0.1	0.1	98.86	-41.2	264.4	267.6	267.4	0.25	1,074.520	
200.0	200.0	182.8	182.8	0.3	0.3	98.97	-41.7	264.3	267.5	266.9	0.60	446.856	
300.0	300.0	283.2	283.2	0.5	0.5	99.19	-42.7	263.9	267.3	266.4	0.95	281.824	
310.1	310.1	293.3	293.3	0.5	0.5	-145.79	-42.8	263.8	267.3	266.3	0.99	271.221	CC, ES
400.0	400.0	383.5	383.5	0.6	0.7	-145.66	-44.3	263.3	268.4	267.1	1.30	206.037	
500.0	499.8	483.9	483.8	0.8	0.8	-145.73	-46.6	262.4	272.2	270.6	1.66	163.823	
600.0	599.5	583.3	583.2	1.1	1.0	-146.07	-49.3	261.4	278.9	276.9	2.03	137.631	
700.0	698.7	682.1	682.0	1.3	1.2	-146.92	-51.2	260.7	288.7	286.3	2.40	120.404	
800.0	797.5	781.2	781.1	1.6	1.4	-148.13	-52.6	260.2	301.6	298.9	2.78	108.568	
900.0	896.0	879.9	879.7	1.9	1.5	-149.59	-53.6	259.7	316.1	312.9	3.16	99.984	
1,000.0	994.5	978.6	978.5	2.3	1.7	-150.94	-54.5	259.1	330.5	327.0	3.54	93.301	
1,100.0	1,093.0	1,068.2	1,068.0	2.6	1.9	-151.80	-56.9	259.6	346.5	342.6	3.92	88.491	
1,200.0	1,191.4	1,155.2	1,154.9	3.0	2.0	-152.30	-61.1	262.7	365.6	361.3	4.29	85.199	
1,300.0	1,289.9	1,246.9	1,246.2	3.3	2.2	-152.51	-67.2	267.8	386.7	382.0	4.69	82.529	
1,400.0	1,388.4	1,331.3	1,330.1	3.6	2.4	-152.65	-73.2	274.8	410.4	405.3	5.07	80.963	
1,500.0	1,486.9	1,417.7	1,415.6	4.0	2.6	-152.55	-81.1	283.9	436.5	431.0	5.47	79.726	
1,600.0	1,585.4	1,491.0	1,487.7	4.3	2.8	-152.25	-89.5	294.2	466.1	460.2	5.87	79.436	SF
1,700.0	1,683.9	1,567.3	1,562.1	4.7	3.1	-151.92	-98.9	308.1	499.7	493.5	6.27	79.703	

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Sprague 3B-9H-N267
Project:	DJ Wattenberg	TVD Reference:	WELL @ 5011.0ft (Original Well Elev)
Reference Site:	S9-T2N-R67W (Sprague)	MD Reference:	WELL @ 5011.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Sprague 3B-9H-N267	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #4	Offset TVD Reference:	Offset Datum

Reference Depths are relative to WELL @ 5011.0ft (Original Well Elev)
 Offset Depths are relative to Offset Datum
 Central Meridian is -105.500000 °

Coordinates are relative to: Sprague 3B-9H-N267
 Coordinate System is US State Plane 1983, Colorado Northern Zone
 Grid Convergence at Surface is: 0.39°

