



Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Sprague 3H-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 3H-9H-N267	Survey Calculation Method:	Minimum Curvature
Wellbore:	Hz		
Design:	Plan #2		

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 3H-9H-N267					
Well Position	+N/-S	0.0 ft	Northing:	1,296,975.86 ft	Latitude:	40.147020
	+E/-W	0.0 ft	Easting:	3,168,187.70 ft	Longitude:	-104.898380
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 #2			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.0	0.0	0.0	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	
400.0	0.00	0.00	400.0	0.0	0.0	0.00	0.00	0.00	0.00	
900.0	10.00	122.00	897.5	-23.1	36.9	2.00	2.00	0.00	122.00	
5,700.0	10.00	122.00	5,624.5	-464.8	743.8	0.00	0.00	0.00	0.00	
6,200.0	0.00	0.00	6,122.0	-487.8	780.7	2.00	-2.00	0.00	180.00	
6,778.0	0.00	0.00	6,700.0	-487.8	780.7	0.00	0.00	0.00	0.00	
6,962.0	18.41	123.50	6,880.9	-504.0	805.1	10.00	10.00	0.00	123.50	
7,962.1	90.00	0.00	7,529.0	60.0	985.0	10.00	7.16	-12.35	-122.13	Sprague 3H-9H-N267
8,822.1	90.00	0.00	7,529.0	920.0	985.0	0.00	0.00	0.00	0.00	
8,880.8	90.00	358.83	7,529.0	978.7	984.4	2.00	0.00	-2.00	-90.00	
13,003.0	90.00	358.83	7,529.0	5,100.0	900.0	0.00	0.00	0.00	0.00	Sprague 3H-9H-N267



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Well:	Sprague 3H-9H-N267	Survey Calculation Method:	Minimum Curvature
Wellbore:	Hz		
Design:	Plan #2		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Comments / Formations
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	KOP @ 400' MD
461.0	1.22	122.00	461.0	-0.3	0.6	-0.3	2.00	2.00	Fox Hills - BASE
500.0	2.00	122.00	500.0	-0.9	1.5	-0.9	2.00	2.00	
600.0	4.00	122.00	599.8	-3.7	5.9	-3.7	2.00	2.00	
700.0	6.00	122.00	699.5	-8.3	13.3	-8.3	2.00	2.00	
800.0	8.00	122.00	798.7	-14.8	23.6	-14.8	2.00	2.00	
900.0	10.00	122.00	897.5	-23.1	36.9	-23.1	2.00	2.00	EOB; 10°
1,000.0	10.00	122.00	995.9	-32.3	51.6	-32.3	0.00	0.00	
1,100.0	10.00	122.00	1,094.4	-41.5	66.4	-41.5	0.00	0.00	
1,200.0	10.00	122.00	1,192.9	-50.7	81.1	-50.7	0.00	0.00	
1,300.0	10.00	122.00	1,291.4	-59.9	95.8	-59.9	0.00	0.00	
1,400.0	10.00	122.00	1,389.9	-69.1	110.5	-69.1	0.00	0.00	
1,500.0	10.00	122.00	1,488.4	-78.3	125.3	-78.3	0.00	0.00	
1,600.0	10.00	122.00	1,586.8	-87.5	140.0	-87.5	0.00	0.00	
1,700.0	10.00	122.00	1,685.3	-96.7	154.7	-96.7	0.00	0.00	
1,800.0	10.00	122.00	1,783.8	-105.9	169.4	-105.9	0.00	0.00	
1,900.0	10.00	122.00	1,882.3	-115.1	184.2	-115.1	0.00	0.00	
2,000.0	10.00	122.00	1,980.8	-124.3	198.9	-124.3	0.00	0.00	
2,100.0	10.00	122.00	2,079.2	-133.5	213.6	-133.5	0.00	0.00	
2,200.0	10.00	122.00	2,177.7	-142.7	228.3	-142.7	0.00	0.00	
2,300.0	10.00	122.00	2,276.2	-151.9	243.1	-151.9	0.00	0.00	
2,400.0	10.00	122.00	2,374.7	-161.1	257.8	-161.1	0.00	0.00	
2,500.0	10.00	122.00	2,473.2	-170.3	272.5	-170.3	0.00	0.00	
2,600.0	10.00	122.00	2,571.6	-179.5	287.3	-179.5	0.00	0.00	
2,700.0	10.00	122.00	2,670.1	-188.7	302.0	-188.7	0.00	0.00	
2,800.0	10.00	122.00	2,768.6	-197.9	316.7	-197.9	0.00	0.00	
2,900.0	10.00	122.00	2,867.1	-207.1	331.4	-207.1	0.00	0.00	
3,000.0	10.00	122.00	2,965.6	-216.3	346.2	-216.3	0.00	0.00	
3,100.0	10.00	122.00	3,064.0	-225.5	360.9	-225.5	0.00	0.00	
3,200.0	10.00	122.00	3,162.5	-234.7	375.6	-234.7	0.00	0.00	
3,300.0	10.00	122.00	3,261.0	-243.9	390.3	-243.9	0.00	0.00	
3,400.0	10.00	122.00	3,359.5	-253.1	405.1	-253.1	0.00	0.00	
3,500.0	10.00	122.00	3,458.0	-262.3	419.8	-262.3	0.00	0.00	
3,600.0	10.00	122.00	3,556.4	-271.5	434.5	-271.5	0.00	0.00	
3,700.0	10.00	122.00	3,654.9	-280.7	449.2	-280.7	0.00	0.00	
3,800.0	10.00	122.00	3,753.4	-289.9	464.0	-289.9	0.00	0.00	
3,900.0	10.00	122.00	3,851.9	-299.1	478.7	-299.1	0.00	0.00	
4,000.0	10.00	122.00	3,950.4	-308.3	493.4	-308.3	0.00	0.00	
4,100.0	10.00	122.00	4,048.9	-317.5	508.1	-317.5	0.00	0.00	
4,200.0	10.00	122.00	4,147.3	-326.7	522.9	-326.7	0.00	0.00	
4,300.0	10.00	122.00	4,245.8	-335.9	537.6	-335.9	0.00	0.00	
4,400.0	10.00	122.00	4,344.3	-345.1	552.3	-345.1	0.00	0.00	
4,474.8	10.00	122.00	4,418.0	-352.0	563.3	-352.0	0.00	0.00	Sussex
4,500.0	10.00	122.00	4,442.8	-354.3	567.1	-354.3	0.00	0.00	
4,600.0	10.00	122.00	4,541.3	-363.5	581.8	-363.5	0.00	0.00	
4,700.0	10.00	122.00	4,639.7	-372.7	596.5	-372.7	0.00	0.00	
4,725.7	10.00	122.00	4,665.0	-375.1	600.3	-375.1	0.00	0.00	Sussex Marker
4,800.0	10.00	122.00	4,738.2	-381.9	611.2	-381.9	0.00	0.00	



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Wellbore:	Hz		
Design:	Plan #2		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Comments / Formations
4,900.0	10.00	122.00	4,836.7	-391.1	626.0	-391.1	0.00	0.00	
5,000.0	10.00	122.00	4,935.2	-400.3	640.7	-400.3	0.00	0.00	
5,028.3	10.00	122.00	4,963.0	-402.9	644.8	-402.9	0.00	0.00	Shannon
5,100.0	10.00	122.00	5,033.7	-409.5	655.4	-409.5	0.00	0.00	
5,200.0	10.00	122.00	5,132.1	-418.7	670.1	-418.7	0.00	0.00	
5,300.0	10.00	122.00	5,230.6	-427.9	684.9	-427.9	0.00	0.00	
5,400.0	10.00	122.00	5,329.1	-437.2	699.6	-437.2	0.00	0.00	
5,500.0	10.00	122.00	5,427.6	-446.4	714.3	-446.4	0.00	0.00	
5,600.0	10.00	122.00	5,526.1	-455.6	729.0	-455.6	0.00	0.00	
5,700.0	10.00	122.00	5,624.5	-464.8	743.8	-464.8	0.00	0.00	Start 2° Drop
5,800.0	8.00	122.00	5,723.3	-473.0	757.0	-473.0	2.00	-2.00	
5,900.0	6.00	122.00	5,822.6	-479.5	767.4	-479.5	2.00	-2.00	
6,000.0	4.00	122.00	5,922.2	-484.1	774.8	-484.1	2.00	-2.00	
6,100.0	2.00	122.00	6,022.0	-486.9	779.2	-486.9	2.00	-2.00	
6,200.0	0.00	0.00	6,122.0	-487.8	780.7	-487.8	2.00	-2.00	EOD; Vertical
6,300.0	0.00	0.00	6,222.0	-487.8	780.7	-487.8	0.00	0.00	
6,389.0	0.00	0.00	6,311.0	-487.8	780.7	-487.8	0.00	0.00	Teepee Buttes (*if present)
6,400.0	0.00	0.00	6,322.0	-487.8	780.7	-487.8	0.00	0.00	
6,500.0	0.00	0.00	6,422.0	-487.8	780.7	-487.8	0.00	0.00	
6,600.0	0.00	0.00	6,522.0	-487.8	780.7	-487.8	0.00	0.00	
6,700.0	0.00	0.00	6,622.0	-487.8	780.7	-487.8	0.00	0.00	
6,778.0	0.00	0.00	6,700.0	-487.8	780.7	-487.8	0.00	0.00	Curve KOP @ 6778' MD
6,800.0	2.20	123.50	6,722.0	-488.1	781.0	-488.1	10.00	10.00	
6,850.0	7.20	123.50	6,771.8	-490.3	784.4	-490.3	10.00	10.00	
6,900.0	12.20	123.50	6,821.1	-495.0	791.5	-495.0	10.00	10.00	
6,950.0	17.21	123.50	6,869.4	-502.0	802.1	-502.0	10.00	10.00	
6,962.0	18.41	123.50	6,880.9	-504.0	805.1	-504.0	10.00	10.00	10° Build/Turn
7,000.0	16.69	112.24	6,917.1	-509.4	815.2	-509.4	10.00	-4.53	
7,050.0	15.56	94.62	6,965.2	-512.6	828.5	-512.6	10.00	-2.26	
7,100.0	15.95	76.18	7,013.3	-511.5	841.9	-511.5	10.00	0.78	
7,150.0	17.76	60.04	7,061.2	-506.1	855.2	-506.1	10.00	3.63	
7,200.0	20.63	47.51	7,108.4	-496.3	868.3	-496.3	10.00	5.73	
7,250.0	24.17	38.20	7,154.7	-482.3	881.1	-482.3	10.00	7.08	
7,282.5	26.71	33.48	7,184.0	-471.0	889.2	-471.0	10.00	7.82	Sharon Springs
7,300.0	28.13	31.27	7,199.5	-464.2	893.6	-464.2	10.00	8.14	
7,350.0	32.37	25.97	7,242.7	-442.1	905.5	-442.1	10.00	8.47	
7,357.4	33.02	25.29	7,249.0	-438.4	907.3	-438.4	10.00	8.69	Niobrara
7,400.0	36.78	21.80	7,283.9	-416.1	917.0	-416.1	10.00	8.84	
7,416.5	38.26	20.60	7,297.0	-406.7	920.6	-406.7	10.00	8.99	B Chalk
7,450.0	41.30	18.41	7,322.7	-386.5	927.7	-386.5	10.00	9.09	
7,458.4	42.07	17.91	7,329.0	-381.2	929.5	-381.2	10.00	9.16	B Marl
7,500.0	45.91	15.60	7,358.9	-353.6	937.8	-353.6	10.00	9.23	
7,517.6	47.55	14.71	7,371.0	-341.2	941.1	-341.2	10.00	9.30	C Chalk
7,550.0	50.58	13.19	7,392.2	-317.4	947.0	-317.4	10.00	9.35	
7,600.0	55.29	11.08	7,422.3	-278.4	955.4	-278.4	10.00	9.42	
7,649.8	60.02	9.21	7,449.0	-237.0	962.8	-237.0	10.00	9.49	C Marl
7,650.0	60.04	9.21	7,449.1	-236.9	962.8	-236.9	10.00	9.51	
7,700.0	64.81	7.50	7,472.2	-193.0	969.2	-193.0	10.00	9.54	
7,750.0	69.59	5.93	7,491.6	-147.3	974.6	-147.3	10.00	9.57	
7,760.0	70.55	5.62	7,495.0	-137.9	975.6	-137.9	10.00	9.59	Ft. Hayes
7,800.0	74.39	4.45	7,507.0	-99.9	978.9	-99.9	10.00	9.60	
7,850.0	79.20	3.03	7,518.5	-51.4	982.1	-51.4	10.00	9.62	



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7,852.9	79.48	2.95	7,519.0	-48.5	982.2	-48.5	10.00	9.63	Codell
7,900.0	84.02	1.67	7,525.8	-2.0	984.1	-2.0	10.00	9.63	
7,950.0	88.83	0.32	7,528.9	47.9	985.0	47.9	10.00	9.64	
7,962.1	90.00	0.00	7,529.0	60.0	985.0	60.0	10.00	9.64	LP @ 7529' TVD; 90°
8,000.0	90.00	0.00	7,529.0	97.9	985.0	97.9	0.00	0.00	
8,100.0	90.00	0.00	7,529.0	197.9	985.0	197.9	0.00	0.00	
8,200.0	90.00	0.00	7,529.0	297.9	985.0	297.9	0.00	0.00	
8,300.0	90.00	0.00	7,529.0	397.9	985.0	397.9	0.00	0.00	
8,400.0	90.00	0.00	7,529.0	497.9	985.0	497.9	0.00	0.00	
8,500.0	90.00	0.00	7,529.0	597.9	985.0	597.9	0.00	0.00	
8,600.0	90.00	0.00	7,529.0	697.9	985.0	697.9	0.00	0.00	
8,700.0	90.00	0.00	7,529.0	797.9	985.0	797.9	0.00	0.00	
8,800.0	90.00	0.00	7,529.0	897.9	985.0	897.9	0.00	0.00	
8,822.1	90.00	0.00	7,529.0	920.0	985.0	920.0	0.00	0.00	Start 2° Turn
8,880.8	90.00	358.83	7,529.0	978.7	984.4	978.7	2.00	0.00	EOT; 358.83°
8,900.0	90.00	358.83	7,529.0	997.9	984.0	997.9	0.00	0.00	
9,000.0	90.00	358.83	7,529.0	1,097.9	982.0	1,097.9	0.00	0.00	
9,100.0	90.00	358.83	7,529.0	1,197.9	979.9	1,197.9	0.00	0.00	
9,200.0	90.00	358.83	7,529.0	1,297.8	977.9	1,297.8	0.00	0.00	
9,300.0	90.00	358.83	7,529.0	1,397.8	975.8	1,397.8	0.00	0.00	
9,400.0	90.00	358.83	7,529.0	1,497.8	973.8	1,497.8	0.00	0.00	
9,500.0	90.00	358.83	7,529.0	1,597.8	971.7	1,597.8	0.00	0.00	
9,600.0	90.00	358.83	7,529.0	1,697.8	969.7	1,697.8	0.00	0.00	
9,700.0	90.00	358.83	7,529.0	1,797.7	967.6	1,797.7	0.00	0.00	
9,800.0	90.00	358.83	7,529.0	1,897.7	965.6	1,897.7	0.00	0.00	
9,900.0	90.00	358.83	7,529.0	1,997.7	963.5	1,997.7	0.00	0.00	
10,000.0	90.00	358.83	7,529.0	2,097.7	961.5	2,097.7	0.00	0.00	
10,100.0	90.00	358.83	7,529.0	2,197.7	959.4	2,197.7	0.00	0.00	
10,200.0	90.00	358.83	7,529.0	2,297.6	957.4	2,297.6	0.00	0.00	
10,300.0	90.00	358.83	7,529.0	2,397.6	955.3	2,397.6	0.00	0.00	
10,400.0	90.00	358.83	7,529.0	2,497.6	953.3	2,497.6	0.00	0.00	
10,500.0	90.00	358.83	7,529.0	2,597.6	951.2	2,597.6	0.00	0.00	
10,600.0	90.00	358.83	7,529.0	2,697.5	949.2	2,697.5	0.00	0.00	
10,700.0	90.00	358.83	7,529.0	2,797.5	947.1	2,797.5	0.00	0.00	
10,800.0	90.00	358.83	7,529.0	2,897.5	945.1	2,897.5	0.00	0.00	
10,900.0	90.00	358.83	7,529.0	2,997.5	943.0	2,997.5	0.00	0.00	
11,000.0	90.00	358.83	7,529.0	3,097.5	941.0	3,097.5	0.00	0.00	
11,100.0	90.00	358.83	7,529.0	3,197.4	938.9	3,197.4	0.00	0.00	
11,200.0	90.00	358.83	7,529.0	3,297.4	936.9	3,297.4	0.00	0.00	
11,300.0	90.00	358.83	7,529.0	3,397.4	934.8	3,397.4	0.00	0.00	
11,400.0	90.00	358.83	7,529.0	3,497.4	932.8	3,497.4	0.00	0.00	
11,500.0	90.00	358.83	7,529.0	3,597.4	930.8	3,597.4	0.00	0.00	
11,600.0	90.00	358.83	7,529.0	3,697.3	928.7	3,697.3	0.00	0.00	
11,700.0	90.00	358.83	7,529.0	3,797.3	926.7	3,797.3	0.00	0.00	
11,800.0	90.00	358.83	7,529.0	3,897.3	924.6	3,897.3	0.00	0.00	
11,900.0	90.00	358.83	7,529.0	3,997.3	922.6	3,997.3	0.00	0.00	
12,000.0	90.00	358.83	7,529.0	4,097.3	920.5	4,097.3	0.00	0.00	
12,100.0	90.00	358.83	7,529.0	4,197.2	918.5	4,197.2	0.00	0.00	
12,200.0	90.00	358.83	7,529.0	4,297.2	916.4	4,297.2	0.00	0.00	
12,300.0	90.00	358.83	7,529.0	4,397.2	914.4	4,397.2	0.00	0.00	
12,400.0	90.00	358.83	7,529.0	4,497.2	912.3	4,497.2	0.00	0.00	
12,500.0	90.00	358.83	7,529.0	4,597.1	910.3	4,597.1	0.00	0.00	



Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Sprague 3H-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 3H-9H-N267	Survey Calculation Method:	Minimum Curvature
Wellbore:	Hz		
Design:	Plan #2		

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
12,600.0	90.00	358.83	7,529.0	4,697.1	908.2	4,697.1	0.00	0.00	
12,700.0	90.00	358.83	7,529.0	4,797.1	906.2	4,797.1	0.00	0.00	
12,800.0	90.00	358.83	7,529.0	4,897.1	904.1	4,897.1	0.00	0.00	
12,900.0	90.00	358.83	7,529.0	4,997.1	902.1	4,997.1	0.00	0.00	
13,003.0	90.00	358.83	7,529.0	5,100.0	900.0	5,100.0	0.00	0.00	PBHL @ 13003' MD

Targets									
Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
Sprague 3H-9H-N267 Tr - plan hits target center - Point	0.00	0.00	7,529.0	60.0	985.0	1,297,042.55	3,169,172.27	40.147184	-104.894856
Sprague 3H-9H-N267 PI - plan hits target center - Point	0.00	0.00	7,529.0	5,100.0	900.0	1,302,081.88	3,169,053.04	40.161020	-104.895160

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
461.0	461.0	Fox Hills - BASE				
4,474.8	4,418.0	Sussex				
4,725.7	4,665.0	Sussex Marker				
5,028.3	4,963.0	Shannon				
6,389.0	6,311.0	Teepee Buttes (*if present)				
7,282.5	7,184.0	Sharon Springs				
7,357.4	7,249.0	Niobrara				
7,416.5	7,297.0	B Chalk				
7,458.4	7,329.0	B Marl				
7,517.6	7,371.0	C Chalk				
7,649.8	7,449.0	C Marl				
7,760.0	7,495.0	Ft. Hayes				
7,852.9	7,519.0	Codell				



Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Sprague 3H-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 3H-9H-N267	Survey Calculation Method:	Minimum Curvature
Wellbore:	Hz		
Design:	Plan #2		

Plan Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
+N/-S (ft)	+E/-W (ft)			
400.0	400.0	0.0	0.0	KOP @ 400' MD
900.0	897.5	-23.1	36.9	EOB; 10°
5,700.0	5,624.5	-464.8	743.8	Start 2° Drop
6,200.0	6,122.0	-487.8	780.7	EOD; Vertical
6,778.0	6,700.0	-487.8	780.7	Curve KOP @ 6778' MD
6,962.0	6,880.9	-504.0	805.1	10° Build/Turn
7,962.1	7,529.0	60.0	985.0	LP @ 7529' TVD; 90°
8,822.1	7,529.0	920.0	985.0	Start 2° Turn
8,880.8	7,529.0	978.7	984.4	EOT; 358.83°
13,003.0	7,529.0	5,100.0	900.0	PBHL @ 13003' MD



EnCana Oil & Gas (USA) Inc

DJ Wattenberg

S9-T2N-R67W (Sprague)

Sprague 3H-9H-N267

Hz

Plan #2

Anticollision Report

21 November, 2013



Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Sprague 3H-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 3H-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 #2	Offset TVD Reference:	Offset Datum

Reference	Plan #2		
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	Stations	Error Model:	Systematic Ellipse
Depth Range:	Unlimited	Scan Method:	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 1,550.0ft	Error Surface:	Elliptical Conic
Warning Levels Evaluated at:	2.00 Sigma		

Survey Tool Program	Date	11/21/2013		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.0	13,003.0	Plan #2 (Hz)	Geolink MWD	Geolink MWD



Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Sprague 3H-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 3H-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 #2	Offset TVD Reference:	Offset Datum

Summary

Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Between Ellipses (ft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
S9-T2N-R67W (Sprague)						
BARNES 34-4 (EXISTING) - ENCANA WELL - ENCANA	13,003.0	7,444.0	743.6	638.6	7.086	CC, ES, SF
ECKSTINE V 9-10 (EXISTING) - NOBLE WELL - NO SU	9,512.2	7,482.0	689.1	643.4	15.073	CC, ES
ECKSTINE V 9-10 (EXISTING) - NOBLE WELL - NO SU	9,700.0	7,482.0	714.2	665.5	14.655	SF
ECKSTINE V 9-15 (EXISTING) - NOBLE WELL - NO SU	8,188.5	7,512.0	151.1	122.8	5.336	CC, ES
ECKSTINE V 9-15 (EXISTING) - NOBLE WELL - NO SU	8,200.0	7,512.0	151.5	123.1	5.335	SF
KATHERINE 1 (EXISTING) - MACEY-MERSHON WELL						Out of range
LUHMAN 1 (EXISTING) - ENCANA WELL - Exising	13,003.0	7,439.0	1,148.4	1,043.5	10.945	CC, ES, SF
SHELEY 1 (EXISTING) - ENCANA WELL - NO SURVEY						Out of range
SHELEY 14-4 (EXISTING) - ENCANA WELL - NO SURV						Out of range
SHELEY 24-4 (EXISTING MR) - MACHII-ROSS WELL - N						Out of range
SHELEY 24-4 (EXISTING) - ENCANA WELL - NO SURV	13,003.0	7,436.0	501.6	396.7	4.781	CC, ES, SF
SHELEY 3A-4H (EXISTING) - ENCANA WELL - Plan #1	13,003.0	9,736.8	431.4	395.0	11.877	CC, ES, SF
SHELEY 3A-4H (EXISTING) - ENCANA WELL - Plan #2	13,003.0	9,696.2	431.4	395.1	11.909	CC, ES, SF
SHELEY 3A-4H (EXISTING) - ENCANA WELL - Plan #3	13,003.0	9,610.2	431.6	395.6	11.975	CC, ES, SF
SHELEY 3A-4H (EXISTING) - ENCANA WELL - Plan #4	13,003.0	9,606.1	437.5	400.6	11.877	CC, ES, SF
SHELEY 3A-4H (EXISTING) - ENCANA WELL - proto	13,003.0	9,572.7	431.3	394.5	11.743	CC, ES, SF
SHELEY 3A-4H (EXISTING) - ENCANA WELL - SURVEY	13,003.0	9,572.7	431.3	394.5	11.743	CC, ES, SF
SHELEY 3B-4H (EXISTING) - ENCANA WELL - Plan #1	13,003.0	9,976.1	1,377.7	1,297.0	17.073	CC, ES, SF
SHELEY 3B-4H (EXISTING) - ENCANA WELL - Plan #2	13,003.0	9,976.1	1,377.7	1,297.0	17.073	CC, ES, SF
SHELEY 3B-4H (EXISTING) - ENCANA WELL - Plan #3	13,003.0	9,789.1	1,372.9	1,287.5	16.061	CC, ES, SF
SHELEY 3B-4H (EXISTING) - ENCANA WELL - Plan #4	13,003.0	9,870.8	1,372.4	1,286.8	16.033	CC, ES, SF
SHELEY 3B-4H (EXISTING) - ENCANA WELL - SURVEY	13,003.0	9,735.0	1,369.0	1,285.6	16.408	CC, ES, SF
SHELEY 4-6-4 (EXISTING) - ENCANA WELL - Plan #1	13,003.0	7,541.8	982.9	871.7	8.838	CC, ES, SF
SHELEY 4-6-4 (EXISTING) - ENCANA WELL - Plan #2	13,003.0	7,555.3	982.9	871.7	8.836	CC, ES, SF
SHELEY 4-6-4 (EXISTING) - ENCANA WELL - SURVEY	13,003.0	7,559.8	978.1	868.4	8.915	CC, ES, SF
SPRAGUE 1 (EXISTING) - ENCANA WELL - NO SURVE	11,582.5	7,460.0	936.6	856.2	11.647	CC
SPRAGUE 1 (EXISTING) - ENCANA WELL - NO SURVE	11,600.0	7,460.0	936.7	856.0	11.605	ES
SPRAGUE 1 (EXISTING) - ENCANA WELL - NO SURVE	11,800.0	7,460.0	961.5	877.3	11.425	SF
SPRAGUE 1 (EXISTING) MACHII - MACHII-ROSS WELL	400.0	363.0	618.6	617.3	483.429	CC, ES
SPRAGUE 1 (EXISTING) MACHII - MACHII-ROSS WELL	9,000.0	7,492.0	1,508.4	1,470.6	39.851	SF
SPRAGUE 1-9 (EXISTING) - MACHII-ROSS WELL - NO	11,376.9	7,455.0	1,176.1	1,099.3	15.299	CC
SPRAGUE 1-9 (EXISTING) - MACHII-ROSS WELL - NO	11,400.0	7,455.0	1,176.4	1,099.1	15.223	ES
SPRAGUE 1-9 (EXISTING) - MACHII-ROSS WELL - NO	11,700.0	7,455.0	1,219.7	1,137.3	14.798	SF
SPRAGUE 2 (EXISTING) - MACHII-ROSS WELL - NO S	11,332.6	7,492.0	1,396.8	1,320.6	18.335	CC, ES
SPRAGUE 2 (EXISTING) - MACHII-ROSS WELL - NO S	11,800.0	7,492.0	1,472.9	1,388.7	17.491	SF
Sprague 21-9 - DD - Plan #1	12,018.7	7,472.0	685.5	597.6	7.797	CC, ES
Sprague 21-9 - DD - Plan #1	12,100.0	7,472.0	690.3	601.0	7.728	SF
SPRAGUE 22-9 J (EXISTING) - MACHII-ROSS WELL - N	10,702.4	7,474.0	748.5	683.1	11.443	CC, ES
SPRAGUE 22-9 J (EXISTING) - MACHII-ROSS WELL - N	10,800.0	7,474.0	754.8	687.8	11.255	SF
SPRAGUE 23-9 J (EXISTING) - MACHII-ROSS WELL - N	9,383.3	7,497.0	761.3	717.6	17.418	CC
SPRAGUE 23-9 J (EXISTING) - MACHII-ROSS WELL - N	9,400.0	7,497.0	761.4	717.5	17.319	ES
SPRAGUE 23-9 J (EXISTING) - MACHII-ROSS WELL - N	9,600.0	7,497.0	791.5	744.3	16.787	SF
SPRAGUE 24-9 (EXISTING) - ENCANA WELL - NO SUR	1,779.6	1,732.7	74.2	66.4	9.566	CC
SPRAGUE 24-9 (EXISTING) - ENCANA WELL - NO SUR	1,800.0	1,752.8	74.3	66.4	9.452	ES
SPRAGUE 24-9 (EXISTING) - ENCANA WELL - NO SUR	1,900.0	1,851.3	77.1	68.8	9.324	SF
SPRAGUE 2-4-9 (EXISTING) - ENCANA WELL - Plan #1	9,993.2	7,570.4	1,478.2	1,421.1	25.907	CC
SPRAGUE 2-4-9 (EXISTING) - ENCANA WELL - Plan #1	10,000.0	7,570.4	1,478.2	1,421.0	25.856	ES
SPRAGUE 2-4-9 (EXISTING) - ENCANA WELL - Plan #1	10,400.0	7,570.4	1,533.1	1,469.3	24.015	SF
SPRAGUE 2-4-9 (EXISTING) - ENCANA WELL - SURVE	9,968.0	7,529.7	1,478.9	1,422.6	26.281	CC
SPRAGUE 2-4-9 (EXISTING) - ENCANA WELL - SURVE	10,000.0	7,530.6	1,479.2	1,422.4	26.042	ES
SPRAGUE 2-4-9 (EXISTING) - ENCANA WELL - SURVE	10,400.0	7,548.0	1,540.6	1,477.1	24.251	SF
SPRAGUE 24-9 J (EXISTING) - MACHII-ROSS WELL - N	1,159.0	1,128.5	158.0	153.4	34.512	CC
SPRAGUE 24-9 J (EXISTING) - MACHII-ROSS WELL - N	1,200.0	1,168.9	158.2	153.4	33.062	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 3H-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 3H-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 #2	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
S9-T2N-R67W (Sprague)						
SPRAGUE 24-9 J (EXISTING) - MACHII-ROSS WELL - N	1,800.0	1,759.8	193.3	185.9	26.190	SF
SPRAGUE 2-8-9 (EXISTING) - ENCANA WELL - SURVE	1,203.3	1,183.3	65.9	60.3	11.767	CC, ES, SF
SPRAGUE 31-9 (EXISTING) - ENCANA WELL - Plan #1	11,884.1	7,691.9	694.1	608.5	8.108	CC, ES
SPRAGUE 31-9 (EXISTING) - ENCANA WELL - Plan #1	12,000.0	7,713.5	703.3	616.2	8.075	SF
SPRAGUE 31-9 (EXISTING) - ENCANA WELL - Plan #2	11,987.9	7,740.3	571.9	484.7	6.561	CC, ES
SPRAGUE 31-9 (EXISTING) - ENCANA WELL - Plan #2	12,000.0	7,743.0	572.0	484.7	6.554	SF
SPRAGUE 31-9 (EXISTING) - ENCANA WELL - Plan #3	12,075.7	7,658.0	468.3	376.5	5.103	CC, ES
SPRAGUE 31-9 (EXISTING) - ENCANA WELL - Plan #3	12,100.0	7,660.1	468.9	376.8	5.088	SF
SPRAGUE 31-9 (EXISTING) - ENCANA WELL - SURVE	12,072.3	7,679.8	505.4	414.6	5.566	CC, ES
SPRAGUE 31-9 (EXISTING) - ENCANA WELL - SURVE	12,100.0	7,682.9	506.2	415.0	5.551	SF
SPRAGUE 32-9 (EXISTING) - ENCANA WELL - NO SUR	10,558.7	7,473.0	580.5	517.5	9.217	CC, ES
SPRAGUE 32-9 (EXISTING) - ENCANA WELL - NO SUR	10,600.0	7,473.0	581.9	518.3	9.139	SF
SPRAGUE 33-9 (EXISTING) - ENCANA WELL - NO SUR	9,534.4	7,483.0	547.2	501.2	11.877	CC, ES
SPRAGUE 33-9 (EXISTING) - ENCANA WELL - NO SUR	9,600.0	7,483.0	551.2	504.0	11.696	SF
Sprague 3A-9H-N267 - Hz - Plan #1	200.0	200.0	69.9	69.3	117.772	CC, ES
Sprague 3A-9H-N267 - Hz - Plan #1	600.0	587.9	101.5	99.5	51.174	SF
Sprague 3B-9H-N267 - Hz - Plan #1	300.0	300.0	58.7	57.8	62.289	CC, ES
Sprague 3B-9H-N267 - Hz - Plan #1	600.0	592.9	78.7	76.7	39.581	SF
Sprague 3C-9H-N267 - Hz - Plan #1	400.0	400.0	50.3	49.0	38.960	CC, ES
Sprague 3C-9H-N267 - Hz - Plan #1	600.0	598.2	59.2	57.2	29.745	SF
Sprague 3D-9H-N267 - Hz - Plan #1	400.0	400.0	39.1	37.8	30.303	CC, ES
Sprague 3D-9H-N267 - Hz - Plan #1	13,003.0	12,876.7	1,438.4	1,252.9	7.752	SF
Sprague 3E-9H-N267 - Hz - Plan #1	200.0	200.0	30.8	30.2	51.820	CC
Sprague 3E-9H-N267 - Hz - Plan #1	300.0	299.8	31.1	30.1	32.980	ES
Sprague 3E-9H-N267 - Hz - Plan #1	13,003.0	12,620.5	1,101.4	922.3	6.149	SF
Sprague 3F-9H-N267 - Hz - Plan #1	400.0	400.0	19.6	18.3	15.151	CC, ES
Sprague 3F-9H-N267 - Hz - Plan #1	13,003.0	12,905.4	735.1	551.0	3.993	SF
Sprague 3G-9H-N267 - Hz - Plan #1	400.0	400.0	8.4	7.1	6.493	CC, ES
Sprague 3G-9H-N267 - Hz - Plan #1	13,003.0	12,714.1	445.0	284.6	2.773	SF
Sprague 3I-9H-N267 - Hz - Plan #1	300.0	300.0	11.7	10.8	12.459	CC, ES
Sprague 3I-9H-N267 - Hz - Plan #1	13,003.0	12,774.2	414.0	257.3	2.642	SF
Sprague 3J-9H-N267 - Hz - Plan #1	200.0	200.0	19.9	19.3	33.527	CC, ES
Sprague 3J-9H-N267 - Hz - Plan #1	13,003.0	13,068.3	698.9	515.5	3.810	SF
SPRAGUE 4-6-9 (EXISTING) - ENCANA WELL - SURVE	8,818.2	7,715.6	60.3	15.7	1.351	Level 3, CC, ES, SF
SPRAGUE 4-8-9 (EXISTING) - ENCANA WELL - SURVE	5,964.6	5,938.5	79.2	43.7	2.231	CC
SPRAGUE 4-8-9 (EXISTING) - ENCANA WELL - SURVE	6,000.0	5,973.7	79.3	43.7	2.225	ES, SF
SPRAGUE 6-0-9 (EXISTING) - ENCANA WELL - PLAN O	12,551.4	7,521.6	1,237.6	1,137.7	12.396	CC, ES
SPRAGUE 6-0-9 (EXISTING) - ENCANA WELL - PLAN O	12,800.0	7,521.6	1,262.3	1,158.1	12.121	SF
SPRAGUE 6-4-9 (EXISTING) - ENCANA WELL - SURVE	10,052.7	7,625.2	1,302.1	1,244.8	22.755	CC, ES
SPRAGUE 6-4-9 (EXISTING) - ENCANA WELL - SURVE	10,600.0	7,621.0	1,412.4	1,346.0	21.275	SF
SPRAGUE V 9-7 (EXISTING) - NOBLE WELL - NO SUR	10,662.8	7,478.0	581.2	516.4	8.976	CC, ES
SPRAGUE V 9-7 (EXISTING) - NOBLE WELL - NO SUR	10,800.0	7,478.0	597.2	530.1	8.903	SF



Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Sprague 3H-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 3H-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 #2	Offset TVD Reference:	Offset Datum

Offset Design S9-T2N-R67W (Sprague) - BARNES 34-4 (EXISTING) - ENCANA WELL - ENCANA WELL													Offset Site Error:	0.0 ft
Survey Program: 8100-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			
11,800.0	7,529.0	7,444.0	7,444.0	73.3	13.0	90.00	5,187.5	1,638.4	1,474.5	1,390.3	84.13	17.526		
11,900.0	7,529.0	7,444.0	7,444.0	75.0	13.0	90.00	5,187.5	1,638.4	1,388.9	1,303.0	85.85	16.178		
12,000.0	7,529.0	7,444.0	7,444.0	76.6	13.0	90.00	5,187.5	1,638.4	1,305.3	1,217.8	87.58	14.905		
12,100.0	7,529.0	7,444.0	7,444.0	78.3	13.0	90.00	5,187.5	1,638.4	1,224.3	1,135.0	89.30	13.709		
12,200.0	7,529.0	7,444.0	7,444.0	80.0	13.0	90.00	5,187.5	1,638.4	1,146.2	1,055.2	91.03	12.592		
12,300.0	7,529.0	7,444.0	7,444.0	81.7	13.0	90.00	5,187.5	1,638.4	1,071.8	979.0	92.76	11.555		
12,400.0	7,529.0	7,444.0	7,444.0	83.4	13.0	90.00	5,187.5	1,638.4	1,001.8	907.4	94.49	10.603		
12,500.0	7,529.0	7,444.0	7,444.0	85.1	13.0	90.00	5,187.5	1,638.4	937.3	841.1	96.22	9.742		
12,600.0	7,529.0	7,444.0	7,444.0	86.8	13.0	90.00	5,187.5	1,638.4	879.5	781.6	97.95	8.980		
12,700.0	7,529.0	7,444.0	7,444.0	88.5	13.0	90.00	5,187.5	1,638.4	829.8	730.1	99.68	8.324		
12,800.0	7,529.0	7,444.0	7,444.0	90.2	13.0	90.00	5,187.5	1,638.4	789.6	688.2	101.41	7.786		
12,900.0	7,529.0	7,444.0	7,444.0	91.9	13.0	90.00	5,187.5	1,638.4	760.5	657.4	103.15	7.373		
13,003.0	7,529.0	7,444.0	7,444.0	93.6	13.0	90.00	5,187.5	1,638.4	743.6	638.6	104.93	7.086 CC, ES, SF		



Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Sprague 3H-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 3H-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 #2	Offset TVD Reference:	Offset Datum

Offset Design S9-T2N-R67W (Sprague) - ECKSTINE V 9-10 (EXISTING) - NOBLE WELL - NO SURVEYS										Offset Site Error: 0.0 ft			
Survey Program: 7775-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
8,200.0	7,529.0	7,482.0	7,482.0	23.2	13.1	90.00	1,624.1	1,660.4	1,488.3	1,459.9	28.35	52.502	
8,300.0	7,529.0	7,482.0	7,482.0	23.8	13.1	90.00	1,624.1	1,660.4	1,399.9	1,370.7	29.23	47.896	
8,400.0	7,529.0	7,482.0	7,482.0	24.4	13.1	90.00	1,624.1	1,660.4	1,313.2	1,282.9	30.24	43.421	
8,500.0	7,529.0	7,482.0	7,482.0	25.2	13.1	90.00	1,624.1	1,660.4	1,228.5	1,197.1	31.37	39.161	
8,600.0	7,529.0	7,482.0	7,482.0	26.1	13.1	90.00	1,624.1	1,660.4	1,146.3	1,113.7	32.59	35.172	
8,700.0	7,529.0	7,482.0	7,482.0	27.1	13.1	90.00	1,624.1	1,660.4	1,067.1	1,033.2	33.89	31.490	
8,800.0	7,529.0	7,482.0	7,482.0	28.2	13.1	90.00	1,624.1	1,660.4	991.7	956.5	35.25	28.137	
8,822.1	7,529.0	7,482.0	7,482.0	28.4	13.1	90.00	1,624.1	1,660.4	975.7	940.1	35.55	27.442	
8,880.8	7,529.0	7,482.0	7,482.0	29.1	13.1	90.00	1,624.1	1,660.4	934.6	898.5	36.12	25.879	
8,900.0	7,529.0	7,482.0	7,482.0	29.3	13.1	90.00	1,624.1	1,660.4	921.7	885.4	36.39	25.331	
9,000.0	7,529.0	7,482.0	7,482.0	30.4	13.1	90.00	1,624.1	1,660.4	858.6	820.8	37.83	22.694	
9,100.0	7,529.0	7,482.0	7,482.0	31.6	13.1	90.00	1,624.1	1,660.4	803.0	763.6	39.32	20.422	
9,200.0	7,529.0	7,482.0	7,482.0	32.9	13.1	90.00	1,624.1	1,660.4	756.5	715.7	40.83	18.527	
9,300.0	7,529.0	7,482.0	7,482.0	34.2	13.1	90.00	1,624.1	1,660.4	721.0	678.7	42.37	17.016	
9,400.0	7,529.0	7,482.0	7,482.0	35.6	13.1	90.00	1,624.1	1,660.4	698.2	654.2	43.94	15.890	
9,500.0	7,529.0	7,482.0	7,482.0	36.9	13.1	90.00	1,624.1	1,660.4	689.2	643.7	45.52	15.140	
9,512.2	7,529.0	7,482.0	7,482.0	37.1	13.1	90.00	1,624.1	1,660.4	689.1	643.4	45.72	15.073 CC, ES	
9,600.0	7,529.0	7,482.0	7,482.0	38.4	13.1	90.00	1,624.1	1,660.4	694.7	647.5	47.12	14.742	
9,700.0	7,529.0	7,482.0	7,482.0	39.8	13.1	90.00	1,624.1	1,660.4	714.2	665.5	48.74	14.655 SF	
9,800.0	7,529.0	7,482.0	7,482.0	41.3	13.1	90.00	1,624.1	1,660.4	746.8	696.4	50.37	14.827	
9,900.0	7,529.0	7,482.0	7,482.0	42.8	13.1	90.00	1,624.1	1,660.4	790.7	738.7	52.00	15.205	
10,000.0	7,529.0	7,482.0	7,482.0	44.3	13.1	90.00	1,624.1	1,660.4	844.3	790.6	53.65	15.736	
10,100.0	7,529.0	7,482.0	7,482.0	45.8	13.1	90.00	1,624.1	1,660.4	905.8	850.4	55.31	16.376	
10,200.0	7,529.0	7,482.0	7,482.0	47.3	13.1	90.00	1,624.1	1,660.4	973.6	916.7	56.97	17.089	
10,300.0	7,529.0	7,482.0	7,482.0	48.9	13.1	90.00	1,624.1	1,660.4	1,046.7	988.0	58.65	17.848	
10,400.0	7,529.0	7,482.0	7,482.0	50.4	13.1	90.00	1,624.1	1,660.4	1,123.9	1,063.5	60.32	18.631	
10,500.0	7,529.0	7,482.0	7,482.0	52.0	13.1	90.00	1,624.1	1,660.4	1,204.4	1,142.4	62.00	19.425	
10,600.0	7,529.0	7,482.0	7,482.0	53.6	13.1	90.00	1,624.1	1,660.4	1,287.7	1,224.0	63.69	20.218	
10,700.0	7,529.0	7,482.0	7,482.0	55.2	13.1	90.00	1,624.1	1,660.4	1,373.2	1,307.8	65.38	21.003	
10,800.0	7,529.0	7,482.0	7,482.0	56.8	13.1	90.00	1,624.1	1,660.4	1,460.6	1,393.5	67.08	21.774	
10,900.0	7,529.0	7,482.0	7,482.0	58.4	13.1	90.00	1,624.1	1,660.4	1,549.5	1,480.7	68.78	22.528	

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 3H-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 3H-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 #2	Offset TVD Reference:	Offset Datum

Offset Design S9-T2N-R67W (Sprague) - ECKSTINE V 9-15 (EXISTING) - NOBLE WELL - NO SURVEYS													Offset Site Error:	0.0 ft
Survey Program: 7775-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	75.85	286.4	1,136.1	1,171.7					
100.0	100.0	83.0	83.0	0.1	0.1	75.85	286.4	1,136.1	1,171.6	1,171.4	0.27	4,384.273		
200.0	200.0	183.0	183.0	0.3	0.3	75.85	286.4	1,136.1	1,171.6	1,171.0	0.62	1,901.072		
300.0	300.0	283.0	283.0	0.5	0.5	75.85	286.4	1,136.1	1,171.6	1,170.7	0.97	1,213.666		
400.0	400.0	383.0	383.0	0.6	0.7	75.85	286.4	1,136.1	1,171.6	1,170.3	1.31	891.360		
500.0	500.0	483.0	483.0	0.8	0.8	-46.23	286.4	1,136.1	1,170.4	1,168.8	1.66	703.237		
600.0	599.8	582.8	582.8	1.0	1.0	-46.47	286.4	1,136.1	1,166.8	1,164.8	2.02	577.704		
700.0	699.5	682.5	682.5	1.2	1.2	-46.87	286.4	1,136.1	1,160.8	1,158.4	2.39	486.202		
800.0	798.7	781.7	781.7	1.5	1.4	-47.43	286.4	1,136.1	1,152.5	1,149.7	2.78	415.247		
900.0	897.5	880.5	880.5	1.8	1.5	-48.16	286.4	1,136.1	1,141.9	1,138.7	3.19	357.778		
1,000.0	995.9	978.9	978.9	2.1	1.7	-48.81	286.4	1,136.1	1,130.3	1,126.7	3.63	311.756		
1,100.0	1,094.4	1,077.4	1,077.4	2.4	1.9	-49.47	286.4	1,136.1	1,118.8	1,114.8	4.07	274.885		
1,200.0	1,192.9	1,175.9	1,175.9	2.7	2.1	-50.15	286.4	1,136.1	1,107.5	1,103.0	4.52	244.844		
1,300.0	1,291.4	1,274.4	1,274.4	3.1	2.2	-50.84	286.4	1,136.1	1,096.4	1,091.4	4.98	219.987		
1,400.0	1,389.9	1,372.9	1,372.9	3.4	2.4	-51.55	286.4	1,136.1	1,085.4	1,079.9	5.45	199.130		
1,500.0	1,488.4	1,471.4	1,471.4	3.8	2.6	-52.26	286.4	1,136.1	1,074.6	1,068.7	5.92	181.413		
1,600.0	1,586.8	1,569.8	1,569.8	4.1	2.7	-53.00	286.4	1,136.1	1,063.9	1,057.5	6.40	166.202		
1,700.0	1,685.3	1,668.3	1,668.3	4.5	2.9	-53.74	286.4	1,136.1	1,053.5	1,046.6	6.88	153.015		
1,800.0	1,783.8	1,766.8	1,766.8	4.8	3.1	-54.50	286.4	1,136.1	1,043.2	1,035.8	7.37	141.489		
1,900.0	1,882.3	1,865.3	1,865.3	5.1	3.3	-55.28	286.4	1,136.1	1,033.1	1,025.2	7.87	131.338		
2,000.0	1,980.8	1,963.8	1,963.8	5.5	3.4	-56.07	286.4	1,136.1	1,023.2	1,014.9	8.36	122.341		
2,100.0	2,079.2	2,062.2	2,062.2	5.8	3.6	-56.88	286.4	1,136.1	1,013.5	1,004.7	8.87	114.318		
2,200.0	2,177.7	2,160.7	2,160.7	6.2	3.8	-57.70	286.4	1,136.1	1,004.0	994.7	9.37	107.127		
2,300.0	2,276.2	2,259.2	2,259.2	6.5	3.9	-58.53	286.4	1,136.1	994.8	984.9	9.88	100.651		
2,400.0	2,374.7	2,357.7	2,357.7	6.9	4.1	-59.39	286.4	1,136.1	985.7	975.3	10.40	94.794		
2,500.0	2,473.2	2,456.2	2,456.2	7.2	4.3	-60.25	286.4	1,136.1	976.9	966.0	10.92	89.478		
2,600.0	2,571.6	2,554.6	2,554.6	7.6	4.5	-61.13	286.4	1,136.1	968.3	956.8	11.44	84.635		
2,700.0	2,670.1	2,653.1	2,653.1	7.9	4.6	-62.03	286.4	1,136.1	959.9	948.0	11.97	80.209		
2,800.0	2,768.6	2,751.6	2,751.6	8.3	4.8	-62.94	286.4	1,136.1	951.8	939.3	12.50	76.154		
2,900.0	2,867.1	2,850.1	2,850.1	8.6	5.0	-63.87	286.4	1,136.1	943.9	930.9	13.03	72.430		
3,000.0	2,965.6	2,948.6	2,948.6	9.0	5.1	-64.81	286.4	1,136.1	936.3	922.7	13.57	69.000		
3,100.0	3,064.0	3,047.0	3,047.0	9.3	5.3	-65.77	286.4	1,136.1	929.0	914.9	14.11	65.836		
3,200.0	3,162.5	3,145.5	3,145.5	9.7	5.5	-66.74	286.4	1,136.1	921.9	907.2	14.65	62.911		
3,300.0	3,261.0	3,244.0	3,244.0	10.0	5.7	-67.73	286.4	1,136.1	915.1	899.9	15.20	60.202		
3,400.0	3,359.5	3,342.5	3,342.5	10.4	5.8	-68.73	286.4	1,136.1	908.5	892.8	15.75	57.691		
3,500.0	3,458.0	3,441.0	3,441.0	10.7	6.0	-69.74	286.4	1,136.1	902.3	886.0	16.30	55.359		
3,600.0	3,556.4	3,539.4	3,539.4	11.1	6.2	-70.77	286.4	1,136.1	896.4	879.5	16.85	53.190		
3,700.0	3,654.9	3,637.9	3,637.9	11.5	6.3	-71.81	286.4	1,136.1	890.7	873.3	17.41	51.173		
3,800.0	3,753.4	3,736.4	3,736.4	11.8	6.5	-72.86	286.4	1,136.1	885.4	867.4	17.96	49.293		
3,900.0	3,851.9	3,834.9	3,834.9	12.2	6.7	-73.93	286.4	1,136.1	880.3	861.8	18.52	47.540		
4,000.0	3,950.4	3,933.4	3,933.4	12.5	6.9	-75.00	286.4	1,136.1	875.6	856.5	19.07	45.905		
4,100.0	4,048.9	4,031.9	4,031.9	12.9	7.0	-76.09	286.4	1,136.1	871.2	851.6	19.63	44.379		
4,200.0	4,147.3	4,130.3	4,130.3	13.2	7.2	-77.19	286.4	1,136.1	867.2	847.0	20.19	42.953		
4,300.0	4,245.8	4,228.8	4,228.8	13.6	7.4	-78.29	286.4	1,136.1	863.4	842.7	20.74	41.621		
4,400.0	4,344.3	4,327.3	4,327.3	13.9	7.6	-79.41	286.4	1,136.1	860.0	838.7	21.30	40.377		
4,500.0	4,442.8	4,425.8	4,425.8	14.3	7.7	-80.54	286.4	1,136.1	856.9	835.1	21.85	39.213		
4,600.0	4,541.3	4,524.3	4,524.3	14.6	7.9	-81.67	286.4	1,136.1	854.2	831.8	22.40	38.126		
4,700.0	4,639.7	4,622.7	4,622.7	15.0	8.1	-82.81	286.4	1,136.1	851.8	828.9	22.95	37.109		
4,800.0	4,738.2	4,721.2	4,721.2	15.3	8.2	-83.95	286.4	1,136.1	849.8	826.3	23.50	36.159		
4,900.0	4,836.7	4,819.7	4,819.7	15.7	8.4	-85.10	286.4	1,136.1	848.1	824.1	24.05	35.272		
5,000.0	4,935.2	4,918.2	4,918.2	16.0	8.6	-86.25	286.4	1,136.1	846.8	822.2	24.59	34.442		
5,100.0	5,033.7	5,016.7	5,016.7	16.4	8.8	-87.41	286.4	1,136.1	845.8	820.7	25.12	33.668		

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 3H-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 3H-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 #2	Offset TVD Reference:	Offset Datum

Offset Design S9-T2N-R67W (Sprague) - ECKSTINE V 9-15 (EXISTING) - NOBLE WELL - NO SURVEYS												Offset Site Error:	0.0 ft
Survey Program: 7775-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		
5,200.0	5,132.1	5,115.1	5,115.1	16.7	8.9	-88.57	286.4	1,136.1	845.2	819.5	25.65	32.945	
5,300.0	5,230.6	5,213.6	5,213.6	17.1	9.1	-89.73	286.4	1,136.1	844.9	818.7	26.18	32.271	
5,323.6	5,253.9	5,236.9	5,236.9	17.2	9.1	-90.00	286.4	1,136.1	844.9	818.6	26.31	32.119	
5,400.0	5,329.1	5,312.1	5,312.1	17.4	9.3	-90.89	286.4	1,136.1	845.0	818.3	26.70	31.643	
5,500.0	5,427.6	5,410.6	5,410.6	17.8	9.4	-92.04	286.4	1,136.1	845.5	818.2	27.22	31.058	
5,600.0	5,526.1	5,509.1	5,509.1	18.1	9.6	-93.20	286.4	1,136.1	846.3	818.5	27.73	30.514	
5,700.0	5,624.5	5,607.5	5,607.5	18.5	9.8	-94.36	286.4	1,136.1	847.4	819.2	28.24	30.009	
5,800.0	5,723.3	5,706.3	5,706.3	18.8	10.0	-95.42	286.4	1,136.1	848.8	820.1	28.69	29.585	
5,900.0	5,822.6	5,805.6	5,805.6	19.0	10.1	-96.26	286.4	1,136.1	850.0	820.9	29.09	29.220	
6,000.0	5,922.2	5,905.2	5,905.2	19.2	10.3	-96.86	286.4	1,136.1	851.0	821.6	29.44	28.903	
6,100.0	6,022.0	6,005.0	6,005.0	19.4	10.5	-97.22	286.4	1,136.1	851.7	821.9	29.75	28.624	
6,200.0	6,122.0	6,105.0	6,105.0	19.5	10.7	24.66	286.4	1,136.1	851.9	826.1	25.75	33.078	
6,300.0	6,222.0	6,205.0	6,205.0	19.6	10.8	24.66	286.4	1,136.1	851.9	825.8	26.05	32.697	
6,400.0	6,322.0	6,305.0	6,305.0	19.7	11.0	24.66	286.4	1,136.1	851.9	825.5	26.35	32.325	
6,500.0	6,422.0	6,405.0	6,405.0	19.8	11.2	24.66	286.4	1,136.1	851.9	825.2	26.66	31.959	
6,600.0	6,522.0	6,505.0	6,505.0	19.9	11.4	24.66	286.4	1,136.1	851.9	824.9	26.96	31.601	
6,700.0	6,622.0	6,605.0	6,605.0	20.0	11.5	24.66	286.4	1,136.1	851.9	824.6	27.26	31.249	
6,778.0	6,700.0	6,683.0	6,683.0	20.1	11.7	24.66	286.4	1,136.1	851.9	824.4	27.50	30.980	
6,800.0	6,722.0	6,705.0	6,705.0	20.1	11.7	-98.87	286.4	1,136.1	852.0	820.3	31.68	26.892	
6,850.0	6,771.8	6,754.8	6,754.8	20.2	11.8	-99.07	286.4	1,136.1	852.6	820.7	31.90	26.728	
6,900.0	6,821.1	6,804.1	6,804.1	20.4	11.9	-99.49	286.4	1,136.1	854.0	821.8	32.17	26.547	
6,950.0	6,869.4	6,852.4	6,852.4	20.7	12.0	-100.08	286.4	1,136.1	856.2	823.7	32.49	26.357	
6,962.0	6,880.9	6,863.9	6,863.9	20.8	12.0	-100.24	286.4	1,136.1	856.9	824.3	32.56	26.315	
7,000.0	6,917.1	6,900.1	6,900.1	21.0	12.0	-90.27	286.4	1,136.1	858.0	825.3	32.79	26.167	
7,050.0	6,965.2	6,948.2	6,948.2	21.2	12.1	-74.14	286.4	1,136.1	856.2	823.3	32.94	25.994	
7,100.0	7,013.3	6,996.3	6,996.3	21.4	12.2	-56.98	286.4	1,136.1	850.4	817.5	32.91	25.844	
7,150.0	7,061.2	7,044.2	7,044.2	21.5	12.3	-41.91	286.4	1,136.1	840.8	808.1	32.70	25.715	
7,200.0	7,108.4	7,091.4	7,091.4	21.7	12.4	-30.24	286.4	1,136.1	827.3	795.0	32.31	25.607	
7,250.0	7,154.7	7,137.7	7,137.7	21.8	12.5	-21.59	286.4	1,136.1	809.9	778.2	31.74	25.518	
7,300.0	7,199.5	7,182.5	7,182.5	21.8	12.5	-15.08	286.4	1,136.1	788.8	757.8	31.00	25.446	
7,350.0	7,242.7	7,225.7	7,225.7	21.9	12.6	-9.93	286.4	1,136.1	764.1	734.0	30.10	25.386	
7,400.0	7,283.9	7,266.9	7,266.9	21.9	12.7	-5.58	286.4	1,136.1	735.9	706.8	29.05	25.332	
7,450.0	7,322.7	7,305.7	7,305.7	21.9	12.8	-1.61	286.4	1,136.1	704.5	676.6	27.88	25.271	
7,500.0	7,358.9	7,341.9	7,341.9	21.9	12.8	2.33	286.4	1,136.1	670.0	643.4	26.61	25.180	
7,550.0	7,392.2	7,375.2	7,375.2	21.9	12.9	6.59	286.4	1,136.1	632.8	607.5	25.30	25.012	
7,600.0	7,422.3	7,405.3	7,405.3	22.0	12.9	11.58	286.4	1,136.1	593.0	569.0	24.04	24.670	
7,650.0	7,449.1	7,432.1	7,432.1	22.0	13.0	17.81	286.4	1,136.1	551.2	528.2	23.00	23.970	
7,700.0	7,472.2	7,455.2	7,455.2	22.0	13.0	25.91	286.4	1,136.1	507.6	485.2	22.45	22.615	
7,750.0	7,491.6	7,474.6	7,474.6	22.0	13.0	36.55	286.4	1,136.1	462.8	440.0	22.75	20.345	
7,800.0	7,507.0	7,490.0	7,490.0	22.0	13.1	49.85	286.4	1,136.1	417.1	393.1	24.00	17.379	
7,850.0	7,518.5	7,501.5	7,501.5	22.1	13.1	64.53	286.4	1,136.1	371.2	345.6	25.61	14.498	
7,900.0	7,525.8	7,508.8	7,508.8	22.2	13.1	78.00	286.4	1,136.1	326.0	299.3	26.66	12.225	
7,950.0	7,528.9	7,511.9	7,511.9	22.3	13.1	88.14	286.4	1,136.1	282.3	255.4	26.98	10.465	
7,962.1	7,529.0	7,512.0	7,512.0	22.3	13.1	90.00	286.4	1,136.1	272.2	245.2	26.99	10.086	
8,000.0	7,529.0	7,512.0	7,512.0	22.4	13.1	90.00	286.4	1,136.1	241.6	214.4	27.14	8.901	
8,100.0	7,529.0	7,512.0	7,512.0	22.7	13.1	90.00	286.4	1,136.1	175.1	147.4	27.68	6.326	
8,188.5	7,529.0	7,512.0	7,512.0	23.1	13.1	90.00	286.4	1,136.1	151.1	122.8	28.32	5.336 CC, ES	
8,200.0	7,529.0	7,512.0	7,512.0	23.2	13.1	90.00	286.4	1,136.1	151.5	123.1	28.40	5.335 SF	
8,300.0	7,529.0	7,512.0	7,512.0	23.8	13.1	90.00	286.4	1,136.1	187.8	158.5	29.28	6.413	
8,400.0	7,529.0	7,512.0	7,512.0	24.4	13.1	90.00	286.4	1,136.1	259.9	229.6	30.30	8.580	
8,500.0	7,529.0	7,512.0	7,512.0	25.2	13.1	90.00	286.4	1,136.1	346.2	314.8	31.42	11.018	
8,600.0	7,529.0	7,512.0	7,512.0	26.1	13.1	90.00	286.4	1,136.1	438.4	405.7	32.64	13.429	

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 3H-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 3H-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 #2	Offset TVD Reference:	Offset Datum

Offset Design S9-T2N-R67W (Sprague) - ECKSTINE V 9-15 (EXISTING) - NOBLE WELL - NO SURVEYS													Offset Site Error: 0.0 ft
Survey Program: 7775-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	
8,700.0	7,529.0	7,512.0	7,512.0	27.1	13.1	90.00	286.4	1,136.1	533.4	499.4	33.94	15.715	
8,800.0	7,529.0	7,512.0	7,512.0	28.2	13.1	90.00	286.4	1,136.1	629.9	594.6	35.30	17.845	
8,822.1	7,529.0	7,512.0	7,512.0	28.4	13.1	90.00	286.4	1,136.1	651.4	615.8	35.61	18.293	
8,880.8	7,529.0	7,512.0	7,512.0	29.1	13.1	90.00	286.4	1,136.1	708.7	672.5	36.17	19.595	
8,900.0	7,529.0	7,512.0	7,512.0	29.3	13.1	90.00	286.4	1,136.1	727.6	691.1	36.44	19.966	
9,000.0	7,529.0	7,512.0	7,512.0	30.4	13.1	90.00	286.4	1,136.1	826.0	788.1	37.89	21.801	
9,100.0	7,529.0	7,512.0	7,512.0	31.6	13.1	90.00	286.4	1,136.1	924.7	885.4	39.37	23.488	
9,200.0	7,529.0	7,512.0	7,512.0	32.9	13.1	90.00	286.4	1,136.1	1,023.7	982.9	40.88	25.039	
9,300.0	7,529.0	7,512.0	7,512.0	34.2	13.1	90.00	286.4	1,136.1	1,122.9	1,080.5	42.43	26.467	
9,400.0	7,529.0	7,512.0	7,512.0	35.6	13.1	90.00	286.4	1,136.1	1,222.2	1,178.2	43.99	27.783	
9,500.0	7,529.0	7,512.0	7,512.0	36.9	13.1	90.00	286.4	1,136.1	1,321.6	1,276.1	45.57	28.999	
9,600.0	7,529.0	7,512.0	7,512.0	38.4	13.1	90.00	286.4	1,136.1	1,421.1	1,374.0	47.18	30.124	
9,700.0	7,529.0	7,512.0	7,512.0	39.8	13.1	90.00	286.4	1,136.1	1,520.7	1,471.9	48.79	31.168	



Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Sprague 3H-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 3H-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 #2	Offset TVD Reference:	Offset Datum

Offset Design S9-T2N-R67W (Sprague) - LUHMAN 1 (EXISTING) - ENCANA WELL - Existing													Offset Site Error: 0.0 ft
Survey Program: 0-MWD													Offset Well Error: 0.0 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	
12,400.0	7,529.0	7,439.0	7,439.0	83.4	13.0	90.00	5,716.1	1,869.2	1,549.6	1,455.1	94.48	16.402	
12,500.0	7,529.0	7,439.0	7,439.0	85.1	13.0	90.00	5,716.1	1,869.2	1,473.6	1,377.4	96.21	15.317	
12,600.0	7,529.0	7,439.0	7,439.0	86.8	13.0	90.00	5,716.1	1,869.2	1,400.6	1,302.7	97.94	14.301	
12,700.0	7,529.0	7,439.0	7,439.0	88.5	13.0	90.00	5,716.1	1,869.2	1,331.1	1,231.5	99.67	13.355	
12,800.0	7,529.0	7,439.0	7,439.0	90.2	13.0	90.00	5,716.1	1,869.2	1,265.7	1,164.3	101.40	12.482	
12,900.0	7,529.0	7,439.0	7,439.0	91.9	13.0	90.00	5,716.1	1,869.2	1,205.1	1,102.0	103.14	11.684	
13,003.0	7,529.0	7,439.0	7,439.0	93.6	13.0	90.00	5,716.1	1,869.2	1,148.4	1,043.5	104.92	10.945 CC, ES, SF	



Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Sprague 3H-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 3H-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 #2	Offset TVD Reference:	Offset Datum

Offset Design S9-T2N-R67W (Sprague) - SHELEY 24-4 (EXISTING) - ENCANA WELL - NO SURVEYS													Offset Site Error: 0.0 ft
Survey Program: 0-MWD													Offset Well Error: 0.0 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	
11,700.0	7,529.0	7,436.0	7,436.0	71.6	13.0	-90.00	5,256.6	423.4	1,543.6	1,461.2	82.39	18.735	
11,800.0	7,529.0	7,436.0	7,436.0	73.3	13.0	-90.00	5,256.6	423.4	1,448.8	1,364.7	84.11	17.224	
11,900.0	7,529.0	7,436.0	7,436.0	75.0	13.0	-90.00	5,256.6	423.4	1,354.7	1,268.8	85.84	15.782	
12,000.0	7,529.0	7,436.0	7,436.0	76.6	13.0	-90.00	5,256.6	423.4	1,261.4	1,173.9	87.56	14.406	
12,100.0	7,529.0	7,436.0	7,436.0	78.3	13.0	-90.00	5,256.6	423.4	1,169.4	1,080.1	89.29	13.096	
12,200.0	7,529.0	7,436.0	7,436.0	80.0	13.0	-90.00	5,256.6	423.4	1,078.7	987.7	91.01	11.852	
12,300.0	7,529.0	7,436.0	7,436.0	81.7	13.0	-90.00	5,256.6	423.4	989.8	897.0	92.74	10.672	
12,400.0	7,529.0	7,436.0	7,436.0	83.4	13.0	-90.00	5,256.6	423.4	903.2	808.7	94.47	9.561	
12,500.0	7,529.0	7,436.0	7,436.0	85.1	13.0	-90.00	5,256.6	423.4	819.7	723.5	96.20	8.521	
12,600.0	7,529.0	7,436.0	7,436.0	86.8	13.0	-90.00	5,256.6	423.4	740.3	642.4	97.93	7.559	
12,700.0	7,529.0	7,436.0	7,436.0	88.5	13.0	-90.00	5,256.6	423.4	666.5	566.8	99.67	6.687	
12,800.0	7,529.0	7,436.0	7,436.0	90.2	13.0	-90.00	5,256.6	423.4	600.3	498.9	101.40	5.920	
12,900.0	7,529.0	7,436.0	7,436.0	91.9	13.0	-90.00	5,256.6	423.4	544.5	441.4	103.13	5.280	
13,003.0	7,529.0	7,436.0	7,436.0	93.6	13.0	-90.00	5,256.6	423.4	501.6	396.7	104.92	4.781 CC, ES, SF	



Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Sprague 3H-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 3H-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 #2	Offset TVD Reference:	Offset Datum

Offset Design S9-T2N-R67W (Sprague) - SHELEY 3A-4H (EXISTING) - ENCANA WELL - Plan #1													Offset Site Error: 0.0 ft
Survey Program: 0-MWD													Offset Well Error: 0.0 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	
11,900.0	7,529.0	9,797.9	7,232.0	75.0	54.3	21.20	5,473.9	974.2	1,492.5	1,446.1	46.39	32.176	
12,000.0	7,529.0	9,792.3	7,232.0	76.6	54.1	19.89	5,474.1	968.6	1,393.7	1,348.1	45.66	30.522	
12,100.0	7,529.0	9,786.8	7,232.0	78.3	54.0	18.55	5,474.3	963.1	1,295.1	1,250.3	44.87	28.867	
12,200.0	7,529.0	9,781.2	7,232.0	80.0	53.9	17.19	5,474.5	957.6	1,196.7	1,152.7	44.00	27.197	
12,300.0	7,529.0	9,775.7	7,232.0	81.7	53.7	15.80	5,474.7	952.0	1,098.6	1,055.5	43.08	25.502	
12,400.0	7,529.0	9,770.2	7,232.0	83.4	53.6	14.40	5,474.9	946.5	1,000.8	958.7	42.11	23.768	
12,500.0	7,529.0	9,764.6	7,232.0	85.1	53.5	12.99	5,475.1	941.0	903.4	862.3	41.10	21.981	
12,600.0	7,529.0	9,759.1	7,232.0	86.8	53.3	11.55	5,475.3	935.4	806.7	766.6	40.08	20.127	
12,700.0	7,529.0	9,753.5	7,232.0	88.5	53.2	10.10	5,475.5	929.9	710.8	671.7	39.06	18.197	
12,800.0	7,529.0	9,748.0	7,232.0	90.2	53.1	8.64	5,475.6	924.3	616.2	578.1	38.08	16.182	
12,900.0	7,529.0	9,742.5	7,232.0	91.9	52.9	7.17	5,475.8	918.8	523.5	486.3	37.16	14.088	
13,003.0	7,529.0	9,736.8	7,232.0	93.6	52.8	5.64	5,476.0	913.1	431.4	395.0	36.32	11.877 CC, ES, SF	



Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Sprague 3H-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 3H-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 #2	Offset TVD Reference:	Offset Datum

Offset Design S9-T2N-R67W (Sprague) - SHELEY 3A-4H (EXISTING) - ENCANA WELL - Plan #2													Offset Site Error: 0.0 ft
Survey Program: 0-MWD													Offset Well Error: 0.0 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	
11,900.0	7,529.0	9,757.3	7,232.0	75.0	55.3	21.20	5,473.9	974.2	1,492.5	1,446.2	46.30	32.237	
12,000.0	7,529.0	9,751.7	7,232.0	76.6	55.1	19.89	5,474.1	968.6	1,393.7	1,348.2	45.57	30.582	
12,100.0	7,529.0	9,746.2	7,232.0	78.3	55.0	18.55	5,474.3	963.1	1,295.1	1,250.4	44.78	28.925	
12,200.0	7,529.0	9,740.7	7,232.0	80.0	54.9	17.19	5,474.5	957.6	1,196.7	1,152.8	43.91	27.254	
12,300.0	7,529.0	9,735.1	7,232.0	81.7	54.7	15.80	5,474.7	952.0	1,098.6	1,055.6	42.99	25.557	
12,400.0	7,529.0	9,729.6	7,232.0	83.4	54.6	14.40	5,474.9	946.5	1,000.8	958.8	42.01	23.820	
12,500.0	7,529.0	9,724.0	7,232.0	85.1	54.5	12.99	5,475.1	941.0	903.4	862.4	41.01	22.031	
12,600.0	7,529.0	9,718.5	7,232.0	86.8	54.3	11.55	5,475.3	935.4	806.7	766.7	39.98	20.175	
12,700.0	7,529.0	9,713.0	7,232.0	88.5	54.2	10.10	5,475.5	929.9	710.8	671.8	38.97	18.241	
12,800.0	7,529.0	9,707.4	7,232.0	90.2	54.1	8.64	5,475.6	924.3	616.2	578.2	37.98	16.223	
12,900.0	7,529.0	9,701.9	7,232.0	91.9	53.9	7.17	5,475.8	918.8	523.5	486.4	37.06	14.124	
13,003.0	7,529.0	9,696.2	7,232.0	93.6	53.8	5.64	5,476.0	913.1	431.4	395.1	36.22	11.909 CC, ES, SF	



Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Sprague 3H-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 3H-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 #2	Offset TVD Reference:	Offset Datum

Offset Design S9-T2N-R67W (Sprague) - SHELEY 3A-4H (EXISTING) - ENCANA WELL - Plan #3													Offset Site Error: 0.0 ft
Survey Program: 0-MWD													Offset Well Error: 0.0 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	
11,900.0	7,529.0	9,671.4	7,232.0	75.0	55.3	21.25	5,474.1	974.4	1,492.8	1,446.6	46.17	32.332	
12,000.0	7,529.0	9,665.9	7,232.0	76.6	55.2	19.93	5,474.3	968.8	1,394.0	1,348.6	45.44	30.676	
12,100.0	7,529.0	9,660.3	7,232.0	78.3	55.1	18.59	5,474.5	963.3	1,295.4	1,250.7	44.64	29.018	
12,200.0	7,529.0	9,654.8	7,232.0	80.0	54.9	17.22	5,474.7	957.7	1,197.0	1,153.2	43.77	27.346	
12,300.0	7,529.0	9,649.2	7,232.0	81.7	54.8	15.84	5,474.9	952.2	1,098.8	1,056.0	42.84	25.648	
12,400.0	7,529.0	9,643.7	7,232.0	83.4	54.7	14.44	5,475.1	946.6	1,001.0	959.2	41.87	23.911	
12,500.0	7,529.0	9,638.1	7,232.0	85.1	54.5	13.02	5,475.3	941.1	903.7	862.8	40.85	22.120	
12,600.0	7,529.0	9,632.5	7,232.0	86.8	54.4	11.58	5,475.5	935.5	806.9	767.1	39.83	20.261	
12,700.0	7,529.0	9,627.0	7,232.0	88.5	54.3	10.13	5,475.7	930.0	711.0	672.2	38.80	18.325	
12,800.0	7,529.0	9,621.4	7,232.0	90.2	54.1	8.66	5,475.9	924.4	616.4	578.6	37.81	16.302	
12,900.0	7,529.0	9,615.9	7,232.0	91.9	54.0	7.19	5,476.1	918.9	523.7	486.8	36.89	14.198	
13,003.0	7,529.0	9,610.2	7,232.0	93.6	53.9	5.66	5,476.3	913.2	431.6	395.6	36.04	11.975 CC, ES, SF	



Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Sprague 3H-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 3H-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 #2	Offset TVD Reference:	Offset Datum

Offset Design S9-T2N-R67W (Sprague) - SHELEY 3A-4H (EXISTING) - ENCANA WELL - Plan #4													Offset Site Error: 0.0 ft
Survey Program: 0-MWD													Offset Well Error: 0.0 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	
11,900.0	7,529.0	9,667.5	7,248.9	75.0	55.4	23.53	5,489.4	976.5	1,505.7	1,457.2	48.44	31.082	
12,000.0	7,529.0	9,661.9	7,248.9	76.6	55.2	22.13	5,489.6	970.9	1,406.7	1,359.1	47.67	29.509	
12,100.0	7,529.0	9,656.4	7,248.8	78.3	55.1	20.70	5,489.8	965.4	1,307.9	1,261.1	46.81	27.940	
12,200.0	7,529.0	9,650.8	7,248.8	80.0	55.0	19.25	5,490.0	959.8	1,209.3	1,163.4	45.87	26.365	
12,300.0	7,529.0	9,645.2	7,248.8	81.7	54.8	17.77	5,490.2	954.2	1,110.9	1,066.0	44.84	24.772	
12,400.0	7,529.0	9,639.7	7,248.7	83.4	54.7	16.27	5,490.4	948.7	1,012.7	969.0	43.75	23.147	
12,500.0	7,529.0	9,634.1	7,248.7	85.1	54.6	14.74	5,490.6	943.1	914.9	872.3	42.60	21.475	
12,600.0	7,529.0	9,628.5	7,248.6	86.8	54.4	13.20	5,490.8	937.5	817.6	776.2	41.42	19.740	
12,700.0	7,529.0	9,622.9	7,248.6	88.5	54.3	11.63	5,491.0	932.0	721.1	680.8	40.22	17.926	
12,800.0	7,529.0	9,617.4	7,248.6	90.2	54.2	10.05	5,491.2	926.4	625.5	586.5	39.04	16.022	
12,900.0	7,529.0	9,611.8	7,248.5	91.9	54.0	8.45	5,491.4	920.8	531.5	493.6	37.90	14.023	
13,003.0	7,529.0	9,606.1	7,248.5	93.6	53.9	6.79	5,491.6	915.1	437.5	400.6	36.83	11.877 CC, ES, SF	



Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Sprague 3H-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 3H-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 #2	Offset TVD Reference:	Offset Datum

Offset Design S9-T2N-R67W (Sprague) - SHELEY 3A-4H (EXISTING) - ENCANA WELL - proto													Offset Site Error: 0.0 ft
Survey Program: 162-MWD, 11557-													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	
11,900.0	7,529.0	9,621.0	7,248.1	75.0	54.8	20.12	5,482.6	963.5	1,498.7	1,453.7	44.93	33.356	
12,000.0	7,529.0	9,616.7	7,248.0	76.6	54.7	18.99	5,482.8	959.2	1,399.7	1,355.3	44.38	31.539	
12,100.0	7,529.0	9,612.4	7,247.9	78.3	54.6	17.84	5,482.9	954.9	1,300.9	1,257.1	43.77	29.721	
12,200.0	7,529.0	9,608.1	7,247.8	80.0	54.5	16.67	5,483.0	950.6	1,202.2	1,159.1	43.10	27.894	
12,300.0	7,529.0	9,603.7	7,247.8	81.7	54.4	15.49	5,483.1	946.2	1,103.8	1,061.4	42.38	26.046	
12,400.0	7,529.0	9,599.3	7,247.7	83.4	54.2	14.29	5,483.2	941.9	1,005.6	964.0	41.61	24.168	
12,500.0	7,529.0	9,595.0	7,247.6	85.1	54.1	13.07	5,483.3	937.5	907.9	867.1	40.81	22.248	
12,600.0	7,529.0	9,590.6	7,247.5	86.8	54.0	11.84	5,483.4	933.1	810.6	770.6	39.98	20.277	
12,700.0	7,529.0	9,586.2	7,247.4	88.5	53.9	10.59	5,483.5	928.7	714.1	675.0	39.14	18.246	
12,800.0	7,529.0	9,581.7	7,247.2	90.2	53.8	9.33	5,483.6	924.3	618.7	580.4	38.31	16.151	
12,900.0	7,529.0	9,577.3	7,247.1	91.9	53.7	8.06	5,483.8	919.8	524.9	487.4	37.50	13.998	
13,003.0	7,529.0	9,572.7	7,247.0	93.6	53.6	6.74	5,483.9	915.3	431.3	394.5	36.73	11.743 CC, ES, SF	



Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Sprague 3H-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 3H-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 #2	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						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	
11,900.0	7,529.0	9,621.0	7,248.1	75.0	54.8	20.12	5,482.6	963.5	1,498.7	1,453.7	44.93	33.356	
12,000.0	7,529.0	9,616.7	7,248.0	76.6	54.7	18.99	5,482.8	959.2	1,399.7	1,355.3	44.38	31.539	
12,100.0	7,529.0	9,612.4	7,247.9	78.3	54.6	17.84	5,482.9	954.9	1,300.9	1,257.1	43.77	29.721	
12,200.0	7,529.0	9,608.1	7,247.8	80.0	54.5	16.67	5,483.0	950.6	1,202.2	1,159.1	43.10	27.894	
12,300.0	7,529.0	9,603.7	7,247.8	81.7	54.4	15.49	5,483.1	946.2	1,103.8	1,061.4	42.38	26.046	
12,400.0	7,529.0	9,599.3	7,247.7	83.4	54.2	14.29	5,483.2	941.9	1,005.6	964.0	41.61	24.168	
12,500.0	7,529.0	9,595.0	7,247.6	85.1	54.1	13.07	5,483.3	937.5	907.9	867.1	40.81	22.248	
12,600.0	7,529.0	9,590.6	7,247.5	86.8	54.0	11.84	5,483.4	933.1	810.6	770.6	39.98	20.277	
12,700.0	7,529.0	9,586.2	7,247.4	88.5	53.9	10.59	5,483.5	928.7	714.1	675.0	39.14	18.246	
12,800.0	7,529.0	9,581.7	7,247.2	90.2	53.8	9.33	5,483.6	924.3	618.7	580.4	38.31	16.151	
12,900.0	7,529.0	9,577.3	7,247.1	91.9	53.7	8.06	5,483.8	919.8	524.9	487.4	37.50	13.998	
13,003.0	7,529.0	9,572.7	7,247.0	93.6	53.6	6.74	5,483.9	915.3	431.3	394.5	36.73	11.743 CC, ES, SF	



Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Sprague 3H-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 3H-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 #2	Offset TVD Reference:	Offset Datum

Offset Design S9-T2N-R67W (Sprague) - SHELEY 3B-4H (EXISTING) - ENCANA WELL - Plan #1													Offset Site Error: 0.0 ft
Survey Program: 0-MWD													Offset Well Error: 0.0 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre +N/-S	+E/-W	Between Centres	Between Ellipses	Total Uncertainty Axis	Separation Factor	
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	(ft)	(ft)	(ft)	(ft)			
12,900.0	7,529.0	9,990.7	7,212.0	91.9	57.8	41.95	6,446.3	1,080.1	1,478.3	1,396.1	82.13	17.999	
13,003.0	7,529.0	9,976.1	7,212.0	93.6	57.4	39.90	6,448.1	1,065.5	1,377.7	1,297.0	80.69	17.073 CC, ES, SF	



Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Sprague 3H-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 3H-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 #2	Offset TVD Reference:	Offset Datum

Offset Design S9-T2N-R67W (Sprague) - SHELEY 3B-4H (EXISTING) - ENCANA WELL - Plan #2													Offset Site Error: 0.0 ft
Survey Program: 0-MWD													Offset Well Error: 0.0 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	
12,900.0	7,529.0	9,990.7	7,212.0	91.9	57.8	41.95	6,446.3	1,080.1	1,478.3	1,396.1	82.13	17.999	
13,003.0	7,529.0	9,976.1	7,212.0	93.6	57.4	39.90	6,448.1	1,065.5	1,377.7	1,297.0	80.69	17.073 CC, ES, SF	



Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Sprague 3H-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 3H-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 #2	Offset TVD Reference:	Offset Datum

Offset Design S9-T2N-R67W (Sprague) - SHELEY 3B-4H (EXISTING) - ENCANA WELL - Plan #3													Offset Site Error: 0.0 ft
Survey Program: 0-MWD													Offset Well Error: 0.0 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	
12,900.0	7,529.0	9,803.8	7,242.1	91.9	57.2	45.95	6,446.3	1,080.1	1,473.9	1,387.1	86.73	16.994	
13,003.0	7,529.0	9,789.1	7,242.1	93.6	56.9	43.88	6,448.1	1,065.5	1,372.9	1,287.5	85.48	16.061 CC, ES, SF	



Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Sprague 3H-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 3H-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 #2	Offset TVD Reference:	Offset Datum

Offset Design S9-T2N-R67W (Sprague) - SHELEY 3B-4H (EXISTING) - ENCANA WELL - Plan #4													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance							
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning	
12,900.0	7,529.0	9,885.5	7,242.6	91.9	58.3	46.01	6,445.8	1,080.0	1,473.3	1,386.5	86.83	16.968		
13,003.0	7,529.0	9,870.8	7,242.6	93.6	57.9	43.94	6,447.6	1,065.5	1,372.4	1,286.8	85.60	16.033	CC, ES, SF	



Cathedral Energy Services
Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Sprague 3H-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 3H-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 #2	Offset TVD Reference:	Offset Datum

Offset Design S9-T2N-R67W (Sprague) - SHELEY 3B-4H (EXISTING) - ENCANA WELL - SURVEYS													Offset Site Error: 0.0 ft
Survey Program: 140-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
12,900.0	7,529.0	9,746.1	7,238.5	91.9	56.8	44.04	6,443.0	1,070.2	1,470.0	1,385.7	84.24	17.449	
13,003.0	7,529.0	9,735.0	7,238.4	93.6	56.6	42.39	6,444.3	1,059.2	1,369.0	1,285.6	83.43	16.408 CC, ES, SF	



Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Sprague 3H-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 3H-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 #2	Offset TVD Reference:	Offset Datum

Offset Design S9-T2N-R67W (Sprague) - SHELEY 4-6-4 (EXISTING) - ENCANA WELL - Plan #1													Offset Site Error: 0.0 ft
Survey Program: 0-MWD													Offset Well Error: 0.0 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	
12,500.0	7,529.0	7,541.8	7,450.0	85.1	21.4	90.00	6,082.6	925.6	1,485.5	1,383.0	102.49	14.494	
12,600.0	7,529.0	7,541.8	7,450.0	86.8	21.4	90.00	6,082.6	925.6	1,385.6	1,281.3	104.22	13.294	
12,700.0	7,529.0	7,541.8	7,450.0	88.5	21.4	90.00	6,082.6	925.6	1,285.6	1,179.7	105.95	12.134	
12,800.0	7,529.0	7,541.8	7,450.0	90.2	21.4	90.00	6,082.6	925.6	1,185.7	1,078.0	107.69	11.011	
12,900.0	7,529.0	7,541.8	7,450.0	91.9	21.4	90.00	6,082.6	925.6	1,085.8	976.3	109.42	9.923	
13,003.0	7,529.0	7,541.8	7,450.0	93.6	21.4	90.00	6,082.6	925.6	982.9	871.7	111.21	8.838 CC, ES, SF	



Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Sprague 3H-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 3H-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 #2	Offset TVD Reference:	Offset Datum

Offset Design S9-T2N-R67W (Sprague) - SHELEY 4-6-4 (EXISTING) - ENCANA WELL - Plan #2													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor		
12,500.0	7,529.0	7,555.3	7,450.0	85.1	21.5	90.00	6,082.6	925.6	1,485.5	1,383.0	102.52	14.490		
12,600.0	7,529.0	7,555.3	7,450.0	86.8	21.5	90.00	6,082.6	925.6	1,385.6	1,281.3	104.25	13.290		
12,700.0	7,529.0	7,555.3	7,450.0	88.5	21.5	90.00	6,082.6	925.6	1,285.6	1,179.6	105.98	12.130		
12,800.0	7,529.0	7,555.3	7,450.0	90.2	21.5	90.00	6,082.6	925.6	1,185.7	1,078.0	107.72	11.007		
12,900.0	7,529.0	7,555.3	7,450.0	91.9	21.5	90.00	6,082.6	925.6	1,085.8	976.3	109.45	9.920		
13,003.0	7,529.0	7,555.3	7,450.0	93.6	21.5	90.00	6,082.6	925.6	982.9	871.7	111.24	8.836 CC, ES, SF		



Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Sprague 3H-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 3H-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 #2	Offset TVD Reference:	Offset Datum

Offset Design S9-T2N-R67W (Sprague) - SHELEY 4-6-4 (EXISTING) - ENCANA WELL - SURVEYS													Offset Site Error:	0.0 ft
Survey Program: 683-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		
12,500.0	7,529.0	7,554.6	7,436.5	85.1	21.3	74.64	6,077.6	929.2	1,480.6	1,381.5	99.17	14.931		
12,600.0	7,529.0	7,555.7	7,437.5	86.8	21.3	75.76	6,077.6	929.2	1,380.7	1,279.4	101.30	13.630		
12,700.0	7,529.0	7,556.7	7,438.5	88.5	21.3	76.88	6,077.6	929.1	1,280.8	1,177.4	103.42	12.384		
12,800.0	7,529.0	7,557.7	7,439.6	90.2	21.3	78.00	6,077.6	929.1	1,180.9	1,075.3	105.52	11.191		
12,900.0	7,529.0	7,558.7	7,440.6	91.9	21.3	79.12	6,077.6	929.1	1,081.0	973.4	107.60	10.046		
13,003.0	7,529.0	7,559.8	7,441.6	93.6	21.3	80.28	6,077.6	929.1	978.1	868.4	109.72	8.915 CC, ES, SF		



Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Sprague 3H-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 3H-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 #2	Offset TVD Reference:	Offset Datum

Offset Design		S9-T2N-R67W (Sprague) - SPRAGUE 1 (EXISTING) - ENCANA WELL - NO SURVEYS											Offset Site Error: 0.0 ft	
Survey Program: 8075-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		
10,400.0	7,529.0	7,460.0	7,460.0	50.4	13.0	90.00	3,699.0	1,865.4	1,508.5	1,448.2	60.28	25.023		
10,500.0	7,529.0	7,460.0	7,460.0	52.0	13.0	90.00	3,699.0	1,865.4	1,431.4	1,369.5	61.97	23.100		
10,600.0	7,529.0	7,460.0	7,460.0	53.6	13.0	90.00	3,699.0	1,865.4	1,357.4	1,293.7	63.65	21.325		
10,700.0	7,529.0	7,460.0	7,460.0	55.2	13.0	90.00	3,699.0	1,865.4	1,286.9	1,221.5	65.35	19.693		
10,800.0	7,529.0	7,460.0	7,460.0	56.8	13.0	90.00	3,699.0	1,865.4	1,220.5	1,153.4	67.04	18.204		
10,900.0	7,529.0	7,460.0	7,460.0	58.4	13.0	90.00	3,699.0	1,865.4	1,158.9	1,090.1	68.74	16.859		
11,000.0	7,529.0	7,460.0	7,460.0	60.1	13.0	90.00	3,699.0	1,865.4	1,102.9	1,032.5	70.44	15.657		
11,100.0	7,529.0	7,460.0	7,460.0	61.7	13.0	90.00	3,699.0	1,865.4	1,053.6	981.4	72.15	14.602		
11,200.0	7,529.0	7,460.0	7,460.0	63.3	13.0	90.00	3,699.0	1,865.4	1,011.7	937.8	73.86	13.698		
11,300.0	7,529.0	7,460.0	7,460.0	65.0	13.0	90.00	3,699.0	1,865.4	978.3	902.7	75.57	12.945		
11,400.0	7,529.0	7,460.0	7,460.0	66.6	13.0	90.00	3,699.0	1,865.4	954.2	876.9	77.28	12.347		
11,500.0	7,529.0	7,460.0	7,460.0	68.3	13.0	90.00	3,699.0	1,865.4	940.2	861.2	79.00	11.902		
11,582.5	7,529.0	7,460.0	7,460.0	69.7	13.0	90.00	3,699.0	1,865.4	936.6	856.2	80.42	11.647 CC		
11,600.0	7,529.0	7,460.0	7,460.0	70.0	13.0	90.00	3,699.0	1,865.4	936.7	856.0	80.72	11.605 ES		
11,700.0	7,529.0	7,460.0	7,460.0	71.6	13.0	90.00	3,699.0	1,865.4	943.9	861.5	82.44	11.450		
11,800.0	7,529.0	7,460.0	7,460.0	73.3	13.0	90.00	3,699.0	1,865.4	961.5	877.3	84.16	11.425 SF		
11,900.0	7,529.0	7,460.0	7,460.0	75.0	13.0	90.00	3,699.0	1,865.4	988.9	903.0	85.88	11.515		
12,000.0	7,529.0	7,460.0	7,460.0	76.6	13.0	90.00	3,699.0	1,865.4	1,025.4	937.8	87.60	11.705		
12,100.0	7,529.0	7,460.0	7,460.0	78.3	13.0	90.00	3,699.0	1,865.4	1,070.0	980.7	89.33	11.979		
12,200.0	7,529.0	7,460.0	7,460.0	80.0	13.0	90.00	3,699.0	1,865.4	1,121.8	1,030.8	91.06	12.320		
12,300.0	7,529.0	7,460.0	7,460.0	81.7	13.0	90.00	3,699.0	1,865.4	1,179.8	1,087.0	92.78	12.716		
12,400.0	7,529.0	7,460.0	7,460.0	83.4	13.0	90.00	3,699.0	1,865.4	1,243.2	1,148.7	94.51	13.153		
12,500.0	7,529.0	7,460.0	7,460.0	85.1	13.0	90.00	3,699.0	1,865.4	1,311.1	1,214.8	96.24	13.623		
12,600.0	7,529.0	7,460.0	7,460.0	86.8	13.0	90.00	3,699.0	1,865.4	1,382.9	1,284.9	97.97	14.115		
12,700.0	7,529.0	7,460.0	7,460.0	88.5	13.0	90.00	3,699.0	1,865.4	1,458.1	1,358.4	99.71	14.623		
12,800.0	7,529.0	7,460.0	7,460.0	90.2	13.0	90.00	3,699.0	1,865.4	1,536.0	1,434.6	101.44	15.142		



Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Sprague 3H-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 3H-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 #2	Offset TVD Reference:	Offset Datum

Offset Design S9-T2N-R67W (Sprague) - SPRAGUE 1 (EXISTING) MACHII - MACHII-ROSS WELL - NO SURVEYS													Offset Site Error:	0.0 ft
Survey Program: 8036-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	-39.45	477.6	-393.0	619.7					
100.0	100.0	63.0	63.0	0.1	0.1	-39.45	477.6	-393.0	618.6	618.3	0.23	2,662.429		
200.0	200.0	163.0	163.0	0.3	0.3	-39.45	477.6	-393.0	618.6	618.0	0.58	1,063.923		
300.0	300.0	263.0	263.0	0.5	0.5	-39.45	477.6	-393.0	618.6	617.6	0.93	664.789		
400.0	400.0	363.0	363.0	0.6	0.6	-39.45	477.6	-393.0	618.6	617.3	1.28	483.429 CC, ES		
500.0	500.0	463.0	463.0	0.8	0.8	-161.49	477.6	-393.0	620.2	618.6	1.63	380.914		
600.0	599.8	562.8	562.8	1.0	1.0	-161.61	477.6	-393.0	625.2	623.2	1.98	316.299		
700.0	699.5	662.5	662.5	1.2	1.2	-161.81	477.6	-393.0	633.5	631.1	2.33	272.444		
800.0	798.7	761.7	761.7	1.5	1.3	-162.08	477.6	-393.0	645.0	642.4	2.67	241.197		
900.0	897.5	860.5	860.5	1.8	1.5	-162.40	477.6	-393.0	660.0	656.9	3.02	218.194		
1,000.0	995.9	958.9	958.9	2.1	1.7	-162.85	477.6	-393.0	676.6	673.2	3.38	199.960		
1,100.0	1,094.4	1,057.4	1,057.4	2.4	1.8	-163.27	477.6	-393.0	693.2	689.4	3.74	185.225		
1,200.0	1,192.9	1,155.9	1,155.9	2.7	2.0	-163.67	477.6	-393.0	709.9	705.8	4.10	173.089		
1,300.0	1,291.4	1,254.4	1,254.4	3.1	2.2	-164.06	477.6	-393.0	726.6	722.1	4.46	162.931		
1,400.0	1,389.9	1,352.9	1,352.9	3.4	2.4	-164.42	477.6	-393.0	743.3	738.5	4.82	154.311		
1,500.0	1,488.4	1,451.4	1,451.4	3.8	2.5	-164.77	477.6	-393.0	760.0	754.9	5.17	146.907		
1,600.0	1,586.8	1,549.8	1,549.8	4.1	2.7	-165.11	477.6	-393.0	776.8	771.3	5.53	140.482		
1,700.0	1,685.3	1,648.3	1,648.3	4.5	2.9	-165.43	477.6	-393.0	793.6	787.8	5.89	134.856		
1,800.0	1,783.8	1,746.8	1,746.8	4.8	3.0	-165.74	477.6	-393.0	810.5	804.2	6.24	129.888		
1,900.0	1,882.3	1,845.3	1,845.3	5.1	3.2	-166.04	477.6	-393.0	827.3	820.7	6.59	125.471		
2,000.0	1,980.8	1,943.8	1,943.8	5.5	3.4	-166.32	477.6	-393.0	844.2	837.3	6.95	121.519		
2,100.0	2,079.2	2,042.2	2,042.2	5.8	3.6	-166.59	477.6	-393.0	861.1	853.8	7.30	117.961		
2,200.0	2,177.7	2,140.7	2,140.7	6.2	3.7	-166.86	477.6	-393.0	878.0	870.4	7.65	114.743		
2,300.0	2,276.2	2,239.2	2,239.2	6.5	3.9	-167.11	477.6	-393.0	895.0	886.9	8.00	111.817		
2,400.0	2,374.7	2,337.7	2,337.7	6.9	4.1	-167.35	477.6	-393.0	911.9	903.5	8.35	109.146		
2,500.0	2,473.2	2,436.2	2,436.2	7.2	4.3	-167.59	477.6	-393.0	928.9	920.2	8.71	106.698		
2,600.0	2,571.6	2,534.6	2,534.6	7.6	4.4	-167.81	477.6	-393.0	945.8	936.8	9.06	104.447		
2,700.0	2,670.1	2,633.1	2,633.1	7.9	4.6	-168.03	477.6	-393.0	962.8	953.4	9.41	102.368		
2,800.0	2,768.6	2,731.6	2,731.6	8.3	4.8	-168.24	477.6	-393.0	979.8	970.1	9.76	100.445		
2,900.0	2,867.1	2,830.1	2,830.1	8.6	4.9	-168.44	477.6	-393.0	996.9	986.8	10.10	98.658		
3,000.0	2,965.6	2,928.6	2,928.6	9.0	5.1	-168.64	477.6	-393.0	1,013.9	1,003.4	10.45	96.996		
3,100.0	3,064.0	3,027.0	3,027.0	9.3	5.3	-168.83	477.6	-393.0	1,030.9	1,020.1	10.80	95.444		
3,200.0	3,162.5	3,125.5	3,125.5	9.7	5.5	-169.01	477.6	-393.0	1,048.0	1,036.8	11.15	93.993		
3,300.0	3,261.0	3,224.0	3,224.0	10.0	5.6	-169.19	477.6	-393.0	1,065.0	1,053.5	11.50	92.633		
3,400.0	3,359.5	3,322.5	3,322.5	10.4	5.8	-169.36	477.6	-393.0	1,082.1	1,070.3	11.85	91.355		
3,500.0	3,458.0	3,421.0	3,421.0	10.7	6.0	-169.53	477.6	-393.0	1,099.2	1,087.0	12.19	90.153		
3,600.0	3,556.4	3,519.4	3,519.4	11.1	6.1	-169.69	477.6	-393.0	1,116.3	1,103.7	12.54	89.019		
3,700.0	3,654.9	3,617.9	3,617.9	11.5	6.3	-169.85	477.6	-393.0	1,133.4	1,120.5	12.89	87.948		
3,800.0	3,753.4	3,716.4	3,716.4	11.8	6.5	-170.00	477.6	-393.0	1,150.5	1,137.2	13.23	86.936		
3,900.0	3,851.9	3,814.9	3,814.9	12.2	6.7	-170.15	477.6	-393.0	1,167.6	1,154.0	13.58	85.977		
4,000.0	3,950.4	3,913.4	3,913.4	12.5	6.8	-170.29	477.6	-393.0	1,184.7	1,170.8	13.93	85.067		
4,100.0	4,048.9	4,011.9	4,011.9	12.9	7.0	-170.43	477.6	-393.0	1,201.8	1,187.6	14.27	84.202		
4,200.0	4,147.3	4,110.3	4,110.3	13.2	7.2	-170.57	477.6	-393.0	1,219.0	1,204.4	14.62	83.380		
4,300.0	4,245.8	4,208.8	4,208.8	13.6	7.3	-170.70	477.6	-393.0	1,236.1	1,221.1	14.97	82.597		
4,400.0	4,344.3	4,307.3	4,307.3	13.9	7.5	-170.83	477.6	-393.0	1,253.3	1,237.9	15.31	81.851		
4,500.0	4,442.8	4,405.8	4,405.8	14.3	7.7	-170.95	477.6	-393.0	1,270.4	1,254.8	15.66	81.138		
4,600.0	4,541.3	4,504.3	4,504.3	14.6	7.9	-171.08	477.6	-393.0	1,287.6	1,271.6	16.00	80.457		
4,700.0	4,639.7	4,602.7	4,602.7	15.0	8.0	-171.19	477.6	-393.0	1,304.7	1,288.4	16.35	79.806		
4,800.0	4,738.2	4,701.2	4,701.2	15.3	8.2	-171.31	477.6	-393.0	1,321.9	1,305.2	16.69	79.182		
4,900.0	4,836.7	4,799.7	4,799.7	15.7	8.4	-171.42	477.6	-393.0	1,339.1	1,322.0	17.04	78.585		
5,000.0	4,935.2	4,898.2	4,898.2	16.0	8.5	-171.53	477.6	-393.0	1,356.3	1,338.9	17.39	78.011		
5,100.0	5,033.7	4,996.7	4,996.7	16.4	8.7	-171.64	477.6	-393.0	1,373.4	1,355.7	17.73	77.461		

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 3H-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 3H-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 #2	Offset TVD Reference:	Offset Datum

Offset Design S9-T2N-R67W (Sprague) - SPRAGUE 1 (EXISTING) MACHII - MACHII-ROSS WELL - NO SURVEYS												Offset Site Error:	0.0 ft
Survey Program: 8036-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		
5,200.0	5,132.1	5,095.1	5,095.1	16.7	8.9	-171.74	477.6	-393.0	1,390.6	1,372.5	18.08	76.932	
5,300.0	5,230.6	5,193.6	5,193.6	17.1	9.1	-171.84	477.6	-393.0	1,407.8	1,389.4	18.42	76.424	
5,400.0	5,329.1	5,292.1	5,292.1	17.4	9.2	-171.94	477.6	-393.0	1,425.0	1,406.2	18.77	75.935	
5,500.0	5,427.6	5,390.6	5,390.6	17.8	9.4	-172.04	477.6	-393.0	1,442.2	1,423.1	19.11	75.463	
5,600.0	5,526.1	5,489.1	5,489.1	18.1	9.6	-172.13	477.6	-393.0	1,459.4	1,440.0	19.46	75.009	
5,700.0	5,624.5	5,587.5	5,587.5	18.5	9.8	-172.23	477.6	-393.0	1,476.6	1,456.8	19.80	74.571	
5,800.0	5,723.3	5,686.3	5,686.3	18.8	9.9	-172.35	477.6	-393.0	1,492.1	1,472.0	20.18	73.944	
5,900.0	5,822.6	5,785.6	5,785.6	19.0	10.1	-172.44	477.6	-393.0	1,504.2	1,483.7	20.54	73.223	
6,000.0	5,922.2	5,885.2	5,885.2	19.2	10.3	-172.51	477.6	-393.0	1,512.9	1,492.0	20.89	72.414	
6,100.0	6,022.0	5,985.0	5,985.0	19.4	10.4	-172.55	477.6	-393.0	1,518.0	1,496.8	21.23	71.521	
6,200.0	6,122.0	6,085.0	6,085.0	19.5	10.6	-50.56	477.6	-393.0	1,519.8	1,491.0	28.74	52.880	
6,300.0	6,222.0	6,185.0	6,185.0	19.6	10.8	-50.56	477.6	-393.0	1,519.8	1,490.8	29.02	52.372	
6,400.0	6,322.0	6,285.0	6,285.0	19.7	11.0	-50.56	477.6	-393.0	1,519.8	1,490.5	29.30	51.872	
6,500.0	6,422.0	6,385.0	6,385.0	19.8	11.1	-50.56	477.6	-393.0	1,519.8	1,490.2	29.58	51.380	
6,600.0	6,522.0	6,485.0	6,485.0	19.9	11.3	-50.56	477.6	-393.0	1,519.8	1,489.9	29.86	50.894	
6,700.0	6,622.0	6,585.0	6,585.0	20.0	11.5	-50.56	477.6	-393.0	1,519.8	1,489.6	30.14	50.417	
6,778.0	6,700.0	6,663.0	6,663.0	20.1	11.6	-50.56	477.6	-393.0	1,519.8	1,489.4	30.37	50.049	
6,800.0	6,722.0	6,685.0	6,685.0	20.1	11.7	-174.06	477.6	-393.0	1,520.2	1,496.5	23.65	64.271	
6,850.0	6,771.8	6,734.8	6,734.8	20.2	11.8	-174.03	477.6	-393.0	1,524.3	1,500.5	23.81	64.019	
6,900.0	6,821.1	6,784.1	6,784.1	20.4	11.8	-173.98	477.6	-393.0	1,532.6	1,508.8	23.85	64.266	
6,950.0	6,869.4	6,832.4	6,832.4	20.7	11.9	-173.89	477.6	-393.0	1,545.3	1,521.5	23.77	65.007	
6,962.0	6,880.9	6,843.9	6,843.9	20.8	11.9	-173.86	477.6	-393.0	1,548.9	1,525.2	23.73	65.260	
7,000.0	7,422.3	7,385.3	7,385.3	22.0	12.9	-79.40	477.6	-393.0	1,545.9	1,520.2	25.70	60.150	
7,650.0	7,449.1	7,412.1	7,412.1	22.0	12.9	-80.47	477.6	-393.0	1,532.6	1,506.7	25.86	59.275	
7,700.0	7,472.2	7,435.2	7,435.2	22.0	13.0	-81.80	477.6	-393.0	1,518.4	1,492.4	26.03	58.332	
7,750.0	7,491.6	7,454.6	7,454.6	22.0	13.0	-83.30	477.6	-393.0	1,503.7	1,477.4	26.21	57.360	
7,800.0	7,507.0	7,470.0	7,470.0	22.0	13.0	-84.89	477.6	-393.0	1,488.6	1,462.2	26.40	56.389	
7,850.0	7,518.5	7,481.5	7,481.5	22.1	13.1	-86.51	477.6	-393.0	1,473.4	1,446.8	26.58	55.440	
7,900.0	7,525.8	7,488.8	7,488.8	22.2	13.1	-88.11	477.6	-393.0	1,458.3	1,431.5	26.75	54.523	
7,950.0	7,528.9	7,491.9	7,491.9	22.3	13.1	-89.64	477.6	-393.0	1,443.5	1,416.5	26.91	53.637	
7,962.1	7,529.0	7,492.0	7,492.0	22.3	13.1	-90.00	477.6	-393.0	1,439.9	1,413.0	26.95	53.427	
8,000.0	7,529.0	7,492.0	7,492.0	22.4	13.1	-90.00	477.6	-393.0	1,429.4	1,402.3	27.10	52.739	
8,100.0	7,529.0	7,492.0	7,492.0	22.7	13.1	-90.00	477.6	-393.0	1,406.1	1,378.5	27.64	50.870	
8,200.0	7,529.0	7,492.0	7,492.0	23.2	13.1	-90.00	477.6	-393.0	1,389.7	1,361.3	28.36	48.995	
8,300.0	7,529.0	7,492.0	7,492.0	23.8	13.1	-90.00	477.6	-393.0	1,380.3	1,351.1	29.25	47.199	
8,379.7	7,529.0	7,492.0	7,492.0	24.3	13.1	-90.00	477.6	-393.0	1,378.0	1,348.0	30.05	45.851	
8,400.0	7,529.0	7,492.0	7,492.0	24.4	13.1	-90.00	477.6	-393.0	1,378.2	1,347.9	30.26	45.544	
8,500.0	7,529.0	7,492.0	7,492.0	25.2	13.1	-90.00	477.6	-393.0	1,383.3	1,351.9	31.39	44.071	
8,600.0	7,529.0	7,492.0	7,492.0	26.1	13.1	-90.00	477.6	-393.0	1,395.5	1,362.9	32.61	42.797	
8,700.0	7,529.0	7,492.0	7,492.0	27.1	13.1	-90.00	477.6	-393.0	1,414.8	1,380.9	33.90	41.728	
8,800.0	7,529.0	7,492.0	7,492.0	28.2	13.1	-90.00	477.6	-393.0	1,440.7	1,405.4	35.26	40.855	
8,822.1	7,529.0	7,492.0	7,492.0	28.4	13.1	-90.00	477.6	-393.0	1,447.3	1,411.7	35.57	40.687	
8,880.8	7,529.0	7,492.0	7,492.0	29.1	13.1	-90.00	477.6	-393.0	1,465.7	1,429.6	36.13	40.565	
8,900.0	7,529.0	7,492.0	7,492.0	29.3	13.1	-90.00	477.6	-393.0	1,472.1	1,435.6	36.41	40.434	
9,000.0	7,529.0	7,492.0	7,492.0	30.4	13.1	-90.00	477.6	-393.0	1,508.4	1,470.6	37.85	39.851 SF	



Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Sprague 3H-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 3H-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 #2	Offset TVD Reference:	Offset Datum

Offset Design S9-T2N-R67W (Sprague) - SPRAGUE 1-9 (EXISTING) - MACHII-ROSS WELL - NO SURVEYS													Offset Site Error:	0.0 ft
Survey Program: 8150-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		
10,400.0	7,529.0	7,455.0	7,455.0	50.4	13.0	-90.00	3,450.2	-242.6	1,528.9	1,468.6	60.28	25.366		
10,500.0	7,529.0	7,455.0	7,455.0	52.0	13.0	-90.00	3,450.2	-242.6	1,467.0	1,405.1	61.96	23.678		
10,600.0	7,529.0	7,455.0	7,455.0	53.6	13.0	-90.00	3,450.2	-242.6	1,409.5	1,345.9	63.65	22.147		
10,700.0	7,529.0	7,455.0	7,455.0	55.2	13.0	-90.00	3,450.2	-242.6	1,357.0	1,291.7	65.34	20.769		
10,800.0	7,529.0	7,455.0	7,455.0	56.8	13.0	-90.00	3,450.2	-242.6	1,310.0	1,243.0	67.03	19.542		
10,900.0	7,529.0	7,455.0	7,455.0	58.4	13.0	-90.00	3,450.2	-242.6	1,269.1	1,200.4	68.73	18.465		
11,000.0	7,529.0	7,455.0	7,455.0	60.1	13.0	-90.00	3,450.2	-242.6	1,235.0	1,164.6	70.44	17.534		
11,100.0	7,529.0	7,455.0	7,455.0	61.7	13.0	-90.00	3,450.2	-242.6	1,208.3	1,136.1	72.14	16.749		
11,200.0	7,529.0	7,455.0	7,455.0	63.3	13.0	-90.00	3,450.2	-242.6	1,189.4	1,115.5	73.85	16.105		
11,300.0	7,529.0	7,455.0	7,455.0	65.0	13.0	-90.00	3,450.2	-242.6	1,178.6	1,103.1	75.56	15.599		
11,376.9	7,529.0	7,455.0	7,455.0	66.3	13.0	-90.00	3,450.2	-242.6	1,176.1	1,099.3	76.88	15.299 CC		
11,400.0	7,529.0	7,455.0	7,455.0	66.6	13.0	-90.00	3,450.2	-242.6	1,176.4	1,099.1	77.27	15.223 ES		
11,500.0	7,529.0	7,455.0	7,455.0	68.3	13.0	-90.00	3,450.2	-242.6	1,182.6	1,103.6	78.99	14.971		
11,600.0	7,529.0	7,455.0	7,455.0	70.0	13.0	-90.00	3,450.2	-242.6	1,197.1	1,116.4	80.71	14.833		
11,700.0	7,529.0	7,455.0	7,455.0	71.6	13.0	-90.00	3,450.2	-242.6	1,219.7	1,137.3	82.43	14.798 SF		
11,800.0	7,529.0	7,455.0	7,455.0	73.3	13.0	-90.00	3,450.2	-242.6	1,249.9	1,165.8	84.15	14.854		
11,900.0	7,529.0	7,455.0	7,455.0	75.0	13.0	-90.00	3,450.2	-242.6	1,287.2	1,201.4	85.87	14.990		
12,000.0	7,529.0	7,455.0	7,455.0	76.6	13.0	-90.00	3,450.2	-242.6	1,331.0	1,243.4	87.59	15.195		
12,100.0	7,529.0	7,455.0	7,455.0	78.3	13.0	-90.00	3,450.2	-242.6	1,380.7	1,291.3	89.32	15.457		
12,200.0	7,529.0	7,455.0	7,455.0	80.0	13.0	-90.00	3,450.2	-242.6	1,435.6	1,344.5	91.05	15.767		
12,300.0	7,529.0	7,455.0	7,455.0	81.7	13.0	-90.00	3,450.2	-242.6	1,495.1	1,402.4	92.78	16.116		

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 3H-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 3H-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 #2	Offset TVD Reference:	Offset Datum

Offset Design S9-T2N-R67W (Sprague) - SPRAGUE 2 (EXISTING) - MACHII-ROSS WELL - NO SURVEYS													Offset Site Error:	0.0 ft
Survey Program: 8100-Geolink MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Total Uncertainty Axis	Separation Factor	Warning			
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)		Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)						
10,700.0	7,529.0	7,492.0	7,492.0	55.2	13.1	-90.00	3,401.4	-462.3	1,533.3	1,467.9	65.40	23.445		
10,800.0	7,529.0	7,492.0	7,492.0	56.8	13.1	-90.00	3,401.4	-462.3	1,494.9	1,427.8	67.10	22.279		
10,900.0	7,529.0	7,492.0	7,492.0	58.4	13.1	-90.00	3,401.4	-462.3	1,462.2	1,393.4	68.80	21.254		
11,000.0	7,529.0	7,492.0	7,492.0	60.1	13.1	-90.00	3,401.4	-462.3	1,435.8	1,365.3	70.50	20.366		
11,100.0	7,529.0	7,492.0	7,492.0	61.7	13.1	-90.00	3,401.4	-462.3	1,416.0	1,343.8	72.21	19.611		
11,200.0	7,529.0	7,492.0	7,492.0	63.3	13.1	-90.00	3,401.4	-462.3	1,403.1	1,329.1	73.91	18.982		
11,300.0	7,529.0	7,492.0	7,492.0	65.0	13.1	-90.00	3,401.4	-462.3	1,397.2	1,321.5	75.63	18.475		
11,332.6	7,529.0	7,492.0	7,492.0	65.5	13.1	-90.00	3,401.4	-462.3	1,396.8	1,320.6	76.18	18.335 CC, ES		
11,400.0	7,529.0	7,492.0	7,492.0	66.6	13.1	-90.00	3,401.4	-462.3	1,398.4	1,321.1	77.34	18.082		
11,500.0	7,529.0	7,492.0	7,492.0	68.3	13.1	-90.00	3,401.4	-462.3	1,406.8	1,327.7	79.05	17.795		
11,600.0	7,529.0	7,492.0	7,492.0	70.0	13.1	-90.00	3,401.4	-462.3	1,422.2	1,341.4	80.77	17.607		
11,700.0	7,529.0	7,492.0	7,492.0	71.6	13.1	-90.00	3,401.4	-462.3	1,444.3	1,361.8	82.49	17.509		
11,800.0	7,529.0	7,492.0	7,492.0	73.3	13.1	-90.00	3,401.4	-462.3	1,472.9	1,388.7	84.21	17.491 SF		
11,900.0	7,529.0	7,492.0	7,492.0	75.0	13.1	-90.00	3,401.4	-462.3	1,507.6	1,421.7	85.94	17.544		
12,000.0	7,529.0	7,492.0	7,492.0	76.6	13.1	-90.00	3,401.4	-462.3	1,548.1	1,460.4	87.66	17.660		



Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Sprague 3H-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 3H-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 #2	Offset TVD Reference:	Offset Datum

Offset Design S9-T2N-R67W (Sprague) - Sprague 21-9 - DD - Plan #1													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance				Total	Separation	Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Uncertainty Axis	Factor		
10,700.0	7,529.0	7,472.0	7,472.0	55.2	13.0	-90.00	4,101.9	234.8	1,486.2	1,420.9	65.34	22.746		
10,800.0	7,529.0	7,472.0	7,472.0	56.8	13.0	-90.00	4,101.9	234.8	1,398.2	1,331.2	67.03	20.858		
10,900.0	7,529.0	7,472.0	7,472.0	58.4	13.0	-90.00	4,101.9	234.8	1,312.0	1,243.2	68.73	19.088		
11,000.0	7,529.0	7,472.0	7,472.0	60.1	13.0	-90.00	4,101.9	234.8	1,227.8	1,157.4	70.44	17.432		
11,100.0	7,529.0	7,472.0	7,472.0	61.7	13.0	-90.00	4,101.9	234.8	1,146.2	1,074.1	72.14	15.888		
11,200.0	7,529.0	7,472.0	7,472.0	63.3	13.0	-90.00	4,101.9	234.8	1,067.8	993.9	73.85	14.458		
11,300.0	7,529.0	7,472.0	7,472.0	65.0	13.0	-90.00	4,101.9	234.8	993.2	917.6	75.56	13.144		
11,400.0	7,529.0	7,472.0	7,472.0	66.6	13.0	-90.00	4,101.9	234.8	923.4	846.1	77.28	11.949		
11,500.0	7,529.0	7,472.0	7,472.0	68.3	13.0	-90.00	4,101.9	234.8	859.6	780.6	78.99	10.882		
11,600.0	7,529.0	7,472.0	7,472.0	70.0	13.0	-90.00	4,101.9	234.8	803.2	722.5	80.71	9.952		
11,700.0	7,529.0	7,472.0	7,472.0	71.6	13.0	-90.00	4,101.9	234.8	755.9	673.5	82.43	9.171		
11,800.0	7,529.0	7,472.0	7,472.0	73.3	13.0	-90.00	4,101.9	234.8	719.5	635.4	84.15	8.550		
11,900.0	7,529.0	7,472.0	7,472.0	75.0	13.0	-90.00	4,101.9	234.8	695.7	609.8	85.87	8.101		
12,000.0	7,529.0	7,472.0	7,472.0	76.6	13.0	-90.00	4,101.9	234.8	685.7	598.1	87.60	7.828		
12,018.7	7,529.0	7,472.0	7,472.0	77.0	13.0	-90.00	4,101.9	234.8	685.5	597.6	87.92	7.797 CC, ES		
12,100.0	7,529.0	7,472.0	7,472.0	78.3	13.0	-90.00	4,101.9	234.8	690.3	601.0	89.32	7.728 SF		
12,200.0	7,529.0	7,472.0	7,472.0	80.0	13.0	-90.00	4,101.9	234.8	709.1	618.0	91.05	7.788		
12,300.0	7,529.0	7,472.0	7,472.0	81.7	13.0	-90.00	4,101.9	234.8	741.0	648.2	92.78	7.987		
12,400.0	7,529.0	7,472.0	7,472.0	83.4	13.0	-90.00	4,101.9	234.8	784.4	689.9	94.51	8.300		
12,500.0	7,529.0	7,472.0	7,472.0	85.1	13.0	-90.00	4,101.9	234.8	837.6	741.4	96.24	8.704		
12,600.0	7,529.0	7,472.0	7,472.0	86.8	13.0	-90.00	4,101.9	234.8	898.8	800.8	97.97	9.174		
12,700.0	7,529.0	7,472.0	7,472.0	88.5	13.0	-90.00	4,101.9	234.8	966.5	866.8	99.70	9.694		
12,800.0	7,529.0	7,472.0	7,472.0	90.2	13.0	-90.00	4,101.9	234.8	1,039.4	938.0	101.43	10.247		
12,900.0	7,529.0	7,472.0	7,472.0	91.9	13.0	-90.00	4,101.9	234.8	1,116.5	1,013.4	103.17	10.823		
13,003.0	7,529.0	7,472.0	7,472.0	93.6	13.0	-90.00	4,101.9	234.8	1,199.5	1,094.5	104.95	11.429		

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 3H-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 3H-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 #2	Offset TVD Reference:	Offset Datum

Offset Design S9-T2N-R67W (Sprague) - SPRAGUE 22-9 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			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	
9,400.0	7,529.0	7,474.0	7,474.0	35.6	13.0	-90.00	2,784.6	198.7	1,502.2	1,458.3	43.92	34.199	
9,500.0	7,529.0	7,474.0	7,474.0	36.9	13.0	-90.00	2,784.6	198.7	1,416.4	1,370.9	45.51	31.123	
9,600.0	7,529.0	7,474.0	7,474.0	38.4	13.0	-90.00	2,784.6	198.7	1,332.5	1,285.4	47.11	28.286	
9,700.0	7,529.0	7,474.0	7,474.0	39.8	13.0	-90.00	2,784.6	198.7	1,251.0	1,202.3	48.72	25.676	
9,800.0	7,529.0	7,474.0	7,474.0	41.3	13.0	-90.00	2,784.6	198.7	1,172.4	1,122.1	50.35	23.285	
9,900.0	7,529.0	7,474.0	7,474.0	42.8	13.0	-90.00	2,784.6	198.7	1,097.3	1,045.3	51.99	21.107	
10,000.0	7,529.0	7,474.0	7,474.0	44.3	13.0	-90.00	2,784.6	198.7	1,026.5	972.8	53.64	19.137	
10,100.0	7,529.0	7,474.0	7,474.0	45.8	13.0	-90.00	2,784.6	198.7	960.8	905.5	55.30	17.376	
10,200.0	7,529.0	7,474.0	7,474.0	47.3	13.0	-90.00	2,784.6	198.7	901.5	844.5	56.96	15.827	
10,300.0	7,529.0	7,474.0	7,474.0	48.9	13.0	-90.00	2,784.6	198.7	849.8	791.2	58.63	14.495	
10,400.0	7,529.0	7,474.0	7,474.0	50.4	13.0	-90.00	2,784.6	198.7	807.3	747.0	60.31	13.386	
10,500.0	7,529.0	7,474.0	7,474.0	52.0	13.0	-90.00	2,784.6	198.7	775.4	713.4	61.99	12.508	
10,600.0	7,529.0	7,474.0	7,474.0	53.6	13.0	-90.00	2,784.6	198.7	755.5	691.8	63.68	11.864	
10,700.0	7,529.0	7,474.0	7,474.0	55.2	13.0	-90.00	2,784.6	198.7	748.5	683.1	65.37	11.450	
10,702.4	7,529.0	7,474.0	7,474.0	55.3	13.0	-90.00	2,784.6	198.7	748.5	683.1	65.41	11.443 CC, ES	
10,800.0	7,529.0	7,474.0	7,474.0	56.8	13.0	-90.00	2,784.6	198.7	754.8	687.8	67.07	11.255 SF	
10,900.0	7,529.0	7,474.0	7,474.0	58.4	13.0	-90.00	2,784.6	198.7	774.1	705.4	68.77	11.258	
11,000.0	7,529.0	7,474.0	7,474.0	60.1	13.0	-90.00	2,784.6	198.7	805.5	735.0	70.47	11.430	
11,100.0	7,529.0	7,474.0	7,474.0	61.7	13.0	-90.00	2,784.6	198.7	847.5	775.4	72.17	11.743	
11,200.0	7,529.0	7,474.0	7,474.0	63.3	13.0	-90.00	2,784.6	198.7	898.8	824.9	73.88	12.165	
11,300.0	7,529.0	7,474.0	7,474.0	65.0	13.0	-90.00	2,784.6	198.7	957.8	882.2	75.59	12.670	
11,400.0	7,529.0	7,474.0	7,474.0	66.6	13.0	-90.00	2,784.6	198.7	1,023.2	945.9	77.31	13.235	
11,500.0	7,529.0	7,474.0	7,474.0	68.3	13.0	-90.00	2,784.6	198.7	1,093.8	1,014.8	79.02	13.841	
11,600.0	7,529.0	7,474.0	7,474.0	70.0	13.0	-90.00	2,784.6	198.7	1,168.7	1,088.0	80.74	14.475	
11,700.0	7,529.0	7,474.0	7,474.0	71.6	13.0	-90.00	2,784.6	198.7	1,247.2	1,164.7	82.46	15.124	
11,800.0	7,529.0	7,474.0	7,474.0	73.3	13.0	-90.00	2,784.6	198.7	1,328.5	1,244.3	84.18	15.782	
11,900.0	7,529.0	7,474.0	7,474.0	75.0	13.0	-90.00	2,784.6	198.7	1,412.2	1,326.3	85.90	16.440	
12,000.0	7,529.0	7,474.0	7,474.0	76.6	13.0	-90.00	2,784.6	198.7	1,498.0	1,410.4	87.63	17.095	

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 3H-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 3H-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 #2	Offset TVD Reference:	Offset Datum

Offset Design S9-T2N-R67W (Sprague) - SPRAGUE 23-9 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			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	8.27	1,465.6	213.0	1,481.3						
100.0	100.0	68.0	68.0	0.1	0.1	8.27	1,465.6	213.0	1,481.0	1,480.7	0.24	6,143.672			
200.0	200.0	168.0	168.0	0.3	0.3	8.27	1,465.6	213.0	1,481.0	1,480.4	0.59	2,509.596			
300.0	300.0	268.0	268.0	0.5	0.5	8.27	1,465.6	213.0	1,481.0	1,480.0	0.94	1,576.860			
400.0	400.0	368.0	368.0	0.6	0.6	8.27	1,465.6	213.0	1,481.0	1,479.7	1.29	1,149.593			
500.0	500.0	468.0	468.0	0.8	0.8	-113.78	1,465.6	213.0	1,481.7	1,480.0	1.64	903.967			
600.0	599.8	567.8	567.8	1.0	1.0	-113.93	1,465.6	213.0	1,483.8	1,481.8	2.00	742.046			
700.0	699.5	667.5	667.5	1.2	1.2	-114.17	1,465.6	213.0	1,487.3	1,485.0	2.38	624.917			
800.0	798.7	766.7	766.7	1.5	1.3	-114.50	1,465.6	213.0	1,492.4	1,489.6	2.79	534.867			
900.0	897.5	865.5	865.5	1.8	1.5	-114.92	1,465.6	213.0	1,499.0	1,495.8	3.24	462.973			
1,000.0	995.9	963.9	963.9	2.1	1.7	-115.51	1,465.6	213.0	1,506.5	1,502.8	3.70	407.248			
1,100.0	1,094.4	1,062.4	1,062.4	2.4	1.9	-116.09	1,465.6	213.0	1,514.1	1,510.0	4.17	363.289			
1,200.0	1,192.9	1,160.9	1,160.9	2.7	2.0	-116.67	1,465.6	213.0	1,522.0	1,517.3	4.64	327.976			
1,300.0	1,291.4	1,259.4	1,259.4	3.1	2.2	-117.25	1,465.6	213.0	1,529.9	1,524.8	5.11	299.111			
1,400.0	1,389.9	1,357.9	1,357.9	3.4	2.4	-117.82	1,465.6	213.0	1,538.0	1,532.5	5.59	275.143			
1,500.0	1,488.4	1,456.4	1,456.4	3.8	2.5	-118.38	1,465.6	213.0	1,546.3	1,540.3	6.06	254.964			
8,100.0	7,529.0	7,497.0	7,497.0	22.7	13.1	-90.00	1,465.6	213.0	1,484.2	1,456.6	27.65	53.678			
8,200.0	7,529.0	7,497.0	7,497.0	23.2	13.1	-90.00	1,465.6	213.0	1,399.8	1,371.4	28.37	49.335			
8,300.0	7,529.0	7,497.0	7,497.0	23.8	13.1	-90.00	1,465.6	213.0	1,317.5	1,288.3	29.25	45.037			
8,400.0	7,529.0	7,497.0	7,497.0	24.4	13.1	-90.00	1,465.6	213.0	1,237.9	1,207.6	30.27	40.895			
8,500.0	7,529.0	7,497.0	7,497.0	25.2	13.1	-90.00	1,465.6	213.0	1,161.4	1,130.0	31.40	36.990			
8,600.0	7,529.0	7,497.0	7,497.0	26.1	13.1	-90.00	1,465.6	213.0	1,088.7	1,056.1	32.62	33.379			
8,700.0	7,529.0	7,497.0	7,497.0	27.1	13.1	-90.00	1,465.6	213.0	1,020.7	986.7	33.91	30.096			
8,800.0	7,529.0	7,497.0	7,497.0	28.2	13.1	-90.00	1,465.6	213.0	958.2	923.0	35.27	27.166			
8,822.1	7,529.0	7,497.0	7,497.0	28.4	13.1	-90.00	1,465.6	213.0	945.3	909.7	35.58	26.568			
8,880.8	7,529.0	7,497.0	7,497.0	29.1	13.1	-90.00	1,465.6	213.0	912.2	876.1	36.14	25.239			
8,900.0	7,529.0	7,497.0	7,497.0	29.3	13.1	-90.00	1,465.6	213.0	901.7	865.3	36.41	24.763			
9,000.0	7,529.0	7,497.0	7,497.0	30.4	13.1	-90.00	1,465.6	213.0	852.3	814.5	37.86	22.512			
9,100.0	7,529.0	7,497.0	7,497.0	31.6	13.1	-90.00	1,465.6	213.0	812.3	772.9	39.34	20.646			
9,200.0	7,529.0	7,497.0	7,497.0	32.9	13.1	-90.00	1,465.6	213.0	783.0	742.2	40.86	19.164			
9,300.0	7,529.0	7,497.0	7,497.0	34.2	13.1	-90.00	1,465.6	213.0	765.8	723.4	42.40	18.061			
9,383.3	7,529.0	7,497.0	7,497.0	35.3	13.1	-90.00	1,465.6	213.0	761.3	717.6	43.70	17.418 CC			
9,400.0	7,529.0	7,497.0	7,497.0	35.6	13.1	-90.00	1,465.6	213.0	761.4	717.5	43.96	17.319 ES			
9,500.0	7,529.0	7,497.0	7,497.0	36.9	13.1	-90.00	1,465.6	213.0	770.1	724.6	45.55	16.908			
9,600.0	7,529.0	7,497.0	7,497.0	38.4	13.1	-90.00	1,465.6	213.0	791.5	744.3	47.15	16.787 SF			
9,700.0	7,529.0	7,497.0	7,497.0	39.8	13.1	-90.00	1,465.6	213.0	824.5	775.7	48.76	16.908			
9,800.0	7,529.0	7,497.0	7,497.0	41.3	13.1	-90.00	1,465.6	213.0	867.8	817.4	50.39	17.221			
9,900.0	7,529.0	7,497.0	7,497.0	42.8	13.1	-90.00	1,465.6	213.0	920.0	868.0	52.03	17.682			
10,000.0	7,529.0	7,497.0	7,497.0	44.3	13.1	-90.00	1,465.6	213.0	979.7	926.0	53.68	18.251			
10,100.0	7,529.0	7,497.0	7,497.0	45.8	13.1	-90.00	1,465.6	213.0	1,045.5	990.2	55.34	18.894			
10,200.0	7,529.0	7,497.0	7,497.0	47.3	13.1	-90.00	1,465.6	213.0	1,116.4	1,059.4	57.00	19.587			
10,300.0	7,529.0	7,497.0	7,497.0	48.9	13.1	-90.00	1,465.6	213.0	1,191.5	1,132.9	58.67	20.309			
10,400.0	7,529.0	7,497.0	7,497.0	50.4	13.1	-90.00	1,465.6	213.0	1,270.1	1,209.7	60.35	21.046			
10,500.0	7,529.0	7,497.0	7,497.0	52.0	13.1	-90.00	1,465.6	213.0	1,351.5	1,289.4	62.03	21.787			
10,600.0	7,529.0	7,497.0	7,497.0	53.6	13.1	-90.00	1,465.6	213.0	1,435.2	1,371.5	63.72	22.524			
10,700.0	7,529.0	7,497.0	7,497.0	55.2	13.1	-90.00	1,465.6	213.0	1,520.9	1,455.5	65.41	23.251			

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 3H-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 3H-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 #2	Offset TVD Reference:	Offset Datum

Offset Design S9-T2N-R67W (Sprague) - SPRAGUE 24-9 (EXISTING) - ENCANA WELL - NO SURVEYS													Offset Site Error:	0.0 ft
Survey Program: 8116-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	101.30	-41.1	205.7	212.1					
100.0	100.0	69.0	69.0	0.1	0.1	101.30	-41.1	205.7	209.8	209.6	0.24	864.154		
200.0	200.0	169.0	169.0	0.3	0.3	101.30	-41.1	205.7	209.8	209.2	0.59	354.501		
300.0	300.0	269.0	269.0	0.5	0.5	101.30	-41.1	205.7	209.8	208.9	0.94	222.989		
400.0	400.0	369.0	369.0	0.6	0.6	101.30	-41.1	205.7	209.8	208.5	1.29	162.649		
500.0	500.0	469.0	469.0	0.8	0.8	-20.88	-41.1	205.7	208.2	206.5	1.64	127.038		
600.0	599.8	568.8	568.8	1.0	1.0	-21.44	-41.1	205.7	203.3	201.3	1.99	102.283		
700.0	699.5	668.5	668.5	1.2	1.2	-22.44	-41.1	205.7	195.2	192.9	2.34	83.475		
800.0	798.7	767.7	767.7	1.5	1.3	-23.98	-41.1	205.7	184.0	181.3	2.70	68.265		
900.0	897.5	866.5	866.5	1.8	1.5	-26.25	-41.1	205.7	169.8	166.7	3.07	55.389		
1,000.0	995.9	964.9	964.9	2.1	1.7	-29.09	-41.1	205.7	154.4	150.9	3.46	44.604		
1,100.0	1,094.4	1,063.4	1,063.4	2.4	1.9	-32.54	-41.1	205.7	139.4	135.5	3.88	35.926		
1,200.0	1,192.9	1,161.9	1,161.9	2.7	2.0	-36.81	-41.1	205.7	125.0	120.7	4.33	28.864		
1,300.0	1,291.4	1,260.4	1,260.4	3.1	2.2	-42.12	-41.1	205.7	111.5	106.7	4.83	23.103		
1,400.0	1,389.9	1,358.9	1,358.9	3.4	2.4	-48.80	-41.1	205.7	99.2	93.9	5.38	18.449		
1,500.0	1,488.4	1,457.4	1,457.4	3.8	2.5	-57.19	-41.1	205.7	88.7	82.7	5.99	14.797		
1,600.0	1,586.8	1,555.8	1,555.8	4.1	2.7	-67.50	-41.1	205.7	80.5	73.8	6.65	12.101		
1,700.0	1,685.3	1,654.3	1,654.3	4.5	2.9	-79.60	-41.1	205.7	75.4	68.1	7.30	10.338		
1,779.6	1,763.7	1,732.7	1,732.7	4.7	3.0	-90.00	-41.1	205.7	74.2	66.4	7.75	9.566 CC		
1,800.0	1,783.8	1,752.8	1,752.8	4.8	3.1	-92.69	-41.1	205.7	74.3	66.4	7.86	9.452 ES		
1,900.0	1,882.3	1,851.3	1,851.3	5.1	3.2	-105.51	-41.1	205.7	77.1	68.8	8.26	9.324 SF		
2,000.0	1,980.8	1,949.8	1,949.8	5.5	3.4	-116.93	-41.1	205.7	83.5	74.9	8.54	9.777		
2,100.0	2,079.2	2,048.2	2,048.2	5.8	3.6	-126.45	-41.1	205.7	92.7	84.0	8.73	10.620		
2,200.0	2,177.7	2,146.7	2,146.7	6.2	3.7	-134.10	-41.1	205.7	104.1	95.2	8.90	11.694		
2,300.0	2,276.2	2,245.2	2,245.2	6.5	3.9	-140.19	-41.1	205.7	116.9	107.8	9.07	12.882		
2,400.0	2,374.7	2,343.7	2,343.7	6.9	4.1	-145.04	-41.1	205.7	130.8	121.5	9.27	14.109		
2,500.0	2,473.2	2,442.2	2,442.2	7.2	4.3	-148.95	-41.1	205.7	145.4	135.9	9.49	15.329		
2,600.0	2,571.6	2,540.6	2,540.6	7.6	4.4	-152.14	-41.1	205.7	160.6	150.9	9.72	16.515		
2,700.0	2,670.1	2,639.1	2,639.1	7.9	4.6	-154.77	-41.1	205.7	176.2	166.2	9.98	17.654		
2,800.0	2,768.6	2,737.6	2,737.6	8.3	4.8	-156.97	-41.1	205.7	192.1	181.8	10.25	18.740		
2,900.0	2,867.1	2,836.1	2,836.1	8.6	5.0	-158.84	-41.1	205.7	208.2	197.7	10.53	19.771		
3,000.0	2,965.6	2,934.6	2,934.6	9.0	5.1	-160.44	-41.1	205.7	224.5	213.7	10.82	20.746		
3,100.0	3,064.0	3,033.0	3,033.0	9.3	5.3	-161.82	-41.1	205.7	241.0	229.9	11.12	21.669		
3,200.0	3,162.5	3,131.5	3,131.5	9.7	5.5	-163.02	-41.1	205.7	257.6	246.1	11.43	22.541		
3,300.0	3,261.0	3,230.0	3,230.0	10.0	5.6	-164.08	-41.1	205.7	274.2	262.5	11.74	23.365		
3,400.0	3,359.5	3,328.5	3,328.5	10.4	5.8	-165.02	-41.1	205.7	291.0	278.9	12.05	24.145		
3,500.0	3,458.0	3,427.0	3,427.0	10.7	6.0	-165.85	-41.1	205.7	307.8	295.4	12.37	24.884		
3,600.0	3,556.4	3,525.4	3,525.4	11.1	6.2	-166.60	-41.1	205.7	324.7	312.0	12.69	25.583		
3,700.0	3,654.9	3,623.9	3,623.9	11.5	6.3	-167.27	-41.1	205.7	341.6	328.6	13.02	26.246		
3,800.0	3,753.4	3,722.4	3,722.4	11.8	6.5	-167.88	-41.1	205.7	358.6	345.2	13.34	26.876		
3,900.0	3,851.9	3,820.9	3,820.9	12.2	6.7	-168.44	-41.1	205.7	375.6	361.9	13.67	27.475		
4,000.0	3,950.4	3,919.4	3,919.4	12.5	6.8	-168.95	-41.1	205.7	392.6	378.6	14.00	28.044		
4,100.0	4,048.9	4,017.9	4,017.9	12.9	7.0	-169.41	-41.1	205.7	409.7	395.4	14.33	28.587		
4,200.0	4,147.3	4,116.3	4,116.3	13.2	7.2	-169.84	-41.1	205.7	426.8	412.1	14.66	29.104		
4,300.0	4,245.8	4,214.8	4,214.8	13.6	7.4	-170.24	-41.1	205.7	443.9	428.9	15.00	29.597		
4,400.0	4,344.3	4,313.3	4,313.3	13.9	7.5	-170.60	-41.1	205.7	461.0	445.7	15.33	30.068		
4,500.0	4,442.8	4,411.8	4,411.8	14.3	7.7	-170.94	-41.1	205.7	478.2	462.5	15.67	30.518		
4,600.0	4,541.3	4,510.3	4,510.3	14.6	7.9	-171.26	-41.1	205.7	495.3	479.3	16.00	30.949		
4,700.0	4,639.7	4,608.7	4,608.7	15.0	8.0	-171.55	-41.1	205.7	512.5	496.2	16.34	31.362		
4,800.0	4,738.2	4,707.2	4,707.2	15.3	8.2	-171.83	-41.1	205.7	529.7	513.0	16.68	31.758		
4,900.0	4,836.7	4,805.7	4,805.7	15.7	8.4	-172.09	-41.1	205.7	546.9	529.9	17.02	32.138		
5,000.0	4,935.2	4,904.2	4,904.2	16.0	8.6	-172.33	-41.1	205.7	564.1	546.8	17.36	32.502		

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 3H-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 3H-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 #2	Offset TVD Reference:	Offset Datum

Offset Design S9-T2N-R67W (Sprague) - SPRAGUE 24-9 (EXISTING) - ENCANA WELL - NO SURVEYS												Offset Site Error:	0.0 ft
Survey Program: 8116-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
5,100.0	5,033.7	5,002.7	5,002.7	16.4	8.7	-172.56	-41.1	205.7	581.3	563.6	17.69	32.853	
5,200.0	5,132.1	5,101.1	5,101.1	16.7	8.9	-172.77	-41.1	205.7	598.6	580.5	18.03	33.190	
5,300.0	5,230.6	5,199.6	5,199.6	17.1	9.1	-172.98	-41.1	205.7	615.8	597.4	18.37	33.514	
5,400.0	5,329.1	5,298.1	5,298.1	17.4	9.2	-173.17	-41.1	205.7	633.0	614.3	18.71	33.826	
5,500.0	5,427.6	5,396.6	5,396.6	17.8	9.4	-173.35	-41.1	205.7	650.3	631.2	19.05	34.127	
5,600.0	5,526.1	5,495.1	5,495.1	18.1	9.6	-173.52	-41.1	205.7	667.5	648.1	19.40	34.417	
5,700.0	5,624.5	5,593.5	5,593.5	18.5	9.8	-173.69	-41.1	205.7	684.8	665.1	19.74	34.697	
5,800.0	5,723.3	5,692.3	5,692.3	18.8	9.9	-173.86	-41.1	205.7	700.3	680.2	20.11	34.822	
5,900.0	5,822.6	5,791.6	5,791.6	19.0	10.1	-173.99	-41.1	205.7	712.5	692.0	20.47	34.797	
6,000.0	5,922.2	5,891.2	5,891.2	19.2	10.3	-174.08	-41.1	205.7	721.1	700.3	20.82	34.631	
6,100.0	6,022.0	5,991.0	5,991.0	19.4	10.5	-174.14	-41.1	205.7	726.3	705.2	21.16	34.331	
6,200.0	6,122.0	6,091.0	6,091.0	19.5	10.6	-52.15	-41.1	205.7	728.1	699.5	28.59	25.470	
6,300.0	6,222.0	6,191.0	6,191.0	19.6	10.8	-52.15	-41.1	205.7	728.1	699.2	28.87	25.223	
6,400.0	6,322.0	6,291.0	6,291.0	19.7	11.0	-52.15	-41.1	205.7	728.1	698.9	29.15	24.980	
6,500.0	6,422.0	6,391.0	6,391.0	19.8	11.2	-52.15	-41.1	205.7	728.1	698.6	29.43	24.741	
6,600.0	6,522.0	6,491.0	6,491.0	19.9	11.3	-52.15	-41.1	205.7	728.1	698.4	29.71	24.505	
6,700.0	6,622.0	6,591.0	6,591.0	20.0	11.5	-52.15	-41.1	205.7	728.1	698.1	30.00	24.273	
6,778.0	6,700.0	6,669.0	6,669.0	20.1	11.6	-52.15	-41.1	205.7	728.1	697.9	30.22	24.095	
6,800.0	6,722.0	6,691.0	6,691.0	20.1	11.7	-175.65	-41.1	205.7	728.5	704.9	23.59	30.878	
6,850.0	6,771.8	6,740.8	6,740.8	20.2	11.8	-175.65	-41.1	205.7	732.6	708.8	23.75	30.848	
6,900.0	6,821.1	6,790.1	6,790.1	20.4	11.9	-175.63	-41.1	205.7	741.0	717.2	23.78	31.155	
6,950.0	6,869.4	6,838.4	6,838.4	20.7	11.9	-175.61	-41.1	205.7	753.6	729.9	23.70	31.800	
6,962.0	6,880.9	6,849.9	6,849.9	20.8	12.0	-175.60	-41.1	205.7	757.3	733.6	23.66	32.007	
7,000.0	6,917.1	6,886.1	6,886.1	21.0	12.0	-164.06	-41.1	205.7	768.5	744.6	23.98	32.054	
7,050.0	6,965.2	6,934.2	6,934.2	21.2	12.1	-146.52	-41.1	205.7	781.1	756.8	24.34	32.087	
7,100.0	7,013.3	6,982.3	6,982.3	21.4	12.2	-128.60	-41.1	205.7	791.2	766.5	24.64	32.107	
7,150.0	7,061.2	7,030.2	7,030.2	21.5	12.3	-113.40	-41.1	205.7	798.7	773.8	24.87	32.119	
7,200.0	7,108.4	7,077.4	7,077.4	21.7	12.4	-102.21	-41.1	205.7	803.8	778.8	25.03	32.115	
7,250.0	7,154.7	7,123.7	7,123.7	21.8	12.4	-94.61	-41.1	205.7	806.7	781.6	25.15	32.082	
7,300.0	7,199.5	7,168.5	7,168.5	21.8	12.5	-89.71	-41.1	205.7	807.5	782.3	25.23	32.002	
7,350.0	7,242.7	7,211.7	7,211.7	21.9	12.6	-86.75	-41.1	205.7	806.5	781.2	25.32	31.858	
7,400.0	7,283.9	7,252.9	7,252.9	21.9	12.7	-85.18	-41.1	205.7	804.0	778.6	25.41	31.643	
7,450.0	7,322.7	7,291.7	7,291.7	21.9	12.7	-84.61	-41.1	205.7	800.4	774.9	25.53	31.356	
7,500.0	7,358.9	7,327.9	7,327.9	21.9	12.8	-84.75	-41.1	205.7	795.9	770.3	25.67	31.011	
7,550.0	7,392.2	7,361.2	7,361.2	21.9	12.8	-85.38	-41.1	205.7	791.1	765.3	25.83	30.634	
7,600.0	7,422.3	7,391.3	7,391.3	22.0	12.9	-86.30	-41.1	205.7	786.3	760.3	25.99	30.253	
7,650.0	7,449.1	7,418.1	7,418.1	22.0	12.9	-87.35	-41.1	205.7	782.0	755.8	26.15	29.899	
7,700.0	7,472.2	7,441.2	7,441.2	22.0	13.0	-88.40	-41.1	205.7	778.5	752.2	26.30	29.596	
7,750.0	7,491.6	7,460.6	7,460.6	22.0	13.0	-89.33	-41.1	205.7	776.2	749.7	26.44	29.357	
7,797.7	7,506.4	7,475.4	7,475.4	22.0	13.0	-90.00	-41.1	205.7	775.4	748.8	26.56	29.195	
7,800.0	7,507.0	7,476.0	7,476.0	22.0	13.0	-90.03	-41.1	205.7	775.4	748.8	26.56	29.191	
7,850.0	7,518.5	7,487.5	7,487.5	22.1	13.1	-90.43	-41.1	205.7	776.4	749.7	26.68	29.096	
7,900.0	7,525.8	7,494.8	7,494.8	22.2	13.1	-90.47	-41.1	205.7	779.3	752.5	26.81	29.073	
7,950.0	7,528.9	7,497.9	7,497.9	22.3	13.1	-90.14	-41.1	205.7	784.3	757.4	26.93	29.121	
7,962.1	7,529.0	7,498.0	7,498.0	22.3	13.1	-90.00	-41.1	205.7	785.8	758.8	26.96	29.144	
8,000.0	7,529.0	7,498.0	7,498.0	22.4	13.1	-90.00	-41.1	205.7	791.6	764.4	27.11	29.194	
8,100.0	7,529.0	7,498.0	7,498.0	22.7	13.1	-90.00	-41.1	205.7	815.1	787.4	27.65	29.476	
8,200.0	7,529.0	7,498.0	7,498.0	23.2	13.1	-90.00	-41.1	205.7	849.8	821.4	28.37	29.950	
8,300.0	7,529.0	7,498.0	7,498.0	23.8	13.1	-90.00	-41.1	205.7	894.4	865.2	29.26	30.572	
8,400.0	7,529.0	7,498.0	7,498.0	24.4	13.1	-90.00	-41.1	205.7	947.5	917.2	30.27	31.301	
8,500.0	7,529.0	7,498.0	7,498.0	25.2	13.1	-90.00	-41.1	205.7	1,007.8	976.4	31.40	32.096	
8,600.0	7,529.0	7,498.0	7,498.0	26.1	13.1	-90.00	-41.1	205.7	1,074.0	1,041.3	32.62	32.925	

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Cathedral Energy Services

Anticollision Report

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Site Error:	0.0ft	North Reference:	True
Reference Well:	Sprague 3H-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 #2	Offset TVD Reference:	Offset Datum

Offset Design S9-T2N-R67W (Sprague) - SPRAGUE 24-9 (EXISTING) - ENCANA WELL - NO SURVEYS													Offset Site Error: 0.0 ft
Survey Program: 8116-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	
8,700.0	7,529.0	7,498.0	7,498.0	27.1	13.1	-90.00	-41.1	205.7	1,145.1	1,111.2	33.91	33.763	
8,800.0	7,529.0	7,498.0	7,498.0	28.2	13.1	-90.00	-41.1	205.7	1,220.2	1,185.0	35.27	34.593	
8,822.1	7,529.0	7,498.0	7,498.0	28.4	13.1	-90.00	-41.1	205.7	1,237.3	1,201.7	35.58	34.774	
8,880.8	7,529.0	7,498.0	7,498.0	29.1	13.1	-90.00	-41.1	205.7	1,283.1	1,246.9	36.14	35.499	
8,900.0	7,529.0	7,498.0	7,498.0	29.3	13.1	-90.00	-41.1	205.7	1,298.2	1,261.7	36.42	35.648	
9,000.0	7,529.0	7,498.0	7,498.0	30.4	13.1	-90.00	-41.1	205.7	1,378.3	1,340.5	37.86	36.404	
9,100.0	7,529.0	7,498.0	7,498.0	31.6	13.1	-90.00	-41.1	205.7	1,460.9	1,421.6	39.35	37.131	
9,200.0	7,529.0	7,498.0	7,498.0	32.9	13.1	-90.00	-41.1	205.7	1,545.6	1,504.8	40.86	37.827	



Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Sprague 3H-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 3H-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 #2	Offset TVD Reference:	Offset Datum

Offset Design S9-T2N-R67W (Sprague) - SPRAGUE 2-4-9 (EXISTING) - ENCANA WELL - Plan #1													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor		
9,600.0	7,529.0	7,570.4	7,507.0	38.4	19.5	-90.00	2,060.6	-516.3	1,529.6	1,479.0	50.64	30.205		
9,700.0	7,529.0	7,570.4	7,507.0	39.8	19.5	-90.00	2,060.6	-516.3	1,507.0	1,454.7	52.26	28.839		
9,800.0	7,529.0	7,570.4	7,507.0	41.3	19.5	-90.00	2,060.6	-516.3	1,490.8	1,436.9	53.88	27.666		
9,900.0	7,529.0	7,570.4	7,507.0	42.8	19.5	-90.00	2,060.6	-516.3	1,481.1	1,425.6	55.52	26.676		
9,993.2	7,529.0	7,570.4	7,507.0	44.2	19.5	-90.00	2,060.6	-516.3	1,478.2	1,421.1	57.06	25.907 CC		
10,000.0	7,529.0	7,570.4	7,507.0	44.3	19.5	-90.00	2,060.6	-516.3	1,478.2	1,421.0	57.17	25.856 ES		
10,100.0	7,529.0	7,570.4	7,507.0	45.8	19.5	-90.00	2,060.6	-516.3	1,482.0	1,423.2	58.83	25.193		
10,200.0	7,529.0	7,570.4	7,507.0	47.3	19.5	-90.00	2,060.6	-516.3	1,492.6	1,432.1	60.49	24.674		
10,300.0	7,529.0	7,570.4	7,507.0	48.9	19.5	-90.00	2,060.6	-516.3	1,509.7	1,447.5	62.16	24.286		
10,400.0	7,529.0	7,570.4	7,507.0	50.4	19.5	-90.00	2,060.6	-516.3	1,533.1	1,469.3	63.84	24.015 SF		



Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Sprague 3H-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 3H-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 #2	Offset TVD Reference:	Offset Datum

Offset Design S9-T2N-R67W (Sprague) - SPRAGUE 2-4-9 (EXISTING) - ENCANA WELL - SURVEYS													Offset Site Error:	0.0 ft
Survey Program: 488-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor		
9,600.0	7,529.0	7,519.9	7,453.1	38.4	19.2	-87.91	2,035.1	-515.5	1,523.9	1,473.7	50.24	30.335		
9,700.0	7,529.0	7,522.6	7,455.7	39.8	19.2	-88.01	2,035.2	-515.6	1,502.9	1,451.1	51.86	28.980		
9,800.0	7,529.0	7,525.2	7,458.4	41.3	19.2	-88.11	2,035.3	-515.6	1,488.4	1,434.9	53.50	27.822		
9,900.0	7,529.0	7,527.9	7,461.0	42.8	19.2	-88.22	2,035.4	-515.7	1,480.4	1,425.3	55.14	26.846		
9,968.0	7,529.0	7,529.7	7,462.8	43.8	19.2	-88.29	2,035.4	-515.8	1,478.9	1,422.6	56.27	26.281 CC		
10,000.0	7,529.0	7,530.6	7,463.7	44.3	19.2	-88.32	2,035.4	-515.8	1,479.2	1,422.4	56.80	26.042 ES		
10,100.0	7,529.0	7,533.3	7,466.4	45.8	19.2	-88.43	2,035.5	-515.9	1,484.7	1,426.3	58.47	25.394		
10,200.0	7,529.0	7,536.0	7,469.1	47.3	19.2	-88.53	2,035.6	-516.0	1,496.9	1,436.8	60.14	24.891		
10,300.0	7,529.0	7,538.7	7,471.8	48.9	19.2	-88.63	2,035.7	-516.1	1,515.6	1,453.8	61.82	24.517		
10,400.0	7,529.0	7,548.0	7,481.1	50.4	19.2	-89.00	2,036.1	-516.4	1,540.6	1,477.1	63.53	24.251 SF		



Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Sprague 3H-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 3H-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 #2	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			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	61.25	87.1	158.8	182.7					
100.0	100.0	76.0	76.0	0.1	0.1	61.25	87.1	158.8	181.1	180.9	0.26	710.201		
200.0	200.0	176.0	176.0	0.3	0.3	61.25	87.1	158.8	181.1	180.5	0.60	299.816		
300.0	300.0	276.0	276.0	0.5	0.5	61.25	87.1	158.8	181.1	180.2	0.95	190.016		
400.0	400.0	376.0	376.0	0.6	0.7	61.25	87.1	158.8	181.1	179.8	1.30	139.082		
500.0	500.0	476.0	476.0	0.8	0.8	-61.25	87.1	158.8	180.3	178.6	1.65	109.066		
600.0	599.8	575.8	575.8	1.0	1.0	-62.77	87.1	158.8	177.8	175.8	2.01	88.344		
700.0	699.5	675.5	675.5	1.2	1.2	-65.38	87.1	158.8	174.0	171.6	2.39	72.686		
800.0	798.7	774.7	774.7	1.5	1.4	-69.20	87.1	158.8	169.2	166.4	2.81	60.217		
900.0	897.5	873.5	873.5	1.8	1.5	-74.34	87.1	158.8	164.3	161.0	3.28	50.102		
1,000.0	995.9	971.9	971.9	2.1	1.7	-80.24	87.1	158.8	160.4	156.6	3.77	42.507		
1,100.0	1,094.4	1,070.4	1,070.4	2.4	1.9	-86.35	87.1	158.8	158.4	154.1	4.28	37.000		
1,159.0	1,152.5	1,128.5	1,128.5	2.6	2.0	-90.00	87.1	158.8	158.0	153.4	4.58	34.512 CC		
1,200.0	1,192.9	1,168.9	1,168.9	2.7	2.0	-92.54	87.1	158.8	158.2	153.4	4.78	33.062 ES		
1,300.0	1,291.4	1,267.4	1,267.4	3.1	2.2	-98.68	87.1	158.8	159.9	154.6	5.28	30.305		
1,400.0	1,389.9	1,365.9	1,365.9	3.4	2.4	-104.62	87.1	158.8	163.5	157.7	5.75	28.440		
1,500.0	1,488.4	1,464.4	1,464.4	3.8	2.6	-110.26	87.1	158.8	168.8	162.6	6.19	27.246		
1,600.0	1,586.8	1,562.8	1,562.8	4.1	2.7	-115.51	87.1	158.8	175.6	169.0	6.61	26.554		
1,700.0	1,685.3	1,661.3	1,661.3	4.5	2.9	-120.35	87.1	158.8	183.8	176.8	7.01	26.235		
1,800.0	1,783.8	1,759.8	1,759.8	4.8	3.1	-124.75	87.1	158.8	193.3	185.9	7.38	26.190 SF		
1,900.0	1,882.3	1,858.3	1,858.3	5.1	3.2	-128.73	87.1	158.8	203.8	196.1	7.74	26.345		
2,000.0	1,980.8	1,956.8	1,956.8	5.5	3.4	-132.31	87.1	158.8	215.2	207.1	8.08	26.641		
2,100.0	2,079.2	2,055.2	2,055.2	5.8	3.6	-135.52	87.1	158.8	227.3	218.9	8.41	27.037		
2,200.0	2,177.7	2,153.7	2,153.7	6.2	3.8	-138.41	87.1	158.8	240.1	231.4	8.73	27.499		
2,300.0	2,276.2	2,252.2	2,252.2	6.5	3.9	-141.00	87.1	158.8	253.4	244.4	9.05	28.005		
2,400.0	2,374.7	2,350.7	2,350.7	6.9	4.1	-143.33	87.1	158.8	267.2	257.9	9.37	28.535		
2,500.0	2,473.2	2,449.2	2,449.2	7.2	4.3	-145.43	87.1	158.8	281.4	271.7	9.68	29.078		
2,600.0	2,571.6	2,547.6	2,547.6	7.6	4.4	-147.33	87.1	158.8	296.0	286.0	9.99	29.623		
2,700.0	2,670.1	2,646.1	2,646.1	7.9	4.6	-149.05	87.1	158.8	310.8	300.5	10.30	30.164		
2,800.0	2,768.6	2,744.6	2,744.6	8.3	4.8	-150.62	87.1	158.8	325.8	315.2	10.62	30.696		
2,900.0	2,867.1	2,843.1	2,843.1	8.6	5.0	-152.04	87.1	158.8	341.1	330.2	10.93	31.215		
3,000.0	2,965.6	2,941.6	2,941.6	9.0	5.1	-153.35	87.1	158.8	356.6	345.4	11.24	31.720		
3,100.0	3,064.0	3,040.0	3,040.0	9.3	5.3	-154.54	87.1	158.8	372.3	360.7	11.56	32.209		
3,200.0	3,162.5	3,138.5	3,138.5	9.7	5.5	-155.64	87.1	158.8	388.1	376.2	11.87	32.682		
3,300.0	3,261.0	3,237.0	3,237.0	10.0	5.6	-156.66	87.1	158.8	404.0	391.8	12.19	33.137		
3,400.0	3,359.5	3,335.5	3,335.5	10.4	5.8	-157.59	87.1	158.8	420.0	407.5	12.51	33.575		
3,500.0	3,458.0	3,434.0	3,434.0	10.7	6.0	-158.46	87.1	158.8	436.2	423.3	12.83	33.996		
3,600.0	3,556.4	3,532.4	3,532.4	11.1	6.2	-159.27	87.1	158.8	452.4	439.2	13.15	34.400		
3,700.0	3,654.9	3,630.9	3,630.9	11.5	6.3	-160.02	87.1	158.8	468.7	455.2	13.47	34.789		
3,800.0	3,753.4	3,729.4	3,729.4	11.8	6.5	-160.72	87.1	158.8	485.1	471.3	13.80	35.161		
3,900.0	3,851.9	3,827.9	3,827.9	12.2	6.7	-161.37	87.1	158.8	501.5	487.4	14.12	35.519		
4,000.0	3,950.4	3,926.4	3,926.4	12.5	6.9	-161.98	87.1	158.8	518.0	503.6	14.44	35.863		
4,100.0	4,048.9	4,024.9	4,024.9	12.9	7.0	-162.56	87.1	158.8	534.6	519.8	14.77	36.192		
4,200.0	4,147.3	4,123.3	4,123.3	13.2	7.2	-163.10	87.1	158.8	551.2	536.1	15.10	36.509		
4,300.0	4,245.8	4,221.8	4,221.8	13.6	7.4	-163.61	87.1	158.8	567.9	552.4	15.43	36.813		
4,400.0	4,344.3	4,320.3	4,320.3	13.9	7.5	-164.09	87.1	158.8	584.6	568.8	15.75	37.105		
4,500.0	4,442.8	4,418.8	4,418.8	14.3	7.7	-164.54	87.1	158.8	601.3	585.2	16.08	37.386		
4,600.0	4,541.3	4,517.3	4,517.3	14.6	7.9	-164.97	87.1	158.8	618.1	601.7	16.41	37.656		
4,700.0	4,639.7	4,615.7	4,615.7	15.0	8.1	-165.37	87.1	158.8	634.9	618.1	16.74	37.916		
4,800.0	4,738.2	4,714.2	4,714.2	15.3	8.2	-165.76	87.1	158.8	651.7	634.6	17.08	38.166		
4,900.0	4,836.7	4,812.7	4,812.7	15.7	8.4	-166.13	87.1	158.8	668.6	651.2	17.41	38.407		
5,000.0	4,935.2	4,911.2	4,911.2	16.0	8.6	-166.47	87.1	158.8	685.5	667.7	17.74	38.639		

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 3H-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 3H-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 #2	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		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		
5,100.0	5,033.7	5,009.7	5,009.7	16.4	8.7	-166.80	87.1	158.8	702.4	684.3	18.07	38.863	
5,200.0	5,132.1	5,108.1	5,108.1	16.7	8.9	-167.12	87.1	158.8	719.3	700.9	18.41	39.078	
5,300.0	5,230.6	5,206.6	5,206.6	17.1	9.1	-167.42	87.1	158.8	736.2	717.5	18.74	39.287	
5,400.0	5,329.1	5,305.1	5,305.1	17.4	9.3	-167.71	87.1	158.8	753.2	734.1	19.07	39.487	
5,500.0	5,427.6	5,403.6	5,403.6	17.8	9.4	-167.98	87.1	158.8	770.2	750.8	19.41	39.681	
5,600.0	5,526.1	5,502.1	5,502.1	18.1	9.6	-168.25	87.1	158.8	787.2	767.5	19.74	39.869	
5,700.0	5,624.5	5,600.5	5,600.5	18.5	9.8	-168.50	87.1	158.8	804.2	784.1	20.08	40.050	
5,800.0	5,723.3	5,699.3	5,699.3	18.8	9.9	-168.78	87.1	158.8	819.6	799.1	20.45	40.085	
5,900.0	5,822.6	5,798.6	5,798.6	19.0	10.1	-168.99	87.1	158.8	831.5	810.7	20.80	39.979	
6,000.0	5,922.2	5,898.2	5,898.2	19.2	10.3	-169.13	87.1	158.8	840.1	818.9	21.14	39.739	
6,100.0	6,022.0	5,998.0	5,998.0	19.4	10.5	-169.22	87.1	158.8	845.2	823.8	21.47	39.372	
6,200.0	6,122.0	6,098.0	6,098.0	19.5	10.6	-47.25	87.1	158.8	846.9	817.9	29.08	29.127	
6,300.0	6,222.0	6,198.0	6,198.0	19.6	10.8	-47.25	87.1	158.8	846.9	817.6	29.35	28.852	
6,400.0	6,322.0	6,298.0	6,298.0	19.7	11.0	-47.25	87.1	158.8	846.9	817.3	29.63	28.582	
6,500.0	6,422.0	6,398.0	6,398.0	19.8	11.2	-47.25	87.1	158.8	846.9	817.0	29.91	28.315	
6,600.0	6,522.0	6,498.0	6,498.0	19.9	11.3	-47.25	87.1	158.8	846.9	816.7	30.19	28.052	
6,700.0	6,622.0	6,598.0	6,598.0	20.0	11.5	-47.25	87.1	158.8	846.9	816.5	30.47	27.793	
6,778.0	6,700.0	6,676.0	6,676.0	20.1	11.7	-47.25	87.1	158.8	846.9	816.2	30.69	27.594	
6,800.0	6,722.0	6,698.0	6,698.0	20.1	11.7	-170.75	87.1	158.8	847.4	823.5	23.87	35.495	
6,850.0	6,771.8	6,747.8	6,747.8	20.2	11.8	-170.72	87.1	158.8	851.4	827.4	24.03	35.431	
6,900.0	6,821.1	6,797.1	6,797.1	20.4	11.9	-170.68	87.1	158.8	859.7	835.6	24.07	35.712	
6,950.0	6,869.4	6,845.4	6,845.4	20.7	11.9	-170.60	87.1	158.8	872.2	848.2	24.01	36.335	
6,962.0	6,880.9	6,856.9	6,856.9	20.8	12.0	-170.58	87.1	158.8	875.9	851.9	23.97	36.537	
7,000.0	6,917.1	6,893.1	6,893.1	21.0	12.0	-159.17	87.1	158.8	886.9	862.6	24.32	36.465	
7,050.0	6,965.2	6,941.2	6,941.2	21.2	12.1	-141.74	87.1	158.8	899.0	874.3	24.71	36.381	
7,100.0	7,013.3	6,989.3	6,989.3	21.4	12.2	-123.90	87.1	158.8	908.3	883.3	25.00	36.325	
7,150.0	7,061.2	7,037.2	7,037.2	21.5	12.3	-108.74	87.1	158.8	914.8	889.6	25.21	36.293	
7,200.0	7,108.4	7,084.4	7,084.4	21.7	12.4	-97.56	87.1	158.8	918.6	893.2	25.32	36.272	
7,250.0	7,154.7	7,130.7	7,130.7	21.8	12.4	-89.96	87.1	158.8	919.8	894.4	25.38	36.239	
7,300.0	7,199.5	7,175.5	7,175.5	21.8	12.5	-85.05	87.1	158.8	918.6	893.2	25.40	36.168	
7,350.0	7,242.7	7,218.7	7,218.7	21.9	12.6	-82.08	87.1	158.8	915.3	889.8	25.40	36.030	
7,400.0	7,283.9	7,259.9	7,259.9	21.9	12.7	-80.52	87.1	158.8	910.0	884.6	25.42	35.801	
7,450.0	7,322.7	7,298.7	7,298.7	21.9	12.7	-79.99	87.1	158.8	903.1	877.7	25.47	35.465	
7,500.0	7,358.9	7,334.9	7,334.9	21.9	12.8	-80.23	87.1	158.8	895.0	869.5	25.55	35.026	
7,550.0	7,392.2	7,368.2	7,368.2	21.9	12.9	-81.02	87.1	158.8	886.0	860.3	25.68	34.499	
7,600.0	7,422.3	7,398.3	7,398.3	22.0	12.9	-82.18	87.1	158.8	876.5	850.6	25.84	33.917	
7,650.0	7,449.1	7,425.1	7,425.1	22.0	13.0	-83.56	87.1	158.8	866.9	840.8	26.02	33.316	
7,700.0	7,472.2	7,448.2	7,448.2	22.0	13.0	-85.02	87.1	158.8	857.5	831.3	26.20	32.733	
7,750.0	7,491.6	7,467.6	7,467.6	22.0	13.0	-86.44	87.1	158.8	848.8	822.5	26.37	32.195	
7,800.0	7,507.0	7,483.0	7,483.0	22.0	13.1	-87.72	87.1	158.8	841.2	814.7	26.52	31.719	
7,850.0	7,518.5	7,494.5	7,494.5	22.1	13.1	-88.77	87.1	158.8	834.9	808.2	26.66	31.311	
7,900.0	7,525.8	7,501.8	7,501.8	22.2	13.1	-89.53	87.1	158.8	830.1	803.3	26.80	30.972	
7,950.0	7,528.9	7,504.9	7,504.9	22.3	13.1	-89.95	87.1	158.8	827.1	800.2	26.94	30.702	
7,962.1	7,529.0	7,505.0	7,505.0	22.3	13.1	-90.00	87.1	158.8	826.7	799.7	26.97	30.646	
7,989.2	7,529.0	7,505.0	7,505.0	22.3	13.1	-90.00	87.1	158.8	826.2	799.1	27.08	30.507	
8,000.0	7,529.0	7,505.0	7,505.0	22.4	13.1	-90.00	87.1	158.8	826.3	799.2	27.13	30.461	
8,100.0	7,529.0	7,505.0	7,505.0	22.7	13.1	-90.00	87.1	158.8	833.6	805.9	27.66	30.133	
8,200.0	7,529.0	7,505.0	7,505.0	23.2	13.1	-90.00	87.1	158.8	852.7	824.3	28.39	30.038	
8,300.0	7,529.0	7,505.0	7,505.0	23.8	13.1	-90.00	87.1	158.8	882.7	853.5	29.27	30.161	
8,400.0	7,529.0	7,505.0	7,505.0	24.4	13.1	-90.00	87.1	158.8	922.7	892.4	30.28	30.469	
8,500.0	7,529.0	7,505.0	7,505.0	25.2	13.1	-90.00	87.1	158.8	971.4	940.0	31.41	30.925	
8,600.0	7,529.0	7,505.0	7,505.0	26.1	13.1	-90.00	87.1	158.8	1,027.5	994.8	32.63	31.488	

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 3H-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 3H-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 #2	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			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	
8,700.0	7,529.0	7,505.0	7,505.0	27.1	13.1	-90.00	87.1	158.8	1,089.9	1,056.0	33.93	32.124	
8,800.0	7,529.0	7,505.0	7,505.0	28.2	13.1	-90.00	87.1	158.8	1,157.6	1,122.3	35.29	32.805	
8,822.1	7,529.0	7,505.0	7,505.0	28.4	13.1	-90.00	87.1	158.8	1,173.2	1,137.6	35.59	32.960	
8,880.8	7,529.0	7,505.0	7,505.0	29.1	13.1	-90.00	87.1	158.8	1,215.1	1,179.0	36.16	33.608	
8,900.0	7,529.0	7,505.0	7,505.0	29.3	13.1	-90.00	87.1	158.8	1,229.0	1,192.6	36.43	33.738	
9,000.0	7,529.0	7,505.0	7,505.0	30.4	13.1	-90.00	87.1	158.8	1,303.6	1,265.7	37.87	34.418	
9,100.0	7,529.0	7,505.0	7,505.0	31.6	13.1	-90.00	87.1	158.8	1,381.3	1,341.9	39.36	35.096	
9,200.0	7,529.0	7,505.0	7,505.0	32.9	13.1	-90.00	87.1	158.8	1,461.8	1,420.9	40.87	35.764	
9,300.0	7,529.0	7,505.0	7,505.0	34.2	13.1	-90.00	87.1	158.8	1,544.5	1,502.1	42.41	36.414	



Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Sprague 3H-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 3H-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 #2	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	109.77	-73.2	203.5	217.0					
100.0	100.0	83.3	83.3	0.1	0.1	109.84	-73.3	203.3	216.1	215.8	0.25	861.776		
200.0	200.0	182.6	182.6	0.3	0.3	110.01	-73.8	202.8	215.9	215.3	0.60	360.545		
300.0	300.0	283.6	283.6	0.5	0.5	110.34	-74.9	202.2	215.6	214.7	0.95	226.785		
400.0	400.0	388.2	388.1	0.6	0.7	110.73	-75.8	200.3	214.3	212.9	1.31	163.216		
500.0	500.0	496.6	496.4	0.8	0.9	-11.03	-75.3	195.1	207.9	206.2	1.67	124.111		
600.0	599.8	602.0	601.4	1.0	1.1	-10.66	-74.3	185.8	194.2	192.2	2.04	95.310		
700.0	699.5	703.6	702.2	1.2	1.4	-9.41	-75.5	173.5	174.9	172.5	2.41	72.552		
800.0	798.7	800.5	798.0	1.5	1.7	-6.34	-80.3	159.2	151.5	148.7	2.81	53.910		
900.0	897.5	897.3	893.2	1.8	2.0	-0.71	-87.8	143.3	125.3	122.0	3.27	38.285		
1,000.0	995.9	993.3	987.0	2.1	2.4	9.44	-96.7	125.3	98.3	94.4	3.87	25.384		
1,100.0	1,094.4	1,087.3	1,078.6	2.4	2.7	26.98	-106.1	105.9	75.8	71.1	4.67	16.224		
1,200.0	1,192.9	1,180.3	1,168.9	2.7	3.1	52.99	-116.0	86.4	65.9	60.3	5.57	11.821		
1,203.3	1,196.2	1,183.3	1,171.8	2.8	3.2	53.93	-116.4	85.8	65.9	60.3	5.60	11.767	CC, ES, SF	
1,300.0	1,291.4	1,272.9	1,258.8	3.1	3.6	79.41	-127.1	66.9	74.7	68.7	6.05	12.363		
1,400.0	1,389.9	1,366.2	1,349.1	3.4	4.0	97.50	-139.1	47.3	97.2	91.0	6.18	15.718		
1,500.0	1,488.4	1,460.0	1,440.1	3.8	4.4	108.41	-151.5	27.8	125.7	119.3	6.35	19.800		
1,600.0	1,586.8	1,555.0	1,532.2	4.1	4.8	115.28	-163.8	8.6	156.4	149.8	6.61	23.652		
1,700.0	1,685.3	1,649.8	1,624.5	4.5	5.2	120.34	-174.6	-10.6	187.8	180.8	6.94	27.046		
1,800.0	1,783.8	1,742.2	1,714.3	4.8	5.6	124.12	-184.2	-29.9	220.4	213.1	7.31	30.151		
1,900.0	1,882.3	1,836.2	1,805.6	5.1	6.1	126.94	-194.4	-49.7	253.9	246.2	7.71	32.947		
2,000.0	1,980.8	1,931.8	1,898.7	5.5	6.5	129.09	-204.7	-69.3	287.3	279.2	8.13	35.340		
2,100.0	2,079.2	2,023.7	1,988.1	5.8	6.9	130.79	-214.2	-88.0	320.8	312.2	8.56	37.496		
2,200.0	2,177.7	2,119.4	2,081.2	6.2	7.3	132.30	-223.9	-108.2	355.1	346.1	8.99	39.482		
2,300.0	2,276.2	2,220.3	2,179.6	6.5	7.7	133.58	-234.0	-127.9	388.0	378.6	9.45	41.061		
2,400.0	2,374.7	2,310.4	2,267.7	6.9	8.1	134.55	-242.7	-144.9	420.5	410.6	9.89	42.523		
2,500.0	2,473.2	2,403.4	2,358.3	7.2	8.5	135.45	-251.7	-163.4	454.0	443.7	10.34	43.930		
2,600.0	2,571.6	2,499.0	2,451.7	7.6	8.9	136.26	-260.7	-182.3	487.4	476.6	10.79	45.181		
2,700.0	2,670.1	2,589.3	2,539.7	7.9	9.3	136.84	-270.0	-200.1	521.0	509.7	11.24	46.342		
2,800.0	2,768.6	2,686.4	2,634.3	8.3	9.7	137.27	-281.1	-219.1	554.6	542.9	11.72	47.337		
2,900.0	2,867.1	2,771.1	2,716.6	8.6	10.1	137.58	-291.1	-236.3	589.1	576.9	12.17	48.422		
3,000.0	2,965.6	2,870.6	2,813.3	9.0	10.6	137.92	-302.8	-256.7	623.7	611.1	12.65	49.317		
3,100.0	3,064.0	2,967.9	2,908.0	9.3	11.0	138.20	-314.1	-275.9	657.6	644.5	13.12	50.108		
3,200.0	3,162.5	3,064.9	3,002.5	9.7	11.4	138.50	-325.0	-294.7	691.2	677.7	13.60	50.837		
3,300.0	3,261.0	3,154.9	3,090.3	10.0	11.8	138.79	-334.5	-312.1	724.6	710.6	14.05	51.562		
3,400.0	3,359.5	3,252.7	3,185.6	10.4	12.2	139.07	-345.1	-331.8	758.9	744.3	14.53	52.220		
3,500.0	3,458.0	3,365.9	3,296.1	10.7	12.7	139.32	-357.6	-352.2	791.1	776.1	15.04	52.589		
3,600.0	3,556.4	3,452.3	3,380.8	11.1	13.0	139.55	-366.4	-367.3	822.8	807.3	15.49	53.120		
3,700.0	3,654.9	3,548.5	3,474.9	11.5	13.4	139.81	-375.9	-384.7	855.0	839.0	15.96	53.571		
3,800.0	3,753.4	3,650.1	3,574.4	11.8	13.8	140.04	-386.1	-402.3	886.4	870.0	16.44	53.908		
3,900.0	3,851.9	3,732.4	3,654.9	12.2	14.2	140.19	-394.9	-417.0	918.5	901.6	16.89	54.391		
4,000.0	3,950.4	3,839.0	3,759.2	12.5	14.6	140.44	-405.1	-436.4	950.8	933.4	17.37	54.746		
4,100.0	4,048.9	3,962.3	3,880.6	12.9	15.0	140.83	-414.8	-456.1	980.8	962.9	17.87	54.882		
4,200.0	4,147.3	4,083.4	4,000.3	13.2	15.4	141.28	-422.3	-472.5	1,008.2	989.9	18.36	54.922		
4,300.0	4,245.8	4,201.4	4,117.4	13.6	15.7	141.73	-428.7	-485.9	1,033.6	1,014.8	18.84	54.873		
4,400.0	4,344.3	4,324.3	4,239.7	13.9	15.9	142.23	-434.0	-497.1	1,056.8	1,037.4	19.31	54.733		
4,500.0	4,442.8	4,453.6	4,368.7	14.3	16.2	142.83	-437.5	-505.8	1,077.5	1,057.7	19.78	54.478		
4,600.0	4,541.3	4,570.5	4,485.5	14.6	16.3	143.40	-439.5	-510.2	1,095.2	1,075.0	20.22	54.168		
4,700.0	4,639.7	4,671.0	4,585.9	15.0	16.5	143.89	-440.7	-513.5	1,112.7	1,092.1	20.63	53.942		
4,800.0	4,738.2	4,769.0	4,683.8	15.3	16.6	144.37	-441.5	-516.6	1,130.0	1,108.9	21.03	53.740		
4,900.0	4,836.7	4,864.3	4,779.1	15.7	16.7	144.84	-442.2	-519.7	1,147.5	1,126.0	21.42	53.576		
5,000.0	4,935.2	4,958.3	4,873.0	16.0	16.9	145.31	-442.3	-523.1	1,165.4	1,143.6	21.80	53.469		

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 3H-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 3H-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 #2	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				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)				
5,100.0	5,033.7	5,057.9	4,972.5	16.4	17.0	145.81	-442.2	-526.9	1,183.6	1,161.4	22.18	53.364		
5,200.0	5,132.1	5,162.9	5,077.4	16.7	17.1	146.33	-441.7	-530.5	1,201.4	1,178.9	22.56	53.248		
5,300.0	5,230.6	5,263.5	5,178.0	17.1	17.3	146.83	-441.0	-533.4	1,218.9	1,195.9	22.94	53.136		
5,400.0	5,329.1	5,361.1	5,275.6	17.4	17.4	147.30	-440.4	-536.3	1,236.4	1,213.1	23.31	53.042		
5,500.0	5,427.6	5,459.3	5,373.7	17.8	17.5	147.75	-439.8	-539.1	1,254.0	1,230.3	23.68	52.962		
5,600.0	5,526.1	5,557.5	5,471.9	18.1	17.6	148.20	-439.1	-541.9	1,271.6	1,247.6	24.04	52.893		
5,700.0	5,624.5	5,655.2	5,569.6	18.5	17.8	148.64	-438.3	-544.7	1,289.3	1,264.9	24.40	52.831		
5,800.0	5,723.3	5,752.7	5,667.0	18.8	17.9	149.18	-437.7	-547.6	1,305.6	1,280.8	24.82	52.607		
5,900.0	5,822.6	5,848.9	5,763.2	19.0	18.0	149.61	-437.1	-550.5	1,319.2	1,294.0	25.20	52.352		
6,000.0	5,922.2	5,949.7	5,863.9	19.2	18.1	149.93	-436.5	-553.7	1,329.9	1,304.4	25.55	52.049		
6,100.0	6,022.0	6,056.6	5,970.7	19.4	18.3	150.14	-436.0	-556.7	1,337.3	1,311.4	25.88	51.669		
6,200.0	6,122.0	6,160.4	6,074.5	19.5	18.4	-87.76	-435.4	-559.1	1,341.1	1,309.8	31.33	42.813		
6,300.0	6,222.0	6,263.3	6,177.4	19.6	18.5	-87.72	-434.4	-561.2	1,343.2	1,311.6	31.60	42.511		
6,400.0	6,322.0	6,364.4	6,278.4	19.7	18.7	-87.67	-433.1	-563.2	1,345.2	1,313.3	31.87	42.214		
6,500.0	6,422.0	6,464.2	6,378.2	19.8	18.8	-87.60	-431.5	-565.0	1,347.1	1,315.0	32.14	41.916		
6,600.0	6,522.0	6,561.9	6,475.9	19.9	18.9	-87.54	-429.8	-566.9	1,349.1	1,316.7	32.41	41.626		
6,700.0	6,622.0	6,655.2	6,569.2	20.0	19.0	-87.47	-428.1	-569.0	1,351.4	1,318.7	32.69	41.344		
6,778.0	6,700.0	6,725.7	6,639.7	20.1	19.1	-87.41	-426.7	-571.0	1,353.7	1,320.8	32.91	41.138		
6,800.0	6,722.0	6,745.6	6,659.5	20.1	19.1	149.05	-426.3	-571.6	1,354.8	1,327.0	27.80	48.733		
6,850.0	6,771.8	6,791.3	6,705.2	20.2	19.2	148.90	-425.4	-573.1	1,360.0	1,332.1	27.86	48.812		
6,900.0	6,821.1	6,838.3	6,752.1	20.4	19.3	148.63	-424.5	-574.8	1,369.1	1,341.2	27.84	49.173		
6,950.0	6,869.4	6,884.2	6,798.0	20.7	19.3	148.24	-423.7	-576.5	1,381.8	1,354.1	27.74	49.807		
6,962.0	6,880.9	6,895.0	6,808.8	20.8	19.4	148.12	-423.5	-576.9	1,385.5	1,357.8	27.71	50.001		
7,000.0	6,917.1	6,929.3	6,843.1	21.0	19.4	160.32	-422.8	-578.3	1,397.3	1,369.5	27.80	50.269		
7,050.0	6,965.2	6,978.4	6,892.1	21.2	19.5	179.01	-422.0	-580.2	1,412.7	1,384.8	27.92	50.603		
7,100.0	7,013.3	7,030.9	6,944.6	21.4	19.6	-161.73	-421.6	-582.2	1,427.8	1,399.7	28.05	50.902		
7,150.0	7,061.2	7,083.3	6,996.9	21.5	19.6	-145.04	-421.5	-583.9	1,442.3	1,414.2	28.18	51.192		
7,200.0	7,108.4	7,134.7	7,048.3	21.7	19.7	-132.23	-421.8	-585.5	1,456.3	1,428.0	28.28	51.489		
7,250.0	7,154.7	7,184.3	7,097.9	21.8	19.8	-122.86	-422.2	-586.9	1,469.8	1,441.4	28.37	51.807		
7,300.0	7,199.5	7,232.6	7,146.2	21.8	19.8	-116.06	-422.5	-588.2	1,482.8	1,454.3	28.43	52.151		
7,350.0	7,242.7	7,279.2	7,192.8	21.9	19.9	-111.06	-422.7	-589.2	1,495.3	1,466.8	28.47	52.522		
7,400.0	7,283.9	7,320.8	7,234.3	21.9	20.0	-107.27	-422.9	-590.1	1,507.4	1,479.0	28.48	52.925		
7,450.0	7,322.7	7,357.6	7,271.1	21.9	20.0	-104.29	-423.1	-590.9	1,519.5	1,491.0	28.48	53.355		
7,500.0	7,358.9	7,391.8	7,305.4	21.9	20.1	-101.92	-423.2	-591.7	1,531.5	1,503.0	28.46	53.805		
7,550.0	7,392.2	7,423.3	7,336.8	21.9	20.1	-99.97	-423.3	-592.4	1,543.6	1,515.1	28.44	54.268		



Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Sprague 3H-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 3H-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 #2	Offset TVD Reference:	Offset Datum

Offset Design S9-T2N-R67W (Sprague) - SPRAGUE 31-9 (EXISTING) - ENCANA WELL - Plan #1														Offset Site Error:	0.0 ft
Survey Program: 0-MWD														Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance				Total		Warning		
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Uncertainty Axis	Separation Factor			
10,500.0	7,529.0	7,319.1	7,266.6	52.0	14.0	75.01	3,897.2	1,693.6	1,510.8	1,450.2	60.59	24.933			
10,600.0	7,529.0	7,355.8	7,300.0	53.6	14.1	77.19	3,908.3	1,683.2	1,426.4	1,363.5	62.84	22.698			
10,700.0	7,529.0	7,390.6	7,331.8	55.2	14.3	79.37	3,918.6	1,673.7	1,343.3	1,278.2	65.04	20.654			
10,800.0	7,529.0	7,423.5	7,362.1	56.8	14.4	81.52	3,928.0	1,664.9	1,261.8	1,194.7	67.17	18.785			
10,900.0	7,529.0	7,454.6	7,390.9	58.4	14.6	83.65	3,936.7	1,656.8	1,182.5	1,113.2	69.24	17.077			
11,000.0	7,529.0	7,484.2	7,418.4	60.1	14.7	85.73	3,944.7	1,649.3	1,105.7	1,034.4	71.24	15.520			
11,100.0	7,529.0	7,512.3	7,444.6	61.7	14.8	87.78	3,952.2	1,642.4	1,032.1	958.9	73.16	14.107			
11,200.0	7,529.0	7,539.1	7,469.6	63.3	15.0	89.77	3,959.1	1,635.9	962.5	887.5	75.01	12.833			
11,300.0	7,529.0	7,564.6	7,493.5	65.0	15.1	91.70	3,965.5	1,629.9	898.0	821.2	76.77	11.697			
11,400.0	7,529.0	7,588.8	7,516.4	66.6	15.2	93.58	3,971.5	1,624.4	839.6	761.2	78.46	10.702			
11,500.0	7,529.0	7,612.0	7,538.2	68.3	15.3	95.40	3,977.1	1,619.2	789.0	708.9	80.07	9.854			
11,600.0	7,529.0	7,634.1	7,559.2	70.0	15.4	97.15	3,982.3	1,614.3	747.5	665.9	81.60	9.161			
11,700.0	7,529.0	7,655.3	7,579.3	71.6	15.4	98.84	3,987.2	1,609.8	717.0	634.0	83.07	8.632			
11,800.0	7,529.0	7,675.5	7,598.5	73.3	15.5	100.46	3,991.7	1,605.6	698.9	614.5	84.47	8.274			
11,884.1	7,529.0	7,691.9	7,614.1	74.7	15.6	101.77	3,995.3	1,602.2	694.1	608.5	85.60	8.108 CC, ES			
11,900.0	7,529.0	7,700.0	7,621.9	75.0	15.6	102.43	3,997.1	1,600.6	694.3	608.6	85.71	8.100			
12,000.0	7,529.0	7,713.5	7,634.8	76.6	15.7	103.51	4,000.0	1,597.9	703.3	616.2	87.09	8.075 SF			
12,100.0	7,529.0	7,731.3	7,651.8	78.3	15.8	104.94	4,003.7	1,594.4	725.6	637.2	88.32	8.215			
12,200.0	7,529.0	7,748.4	7,668.2	80.0	15.8	106.32	4,007.3	1,591.1	760.0	670.5	89.50	8.491			
12,300.0	7,529.0	7,764.8	7,684.0	81.7	15.9	107.63	4,010.6	1,588.0	804.9	714.3	90.64	8.881			
12,400.0	7,529.0	7,780.6	7,699.2	83.4	15.9	108.88	4,013.7	1,585.1	858.9	767.1	91.74	9.362			
12,500.0	7,529.0	7,800.0	7,717.9	85.1	16.0	110.42	4,017.5	1,581.5	920.2	827.6	92.64	9.934			
12,600.0	7,529.0	7,810.4	7,728.0	86.8	16.1	111.24	4,019.5	1,579.7	987.6	893.8	93.83	10.525			
12,700.0	7,529.0	7,829.7	7,746.6	88.5	16.1	112.74	4,023.2	1,576.3	1,059.8	965.2	94.60	11.203			
12,800.0	7,529.0	7,849.0	7,765.3	90.2	16.2	114.22	4,026.8	1,572.9	1,135.9	1,040.6	95.29	11.921			
12,900.0	7,529.0	7,868.3	7,783.9	91.9	16.3	115.69	4,030.5	1,569.5	1,215.2	1,119.3	95.89	12.672			
13,003.0	7,529.0	7,888.2	7,803.1	93.6	16.4	117.17	4,034.2	1,566.0	1,299.5	1,203.1	96.44	13.475			

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 3H-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 3H-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 #2	Offset TVD Reference:	Offset Datum

Offset Design S9-T2N-R67W (Sprague) - SPRAGUE 31-9 (EXISTING) - ENCANA WELL - Plan #2													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance				Total	Separation	Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Uncertainty Axis	Factor		
10,500.0	7,529.0	7,316.6	7,236.7	52.0	15.0	70.69	3,974.6	1,596.2	1,538.8	1,478.9	59.88	25.700		
10,600.0	7,529.0	7,346.8	7,264.1	53.6	15.2	72.58	3,983.6	1,587.1	1,450.6	1,388.5	62.15	23.341		
10,700.0	7,529.0	7,377.0	7,291.5	55.2	15.4	74.56	3,992.6	1,578.0	1,363.4	1,299.0	64.43	21.160		
10,800.0	7,529.0	7,407.3	7,318.9	56.8	15.5	76.63	4,001.5	1,568.9	1,277.3	1,210.6	66.71	19.147		
10,900.0	7,529.0	7,437.5	7,346.3	58.4	15.7	78.80	4,010.5	1,559.8	1,192.7	1,123.7	68.97	17.292		
11,000.0	7,529.0	7,467.8	7,373.7	60.1	15.9	81.07	4,019.4	1,550.7	1,109.7	1,038.5	71.20	15.587		
11,100.0	7,529.0	7,498.0	7,401.1	61.7	16.1	83.43	4,028.4	1,541.6	1,029.0	955.6	73.36	14.025		
11,200.0	7,529.0	7,528.3	7,428.6	63.3	16.2	85.88	4,037.4	1,532.4	950.9	875.4	75.45	12.602		
11,300.0	7,529.0	7,558.5	7,456.0	65.0	16.4	88.43	4,046.3	1,523.3	876.2	798.8	77.44	11.315		
11,400.0	7,529.0	7,588.5	7,483.2	66.6	16.6	91.03	4,055.1	1,514.4	805.9	726.6	79.29	10.164		
11,500.0	7,529.0	7,617.1	7,509.3	68.3	16.8	93.60	4,063.3	1,506.1	741.3	660.3	80.99	9.152		
11,600.0	7,529.0	7,644.5	7,534.4	70.0	16.9	96.13	4,071.0	1,498.3	684.0	601.5	82.54	8.287		
11,700.0	7,529.0	7,670.7	7,558.6	71.6	17.1	98.59	4,078.1	1,491.0	636.2	552.3	83.94	7.579		
11,800.0	7,529.0	7,700.0	7,585.6	73.3	17.2	101.38	4,086.0	1,483.0	600.2	515.1	85.11	7.052		
11,900.0	7,529.0	7,719.9	7,604.1	75.0	17.3	103.30	4,091.2	1,477.7	578.2	491.9	86.31	6.700		
11,987.9	7,529.0	7,740.3	7,623.1	76.4	17.4	105.26	4,096.5	1,472.4	571.9	484.7	87.17	6.561 CC, ES		
12,000.0	7,529.0	7,743.0	7,625.6	76.6	17.5	105.53	4,097.2	1,471.7	572.0	484.7	87.29	6.554 SF		
12,100.0	7,529.0	7,765.2	7,646.3	78.3	17.6	107.68	4,102.7	1,466.0	582.2	494.0	88.15	6.605		
12,200.0	7,529.0	7,786.5	7,666.3	80.0	17.7	109.73	4,108.0	1,460.6	607.9	519.0	88.90	6.838		
12,300.0	7,529.0	7,800.0	7,678.9	81.7	17.8	111.03	4,111.3	1,457.3	647.4	557.5	89.90	7.201		
12,400.0	7,529.0	7,826.8	7,704.1	83.4	17.9	113.58	4,117.7	1,450.8	698.3	608.2	90.12	7.748		
12,500.0	7,529.0	7,845.8	7,722.0	85.1	18.0	115.37	4,122.1	1,446.3	758.5	667.8	90.62	8.370		
12,600.0	7,529.0	7,864.1	7,739.3	86.8	18.1	117.07	4,126.3	1,442.0	825.8	734.8	91.05	9.070		
12,700.0	7,529.0	7,881.7	7,756.0	88.5	18.2	118.69	4,130.2	1,438.0	898.9	807.4	91.42	9.832		
12,800.0	7,529.0	7,900.0	7,773.4	90.2	18.2	120.34	4,134.3	1,433.9	976.3	884.6	91.67	10.650		
12,900.0	7,529.0	7,915.2	7,787.8	91.9	18.3	121.69	4,137.6	1,430.6	1,057.1	965.1	92.05	11.484		
13,003.0	7,529.0	7,931.5	7,803.3	93.6	18.4	123.11	4,141.0	1,427.0	1,143.2	1,050.9	92.32	12.384		



Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Sprague 3H-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 3H-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 #2	Offset TVD Reference:	Offset Datum

Offset Design S9-T2N-R67W (Sprague) - SPRAGUE 31-9 (EXISTING) - ENCANA WELL - Plan #3													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis		Distance		Total		Separation		Warning		
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Uncertainty Axis			
10,600.0	7,529.0	7,462.1	7,325.4	53.6	18.0	73.28	4,158.7	1,409.1	1,538.9	1,474.9	63.93	24.070		
10,700.0	7,529.0	7,481.2	7,344.0	55.2	18.1	75.23	4,161.4	1,406.3	1,444.8	1,378.7	66.15	21.841		
10,800.0	7,529.0	7,499.0	7,361.6	56.8	18.2	77.11	4,163.9	1,403.8	1,351.5	1,283.1	68.32	19.781		
10,900.0	7,529.0	7,515.9	7,378.1	58.4	18.2	78.93	4,166.1	1,401.5	1,258.9	1,188.5	70.44	17.872		
11,000.0	7,529.0	7,531.7	7,393.7	60.1	18.3	80.68	4,168.2	1,399.4	1,167.4	1,094.9	72.50	16.101		
11,100.0	7,529.0	7,546.7	7,408.4	61.7	18.3	82.37	4,170.1	1,397.5	1,077.2	1,002.7	74.52	14.456		
11,200.0	7,529.0	7,560.8	7,422.3	63.3	18.4	83.99	4,171.8	1,395.7	988.8	912.3	76.48	12.928		
11,300.0	7,529.0	7,574.2	7,435.5	65.0	18.4	85.55	4,173.4	1,394.1	902.5	824.1	78.39	11.512		
11,400.0	7,529.0	7,586.9	7,448.1	66.6	18.5	87.04	4,174.9	1,392.6	819.2	738.9	80.26	10.206		
11,500.0	7,529.0	7,599.0	7,459.9	68.3	18.5	88.48	4,176.3	1,391.2	739.8	657.7	82.08	9.013		
11,600.0	7,529.0	7,610.4	7,471.3	70.0	18.5	89.85	4,177.5	1,389.9	665.8	582.0	83.86	7.940		
11,700.0	7,529.0	7,621.3	7,482.0	71.6	18.6	91.16	4,178.7	1,388.7	599.2	513.6	85.59	7.001		
11,800.0	7,529.0	7,631.7	7,492.3	73.3	18.6	92.42	4,179.8	1,387.6	542.8	455.5	87.29	6.218		
11,900.0	7,529.0	7,641.6	7,502.1	75.0	18.6	93.62	4,180.8	1,386.6	499.9	410.9	88.94	5.620		
12,000.0	7,529.0	7,651.1	7,511.5	76.6	18.6	94.77	4,181.8	1,385.6	474.3	383.8	90.57	5.237		
12,075.7	7,529.0	7,658.0	7,518.3	77.9	18.7	95.61	4,182.5	1,384.9	468.3	376.5	91.78	5.103 CC, ES		
12,100.0	7,529.0	7,660.1	7,520.4	78.3	18.7	95.87	4,182.7	1,384.7	468.9	376.8	92.17	5.088 SF		
12,200.0	7,529.0	7,668.8	7,529.0	80.0	18.7	96.93	4,183.5	1,383.9	484.4	390.7	93.73	5.168		
12,300.0	7,529.0	7,677.1	7,537.2	81.7	18.7	97.94	4,184.3	1,383.1	518.9	423.6	95.27	5.446		
12,400.0	7,529.0	7,685.0	7,545.1	83.4	18.7	98.90	4,185.0	1,382.3	568.9	472.1	96.79	5.878		
12,500.0	7,529.0	7,700.0	7,559.9	85.1	18.8	100.71	4,186.3	1,381.0	630.9	532.8	98.05	6.434		
12,600.0	7,529.0	7,700.0	7,559.9	86.8	18.8	100.71	4,186.3	1,381.0	701.5	601.7	99.75	7.032		
12,700.0	7,529.0	7,700.0	7,559.9	88.5	18.8	100.71	4,186.3	1,381.0	778.5	677.1	101.45	7.674		
12,800.0	7,529.0	7,713.8	7,573.6	90.2	18.8	102.37	4,187.5	1,379.8	860.2	757.6	102.64	8.381		
12,900.0	7,529.0	7,720.3	7,580.1	91.9	18.8	103.15	4,188.1	1,379.2	945.4	841.3	104.05	9.085		
13,003.0	7,529.0	7,726.7	7,586.5	93.6	18.8	103.92	4,188.6	1,378.7	1,035.8	930.3	105.50	9.818		

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 3H-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 3H-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 #2	Offset TVD Reference:	Offset Datum

Offset Design S9-T2N-R67W (Sprague) - SPRAGUE 31-9 (EXISTING) - ENCANA WELL - SURVEYS													Offset Site Error:	0.0 ft
Survey Program: 515-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		
10,600.0	7,529.0	7,203.0	7,112.3	53.6	15.8	59.43	4,065.7	1,531.1	1,529.7	1,472.5	57.23	26.730		
10,700.0	7,529.0	7,308.0	7,206.1	55.2	16.5	65.30	4,101.0	1,499.9	1,440.6	1,378.8	61.83	23.298		
10,800.0	7,529.0	7,345.3	7,240.0	56.8	16.7	67.77	4,112.3	1,489.3	1,351.2	1,286.7	64.55	20.935		
10,900.0	7,529.0	7,410.5	7,300.3	58.4	17.1	72.69	4,130.4	1,472.5	1,262.3	1,194.1	68.17	18.517		
11,000.0	7,529.0	7,463.4	7,350.0	60.1	17.3	77.22	4,143.2	1,459.7	1,173.8	1,102.5	71.31	16.461		
11,100.0	7,529.0	7,507.4	7,391.9	61.7	17.5	81.36	4,152.5	1,449.8	1,086.1	1,012.1	74.01	14.675		
11,200.0	7,529.0	7,539.6	7,422.8	63.3	17.7	84.58	4,158.5	1,443.1	1,000.1	923.8	76.28	13.111		
11,300.0	7,529.0	7,563.0	7,445.4	65.0	17.8	87.01	4,162.4	1,438.5	916.3	838.0	78.27	11.706		
11,400.0	7,529.0	7,581.7	7,463.6	66.6	17.9	89.01	4,165.4	1,434.9	835.7	755.6	80.13	10.429		
11,500.0	7,529.0	7,598.0	7,479.3	68.3	17.9	90.76	4,167.9	1,431.8	759.4	677.5	81.91	9.271		
11,600.0	7,529.0	7,613.9	7,494.7	70.0	18.0	92.49	4,170.3	1,428.8	688.7	605.1	83.61	8.237		
11,700.0	7,529.0	7,629.1	7,509.5	71.6	18.1	94.17	4,172.6	1,426.0	625.8	540.5	85.25	7.340		
11,800.0	7,529.0	7,644.1	7,524.1	73.3	18.1	95.84	4,174.8	1,423.3	573.0	486.2	86.81	6.600		
11,900.0	7,529.0	7,658.4	7,538.0	75.0	18.2	97.44	4,176.9	1,420.7	533.6	445.2	88.31	6.042		
12,000.0	7,529.0	7,671.4	7,550.7	76.6	18.2	98.89	4,178.6	1,418.4	510.5	420.7	89.77	5.687		
12,072.3	7,529.0	7,679.8	7,558.9	77.9	18.3	99.84	4,179.8	1,416.9	505.4	414.6	90.80	5.566 CC, ES		
12,100.0	7,529.0	7,682.9	7,561.9	78.3	18.3	100.19	4,180.2	1,416.4	506.2	415.0	91.19	5.551 SF		
12,200.0	7,529.0	7,694.0	7,572.7	80.0	18.3	101.43	4,181.6	1,414.5	521.1	428.5	92.58	5.628		
12,300.0	7,529.0	7,704.7	7,583.2	81.7	18.4	102.63	4,182.9	1,412.8	553.7	459.7	93.93	5.895		
12,400.0	7,529.0	7,714.8	7,593.1	83.4	18.4	103.77	4,184.2	1,411.1	601.1	505.8	95.24	6.311		
12,500.0	7,529.0	7,724.3	7,602.4	85.1	18.4	104.83	4,185.3	1,409.6	660.2	563.6	96.54	6.838		
12,600.0	7,529.0	7,731.1	7,609.1	86.8	18.5	105.58	4,186.1	1,408.5	728.1	630.2	97.91	7.436		
12,700.0	7,529.0	7,741.0	7,618.8	88.5	18.5	106.68	4,187.2	1,407.0	802.6	703.5	99.11	8.099		
12,800.0	7,529.0	7,748.3	7,626.0	90.2	18.5	107.49	4,188.0	1,405.8	882.1	781.7	100.39	8.787		
12,900.0	7,529.0	7,755.1	7,632.6	91.9	18.5	108.23	4,188.6	1,404.8	965.4	863.7	101.68	9.494		
13,003.0	7,529.0	7,762.6	7,640.0	93.6	18.6	109.06	4,189.4	1,403.6	1,054.1	951.1	102.94	10.240		



Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Sprague 3H-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 3H-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 #2	Offset TVD Reference:	Offset Datum

Offset Design S9-T2N-R67W (Sprague) - SPRAGUE 32-9 (EXISTING) - ENCANA WELL - NO SURVEYS													Offset Site Error: 0.0 ft	
Survey Program: 8100-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		
9,200.0	7,529.0	7,473.0	7,473.0	32.9	13.0	90.00	2,668.1	1,530.4	1,477.5	1,436.6	40.82	36.197		
9,300.0	7,529.0	7,473.0	7,473.0	34.2	13.0	90.00	2,668.1	1,530.4	1,386.1	1,343.7	42.36	32.722		
9,400.0	7,529.0	7,473.0	7,473.0	35.6	13.0	90.00	2,668.1	1,530.4	1,295.9	1,252.0	43.92	29.504		
9,500.0	7,529.0	7,473.0	7,473.0	36.9	13.0	90.00	2,668.1	1,530.4	1,207.3	1,161.8	45.51	26.531		
9,600.0	7,529.0	7,473.0	7,473.0	38.4	13.0	90.00	2,668.1	1,530.4	1,120.7	1,073.6	47.11	23.790		
9,700.0	7,529.0	7,473.0	7,473.0	39.8	13.0	90.00	2,668.1	1,530.4	1,036.4	987.7	48.72	21.272		
9,800.0	7,529.0	7,473.0	7,473.0	41.3	13.0	90.00	2,668.1	1,530.4	955.2	904.9	50.35	18.972		
9,900.0	7,529.0	7,473.0	7,473.0	42.8	13.0	90.00	2,668.1	1,530.4	877.9	825.9	51.99	16.887		
10,000.0	7,529.0	7,473.0	7,473.0	44.3	13.0	90.00	2,668.1	1,530.4	805.6	752.0	53.64	15.020		
10,100.0	7,529.0	7,473.0	7,473.0	45.8	13.0	90.00	2,668.1	1,530.4	739.8	684.5	55.29	13.379		
10,200.0	7,529.0	7,473.0	7,473.0	47.3	13.0	90.00	2,668.1	1,530.4	682.3	625.4	56.96	11.979		
10,300.0	7,529.0	7,473.0	7,473.0	48.9	13.0	90.00	2,668.1	1,530.4	635.5	576.9	58.63	10.839		
10,400.0	7,529.0	7,473.0	7,473.0	50.4	13.0	90.00	2,668.1	1,530.4	601.8	541.4	60.31	9.978		
10,500.0	7,529.0	7,473.0	7,473.0	52.0	13.0	90.00	2,668.1	1,530.4	583.4	521.4	61.99	9.412		
10,558.7	7,529.0	7,473.0	7,473.0	53.0	13.0	90.00	2,668.1	1,530.4	580.5	517.5	62.98	9.217 CC, ES		
10,600.0	7,529.0	7,473.0	7,473.0	53.6	13.0	90.00	2,668.1	1,530.4	581.9	518.3	63.68	9.139 SF		
10,700.0	7,529.0	7,473.0	7,473.0	55.2	13.0	90.00	2,668.1	1,530.4	597.4	532.1	65.37	9.139		
10,800.0	7,529.0	7,473.0	7,473.0	56.8	13.0	90.00	2,668.1	1,530.4	628.6	561.6	67.06	9.374		
10,900.0	7,529.0	7,473.0	7,473.0	58.4	13.0	90.00	2,668.1	1,530.4	673.4	604.6	68.76	9.793		
11,000.0	7,529.0	7,473.0	7,473.0	60.1	13.0	90.00	2,668.1	1,530.4	729.2	658.7	70.47	10.348		
11,100.0	7,529.0	7,473.0	7,473.0	61.7	13.0	90.00	2,668.1	1,530.4	793.7	721.5	72.17	10.998		
11,200.0	7,529.0	7,473.0	7,473.0	63.3	13.0	90.00	2,668.1	1,530.4	865.0	791.1	73.88	11.708		
11,300.0	7,529.0	7,473.0	7,473.0	65.0	13.0	90.00	2,668.1	1,530.4	941.6	866.0	75.59	12.456		
11,400.0	7,529.0	7,473.0	7,473.0	66.6	13.0	90.00	2,668.1	1,530.4	1,022.2	944.9	77.31	13.222		
11,500.0	7,529.0	7,473.0	7,473.0	68.3	13.0	90.00	2,668.1	1,530.4	1,105.9	1,026.9	79.02	13.995		
11,600.0	7,529.0	7,473.0	7,473.0	70.0	13.0	90.00	2,668.1	1,530.4	1,192.2	1,111.5	80.74	14.766		
11,700.0	7,529.0	7,473.0	7,473.0	71.6	13.0	90.00	2,668.1	1,530.4	1,280.5	1,198.0	82.46	15.529		
11,800.0	7,529.0	7,473.0	7,473.0	73.3	13.0	90.00	2,668.1	1,530.4	1,370.4	1,286.2	84.18	16.279		
11,900.0	7,529.0	7,473.0	7,473.0	75.0	13.0	90.00	2,668.1	1,530.4	1,461.6	1,375.7	85.90	17.014		

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 3H-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 3H-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 #2	Offset TVD Reference:	Offset Datum

Offset Design S9-T2N-R67W (Sprague) - SPRAGUE 33-9 (EXISTING) - ENCANA WELL - NO SURVEYS														Offset Site Error:	0.0 ft
Survey Program: 8150-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		
8,100.0	7,529.0	7,483.0	7,483.0	22.7	13.1	90.00	1,643.4	1,518.1	1,540.6	1,513.0	27.63	55.768			
8,200.0	7,529.0	7,483.0	7,483.0	23.2	13.1	90.00	1,643.4	1,518.1	1,447.2	1,418.9	28.35	51.052			
8,300.0	7,529.0	7,483.0	7,483.0	23.8	13.1	90.00	1,643.4	1,518.1	1,354.8	1,325.5	29.23	46.350			
8,400.0	7,529.0	7,483.0	7,483.0	24.4	13.1	90.00	1,643.4	1,518.1	1,263.5	1,233.2	30.24	41.774			
8,500.0	7,529.0	7,483.0	7,483.0	25.2	13.1	90.00	1,643.4	1,518.1	1,173.6	1,142.2	31.37	37.407			
8,600.0	7,529.0	7,483.0	7,483.0	26.1	13.1	90.00	1,643.4	1,518.1	1,085.4	1,052.8	32.59	33.303			
8,700.0	7,529.0	7,483.0	7,483.0	27.1	13.1	90.00	1,643.4	1,518.1	999.5	965.6	33.89	29.494			
8,800.0	7,529.0	7,483.0	7,483.0	28.2	13.1	90.00	1,643.4	1,518.1	916.5	881.2	35.25	26.001			
8,822.1	7,529.0	7,483.0	7,483.0	28.4	13.1	90.00	1,643.4	1,518.1	898.6	863.1	35.56	25.273			
8,880.8	7,529.0	7,483.0	7,483.0	29.1	13.1	90.00	1,643.4	1,518.1	852.5	816.3	36.12	23.603			
8,900.0	7,529.0	7,483.0	7,483.0	29.3	13.1	90.00	1,643.4	1,518.1	837.8	801.4	36.39	23.023			
9,000.0	7,529.0	7,483.0	7,483.0	30.4	13.1	90.00	1,643.4	1,518.1	764.9	727.0	37.84	20.216			
9,100.0	7,529.0	7,483.0	7,483.0	31.6	13.1	90.00	1,643.4	1,518.1	698.7	659.4	39.32	17.770			
9,200.0	7,529.0	7,483.0	7,483.0	32.9	13.1	90.00	1,643.4	1,518.1	641.3	600.5	40.83	15.705			
9,300.0	7,529.0	7,483.0	7,483.0	34.2	13.1	90.00	1,643.4	1,518.1	595.3	552.9	42.38	14.049			
9,400.0	7,529.0	7,483.0	7,483.0	35.6	13.1	90.00	1,643.4	1,518.1	563.5	519.6	43.94	12.824			
9,500.0	7,529.0	7,483.0	7,483.0	36.9	13.1	90.00	1,643.4	1,518.1	548.3	502.8	45.52	12.045			
9,534.4	7,529.0	7,483.0	7,483.0	37.4	13.1	90.00	1,643.4	1,518.1	547.2	501.2	46.07	11.877 CC, ES			
9,600.0	7,529.0	7,483.0	7,483.0	38.4	13.1	90.00	1,643.4	1,518.1	551.2	504.0	47.12	11.696 SF			
9,700.0	7,529.0	7,483.0	7,483.0	39.8	13.1	90.00	1,643.4	1,518.1	571.7	523.0	48.74	11.731			
9,800.0	7,529.0	7,483.0	7,483.0	41.3	13.1	90.00	1,643.4	1,518.1	608.3	557.9	50.37	12.077			
9,900.0	7,529.0	7,483.0	7,483.0	42.8	13.1	90.00	1,643.4	1,518.1	658.1	606.1	52.01	12.655			
10,000.0	7,529.0	7,483.0	7,483.0	44.3	13.1	90.00	1,643.4	1,518.1	718.5	664.9	53.65	13.392			
10,100.0	7,529.0	7,483.0	7,483.0	45.8	13.1	90.00	1,643.4	1,518.1	787.0	731.7	55.31	14.229			
10,200.0	7,529.0	7,483.0	7,483.0	47.3	13.1	90.00	1,643.4	1,518.1	861.7	804.7	56.98	15.124			
10,300.0	7,529.0	7,483.0	7,483.0	48.9	13.1	90.00	1,643.4	1,518.1	941.1	882.4	58.65	16.047			
10,400.0	7,529.0	7,483.0	7,483.0	50.4	13.1	90.00	1,643.4	1,518.1	1,024.1	963.8	60.32	16.976			
10,500.0	7,529.0	7,483.0	7,483.0	52.0	13.1	90.00	1,643.4	1,518.1	1,109.9	1,047.9	62.01	17.900			
10,600.0	7,529.0	7,483.0	7,483.0	53.6	13.1	90.00	1,643.4	1,518.1	1,197.9	1,134.2	63.69	18.807			
10,700.0	7,529.0	7,483.0	7,483.0	55.2	13.1	90.00	1,643.4	1,518.1	1,287.7	1,222.3	65.39	19.693			
10,800.0	7,529.0	7,483.0	7,483.0	56.8	13.1	90.00	1,643.4	1,518.1	1,378.9	1,311.8	67.08	20.555			
10,900.0	7,529.0	7,483.0	7,483.0	58.4	13.1	90.00	1,643.4	1,518.1	1,471.2	1,402.4	68.78	21.389			

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 3H-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 3H-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 #2	Offset TVD Reference:	Offset Datum

Offset Design S9-T2N-R67W (Sprague) - Sprague 3A-9H-N267 - Hz - Plan #1													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	-89.95	0.1	-69.9	69.9					
100.0	100.0	100.0	100.0	0.1	0.1	-89.95	0.1	-69.9	69.9	69.6	0.24	286.018		
200.0	200.0	200.0	200.0	0.3	0.3	-89.95	0.1	-69.9	69.9	69.3	0.59	117.772 CC, ES		
300.0	300.0	297.7	297.7	0.5	0.5	-90.39	-0.5	-71.5	71.5	70.6	0.94	75.893		
400.0	400.0	395.2	395.0	0.6	0.7	-91.61	-2.1	-76.2	76.4	75.0	1.31	58.463		
500.0	500.0	492.1	491.6	0.8	0.9	145.24	-4.9	-83.9	85.9	84.3	1.63	52.610		
600.0	599.8	587.9	586.7	1.0	1.1	144.84	-8.6	-94.6	101.5	99.5	1.98	51.174 SF		
700.0	699.5	682.0	679.7	1.2	1.4	144.94	-13.3	-108.1	123.1	120.7	2.34	52.537		
800.0	798.7	774.0	770.1	1.5	1.8	145.27	-18.9	-124.0	150.4	147.7	2.71	55.449		
900.0	897.5	863.4	857.5	1.8	2.1	145.65	-25.2	-142.1	183.4	180.3	3.10	59.246		
1,000.0	995.9	956.5	948.1	2.1	2.5	146.35	-32.3	-162.3	219.3	215.7	3.51	62.541		
1,100.0	1,094.4	1,049.8	1,038.9	2.4	2.9	146.86	-39.4	-182.6	255.1	251.2	3.92	65.043		
1,200.0	1,192.9	1,143.1	1,129.7	2.7	3.3	147.24	-46.5	-203.0	291.0	286.7	4.34	66.998		
1,300.0	1,291.4	1,236.5	1,220.5	3.1	3.7	147.54	-53.6	-223.3	326.9	322.2	4.77	68.560		
1,400.0	1,389.9	1,329.8	1,311.3	3.4	4.1	147.78	-60.7	-243.6	362.8	357.6	5.20	69.834		
1,500.0	1,488.4	1,423.1	1,402.1	3.8	4.6	147.97	-67.8	-263.9	398.7	393.1	5.62	70.892		
1,600.0	1,586.8	1,516.4	1,492.9	4.1	5.0	148.14	-74.9	-284.2	434.6	428.6	6.06	71.781		
1,700.0	1,685.3	1,609.8	1,583.7	4.5	5.4	148.28	-82.0	-304.5	470.6	464.1	6.49	72.540		
1,800.0	1,783.8	1,703.1	1,674.5	4.8	5.8	148.39	-89.1	-324.8	506.5	499.6	6.92	73.194		
1,900.0	1,882.3	1,796.4	1,765.3	5.1	6.2	148.50	-96.2	-345.1	542.4	535.0	7.35	73.763		
2,000.0	1,980.8	1,889.7	1,856.2	5.5	6.6	148.59	-103.3	-365.5	578.3	570.5	7.79	74.262		
2,100.0	2,079.2	1,983.0	1,947.0	5.8	7.0	148.67	-110.4	-385.8	614.2	606.0	8.22	74.703		
2,200.0	2,177.7	2,076.4	2,037.8	6.2	7.5	148.74	-117.6	-406.1	650.2	641.5	8.66	75.096		
2,300.0	2,276.2	2,169.7	2,128.6	6.5	7.9	148.80	-124.7	-426.4	686.1	677.0	9.09	75.448		
2,400.0	2,374.7	2,263.0	2,219.4	6.9	8.3	148.86	-131.8	-446.7	722.0	712.5	9.53	75.765		
2,500.0	2,473.2	2,356.3	2,310.2	7.2	8.7	148.91	-138.9	-467.0	757.9	748.0	9.97	76.052		
2,600.0	2,571.6	2,449.7	2,401.0	7.6	9.1	148.96	-146.0	-487.3	793.9	783.5	10.40	76.314		
2,700.0	2,670.1	2,543.0	2,491.8	7.9	9.5	149.00	-153.1	-507.6	829.8	818.9	10.84	76.552		
2,800.0	2,768.6	2,636.3	2,582.6	8.3	9.9	149.04	-160.2	-528.0	865.7	854.4	11.28	76.771		
2,900.0	2,867.1	2,729.6	2,673.4	8.6	10.4	149.08	-167.3	-548.3	901.6	889.9	11.71	76.972		
3,000.0	2,965.6	2,822.9	2,764.2	9.0	10.8	149.11	-174.4	-568.6	937.6	925.4	12.15	77.157		
3,100.0	3,064.0	2,916.3	2,855.0	9.3	11.2	149.14	-181.5	-588.9	973.5	960.9	12.59	77.329		
3,200.0	3,162.5	3,009.6	2,945.8	9.7	11.6	149.17	-188.6	-609.2	1,009.4	996.4	13.03	77.488		
3,300.0	3,261.0	3,102.9	3,036.6	10.0	12.0	149.20	-195.7	-629.5	1,045.3	1,031.9	13.46	77.637		
3,400.0	3,359.5	3,196.2	3,127.5	10.4	12.4	149.22	-202.8	-649.8	1,081.3	1,067.4	13.90	77.775		
3,500.0	3,458.0	3,289.6	3,218.3	10.7	12.9	149.25	-209.9	-670.1	1,117.2	1,102.9	14.34	77.905		
3,600.0	3,556.4	3,382.9	3,309.1	11.1	13.3	149.27	-217.0	-690.5	1,153.1	1,138.4	14.78	78.026		
3,700.0	3,654.9	3,476.2	3,399.9	11.5	13.7	149.29	-224.1	-710.8	1,189.1	1,173.8	15.22	78.140		
3,800.0	3,753.4	3,569.5	3,490.7	11.8	14.1	149.31	-231.3	-731.1	1,225.0	1,209.3	15.66	78.247		
3,900.0	3,851.9	3,662.8	3,581.5	12.2	14.5	149.33	-238.4	-751.4	1,260.9	1,244.8	16.09	78.348		
4,000.0	3,950.4	3,756.2	3,672.3	12.5	14.9	149.34	-245.5	-771.7	1,296.8	1,280.3	16.53	78.443		
4,100.0	4,048.9	3,849.5	3,763.1	12.9	15.4	149.36	-252.6	-792.0	1,332.8	1,315.8	16.97	78.534		
4,200.0	4,147.3	3,942.8	3,853.9	13.2	15.8	149.37	-259.7	-812.3	1,368.7	1,351.3	17.41	78.619		
4,300.0	4,245.8	4,036.1	3,944.7	13.6	16.2	149.39	-266.8	-832.6	1,404.6	1,386.8	17.85	78.700		
4,400.0	4,344.3	4,129.5	4,035.5	13.9	16.6	149.40	-273.9	-852.9	1,440.6	1,422.3	18.29	78.777		
4,500.0	4,442.8	4,222.8	4,126.3	14.3	17.0	149.42	-281.0	-873.3	1,476.5	1,457.8	18.73	78.850		
4,600.0	4,541.3	4,316.1	4,217.1	14.6	17.5	149.43	-288.1	-893.6	1,512.4	1,493.3	19.16	78.920		
4,700.0	4,639.7	4,409.4	4,307.9	15.0	17.9	149.44	-295.2	-913.9	1,548.3	1,528.7	19.60	78.986		

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 3H-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 3H-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 #2	Offset TVD Reference:	Offset Datum

Offset Design S9-T2N-R67W (Sprague) - Sprague 3B-9H-N267 - Hz - Plan #1													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	-89.95	0.1	-58.7	58.7					
100.0	100.0	100.0	100.0	0.1	0.1	-89.95	0.1	-58.7	58.7	58.5	0.24	240.255		
200.0	200.0	200.0	200.0	0.3	0.3	-89.95	0.1	-58.7	58.7	58.1	0.59	98.929		
300.0	300.0	300.0	300.0	0.5	0.5	-89.95	0.1	-58.7	58.7	57.8	0.94	62.289	CC, ES	
400.0	400.0	398.1	398.1	0.6	0.6	-90.59	-0.6	-60.2	60.3	59.0	1.29	46.690		
500.0	500.0	495.9	495.8	0.8	0.8	146.43	-2.6	-64.8	66.5	64.8	1.64	40.621		
600.0	599.8	592.9	592.4	1.0	1.0	146.07	-6.0	-72.4	78.7	76.7	1.99	39.581	SF	
700.0	699.5	688.5	687.3	1.2	1.3	146.12	-10.5	-82.8	96.9	94.5	2.35	41.238		
800.0	798.7	782.3	780.0	1.5	1.6	146.35	-16.2	-95.8	120.9	118.2	2.72	44.391		
900.0	897.5	876.3	872.5	1.8	1.9	146.71	-23.0	-111.1	150.1	147.0	3.11	48.208		
1,000.0	995.9	971.3	966.0	2.1	2.2	147.46	-29.9	-126.9	181.1	177.6	3.53	51.363		
1,100.0	1,094.4	1,066.4	1,059.5	2.4	2.5	147.99	-36.8	-142.7	212.0	208.1	3.94	53.780		
1,200.0	1,192.9	1,161.5	1,153.0	2.7	2.9	148.39	-43.8	-158.5	243.0	238.6	4.36	55.683		
1,300.0	1,291.4	1,256.5	1,246.4	3.1	3.2	148.69	-50.7	-174.3	274.0	269.2	4.79	57.214		
1,400.0	1,389.9	1,351.6	1,339.9	3.4	3.5	148.94	-57.6	-190.1	305.0	299.7	5.22	58.471		
1,500.0	1,488.4	1,446.7	1,433.4	3.8	3.9	149.14	-64.6	-205.9	336.0	330.3	5.64	59.518		
1,600.0	1,586.8	1,541.8	1,526.9	4.1	4.2	149.30	-71.5	-221.7	366.9	360.9	6.07	60.404		
1,700.0	1,685.3	1,636.8	1,620.4	4.5	4.6	149.44	-78.4	-237.5	397.9	391.4	6.51	61.162		
1,800.0	1,783.8	1,731.9	1,713.9	4.8	4.9	149.56	-85.4	-253.3	428.9	422.0	6.94	61.818		
1,900.0	1,882.3	1,827.0	1,807.4	5.1	5.3	149.66	-92.3	-269.0	459.9	452.5	7.37	62.390		
2,000.0	1,980.8	1,922.0	1,900.9	5.5	5.6	149.76	-99.2	-284.8	490.9	483.1	7.81	62.894		
2,100.0	2,079.2	2,017.1	1,994.4	5.8	5.9	149.84	-106.2	-300.6	521.9	513.7	8.24	63.341		
2,200.0	2,177.7	2,112.2	2,087.9	6.2	6.3	149.91	-113.1	-316.4	552.9	544.2	8.67	63.740		
2,300.0	2,276.2	2,207.3	2,181.4	6.5	6.6	149.97	-120.0	-332.2	583.9	574.8	9.11	64.098		
2,400.0	2,374.7	2,302.3	2,274.9	6.9	7.0	150.03	-127.0	-348.0	614.9	605.4	9.55	64.421		
2,500.0	2,473.2	2,397.4	2,368.4	7.2	7.3	150.08	-133.9	-363.8	645.9	635.9	9.98	64.714		
2,600.0	2,571.6	2,492.5	2,461.9	7.6	7.7	150.12	-140.8	-379.6	676.9	666.5	10.42	64.981		
2,700.0	2,670.1	2,587.6	2,555.4	7.9	8.0	150.17	-147.8	-395.4	707.9	697.1	10.85	65.225		
2,800.0	2,768.6	2,682.6	2,648.9	8.3	8.4	150.21	-154.7	-411.2	738.9	727.6	11.29	65.449		
2,900.0	2,867.1	2,777.7	2,742.4	8.6	8.7	150.24	-161.6	-426.9	769.9	758.2	11.73	65.656		
3,000.0	2,965.6	2,872.8	2,835.9	9.0	9.0	150.27	-168.6	-442.7	800.9	788.8	12.16	65.846		
3,100.0	3,064.0	2,967.8	2,929.4	9.3	9.4	150.31	-175.5	-458.5	831.9	819.3	12.60	66.023		
3,200.0	3,162.5	3,062.9	3,022.9	9.7	9.7	150.33	-182.4	-474.3	862.9	849.9	13.04	66.188		
3,300.0	3,261.0	3,158.0	3,116.3	10.0	10.1	150.36	-189.4	-490.1	893.9	880.4	13.47	66.341		
3,400.0	3,359.5	3,253.1	3,209.8	10.4	10.4	150.38	-196.3	-505.9	924.9	911.0	13.91	66.484		
3,500.0	3,458.0	3,348.1	3,303.3	10.7	10.8	150.41	-203.2	-521.7	955.9	941.6	14.35	66.618		
3,600.0	3,556.4	3,443.2	3,396.8	11.1	11.1	150.43	-210.2	-537.5	986.9	972.1	14.79	66.744		
3,700.0	3,654.9	3,538.3	3,490.3	11.5	11.5	150.45	-217.1	-553.3	1,017.9	1,002.7	15.22	66.862		
3,800.0	3,753.4	3,633.3	3,583.8	11.8	11.8	150.47	-224.0	-569.1	1,048.9	1,033.3	15.66	66.973		
3,900.0	3,851.9	3,728.4	3,677.3	12.2	12.2	150.49	-231.0	-584.9	1,079.9	1,063.8	16.10	67.078		
4,000.0	3,950.4	3,823.5	3,770.8	12.5	12.5	150.50	-237.9	-600.6	1,110.9	1,094.4	16.54	67.177		
4,100.0	4,048.9	3,918.6	3,864.3	12.9	12.9	150.52	-244.8	-616.4	1,141.9	1,125.0	16.98	67.270		
4,200.0	4,147.3	4,013.6	3,957.8	13.2	13.2	150.54	-251.8	-632.2	1,172.9	1,155.5	17.41	67.359		
4,300.0	4,245.8	4,108.7	4,051.3	13.6	13.6	150.55	-258.7	-648.0	1,203.9	1,186.1	17.85	67.444		
4,400.0	4,344.3	4,203.8	4,144.8	13.9	13.9	150.56	-265.6	-663.8	1,234.9	1,216.7	18.29	67.524		
4,500.0	4,442.8	4,298.9	4,238.3	14.3	14.2	150.58	-272.5	-679.6	1,266.0	1,247.2	18.73	67.600		
4,600.0	4,541.3	4,393.9	4,331.8	14.6	14.6	150.59	-279.5	-695.4	1,297.0	1,277.8	19.17	67.672		
4,700.0	4,639.7	4,489.0	4,425.3	15.0	14.9	150.60	-286.4	-711.2	1,328.0	1,308.4	19.60	67.742		
4,800.0	4,738.2	4,584.1	4,518.8	15.3	15.3	150.61	-293.3	-727.0	1,359.0	1,338.9	20.04	67.808		
4,900.0	4,836.7	4,679.1	4,612.3	15.7	15.6	150.62	-300.3	-742.8	1,390.0	1,369.5	20.48	67.871		
5,000.0	4,935.2	4,774.2	4,705.8	16.0	16.0	150.63	-307.2	-758.5	1,421.0	1,400.1	20.92	67.931		
5,100.0	5,033.7	4,869.3	4,799.3	16.4	16.3	150.64	-314.1	-774.3	1,452.0	1,430.6	21.36	67.989		

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 3H-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 3H-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 #2	Offset TVD Reference:	Offset Datum

Offset Design													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			
5,200.0	5,132.1	4,964.4	4,892.8	16.7	16.7	150.65	-321.1	-790.1	1,483.0	1,461.2	21.79	68.045			
5,300.0	5,230.6	5,059.4	4,986.3	17.1	17.0	150.66	-328.0	-805.9	1,514.0	1,491.7	22.23	68.098			
5,400.0	5,329.1	5,154.5	5,079.7	17.4	17.4	150.67	-334.9	-821.7	1,545.0	1,522.3	22.67	68.149			



Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Sprague 3H-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 3H-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 #2	Offset TVD Reference:	Offset Datum

Offset Design S9-T2N-R67W (Sprague) - Sprague 3C-9H-N267 - Hz - Plan #1													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	-89.95	0.0	-50.3	50.3					
100.0	100.0	100.0	100.0	0.1	0.1	-89.95	0.0	-50.3	50.3	50.1	0.24	205.933		
200.0	200.0	200.0	200.0	0.3	0.3	-89.95	0.0	-50.3	50.3	49.7	0.59	84.796		
300.0	300.0	300.0	300.0	0.5	0.5	-89.95	0.0	-50.3	50.3	49.4	0.94	53.390		
400.0	400.0	400.0	400.0	0.6	0.6	-89.95	0.0	-50.3	50.3	49.0	1.29	38.960 CC, ES		
500.0	500.0	499.2	499.2	0.8	0.8	148.52	-0.4	-51.0	52.5	50.9	1.64	32.041		
600.0	599.8	598.2	598.1	1.0	1.0	149.73	-1.8	-53.2	59.2	57.2	1.99	29.745 SF		
700.0	699.5	696.6	696.5	1.2	1.2	151.22	-4.1	-56.8	70.3	68.0	2.34	29.983		
800.0	798.7	794.3	794.0	1.5	1.4	152.63	-7.2	-61.8	85.9	83.2	2.71	31.732		
900.0	897.5	891.0	890.4	1.8	1.6	153.81	-11.2	-68.1	105.9	102.8	3.08	34.415		
1,000.0	995.9	986.8	985.8	2.1	1.8	154.60	-16.0	-75.7	128.8	125.3	3.46	37.187		
1,100.0	1,094.4	1,082.0	1,080.4	2.4	2.0	154.76	-21.6	-84.6	152.9	149.0	3.86	39.626		
1,200.0	1,192.9	1,176.7	1,174.3	2.7	2.3	154.54	-28.1	-94.7	178.2	174.0	4.26	41.795		
1,300.0	1,291.4	1,270.7	1,267.3	3.1	2.5	154.09	-35.3	-106.1	204.8	200.2	4.68	43.763		
1,400.0	1,389.9	1,366.9	1,362.4	3.4	2.8	153.61	-43.0	-118.4	232.0	226.9	5.11	45.424		
1,500.0	1,488.4	1,463.1	1,457.5	3.8	3.1	153.24	-50.8	-130.7	259.2	253.7	5.54	46.803		
1,600.0	1,586.8	1,559.3	1,552.7	4.1	3.4	152.93	-58.6	-143.0	286.5	280.5	5.97	47.963		
1,700.0	1,685.3	1,655.5	1,647.8	4.5	3.7	152.68	-66.3	-155.2	313.7	307.3	6.41	48.950		
1,800.0	1,783.8	1,751.7	1,742.9	4.8	4.0	152.47	-74.1	-167.5	340.9	334.1	6.85	49.800		
1,900.0	1,882.3	1,848.0	1,838.0	5.1	4.2	152.29	-81.9	-179.8	368.2	360.9	7.28	50.538		
2,000.0	1,980.8	1,944.2	1,933.1	5.5	4.5	152.13	-89.7	-192.1	395.4	387.7	7.72	51.185		
2,100.0	2,079.2	2,040.4	2,028.2	5.8	4.8	152.00	-97.4	-204.4	422.6	414.5	8.17	51.756		
2,200.0	2,177.7	2,136.6	2,123.3	6.2	5.1	151.88	-105.2	-216.6	449.9	441.3	8.61	52.264		
2,300.0	2,276.2	2,232.8	2,218.4	6.5	5.4	151.77	-113.0	-228.9	477.1	468.1	9.05	52.718		
2,400.0	2,374.7	2,329.0	2,313.5	6.9	5.7	151.68	-120.7	-241.2	504.4	494.9	9.49	53.127		
2,500.0	2,473.2	2,425.2	2,408.6	7.2	6.0	151.59	-128.5	-253.5	531.6	521.7	9.94	53.497		
2,600.0	2,571.6	2,521.5	2,503.8	7.6	6.3	151.52	-136.3	-265.8	558.8	548.5	10.38	53.833		
2,700.0	2,670.1	2,617.7	2,598.9	7.9	6.6	151.45	-144.1	-278.1	586.1	575.3	10.83	54.139		
2,800.0	2,768.6	2,713.9	2,694.0	8.3	6.9	151.39	-151.8	-290.3	613.3	602.1	11.27	54.419		
2,900.0	2,867.1	2,810.1	2,789.1	8.6	7.2	151.33	-159.6	-302.6	640.6	628.9	11.72	54.677		
3,000.0	2,965.6	2,906.3	2,884.2	9.0	7.5	151.28	-167.4	-314.9	667.8	655.7	12.16	54.915		
3,100.0	3,064.0	3,002.5	2,979.3	9.3	7.8	151.23	-175.1	-327.2	695.1	682.5	12.61	55.135		
3,200.0	3,162.5	3,098.7	3,074.4	9.7	8.2	151.18	-182.9	-339.5	722.3	709.3	13.05	55.339		
3,300.0	3,261.0	3,195.0	3,169.5	10.0	8.5	151.14	-190.7	-351.7	749.6	736.1	13.50	55.528		
3,400.0	3,359.5	3,291.2	3,264.6	10.4	8.8	151.10	-198.5	-364.0	776.8	762.9	13.95	55.705		
3,500.0	3,458.0	3,387.4	3,359.8	10.7	9.1	151.07	-206.2	-376.3	804.1	789.7	14.39	55.870		
3,600.0	3,556.4	3,483.6	3,454.9	11.1	9.4	151.03	-214.0	-388.6	831.3	816.5	14.84	56.025		
3,700.0	3,654.9	3,579.8	3,550.0	11.5	9.7	151.00	-221.8	-400.9	858.6	843.3	15.29	56.170		
3,800.0	3,753.4	3,676.0	3,645.1	11.8	10.0	150.97	-229.5	-413.1	885.8	870.1	15.73	56.307		
3,900.0	3,851.9	3,772.2	3,740.2	12.2	10.3	150.94	-237.3	-425.4	913.1	896.9	16.18	56.436		
4,000.0	3,950.4	3,868.5	3,835.3	12.5	10.6	150.92	-245.1	-437.7	940.3	923.7	16.63	56.557		
4,100.0	4,048.9	3,964.7	3,930.4	12.9	10.9	150.89	-252.9	-450.0	967.6	950.5	17.07	56.672		
4,200.0	4,147.3	4,060.9	4,025.5	13.2	11.2	150.87	-260.6	-462.3	994.8	977.3	17.52	56.780		
4,300.0	4,245.8	4,157.1	4,120.6	13.6	11.5	150.85	-268.4	-474.6	1,022.1	1,004.1	17.97	56.883		
4,400.0	4,344.3	4,253.3	4,215.7	13.9	11.8	150.82	-276.2	-486.8	1,049.4	1,030.9	18.42	56.981		
4,500.0	4,442.8	4,349.5	4,310.9	14.3	12.1	150.80	-283.9	-499.1	1,076.6	1,057.7	18.86	57.074		
4,600.0	4,541.3	4,445.7	4,406.0	14.6	12.4	150.79	-291.7	-511.4	1,103.9	1,084.5	19.31	57.162		
4,700.0	4,639.7	4,542.0	4,501.1	15.0	12.7	150.77	-299.5	-523.7	1,131.1	1,111.3	19.76	57.246		
4,800.0	4,738.2	4,638.2	4,596.2	15.3	13.0	150.75	-307.3	-536.0	1,158.4	1,138.2	20.21	57.327		
4,900.0	4,836.7	4,734.4	4,691.3	15.7	13.3	150.73	-315.0	-548.2	1,185.6	1,165.0	20.65	57.403		
5,000.0	4,935.2	4,830.6	4,786.4	16.0	13.6	150.72	-322.8	-560.5	1,212.9	1,191.8	21.10	57.477		
5,100.0	5,033.7	4,926.8	4,881.5	16.4	13.9	150.70	-330.6	-572.8	1,240.1	1,218.6	21.55	57.547		

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 3H-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 3H-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 #2	Offset TVD Reference:	Offset Datum

Offset Design S9-T2N-R67W (Sprague) - Sprague 3C-9H-N267 - Hz - Plan #1													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	
5,200.0	5,132.1	5,023.0	4,976.6	16.7	14.2	150.69	-338.3	-585.1	1,267.4	1,245.4	22.00	57.614		
5,300.0	5,230.6	5,119.2	5,071.7	17.1	14.5	150.67	-346.1	-597.4	1,294.6	1,272.2	22.45	57.678		
5,400.0	5,329.1	5,215.5	5,166.8	17.4	14.8	150.66	-353.9	-609.6	1,321.9	1,299.0	22.89	57.740		
5,500.0	5,427.6	5,311.7	5,262.0	17.8	15.2	150.65	-361.7	-621.9	1,349.1	1,325.8	23.34	57.799		
5,600.0	5,526.1	5,407.9	5,357.1	18.1	15.5	150.64	-369.4	-634.2	1,376.4	1,352.6	23.79	57.856		
5,700.0	5,624.5	5,504.1	5,452.2	18.5	15.8	150.62	-377.2	-646.5	1,403.6	1,379.4	24.24	57.911		
5,800.0	5,723.3	5,600.7	5,547.7	18.8	16.1	150.84	-385.0	-658.8	1,429.4	1,404.7	24.73	57.799		
5,900.0	5,822.6	5,698.0	5,643.9	19.0	16.4	150.95	-392.9	-671.2	1,452.3	1,427.1	25.20	57.636		
6,000.0	5,922.2	5,795.9	5,740.6	19.2	16.7	150.97	-400.8	-683.7	1,472.1	1,446.5	25.63	57.427		
6,100.0	6,022.0	5,894.3	5,837.9	19.4	17.0	150.90	-408.7	-696.3	1,489.0	1,463.0	26.04	57.175		
6,200.0	6,122.0	5,993.0	5,935.5	19.5	17.3	-87.27	-416.7	-708.9	1,502.9	1,472.5	30.36	49.507		
6,300.0	6,222.0	6,091.9	6,033.2	19.6	17.6	-87.59	-424.7	-721.5	1,515.3	1,484.6	30.77	49.246		
6,400.0	6,322.0	6,190.7	6,130.9	19.7	17.9	-87.91	-432.7	-734.1	1,527.8	1,496.6	31.19	48.991		
6,500.0	6,422.0	6,289.6	6,228.6	19.8	18.3	-88.23	-440.6	-746.8	1,540.3	1,508.7	31.60	48.739		



Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Sprague 3H-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 3H-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 #2	Offset TVD Reference:	Offset Datum

Offset Design S9-T2N-R67W (Sprague) - Sprague 3D-9H-N267 - Hz - Plan #1													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	-89.95	0.0	-39.1	39.1					
100.0	100.0	100.0	100.0	0.1	0.1	-89.95	0.0	-39.1	39.1	38.9	0.24	160.170		
200.0	200.0	200.0	200.0	0.3	0.3	-89.95	0.0	-39.1	39.1	38.5	0.59	65.953		
300.0	300.0	300.0	300.0	0.5	0.5	-89.95	0.0	-39.1	39.1	38.2	0.94	41.526		
400.0	400.0	400.0	400.0	0.6	0.6	-89.95	0.0	-39.1	39.1	37.8	1.29	30.303	CC, ES	
500.0	500.0	500.0	500.0	0.8	0.8	149.34	0.0	-39.1	40.6	39.0	1.64	24.763		
600.0	599.8	599.2	599.2	1.0	1.0	152.04	-0.4	-39.9	45.9	43.9	1.99	23.078		
700.0	699.5	697.9	697.9	1.2	1.2	154.64	-1.7	-42.1	55.8	53.5	2.34	23.847		
800.0	798.7	796.0	795.9	1.5	1.3	156.66	-3.8	-45.8	70.3	67.6	2.69	26.094		
900.0	897.5	893.1	892.8	1.8	1.5	158.07	-6.7	-50.8	89.4	86.3	3.05	29.265		
1,000.0	995.9	989.4	988.8	2.1	1.7	158.83	-10.4	-57.2	111.3	107.8	3.43	32.484		
1,100.0	1,094.4	1,085.1	1,084.1	2.4	1.9	158.87	-14.9	-65.0	134.4	130.6	3.81	35.314		
1,200.0	1,192.9	1,180.3	1,178.7	2.7	2.2	158.51	-20.1	-74.1	158.8	154.6	4.20	37.827		
1,300.0	1,291.4	1,274.8	1,272.4	3.1	2.4	157.91	-26.1	-84.4	184.4	179.8	4.60	40.085		
1,400.0	1,389.9	1,370.6	1,367.3	3.4	2.7	157.25	-32.8	-95.9	210.9	205.8	5.01	42.078		
1,500.0	1,488.4	1,467.0	1,462.7	3.8	2.9	156.72	-39.5	-107.6	237.4	232.0	5.43	43.741		
1,600.0	1,586.8	1,563.4	1,558.2	4.1	3.2	156.30	-46.2	-119.2	264.0	258.1	5.85	45.147		
1,700.0	1,685.3	1,659.7	1,653.6	4.5	3.5	155.95	-52.9	-130.8	290.6	284.3	6.27	46.351		
1,800.0	1,783.8	1,756.1	1,749.1	4.8	3.7	155.66	-59.6	-142.4	317.2	310.5	6.69	47.392		
1,900.0	1,882.3	1,852.5	1,844.5	5.1	4.0	155.42	-66.3	-154.0	343.8	336.7	7.12	48.300		
2,000.0	1,980.8	1,948.9	1,940.0	5.5	4.3	155.21	-73.0	-165.6	370.4	362.8	7.54	49.098		
2,100.0	2,079.2	2,045.3	2,035.4	5.8	4.6	155.03	-79.7	-177.3	397.0	389.0	7.97	49.806		
2,200.0	2,177.7	2,141.7	2,130.9	6.2	4.9	154.87	-86.4	-188.9	423.6	415.2	8.40	50.437		
2,300.0	2,276.2	2,238.1	2,226.3	6.5	5.1	154.74	-93.1	-200.5	450.2	441.4	8.83	51.002		
2,400.0	2,374.7	2,334.5	2,321.8	6.9	5.4	154.61	-99.8	-212.1	476.8	467.6	9.26	51.513		
2,500.0	2,473.2	2,430.8	2,417.2	7.2	5.7	154.50	-106.5	-223.7	503.4	493.8	9.69	51.975		
2,600.0	2,571.6	2,527.2	2,512.7	7.6	6.0	154.40	-113.2	-235.3	530.1	520.0	10.12	52.396		
2,700.0	2,670.1	2,623.6	2,608.1	7.9	6.3	154.31	-120.0	-247.0	556.7	546.1	10.55	52.781		
2,800.0	2,768.6	2,720.0	2,703.6	8.3	6.6	154.23	-126.7	-258.6	583.3	572.3	10.98	53.134		
2,900.0	2,867.1	2,816.4	2,799.0	8.6	6.8	154.16	-133.4	-270.2	609.9	598.5	11.41	53.458		
3,000.0	2,965.6	2,912.8	2,894.5	9.0	7.1	154.09	-140.1	-281.8	636.6	624.7	11.84	53.758		
3,100.0	3,064.0	3,009.2	2,989.9	9.3	7.4	154.03	-146.8	-293.4	663.2	650.9	12.27	54.036		
3,200.0	3,162.5	3,105.6	3,085.4	9.7	7.7	153.97	-153.5	-305.0	689.8	677.1	12.71	54.294		
3,300.0	3,261.0	3,201.9	3,180.8	10.0	8.0	153.91	-160.2	-316.7	716.4	703.3	13.14	54.534		
3,400.0	3,359.5	3,298.3	3,276.3	10.4	8.3	153.86	-166.9	-328.3	743.1	729.5	13.57	54.759		
3,500.0	3,458.0	3,394.7	3,371.7	10.7	8.6	153.82	-173.6	-339.9	769.7	755.7	14.00	54.968		
3,600.0	3,556.4	3,491.1	3,467.2	11.1	8.8	153.77	-180.3	-351.5	796.3	781.9	14.44	55.165		
3,700.0	3,654.9	3,587.5	3,562.6	11.5	9.1	153.73	-187.0	-363.1	823.0	808.1	14.87	55.350		
3,800.0	3,753.4	3,683.9	3,658.1	11.8	9.4	153.70	-193.7	-374.7	849.6	834.3	15.30	55.524		
3,900.0	3,851.9	3,780.3	3,753.5	12.2	9.7	153.66	-200.4	-386.4	876.2	860.5	15.73	55.687		
4,000.0	3,950.4	3,876.7	3,849.0	12.5	10.0	153.63	-207.1	-398.0	902.8	886.7	16.17	55.842		
4,100.0	4,048.9	3,973.0	3,944.4	12.9	10.3	153.60	-213.9	-409.6	929.5	912.9	16.60	55.989		
4,200.0	4,147.3	4,069.4	4,039.9	13.2	10.6	153.57	-220.6	-421.2	956.1	939.1	17.03	56.127		
4,300.0	4,245.8	4,165.8	4,135.3	13.6	10.9	153.54	-227.3	-432.8	982.7	965.3	17.47	56.259		
4,400.0	4,344.3	4,262.2	4,230.8	13.9	11.1	153.51	-234.0	-444.5	1,009.4	991.5	17.90	56.384		
4,500.0	4,442.8	4,358.6	4,326.2	14.3	11.4	153.49	-240.7	-456.1	1,036.0	1,017.7	18.34	56.502		
4,600.0	4,541.3	4,455.0	4,421.7	14.6	11.7	153.46	-247.4	-467.7	1,062.6	1,043.9	18.77	56.615		
4,700.0	4,639.7	4,551.4	4,517.1	15.0	12.0	153.44	-254.1	-479.3	1,089.3	1,070.1	19.20	56.723		
4,800.0	4,738.2	4,647.8	4,612.6	15.3	12.3	153.42	-260.8	-490.9	1,115.9	1,096.2	19.64	56.826		
4,900.0	4,836.7	4,744.1	4,708.0	15.7	12.6	153.40	-267.5	-502.5	1,142.5	1,122.4	20.07	56.924		
5,000.0	4,935.2	4,840.5	4,803.5	16.0	12.9	153.38	-274.2	-514.2	1,169.1	1,148.6	20.50	57.018		
5,100.0	5,033.7	4,936.9	4,898.9	16.4	13.2	153.36	-280.9	-525.8	1,195.8	1,174.8	20.94	57.108		

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 3H-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 3H-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 #2	Offset TVD Reference:	Offset Datum

Offset Design S9-T2N-R67W (Sprague) - Sprague 3D-9H-N267 - Hz - Plan #1													Offset Site Error:	0.0 ft
Survey Program: 0-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	5,132.1	5,033.3	4,994.4	16.7	13.5	153.34	-287.6	-537.4	1,222.4	1,201.0	21.37	57.195		
5,300.0	5,230.6	5,129.7	5,089.8	17.1	13.7	153.32	-294.3	-549.0	1,249.0	1,227.2	21.81	57.277		
5,400.0	5,329.1	5,226.1	5,185.3	17.4	14.0	153.30	-301.0	-560.6	1,275.7	1,253.4	22.24	57.357		
5,500.0	5,427.6	5,322.5	5,280.7	17.8	14.3	153.29	-307.8	-572.2	1,302.3	1,279.6	22.68	57.433		
5,600.0	5,526.1	5,418.9	5,376.2	18.1	14.6	153.27	-314.5	-583.9	1,328.9	1,305.8	23.11	57.506		
5,700.0	5,624.5	5,515.2	5,471.6	18.5	14.9	153.26	-321.2	-595.5	1,355.6	1,332.0	23.54	57.577		
5,800.0	5,723.3	5,612.0	5,567.5	18.8	15.2	153.44	-327.9	-607.1	1,380.7	1,356.7	24.02	57.479		
5,900.0	5,822.6	5,709.5	5,664.0	19.0	15.5	153.53	-334.7	-618.9	1,402.8	1,378.3	24.47	57.318		
6,000.0	5,922.2	5,809.5	5,763.0	19.2	15.8	153.53	-341.6	-630.9	1,421.8	1,396.9	24.91	57.089		
6,100.0	6,022.0	5,933.4	5,886.0	19.4	16.1	153.41	-349.5	-644.6	1,436.8	1,411.5	25.35	56.681		
6,200.0	6,122.0	6,058.5	6,010.3	19.5	16.4	-84.76	-356.1	-655.9	1,447.0	1,417.1	29.82	48.523		
6,300.0	6,222.0	6,184.2	6,135.6	19.6	16.7	-85.00	-361.3	-665.0	1,453.8	1,423.6	30.20	48.147		
6,400.0	6,322.0	6,310.3	6,261.5	19.7	16.9	-85.17	-365.2	-671.7	1,458.8	1,428.3	30.54	47.763		
6,500.0	6,422.0	6,436.7	6,387.8	19.8	17.1	-85.29	-367.7	-676.1	1,462.1	1,431.2	30.86	47.372		
6,600.0	6,522.0	6,563.3	6,514.3	19.9	17.3	-85.34	-368.8	-678.0	1,463.5	1,432.4	31.16	46.967		
6,700.0	6,622.0	6,671.0	6,622.0	20.0	17.4	-85.34	-368.9	-678.1	1,463.6	1,432.2	31.43	46.568		
6,778.0	6,700.0	6,749.0	6,700.0	20.1	17.5	-85.34	-368.9	-678.1	1,463.6	1,432.0	31.63	46.268		
6,800.0	6,722.0	6,771.0	6,722.0	20.1	17.5	151.15	-368.9	-678.1	1,464.0	1,436.2	27.81	52.651		
6,850.0	6,771.8	6,820.8	6,771.8	20.2	17.6	151.05	-368.9	-678.1	1,467.6	1,439.7	27.89	52.618		
6,900.0	6,821.1	6,870.1	6,821.1	20.4	17.6	150.85	-368.9	-678.1	1,475.0	1,447.1	27.88	52.895		
6,950.0	6,869.4	6,918.4	6,869.4	20.7	17.7	150.53	-368.9	-678.1	1,486.1	1,458.3	27.79	53.468		
6,962.0	6,880.9	6,929.9	6,880.9	20.8	17.7	150.43	-368.9	-678.1	1,489.4	1,461.6	27.76	53.652		
7,000.0	6,917.1	6,966.1	6,917.1	21.0	17.7	162.44	-368.9	-678.1	1,499.9	1,472.0	27.85	53.846		
7,050.0	6,965.2	7,012.5	6,963.5	21.2	17.8	-179.14	-368.8	-678.1	1,513.4	1,485.5	27.96	54.119		
7,100.0	7,013.3	7,050.0	7,001.0	21.4	17.8	-160.00	-367.1	-678.1	1,526.8	1,498.8	28.03	54.463		
7,150.0	7,061.2	7,091.4	7,042.1	21.5	17.8	-143.22	-362.4	-678.0	1,540.0	1,511.9	28.07	54.871		
11,600.0	7,529.0	11,482.5	7,529.0	70.0	70.1	-90.00	3,780.8	-612.0	1,543.0	1,405.8	137.23	11.244		
11,700.0	7,529.0	11,582.3	7,529.0	71.6	71.8	-90.00	3,880.4	-606.6	1,535.5	1,394.9	140.67	10.916		
11,800.0	7,529.0	11,682.0	7,529.0	73.3	73.4	-90.00	3,979.9	-601.2	1,528.1	1,384.0	144.10	10.604		
11,900.0	7,529.0	11,781.7	7,529.0	75.0	75.1	-90.00	4,079.5	-595.8	1,520.6	1,373.1	147.54	10.306		
12,000.0	7,529.0	11,881.4	7,529.0	76.6	76.8	-90.00	4,179.1	-590.5	1,513.2	1,362.2	150.99	10.022		
12,100.0	7,529.0	11,981.2	7,529.0	78.3	78.5	-90.00	4,278.7	-585.1	1,505.7	1,351.3	154.43	9.750		
12,200.0	7,529.0	12,080.9	7,529.0	80.0	80.2	-90.00	4,378.2	-579.7	1,498.3	1,340.4	157.88	9.490		
12,300.0	7,529.0	12,180.6	7,529.0	81.7	81.9	-90.00	4,477.8	-574.3	1,490.8	1,329.5	161.33	9.241		
12,400.0	7,529.0	12,280.3	7,529.0	83.4	83.6	-90.00	4,577.4	-568.9	1,483.4	1,318.6	164.78	9.002		
12,500.0	7,529.0	12,380.0	7,529.0	85.1	85.3	-90.00	4,677.0	-563.5	1,475.9	1,307.7	168.23	8.773		
12,600.0	7,529.0	12,479.8	7,529.0	86.8	87.0	-90.00	4,776.5	-558.1	1,468.5	1,296.8	171.69	8.553		
12,700.0	7,529.0	12,579.5	7,529.0	88.5	88.8	-90.00	4,876.1	-552.7	1,461.0	1,285.9	175.15	8.342		
12,800.0	7,529.0	12,679.2	7,529.0	90.2	90.5	-90.00	4,975.7	-547.3	1,453.6	1,274.9	178.61	8.138		
12,900.0	7,529.0	12,778.9	7,529.0	91.9	92.2	-90.00	5,075.3	-541.9	1,446.1	1,264.0	182.07	7.943		
13,003.0	7,529.0	12,876.7	7,529.0	93.6	93.9	-90.00	5,172.9	-536.6	1,438.4	1,252.9	185.55	7.752 SF		



Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Sprague 3H-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 3H-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 #2	Offset TVD Reference:	Offset Datum

Offset Design S9-T2N-R67W (Sprague) - Sprague 3E-9H-N267 - Hz - Plan #1													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	-89.95	0.0	-30.8	30.8					
100.0	100.0	100.0	100.0	0.1	0.1	-89.95	0.0	-30.8	30.8	30.5	0.24	125.848		
200.0	200.0	200.0	200.0	0.3	0.3	-89.95	0.0	-30.8	30.8	30.2	0.59	51.820 CC		
300.0	300.0	299.8	299.8	0.5	0.5	-91.43	-0.8	-31.1	31.1	30.1	0.94	32.980 ES		
400.0	400.0	399.5	399.5	0.6	0.7	-95.67	-3.2	-32.1	32.2	30.9	1.30	24.884		
500.0	500.0	499.1	499.0	0.8	0.8	137.85	-7.2	-33.7	35.8	34.1	1.65	21.631		
600.0	599.8	598.5	598.1	1.0	1.0	135.61	-12.8	-36.0	43.0	40.9	2.02	21.224		
700.0	699.5	697.4	696.8	1.2	1.2	135.12	-19.9	-39.0	53.6	51.2	2.41	22.208		
800.0	798.7	795.8	794.7	1.5	1.5	135.61	-28.6	-42.6	67.7	64.9	2.83	23.903		
900.0	897.5	893.5	891.8	1.8	1.7	136.50	-38.7	-46.7	85.3	82.0	3.29	25.952		
1,000.0	995.9	990.7	988.2	2.1	2.0	137.13	-50.3	-51.5	105.0	101.3	3.77	27.876		
1,100.0	1,094.4	1,087.5	1,083.9	2.4	2.3	136.91	-63.4	-56.9	125.6	121.4	4.27	29.413		
1,200.0	1,192.9	1,183.9	1,179.0	2.7	2.6	136.21	-77.9	-62.9	147.2	142.4	4.80	30.668		
1,300.0	1,291.4	1,280.3	1,273.9	3.1	2.9	135.24	-93.8	-69.4	169.6	164.3	5.34	31.742		
1,400.0	1,389.9	1,377.6	1,369.6	3.4	3.2	134.39	-110.2	-76.2	192.3	186.4	5.90	32.602		
1,500.0	1,488.4	1,475.0	1,465.4	3.8	3.6	133.73	-126.6	-83.0	215.0	208.5	6.46	33.297		
1,600.0	1,586.8	1,572.3	1,561.1	4.1	3.9	133.19	-143.0	-89.7	237.7	230.7	7.02	33.868		
1,700.0	1,685.3	1,669.7	1,656.8	4.5	4.3	132.74	-159.4	-96.5	260.5	252.9	7.58	34.345		
1,800.0	1,783.8	1,767.1	1,752.5	4.8	4.6	132.37	-175.8	-103.3	283.3	275.1	8.15	34.749		
1,900.0	1,882.3	1,864.4	1,848.3	5.1	5.0	132.05	-192.2	-110.0	306.0	297.3	8.72	35.095		
2,000.0	1,980.8	1,961.8	1,944.0	5.5	5.3	131.77	-208.6	-116.8	328.8	319.5	9.29	35.394		
2,100.0	2,079.2	2,059.1	2,039.7	5.8	5.7	131.54	-225.0	-123.6	351.6	341.8	9.86	35.655		
2,200.0	2,177.7	2,156.5	2,135.5	6.2	6.0	131.33	-241.4	-130.3	374.4	364.0	10.43	35.885		
2,300.0	2,276.2	2,253.9	2,231.2	6.5	6.4	131.14	-257.8	-137.1	397.2	386.2	11.01	36.089		
2,400.0	2,374.7	2,351.2	2,326.9	6.9	6.7	130.97	-274.2	-143.9	420.0	408.4	11.58	36.270		
2,500.0	2,473.2	2,448.6	2,422.6	7.2	7.1	130.83	-290.6	-150.6	442.8	430.7	12.15	36.434		
2,600.0	2,571.6	2,545.9	2,518.4	7.6	7.4	130.69	-307.0	-157.4	465.6	452.9	12.73	36.581		
2,700.0	2,670.1	2,643.3	2,614.1	7.9	7.8	130.57	-323.4	-164.2	488.5	475.1	13.30	36.715		
2,800.0	2,768.6	2,740.6	2,709.8	8.3	8.1	130.46	-339.8	-170.9	511.3	497.4	13.88	36.836		
2,900.0	2,867.1	2,838.0	2,805.5	8.6	8.5	130.36	-356.2	-177.7	534.1	519.6	14.46	36.948		
3,000.0	2,965.6	2,935.4	2,901.3	9.0	8.8	130.27	-372.6	-184.5	556.9	541.9	15.03	37.050		
3,100.0	3,064.0	3,032.7	2,997.0	9.3	9.2	130.18	-389.0	-191.2	579.7	564.1	15.61	37.144		
3,200.0	3,162.5	3,132.2	3,094.9	9.7	9.5	130.11	-405.7	-198.1	602.5	586.3	16.18	37.225		
3,300.0	3,261.0	3,236.9	3,198.1	10.0	9.9	130.14	-421.9	-204.8	624.4	607.6	16.76	37.257		
3,400.0	3,359.5	3,342.1	3,302.1	10.4	10.2	130.31	-436.4	-210.8	645.2	627.8	17.32	37.259		
3,500.0	3,458.0	3,447.8	3,406.8	10.7	10.5	130.59	-449.3	-216.1	664.8	646.9	17.85	37.236		
3,600.0	3,556.4	3,553.8	3,512.1	11.1	10.7	131.00	-460.4	-220.7	683.3	664.9	18.37	37.194		
3,700.0	3,654.9	3,660.0	3,617.9	11.5	11.0	131.50	-469.7	-224.5	700.7	681.9	18.87	37.136		
3,800.0	3,753.4	3,766.6	3,724.1	11.8	11.2	132.11	-477.2	-227.6	717.1	697.7	19.34	37.069		
3,900.0	3,851.9	3,873.2	3,830.6	12.2	11.4	132.82	-482.8	-230.0	732.4	712.6	19.80	36.998		
4,000.0	3,950.4	3,980.0	3,937.3	12.5	11.5	133.61	-486.7	-231.6	746.7	726.5	20.22	36.929		
4,100.0	4,048.9	4,086.7	4,044.0	12.9	11.6	134.50	-488.7	-232.4	760.1	739.5	20.62	36.865		
4,200.0	4,147.3	4,190.0	4,147.3	13.2	11.8	135.44	-489.0	-232.5	772.6	751.6	20.99	36.808		
4,300.0	4,245.8	4,288.5	4,245.8	13.6	11.9	136.32	-489.0	-232.5	785.2	763.8	21.35	36.774		
4,400.0	4,344.3	4,387.0	4,344.3	13.9	12.0	137.17	-489.0	-232.5	797.9	776.2	21.71	36.758		
4,500.0	4,442.8	4,485.5	4,442.8	14.3	12.1	138.00	-489.0	-232.5	810.8	788.8	22.06	36.759		
4,600.0	4,541.3	4,584.0	4,541.3	14.6	12.2	138.81	-489.0	-232.5	823.9	801.5	22.40	36.774		
4,700.0	4,639.7	4,682.4	4,639.7	15.0	12.3	139.58	-489.0	-232.5	837.1	814.4	22.75	36.804		
4,800.0	4,738.2	4,780.9	4,738.2	15.3	12.4	140.34	-489.0	-232.5	850.5	827.4	23.08	36.845		
4,900.0	4,836.7	4,879.4	4,836.7	15.7	12.5	141.07	-489.0	-232.5	864.0	840.6	23.42	36.897		
5,000.0	4,935.2	4,977.9	4,935.2	16.0	12.7	141.78	-489.0	-232.5	877.7	853.9	23.75	36.958		
5,100.0	5,033.7	5,076.4	5,033.7	16.4	12.8	142.46	-489.0	-232.5	891.5	867.4	24.08	37.028		

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 3H-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 3H-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 #2	Offset TVD Reference:	Offset Datum

Offset Design S9-T2N-R67W (Sprague) - Sprague 3E-9H-N267 - Hz - Plan #1													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	5,132.1	5,174.9	5,132.1	16.7	12.9	143.13	-489.0	-232.5	905.4	881.0	24.40	37.105		
5,300.0	5,230.6	5,273.3	5,230.6	17.1	13.0	143.77	-489.0	-232.5	919.4	894.7	24.72	37.188		
5,400.0	5,329.1	5,371.8	5,329.1	17.4	13.1	144.40	-489.0	-232.5	933.5	908.5	25.04	37.278		
5,500.0	5,427.6	5,470.3	5,427.6	17.8	13.3	145.01	-489.0	-232.5	947.8	922.4	25.36	37.372		
5,600.0	5,526.1	5,568.8	5,526.1	18.1	13.4	145.60	-489.0	-232.5	962.1	936.5	25.68	37.471		
5,700.0	5,624.5	5,667.3	5,624.5	18.5	13.5	146.17	-489.0	-232.5	976.6	950.6	25.99	37.574		
5,800.0	5,723.3	5,766.0	5,723.3	18.8	13.6	146.82	-489.0	-232.5	989.7	963.4	26.32	37.597		
5,900.0	5,822.6	5,865.3	5,822.6	19.0	13.8	147.31	-489.0	-232.5	999.9	973.3	26.64	37.540		
6,000.0	5,922.2	5,964.9	5,922.2	19.2	13.9	147.66	-489.0	-232.5	1,007.3	980.4	26.93	37.404		
6,100.0	6,022.0	6,064.7	6,022.0	19.4	14.0	147.86	-489.0	-232.5	1,011.7	984.5	27.20	37.189		
6,200.0	6,122.0	6,164.7	6,122.0	19.5	14.1	-90.07	-489.0	-232.5	1,013.2	987.4	25.82	39.243		
6,300.0	6,222.0	6,264.7	6,222.0	19.6	14.3	-90.07	-489.0	-232.5	1,013.2	987.1	26.11	38.805		
6,400.0	6,322.0	6,364.7	6,322.0	19.7	14.4	-90.07	-489.0	-232.5	1,013.2	986.8	26.40	38.375		
6,500.0	6,422.0	6,464.7	6,422.0	19.8	14.5	-90.07	-489.0	-232.5	1,013.2	986.5	26.70	37.952		
6,600.0	6,522.0	6,564.7	6,522.0	19.9	14.7	-90.07	-489.0	-232.5	1,013.2	986.2	26.99	37.537		
6,700.0	6,622.0	6,664.7	6,622.0	20.0	14.8	-90.07	-489.0	-232.5	1,013.2	985.9	27.29	37.129		
6,778.0	6,700.0	6,742.7	6,700.0	20.1	14.9	-90.07	-489.0	-232.5	1,013.2	985.7	27.52	36.816		
6,800.0	6,722.0	6,764.7	6,722.0	20.1	15.0	146.43	-489.0	-232.5	1,013.5	984.4	29.14	34.780		
6,850.0	6,771.8	6,814.4	6,771.7	20.2	15.0	146.43	-487.8	-232.5	1,017.0	987.7	29.24	34.785		
6,900.0	6,821.1	6,862.3	6,819.3	20.4	15.0	146.58	-482.6	-232.5	1,024.1	994.9	29.20	35.076		
6,950.0	6,869.4	6,906.9	6,863.1	20.7	15.0	146.78	-474.3	-232.5	1,035.0	1,005.9	29.05	35.631		
6,962.0	6,880.9	6,917.0	6,872.9	20.8	14.9	146.83	-471.9	-232.5	1,038.2	1,009.2	28.99	35.808		
7,000.0	6,917.1	6,950.0	6,904.7	21.0	14.9	159.43	-463.0	-232.5	1,048.8	1,020.0	28.82	36.392		
7,050.0	6,965.2	6,988.6	6,941.1	21.2	14.8	178.68	-450.3	-232.5	1,063.1	1,034.6	28.57	37.217		
7,100.0	7,013.3	7,028.1	6,977.4	21.4	14.7	-161.25	-434.8	-232.5	1,077.7	1,049.4	28.29	38.092		
7,150.0	7,061.2	7,066.9	7,011.9	21.5	14.6	-143.56	-417.1	-232.5	1,092.4	1,064.4	28.02	38.983		
7,200.0	7,108.4	7,105.1	7,044.7	21.7	14.5	-129.57	-397.5	-232.5	1,107.0	1,079.3	27.77	39.868		
7,250.0	7,154.7	7,142.9	7,075.7	21.8	14.4	-118.92	-376.0	-232.5	1,121.5	1,093.9	27.53	40.733		
7,300.0	7,199.5	7,180.2	7,105.0	21.8	14.2	-110.76	-352.7	-232.5	1,135.5	1,108.2	27.32	41.563		
7,350.0	7,242.7	7,217.2	7,132.4	21.9	14.1	-104.38	-327.9	-232.5	1,149.1	1,121.9	27.13	42.351		
7,400.0	7,283.9	7,250.0	7,155.3	21.9	14.0	-99.31	-304.4	-232.5	1,162.0	1,135.0	26.98	43.069		
7,450.0	7,322.7	7,290.5	7,181.7	21.9	13.9	-95.12	-273.7	-232.5	1,174.2	1,147.4	26.82	43.789		
7,500.0	7,358.9	7,326.9	7,203.4	21.9	13.8	-91.69	-244.6	-232.5	1,185.6	1,158.9	26.68	44.434		
7,550.0	7,392.2	7,363.1	7,223.3	21.9	13.7	-88.85	-214.3	-232.5	1,196.0	1,169.5	26.56	45.026		
7,600.0	7,422.3	7,400.0	7,241.4	22.0	13.6	-86.50	-182.2	-232.5	1,205.4	1,179.0	26.46	45.563		
7,650.0	7,449.1	7,435.2	7,256.8	22.0	13.6	-84.56	-150.5	-232.5	1,213.7	1,187.4	26.38	46.007		
7,700.0	7,472.2	7,471.2	7,270.5	22.0	13.6	-82.99	-117.3	-232.5	1,220.9	1,194.5	26.33	46.366		
7,750.0	7,491.6	7,507.1	7,282.1	22.0	13.6	-81.75	-83.2	-232.5	1,226.8	1,200.5	26.32	46.620		
7,800.0	7,507.0	7,550.0	7,293.0	22.0	13.6	-80.79	-41.8	-232.5	1,231.5	1,205.2	26.35	46.734		
7,850.0	7,518.5	7,579.0	7,298.7	22.1	13.6	-80.15	-13.4	-232.5	1,234.8	1,208.4	26.44	46.695		
7,900.0	7,525.8	7,614.9	7,303.7	22.2	13.7	-79.76	22.2	-232.5	1,236.9	1,210.3	26.59	46.515		
7,950.0	7,528.9	7,650.0	7,306.4	22.3	13.8	-79.64	57.2	-232.5	1,237.6	1,210.8	26.80	46.184		
7,962.1	7,529.0	7,659.6	7,306.7	22.3	13.9	-79.65	66.8	-232.5	1,237.6	1,210.7	26.86	46.068		
8,000.0	7,529.0	7,690.9	7,307.0	22.4	14.0	-79.67	98.1	-232.4	1,237.5	1,210.4	27.14	45.590		
8,100.0	7,529.0	7,790.9	7,307.0	22.7	14.5	-79.67	198.1	-232.4	1,237.5	1,209.3	28.23	43.834		
8,200.0	7,529.0	7,890.9	7,307.0	23.2	15.2	-79.67	298.1	-232.4	1,237.5	1,207.8	29.68	41.702		
8,300.0	7,529.0	7,990.9	7,307.0	23.8	16.1	-79.67	398.1	-232.4	1,237.5	1,206.1	31.43	39.369		
8,400.0	7,529.0	8,090.9	7,307.0	24.4	17.1	-79.67	498.1	-232.4	1,237.5	1,204.0	33.46	36.989		
8,500.0	7,529.0	8,190.9	7,307.0	25.2	18.3	-79.67	598.1	-232.4	1,237.5	1,201.8	35.70	34.665		
8,600.0	7,529.0	8,290.9	7,307.0	26.1	19.5	-79.67	698.1	-232.4	1,237.5	1,199.3	38.12	32.460		
8,700.0	7,529.0	8,390.9	7,307.0	27.1	20.8	-79.67	798.1	-232.4	1,237.4	1,196.8	40.69	30.408		
8,800.0	7,529.0	8,490.9	7,307.0	28.2	22.1	-79.66	898.1	-232.4	1,237.4	1,194.0	43.39	28.519		

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 3H-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 3H-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 #2	Offset TVD Reference:	Offset Datum

Offset Design S9-T2N-R67W (Sprague) - Sprague 3E-9H-N267 - Hz - Plan #1													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		
8,822.1	7,529.0	8,512.9	7,307.0	28.4	22.4	-79.66	920.1	-232.4	1,237.4	1,193.4	44.00	28.124		
8,880.8	7,529.0	8,571.6	7,307.0	29.1	23.3	-79.66	978.8	-232.3	1,236.8	1,191.4	45.43	27.228		
8,900.0	7,529.0	8,590.8	7,307.0	29.3	23.5	-79.65	998.0	-232.3	1,236.4	1,190.5	45.97	26.899		
9,000.0	7,529.0	8,690.8	7,307.0	30.4	25.0	-79.64	1,098.0	-232.3	1,234.4	1,185.6	48.83	25.278		
9,100.0	7,529.0	8,790.8	7,307.0	31.6	26.5	-79.62	1,198.0	-232.3	1,232.4	1,180.6	51.77	23.803		
9,200.0	7,529.0	8,890.8	7,307.0	32.9	28.0	-79.60	1,298.0	-232.3	1,230.4	1,175.6	54.77	22.463		
9,300.0	7,529.0	8,990.8	7,307.0	34.2	29.6	-79.59	1,398.0	-232.3	1,228.3	1,170.5	57.82	21.243		
9,400.0	7,529.0	9,090.7	7,307.0	35.6	31.1	-79.57	1,497.9	-232.3	1,226.3	1,165.4	60.91	20.132		
9,500.0	7,529.0	9,194.2	7,307.0	36.9	32.8	-79.55	1,601.4	-232.3	1,224.3	1,160.2	64.09	19.101		
9,600.0	7,529.0	9,320.7	7,307.0	38.4	34.8	-79.51	1,727.9	-230.5	1,220.9	1,153.2	67.67	18.042		
9,700.0	7,529.0	9,446.9	7,307.0	39.8	36.8	-79.45	1,854.0	-225.9	1,215.3	1,144.0	71.27	17.053		
9,800.0	7,529.0	9,572.8	7,307.0	41.3	38.9	-79.37	1,979.6	-218.6	1,207.6	1,132.7	74.88	16.128		
9,900.0	7,529.0	9,698.1	7,307.0	42.8	40.9	-79.25	2,104.6	-208.6	1,197.7	1,119.2	78.49	15.260		
10,000.0	7,529.0	9,813.5	7,307.0	44.3	42.8	-79.13	2,219.4	-197.1	1,185.9	1,103.9	81.95	14.470		
10,100.0	7,529.0	9,912.8	7,307.0	45.8	44.4	-79.01	2,318.1	-186.7	1,173.6	1,088.5	85.17	13.780		
10,200.0	7,529.0	10,012.0	7,307.0	47.3	46.1	-78.90	2,416.8	-176.3	1,161.4	1,073.0	88.40	13.138		
10,300.0	7,529.0	10,111.2	7,307.0	48.9	47.7	-78.78	2,515.5	-166.0	1,149.1	1,057.5	91.63	12.541		
10,400.0	7,529.0	10,210.4	7,307.0	50.4	49.4	-78.65	2,614.1	-155.6	1,136.9	1,042.0	94.87	11.983		
10,500.0	7,529.0	10,309.6	7,307.0	52.0	51.1	-78.53	2,712.8	-145.2	1,124.6	1,026.5	98.12	11.461		
10,600.0	7,529.0	10,408.8	7,307.0	53.6	52.7	-78.40	2,811.5	-134.8	1,112.4	1,011.0	101.38	10.973		
10,700.0	7,529.0	10,508.1	7,307.0	55.2	54.4	-78.27	2,910.2	-124.5	1,100.1	995.5	104.63	10.514		
10,800.0	7,529.0	10,600.0	7,307.0	56.8	56.0	-78.15	3,001.6	-114.9	1,087.9	980.2	107.77	10.095		
10,900.0	7,529.0	10,689.5	7,307.0	58.4	57.5	-78.03	3,090.7	-106.3	1,076.6	965.7	110.88	9.709		
11,000.0	7,529.0	10,773.6	7,307.0	60.1	58.9	-77.93	3,174.5	-99.4	1,066.6	952.7	113.92	9.363		
11,100.0	7,529.0	10,857.9	7,307.0	61.7	60.4	-77.85	3,258.6	-93.8	1,058.1	941.2	116.96	9.047		
11,200.0	7,529.0	10,942.5	7,307.0	63.3	61.8	-77.78	3,343.0	-89.4	1,051.1	931.0	120.02	8.758		
11,300.0	7,529.0	11,027.1	7,307.0	65.0	63.3	-77.72	3,427.7	-86.3	1,045.4	922.4	123.08	8.494		
11,400.0	7,529.0	11,112.0	7,307.0	66.6	64.7	-77.68	3,512.5	-84.4	1,041.3	915.1	126.16	8.253		
11,500.0	7,529.0	11,200.0	7,307.0	68.3	66.2	-77.65	3,600.5	-83.8	1,038.6	909.2	129.30	8.032		
11,600.0	7,529.0	11,281.8	7,307.0	70.0	67.6	-77.64	3,682.3	-84.4	1,037.3	904.9	132.35	7.837		
11,638.3	7,529.0	11,314.4	7,307.0	70.6	68.2	-77.64	3,714.9	-85.0	1,037.2	903.6	133.54	7.767		
11,700.0	7,529.0	11,366.8	7,307.0	71.6	69.1	-77.64	3,767.3	-86.3	1,037.4	902.0	135.46	7.658		
11,800.0	7,529.0	11,451.8	7,307.0	73.3	70.6	-77.66	3,852.2	-89.5	1,039.1	900.5	138.58	7.498		
11,900.0	7,529.0	11,536.6	7,307.0	75.0	72.0	-77.69	3,937.0	-93.9	1,042.1	900.4	141.71	7.354		
12,000.0	7,529.0	11,621.4	7,307.0	76.6	73.5	-77.74	4,021.6	-99.5	1,046.6	901.8	144.85	7.225		
12,100.0	7,529.0	11,719.0	7,307.0	78.3	75.2	-77.80	4,118.8	-106.9	1,052.1	903.8	148.22	7.098		
12,200.0	7,529.0	11,818.8	7,307.0	80.0	76.9	-77.86	4,218.4	-114.5	1,057.5	905.9	151.63	6.974		
12,300.0	7,529.0	11,918.7	7,307.0	81.7	78.6	-77.93	4,317.9	-122.2	1,063.0	907.9	155.05	6.856		
12,400.0	7,529.0	12,018.5	7,307.0	83.4	80.4	-77.99	4,417.5	-129.8	1,068.4	910.0	158.46	6.742		
12,500.0	7,529.0	12,118.3	7,307.0	85.1	82.1	-78.05	4,517.0	-137.4	1,073.9	912.0	161.88	6.634		
12,600.0	7,529.0	12,218.2	7,307.0	86.8	83.8	-78.11	4,616.6	-145.0	1,079.4	914.1	165.31	6.529		
12,700.0	7,529.0	12,318.0	7,307.0	88.5	85.6	-78.17	4,716.1	-152.6	1,084.8	916.1	168.73	6.429		
12,800.0	7,529.0	12,417.9	7,307.0	90.2	87.3	-78.23	4,815.7	-160.2	1,090.3	918.1	172.16	6.333		
12,900.0	7,529.0	12,517.7	7,307.0	91.9	89.0	-78.29	4,915.2	-167.8	1,095.8	920.2	175.60	6.240		
13,003.0	7,529.0	12,620.5	7,307.0	93.6	90.8	-78.35	5,017.8	-175.7	1,101.4	922.3	179.13	6.149 SF		

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 3H-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 3H-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 #2	Offset TVD Reference:	Offset Datum

Offset Design S9-T2N-R67W (Sprague) - Sprague 3F-9H-N267 - Hz - Plan #1													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	-89.95	0.0	-19.6	19.6					
100.0	100.0	100.0	100.0	0.1	0.1	-89.95	0.0	-19.6	19.6	19.3	0.24	80.085		
200.0	200.0	200.0	200.0	0.3	0.3	-89.95	0.0	-19.6	19.6	19.0	0.59	32.976		
300.0	300.0	300.0	300.0	0.5	0.5	-89.95	0.0	-19.6	19.6	18.6	0.94	20.763		
400.0	400.0	400.0	400.0	0.6	0.6	-89.95	0.0	-19.6	19.6	18.3	1.29	15.151 CC, ES		
500.0	500.0	500.0	500.0	0.8	0.8	150.55	0.0	-19.6	21.1	19.4	1.64	12.842		
600.0	599.8	600.0	600.0	1.0	1.0	154.52	-0.8	-19.3	25.3	23.4	1.99	12.730		
700.0	699.5	700.0	700.0	1.2	1.2	157.02	-3.2	-18.3	32.1	29.7	2.34	13.671		
800.0	798.7	800.0	799.8	1.5	1.4	158.32	-7.3	-16.8	41.1	38.4	2.70	15.210		
900.0	897.5	899.7	899.4	1.8	1.5	158.86	-13.0	-14.6	52.6	49.5	3.07	17.092		
1,000.0	995.9	999.5	998.9	2.1	1.8	158.50	-20.3	-11.9	64.7	61.2	3.47	18.649		
1,100.0	1,094.4	1,099.5	1,098.4	2.4	2.0	157.13	-29.3	-8.5	75.9	72.1	3.89	19.532		
1,200.0	1,192.9	1,199.6	1,197.9	2.7	2.2	155.09	-39.9	-4.5	86.4	82.1	4.34	19.904		
1,300.0	1,291.4	1,299.8	1,297.2	3.1	2.5	152.56	-52.1	0.1	96.2	91.3	4.84	19.891		
1,400.0	1,389.9	1,399.2	1,395.6	3.4	2.7	150.07	-65.1	5.0	105.8	100.4	5.35	19.749		
1,500.0	1,488.4	1,498.6	1,494.1	3.8	3.0	148.01	-78.0	9.9	115.5	109.6	5.89	19.607		
1,600.0	1,586.8	1,598.1	1,592.6	4.1	3.3	146.26	-91.0	14.8	125.4	118.9	6.44	19.473		
1,700.0	1,685.3	1,697.5	1,691.1	4.5	3.6	144.77	-103.9	19.7	135.3	128.3	6.99	19.349		
1,800.0	1,783.8	1,797.0	1,789.5	4.8	3.8	143.49	-116.8	24.6	145.4	137.8	7.56	19.235		
1,900.0	1,882.3	1,896.4	1,888.0	5.1	4.1	142.37	-129.8	29.5	155.5	147.4	8.13	19.132		
2,000.0	1,980.8	1,995.9	1,986.5	5.5	4.4	141.39	-142.7	34.4	165.7	157.0	8.70	19.039		
2,100.0	2,079.2	2,095.3	2,085.0	5.8	4.7	140.52	-155.7	39.3	175.9	166.6	9.28	18.955		
2,200.0	2,177.7	2,194.8	2,183.5	6.2	5.0	139.75	-168.6	44.2	186.1	176.2	9.86	18.879		
2,300.0	2,276.2	2,294.2	2,281.9	6.5	5.3	139.06	-181.6	49.1	196.4	185.9	10.44	18.810		
2,400.0	2,374.7	2,393.6	2,380.4	6.9	5.6	138.44	-194.5	53.9	206.7	195.6	11.02	18.747		
2,500.0	2,473.2	2,493.1	2,478.9	7.2	5.9	137.87	-207.5	58.8	217.0	205.4	11.61	18.690		
2,600.0	2,571.6	2,592.5	2,577.4	7.6	6.2	137.36	-220.4	63.7	227.3	215.1	12.20	18.638		
2,700.0	2,670.1	2,692.0	2,675.8	7.9	6.5	136.89	-233.4	68.6	237.7	224.9	12.78	18.590		
2,800.0	2,768.6	2,791.4	2,774.3	8.3	6.7	136.46	-246.3	73.5	248.0	234.7	13.37	18.546		
2,900.0	2,867.1	2,890.9	2,872.8	8.6	7.0	136.07	-259.3	78.4	258.4	244.4	13.96	18.506		
3,000.0	2,965.6	2,990.3	2,971.3	9.0	7.3	135.70	-272.2	83.3	268.8	254.2	14.55	18.469		
3,100.0	3,064.0	3,089.8	3,069.7	9.3	7.6	135.37	-285.2	88.2	279.2	264.1	15.15	18.435		
3,200.0	3,162.5	3,189.2	3,168.2	9.7	7.9	135.06	-298.1	93.1	289.6	273.9	15.74	18.403		
3,300.0	3,261.0	3,288.7	3,266.7	10.0	8.2	134.76	-311.0	98.0	300.0	283.7	16.33	18.373		
3,400.0	3,359.5	3,388.1	3,365.2	10.4	8.5	134.49	-324.0	102.9	310.5	293.5	16.92	18.346		
3,500.0	3,458.0	3,487.5	3,463.7	10.7	8.8	134.24	-336.9	107.8	320.9	303.4	17.52	18.320		
3,600.0	3,556.4	3,587.0	3,562.1	11.1	9.1	134.00	-349.9	112.6	331.3	313.2	18.11	18.296		
3,700.0	3,654.9	3,686.4	3,660.6	11.5	9.4	133.78	-362.8	117.5	341.8	323.1	18.70	18.273		
3,800.0	3,753.4	3,785.9	3,759.1	11.8	9.7	133.57	-375.8	122.4	352.2	332.9	19.30	18.252		
3,900.0	3,851.9	3,885.3	3,857.6	12.2	10.0	133.37	-388.7	127.3	362.7	342.8	19.89	18.232		
4,000.0	3,950.4	3,984.8	3,956.0	12.5	10.3	133.18	-401.7	132.2	373.1	352.6	20.49	18.214		
4,100.0	4,048.9	4,084.2	4,054.5	12.9	10.6	133.01	-414.6	137.1	383.6	362.5	21.08	18.196		
4,200.0	4,147.3	4,183.7	4,153.0	13.2	10.9	132.84	-427.6	142.0	394.0	372.4	21.68	18.179		
4,300.0	4,245.8	4,282.9	4,251.3	13.6	11.2	132.69	-440.4	146.8	404.5	382.2	22.26	18.169		
4,400.0	4,344.3	4,381.6	4,349.2	13.9	11.4	132.74	-451.9	151.2	415.1	392.3	22.81	18.203		
4,500.0	4,442.8	4,480.2	4,447.3	14.3	11.7	133.01	-461.9	155.0	425.9	402.6	23.30	18.281		
4,600.0	4,541.3	4,578.7	4,545.4	14.6	11.9	133.49	-470.2	158.1	436.9	413.2	23.74	18.403		
4,700.0	4,639.7	4,677.1	4,643.4	15.0	12.1	134.17	-477.0	160.7	448.1	424.0	24.13	18.568		
4,800.0	4,738.2	4,775.1	4,741.3	15.3	12.3	135.01	-482.2	162.6	459.7	435.2	24.48	18.779		
4,900.0	4,836.7	4,872.9	4,839.0	15.7	12.4	136.02	-485.8	164.0	471.6	446.8	24.77	19.036		
5,000.0	4,935.2	4,970.3	4,936.4	16.0	12.6	137.16	-487.8	164.8	483.9	458.9	25.01	19.344		
5,100.0	5,033.7	5,067.6	5,033.7	16.4	12.7	138.44	-488.4	165.0	496.7	471.5	25.22	19.699		

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 3H-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 3H-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 #2	Offset TVD Reference:	Offset Datum

Offset Design S9-T2N-R67W (Sprague) - Sprague 3F-9H-N267 - Hz - Plan #1												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	5,132.1	5,166.0	5,132.1	16.7	12.8	139.72	-488.4	165.0	509.9	484.5	25.40	20.074	
5,300.0	5,230.6	5,264.5	5,230.6	17.1	12.9	140.94	-488.4	165.0	523.4	497.8	25.59	20.452	
5,400.0	5,329.1	5,363.0	5,329.1	17.4	13.0	142.10	-488.4	165.0	537.1	511.3	25.78	20.832	
5,500.0	5,427.6	5,461.5	5,427.6	17.8	13.2	143.21	-488.4	165.0	550.9	525.0	25.97	21.214	
5,600.0	5,526.1	5,560.0	5,526.1	18.1	13.3	144.26	-488.4	165.0	565.0	538.9	26.16	21.595	
5,700.0	5,624.5	5,658.4	5,624.5	18.5	13.4	145.26	-488.4	165.0	579.3	552.9	26.36	21.975	
5,800.0	5,723.3	5,757.2	5,723.3	18.8	13.5	146.26	-488.4	165.0	592.3	565.7	26.56	22.300	
5,900.0	5,822.6	5,856.5	5,822.6	19.0	13.7	147.01	-488.4	165.0	602.5	575.7	26.77	22.508	
6,000.0	5,922.2	5,956.1	5,922.2	19.2	13.8	147.54	-488.4	165.0	609.8	582.8	26.98	22.598	
6,100.0	6,022.0	6,055.9	6,022.0	19.4	13.9	147.85	-488.4	165.0	614.2	587.0	27.21	22.573	
6,200.0	6,122.0	6,155.9	6,122.0	19.5	14.1	-90.05	-488.4	165.0	615.7	592.2	23.52	26.174	
6,300.0	6,222.0	6,255.9	6,222.0	19.6	14.2	-90.05	-488.4	165.0	615.7	591.9	23.84	25.822	
6,400.0	6,322.0	6,355.9	6,322.0	19.7	14.3	-90.05	-488.4	165.0	615.7	591.5	24.17	25.479	
6,500.0	6,422.0	6,455.9	6,422.0	19.8	14.5	-90.05	-488.4	165.0	615.7	591.2	24.49	25.144	
6,600.0	6,522.0	6,555.9	6,522.0	19.9	14.6	-90.05	-488.4	165.0	615.7	590.9	24.81	24.817	
6,700.0	6,622.0	6,655.9	6,622.0	20.0	14.7	-90.05	-488.4	165.0	615.7	590.6	25.13	24.498	
6,778.0	6,700.0	6,733.9	6,700.0	20.1	14.8	-90.05	-488.4	165.0	615.7	590.3	25.39	24.254	
6,800.0	6,722.0	6,755.9	6,722.0	20.1	14.9	146.45	-488.4	165.0	616.1	586.9	29.14	21.144	
6,850.0	6,771.8	6,805.7	6,771.8	20.2	14.9	146.47	-488.4	165.0	619.5	590.2	29.30	21.146	
6,900.0	6,821.1	6,855.0	6,821.1	20.4	15.0	146.50	-488.4	165.0	626.5	597.1	29.39	21.317	
6,950.0	6,869.4	6,903.3	6,869.4	20.7	15.1	146.53	-488.4	165.0	637.2	607.8	29.43	21.656	
6,962.0	6,880.9	6,914.8	6,880.9	20.8	15.1	146.53	-488.4	165.0	640.3	610.9	29.42	21.763	
7,000.0	6,917.1	6,951.0	6,917.1	21.0	15.1	158.79	-488.4	165.0	650.5	621.2	29.29	22.214	
7,050.0	6,965.2	6,998.7	6,964.8	21.2	15.2	177.38	-488.3	165.0	664.0	634.8	29.14	22.788	
7,100.0	7,013.3	7,044.8	7,010.8	21.4	15.2	-163.38	-485.7	165.0	677.4	648.4	28.96	23.392	
7,150.0	7,061.2	7,090.9	7,056.5	21.5	15.2	-146.49	-479.5	165.0	690.7	662.0	28.75	24.025	
7,200.0	7,108.4	7,136.9	7,101.4	21.7	15.2	-133.29	-469.6	165.0	703.8	675.3	28.52	24.677	
7,250.0	7,154.7	7,183.0	7,145.5	21.8	15.1	-123.39	-456.1	165.0	716.7	688.4	28.29	25.336	
7,300.0	7,199.5	7,229.2	7,188.4	21.8	15.0	-115.95	-439.1	165.0	729.1	701.0	28.05	25.990	
7,350.0	7,242.7	7,275.6	7,230.0	21.9	14.9	-110.24	-418.6	165.0	741.1	713.2	27.83	26.630	
7,400.0	7,283.9	7,322.1	7,269.9	21.9	14.7	-105.77	-394.7	165.0	752.4	724.8	27.62	27.247	
7,450.0	7,322.7	7,368.9	7,307.9	21.9	14.6	-102.20	-367.6	165.0	763.2	735.7	27.42	27.831	
7,500.0	7,358.9	7,415.9	7,343.8	21.9	14.4	-99.31	-337.2	165.0	773.1	745.9	27.25	28.373	
7,550.0	7,392.2	7,463.3	7,377.3	21.9	14.3	-96.96	-303.7	165.0	782.3	755.2	27.10	28.863	
7,600.0	7,422.3	7,510.9	7,408.1	22.0	14.1	-95.04	-267.4	165.0	790.6	763.6	26.99	29.292	
7,650.0	7,449.1	7,558.9	7,436.0	22.0	14.0	-93.50	-228.3	165.0	798.0	771.1	26.92	29.648	
7,700.0	7,472.2	7,607.2	7,460.6	22.0	13.9	-92.27	-186.8	165.0	804.4	777.5	26.88	29.921	
7,750.0	7,491.6	7,655.8	7,481.8	22.0	13.9	-91.32	-143.1	165.0	809.7	782.8	26.90	30.102	
7,800.0	7,507.0	7,704.8	7,499.3	22.0	13.8	-90.63	-97.4	165.0	814.0	787.0	26.97	30.180	
7,850.0	7,518.5	7,754.0	7,513.0	22.1	13.9	-90.17	-50.1	165.0	817.1	790.0	27.10	30.149	
7,900.0	7,525.8	7,803.5	7,522.5	22.2	14.0	-89.94	-1.5	165.0	819.1	791.8	27.30	30.007	
7,950.0	7,528.9	7,853.3	7,527.8	22.3	14.1	-89.93	48.0	165.0	820.0	792.4	27.56	29.754	
7,962.1	7,529.0	7,865.4	7,528.5	22.3	14.1	-89.96	60.0	165.0	820.0	792.4	27.64	29.673	
7,967.6	7,529.0	7,870.8	7,528.7	22.3	14.1	-89.98	65.5	165.0	820.0	792.4	27.68	29.627	
8,000.0	7,529.0	7,903.2	7,529.0	22.4	14.3	-90.00	97.9	165.0	820.0	792.1	27.94	29.351	
8,100.0	7,529.0	8,003.2	7,529.0	22.7	14.8	-90.00	197.9	165.0	820.0	791.0	29.02	28.261	
8,200.0	7,529.0	8,103.2	7,529.0	23.2	15.5	-90.00	297.9	165.0	820.0	789.6	30.46	26.920	
8,300.0	7,529.0	8,203.2	7,529.0	23.8	16.4	-90.00	397.9	165.0	820.0	787.8	32.23	25.446	
8,400.0	7,529.0	8,303.2	7,529.0	24.4	17.4	-90.00	497.9	165.0	820.0	785.8	34.26	23.935	
8,500.0	7,529.0	8,403.2	7,529.0	25.2	18.5	-90.00	597.9	165.0	820.0	783.5	36.52	22.455	
8,600.0	7,529.0	8,503.2	7,529.0	26.1	19.7	-90.00	697.9	165.0	820.0	781.1	38.96	21.047	
8,700.0	7,529.0	8,603.2	7,529.0	27.1	21.0	-90.00	797.9	165.0	820.0	778.5	41.56	19.732	

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 3H-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 3H-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 #2	Offset TVD Reference:	Offset Datum

Offset Design S9-T2N-R67W (Sprague) - Sprague 3F-9H-N267 - Hz - Plan #1													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	
8,800.0	7,529.0	8,703.2	7,529.0	28.2	22.3	-90.00	897.9	165.0	820.0	775.8	44.28	18.519		
8,822.1	7,529.0	8,725.3	7,529.0	28.4	22.6	-90.00	920.0	165.0	820.0	775.1	44.90	18.263		
8,880.8	7,529.0	8,784.0	7,529.0	29.1	23.5	-90.00	978.7	165.0	819.4	773.2	46.24	17.722		
8,900.0	7,529.0	8,803.2	7,529.0	29.3	23.7	-90.00	997.9	165.0	819.1	772.3	46.78	17.507		
9,000.0	7,529.0	8,903.2	7,529.0	30.4	25.2	-90.00	1,097.9	165.0	817.0	767.3	49.69	16.443		
9,100.0	7,529.0	9,003.2	7,529.0	31.6	26.7	-90.00	1,197.9	165.0	815.0	762.3	52.66	15.476		
9,200.0	7,529.0	9,103.2	7,529.0	32.9	28.2	-90.00	1,297.8	165.0	812.9	757.2	55.70	14.595		
9,300.0	7,529.0	9,203.2	7,529.0	34.2	29.7	-90.00	1,397.8	164.9	810.9	752.1	58.79	13.793		
9,400.0	7,529.0	9,303.1	7,529.0	35.6	31.3	-90.00	1,497.8	164.9	808.8	746.9	61.92	13.062		
9,500.0	7,529.0	9,403.1	7,529.0	36.9	32.9	-90.00	1,597.8	164.9	806.8	741.7	65.09	12.394		
9,600.0	7,529.0	9,503.1	7,529.0	38.4	34.4	-90.00	1,697.7	164.9	804.7	736.4	68.30	11.782		
9,700.0	7,529.0	9,603.1	7,529.0	39.8	36.1	-90.00	1,797.7	164.9	802.7	731.1	71.53	11.221		
9,800.0	7,529.0	9,703.1	7,529.0	41.3	37.7	-90.00	1,897.7	164.9	800.6	725.8	74.79	10.705		
9,900.0	7,529.0	9,803.0	7,529.0	42.8	39.3	-90.00	1,997.7	164.9	798.6	720.5	78.07	10.229		
10,000.0	7,529.0	9,903.0	7,529.0	44.3	41.0	-90.00	2,097.7	164.9	796.5	715.2	81.37	9.789		
10,100.0	7,529.0	10,003.0	7,529.0	45.8	42.6	-90.00	2,197.6	164.9	794.5	709.8	84.68	9.382		
10,200.0	7,529.0	10,103.0	7,529.0	47.3	44.3	-90.00	2,297.6	164.9	792.4	704.4	88.02	9.003		
10,300.0	7,529.0	10,202.9	7,529.0	48.9	46.0	-90.00	2,397.6	164.9	790.4	699.0	91.36	8.652		
10,400.0	7,529.0	10,302.9	7,529.0	50.4	47.6	-90.00	2,497.6	164.9	788.3	693.6	94.71	8.323		
10,500.0	7,529.0	10,402.9	7,529.0	52.0	49.3	-90.00	2,597.6	164.9	786.3	688.2	98.08	8.017		
10,600.0	7,529.0	10,502.9	7,529.0	53.6	51.0	-90.00	2,697.5	164.9	784.3	682.8	101.46	7.730		
10,700.0	7,529.0	10,602.9	7,529.0	55.2	52.7	-90.00	2,797.5	164.9	782.2	677.4	104.84	7.461		
10,800.0	7,529.0	10,702.8	7,529.0	56.8	54.4	-90.00	2,897.5	164.9	780.2	671.9	108.23	7.208		
10,900.0	7,529.0	10,802.8	7,529.0	58.4	56.1	-90.00	2,997.5	164.9	778.1	666.5	111.63	6.970		
11,000.0	7,529.0	10,902.8	7,529.0	60.1	57.8	-90.00	3,097.5	164.9	776.1	661.0	115.04	6.746		
11,100.0	7,529.0	11,002.8	7,529.0	61.7	59.5	-90.00	3,197.4	164.9	774.0	655.6	118.45	6.535		
11,200.0	7,529.0	11,102.8	7,529.0	63.3	61.2	-90.00	3,297.4	164.9	772.0	650.1	121.87	6.334		
11,300.0	7,529.0	11,202.7	7,529.0	65.0	62.9	-90.00	3,397.4	164.9	769.9	644.6	125.29	6.145		
11,400.0	7,529.0	11,302.7	7,529.0	66.6	64.6	-90.00	3,497.4	164.9	767.9	639.2	128.72	5.966		
11,500.0	7,529.0	11,402.7	7,529.0	68.3	66.3	-90.00	3,597.3	164.9	765.8	633.7	132.15	5.795		
11,600.0	7,529.0	11,502.7	7,529.0	70.0	68.0	-90.00	3,697.3	164.9	763.8	628.2	135.58	5.633		
11,700.0	7,529.0	11,602.7	7,529.0	71.6	69.8	-90.00	3,797.3	164.9	761.7	622.7	139.02	5.479		
11,800.0	7,529.0	11,702.6	7,529.0	73.3	71.5	-90.00	3,897.3	164.9	759.7	617.2	142.46	5.332		
11,900.0	7,529.0	11,802.6	7,529.0	75.0	73.2	-90.00	3,997.3	164.9	757.6	611.7	145.91	5.193		
12,000.0	7,529.0	11,902.6	7,529.0	76.6	74.9	-90.00	4,097.2	164.9	755.6	606.2	149.36	5.059		
12,100.0	7,529.0	12,002.6	7,529.0	78.3	76.6	-90.00	4,197.2	164.9	753.5	600.7	152.81	4.931		
12,200.0	7,529.0	12,102.5	7,529.0	80.0	78.4	-90.00	4,297.2	164.9	751.5	595.2	156.26	4.809		
12,300.0	7,529.0	12,202.5	7,529.0	81.7	80.1	-90.00	4,397.2	164.9	749.5	589.7	159.72	4.692		
12,400.0	7,529.0	12,302.5	7,529.0	83.4	81.8	-90.00	4,497.2	164.9	747.4	584.2	163.18	4.580		
12,500.0	7,529.0	12,402.5	7,529.0	85.1	83.6	-90.00	4,597.1	164.9	745.4	578.7	166.64	4.473		
12,600.0	7,529.0	12,502.5	7,529.0	86.8	85.3	-90.00	4,697.1	164.9	743.3	573.2	170.10	4.370		
12,700.0	7,529.0	12,602.4	7,529.0	88.5	87.0	-90.00	4,797.1	164.9	741.3	567.7	173.56	4.271		
12,800.0	7,529.0	12,702.4	7,529.0	90.2	88.7	-90.00	4,897.1	164.9	739.2	562.2	177.03	4.176		
12,900.0	7,529.0	12,802.4	7,529.0	91.9	90.5	-90.00	4,997.1	164.9	737.2	556.7	180.49	4.084		
13,003.0	7,529.0	12,905.4	7,529.0	93.6	92.3	-90.00	5,100.0	164.9	735.1	551.0	184.07	3.993 SF		

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 3H-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 3H-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 #2	Offset TVD Reference:	Offset Datum

Offset Design S9-T2N-R67W (Sprague) - Sprague 3G-9H-N267 - Hz - Plan #1													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	-89.94	0.0	-8.4	8.4					
100.0	100.0	100.0	100.0	0.1	0.1	-89.94	0.0	-8.4	8.4	8.1	0.24	34.322		
200.0	200.0	200.0	200.0	0.3	0.3	-89.94	0.0	-8.4	8.4	7.8	0.59	14.133		
300.0	300.0	300.0	300.0	0.5	0.5	-89.94	0.0	-8.4	8.4	7.4	0.94	8.898		
400.0	400.0	400.0	400.0	0.6	0.6	-89.94	0.0	-8.4	8.4	7.1	1.29	6.493	CC, ES	
500.0	500.0	500.1	500.1	0.8	0.8	150.02	-0.6	-7.8	9.2	7.6	1.64	5.633		
600.0	599.8	600.2	600.2	1.0	1.0	154.17	-2.4	-5.9	11.9	9.9	1.99	5.953		
700.0	699.5	700.3	700.2	1.2	1.2	158.10	-5.5	-2.7	16.3	14.0	2.35	6.949		
800.0	798.7	800.4	800.1	1.5	1.4	160.97	-9.7	1.7	22.6	19.9	2.70	8.361		
900.0	897.5	900.4	899.8	1.8	1.6	162.93	-15.2	7.3	30.7	27.7	3.06	10.037		
1,000.0	995.9	1,000.6	999.5	2.1	1.8	163.60	-21.8	14.2	39.0	35.6	3.43	11.360		
1,100.0	1,094.4	1,101.1	1,099.3	2.4	2.1	163.00	-29.7	22.4	45.7	41.9	3.82	11.974		
1,200.0	1,192.9	1,201.6	1,199.0	2.7	2.3	161.59	-38.9	31.9	51.0	46.7	4.23	12.054		
1,300.0	1,291.4	1,301.5	1,297.9	3.1	2.6	159.99	-48.5	41.9	55.5	50.8	4.65	11.928		
1,400.0	1,389.9	1,401.4	1,396.9	3.4	2.9	158.63	-58.2	51.9	60.1	55.0	5.09	11.805		
1,500.0	1,488.4	1,501.3	1,495.8	3.8	3.2	157.47	-67.9	61.9	64.7	59.1	5.53	11.686		
1,600.0	1,586.8	1,601.2	1,594.7	4.1	3.4	156.46	-77.5	71.9	69.3	63.3	5.99	11.573		
1,700.0	1,685.3	1,701.1	1,693.6	4.5	3.7	155.58	-87.2	81.9	73.9	67.5	6.45	11.468		
1,800.0	1,783.8	1,801.0	1,792.5	4.8	4.0	154.80	-96.8	91.9	78.6	71.7	6.91	11.369		
1,900.0	1,882.3	1,900.8	1,891.4	5.1	4.3	154.11	-106.5	101.9	83.2	75.9	7.38	11.277		
2,000.0	1,980.8	2,000.7	1,990.3	5.5	4.6	153.49	-116.1	111.9	87.9	80.1	7.86	11.191		
2,100.0	2,079.2	2,100.6	2,089.3	5.8	4.9	152.93	-125.8	121.9	92.6	84.3	8.33	11.112		
2,200.0	2,177.7	2,200.5	2,188.2	6.2	5.2	152.43	-135.5	131.9	97.3	88.5	8.81	11.039		
2,300.0	2,276.2	2,300.4	2,287.1	6.5	5.5	151.98	-145.1	141.9	102.0	92.7	9.30	10.970		
2,400.0	2,374.7	2,400.3	2,386.0	6.9	5.8	151.56	-154.8	151.9	106.7	96.9	9.78	10.907		
2,500.0	2,473.2	2,500.2	2,484.9	7.2	6.1	151.18	-164.4	161.9	111.4	101.1	10.27	10.847		
2,600.0	2,571.6	2,600.1	2,583.8	7.6	6.4	150.83	-174.1	171.9	116.1	105.4	10.76	10.792		
2,700.0	2,670.1	2,699.9	2,682.7	7.9	6.7	150.51	-183.7	181.9	120.9	109.6	11.25	10.741		
2,800.0	2,768.6	2,799.8	2,781.7	8.3	7.0	150.21	-193.4	191.9	125.6	113.8	11.74	10.693		
2,900.0	2,867.1	2,899.7	2,880.6	8.6	7.3	149.93	-203.1	201.9	130.3	118.1	12.24	10.647		
3,000.0	2,965.6	2,999.6	2,979.5	9.0	7.6	149.68	-212.7	211.9	135.0	122.3	12.73	10.605		
3,100.0	3,064.0	3,099.5	3,078.4	9.3	7.8	149.44	-222.4	221.9	139.8	126.5	13.23	10.565		
3,200.0	3,162.5	3,199.4	3,177.3	9.7	8.1	149.21	-232.0	231.9	144.5	130.8	13.73	10.528		
3,300.0	3,261.0	3,299.3	3,276.2	10.0	8.4	149.00	-241.7	241.9	149.2	135.0	14.22	10.493		
3,400.0	3,359.5	3,399.1	3,375.1	10.4	8.7	148.81	-251.3	251.9	154.0	139.3	14.72	10.459		
3,500.0	3,458.0	3,499.0	3,474.1	10.7	9.0	148.62	-261.0	261.9	158.7	143.5	15.22	10.428		
3,600.0	3,556.4	3,598.9	3,573.0	11.1	9.3	148.45	-270.6	271.9	163.5	147.7	15.72	10.398		
3,700.0	3,654.9	3,698.8	3,671.9	11.5	9.6	148.28	-280.3	281.9	168.2	152.0	16.22	10.370		
3,800.0	3,753.4	3,798.7	3,770.8	11.8	9.9	148.13	-290.0	291.9	173.0	156.2	16.72	10.343		
3,900.0	3,851.9	3,898.6	3,869.7	12.2	10.2	147.98	-299.6	301.9	177.7	160.5	17.22	10.318		
4,000.0	3,950.4	3,998.5	3,968.6	12.5	10.5	147.84	-309.3	311.9	182.5	164.7	17.72	10.294		
4,100.0	4,048.9	4,098.3	4,067.5	12.9	10.8	147.71	-318.9	321.9	187.2	169.0	18.23	10.271		
4,200.0	4,147.3	4,198.2	4,166.5	13.2	11.1	147.58	-328.6	331.9	192.0	173.2	18.73	10.249		
4,300.0	4,245.8	4,298.1	4,265.4	13.6	11.4	147.46	-338.2	341.9	196.7	177.5	19.23	10.228		
4,400.0	4,344.3	4,398.0	4,364.3	13.9	11.7	147.35	-347.9	351.9	201.5	181.7	19.73	10.208		
4,500.0	4,442.8	4,497.9	4,463.2	14.3	12.0	147.24	-357.6	361.9	206.2	186.0	20.24	10.189		
4,600.0	4,541.3	4,597.8	4,562.1	14.6	12.3	147.14	-367.2	371.9	211.0	190.2	20.74	10.171		
4,700.0	4,639.7	4,697.7	4,661.0	15.0	12.6	147.04	-376.9	381.9	215.7	194.5	21.25	10.154		
4,800.0	4,738.2	4,797.6	4,759.9	15.3	12.9	146.94	-386.5	391.9	220.5	198.7	21.75	10.137		
4,900.0	4,836.7	4,897.4	4,858.9	15.7	13.2	146.85	-396.2	401.9	225.2	203.0	22.25	10.121		
5,000.0	4,935.2	4,997.3	4,957.8	16.0	13.5	146.76	-405.8	411.9	230.0	207.2	22.76	10.105		
5,100.0	5,033.7	5,097.2	5,056.7	16.4	13.8	146.68	-415.5	421.9	234.7	211.5	23.26	10.091		

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 3H-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 3H-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 #2	Offset TVD Reference:	Offset Datum

Offset Design S9-T2N-R67W (Sprague) - Sprague 3G-9H-N267 - Hz - Plan #1													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		
5,200.0	5,132.1	5,197.1	5,155.6	16.7	14.1	146.60	-425.2	431.9	239.5	215.7	23.77	10.076		
5,300.0	5,230.6	5,297.0	5,254.5	17.1	14.4	146.52	-434.8	441.9	244.2	220.0	24.27	10.063		
5,400.0	5,329.1	5,396.9	5,353.4	17.4	14.7	146.45	-444.5	451.9	249.0	224.2	24.78	10.050		
5,500.0	5,427.6	5,496.8	5,452.3	17.8	15.0	146.38	-454.1	461.9	253.8	228.5	25.28	10.037		
5,600.0	5,526.1	5,596.6	5,551.3	18.1	15.3	146.31	-463.8	471.9	258.5	232.7	25.79	10.025		
5,700.0	5,624.5	5,694.1	5,647.9	18.5	15.6	146.32	-472.9	481.3	263.6	237.4	26.26	10.039		
5,800.0	5,723.3	5,790.9	5,743.9	18.8	15.8	146.42	-480.8	489.5	268.4	241.7	26.68	10.059		
5,900.0	5,822.6	5,887.6	5,840.2	19.0	16.1	146.36	-487.6	496.6	271.5	244.4	27.10	10.017		
6,000.0	5,922.2	5,984.4	5,936.6	19.2	16.3	146.13	-493.3	502.4	272.9	245.3	27.52	9.916		
6,100.0	6,022.0	6,081.2	6,033.2	19.4	16.5	145.73	-497.8	507.1	272.5	244.6	27.93	9.756		
6,200.0	6,122.0	6,178.0	6,129.8	19.5	16.6	-92.84	-501.2	510.7	270.5	247.3	23.19	11.662		
6,300.0	6,222.0	6,274.8	6,226.6	19.6	16.8	-93.35	-503.5	513.0	268.2	244.7	23.43	11.446		
6,400.0	6,322.0	6,371.7	6,323.5	19.7	16.9	-93.61	-504.6	514.2	267.0	243.3	23.71	11.263		
6,466.4	6,388.4	6,436.6	6,388.4	19.7	17.0	-93.64	-504.8	514.3	266.9	243.0	23.92	11.159		
6,500.0	6,422.0	6,470.2	6,422.0	19.8	17.0	-93.64	-504.8	514.3	266.9	242.9	24.03	11.107		
6,600.0	6,522.0	6,570.2	6,522.0	19.9	17.1	-93.64	-504.8	514.3	266.9	242.5	24.36	10.958		
6,700.0	6,622.0	6,670.2	6,622.0	20.0	17.2	-93.64	-504.8	514.3	266.9	242.2	24.69	10.811		
6,778.0	6,700.0	6,748.2	6,700.0	20.1	17.3	-93.64	-504.8	514.3	266.9	241.9	24.94	10.700		
6,800.0	6,722.0	6,770.2	6,722.0	20.1	17.3	142.89	-504.8	514.3	267.2	237.0	30.20	8.850		
6,850.0	6,771.8	6,820.9	6,772.7	20.2	17.4	143.51	-503.5	514.3	270.4	240.2	30.21	8.951		
6,900.0	6,821.1	6,870.1	6,821.6	20.4	17.4	145.26	-498.1	514.3	277.2	247.3	29.87	9.280		
6,950.0	6,869.4	6,915.8	6,866.4	20.7	17.3	147.76	-489.3	514.3	288.0	258.8	29.25	9.846		
6,962.0	6,880.9	6,926.2	6,876.5	20.8	17.3	148.41	-486.8	514.3	291.3	262.3	29.07	10.020		
7,000.0	6,917.1	6,958.1	6,907.2	21.0	17.3	162.87	-478.0	514.3	302.6	274.4	28.25	10.714		
7,050.0	6,965.2	7,000.0	6,946.6	21.2	17.2	-175.57	-463.9	514.3	318.5	291.2	27.28	11.676		
7,100.0	7,013.3	7,039.5	6,982.7	21.4	17.1	-153.68	-448.0	514.3	335.0	308.5	26.53	12.628		
7,150.0	7,061.2	7,078.9	7,017.7	21.5	17.0	-134.41	-429.7	514.3	352.0	326.0	26.00	13.540		
7,200.0	7,108.4	7,117.8	7,050.7	21.7	16.9	-119.12	-409.3	514.3	369.0	343.4	25.66	14.383		
7,250.0	7,154.7	7,156.1	7,081.9	21.8	16.8	-107.42	-387.1	514.3	385.9	360.4	25.47	15.149		
7,300.0	7,199.5	7,193.9	7,111.2	21.8	16.7	-98.42	-363.1	514.3	402.3	376.9	25.39	15.845		
7,350.0	7,242.7	7,231.4	7,138.6	21.9	16.6	-91.38	-337.6	514.3	418.1	392.7	25.37	16.481		
7,400.0	7,283.9	7,268.5	7,164.0	21.9	16.4	-85.77	-310.5	514.3	433.2	407.8	25.37	17.073		
7,450.0	7,322.7	7,300.0	7,184.1	21.9	16.4	-81.31	-286.3	514.3	447.4	422.0	25.36	17.644		
7,500.0	7,358.9	7,342.1	7,209.0	21.9	16.2	-77.51	-252.4	514.3	460.5	435.2	25.34	18.172		
7,550.0	7,392.2	7,378.6	7,228.4	21.9	16.2	-74.46	-221.5	514.3	472.5	447.2	25.29	18.682		
7,600.0	7,422.3	7,414.9	7,245.8	22.0	16.1	-71.96	-189.5	514.3	483.3	458.1	25.22	19.167		
7,650.0	7,449.1	7,450.0	7,260.6	22.0	16.1	-69.92	-157.8	514.3	492.9	467.8	25.12	19.625		
7,700.0	7,472.2	7,487.4	7,274.2	22.0	16.0	-68.26	-123.0	514.3	501.1	476.0	25.03	20.018		
7,750.0	7,491.6	7,523.5	7,285.1	22.0	16.0	-66.96	-88.6	514.3	507.9	482.9	24.95	20.354		
7,800.0	7,507.0	7,559.5	7,293.9	22.0	16.0	-65.98	-53.6	514.3	513.2	488.3	24.91	20.604		
7,850.0	7,518.5	7,600.0	7,301.1	22.1	16.1	-65.29	-13.8	514.3	517.2	492.3	24.88	20.783		
7,900.0	7,525.8	7,631.6	7,304.8	22.2	16.1	-64.88	17.6	514.3	519.5	494.6	24.91	20.857		
7,950.0	7,528.9	7,667.6	7,306.8	22.3	16.2	-64.74	53.6	514.3	520.4	495.4	25.01	20.806		
7,962.1	7,529.0	7,676.4	7,307.0	22.3	16.3	-64.75	62.3	514.3	520.4	495.4	25.05	20.778		
7,972.6	7,529.0	7,684.6	7,307.0	22.3	16.3	-64.75	70.5	514.3	520.4	495.3	25.12	20.718		
8,000.0	7,529.0	7,712.0	7,307.0	22.4	16.4	-64.75	97.9	514.3	520.4	495.1	25.34	20.533		
8,100.0	7,529.0	7,812.0	7,307.0	22.7	16.8	-64.75	197.9	514.3	520.4	494.0	26.38	19.729		
8,200.0	7,529.0	7,912.0	7,307.0	23.2	17.4	-64.75	297.9	514.3	520.4	492.7	27.74	18.762		
8,300.0	7,529.0	8,012.0	7,307.0	23.8	18.2	-64.75	397.9	514.3	520.4	491.0	29.38	17.713		
8,400.0	7,529.0	8,112.0	7,307.0	24.4	19.1	-64.75	497.9	514.3	520.4	489.1	31.26	16.648		
8,500.0	7,529.0	8,212.0	7,307.0	25.2	20.1	-64.75	597.9	514.3	520.4	487.1	33.34	15.611		
8,600.0	7,529.0	8,312.0	7,307.0	26.1	21.2	-64.75	697.9	514.3	520.4	484.8	35.58	14.628		

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 3H-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 3H-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 #2	Offset TVD Reference:	Offset Datum

Offset Design S9-T2N-R67W (Sprague) - Sprague 3G-9H-N267 - Hz - Plan #1												Offset Site Error:	0.0 ft
Survey Program: 0-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)			
8,700.0	7,529.0	8,412.0	7,307.0	27.1	22.4	-64.75	797.9	514.3	520.4	482.5	37.95	13.713	
8,800.0	7,529.0	8,512.0	7,307.0	28.2	23.7	-64.75	897.9	514.3	520.4	480.0	40.43	12.871	
8,822.1	7,529.0	8,534.1	7,307.0	28.4	24.0	-64.75	920.0	514.3	520.4	479.4	41.00	12.693	
8,880.8	7,529.0	8,592.7	7,307.0	29.1	24.8	-64.72	978.7	514.3	519.9	477.7	42.12	12.343	
8,900.0	7,529.0	8,612.0	7,307.0	29.3	25.0	-64.70	997.9	514.3	519.5	476.9	42.61	12.191	
9,000.0	7,529.0	8,711.9	7,307.0	30.4	26.4	-64.60	1,097.9	514.3	517.7	472.4	45.22	11.447	
9,100.0	7,529.0	8,811.9	7,307.0	31.6	27.8	-64.50	1,197.9	514.3	515.8	467.9	47.89	10.771	
9,200.0	7,529.0	8,911.9	7,307.0	32.9	29.3	-64.40	1,297.8	514.3	514.0	463.4	50.61	10.155	
9,300.0	7,529.0	9,011.9	7,307.0	34.2	30.7	-64.31	1,397.8	514.3	512.1	458.8	53.37	9.596	
9,400.0	7,529.0	9,111.9	7,307.0	35.6	32.3	-64.21	1,497.8	514.3	510.3	454.1	56.16	9.085	
9,500.0	7,529.0	9,211.8	7,307.0	36.9	33.8	-64.11	1,597.8	514.3	508.4	449.4	58.99	8.619	
9,600.0	7,529.0	9,311.8	7,307.0	38.4	35.3	-64.00	1,697.8	514.3	506.6	444.8	61.83	8.193	
9,700.0	7,529.0	9,411.8	7,307.0	39.8	36.9	-63.90	1,797.7	514.3	504.8	440.1	64.70	7.802	
9,800.0	7,529.0	9,511.8	7,307.0	41.3	38.5	-63.80	1,897.7	514.3	502.9	435.3	67.58	7.442	
9,900.0	7,529.0	9,611.8	7,307.0	42.8	40.1	-63.70	1,997.7	514.3	501.1	430.6	70.48	7.110	
10,000.0	7,529.0	9,711.7	7,307.0	44.3	41.7	-63.59	2,097.7	514.3	499.2	425.9	73.38	6.803	
10,100.0	7,529.0	9,811.7	7,307.0	45.8	43.3	-63.49	2,197.6	514.3	497.4	421.1	76.30	6.519	
10,200.0	7,529.0	9,911.7	7,307.0	47.3	45.0	-63.38	2,297.6	514.3	495.6	416.4	79.22	6.256	
10,300.0	7,529.0	10,011.7	7,307.0	48.9	46.6	-63.28	2,397.6	514.3	493.8	411.6	82.15	6.011	
10,400.0	7,529.0	10,111.7	7,307.0	50.4	48.3	-63.17	2,497.6	514.3	491.9	406.9	85.08	5.782	
10,500.0	7,529.0	10,211.6	7,307.0	52.0	49.9	-63.06	2,597.6	514.3	490.1	402.1	88.01	5.569	
10,600.0	7,529.0	10,311.6	7,307.0	53.6	51.6	-62.95	2,697.5	514.3	488.3	397.3	90.95	5.369	
10,700.0	7,529.0	10,411.6	7,307.0	55.2	53.3	-62.84	2,797.5	514.3	486.5	392.6	93.88	5.181	
10,800.0	7,529.0	10,511.6	7,307.0	56.8	54.9	-62.73	2,897.5	514.3	484.6	387.8	96.82	5.006	
10,900.0	7,529.0	10,611.5	7,307.0	58.4	56.6	-62.62	2,997.5	514.3	482.8	383.1	99.76	4.840	
11,000.0	7,529.0	10,711.5	7,307.0	60.1	58.3	-62.51	3,097.5	514.3	481.0	378.3	102.69	4.684	
11,100.0	7,529.0	10,811.5	7,307.0	61.7	60.0	-62.40	3,197.4	514.3	479.2	373.6	105.62	4.537	
11,200.0	7,529.0	10,911.5	7,307.0	63.3	61.7	-62.28	3,297.4	514.3	477.4	368.8	108.55	4.398	
11,300.0	7,529.0	11,011.5	7,307.0	65.0	63.4	-62.17	3,397.4	514.3	475.6	364.1	111.48	4.266	
11,400.0	7,529.0	11,111.4	7,307.0	66.6	65.1	-62.05	3,497.4	514.3	473.7	359.3	114.40	4.141	
11,500.0	7,529.0	11,211.4	7,307.0	68.3	66.8	-61.93	3,597.4	514.3	471.9	354.6	117.32	4.023	
11,600.0	7,529.0	11,311.4	7,307.0	70.0	68.5	-61.82	3,697.3	514.3	470.1	349.9	120.24	3.910	
11,700.0	7,529.0	11,411.4	7,307.0	71.6	70.2	-61.70	3,797.3	514.3	468.3	345.2	123.15	3.803	
11,800.0	7,529.0	11,511.4	7,307.0	73.3	71.9	-61.58	3,897.3	514.3	466.5	340.5	126.05	3.701	
11,900.0	7,529.0	11,611.3	7,307.0	75.0	73.6	-61.46	3,997.3	514.3	464.7	335.8	128.95	3.604	
12,000.0	7,529.0	11,711.3	7,307.0	76.6	75.3	-61.34	4,097.2	514.3	462.9	331.1	131.84	3.511	
12,100.0	7,529.0	11,811.3	7,307.0	78.3	77.0	-61.22	4,197.2	514.3	461.1	326.4	134.73	3.423	
12,200.0	7,529.0	11,911.3	7,307.0	80.0	78.8	-61.09	4,297.2	514.3	459.3	321.7	137.61	3.338	
12,300.0	7,529.0	12,011.3	7,307.0	81.7	80.5	-60.97	4,397.2	514.3	457.6	317.1	140.49	3.257	
12,400.0	7,529.0	12,111.2	7,307.0	83.4	82.2	-60.85	4,497.2	514.3	455.8	312.4	143.35	3.179	
12,500.0	7,529.0	12,211.2	7,307.0	85.1	83.9	-60.72	4,597.1	514.3	454.0	307.8	146.21	3.105	
12,600.0	7,529.0	12,311.2	7,307.0	86.8	85.6	-60.59	4,697.1	514.3	452.2	303.1	149.06	3.034	
12,700.0	7,529.0	12,411.2	7,307.0	88.5	87.4	-60.46	4,797.1	514.3	450.4	298.5	151.91	2.965	
12,800.0	7,529.0	12,511.1	7,307.0	90.2	89.1	-60.34	4,897.1	514.3	448.6	293.9	154.74	2.899	
12,900.0	7,529.0	12,611.1	7,307.0	91.9	90.8	-60.21	4,997.1	514.3	446.9	289.3	157.57	2.836	
13,003.0	7,529.0	12,714.1	7,307.0	93.6	92.6	-60.07	5,100.0	514.3	445.0	284.6	160.47	2.773 SF	

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 3H-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 3H-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 #2	Offset TVD Reference:	Offset Datum

Offset Design S9-T2N-R67W (Sprague) - Sprague 3I--9H-N267 - Hz - Plan #1													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	107.77	-3.6	11.2	11.7					
100.0	100.0	100.0	100.0	0.1	0.1	107.77	-3.6	11.2	11.7	11.5	0.24	48.057		
200.0	200.0	200.0	200.0	0.3	0.3	107.77	-3.6	11.2	11.7	11.1	0.59	19.788		
300.0	300.0	300.0	300.0	0.5	0.5	107.77	-3.6	11.2	11.7	10.8	0.94	12.459 CC, ES		
400.0	400.0	399.6	399.5	0.6	0.6	108.48	-4.3	12.8	13.5	12.2	1.29	10.423		
500.0	500.0	499.0	498.8	0.8	0.8	-13.41	-6.3	17.5	17.0	15.3	1.64	10.354		
600.0	599.8	598.3	597.7	1.0	1.1	-14.78	-9.7	25.4	20.5	18.5	1.99	10.332		
700.0	699.5	697.4	696.1	1.2	1.3	-16.97	-14.5	36.5	24.2	21.8	2.34	10.340		
800.0	798.7	796.4	794.0	1.5	1.6	-19.62	-20.6	50.6	28.0	25.3	2.70	10.350		
900.0	897.5	895.7	891.4	1.8	2.0	-22.60	-27.9	67.7	31.8	28.7	3.09	10.286		
1,000.0	995.9	995.6	989.4	2.1	2.3	-25.77	-35.7	85.8	34.9	31.4	3.52	9.930		
1,100.0	1,094.4	1,095.5	1,087.4	2.4	2.7	-28.42	-43.5	103.8	38.2	34.2	3.97	9.606		
1,200.0	1,192.9	1,195.5	1,185.4	2.7	3.1	-30.65	-51.2	121.9	41.5	37.0	4.45	9.314		
1,300.0	1,291.4	1,295.4	1,283.3	3.1	3.4	-32.54	-59.0	139.9	44.8	39.9	4.95	9.052		
1,400.0	1,389.9	1,395.3	1,381.3	3.4	3.8	-34.17	-66.8	158.0	48.2	42.8	5.47	8.819		
1,500.0	1,488.4	1,495.3	1,479.3	3.8	4.2	-35.59	-74.5	176.0	51.7	45.7	6.00	8.612		
1,600.0	1,586.8	1,595.2	1,577.3	4.1	4.6	-36.82	-82.3	194.1	55.1	48.6	6.54	8.428		
1,700.0	1,685.3	1,695.1	1,675.3	4.5	5.0	-37.92	-90.1	212.1	58.6	51.5	7.09	8.264		
1,800.0	1,783.8	1,795.1	1,773.3	4.8	5.4	-38.88	-97.8	230.1	62.1	54.5	7.65	8.119		
1,900.0	1,882.3	1,895.0	1,871.2	5.1	5.7	-39.75	-105.6	248.2	65.6	57.4	8.22	7.989		
2,000.0	1,980.8	1,994.9	1,969.2	5.5	6.1	-40.52	-113.4	266.2	69.2	60.4	8.79	7.872		
2,100.0	2,079.2	2,094.9	2,067.2	5.8	6.5	-41.23	-121.2	284.3	72.7	63.4	9.36	7.767		
2,200.0	2,177.7	2,194.8	2,165.2	6.2	6.9	-41.86	-128.9	302.3	76.3	66.3	9.94	7.672		
2,300.0	2,276.2	2,294.7	2,263.2	6.5	7.3	-42.44	-136.7	320.4	79.8	69.3	10.53	7.586		
2,400.0	2,374.7	2,394.7	2,361.1	6.9	7.7	-42.97	-144.5	338.4	83.4	72.3	11.11	7.508		
2,500.0	2,473.2	2,494.6	2,459.1	7.2	8.1	-43.45	-152.2	356.5	87.0	75.3	11.70	7.437		
2,600.0	2,571.6	2,594.5	2,557.1	7.6	8.5	-43.90	-160.0	374.5	90.6	78.3	12.29	7.372		
2,700.0	2,670.1	2,694.5	2,655.1	7.9	8.8	-44.32	-167.8	392.6	94.2	81.3	12.88	7.312		
2,800.0	2,768.6	2,794.4	2,753.1	8.3	9.2	-44.70	-175.5	410.6	97.8	84.3	13.47	7.257		
2,900.0	2,867.1	2,894.3	2,851.1	8.6	9.6	-45.05	-183.3	428.7	101.4	87.3	14.07	7.206		
3,000.0	2,965.6	2,994.3	2,949.0	9.0	10.0	-45.39	-191.1	446.7	105.0	90.3	14.66	7.159		
3,100.0	3,064.0	3,094.2	3,047.0	9.3	10.4	-45.70	-198.8	464.7	108.6	93.3	15.26	7.115		
3,200.0	3,162.5	3,194.1	3,145.0	9.7	10.8	-45.99	-206.6	482.8	112.2	96.3	15.86	7.074		
3,300.0	3,261.0	3,294.1	3,243.0	10.0	11.2	-46.26	-214.4	500.8	115.8	99.3	16.46	7.036		
3,400.0	3,359.5	3,394.0	3,341.0	10.4	11.6	-46.51	-222.2	518.9	119.4	102.3	17.06	7.000		
3,500.0	3,458.0	3,493.9	3,439.0	10.7	12.0	-46.75	-229.9	536.9	123.0	105.4	17.66	6.967		
3,600.0	3,556.4	3,593.9	3,536.9	11.1	12.3	-46.98	-237.7	555.0	126.6	108.4	18.26	6.936		
3,700.0	3,654.9	3,693.8	3,634.9	11.5	12.7	-47.19	-245.5	573.0	130.2	111.4	18.86	6.906		
3,800.0	3,753.4	3,793.7	3,732.9	11.8	13.1	-47.39	-253.2	591.1	133.9	114.4	19.46	6.879		
3,900.0	3,851.9	3,893.7	3,830.9	12.2	13.5	-47.59	-261.0	609.1	137.5	117.4	20.06	6.852		
4,000.0	3,950.4	3,993.6	3,928.9	12.5	13.9	-47.77	-268.8	627.2	141.1	120.4	20.67	6.828		
4,100.0	4,048.9	4,093.5	4,026.9	12.9	14.3	-47.94	-276.5	645.2	144.7	123.5	21.27	6.804		
4,200.0	4,147.3	4,193.5	4,124.8	13.2	14.7	-48.10	-284.3	663.3	148.4	126.5	21.87	6.782		
4,300.0	4,245.8	4,293.4	4,222.8	13.6	15.1	-48.26	-292.1	681.3	152.0	129.5	22.48	6.761		
4,400.0	4,344.3	4,393.3	4,320.8	13.9	15.5	-48.41	-299.8	699.3	155.6	132.5	23.08	6.741		
4,500.0	4,442.8	4,493.3	4,418.8	14.3	15.8	-48.55	-307.6	717.4	159.2	135.6	23.69	6.723		
4,600.0	4,541.3	4,593.2	4,516.8	14.6	16.2	-48.69	-315.4	735.4	162.9	138.6	24.29	6.704		
4,700.0	4,639.7	4,693.1	4,614.8	15.0	16.6	-48.82	-323.2	753.5	166.5	141.6	24.90	6.687		
4,800.0	4,738.2	4,793.1	4,712.7	15.3	17.0	-48.94	-330.9	771.5	170.1	144.6	25.51	6.671		
4,900.0	4,836.7	4,893.0	4,810.7	15.7	17.4	-49.06	-338.7	789.6	173.8	147.7	26.11	6.655		
5,000.0	4,935.2	4,992.9	4,908.7	16.0	17.8	-49.18	-346.5	807.6	177.4	150.7	26.72	6.640		
5,100.0	5,033.7	5,092.9	5,006.7	16.4	18.2	-49.29	-354.2	825.7	181.0	153.7	27.32	6.626		

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



Cathedral Energy Services

Anticollision Report

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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 3H-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 #2	Offset TVD Reference:	Offset Datum

Offset Design S9-T2N-R67W (Sprague) - Sprague 3I--9H-N267 - Hz - Plan #1												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	5,132.1	5,192.8	5,104.7	16.7	18.6	-49.39	-362.0	843.7	184.7	156.7	27.93	6.612	
5,300.0	5,230.6	5,292.7	5,202.7	17.1	19.0	-49.49	-369.8	861.8	188.3	159.8	28.54	6.599	
5,400.0	5,329.1	5,392.7	5,300.6	17.4	19.3	-49.59	-377.5	879.8	191.9	162.8	29.14	6.586	
5,500.0	5,427.6	5,492.6	5,398.6	17.8	19.7	-49.68	-385.3	897.9	195.6	165.8	29.75	6.574	
5,600.0	5,526.1	5,592.5	5,496.6	18.1	20.1	-49.77	-393.1	915.9	199.2	168.9	30.36	6.562	
5,700.0	5,624.5	5,692.5	5,594.6	18.5	20.5	-49.86	-400.8	933.9	202.9	171.9	30.97	6.551	
5,800.0	5,723.3	5,792.3	5,692.5	18.8	20.9	-49.65	-408.6	952.0	207.6	176.2	31.43	6.606	
5,900.0	5,822.6	5,892.0	5,790.2	19.0	21.3	-48.78	-416.4	970.0	214.7	183.0	31.64	6.786	
6,000.0	5,922.2	5,991.4	5,887.7	19.2	21.7	-47.34	-424.1	987.9	224.1	192.5	31.60	7.093	
6,100.0	6,022.0	6,090.3	5,984.7	19.4	22.1	-45.46	-431.8	1,005.8	236.2	204.8	31.35	7.533	
6,200.0	6,122.0	6,188.7	6,081.1	19.5	22.4	-78.73	-439.4	1,023.6	251.0	226.7	24.32	10.320	
6,300.0	6,222.0	6,286.7	6,177.2	19.6	22.8	81.11	-447.0	1,041.3	267.5	242.1	25.38	10.542	
6,400.0	6,322.0	6,384.8	6,273.4	19.7	23.2	83.21	-454.7	1,059.0	284.4	258.0	26.40	10.773	
6,500.0	6,422.0	6,482.8	6,369.5	19.8	23.6	85.07	-462.3	1,076.7	301.7	274.3	27.39	11.014	
6,600.0	6,522.0	6,580.9	6,465.7	19.9	24.0	86.73	-469.9	1,094.4	319.2	290.9	28.34	11.264	
6,700.0	6,622.0	6,678.9	6,561.8	20.0	24.4	88.22	-477.5	1,112.1	337.0	307.7	29.25	11.521	
6,778.0	6,700.0	6,755.4	6,636.8	20.1	24.7	89.28	-483.5	1,125.9	351.0	321.1	29.93	11.726	
6,800.0	6,722.0	6,777.0	6,658.0	20.1	24.7	-33.77	-485.2	1,129.8	354.6	325.3	29.27	12.116	
6,850.0	6,771.8	6,826.7	6,706.6	20.2	24.9	-33.20	-489.0	1,138.8	360.3	330.9	29.36	12.269	
6,900.0	6,821.1	6,876.2	6,755.4	20.4	25.1	-33.64	-490.1	1,147.7	362.3	332.6	29.74	12.182	
6,950.0	6,869.4	6,924.3	6,802.6	20.7	25.2	-35.27	-487.1	1,156.4	360.9	330.5	30.49	11.840	
6,962.0	6,880.9	6,935.5	6,813.5	20.8	25.3	-35.82	-485.8	1,158.4	360.2	329.4	30.72	11.724	
7,000.0	6,917.1	6,970.2	6,847.2	21.0	25.3	-26.47	-480.4	1,164.7	357.6	326.3	31.32	11.418	
7,050.0	6,965.2	7,015.1	6,890.2	21.2	25.4	-11.36	-470.4	1,172.6	354.7	322.6	32.01	11.080	
7,100.0	7,013.3	7,059.1	6,931.5	21.4	25.5	4.60	-457.4	1,180.2	352.2	319.7	32.58	10.813	
7,150.0	7,061.2	7,100.0	6,968.9	21.5	25.5	18.40	-442.4	1,187.1	350.3	317.4	32.97	10.627	
7,200.0	7,108.4	7,144.8	7,008.6	21.7	25.6	28.44	-422.9	1,194.4	348.9	315.6	33.24	10.496	
7,250.0	7,154.7	7,186.6	7,044.1	21.8	25.6	35.42	-401.9	1,200.9	347.8	314.5	33.30	10.446	
7,300.0	7,199.5	7,227.9	7,077.7	21.8	25.6	40.10	-378.6	1,207.1	347.1	313.9	33.16	10.467	
7,350.0	7,242.7	7,268.7	7,109.1	21.9	25.6	43.22	-353.2	1,212.9	346.7	313.9	32.83	10.559	
7,400.0	7,283.9	7,309.1	7,138.4	21.9	25.6	45.30	-326.0	1,218.3	346.5	314.2	32.32	10.722	
7,415.6	7,296.3	7,321.6	7,147.1	21.9	25.6	45.79	-317.1	1,219.9	346.5	314.4	32.12	10.789	
7,450.0	7,322.7	7,350.0	7,166.1	21.9	25.6	46.65	-296.3	1,223.4	346.5	314.9	31.63	10.954	
7,450.6	7,323.2	7,350.0	7,166.1	21.9	25.6	46.68	-296.3	1,223.4	346.5	314.9	31.62	10.958	
7,500.0	7,358.9	7,388.7	7,190.3	21.9	25.6	47.59	-266.4	1,227.8	346.6	315.8	30.80	11.255	
7,550.0	7,392.2	7,428.0	7,212.8	21.9	25.6	48.19	-234.4	1,232.0	346.8	317.0	29.86	11.616	
7,600.0	7,422.3	7,467.1	7,233.0	22.0	25.6	48.58	-201.2	1,235.7	347.0	318.1	28.85	12.028	
7,650.0	7,449.1	7,506.0	7,250.8	22.0	25.6	48.85	-166.7	1,239.0	347.1	319.3	27.83	12.473	
7,700.0	7,472.2	7,550.0	7,268.1	22.0	25.6	48.96	-126.5	1,242.2	347.3	320.4	26.84	12.936	
7,720.6	7,480.7	7,560.7	7,271.8	22.0	25.6	49.10	-116.5	1,242.9	347.2	320.7	26.49	13.106	
7,750.0	7,491.6	7,583.4	7,279.2	22.0	25.6	49.19	-95.0	1,244.2	347.2	321.2	26.01	13.347	
7,800.0	7,507.0	7,621.9	7,289.7	22.0	25.7	49.33	-58.0	1,246.2	347.0	321.7	25.34	13.692	
7,850.0	7,518.5	7,660.4	7,297.8	22.1	25.7	49.49	-20.4	1,247.6	346.7	321.7	24.94	13.897	
7,900.0	7,525.8	7,700.0	7,303.5	22.2	25.8	49.67	18.7	1,248.7	346.2	321.4	24.83	13.945	
7,950.0	7,528.9	7,737.3	7,306.4	22.3	25.8	49.88	55.9	1,249.2	345.5	320.5	25.03	13.803	
7,962.1	7,529.0	7,750.0	7,306.8	22.3	25.9	49.95	68.6	1,249.3	345.4	320.2	25.14	13.738	
7,983.5	7,529.0	7,764.2	7,307.0	22.3	25.9	49.97	82.8	1,249.3	345.2	319.9	25.26	13.663	
8,000.0	7,529.0	7,779.3	7,307.0	22.4	25.9	49.97	97.9	1,249.3	345.2	319.8	25.38	13.602	
8,100.0	7,529.0	7,879.3	7,307.0	22.7	26.2	49.97	197.9	1,249.3	345.2	318.9	26.25	13.151	
8,200.0	7,529.0	7,979.3	7,307.0	23.2	26.6	49.97	297.9	1,249.3	345.2	317.8	27.35	12.621	
8,300.0	7,529.0	8,079.3	7,307.0	23.8	27.1	49.97	397.9	1,249.3	345.2	316.5	28.66	12.042	
8,400.0	7,529.0	8,179.3	7,307.0	24.4	27.7	49.97	497.9	1,249.3	345.2	315.0	30.16	11.444	

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 3H-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 3H-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 #2	Offset TVD Reference:	Offset Datum

Offset Design S9-T2N-R67W (Sprague) - Sprague 3I-9H-N267 - Hz - Plan #1												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		
8,500.0	7,529.0	8,279.3	7,307.0	25.2	28.4	49.97	597.9	1,249.3	345.2	313.4	31.82	10.848	
8,600.0	7,529.0	8,379.3	7,307.0	26.1	29.2	49.97	697.9	1,249.3	345.2	311.6	33.61	10.269	
8,700.0	7,529.0	8,479.3	7,307.0	27.1	30.0	49.97	797.9	1,249.3	345.2	309.7	35.52	9.718	
8,800.0	7,529.0	8,579.3	7,307.0	28.2	31.0	49.97	897.9	1,249.3	345.2	307.7	37.53	9.199	
8,822.1	7,529.0	8,601.4	7,307.0	28.4	31.2	49.97	920.0	1,249.3	345.2	307.2	37.98	9.089	
8,822.1	7,529.0	8,601.4	7,307.0	28.4	31.2	49.97	920.0	1,249.3	345.2	307.2	37.98	9.089	
8,880.8	7,529.0	8,660.1	7,307.0	29.1	31.8	50.03	978.7	1,249.3	345.7	306.8	38.82	8.903	
8,900.0	7,529.0	8,679.3	7,307.0	29.3	32.0	50.07	997.9	1,249.3	346.0	306.7	39.24	8.816	
9,000.0	7,529.0	8,779.3	7,307.0	30.4	33.1	50.29	1,097.9	1,249.3	347.5	306.1	41.47	8.381	
9,100.0	7,529.0	8,879.3	7,307.0	31.6	34.2	50.51	1,197.9	1,249.3	349.1	305.3	43.77	7.976	
9,200.0	7,529.0	8,979.3	7,307.0	32.9	35.4	50.72	1,297.8	1,249.3	350.7	304.5	46.14	7.601	
9,300.0	7,529.0	9,079.2	7,307.0	34.2	36.6	50.93	1,397.8	1,249.3	352.3	303.7	48.57	7.253	
9,400.0	7,529.0	9,179.2	7,307.0	35.6	37.9	51.14	1,497.8	1,249.3	353.9	302.8	51.05	6.931	
9,500.0	7,529.0	9,279.2	7,307.0	36.9	39.2	51.35	1,597.8	1,249.3	355.5	301.9	53.59	6.633	
9,600.0	7,529.0	9,379.2	7,307.0	38.4	40.6	51.55	1,697.8	1,249.3	357.1	300.9	56.16	6.358	
9,700.0	7,529.0	9,479.2	7,307.0	39.8	41.9	51.75	1,797.7	1,249.3	358.7	299.9	58.78	6.102	
9,800.0	7,529.0	9,579.1	7,307.0	41.3	43.3	51.96	1,897.7	1,249.3	360.3	298.9	61.43	5.865	
9,900.0	7,529.0	9,679.1	7,307.0	42.8	44.8	52.16	1,997.7	1,249.3	361.9	297.8	64.11	5.645	
10,000.0	7,529.0	9,779.1	7,307.0	44.3	46.2	52.35	2,097.7	1,249.3	363.5	296.7	66.83	5.439	
10,100.0	7,529.0	9,879.1	7,307.0	45.8	47.7	52.55	2,197.7	1,249.3	365.1	295.6	69.57	5.248	
10,200.0	7,529.0	9,979.1	7,307.0	47.3	49.2	52.75	2,297.6	1,249.3	366.8	294.4	72.35	5.070	
10,300.0	7,529.0	10,079.0	7,307.0	48.9	50.7	52.94	2,397.6	1,249.3	368.4	293.3	75.14	4.903	
10,400.0	7,529.0	10,179.0	7,307.0	50.4	52.2	53.13	2,497.6	1,249.3	370.0	292.1	77.96	4.746	
10,500.0	7,529.0	10,279.0	7,307.0	52.0	53.7	53.32	2,597.6	1,249.3	371.7	290.9	80.80	4.600	
10,600.0	7,529.0	10,379.0	7,307.0	53.6	55.3	53.51	2,697.5	1,249.3	373.3	289.7	83.66	4.462	
10,700.0	7,529.0	10,478.9	7,307.0	55.2	56.9	53.69	2,797.5	1,249.3	375.0	288.4	86.55	4.333	
10,800.0	7,529.0	10,578.9	7,307.0	56.8	58.4	53.88	2,897.5	1,249.3	376.6	287.2	89.45	4.211	
10,900.0	7,529.0	10,678.9	7,307.0	58.4	60.0	54.06	2,997.5	1,249.3	378.3	285.9	92.36	4.096	
11,000.0	7,529.0	10,778.9	7,307.0	60.1	61.6	54.24	3,097.5	1,249.3	379.9	284.6	95.30	3.987	
11,100.0	7,529.0	10,878.9	7,307.0	61.7	63.2	54.42	3,197.4	1,249.3	381.6	283.4	98.25	3.884	
11,200.0	7,529.0	10,978.8	7,307.0	63.3	64.8	54.60	3,297.4	1,249.3	383.3	282.1	101.22	3.787	
11,300.0	7,529.0	11,078.8	7,307.0	65.0	66.4	54.78	3,397.4	1,249.3	384.9	280.7	104.20	3.694	
11,400.0	7,529.0	11,178.8	7,307.0	66.6	68.1	54.95	3,497.4	1,249.3	386.6	279.4	107.20	3.607	
11,500.0	7,529.0	11,278.8	7,307.0	68.3	69.7	55.12	3,597.4	1,249.3	388.3	278.1	110.21	3.523	
11,600.0	7,529.0	11,378.8	7,307.0	70.0	71.3	55.30	3,697.3	1,249.3	390.0	276.8	113.23	3.444	
11,700.0	7,529.0	11,478.7	7,307.0	71.6	73.0	55.47	3,797.3	1,249.3	391.7	275.4	116.26	3.369	
11,800.0	7,529.0	11,578.7	7,307.0	73.3	74.6	55.64	3,897.3	1,249.3	393.4	274.0	119.31	3.297	
11,900.0	7,529.0	11,678.7	7,307.0	75.0	76.3	55.80	3,997.3	1,249.3	395.1	272.7	122.37	3.228	
12,000.0	7,529.0	11,778.7	7,307.0	76.6	77.9	55.97	4,097.3	1,249.3	396.7	271.3	125.44	3.163	
12,100.0	7,529.0	11,878.7	7,307.0	78.3	79.6	56.13	4,197.2	1,249.3	398.4	269.9	128.53	3.100	
12,200.0	7,529.0	11,978.6	7,307.0	80.0	81.2	56.30	4,297.2	1,249.3	400.1	268.5	131.62	3.040	
12,300.0	7,529.0	12,078.6	7,307.0	81.7	82.9	56.46	4,397.2	1,249.3	401.9	267.1	134.72	2.983	
12,400.0	7,529.0	12,178.6	7,307.0	83.4	84.6	56.62	4,497.2	1,249.3	403.6	265.7	137.84	2.928	
12,500.0	7,529.0	12,278.6	7,307.0	85.1	86.2	56.78	4,597.1	1,249.3	405.3	264.3	140.96	2.875	
12,600.0	7,529.0	12,378.6	7,307.0	86.8	87.9	56.94	4,697.1	1,249.3	407.0	262.9	144.09	2.825	
12,700.0	7,529.0	12,478.5	7,307.0	88.5	89.6	57.09	4,797.1	1,249.3	408.7	261.5	147.24	2.776	
12,800.0	7,529.0	12,578.5	7,307.0	90.2	91.3	57.25	4,897.1	1,249.3	410.4	260.0	150.39	2.729	
12,900.0	7,529.0	12,678.5	7,307.0	91.9	93.0	57.40	4,997.1	1,249.3	412.2	258.6	153.55	2.684	
13,003.0	7,529.0	12,774.2	7,307.0	93.6	94.6	57.55	5,092.8	1,249.3	414.0	257.3	156.69	2.642 SF	

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 3H-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 3H-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 #2	Offset TVD Reference:	Offset Datum

Offset Design S9-T2N-R67W (Sprague) - Sprague 3J-9H-N267 - Hz - Plan #1													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	100.40	-3.6	19.6	19.9					
100.0	100.0	100.0	100.0	0.1	0.1	100.40	-3.6	19.6	19.9	19.7	0.24	81.424	CC, ES	
200.0	200.0	200.0	200.0	0.3	0.3	100.40	-3.6	19.6	19.9	19.3	0.59	33.527		
300.0	300.0	299.3	299.3	0.5	0.5	101.10	-4.2	21.2	21.6	20.7	0.94	22.904		
400.0	400.0	398.3	398.2	0.6	0.7	102.65	-5.8	26.0	26.8	25.5	1.30	20.521		
500.0	500.0	497.0	496.5	0.8	0.9	-18.62	-8.6	34.1	33.7	32.1	1.64	20.594		
600.0	599.8	595.5	594.3	1.0	1.2	-19.20	-12.6	45.3	40.8	38.8	1.99	20.532		
700.0	699.5	693.7	691.3	1.2	1.5	-20.48	-17.5	59.7	48.0	45.6	2.34	20.500		
800.0	798.7	791.7	787.5	1.5	1.8	-22.19	-23.6	77.1	55.3	52.6	2.71	20.444		
900.0	897.5	889.8	883.2	1.8	2.2	-24.16	-30.7	97.6	62.8	59.7	3.09	20.295		
1,000.0	995.9	989.5	980.1	2.1	2.7	-26.19	-38.4	119.5	69.9	66.4	3.52	19.883		
1,100.0	1,094.4	1,089.2	1,077.1	2.4	3.1	-27.84	-46.0	141.4	77.1	73.2	3.96	19.483		
1,200.0	1,192.9	1,188.9	1,174.1	2.7	3.5	-29.21	-53.6	163.3	84.4	80.0	4.42	19.107		
1,300.0	1,291.4	1,288.7	1,271.1	3.1	4.0	-30.37	-61.2	185.2	91.7	86.8	4.89	18.758		
1,400.0	1,389.9	1,388.4	1,368.1	3.4	4.4	-31.35	-68.8	207.1	99.0	93.6	5.37	18.439		
1,500.0	1,488.4	1,488.1	1,465.1	3.8	4.9	-32.19	-76.5	229.0	106.3	100.5	5.86	18.149		
1,600.0	1,586.8	1,587.8	1,562.0	4.1	5.3	-32.93	-84.1	250.9	113.7	107.4	6.36	17.886		
1,700.0	1,685.3	1,687.5	1,659.0	4.5	5.8	-33.58	-91.7	272.8	121.1	114.2	6.86	17.648		
1,800.0	1,783.8	1,787.3	1,756.0	4.8	6.2	-34.15	-99.3	294.7	128.5	121.1	7.37	17.432		
1,900.0	1,882.3	1,887.0	1,853.0	5.1	6.6	-34.66	-107.0	316.6	135.9	128.0	7.88	17.236		
2,000.0	1,980.8	1,986.7	1,950.0	5.5	7.1	-35.12	-114.6	338.5	143.3	134.9	8.40	17.058		
2,100.0	2,079.2	2,086.4	2,047.0	5.8	7.5	-35.53	-122.2	360.4	150.8	141.8	8.92	16.895		
2,200.0	2,177.7	2,186.1	2,143.9	6.2	8.0	-35.91	-129.8	382.4	158.2	148.7	9.45	16.746		
2,300.0	2,276.2	2,285.8	2,240.9	6.5	8.4	-36.25	-137.5	404.3	165.6	155.7	9.97	16.610		
2,400.0	2,374.7	2,385.6	2,337.9	6.9	8.9	-36.56	-145.1	426.2	173.1	162.6	10.50	16.484		
2,500.0	2,473.2	2,485.3	2,434.9	7.2	9.3	-36.84	-152.7	448.1	180.5	169.5	11.03	16.368		
2,600.0	2,571.6	2,585.0	2,531.9	7.6	9.8	-37.11	-160.3	470.0	188.0	176.4	11.56	16.261		
2,700.0	2,670.1	2,684.7	2,628.9	7.9	10.2	-37.35	-167.9	491.9	195.4	183.3	12.09	16.162		
2,800.0	2,768.6	2,784.4	2,725.8	8.3	10.7	-37.57	-175.6	513.8	202.9	190.3	12.63	16.070		
2,900.0	2,867.1	2,884.2	2,822.8	8.6	11.1	-37.78	-183.2	535.7	210.4	197.2	13.16	15.984		
3,000.0	2,965.6	2,983.9	2,919.8	9.0	11.6	-37.98	-190.8	557.6	217.8	204.1	13.70	15.904		
3,100.0	3,064.0	3,083.6	3,016.8	9.3	12.0	-38.16	-198.4	579.5	225.3	211.1	14.23	15.830		
3,200.0	3,162.5	3,183.3	3,113.8	9.7	12.5	-38.33	-206.1	601.4	232.8	218.0	14.77	15.760		
3,300.0	3,261.0	3,283.0	3,210.8	10.0	12.9	-38.49	-213.7	623.3	240.2	224.9	15.31	15.694		
3,400.0	3,359.5	3,382.7	3,307.7	10.4	13.4	-38.64	-221.3	645.2	247.7	231.9	15.85	15.632		
3,500.0	3,458.0	3,482.5	3,404.7	10.7	13.8	-38.78	-228.9	667.1	255.2	238.8	16.39	15.574		
3,600.0	3,556.4	3,582.2	3,501.7	11.1	14.3	-38.91	-236.5	689.0	262.7	245.8	16.93	15.519		
3,700.0	3,654.9	3,681.9	3,598.7	11.5	14.7	-39.04	-244.2	710.9	270.2	252.7	17.47	15.467		
3,800.0	3,753.4	3,781.6	3,695.7	11.8	15.2	-39.16	-251.8	732.9	277.6	259.6	18.01	15.418		
3,900.0	3,851.9	3,881.3	3,792.7	12.2	15.6	-39.27	-259.4	754.8	285.1	266.6	18.55	15.371		
4,000.0	3,950.4	3,981.1	3,889.6	12.5	16.1	-39.38	-267.0	776.7	292.6	273.5	19.09	15.327		
4,100.0	4,048.9	4,080.8	3,986.6	12.9	16.5	-39.48	-274.7	798.6	300.1	280.5	19.63	15.285		
4,200.0	4,147.3	4,180.5	4,083.6	13.2	17.0	-39.57	-282.3	820.5	307.6	287.4	20.18	15.245		
4,300.0	4,245.8	4,280.2	4,180.6	13.6	17.4	-39.67	-289.9	842.4	315.1	294.3	20.72	15.207		
4,400.0	4,344.3	4,379.9	4,277.6	13.9	17.9	-39.75	-297.5	864.3	322.5	301.3	21.26	15.171		
4,500.0	4,442.8	4,479.6	4,374.6	14.3	18.3	-39.84	-305.1	886.2	330.0	308.2	21.80	15.137		
4,600.0	4,541.3	4,579.4	4,471.5	14.6	18.8	-39.92	-312.8	908.1	337.5	315.2	22.35	15.104		
4,700.0	4,639.7	4,679.1	4,568.5	15.0	19.2	-39.99	-320.4	930.0	345.0	322.1	22.89	15.072		
4,800.0	4,738.2	4,778.8	4,665.5	15.3	19.7	-40.07	-328.0	951.9	352.5	329.1	23.43	15.042		
4,900.0	4,836.7	4,878.5	4,762.5	15.7	20.1	-40.14	-335.6	973.8	360.0	336.0	23.98	15.013		
5,000.0	4,935.2	4,978.2	4,859.5	16.0	20.6	-40.20	-343.3	995.7	367.5	343.0	24.52	14.985		
5,100.0	5,033.7	5,078.0	4,956.5	16.4	21.0	-40.27	-350.9	1,017.6	375.0	349.9	25.07	14.958		

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 3H-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 3H-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 #2	Offset TVD Reference:	Offset Datum

Offset Design S9-T2N-R67W (Sprague) - Sprague 3J-9H-N267 - Hz - Plan #1													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)	Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor		
5,200.0	5,132.1	5,177.7	5,053.4	16.7	21.5	-40.33	-358.5	1,039.5	382.5	356.9	25.61	14.933		
5,300.0	5,230.6	5,277.4	5,150.4	17.1	21.9	-40.39	-366.1	1,061.4	390.0	363.8	26.16	14.908		
5,400.0	5,329.1	5,377.1	5,247.4	17.4	22.3	-40.45	-373.8	1,083.3	397.4	370.7	26.70	14.885		
5,500.0	5,427.6	5,476.8	5,344.4	17.8	22.8	-40.50	-381.4	1,105.3	404.9	377.7	27.25	14.862		
5,600.0	5,526.1	5,576.5	5,441.4	18.1	23.2	-40.56	-389.0	1,127.2	412.4	384.6	27.79	14.840		
5,700.0	5,624.5	5,676.3	5,538.4	18.5	23.7	-40.61	-396.6	1,149.1	419.9	391.6	28.34	14.819		
5,800.0	5,723.3	5,775.9	5,635.2	18.8	24.1	-40.62	-404.2	1,170.9	428.7	399.9	28.82	14.879		
5,900.0	5,822.6	5,875.2	5,731.8	19.0	24.6	-40.38	-411.8	1,192.8	440.2	411.0	29.16	15.097		
6,000.0	5,922.2	5,974.0	5,827.9	19.2	25.0	-39.90	-419.4	1,214.5	454.3	425.0	29.37	15.469		
6,100.0	6,022.0	6,072.3	5,923.5	19.4	25.5	-39.23	-426.9	1,236.1	471.2	441.7	29.47	15.992		
6,200.0	6,122.0	6,170.0	6,018.5	19.5	25.9	83.60	-434.4	1,257.5	490.9	462.9	27.98	17.543		
6,300.0	6,222.0	6,267.2	6,113.1	19.6	26.4	84.72	-441.8	1,278.9	512.0	483.2	28.84	17.754		
6,400.0	6,322.0	6,364.5	6,207.7	19.7	26.8	85.75	-449.2	1,300.3	533.4	503.7	29.68	17.973		
6,500.0	6,422.0	6,461.7	6,302.3	19.8	27.2	86.70	-456.7	1,321.6	554.9	524.4	30.49	18.197		
6,600.0	6,522.0	6,559.0	6,396.9	19.9	27.7	87.58	-464.1	1,343.0	576.6	545.3	31.29	18.425		
6,700.0	6,622.0	6,656.2	6,491.5	20.0	28.1	88.40	-471.5	1,364.3	598.3	566.2	32.07	18.657		
6,778.0	6,700.0	6,732.1	6,565.2	20.1	28.5	89.00	-477.3	1,381.0	615.4	582.7	32.67	18.838		
6,800.0	6,722.0	6,753.6	6,586.1	20.1	28.6	-34.10	-479.0	1,385.7	619.8	590.5	29.33	21.133		
6,850.0	6,771.8	6,803.0	6,634.1	20.2	28.8	-33.52	-482.7	1,396.6	627.5	598.0	29.43	21.324		
6,900.0	6,821.1	6,852.8	6,682.6	20.4	29.0	-33.37	-486.6	1,407.5	631.5	601.8	29.68	21.279		
6,950.0	6,869.4	6,902.7	6,731.1	20.7	29.2	-33.64	-490.4	1,418.5	631.9	601.8	30.08	21.006		
6,962.0	6,880.9	6,914.6	6,742.8	20.8	29.3	-33.77	-491.3	1,421.1	631.4	601.2	30.20	20.908		
7,000.0	6,917.1	6,952.5	6,779.5	21.0	29.4	-23.08	-494.2	1,429.4	629.6	599.2	30.41	20.708		
7,050.0	6,965.2	7,002.4	6,828.1	21.2	29.7	-5.86	-498.0	1,440.4	627.2	596.7	30.48	20.580		
7,100.0	7,013.3	7,052.1	6,876.4	21.4	29.9	12.60	-501.8	1,451.3	624.7	594.4	30.33	20.593		
7,150.0	7,061.2	7,101.1	6,924.1	21.5	30.1	29.14	-505.5	1,462.1	622.2	592.2	30.01	20.734		
7,200.0	7,108.4	7,150.1	6,971.9	21.7	30.3	42.27	-507.5	1,472.9	619.9	590.4	29.56	20.968		
7,250.0	7,154.7	7,200.2	7,020.6	21.8	30.5	52.18	-505.1	1,483.9	617.9	588.8	29.10	21.233		
7,300.0	7,199.5	7,251.3	7,070.0	21.8	30.7	59.70	-498.2	1,495.0	616.2	587.6	28.65	21.510		
7,350.0	7,242.7	7,303.6	7,119.7	21.9	30.8	65.57	-486.6	1,506.3	614.8	586.6	28.22	21.786		
7,400.0	7,283.9	7,357.1	7,169.3	21.9	30.9	70.26	-469.9	1,517.5	613.7	585.8	27.84	22.045		
7,450.0	7,322.7	7,411.9	7,218.2	21.9	31.0	74.11	-447.9	1,528.5	612.9	585.3	27.51	22.275		
7,500.0	7,358.9	7,467.9	7,266.0	21.9	31.1	77.32	-420.6	1,539.3	612.3	585.1	27.26	22.465		
7,550.0	7,392.2	7,525.3	7,311.9	21.9	31.2	80.04	-387.9	1,549.7	612.0	585.0	27.07	22.611		
7,597.0	7,420.6	7,580.5	7,352.8	21.9	31.2	82.22	-352.1	1,558.9	611.9	585.0	26.96	22.702		
7,600.0	7,422.3	7,584.0	7,355.3	22.0	31.2	82.35	-349.6	1,559.5	611.9	585.0	26.95	22.707		
7,650.0	7,449.1	7,644.0	7,395.5	22.0	31.2	84.31	-306.1	1,568.6	612.0	585.1	26.89	22.756		
7,700.0	7,472.2	7,705.3	7,431.8	22.0	31.3	85.96	-257.4	1,576.7	612.2	585.3	26.91	22.755		
7,750.0	7,491.6	7,767.6	7,463.3	22.0	31.3	87.31	-204.1	1,583.9	612.5	585.6	26.98	22.705		
7,800.0	7,507.0	7,831.0	7,489.3	22.0	31.3	88.38	-146.7	1,589.7	612.9	585.8	27.10	22.612		
7,850.0	7,518.5	7,895.2	7,509.2	22.1	31.4	89.18	-85.8	1,594.2	613.2	585.9	27.27	22.483		
7,900.0	7,525.8	7,960.1	7,522.4	22.2	31.5	89.71	-22.4	1,597.2	613.5	586.0	27.50	22.307		
7,950.0	7,528.9	8,025.3	7,528.5	22.3	31.5	89.97	42.5	1,598.6	613.7	585.9	27.77	22.096		
7,962.1	7,529.0	8,041.1	7,529.0	22.3	31.6	90.00	58.3	1,598.7	613.7	585.9	27.84	22.041		
8,000.0	7,529.0	8,080.8	7,529.0	22.4	31.6	90.00	97.9	1,598.7	613.7	585.5	28.16	21.796		
8,100.0	7,529.0	8,180.8	7,529.0	22.7	31.9	90.00	197.9	1,598.7	613.7	584.5	29.24	20.986		
8,200.0	7,529.0	8,280.8	7,529.0	23.2	32.2	90.00	297.9	1,598.7	613.7	583.0	30.69	20.000		
8,300.0	7,529.0	8,380.8	7,529.0	23.8	32.6	90.00	397.9	1,598.7	613.7	581.3	32.44	18.915		
8,400.0	7,529.0	8,480.8	7,529.0	24.4	33.1	90.00	497.9	1,598.7	613.7	579.2	34.47	17.803		
8,500.0	7,529.0	8,580.8	7,529.0	25.2	33.7	90.00	597.9	1,598.7	613.7	577.0	36.72	16.711		
8,600.0	7,529.0	8,680.8	7,529.0	26.1	34.3	90.00	697.9	1,598.7	613.7	574.5	39.16	15.672		
8,700.0	7,529.0	8,780.8	7,529.0	27.1	35.1	90.00	797.9	1,598.7	613.7	572.0	41.75	14.700		

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 3H-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 3H-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 #2	Offset TVD Reference:	Offset Datum

Offset Design S9-T2N-R67W (Sprague) - Sprague 3J-9H-N267 - Hz - Plan #1												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
8,800.0	7,529.0	8,880.8	7,529.0	28.2	35.9	90.00	897.9	1,598.7	613.7	569.2	44.47	13.802	
8,822.1	7,529.0	8,902.8	7,529.0	28.4	36.0	90.00	920.0	1,598.7	613.7	568.6	45.08	13.615	
8,822.1	7,529.0	8,902.8	7,529.0	28.4	36.0	90.00	920.0	1,598.7	613.7	568.6	45.08	13.615	
8,880.8	7,529.0	8,961.5	7,529.0	29.1	36.6	90.00	978.7	1,598.7	614.3	568.3	46.05	13.340	
8,900.0	7,529.0	8,980.7	7,529.0	29.3	36.7	90.00	997.9	1,598.7	614.7	568.1	46.59	13.194	
9,000.0	7,529.0	9,080.7	7,529.0	30.4	37.7	90.00	1,097.9	1,598.7	616.7	567.3	49.47	12.466	
9,100.0	7,529.0	9,180.7	7,529.0	31.6	38.7	90.00	1,197.9	1,598.7	618.8	566.4	52.43	11.802	
9,200.0	7,529.0	9,280.7	7,529.0	32.9	39.7	90.00	1,297.8	1,598.7	620.8	565.4	55.45	11.196	
9,300.0	7,529.0	9,380.7	7,529.0	34.2	40.8	90.00	1,397.8	1,598.7	622.9	564.4	58.53	10.642	
9,400.0	7,529.0	9,480.6	7,529.0	35.6	41.9	90.00	1,497.8	1,598.7	624.9	563.3	61.65	10.136	
9,500.0	7,529.0	9,580.6	7,529.0	36.9	43.1	90.00	1,597.8	1,598.7	627.0	562.2	64.81	9.674	
9,600.0	7,529.0	9,680.6	7,529.0	38.4	44.3	90.00	1,697.8	1,598.7	629.0	561.0	68.01	9.249	
9,700.0	7,529.0	9,780.6	7,529.0	39.8	45.6	90.00	1,797.7	1,598.7	631.1	559.8	71.24	8.859	
9,800.0	7,529.0	9,880.6	7,529.0	41.3	46.9	90.00	1,897.7	1,598.7	633.1	558.6	74.49	8.500	
9,900.0	7,529.0	9,980.5	7,529.0	42.8	48.2	90.00	1,997.7	1,598.7	635.2	557.4	77.76	8.168	
10,000.0	7,529.0	10,080.5	7,529.0	44.3	49.6	90.00	2,097.7	1,598.7	637.2	556.2	81.05	7.862	
10,100.0	7,529.0	10,180.5	7,529.0	45.8	50.9	90.00	2,197.7	1,598.7	639.3	554.9	84.36	7.578	
10,200.0	7,529.0	10,280.5	7,529.0	47.3	52.3	90.00	2,297.6	1,598.7	641.3	553.6	87.69	7.314	
10,300.0	7,529.0	10,380.5	7,529.0	48.9	53.7	90.00	2,397.6	1,598.7	643.4	552.3	91.03	7.068	
10,400.0	7,529.0	10,480.4	7,529.0	50.4	55.2	90.00	2,497.6	1,598.7	645.4	551.0	94.38	6.839	
10,500.0	7,529.0	10,580.4	7,529.0	52.0	56.6	90.00	2,597.6	1,598.7	647.5	549.7	97.74	6.624	
10,600.0	7,529.0	10,680.4	7,529.0	53.6	58.1	90.00	2,697.5	1,598.7	649.5	548.4	101.11	6.424	
10,700.0	7,529.0	10,780.4	7,529.0	55.2	59.6	90.00	2,797.5	1,598.7	651.6	547.1	104.50	6.235	
10,800.0	7,529.0	10,880.3	7,529.0	56.8	61.1	90.00	2,897.5	1,598.7	653.6	545.7	107.88	6.058	
10,900.0	7,529.0	10,980.3	7,529.0	58.4	62.6	90.00	2,997.5	1,598.7	655.7	544.4	111.28	5.892	
11,000.0	7,529.0	11,080.3	7,529.0	60.1	64.1	90.00	3,097.5	1,598.7	657.7	543.0	114.68	5.735	
11,100.0	7,529.0	11,180.3	7,529.0	61.7	65.7	90.00	3,197.4	1,598.7	659.8	541.7	118.09	5.587	
11,200.0	7,529.0	11,280.3	7,529.0	63.3	67.2	90.00	3,297.4	1,598.7	661.8	540.3	121.51	5.447	
11,300.0	7,529.0	11,380.2	7,529.0	65.0	68.8	90.00	3,397.4	1,598.7	663.9	538.9	124.93	5.314	
11,400.0	7,529.0	11,480.2	7,529.0	66.6	70.4	90.00	3,497.4	1,598.7	665.9	537.5	128.35	5.188	
11,500.0	7,529.0	11,580.2	7,529.0	68.3	71.9	90.00	3,597.4	1,598.7	667.9	536.2	131.78	5.069	
11,600.0	7,529.0	11,680.2	7,529.0	70.0	73.5	90.00	3,697.3	1,598.7	670.0	534.8	135.22	4.955	
11,700.0	7,529.0	11,780.2	7,529.0	71.6	75.1	90.00	3,797.3	1,598.7	672.0	533.4	138.65	4.847	
11,800.0	7,529.0	11,880.1	7,529.0	73.3	76.7	90.00	3,897.3	1,598.7	674.1	532.0	142.09	4.744	
11,900.0	7,529.0	11,980.1	7,529.0	75.0	78.3	90.00	3,997.3	1,598.7	676.1	530.6	145.54	4.646	
12,000.0	7,529.0	12,080.1	7,529.0	76.6	79.9	90.00	4,097.3	1,598.7	678.2	529.2	148.98	4.552	
12,100.0	7,529.0	12,180.1	7,529.0	78.3	81.6	90.00	4,197.2	1,598.7	680.2	527.8	152.43	4.463	
12,200.0	7,529.0	12,280.1	7,529.0	80.0	83.2	90.00	4,297.2	1,598.7	682.3	526.4	155.89	4.377	
12,300.0	7,529.0	12,380.0	7,529.0	81.7	84.8	90.00	4,397.2	1,598.7	684.3	525.0	159.34	4.295	
12,400.0	7,529.0	12,480.0	7,529.0	83.4	86.4	90.00	4,497.2	1,598.7	686.4	523.6	162.80	4.216	
12,500.0	7,529.0	12,580.0	7,529.0	85.1	88.1	90.00	4,597.1	1,598.7	688.4	522.2	166.26	4.141	
12,600.0	7,529.0	12,680.0	7,529.0	86.8	89.7	90.00	4,697.1	1,598.7	690.5	520.8	169.72	4.068	
12,700.0	7,529.0	12,779.9	7,529.0	88.5	91.4	90.00	4,797.1	1,598.7	692.5	519.3	173.18	3.999	
12,800.0	7,529.0	12,879.9	7,529.0	90.2	93.0	90.00	4,897.1	1,598.7	694.6	517.9	176.64	3.932	
12,900.0	7,529.0	12,979.9	7,529.0	91.9	94.7	90.00	4,997.1	1,598.7	696.6	516.5	180.11	3.868	
13,003.0	7,529.0	13,068.3	7,529.0	93.6	96.1	90.00	5,085.5	1,598.7	698.9	515.5	183.43	3.810 SF	



Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Sprague 3H-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 3H-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 #2	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							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	112.56	-83.7	201.6	219.0					
100.0	100.0	82.6	82.6	0.1	0.1	112.56	-83.7	201.5	218.2	218.0	0.26	852.514		
167.9	167.9	150.3	150.3	0.2	0.2	112.58	-83.8	201.4	218.1	217.7	0.49	448.857		
200.0	200.0	181.7	181.7	0.3	0.3	112.59	-83.8	201.5	218.2	217.6	0.60	365.650		
300.0	300.0	280.3	280.3	0.5	0.5	112.61	-84.2	202.1	218.9	218.0	0.94	232.009		
400.0	400.0	379.4	379.4	0.6	0.6	112.30	-83.5	203.6	220.1	218.8	1.29	170.142		
500.0	500.0	472.1	472.0	0.8	0.8	-10.57	-81.5	206.9	220.9	219.3	1.63	135.299		
600.0	599.8	561.8	561.4	1.0	1.0	-11.58	-80.9	214.0	222.9	220.9	1.97	113.256		
700.0	699.5	655.1	654.1	1.2	1.2	-12.78	-81.6	224.7	225.5	223.2	2.31	97.499		
800.0	798.7	753.9	751.9	1.5	1.5	-14.82	-80.7	238.4	226.5	223.9	2.68	84.608		
900.0	897.5	851.5	848.4	1.8	1.8	-17.79	-77.0	252.8	224.8	221.7	3.05	73.581		
1,000.0	995.9	948.5	943.9	2.1	2.1	-21.56	-71.2	268.6	223.1	219.7	3.46	64.455		
1,035.6	1,031.0	983.1	977.8	2.2	2.3	-23.21	-68.0	274.6	223.0	219.4	3.61	61.714		
1,100.0	1,094.4	1,046.3	1,039.6	2.4	2.5	-26.57	-60.8	285.7	223.4	219.5	3.91	57.193		
1,200.0	1,192.9	1,146.7	1,137.4	2.7	2.9	-32.79	-45.6	302.9	225.1	220.7	4.40	51.199		
1,300.0	1,291.4	1,236.1	1,223.7	3.1	3.3	-39.06	-28.5	318.4	230.3	225.4	4.89	47.056		
1,400.0	1,389.9	1,327.0	1,310.5	3.4	3.7	-45.85	-7.4	335.6	241.4	235.9	5.43	44.446		
1,500.0	1,488.4	1,415.0	1,393.3	3.8	4.3	-52.38	16.0	353.5	258.8	252.8	5.96	43.391		
1,600.0	1,586.8	1,505.3	1,477.7	4.1	4.8	-58.57	42.0	372.4	281.3	274.8	6.51	43.231		
1,700.0	1,685.3	1,598.9	1,565.0	4.5	5.4	-64.47	70.6	390.4	306.7	299.7	7.06	43.470		
1,800.0	1,783.8	1,689.6	1,649.5	4.8	5.9	-69.63	99.4	406.8	334.8	327.2	7.59	44.095		
1,900.0	1,882.3	1,778.8	1,732.2	5.1	6.5	-74.13	128.8	422.4	365.8	357.7	8.13	45.019		
2,000.0	1,980.8	1,871.7	1,818.4	5.5	7.1	-78.14	159.5	438.7	398.7	390.1	8.67	46.015		
2,100.0	2,079.2	1,967.0	1,907.1	5.8	7.7	-81.57	190.1	455.1	432.3	423.1	9.21	46.921		
2,200.0	2,177.7	2,059.0	1,993.0	6.2	8.3	-84.34	219.0	471.2	466.6	456.8	9.76	47.799		
2,300.0	2,276.2	2,153.8	2,081.5	6.5	8.9	-86.73	248.2	488.4	501.7	491.3	10.32	48.596		
2,400.0	2,374.7	2,251.5	2,173.1	6.9	9.5	-88.76	277.0	506.3	536.2	525.3	10.90	49.202		
2,500.0	2,473.2	2,350.0	2,265.8	7.2	10.1	-90.55	305.3	524.1	570.5	559.1	11.48	49.681		
2,600.0	2,571.6	2,444.9	2,355.3	7.6	10.7	-91.99	331.4	541.6	604.4	592.3	12.07	50.072		
2,700.0	2,670.1	2,544.2	2,449.2	7.9	11.3	-93.32	358.4	559.9	638.1	625.4	12.67	50.375		
2,800.0	2,768.6	2,635.8	2,535.9	8.3	11.8	-94.48	383.2	575.9	671.6	658.4	13.25	50.682		
2,900.0	2,867.1	2,739.0	2,633.6	8.6	12.4	-95.46	409.3	595.9	704.6	690.7	13.89	50.728		
3,000.0	2,965.6	2,816.7	2,707.0	9.0	12.9	-95.99	428.8	612.6	738.4	724.0	14.45	51.093		
3,100.0	3,064.0	2,901.7	2,786.7	9.3	13.4	-96.53	451.4	631.5	773.8	758.8	15.03	51.470		
3,200.0	3,162.5	2,986.0	2,865.7	9.7	14.0	-97.04	474.1	650.1	809.8	794.2	15.62	51.849		
3,300.0	3,261.0	3,073.0	2,946.8	10.0	14.6	-97.55	499.1	669.4	847.3	831.1	16.20	52.286		
3,400.0	3,359.5	3,145.7	3,014.1	10.4	15.1	-98.02	521.6	685.1	886.6	869.8	16.75	52.942		
3,500.0	3,458.0	3,243.2	3,104.5	10.7	15.7	-98.68	552.4	705.0	926.2	908.9	17.36	53.346		
3,600.0	3,556.4	3,334.6	3,189.2	11.1	16.4	-99.20	580.6	724.3	965.5	947.6	17.97	53.717		
3,700.0	3,654.9	3,439.5	3,286.6	11.5	17.1	-99.68	612.1	747.4	1,004.5	985.8	18.62	53.940		
3,800.0	3,753.4	3,547.1	3,387.4	11.8	17.8	-100.19	642.8	769.3	1,041.5	1,022.2	19.27	54.047		
3,900.0	3,851.9	3,639.9	3,474.3	12.2	18.4	-100.64	669.6	787.6	1,078.6	1,058.8	19.89	54.244		
4,000.0	3,950.4	3,751.3	3,579.0	12.5	19.1	-101.09	700.4	809.9	1,114.8	1,094.3	20.56	54.237		
4,100.0	4,048.9	3,848.1	3,670.3	12.9	19.6	-101.48	726.2	828.8	1,150.0	1,128.8	21.18	54.296		
4,200.0	4,147.3	3,936.1	3,753.5	13.2	20.2	-101.86	750.2	845.1	1,185.3	1,163.6	21.77	54.444		
4,300.0	4,245.8	4,070.9	3,881.5	13.6	20.9	-102.52	786.1	867.2	1,219.8	1,197.3	22.49	54.230		
4,400.0	4,344.3	4,208.2	4,013.6	13.9	21.6	-103.25	818.4	886.2	1,250.3	1,227.1	23.22	53.848		
4,500.0	4,442.8	4,349.7	4,150.9	14.3	22.2	-104.07	848.2	902.1	1,278.1	1,254.2	23.95	53.362		
4,600.0	4,541.3	4,507.5	4,305.7	14.6	22.8	-104.95	874.9	917.6	1,301.6	1,276.8	24.74	52.618		
4,700.0	4,639.7	4,681.9	4,478.2	15.0	23.2	-106.00	896.8	929.6	1,320.4	1,294.8	25.54	51.690		
4,800.0	4,738.2	4,836.6	4,632.3	15.3	23.5	-107.05	910.0	934.8	1,334.8	1,308.5	26.29	50.777		
4,900.0	4,836.7	4,992.3	4,787.8	15.7	23.7	-108.13	915.4	937.0	1,343.4	1,316.4	27.03	49.692		

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 3H-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 3H-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 #2	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						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	4,935.2	5,125.3	4,920.8	16.0	23.8	-109.01	916.1	938.4	1,349.7	1,322.0	27.71	48.717		
5,100.0	5,033.7	5,231.5	5,027.0	16.4	23.8	-109.77	915.6	937.8	1,355.0	1,326.7	28.30	47.882		
5,200.0	5,132.1	5,330.8	5,126.3	16.7	23.9	-110.48	915.0	936.9	1,360.2	1,331.3	28.87	47.107		
5,300.0	5,230.6	5,427.8	5,223.3	17.1	23.9	-111.17	914.3	936.2	1,365.6	1,336.2	29.44	46.388		
5,400.0	5,329.1	5,525.3	5,320.8	17.4	24.0	-111.85	913.7	935.6	1,371.3	1,341.3	30.00	45.714		
5,500.0	5,427.6	5,623.4	5,418.9	17.8	24.0	-112.53	913.2	934.9	1,377.3	1,346.8	30.55	45.080		
5,600.0	5,526.1	5,721.0	5,516.5	18.1	24.1	-113.21	912.7	934.2	1,383.5	1,352.4	31.10	44.487		
5,700.0	5,624.5	5,815.6	5,611.1	18.5	24.1	-113.86	912.3	933.5	1,390.1	1,358.5	31.63	43.944		
5,800.0	5,723.3	5,909.2	5,704.7	18.8	24.2	-114.56	912.3	932.7	1,396.4	1,364.3	32.17	43.405		
5,900.0	5,822.6	6,002.7	5,798.2	19.0	24.3	-115.12	912.7	931.7	1,401.9	1,369.2	32.63	42.959		
6,000.0	5,922.2	6,098.5	5,894.0	19.2	24.4	-115.55	913.4	930.7	1,406.2	1,373.2	33.02	42.585		
6,100.0	6,022.0	6,195.5	5,990.9	19.4	24.4	-115.83	914.3	929.8	1,409.4	1,376.0	33.34	42.270		
6,200.0	6,122.0	6,295.8	6,091.3	19.5	24.5	6.05	915.4	929.3	1,411.1	1,378.9	32.28	43.717		
6,300.0	6,222.0	6,401.2	6,196.7	19.6	24.6	6.03	916.2	928.9	1,411.9	1,379.3	32.53	43.402		
6,400.0	6,322.0	6,503.7	6,299.2	19.7	24.7	6.01	916.7	928.7	1,412.3	1,379.6	32.78	43.090		
6,500.0	6,422.0	6,604.8	6,400.2	19.8	24.8	6.02	917.1	928.7	1,412.7	1,379.6	33.02	42.781		
6,600.0	6,522.0	6,703.7	6,499.2	19.9	24.9	6.03	917.3	929.1	1,413.0	1,379.7	33.27	42.473		
6,700.0	6,622.0	6,802.6	6,598.1	20.0	25.0	6.04	917.7	929.3	1,413.4	1,379.9	33.52	42.171		
6,778.0	6,700.0	6,885.6	6,681.0	20.1	25.0	6.04	918.0	929.3	1,413.6	1,379.9	33.72	41.929		
6,800.0	6,722.0	6,908.9	6,704.4	20.1	25.0	-117.46	918.0	929.3	1,413.8	1,378.8	35.01	40.389		
6,850.0	6,771.8	6,960.7	6,756.1	20.2	25.1	-117.45	917.9	929.3	1,415.7	1,380.6	35.11	40.325		
6,900.0	6,821.1	7,011.6	6,807.1	20.4	25.1	-117.42	917.9	929.1	1,419.5	1,384.3	35.19	40.339		
6,950.0	6,869.4	7,060.6	6,856.1	20.7	25.2	-117.36	917.7	928.9	1,425.4	1,390.1	35.25	40.431		
6,962.0	6,880.9	7,071.8	6,867.2	20.8	25.2	-117.33	917.7	928.8	1,427.1	1,391.8	35.26	40.471		
7,000.0	6,917.1	7,107.0	6,902.4	21.0	25.2	-107.03	917.6	928.6	1,431.5	1,395.6	35.93	39.845		
7,050.0	6,965.2	7,153.7	6,949.1	21.2	25.2	-90.63	917.6	928.3	1,433.7	1,397.1	36.60	39.170		
7,100.0	7,013.3	7,201.6	6,997.1	21.4	25.3	-73.38	917.6	928.1	1,431.7	1,394.7	37.05	38.647		
7,150.0	7,061.2	7,250.2	7,045.7	21.5	25.3	-58.40	917.5	927.7	1,425.5	1,388.2	37.25	38.266		
7,200.0	7,108.4	7,298.2	7,093.7	21.7	25.4	-47.04	917.5	927.4	1,415.0	1,377.8	37.22	38.017		
7,250.0	7,154.7	7,345.1	7,140.5	21.8	25.4	-38.91	917.4	927.0	1,400.4	1,363.5	36.96	37.896		
7,300.0	7,199.5	7,390.5	7,186.0	21.8	25.4	-33.15	917.3	926.6	1,381.8	1,345.4	36.46	37.898		
7,350.0	7,242.7	7,434.3	7,229.7	21.9	25.5	-29.06	917.1	926.4	1,359.4	1,323.6	35.75	38.023		
7,400.0	7,283.9	7,475.3	7,270.7	21.9	25.5	-26.14	917.0	926.1	1,333.1	1,298.3	34.83	38.270		
7,450.0	7,322.7	7,513.9	7,309.3	21.9	25.5	-24.07	916.9	925.9	1,303.4	1,269.7	33.74	38.636		
7,500.0	7,358.9	7,549.8	7,345.3	21.9	25.6	-22.66	916.8	925.6	1,270.4	1,237.9	32.48	39.112		
7,550.0	7,392.2	7,583.0	7,378.5	21.9	25.6	-21.79	916.6	925.4	1,234.3	1,203.2	31.10	39.683		
7,600.0	7,422.3	7,613.2	7,408.7	22.0	25.6	-21.41	916.5	925.3	1,195.4	1,165.7	29.65	40.316		
7,650.0	7,449.1	7,640.0	7,435.4	22.0	25.6	-21.53	916.5	925.1	1,153.9	1,125.8	28.18	40.944		
7,700.0	7,472.2	7,663.1	7,458.5	22.0	25.6	-22.21	916.4	925.0	1,110.3	1,083.5	26.79	41.442		
7,750.0	7,491.6	7,682.4	7,477.9	22.0	25.7	-23.67	916.3	924.8	1,064.7	1,039.1	25.61	41.569		
7,800.0	7,507.0	7,697.8	7,493.2	22.0	25.7	-26.37	916.2	924.8	1,017.6	992.7	24.89	40.883		
7,850.0	7,518.5	7,709.1	7,504.5	22.1	25.7	-31.53	916.2	924.7	969.3	944.1	25.13	38.565		
7,900.0	7,525.8	7,716.2	7,511.7	22.2	25.7	-43.11	916.2	924.7	920.1	892.3	27.73	33.178		
7,950.0	7,528.9	7,719.1	7,514.6	22.3	25.7	-77.61	916.1	924.6	870.3	835.1	35.20	24.725		
7,962.1	7,529.0	7,719.2	7,514.7	22.3	25.7	-93.10	916.1	924.6	858.3	822.1	36.16	23.733		
8,000.0	7,529.0	7,719.1	7,514.5	22.4	25.7	-92.95	916.1	924.6	820.5	784.1	36.31	22.593		
8,100.0	7,529.0	7,718.6	7,514.1	22.7	25.7	-92.55	916.1	924.6	720.8	683.9	36.85	19.560		
8,200.0	7,529.0	7,718.2	7,513.7	23.2	25.7	-92.15	916.1	924.6	621.2	583.6	37.56	16.536		
8,300.0	7,529.0	7,717.8	7,513.2	23.8	25.7	-91.74	916.1	924.6	521.7	483.3	38.44	13.573		
8,400.0	7,529.0	7,717.4	7,512.8	24.4	25.7	-91.35	916.2	924.6	422.6	383.1	39.45	10.712		
8,500.0	7,529.0	7,716.9	7,512.4	25.2	25.7	-90.95	916.2	924.6	323.9	283.3	40.57	7.984		
8,600.0	7,529.0	7,716.5	7,512.0	26.1	25.7	-90.55	916.2	924.6	226.4	184.7	41.78	5.420		

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 3H-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 3H-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 #2	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						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	
8,700.0	7,529.0	7,716.1	7,511.6	27.1	25.7	-90.15	916.2	924.7	132.8	89.7	43.07	3.082	
8,800.0	7,529.0	7,715.7	7,511.1	28.2	25.7	-89.75	916.2	924.7	63.0	18.6	44.42	1.419	Level 3
8,818.2	7,529.0	7,715.6	7,511.1	28.4	25.7	-89.68	916.2	924.7	60.3	15.7	44.67	1.351	Level 3, CC, ES, SF
8,822.1	7,529.0	7,715.6	7,511.0	28.4	25.7	-89.67	916.2	924.7	60.5	15.7	44.72	1.352	Level 3
8,880.8	7,529.0	7,715.4	7,510.8	29.1	25.7	-89.44	916.2	924.7	86.5	41.4	45.07	1.919	
8,900.0	7,529.0	7,715.3	7,510.7	29.3	25.7	-89.37	916.2	924.7	101.0	55.7	45.34	2.228	
9,000.0	7,529.0	7,714.9	7,510.3	30.4	25.7	-88.99	916.2	924.7	190.5	143.8	46.77	4.074	
9,100.0	7,529.0	7,714.5	7,509.9	31.6	25.7	-88.61	916.2	924.7	287.1	238.8	48.24	5.951	
9,200.0	7,529.0	7,714.1	7,509.5	32.9	25.7	-88.23	916.2	924.7	385.4	335.6	49.74	7.747	
9,300.0	7,529.0	7,713.7	7,509.1	34.2	25.7	-87.85	916.2	924.7	484.4	433.1	51.27	9.448	
9,400.0	7,529.0	7,713.3	7,508.7	35.6	25.7	-87.48	916.2	924.7	583.7	530.9	52.81	11.053	
9,500.0	7,529.0	7,712.9	7,508.3	36.9	25.7	-87.10	916.2	924.7	683.2	628.9	54.37	12.566	
9,600.0	7,529.0	7,712.5	7,507.9	38.4	25.7	-86.72	916.2	924.7	782.9	726.9	55.95	13.993	
9,700.0	7,529.0	7,712.1	7,507.5	39.8	25.7	-86.35	916.2	924.7	882.6	825.1	57.53	15.341	
9,800.0	7,529.0	7,711.7	7,507.1	41.3	25.7	-85.98	916.2	924.7	982.4	923.3	59.13	16.614	
9,900.0	7,529.0	7,711.3	7,506.7	42.8	25.7	-85.61	916.2	924.7	1,082.2	1,021.5	60.73	17.819	
10,000.0	7,529.0	7,710.9	7,506.3	44.3	25.7	-85.23	916.2	924.7	1,182.1	1,119.7	62.34	18.960	
10,100.0	7,529.0	7,710.5	7,505.9	45.8	25.7	-84.86	916.2	924.7	1,282.0	1,218.0	63.96	20.043	
10,200.0	7,529.0	7,710.1	7,505.5	47.3	25.7	-84.50	916.2	924.7	1,381.8	1,316.3	65.58	21.072	
10,300.0	7,529.0	7,709.7	7,505.1	48.9	25.7	-84.13	916.2	924.7	1,481.8	1,414.6	67.20	22.051	



Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Sprague 3H-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 3H-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 #2	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	101.30	-41.1	205.7	210.6					
100.0	100.0	82.5	82.5	0.1	0.1	101.32	-41.2	205.7	209.8	209.6	0.25	842.585		
200.0	200.0	182.7	182.6	0.3	0.3	101.46	-41.7	205.6	209.7	209.1	0.60	350.386		
300.0	300.0	282.9	282.9	0.5	0.5	101.75	-42.7	205.2	209.6	208.6	0.95	220.906		
400.0	400.0	383.1	383.0	0.6	0.7	102.19	-44.2	204.6	209.3	208.0	1.30	161.123		
500.0	500.0	483.3	483.2	0.8	0.8	-19.31	-46.5	203.7	207.3	205.6	1.66	125.202		
600.0	599.8	582.9	582.8	1.0	1.0	-19.01	-49.3	202.7	202.0	200.0	2.01	100.569		
700.0	699.5	682.3	682.2	1.2	1.2	-19.32	-51.1	202.0	193.5	191.1	2.36	82.015		
800.0	798.7	781.7	781.6	1.5	1.4	-20.21	-52.5	201.5	181.9	179.1	2.71	67.028		
900.0	897.5	880.6	880.4	1.8	1.5	-21.80	-53.5	201.0	166.9	163.8	3.07	54.307		
1,000.0	995.9	979.0	978.9	2.1	1.7	-23.86	-54.4	200.3	150.4	146.9	3.45	43.527		
1,100.0	1,094.4	1,073.5	1,073.3	2.4	1.9	-25.62	-57.1	201.0	135.6	131.7	3.84	35.268		
1,200.0	1,192.9	1,168.7	1,168.3	2.7	2.1	-26.95	-61.8	204.7	124.3	120.1	4.25	29.260		
1,300.0	1,291.4	1,265.5	1,264.8	3.1	2.3	-27.68	-68.5	210.4	115.3	110.6	4.66	24.716		
1,400.0	1,389.9	1,361.8	1,360.4	3.4	2.5	-28.38	-75.7	219.1	109.4	104.3	5.09	21.496		
1,500.0	1,488.4	1,457.4	1,454.7	3.8	2.7	-27.74	-85.5	230.4	106.6	101.1	5.51	19.350		
1,506.0	1,494.3	1,463.0	1,460.3	3.8	2.7	-27.67	-86.1	231.2	106.6	101.1	5.53	19.263		
1,600.0	1,586.8	1,551.5	1,546.8	4.1	3.0	-26.35	-96.9	246.3	109.0	103.1	5.91	18.458		
1,700.0	1,685.3	1,649.7	1,642.2	4.5	3.4	-25.50	-108.2	266.7	115.4	109.1	6.31	18.287		
1,800.0	1,783.8	1,751.3	1,741.1	4.8	3.7	-25.42	-118.3	287.5	121.3	114.6	6.74	18.000		
1,900.0	1,882.3	1,851.1	1,838.4	5.1	4.1	-25.20	-128.5	307.2	126.5	119.4	7.17	17.660		
2,000.0	1,980.8	1,953.2	1,938.2	5.5	4.5	-25.10	-138.6	326.5	130.8	123.2	7.59	17.224		
2,100.0	2,079.2	2,053.9	2,036.9	5.8	4.8	-25.14	-148.1	344.2	133.7	125.6	8.03	16.651		
2,200.0	2,177.7	2,154.9	2,135.8	6.2	5.2	-24.98	-158.1	361.8	136.5	128.0	8.45	16.149		
2,300.0	2,276.2	2,255.4	2,234.4	6.5	5.6	-24.66	-168.3	378.1	138.1	129.3	8.87	15.566		
2,400.0	2,374.7	2,355.7	2,332.8	6.9	5.9	-23.83	-179.7	394.3	139.9	130.6	9.26	15.103		
2,500.0	2,473.2	2,456.2	2,431.4	7.2	6.3	-23.34	-190.4	410.2	141.2	131.5	9.65	14.623		
2,600.0	2,571.6	2,555.3	2,528.7	7.6	6.7	-23.31	-199.8	426.2	142.7	132.6	10.07	14.167		
2,700.0	2,670.1	2,654.6	2,626.2	7.9	7.0	-23.03	-209.9	442.7	144.7	134.2	10.48	13.807		
2,800.0	2,768.6	2,753.5	2,723.1	8.3	7.4	-22.77	-220.0	459.7	147.3	136.5	10.88	13.545		
2,900.0	2,867.1	2,853.2	2,820.6	8.6	7.8	-22.63	-230.0	477.4	150.5	139.2	11.29	13.334		
3,000.0	2,965.6	2,954.2	2,919.6	9.0	8.2	-22.47	-240.2	495.1	153.4	141.7	11.70	13.120		
3,100.0	3,064.0	3,055.2	3,018.7	9.3	8.6	-22.51	-249.7	512.0	155.5	143.4	12.12	12.835		
3,200.0	3,162.5	3,154.9	3,116.6	9.7	8.9	-22.73	-258.6	528.6	157.5	144.9	12.56	12.539		
3,300.0	3,261.0	3,254.4	3,214.2	10.0	9.3	-22.75	-268.0	545.4	159.6	146.7	12.99	12.292		
3,400.0	3,359.5	3,354.9	3,312.6	10.4	9.7	-21.86	-280.1	562.1	162.0	148.7	13.33	12.156		
3,500.0	3,458.0	3,456.1	3,411.7	10.7	10.1	-20.71	-292.9	577.7	163.4	149.8	13.62	11.996		
3,600.0	3,556.4	3,555.3	3,509.0	11.1	10.5	-19.84	-304.7	593.3	165.0	151.0	13.94	11.834		
3,700.0	3,654.9	3,653.8	3,605.4	11.5	10.9	-18.90	-316.9	609.3	167.1	152.9	14.24	11.740		
3,800.0	3,753.4	3,753.8	3,703.3	11.8	11.3	-18.34	-328.3	626.3	170.0	155.4	14.57	11.664		
3,900.0	3,851.9	3,856.3	3,803.8	12.2	11.6	-17.89	-339.5	643.0	171.9	157.0	14.93	11.515		
4,000.0	3,950.4	3,955.3	3,900.9	12.5	12.0	-17.18	-351.1	658.5	173.4	158.2	15.24	11.380		
4,100.0	4,048.9	4,054.0	3,997.6	12.9	12.4	-16.32	-363.2	674.2	175.4	159.9	15.53	11.298		
4,200.0	4,147.3	4,150.2	4,091.6	13.2	12.8	-15.75	-374.6	691.1	179.0	163.2	15.84	11.302		
4,300.0	4,245.8	4,248.8	4,187.6	13.6	13.2	-15.70	-385.3	710.7	184.5	168.3	16.21	11.379		
4,400.0	4,344.3	4,353.4	4,289.8	13.9	13.6	-16.14	-394.8	730.8	188.9	172.2	16.66	11.337		
4,500.0	4,442.8	4,456.5	4,391.1	14.3	14.0	-16.95	-402.2	748.6	190.8	173.7	17.17	11.116		
4,600.0	4,541.3	4,561.8	4,495.0	14.6	14.4	-17.80	-409.1	764.7	190.7	173.0	17.69	10.781		
4,700.0	4,639.7	4,666.1	4,598.2	15.0	14.7	-18.76	-415.0	778.1	187.9	169.7	18.24	10.301		
4,800.0	4,738.2	4,769.9	4,701.2	15.3	14.9	-19.73	-420.4	789.4	183.4	164.5	18.81	9.749		
4,900.0	4,836.7	4,874.9	4,805.8	15.7	15.1	-21.53	-423.1	798.6	176.1	156.6	19.53	9.019		
5,000.0	4,935.2	4,979.6	4,910.3	16.0	15.3	-24.13	-423.5	804.9	166.0	145.6	20.44	8.122		

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 3H-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 3H-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 #2	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		
5,100.0	5,033.7	5,079.4	5,010.0	16.4	15.4	-27.20	-422.9	809.1	154.4	132.9	21.48	7.187		
5,200.0	5,132.1	5,179.9	5,110.5	16.7	15.6	-30.46	-423.2	812.6	142.6	120.0	22.63	6.300		
5,300.0	5,230.6	5,280.2	5,210.7	17.1	15.7	-34.51	-423.0	814.8	130.0	106.0	24.00	5.417		
5,400.0	5,329.1	5,379.4	5,310.0	17.4	15.8	-39.61	-422.3	816.3	117.7	92.0	25.66	4.585		
5,500.0	5,427.6	5,478.5	5,409.1	17.8	15.9	-45.96	-421.5	817.2	105.9	78.2	27.63	3.832		
5,600.0	5,526.1	5,577.4	5,507.9	18.1	16.0	-53.83	-420.7	817.7	95.3	65.4	29.86	3.192		
5,700.0	5,624.5	5,676.0	5,606.5	18.5	16.1	-63.51	-419.8	817.9	86.7	54.5	32.19	2.694		
5,800.0	5,723.3	5,774.8	5,705.3	18.8	16.2	-73.79	-418.9	817.9	81.5	47.4	34.06	2.392		
5,900.0	5,822.6	5,874.1	5,804.6	19.0	16.3	-82.79	-417.9	817.6	79.5	44.3	35.15	2.261		
5,964.6	5,886.9	5,938.5	5,869.0	19.2	16.4	-87.48	-417.4	817.4	79.2	43.7	35.51	2.231 CC		
6,000.0	5,922.2	5,973.7	5,904.2	19.2	16.4	-89.61	-417.1	817.2	79.3	43.7	35.64	2.225 ES, SF		
6,100.0	6,022.0	6,073.3	6,003.8	19.4	16.5	-93.90	-416.2	816.9	80.1	44.3	35.84	2.235		
6,200.0	6,122.0	6,173.1	6,103.5	19.5	16.6	26.39	-415.1	816.8	81.2	53.0	28.16	2.884		
6,300.0	6,222.0	6,273.0	6,203.4	19.6	16.7	26.16	-413.9	817.0	82.3	53.9	28.47	2.891		
6,400.0	6,322.0	6,372.7	6,303.1	19.7	16.8	26.18	-412.7	817.6	83.7	54.9	28.72	2.913		
6,500.0	6,422.0	6,472.3	6,402.8	19.8	17.0	26.30	-411.3	818.5	85.4	56.5	28.95	2.950		
6,600.0	6,522.0	6,572.2	6,502.6	19.9	17.1	26.64	-409.7	819.9	87.4	58.3	29.13	3.000		
6,700.0	6,622.0	6,672.3	6,602.7	20.0	17.2	27.26	-408.3	821.7	89.5	60.3	29.25	3.060		
6,778.0	6,700.0	6,750.8	6,681.2	20.1	17.3	27.65	-407.4	822.8	90.8	61.4	29.37	3.091		
6,800.0	6,722.0	6,773.0	6,703.4	20.1	17.3	-96.01	-407.2	823.0	91.1	53.7	37.36	2.438		
6,850.0	6,771.8	6,823.1	6,753.5	20.2	17.4	-98.32	-406.9	823.4	92.1	54.6	37.48	2.456		
6,900.0	6,821.1	6,872.5	6,802.9	20.4	17.4	-103.09	-406.6	823.7	94.0	56.6	37.45	2.510		
6,950.0	6,869.4	6,920.9	6,851.3	20.7	17.5	-109.76	-406.4	823.8	98.0	60.9	37.09	2.643		
6,962.0	6,880.9	6,932.4	6,862.8	20.8	17.5	-111.55	-406.3	823.8	99.4	62.5	36.93	2.693		
7,000.0	6,917.1	6,968.6	6,898.9	21.0	17.6	-106.73	-406.1	823.7	103.6	67.3	36.29	2.855		
7,050.0	6,965.2	7,016.6	6,947.0	21.2	17.6	-96.95	-405.9	823.5	106.9	71.8	35.12	3.044		
7,100.0	7,013.3	7,064.7	6,995.1	21.4	17.7	-86.21	-405.6	823.2	107.6	74.0	33.58	3.203		
7,150.0	7,061.2	7,112.5	7,042.9	21.5	17.7	-78.25	-405.4	822.9	105.7	74.1	31.69	3.337		
7,200.0	7,108.4	7,159.6	7,090.0	21.7	17.8	-74.99	-405.2	822.5	102.0	72.5	29.49	3.459		
7,250.0	7,154.7	7,205.8	7,136.1	21.8	17.8	-76.57	-405.0	822.0	97.3	70.1	27.26	3.570		
7,300.0	7,199.5	7,250.6	7,180.9	21.8	17.9	-82.40	-404.8	821.6	93.3	67.7	25.67	3.636		
7,336.5	7,231.2	7,282.2	7,212.6	21.9	17.9	-88.72	-404.6	821.3	92.2	66.8	25.38	3.632		
7,350.0	7,242.7	7,293.7	7,224.0	21.9	17.9	-91.35	-404.6	821.1	92.4	66.9	25.50	3.623		
7,400.0	7,283.9	7,334.8	7,265.2	21.9	18.0	-101.59	-404.4	820.7	97.0	70.3	26.70	3.633		
7,450.0	7,322.7	7,373.7	7,304.1	21.9	18.0	-111.18	-404.2	820.3	108.9	80.8	28.16	3.868		
7,500.0	7,358.9	7,410.1	7,340.4	21.9	18.0	-118.87	-403.9	819.9	128.2	99.2	29.00	4.422		
7,550.0	7,392.2	7,443.6	7,373.9	21.9	18.1	-124.30	-403.7	819.5	154.0	124.9	29.08	5.294		
7,600.0	7,422.3	7,474.0	7,404.3	22.0	18.1	-127.61	-403.5	819.2	184.9	156.2	28.64	6.456		
7,650.0	7,449.1	7,501.0	7,431.4	22.0	18.1	-129.01	-403.3	819.0	220.0	192.0	27.97	7.866		
7,700.0	7,472.2	7,524.5	7,454.9	22.0	18.2	-128.61	-403.1	818.7	258.4	231.1	27.33	9.457		
7,750.0	7,491.6	7,544.2	7,474.6	22.0	18.2	-126.36	-403.0	818.6	299.6	272.6	26.93	11.122		
7,800.0	7,507.0	7,560.1	7,490.4	22.0	18.2	-122.06	-402.8	818.4	342.8	315.8	26.95	12.721		
7,850.0	7,518.5	7,571.9	7,502.2	22.1	18.2	-115.36	-402.7	818.3	387.7	360.3	27.41	14.144		
7,900.0	7,525.8	7,579.6	7,509.9	22.2	18.2	-105.94	-402.7	818.2	433.7	405.6	28.11	15.426		
7,950.0	7,528.9	7,583.2	7,513.5	22.3	18.2	-93.97	-402.6	818.2	480.4	451.9	28.56	16.822		
7,962.1	7,529.0	7,583.4	7,513.7	22.3	18.2	-90.80	-402.6	818.2	491.8	463.2	28.56	17.219		
8,000.0	7,529.0	7,583.7	7,514.1	22.4	18.2	-90.91	-402.6	818.2	527.6	498.9	28.72	18.373		
8,100.0	7,529.0	7,584.6	7,514.9	22.7	18.2	-91.22	-402.6	818.2	623.3	594.0	29.26	21.299		
8,200.0	7,529.0	7,585.5	7,515.8	23.2	18.2	-91.52	-402.6	818.1	720.1	690.1	29.99	24.011		
8,300.0	7,529.0	7,586.4	7,516.7	23.8	18.2	-91.82	-402.6	818.1	817.7	786.9	30.88	26.483		
8,400.0	7,529.0	7,587.3	7,517.6	24.4	18.2	-92.13	-402.6	818.1	915.9	884.0	31.90	28.713		
8,500.0	7,529.0	7,588.2	7,518.5	25.2	18.2	-92.44	-402.6	818.1	1,014.3	981.3	33.03	30.714		

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 3H-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 3H-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 #2	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	
8,600.0	7,529.0	7,589.1	7,519.4	26.1	18.2	-92.74	-402.6	818.1	1,113.1	1,078.9	34.25	32.503	
8,700.0	7,529.0	7,590.0	7,520.3	27.1	18.2	-93.05	-402.6	818.1	1,212.1	1,176.5	35.54	34.104	
8,800.0	7,529.0	7,590.9	7,521.2	28.2	18.2	-93.36	-402.6	818.1	1,311.2	1,274.3	36.90	35.537	
8,822.1	7,529.0	7,591.1	7,521.4	28.4	18.2	-93.42	-402.6	818.1	1,333.1	1,295.9	37.20	35.833	
8,880.8	7,529.0	7,591.6	7,521.9	29.1	18.2	-93.10	-402.6	818.1	1,391.3	1,353.4	37.86	36.746	
8,900.0	7,529.0	7,591.8	7,522.1	29.3	18.2	-93.15	-402.6	818.1	1,410.3	1,372.2	38.13	36.983	
9,000.0	7,529.0	7,592.7	7,523.0	30.4	18.2	-93.42	-402.5	818.1	1,509.4	1,469.8	39.57	38.141	



Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Sprague 3H-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 3H-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 #2	Offset TVD Reference:	Offset Datum

Offset Design S9-T2N-R67W (Sprague) - SPRAGUE 6-0-9 (EXISTING) - ENCANA WELL - PLAN ONLY													Offset Site Error: 0.0 ft
Survey Program: 800-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	
11,700.0	7,529.0	7,521.6	7,459.0	71.6	20.1	90.00	4,673.9	2,146.5	1,502.2	1,417.0	85.13	17.645	
11,800.0	7,529.0	7,521.6	7,459.0	73.3	20.1	90.00	4,673.9	2,146.5	1,447.8	1,361.0	86.85	16.669	
11,900.0	7,529.0	7,521.6	7,459.0	75.0	20.1	90.00	4,673.9	2,146.5	1,398.5	1,310.0	88.58	15.789	
12,000.0	7,529.0	7,521.6	7,459.0	76.6	20.1	90.00	4,673.9	2,146.5	1,354.9	1,264.6	90.30	15.004	
12,100.0	7,529.0	7,521.6	7,459.0	78.3	20.1	90.00	4,673.9	2,146.5	1,317.3	1,225.3	92.03	14.314	
12,200.0	7,529.0	7,521.6	7,459.0	80.0	20.1	90.00	4,673.9	2,146.5	1,286.5	1,192.7	93.75	13.722	
12,300.0	7,529.0	7,521.6	7,459.0	81.7	20.1	90.00	4,673.9	2,146.5	1,262.8	1,167.4	95.48	13.226	
12,400.0	7,529.0	7,521.6	7,459.0	83.4	20.1	90.00	4,673.9	2,146.5	1,246.8	1,149.6	97.21	12.826	
12,500.0	7,529.0	7,521.6	7,459.0	85.1	20.1	90.00	4,673.9	2,146.5	1,238.6	1,139.7	98.94	12.519	
12,551.4	7,529.0	7,521.6	7,459.0	85.9	20.1	90.00	4,673.9	2,146.5	1,237.6	1,137.7	99.83	12.396 CC, ES	
12,600.0	7,529.0	7,521.6	7,459.0	86.8	20.1	90.00	4,673.9	2,146.5	1,238.5	1,137.8	100.67	12.302	
12,700.0	7,529.0	7,521.6	7,459.0	88.5	20.1	90.00	4,673.9	2,146.5	1,246.5	1,144.0	102.41	12.172	
12,800.0	7,529.0	7,521.6	7,459.0	90.2	20.1	90.00	4,673.9	2,146.5	1,262.3	1,158.1	104.14	12.121 SF	
12,900.0	7,529.0	7,521.6	7,459.0	91.9	20.1	90.00	4,673.9	2,146.5	1,285.7	1,179.8	105.87	12.144	
13,003.0	7,529.0	7,521.6	7,459.0	93.6	20.1	90.00	4,673.9	2,146.5	1,317.4	1,209.7	107.66	12.237	



Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Sprague 3H-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 3H-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 #2	Offset TVD Reference:	Offset Datum

Offset Design S9-T2N-R67W (Sprague) - SPRAGUE 6-4-9 (EXISTING) - ENCANA WELL - SURVEYS													Offset Site Error:	0.0 ft
Survey Program: 642-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		
9,300.0	7,529.0	7,631.1	7,522.5	34.2	20.4	92.31	2,177.0	2,261.1	1,504.0	1,458.9	45.07	33.370		
9,400.0	7,529.0	7,630.3	7,521.7	35.6	20.4	92.28	2,177.0	2,261.2	1,456.5	1,409.9	46.63	31.232		
9,500.0	7,529.0	7,629.5	7,520.9	36.9	20.4	92.24	2,177.0	2,261.2	1,414.5	1,366.3	48.22	29.336		
9,600.0	7,529.0	7,628.7	7,520.1	38.4	20.4	92.21	2,177.0	2,261.2	1,378.5	1,328.7	49.82	27.671		
9,700.0	7,529.0	7,628.0	7,519.4	39.8	20.4	92.17	2,177.0	2,261.3	1,349.0	1,297.6	51.43	26.228		
9,800.0	7,529.0	7,627.2	7,518.6	41.3	20.4	92.14	2,177.0	2,261.3	1,326.4	1,273.3	53.06	24.997		
9,900.0	7,529.0	7,626.4	7,517.8	42.8	20.4	92.10	2,177.0	2,261.3	1,311.0	1,256.3	54.70	23.967		
10,000.0	7,529.0	7,625.6	7,517.0	44.3	20.4	92.07	2,177.0	2,261.3	1,303.1	1,246.8	56.35	23.126		
10,052.7	7,529.0	7,625.2	7,516.6	45.1	20.4	92.05	2,177.0	2,261.4	1,302.1	1,244.8	57.22	22.755 CC, ES		
10,100.0	7,529.0	7,624.9	7,516.3	45.8	20.4	92.04	2,177.0	2,261.4	1,302.9	1,244.9	58.01	22.462		
10,200.0	7,529.0	7,624.1	7,515.5	47.3	20.4	92.00	2,177.0	2,261.4	1,310.4	1,250.7	59.67	21.960		
10,300.0	7,529.0	7,623.3	7,514.7	48.9	20.4	91.97	2,177.0	2,261.4	1,325.3	1,264.0	61.34	21.606		
10,400.0	7,529.0	7,622.5	7,514.0	50.4	20.4	91.93	2,177.0	2,261.4	1,347.6	1,284.6	63.02	21.384		
10,500.0	7,529.0	7,621.8	7,513.2	52.0	20.4	91.90	2,177.0	2,261.5	1,376.7	1,312.0	64.70	21.279		
10,600.0	7,529.0	7,621.0	7,512.4	53.6	20.4	91.87	2,177.1	2,261.5	1,412.4	1,346.0	66.39	21.275 SF		
10,700.0	7,529.0	7,620.2	7,511.6	55.2	20.4	91.83	2,177.1	2,261.5	1,454.1	1,386.0	68.08	21.358		
10,800.0	7,529.0	7,619.5	7,510.9	56.8	20.4	91.80	2,177.1	2,261.6	1,501.3	1,431.5	69.78	21.516		



Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Sprague 3H-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 3H-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 #2	Offset TVD Reference:	Offset Datum

Offset Design S9-T2N-R67W (Sprague) - SPRAGUE V 9-7 (EXISTING) - NOBLE WELL - NO SURVEYS													Offset Site Error:	0.0 ft
Survey Program: 7700-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			
9,300.0	7,529.0	7,478.0	7,478.0	34.2	13.1	90.00	2,772.3	1,529.0	1,481.6	1,439.2	42.37	34.970		
9,400.0	7,529.0	7,478.0	7,478.0	35.6	13.1	90.00	2,772.3	1,529.0	1,390.2	1,346.2	43.93	31.644		
9,500.0	7,529.0	7,478.0	7,478.0	36.9	13.1	90.00	2,772.3	1,529.0	1,300.0	1,254.5	45.52	28.562		
9,600.0	7,529.0	7,478.0	7,478.0	38.4	13.1	90.00	2,772.3	1,529.0	1,211.4	1,164.3	47.12	25.710		
9,700.0	7,529.0	7,478.0	7,478.0	39.8	13.1	90.00	2,772.3	1,529.0	1,124.7	1,075.9	48.73	23.079		
9,800.0	7,529.0	7,478.0	7,478.0	41.3	13.1	90.00	2,772.3	1,529.0	1,040.3	990.0	50.36	20.658		
9,900.0	7,529.0	7,478.0	7,478.0	42.8	13.1	90.00	2,772.3	1,529.0	959.0	907.0	52.00	18.444		
10,000.0	7,529.0	7,478.0	7,478.0	44.3	13.1	90.00	2,772.3	1,529.0	881.6	827.9	53.65	16.433		
10,100.0	7,529.0	7,478.0	7,478.0	45.8	13.1	90.00	2,772.3	1,529.0	809.1	753.8	55.30	14.630		
10,200.0	7,529.0	7,478.0	7,478.0	47.3	13.1	90.00	2,772.3	1,529.0	743.0	686.0	56.97	13.042		
10,300.0	7,529.0	7,478.0	7,478.0	48.9	13.1	90.00	2,772.3	1,529.0	685.2	626.5	58.64	11.685		
10,400.0	7,529.0	7,478.0	7,478.0	50.4	13.1	90.00	2,772.3	1,529.0	637.9	577.5	60.32	10.576		
10,500.0	7,529.0	7,478.0	7,478.0	52.0	13.1	90.00	2,772.3	1,529.0	603.6	541.6	62.00	9.735		
10,600.0	7,529.0	7,478.0	7,478.0	53.6	13.1	90.00	2,772.3	1,529.0	584.6	520.9	63.69	9.179		
10,662.8	7,529.0	7,478.0	7,478.0	54.6	13.1	90.00	2,772.3	1,529.0	581.2	516.4	64.75	8.976 CC, ES		
10,700.0	7,529.0	7,478.0	7,478.0	55.2	13.1	90.00	2,772.3	1,529.0	582.4	517.0	65.38	8.908		
10,800.0	7,529.0	7,478.0	7,478.0	56.8	13.1	90.00	2,772.3	1,529.0	597.2	530.1	67.07	8.903 SF		
10,900.0	7,529.0	7,478.0	7,478.0	58.4	13.1	90.00	2,772.3	1,529.0	627.7	558.9	68.77	9.127		
11,000.0	7,529.0	7,478.0	7,478.0	60.1	13.1	90.00	2,772.3	1,529.0	671.9	601.4	70.48	9.534		
11,100.0	7,529.0	7,478.0	7,478.0	61.7	13.1	90.00	2,772.3	1,529.0	727.2	655.1	72.18	10.075		
11,200.0	7,529.0	7,478.0	7,478.0	63.3	13.1	90.00	2,772.3	1,529.0	791.4	717.5	73.89	10.711		
11,300.0	7,529.0	7,478.0	7,478.0	65.0	13.1	90.00	2,772.3	1,529.0	862.4	786.8	75.60	11.407		
11,400.0	7,529.0	7,478.0	7,478.0	66.6	13.1	90.00	2,772.3	1,529.0	938.7	861.4	77.31	12.142		
11,500.0	7,529.0	7,478.0	7,478.0	68.3	13.1	90.00	2,772.3	1,529.0	1,019.1	940.1	79.03	12.895		
11,600.0	7,529.0	7,478.0	7,478.0	70.0	13.1	90.00	2,772.3	1,529.0	1,102.7	1,022.0	80.75	13.657		
11,700.0	7,529.0	7,478.0	7,478.0	71.6	13.1	90.00	2,772.3	1,529.0	1,188.9	1,106.4	82.47	14.417		
11,800.0	7,529.0	7,478.0	7,478.0	73.3	13.1	90.00	2,772.3	1,529.0	1,277.1	1,192.9	84.19	15.169		
11,900.0	7,529.0	7,478.0	7,478.0	75.0	13.1	90.00	2,772.3	1,529.0	1,366.9	1,281.0	85.91	15.910		
12,000.0	7,529.0	7,478.0	7,478.0	76.6	13.1	90.00	2,772.3	1,529.0	1,458.0	1,370.4	87.64	16.637		

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



Cathedral Energy Services

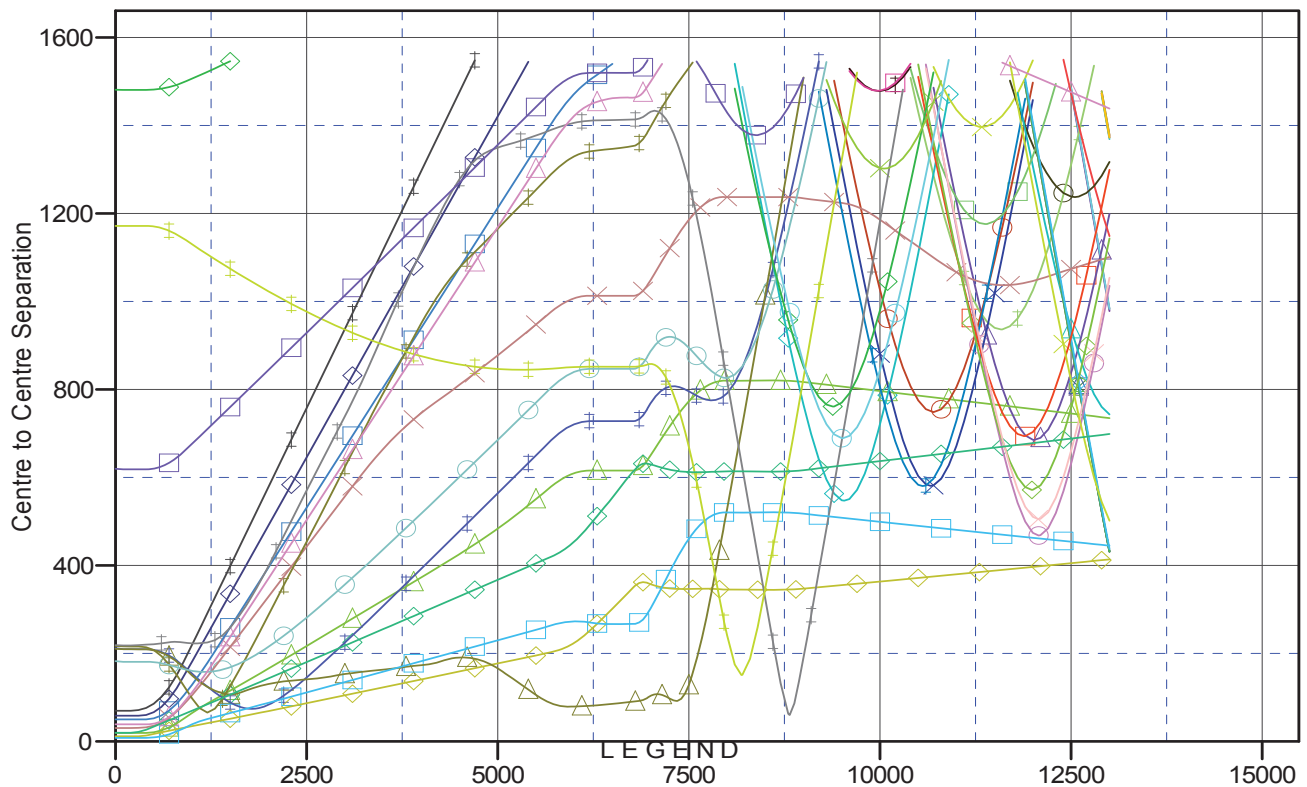
Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Sprague 3H-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 3H-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 #2	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 3H-9H-N267
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 0.39°

Ladder Plot



NA WELL, Plan#1 V0	SPRAGUE 33-9 (EXISTING), ENCANA WELL, NO SURVEYS V0	SPRAGUE 2-8-9 (EXISTING), ENCANA WELL, NO SURVEYS V0
NA WELL, SURVEYS V0	LUHMAN 1 (EXISTING), ENCANA WELL, Existing V0	SPRAGUE 4-8-9 (EXISTING), ENCANA WELL, NO SURVEYS V0
WELL, Plan#1 V0	Sprague 3B-9H-N267, Hz, Plan#1 V0	SPRAGUE 31-9 (EXISTING), ENCANA WELL, NO SURVEYS V0
WELL, SURVEYS V0	SPRAGUE 2 (EXISTING), MACHII-ROSS WELL, NO SURVEYS V0	SPRAGUE 31-9 (EXISTING), ENCANA WELL, NO SURVEYS V0
WELL, Plan#2 V0	SPRAGUE 6-0-9 (EXISTING), ENCANA WELL, PLAN ONLY V0	SPRAGUE 31-9 (EXISTING), ENCANA WELL, NO SURVEYS V0
WELL, NO SURVEYS V0	Sprague 3I-9H-N267, Hz, Plan#1 V0	SPRAGUE 4-6-9 (EXISTING), ENCANA WELL, NO SURVEYS V0
IA WELL, Plan#1 V0	Sprague 3A-9H-N267, Hz, Plan#1 V0	SPRAGUE 24-9 J (EXISTING), MACHII-ROSS WELL, NO SURVEYS V0
IA WELL, Plan#3 V0	Sprague 3E-9H-N267, Hz, Plan#1 V0	Sprague 3G-9H-N267, Hz, Plan#1 V0
IA WELL, SURVEYS V0	BARNES 34-4 (EXISTING), ENCANA WELL, ENCANA WELL V0	SHELEY 24-4 (EXISTING), ENCANA WELL, NO SURVEYS V0
IA WELL, Plan#2 V0	SPRAGUE 32-9 (EXISTING), ENCANA WELL, NO SURVEYS V0	SPRAGUE 23-9 J (EXISTING), MACHII-ROSS WELL, NO SURVEYS V0
IA WELL, Plan#4 V0	SPRAGUE 1-9 (EXISTING), MACHII-ROSS WELL, NO SURVEYS V0	ECKSTINE V 9-15 (EXISTING), ENCANA WELL, NO SURVEYS V0
	SHELEY 3A-4H (EXISTING), ENCANA WELL, Plan#2 V0	ECKSTINE V 9-10 (EXISTING), ENCANA WELL, NO SURVEYS V0
	SHELEY 3A-4H (EXISTING), ENCANA WELL, Plan#3 V0	