





Cathedral Energy Services

Planning Report

Database: USA EDM 5000 Multi Users DB
Company: EnCana Oil & Gas (USA) Inc
Project: DJ Wattenberg
Site: S9-T2N-R67W (Sprague)
Well: Sprague 3F-9H-N267
Wellbore: Hz
Design: Plan #1

Local Co-ordinate Reference: Well Sprague 3F-9H-N267
TVD Reference: WELL @ 5011.0ft (Original Well Elev)
MD Reference: WELL @ 5011.0ft (Original Well Elev)
North Reference: True
Survey Calculation Method: Minimum Curvature

Project DJ Wattenberg

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

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 3F-9H-N267

Well Position +N/-S 0.0 ft Northing: 1,296,975.75 ft Latitude: 40.147020
+E/-W 0.0 ft Easting: 3,168,168.13 ft Longitude: -104.898450
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 #1

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	
500.0	0.00	0.00	500.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,300.0	8.00	159.30	1,297.4	-52.2	19.7	1.00	1.00	0.00	159.30	
4,250.0	8.00	159.30	4,218.7	-436.2	164.8	0.00	0.00	0.00	0.00	
5,050.0	0.00	0.00	5,016.1	-488.4	184.5	1.00	-1.00	0.00	180.00	
6,989.9	0.00	0.00	6,956.0	-488.4	184.5	0.00	0.00	0.00	0.00	
7,889.9	90.00	360.00	7,529.0	84.6	184.5	10.00	10.00	0.00	360.00	
12,967.3	90.00	360.00	7,529.0	5,161.9	184.5	0.00	0.00	0.00	0.00	Sprague 3F-9H-N267



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TVD Reference: WELL @ 5011.0ft (Original Well Elev)
MD Reference: WELL @ 5011.0ft (Original Well Elev)
North Reference: True
Survey Calculation Method: Minimum Curvature

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	
461.0	0.00	0.00	461.0	0.0	0.0	0.0	0.00	0.00	Fox Hills - BASE
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	KOP @ 500' MD
600.0	1.00	159.30	600.0	-0.8	0.3	-0.8	1.00	1.00	
700.0	2.00	159.30	700.0	-3.3	1.2	-3.3	1.00	1.00	
800.0	3.00	159.30	799.9	-7.3	2.8	-7.3	1.00	1.00	
900.0	4.00	159.30	899.7	-13.1	4.9	-13.1	1.00	1.00	
1,000.0	5.00	159.30	999.4	-20.4	7.7	-20.4	1.00	1.00	
1,100.0	6.00	159.30	1,098.9	-29.4	11.1	-29.4	1.00	1.00	
1,200.0	7.00	159.30	1,198.3	-40.0	15.1	-40.0	1.00	1.00	
1,300.0	8.00	159.30	1,297.4	-52.2	19.7	-52.2	1.00	1.00	EOB; 8°
1,400.0	8.00	159.30	1,396.4	-65.2	24.6	-65.2	0.00	0.00	
1,500.0	8.00	159.30	1,495.5	-78.2	29.5	-78.2	0.00	0.00	
1,600.0	8.00	159.30	1,594.5	-91.2	34.5	-91.2	0.00	0.00	
1,700.0	8.00	159.30	1,693.5	-104.2	39.4	-104.2	0.00	0.00	
1,800.0	8.00	159.30	1,792.5	-117.3	44.3	-117.3	0.00	0.00	
1,900.0	8.00	159.30	1,891.6	-130.3	49.2	-130.3	0.00	0.00	
2,000.0	8.00	159.30	1,990.6	-143.3	54.1	-143.3	0.00	0.00	
2,100.0	8.00	159.30	2,089.6	-156.3	59.1	-156.3	0.00	0.00	
2,200.0	8.00	159.30	2,188.6	-169.3	64.0	-169.3	0.00	0.00	
2,300.0	8.00	159.30	2,287.7	-182.3	68.9	-182.3	0.00	0.00	
2,400.0	8.00	159.30	2,386.7	-195.4	73.8	-195.4	0.00	0.00	
2,500.0	8.00	159.30	2,485.7	-208.4	78.7	-208.4	0.00	0.00	
2,600.0	8.00	159.30	2,584.8	-221.4	83.7	-221.4	0.00	0.00	
2,700.0	8.00	159.30	2,683.8	-234.4	88.6	-234.4	0.00	0.00	
2,800.0	8.00	159.30	2,782.8	-247.4	93.5	-247.4	0.00	0.00	
2,900.0	8.00	159.30	2,881.8	-260.5	98.4	-260.5	0.00	0.00	
3,000.0	8.00	159.30	2,980.9	-273.5	103.3	-273.5	0.00	0.00	
3,100.0	8.00	159.30	3,079.9	-286.5	108.3	-286.5	0.00	0.00	
3,200.0	8.00	159.30	3,178.9	-299.5	113.2	-299.5	0.00	0.00	
3,300.0	8.00	159.30	3,277.9	-312.5	118.1	-312.5	0.00	0.00	
3,400.0	8.00	159.30	3,377.0	-325.6	123.0	-325.6	0.00	0.00	
3,500.0	8.00	159.30	3,476.0	-338.6	127.9	-338.6	0.00	0.00	
3,600.0	8.00	159.30	3,575.0	-351.6	132.9	-351.6	0.00	0.00	
3,700.0	8.00	159.30	3,674.0	-364.6	137.8	-364.6	0.00	0.00	
3,800.0	8.00	159.30	3,773.1	-377.6	142.7	-377.6	0.00	0.00	
3,900.0	8.00	159.30	3,872.1	-390.7	147.6	-390.7	0.00	0.00	
4,000.0	8.00	159.30	3,971.1	-403.7	152.5	-403.7	0.00	0.00	
4,100.0	8.00	159.30	4,070.2	-416.7	157.5	-416.7	0.00	0.00	
4,200.0	8.00	159.30	4,169.2	-429.7	162.4	-429.7	0.00	0.00	
4,250.0	8.00	159.30	4,218.7	-436.2	164.8	-436.2	0.00	0.00	Start 1° Drop
4,300.0	7.50	159.30	4,268.2	-442.5	167.2	-442.5	1.00	-1.00	
4,400.0	6.50	159.30	4,367.5	-453.9	171.5	-453.9	1.00	-1.00	
4,450.8	5.99	159.30	4,418.0	-459.1	173.5	-459.1	1.00	-1.00	Sussex
4,500.0	5.50	159.30	4,466.9	-463.7	175.2	-463.7	1.00	-1.00	
4,600.0	4.50	159.30	4,566.6	-471.9	178.3	-471.9	1.00	-1.00	
4,698.7	3.51	159.30	4,665.0	-478.3	180.7	-478.3	1.00	-1.00	Sussex Marker
4,700.0	3.50	159.30	4,666.3	-478.4	180.8	-478.4	1.00	-1.00	



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Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Comments / Formations
4,800.0	2.50	159.30	4,766.2	-483.3	182.6	-483.3	1.00	-1.00	
4,900.0	1.50	159.30	4,866.1	-486.5	183.8	-486.5	1.00	-1.00	
4,996.9	0.53	159.30	4,963.0	-488.1	184.5	-488.1	1.00	-1.00	Shannon
5,000.0	0.50	159.30	4,966.1	-488.2	184.5	-488.2	1.00	-1.00	
5,050.0	0.00	0.00	5,016.1	-488.4	184.5	-488.4	1.00	-1.00	EOD; Vertical
5,100.0	0.00	0.00	5,066.1	-488.4	184.5	-488.4	0.00	0.00	
5,200.0	0.00	0.00	5,166.1	-488.4	184.5	-488.4	0.00	0.00	
5,300.0	0.00	0.00	5,266.1	-488.4	184.5	-488.4	0.00	0.00	
5,400.0	0.00	0.00	5,366.1	-488.4	184.5	-488.4	0.00	0.00	
5,500.0	0.00	0.00	5,466.1	-488.4	184.5	-488.4	0.00	0.00	
5,600.0	0.00	0.00	5,566.1	-488.4	184.5	-488.4	0.00	0.00	
5,700.0	0.00	0.00	5,666.1	-488.4	184.5	-488.4	0.00	0.00	
5,800.0	0.00	0.00	5,766.1	-488.4	184.5	-488.4	0.00	0.00	
5,900.0	0.00	0.00	5,866.1	-488.4	184.5	-488.4	0.00	0.00	
6,000.0	0.00	0.00	5,966.1	-488.4	184.5	-488.4	0.00	0.00	
6,100.0	0.00	0.00	6,066.1	-488.4	184.5	-488.4	0.00	0.00	
6,200.0	0.00	0.00	6,166.1	-488.4	184.5	-488.4	0.00	0.00	
6,300.0	0.00	0.00	6,266.1	-488.4	184.5	-488.4	0.00	0.00	
6,344.9	0.00	0.00	6,311.0	-488.4	184.5	-488.4	0.00	0.00	Teepee Buttes (*if present)
6,400.0	0.00	0.00	6,366.1	-488.4	184.5	-488.4	0.00	0.00	
6,500.0	0.00	0.00	6,466.1	-488.4	184.5	-488.4	0.00	0.00	
6,600.0	0.00	0.00	6,566.1	-488.4	184.5	-488.4	0.00	0.00	
6,700.0	0.00	0.00	6,666.1	-488.4	184.5	-488.4	0.00	0.00	
6,800.0	0.00	0.00	6,766.1	-488.4	184.5	-488.4	0.00	0.00	
6,900.0	0.00	0.00	6,866.1	-488.4	184.5	-488.4	0.00	0.00	
6,989.9	0.00	0.00	6,956.0	-488.4	184.5	-488.4	0.00	0.00	Curve KOP @ 6989' MD
7,000.0	1.01	360.00	6,966.1	-488.3	184.5	-488.3	10.00	10.00	
7,050.0	6.01	360.00	7,016.0	-485.2	184.5	-485.2	10.00	10.00	
7,100.0	11.01	360.00	7,065.4	-477.8	184.5	-477.8	10.00	10.00	
7,150.0	16.01	360.00	7,114.0	-466.2	184.5	-466.2	10.00	10.00	
7,200.0	21.01	360.00	7,161.4	-450.3	184.5	-450.3	10.00	10.00	
7,224.4	23.44	360.00	7,184.0	-441.1	184.5	-441.1	10.00	10.00	Sharon Springs
7,250.0	26.01	360.00	7,207.3	-430.4	184.5	-430.4	10.00	10.00	
7,297.5	30.75	360.00	7,249.0	-407.8	184.5	-407.8	10.00	10.00	Niobrara
7,300.0	31.01	360.00	7,251.2	-406.5	184.5	-406.5	10.00	10.00	
7,350.0	36.01	360.00	7,292.9	-378.9	184.5	-378.9	10.00	10.00	
7,355.1	36.52	360.00	7,297.0	-375.9	184.5	-375.9	10.00	10.00	B Chalk
7,396.1	40.61	360.00	7,329.0	-350.4	184.5	-350.4	10.00	10.00	B Marl
7,400.0	41.01	360.00	7,332.0	-347.8	184.5	-347.8	10.00	10.00	
7,450.0	46.01	360.00	7,368.2	-313.4	184.5	-313.4	10.00	10.00	
7,454.0	46.41	360.00	7,371.0	-310.5	184.5	-310.5	10.00	10.00	C Chalk
7,500.0	51.01	360.00	7,401.3	-276.0	184.5	-276.0	10.00	10.00	
7,550.0	56.01	360.00	7,431.1	-235.8	184.5	-235.8	10.00	10.00	
7,583.5	59.36	360.00	7,449.0	-207.4	184.5	-207.4	10.00	10.00	C Marl
7,600.0	61.01	360.00	7,457.2	-193.1	184.5	-193.1	10.00	10.00	
7,650.0	66.01	360.00	7,479.5	-148.4	184.5	-148.4	10.00	10.00	
7,691.6	70.16	360.00	7,495.0	-109.9	184.5	-109.9	10.00	10.00	Ft. Hayes
7,700.0	71.01	360.00	7,497.8	-101.9	184.5	-101.9	10.00	10.00	
7,750.0	76.01	360.00	7,512.0	-54.0	184.5	-54.0	10.00	10.00	
7,782.7	79.28	360.00	7,519.0	-22.0	184.5	-22.0	10.00	10.00	Codell
7,800.0	81.01	360.00	7,522.0	-5.0	184.5	-5.0	10.00	10.00	
7,850.0	86.01	360.00	7,527.6	44.7	184.5	44.7	10.00	10.00	



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Well:	Sprague 3F-9H-N267	Survey Calculation Method:	Minimum Curvature
Wellbore:	Hz		
Design:	Plan #1		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Comments / Formations
7,889.9	90.00	360.00	7,529.0	84.6	184.5	84.6	10.00	10.00	LP @ 7529' TVD; 90°
7,900.0	90.00	360.00	7,529.0	94.6	184.5	94.6	0.00	0.00	
8,000.0	90.00	360.00	7,529.0	194.6	184.5	194.6	0.00	0.00	
8,100.0	90.00	360.00	7,529.0	294.6	184.5	294.6	0.00	0.00	
8,200.0	90.00	360.00	7,529.0	394.6	184.5	394.6	0.00	0.00	
8,300.0	90.00	360.00	7,529.0	494.6	184.5	494.6	0.00	0.00	
8,400.0	90.00	360.00	7,529.0	594.6	184.5	594.6	0.00	0.00	
8,500.0	90.00	360.00	7,529.0	694.6	184.5	694.6	0.00	0.00	
8,600.0	90.00	360.00	7,529.0	794.6	184.5	794.6	0.00	0.00	
8,700.0	90.00	360.00	7,529.0	894.6	184.5	894.6	0.00	0.00	
8,800.0	90.00	360.00	7,529.0	994.6	184.5	994.6	0.00	0.00	
8,900.0	90.00	360.00	7,529.0	1,094.6	184.5	1,094.6	0.00	0.00	
9,000.0	90.00	360.00	7,529.0	1,194.6	184.5	1,194.6	0.00	0.00	
9,100.0	90.00	360.00	7,529.0	1,294.6	184.5	1,294.6	0.00	0.00	
9,200.0	90.00	360.00	7,529.0	1,394.6	184.5	1,394.6	0.00	0.00	
9,300.0	90.00	360.00	7,529.0	1,494.6	184.5	1,494.6	0.00	0.00	
9,400.0	90.00	360.00	7,529.0	1,594.6	184.5	1,594.6	0.00	0.00	
9,500.0	90.00	360.00	7,529.0	1,694.6	184.5	1,694.6	0.00	0.00	
9,600.0	90.00	360.00	7,529.0	1,794.6	184.5	1,794.6	0.00	0.00	
9,700.0	90.00	360.00	7,529.0	1,894.6	184.5	1,894.6	0.00	0.00	
9,800.0	90.00	360.00	7,529.0	1,994.6	184.5	1,994.6	0.00	0.00	
9,900.0	90.00	360.00	7,529.0	2,094.6	184.5	2,094.6	0.00	0.00	
10,000.0	90.00	360.00	7,529.0	2,194.6	184.5	2,194.6	0.00	0.00	
10,100.0	90.00	360.00	7,529.0	2,294.6	184.5	2,294.6	0.00	0.00	
10,200.0	90.00	360.00	7,529.0	2,394.6	184.5	2,394.6	0.00	0.00	
10,300.0	90.00	360.00	7,529.0	2,494.6	184.5	2,494.6	0.00	0.00	
10,400.0	90.00	360.00	7,529.0	2,594.6	184.5	2,594.6	0.00	0.00	
10,500.0	90.00	360.00	7,529.0	2,694.6	184.5	2,694.6	0.00	0.00	
10,600.0	90.00	360.00	7,529.0	2,794.6	184.5	2,794.6	0.00	0.00	
10,700.0	90.00	360.00	7,529.0	2,894.6	184.5	2,894.6	0.00	0.00	
10,800.0	90.00	360.00	7,529.0	2,994.6	184.5	2,994.6	0.00	0.00	
10,900.0	90.00	360.00	7,529.0	3,094.6	184.5	3,094.6	0.00	0.00	
11,000.0	90.00	360.00	7,529.0	3,194.6	184.5	3,194.6	0.00	0.00	
11,100.0	90.00	360.00	7,529.0	3,294.6	184.5	3,294.6	0.00	0.00	
11,200.0	90.00	360.00	7,529.0	3,394.6	184.5	3,394.6	0.00	0.00	
11,300.0	90.00	360.00	7,529.0	3,494.6	184.5	3,494.6	0.00	0.00	
11,400.0	90.00	360.00	7,529.0	3,594.6	184.5	3,594.6	0.00	0.00	
11,500.0	90.00	360.00	7,529.0	3,694.6	184.5	3,694.6	0.00	0.00	
11,600.0	90.00	360.00	7,529.0	3,794.6	184.5	3,794.6	0.00	0.00	
11,700.0	90.00	360.00	7,529.0	3,894.6	184.5	3,894.6	0.00	0.00	
11,800.0	90.00	360.00	7,529.0	3,994.6	184.5	3,994.6	0.00	0.00	
11,900.0	90.00	360.00	7,529.0	4,094.6	184.5	4,094.6	0.00	0.00	
12,000.0	90.00	360.00	7,529.0	4,194.6	184.5	4,194.6	0.00	0.00	
12,100.0	90.00	360.00	7,529.0	4,294.6	184.5	4,294.6	0.00	0.00	
12,200.0	90.00	360.00	7,529.0	4,394.6	184.5	4,394.6	0.00	0.00	
12,300.0	90.00	360.00	7,529.0	4,494.6	184.5	4,494.6	0.00	0.00	
12,400.0	90.00	360.00	7,529.0	4,594.6	184.5	4,594.6	0.00	0.00	
12,500.0	90.00	360.00	7,529.0	4,694.6	184.5	4,694.6	0.00	0.00	
12,600.0	90.00	360.00	7,529.0	4,794.6	184.5	4,794.6	0.00	0.00	
12,700.0	90.00	360.00	7,529.0	4,894.6	184.5	4,894.6	0.00	0.00	
12,800.0	90.00	360.00	7,529.0	4,994.6	184.5	4,994.6	0.00	0.00	
12,900.0	90.00	360.00	7,529.0	5,094.6	184.5	5,094.6	0.00	0.00	



Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Sprague 3F-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 3F-9H-N267	Survey Calculation Method:	Minimum Curvature
Wellbore:	Hz		
Design:	Plan #1		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Comments / Formations
12,967.3	90.00	360.00	7,529.0	5,161.9	184.5	5,161.9	0.00	0.00	PBHL @ 12967' MD

Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
- hit/miss target									
- Shape									
Sprague 3F-9H-N267 Pf	0.00	0.00	7,529.0	5,161.9	184.5	1,302,138.80	3,168,317.57	40.161190	-104.897790
- plan hits target center									
- Point									

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
461.0	461.0	Fox Hills - BASE				
4,450.8	4,418.0	Sussex				
4,698.7	4,665.0	Sussex Marker				
4,996.9	4,963.0	Shannon				
6,344.9	6,311.0	Teepee Buttes (*if present)				
7,224.4	7,184.0	Sharon Springs				
7,297.5	7,249.0	Niobrara				
7,355.1	7,297.0	B Chalk				
7,396.1	7,329.0	B Marl				
7,454.0	7,371.0	C Chalk				
7,583.5	7,449.0	C Marl				
7,691.6	7,495.0	Ft. Hayes				
7,782.7	7,519.0	Codell				

Plan Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
500.0	500.0	0.0	0.0	KOP @ 500' MD
1,300.0	1,297.4	-52.2	19.7	EOB; 8°
4,250.0	4,218.7	-436.2	164.8	Start 1° Drop
5,050.0	5,016.1	-488.4	184.5	EOD; Vertical
6,989.9	6,956.0	-488.4	184.5	Curve KOP @ 6989' MD
7,889.9	7,529.0	84.6	184.5	LP @ 7529' TVD; 90°
12,967.3	7,529.0	5,161.9	184.5	PBHL @ 12967' MD



EnCana Oil & Gas (USA) Inc

DJ Wattenberg

S9-T2N-R67W (Sprague)

Sprague 3F-9H-N267

Hz

Plan #1

Anticollision Report

21 November, 2013



Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Sprague 3F-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 3F-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 #1	Offset TVD Reference:	Offset Datum

Reference	Plan #1		
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	12,967.3	Plan #1 (Hz)	Geolink MWD	Geolink MWD	

Summary						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
S9-T2N-R67W (Sprague)						
Sprague 21-9 - DD - Plan #1	11,907.2	7,472.0	69.9	-18.1	0.794	Level 1, CC, ES, SF
SPRAGUE 2-4-9 (EXISTING) - ENCANA WELL - SURVE	9,841.5	7,550.5	681.8	625.6	12.133	CC, ES
SPRAGUE 2-4-9 (EXISTING) - ENCANA WELL - SURVE	10,000.0	7,558.2	699.9	641.1	11.893	SF
Sprague 3A-9H-N267 - Hz - Plan #1	200.0	200.0	50.3	49.7	84.796	CC, ES
Sprague 3A-9H-N267 - Hz - Plan #1	600.0	591.0	76.9	74.9	38.755	SF
Sprague 3B-9H-N267 - Hz - Plan #1	300.0	300.0	39.1	38.2	41.526	CC, ES
Sprague 3B-9H-N267 - Hz - Plan #1	12,967.3	13,032.6	1,400.3	1,213.7	7.506	SF
Sprague 3C-9H-N267 - Hz - Plan #1	400.0	400.0	30.8	29.5	23.809	CC, ES
Sprague 3C-9H-N267 - Hz - Plan #1	12,967.3	12,774.9	1,074.1	891.4	5.880	SF
Sprague 3D-9H-N267 - Hz - Plan #1	500.0	500.0	19.6	17.9	11.928	CC, ES
Sprague 3D-9H-N267 - Hz - Plan #1	12,967.3	12,876.7	701.6	514.9	3.757	SF
Sprague 3E-9H-N267 - Hz - Plan #1	200.0	200.0	11.2	10.6	18.844	CC, ES
Sprague 3E-9H-N267 - Hz - Plan #1	12,967.3	12,738.3	415.0	256.4	2.616	SF
Sprague 3G-9H-N267 - Hz - Plan #1	400.0	400.0	11.2	9.9	8.658	CC, ES
Sprague 3G-9H-N267 - Hz - Plan #1	12,967.3	12,772.4	413.9	255.0	2.605	SF
Sprague 3H-9H-N267 - Hz - Plan #1	400.0	400.0	19.6	18.3	15.151	CC, ES
Sprague 3H-9H-N267 - Hz - Plan #1	12,967.3	12,974.1	737.7	552.2	3.977	SF
Sprague 3I-9H-N267 - Hz - Plan #1	300.0	300.0	31.0	30.0	32.850	CC, ES
Sprague 3I-9H-N267 - Hz - Plan #1	12,967.3	12,774.2	1,109.1	927.3	6.100	SF
Sprague 3J-9H-N267 - Hz - Plan #1	200.0	200.0	39.3	38.7	66.232	CC, ES
Sprague 3J-9H-N267 - Hz - Plan #1	12,967.3	13,068.3	1,435.8	1,250.5	7.747	SF



Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Sprague 3F-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 3F-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 #1	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						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	7,472.0	7,472.0	49.3	13.0	90.00	4,101.9	254.3	1,508.8	1,446.7	62.17	24.270	
10,500.0	7,529.0	7,472.0	7,472.0	50.9	13.0	90.00	4,101.9	254.3	1,409.0	1,345.1	63.86	22.064	
10,600.0	7,529.0	7,472.0	7,472.0	52.6	13.0	90.00	4,101.9	254.3	1,309.1	1,243.5	65.55	19.970	
10,700.0	7,529.0	7,472.0	7,472.0	54.3	13.0	90.00	4,101.9	254.3	1,209.2	1,142.0	67.25	17.981	
10,800.0	7,529.0	7,472.0	7,472.0	56.0	13.0	90.00	4,101.9	254.3	1,109.4	1,040.5	68.95	16.090	
10,900.0	7,529.0	7,472.0	7,472.0	57.7	13.0	90.00	4,101.9	254.3	1,009.6	939.0	70.65	14.290	
11,000.0	7,529.0	7,472.0	7,472.0	59.4	13.0	90.00	4,101.9	254.3	909.9	837.5	72.36	12.575	
11,100.0	7,529.0	7,472.0	7,472.0	61.1	13.0	90.00	4,101.9	254.3	810.2	736.2	74.07	10.939	
11,200.0	7,529.0	7,472.0	7,472.0	62.9	13.0	90.00	4,101.9	254.3	710.7	634.9	75.78	9.378	
11,300.0	7,529.0	7,472.0	7,472.0	64.6	13.0	90.00	4,101.9	254.3	611.2	533.7	77.50	7.887	
11,400.0	7,529.0	7,472.0	7,472.0	66.3	13.0	90.00	4,101.9	254.3	512.0	432.8	79.21	6.464	
11,500.0	7,529.0	7,472.0	7,472.0	68.0	13.0	90.00	4,101.9	254.3	413.2	332.2	80.93	5.105	
11,600.0	7,529.0	7,472.0	7,472.0	69.7	13.0	90.00	4,101.9	254.3	315.1	232.4	82.65	3.812	
11,700.0	7,529.0	7,472.0	7,472.0	71.4	13.0	90.00	4,101.9	254.3	218.7	134.3	84.37	2.592	
11,800.0	7,529.0	7,472.0	7,472.0	73.2	13.0	90.00	4,101.9	254.3	128.0	41.9	86.10	1.486 Level 3	
11,900.0	7,529.0	7,472.0	7,472.0	74.9	13.0	90.00	4,101.9	254.3	70.2	-17.6	87.82	0.800 Level 1	
11,907.2	7,529.0	7,472.0	7,472.0	75.0	13.0	90.00	4,101.9	254.3	69.9	-18.1	87.95	0.794 Level 1, CC, ES, SF	
12,000.0	7,529.0	7,472.0	7,472.0	76.6	13.0	90.00	4,101.9	254.3	116.1	26.6	89.55	1.297 Level 3	
12,100.0	7,529.0	7,472.0	7,472.0	78.3	13.0	90.00	4,101.9	254.3	205.1	113.8	91.27	2.247	
12,200.0	7,529.0	7,472.0	7,472.0	80.1	13.0	90.00	4,101.9	254.3	301.0	208.0	93.00	3.236	
12,300.0	7,529.0	7,472.0	7,472.0	81.8	13.0	90.00	4,101.9	254.3	398.9	304.2	94.73	4.211	
12,400.0	7,529.0	7,472.0	7,472.0	83.5	13.0	90.00	4,101.9	254.3	497.7	401.2	96.46	5.160	
12,500.0	7,529.0	7,472.0	7,472.0	85.2	13.0	90.00	4,101.9	254.3	596.9	498.7	98.19	6.079	
12,600.0	7,529.0	7,472.0	7,472.0	87.0	13.0	90.00	4,101.9	254.3	696.3	596.4	99.93	6.968	
12,700.0	7,529.0	7,472.0	7,472.0	88.7	13.0	90.00	4,101.9	254.3	795.9	694.2	101.66	7.829	
12,800.0	7,529.0	7,472.0	7,472.0	90.4	13.0	90.00	4,101.9	254.3	895.5	792.1	103.39	8.661	
12,900.0	7,529.0	7,472.0	7,472.0	92.2	13.0	90.00	4,101.9	254.3	995.2	890.1	105.13	9.467	
12,967.3	7,529.0	7,472.0	7,472.0	93.3	13.0	90.00	4,101.9	254.3	1,062.4	956.1	106.30	9.994	



Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Sprague 3F-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 3F-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 #1	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				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)			
8,500.0	7,529.0	7,508.9	7,442.0	19.7	19.1	-84.54	2,034.7	-495.6	1,504.2	1,468.6	35.54	42.320	
8,600.0	7,529.0	7,511.8	7,445.0	20.9	19.1	-84.79	2,034.8	-495.7	1,415.8	1,378.9	36.85	38.415	
8,700.0	7,529.0	7,514.8	7,447.9	22.3	19.1	-85.04	2,034.9	-495.8	1,329.1	1,290.8	38.23	34.765	
8,800.0	7,529.0	7,517.8	7,450.9	23.7	19.1	-85.29	2,035.0	-495.9	1,244.3	1,204.7	39.66	31.376	
8,900.0	7,529.0	7,520.8	7,453.9	25.1	19.2	-85.54	2,035.1	-495.9	1,162.0	1,120.9	41.13	28.252	
9,000.0	7,529.0	7,523.8	7,457.0	26.6	19.2	-85.79	2,035.2	-496.0	1,082.7	1,040.0	42.64	25.392	
9,100.0	7,529.0	7,526.9	7,460.0	28.1	19.2	-86.05	2,035.3	-496.1	1,007.0	962.8	44.18	22.795	
9,200.0	7,529.0	7,529.9	7,463.0	29.7	19.2	-86.30	2,035.4	-496.2	935.9	890.2	45.74	20.460	
9,300.0	7,529.0	7,533.0	7,466.1	31.2	19.2	-86.56	2,035.5	-496.3	870.5	823.2	47.33	18.392	
9,400.0	7,529.0	7,536.0	7,469.1	32.8	19.2	-86.82	2,035.6	-496.4	812.1	763.2	48.93	16.596	
9,500.0	7,529.0	7,539.1	7,472.2	34.4	19.2	-87.07	2,035.7	-496.5	762.5	711.9	50.56	15.082	
9,600.0	7,529.0	7,542.2	7,475.3	36.0	19.2	-87.33	2,035.8	-496.6	723.3	671.1	52.19	13.858	
9,700.0	7,529.0	7,548.0	7,481.1	37.6	19.2	-87.82	2,036.1	-496.8	696.3	642.5	53.85	12.930	
9,800.0	7,529.0	7,548.6	7,481.6	39.3	19.2	-87.87	2,036.1	-496.8	683.1	627.6	55.50	12.308	
9,841.5	7,529.0	7,550.5	7,483.6	40.0	19.2	-88.03	2,036.2	-496.9	681.8	625.6	56.19	12.133 CC, ES	
9,900.0	7,529.0	7,553.3	7,486.4	40.9	19.2	-88.26	2,036.3	-497.0	684.3	627.1	57.17	11.969	
10,000.0	7,529.0	7,558.2	7,491.3	42.6	19.2	-88.68	2,036.4	-497.2	699.9	641.1	58.86	11.893 SF	
10,100.0	7,529.0	7,563.4	7,496.4	44.2	19.2	-89.11	2,036.6	-497.3	729.1	668.5	60.54	12.042	
10,200.0	7,529.0	7,568.8	7,501.8	45.9	19.2	-89.56	2,036.9	-497.5	770.1	707.9	62.24	12.374	
10,300.0	7,529.0	7,574.4	7,507.5	47.6	19.2	-90.04	2,037.1	-497.6	821.4	757.4	63.93	12.847	
10,400.0	7,529.0	7,580.3	7,513.4	49.3	19.2	-90.53	2,037.3	-497.8	881.0	815.4	65.63	13.423	
10,500.0	7,529.0	7,586.5	7,519.6	50.9	19.2	-91.05	2,037.6	-497.9	947.4	880.1	67.33	14.071	
10,600.0	7,529.0	7,593.0	7,526.1	52.6	19.3	-91.60	2,037.9	-498.1	1,019.3	950.3	69.03	14.766	
10,700.0	7,529.0	7,599.9	7,532.9	54.3	19.3	-92.17	2,038.2	-498.2	1,095.6	1,024.8	70.73	15.490	
10,800.0	7,529.0	7,607.1	7,540.1	56.0	19.3	-92.77	2,038.5	-498.3	1,175.4	1,103.0	72.42	16.231	
10,900.0	7,529.0	7,614.7	7,547.7	57.7	19.3	-93.41	2,038.9	-498.4	1,258.1	1,184.0	74.10	16.978	
11,000.0	7,529.0	7,622.7	7,555.7	59.4	19.3	-94.08	2,039.2	-498.5	1,343.1	1,267.3	75.77	17.725	
11,100.0	7,529.0	7,631.2	7,564.2	61.1	19.3	-94.78	2,039.7	-498.6	1,430.0	1,352.6	77.44	18.467	
11,200.0	7,529.0	7,640.1	7,573.1	62.9	19.3	-95.53	2,040.1	-498.7	1,518.5	1,439.4	79.08	19.201	



Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Sprague 3F-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 3F-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 #1	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	0.0	-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	CC, ES	
300.0	300.0	298.3	298.3	0.5	0.5	-90.57	-0.5	-51.9	51.9	51.0	0.94	55.191		
400.0	400.0	396.4	396.3	0.6	0.7	-92.20	-2.2	-56.7	56.8	55.5	1.29	43.901		
500.0	500.0	494.1	493.6	0.8	0.9	-94.37	-4.9	-64.6	65.1	63.4	1.66	39.280		
600.0	600.0	591.0	589.8	1.0	1.1	104.59	-8.8	-75.5	76.9	74.9	1.98	38.755	SF	
700.0	700.0	687.0	684.7	1.2	1.4	103.86	-13.6	-89.3	92.4	90.1	2.33	39.580		
800.0	799.9	781.9	777.9	1.4	1.8	103.76	-19.4	-105.9	111.5	108.8	2.69	41.431		
900.0	899.7	875.8	869.5	1.5	2.2	104.02	-26.2	-125.2	134.2	131.2	3.06	43.854		
1,000.0	999.4	972.7	963.9	1.8	2.6	104.66	-33.5	-146.3	158.6	155.1	3.45	45.942		
1,100.0	1,098.9	1,069.5	1,058.1	2.0	3.0	105.59	-40.9	-167.4	183.4	179.6	3.86	47.470		
1,200.0	1,198.3	1,166.2	1,152.1	2.2	3.4	106.72	-48.3	-188.4	208.8	204.5	4.30	48.550		
1,300.0	1,297.4	1,262.6	1,245.9	2.5	3.8	107.95	-55.6	-209.4	234.8	230.1	4.77	49.278		
1,400.0	1,396.4	1,358.8	1,339.6	2.7	4.3	109.34	-62.9	-230.3	261.2	256.0	5.25	49.760		
1,500.0	1,495.5	1,455.1	1,433.3	3.0	4.7	110.47	-70.3	-251.3	287.8	282.0	5.74	50.108		
1,600.0	1,594.5	1,551.4	1,526.9	3.3	5.1	111.40	-77.6	-272.2	314.4	308.1	6.24	50.363		
1,700.0	1,693.5	1,647.7	1,620.6	3.6	5.5	112.20	-84.9	-293.2	341.0	334.3	6.75	50.555		
1,800.0	1,792.5	1,744.0	1,714.3	3.9	6.0	112.87	-92.3	-314.2	367.7	360.5	7.25	50.701		
1,900.0	1,891.6	1,840.2	1,808.0	4.1	6.4	113.46	-99.6	-335.1	394.5	386.8	7.76	50.814		
2,000.0	1,990.6	1,936.5	1,901.7	4.4	6.8	113.97	-106.9	-356.1	421.3	413.0	8.28	50.903		
2,100.0	2,089.6	2,032.8	1,995.4	4.7	7.3	114.42	-114.3	-377.0	448.1	439.3	8.79	50.974		
2,200.0	2,188.6	2,129.1	2,089.0	5.0	7.7	114.82	-121.6	-398.0	475.0	465.7	9.31	51.031		
2,300.0	2,287.7	2,225.3	2,182.7	5.3	8.1	115.18	-128.9	-418.9	501.9	492.0	9.83	51.077		
2,400.0	2,386.7	2,321.6	2,276.4	5.6	8.5	115.50	-136.2	-439.9	528.7	518.4	10.34	51.114		
2,500.0	2,485.7	2,417.9	2,370.1	5.9	9.0	115.79	-143.6	-460.8	555.6	544.8	10.86	51.145		
2,600.0	2,584.8	2,514.2	2,463.8	6.2	9.4	116.05	-150.9	-481.8	582.5	571.2	11.38	51.171		
2,700.0	2,683.8	2,610.5	2,557.5	6.5	9.8	116.29	-158.2	-502.8	609.5	597.6	11.91	51.192		
2,800.0	2,782.8	2,706.7	2,651.1	6.8	10.3	116.51	-165.6	-523.7	636.4	624.0	12.43	51.210		
2,900.0	2,881.8	2,803.0	2,744.8	7.1	10.7	116.71	-172.9	-544.7	663.3	650.4	12.95	51.225		
3,000.0	2,980.9	2,899.3	2,838.5	7.4	11.1	116.90	-180.2	-565.6	690.3	676.8	13.47	51.238		
3,100.0	3,079.9	2,995.6	2,932.2	7.7	11.6	117.07	-187.6	-586.6	717.2	703.2	13.99	51.248		
3,200.0	3,178.9	3,091.9	3,025.9	8.0	12.0	117.23	-194.9	-607.5	744.2	729.7	14.52	51.257		
3,300.0	3,277.9	3,188.1	3,119.6	8.3	12.4	117.38	-202.2	-628.5	771.1	756.1	15.04	51.265		
3,400.0	3,377.0	3,284.4	3,213.3	8.5	12.8	117.52	-209.6	-649.4	798.1	782.5	15.57	51.272		
3,500.0	3,476.0	3,380.7	3,306.9	8.8	13.3	117.65	-216.9	-670.4	825.1	809.0	16.09	51.277		
3,600.0	3,575.0	3,477.0	3,400.6	9.1	13.7	117.77	-224.2	-691.4	852.0	835.4	16.61	51.282		
3,700.0	3,674.0	3,573.2	3,494.3	9.4	14.1	117.88	-231.6	-712.3	879.0	861.9	17.14	51.286		
3,800.0	3,773.1	3,669.5	3,588.0	9.7	14.6	117.99	-238.9	-733.3	906.0	888.3	17.66	51.290		
3,900.0	3,872.1	3,765.8	3,681.7	10.0	15.0	118.09	-246.2	-754.2	933.0	914.8	18.19	51.293		
4,000.0	3,971.1	3,862.1	3,775.4	10.3	15.4	118.18	-253.5	-775.2	960.0	941.2	18.71	51.295		
4,100.0	4,070.2	3,958.4	3,869.0	10.6	15.9	118.27	-260.9	-796.1	986.9	967.7	19.24	51.297		
4,200.0	4,169.2	4,054.6	3,962.7	10.9	16.3	118.36	-268.2	-817.1	1,013.9	994.2	19.77	51.299		
4,250.0	4,218.7	4,102.8	4,009.6	11.1	16.5	118.40	-271.9	-827.6	1,027.4	1,007.4	20.03	51.300		
4,300.0	4,268.2	4,150.9	4,056.4	11.2	16.7	118.55	-275.5	-838.1	1,040.8	1,020.5	20.31	51.252		
4,400.0	4,367.5	4,247.5	4,150.3	11.5	17.1	118.78	-282.9	-859.1	1,067.0	1,046.2	20.84	51.194		
4,500.0	4,466.9	4,344.2	4,244.5	11.7	17.6	118.92	-290.3	-880.1	1,092.4	1,071.0	21.35	51.169		
4,600.0	4,566.6	4,441.1	4,338.7	11.9	18.0	118.97	-297.6	-901.2	1,117.0	1,095.1	21.83	51.175		
4,700.0	4,666.3	4,538.1	4,433.1	12.1	18.4	118.95	-305.0	-922.3	1,140.7	1,118.4	22.27	51.212		
4,800.0	4,766.2	4,635.2	4,527.7	12.3	18.9	118.85	-312.4	-943.5	1,163.7	1,141.0	22.69	51.279		
4,900.0	4,866.1	4,732.4	4,622.3	12.5	19.3	118.67	-319.8	-964.6	1,185.9	1,162.8	23.08	51.378		
5,000.0	4,966.1	4,829.7	4,716.9	12.6	19.7	118.44	-327.2	-985.8	1,207.3	1,183.8	23.44	51.507		

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 3F-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 3F-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 #1	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							
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	
5,050.0	5,016.1	4,878.4	4,764.3	12.7	20.0	-82.41	-330.9	-996.4	1,217.7	1,194.1	23.61	51.579		
5,100.0	5,066.1	4,927.0	4,811.6	12.7	20.2	-82.65	-334.6	-1,007.0	1,228.1	1,204.3	23.76	51.684		
5,200.0	5,166.1	5,024.3	4,906.3	12.8	20.6	-83.12	-342.0	-1,028.2	1,248.8	1,224.8	24.06	51.896		
5,300.0	5,266.1	5,121.6	5,001.0	13.0	21.1	-83.58	-349.5	-1,049.3	1,269.7	1,245.3	24.37	52.108		
5,400.0	5,366.1	5,218.9	5,095.6	13.1	21.5	-84.02	-356.9	-1,070.5	1,290.6	1,265.9	24.67	52.320		
5,500.0	5,466.1	5,316.2	5,190.3	13.2	21.9	-84.45	-364.3	-1,091.7	1,311.6	1,286.6	24.97	52.531		
5,600.0	5,566.1	5,413.6	5,285.0	13.3	22.4	-84.86	-371.7	-1,112.9	1,332.6	1,307.4	25.27	52.742		
5,700.0	5,666.1	5,510.9	5,379.7	13.5	22.8	-85.26	-379.1	-1,134.1	1,353.8	1,328.2	25.57	52.951		
5,800.0	5,766.1	5,608.2	5,474.4	13.6	23.2	-85.65	-386.5	-1,155.2	1,374.9	1,349.1	25.86	53.160		
5,900.0	5,866.1	5,705.5	5,569.1	13.7	23.7	-86.03	-393.9	-1,176.4	1,396.2	1,370.0	26.16	53.366		
6,000.0	5,966.1	5,802.8	5,663.7	13.9	24.1	-86.40	-401.3	-1,197.6	1,417.5	1,391.0	26.46	53.570		
6,100.0	6,066.1	5,900.1	5,758.4	14.0	24.5	-86.75	-408.7	-1,218.8	1,438.8	1,412.1	26.76	53.773		
6,200.0	6,166.1	5,997.4	5,853.1	14.1	25.0	-87.10	-416.1	-1,239.9	1,460.3	1,433.2	27.06	53.973		
6,300.0	6,266.1	6,094.7	5,947.8	14.3	25.4	-87.43	-423.6	-1,261.1	1,481.7	1,454.4	27.35	54.171		
6,400.0	6,366.1	6,192.0	6,042.5	14.4	25.8	-87.76	-431.0	-1,282.3	1,503.2	1,475.6	27.65	54.367		
6,500.0	6,466.1	6,289.3	6,137.2	14.5	26.3	-88.08	-438.4	-1,303.5	1,524.8	1,496.8	27.95	54.560		
6,600.0	6,566.1	6,386.6	6,231.8	14.7	26.7	-88.38	-445.8	-1,324.7	1,546.4	1,518.1	28.24	54.750		



Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Sprague 3F-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 3F-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 #1	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: 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	-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 CC, ES		
400.0	400.0	398.7	398.7	0.6	0.6	-90.92	-0.7	-40.7	40.7	39.4	1.29	31.550		
500.0	500.0	497.2	497.1	0.8	0.8	-93.40	-2.7	-45.4	45.5	43.9	1.64	27.687		
600.0	600.0	595.2	594.7	1.0	1.0	104.97	-6.1	-53.1	53.9	51.9	1.99	27.104		
700.0	700.0	692.6	691.3	1.2	1.3	103.85	-10.8	-63.7	66.0	63.6	2.34	28.168		
800.0	799.9	789.0	786.6	1.4	1.6	103.53	-16.7	-77.3	81.7	79.0	2.70	30.209		
900.0	899.7	886.3	882.3	1.5	1.9	103.78	-23.7	-93.2	100.3	97.2	3.08	32.566		
1,000.0	999.4	984.4	978.8	1.8	2.2	104.69	-30.9	-109.5	119.5	116.0	3.47	34.399		
1,100.0	1,098.9	1,082.3	1,075.1	2.0	2.6	106.00	-38.0	-125.8	139.2	135.3	3.89	35.788		
1,200.0	1,198.3	1,180.2	1,171.3	2.2	2.9	107.53	-45.1	-142.0	159.5	155.2	4.33	36.832		
1,300.0	1,297.4	1,277.8	1,267.3	2.5	3.3	109.21	-52.3	-158.3	180.5	175.7	4.80	37.615		
1,400.0	1,396.4	1,375.3	1,363.2	2.7	3.6	110.93	-59.4	-174.5	201.9	196.6	5.28	38.222		
1,500.0	1,495.5	1,472.8	1,459.1	3.0	4.0	112.32	-66.5	-190.7	223.5	217.7	5.77	38.703		
1,600.0	1,594.5	1,570.3	1,555.0	3.3	4.3	113.47	-73.6	-206.9	245.2	238.9	6.27	39.092		
1,700.0	1,693.5	1,667.8	1,650.9	3.6	4.7	114.43	-80.7	-223.0	266.9	260.1	6.77	39.412		
1,800.0	1,792.5	1,765.4	1,746.8	3.9	5.0	115.24	-87.8	-239.2	288.7	281.4	7.28	39.680		
1,900.0	1,891.6	1,862.9	1,842.7	4.1	5.4	115.94	-94.9	-255.4	310.6	302.8	7.78	39.908		
2,000.0	1,990.6	1,960.4	1,938.6	4.4	5.7	116.55	-102.0	-271.6	332.5	324.2	8.29	40.103		
2,100.0	2,089.6	2,057.9	2,034.5	4.7	6.1	117.09	-109.2	-287.8	354.4	345.6	8.80	40.272		
2,200.0	2,188.6	2,155.4	2,130.4	5.0	6.4	117.56	-116.3	-304.0	376.3	367.0	9.31	40.421		
2,300.0	2,287.7	2,252.9	2,226.3	5.3	6.8	117.98	-123.4	-320.2	398.3	388.5	9.82	40.552		
2,400.0	2,386.7	2,350.5	2,322.2	5.6	7.1	118.35	-130.5	-336.4	420.3	410.0	10.34	40.668		
2,500.0	2,485.7	2,448.0	2,418.1	5.9	7.5	118.69	-137.6	-352.6	442.3	431.5	10.85	40.772		
2,600.0	2,584.8	2,545.5	2,514.0	6.2	7.9	119.00	-144.7	-368.8	464.3	453.0	11.36	40.866		
2,700.0	2,683.8	2,643.0	2,609.9	6.5	8.2	119.28	-151.8	-385.0	486.4	474.5	11.88	40.951		
2,800.0	2,782.8	2,740.5	2,705.8	6.8	8.6	119.53	-158.9	-401.2	508.4	496.0	12.39	41.028		
2,900.0	2,881.8	2,838.0	2,801.7	7.1	8.9	119.77	-166.0	-417.4	530.5	517.6	12.91	41.098		
3,000.0	2,980.9	2,935.6	2,897.6	7.4	9.3	119.98	-173.2	-433.6	552.5	539.1	13.42	41.163		
3,100.0	3,079.9	3,033.1	2,993.5	7.7	9.6	120.18	-180.3	-449.8	574.6	560.7	13.94	41.222		
3,200.0	3,178.9	3,130.6	3,089.4	8.0	10.0	120.36	-187.4	-466.0	596.7	582.2	14.46	41.277		
3,300.0	3,277.9	3,228.1	3,185.3	8.3	10.3	120.53	-194.5	-482.2	618.8	603.8	14.97	41.328		
3,400.0	3,377.0	3,325.6	3,281.2	8.5	10.7	120.69	-201.6	-498.4	640.8	625.4	15.49	41.375		
3,500.0	3,476.0	3,423.1	3,377.1	8.8	11.1	120.84	-208.7	-514.6	662.9	646.9	16.01	41.419		
3,600.0	3,575.0	3,520.7	3,473.0	9.1	11.4	120.98	-215.8	-530.8	685.0	668.5	16.52	41.460		
3,700.0	3,674.0	3,618.2	3,568.9	9.4	11.8	121.11	-222.9	-547.0	707.1	690.1	17.04	41.498		
3,800.0	3,773.1	3,715.7	3,664.8	9.7	12.1	121.23	-230.0	-563.2	729.2	711.7	17.56	41.534		
3,900.0	3,872.1	3,813.2	3,760.7	10.0	12.5	121.34	-237.2	-579.4	751.3	733.2	18.07	41.568		
4,000.0	3,971.1	3,910.7	3,856.6	10.3	12.8	121.45	-244.3	-595.6	773.4	754.8	18.59	41.600		
4,100.0	4,070.2	4,008.2	3,952.5	10.6	13.2	121.56	-251.4	-611.8	795.5	776.4	19.11	41.630		
4,200.0	4,169.2	4,105.8	4,048.4	10.9	13.5	121.65	-258.5	-628.0	817.6	798.0	19.63	41.658		
4,250.0	4,218.7	4,154.5	4,096.3	11.1	13.7	121.70	-262.0	-636.1	828.7	808.8	19.89	41.671		
4,300.0	4,268.2	4,203.3	4,144.3	11.2	13.9	121.83	-265.6	-644.2	839.6	819.5	20.15	41.660		
4,400.0	4,367.5	4,301.0	4,240.4	11.5	14.3	122.00	-272.7	-660.4	860.8	840.2	20.67	41.652		
4,500.0	4,466.9	4,398.9	4,336.7	11.7	14.6	122.06	-279.9	-676.6	881.2	860.0	21.16	41.650		
4,600.0	4,566.6	4,497.0	4,433.1	11.9	15.0	122.03	-287.0	-692.9	900.6	878.9	21.62	41.654		
4,700.0	4,666.3	4,595.1	4,529.7	12.1	15.3	121.90	-294.2	-709.2	919.1	897.0	22.06	41.666		
4,800.0	4,766.2	4,693.4	4,626.3	12.3	15.7	121.68	-301.3	-725.6	936.7	914.2	22.47	41.687		
4,900.0	4,866.1	4,791.7	4,723.0	12.5	16.0	121.38	-308.5	-741.9	953.5	930.6	22.86	41.719		
5,000.0	4,966.1	4,890.0	4,819.7	12.6	16.4	121.00	-315.7	-758.2	969.5	946.2	23.21	41.763		

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 3F-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 3F-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 #1	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: 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		
5,050.0	5,016.1	4,939.2	4,868.0	12.7	16.6	-79.92	-319.3	-766.4	977.1	953.7	23.38	41.787		
5,100.0	5,066.1	4,988.4	4,916.4	12.7	16.8	-80.21	-322.8	-774.6	984.7	961.2	23.55	41.822		
5,200.0	5,166.1	5,086.7	5,013.1	12.8	17.1	-80.78	-330.0	-790.9	1,000.0	976.1	23.87	41.897		
5,300.0	5,266.1	5,185.1	5,109.8	13.0	17.5	-81.33	-337.2	-807.2	1,015.3	991.1	24.19	41.977		
5,400.0	5,366.1	5,283.4	5,206.5	13.1	17.8	-81.87	-344.4	-823.6	1,030.8	1,006.2	24.51	42.061		
5,500.0	5,466.1	5,381.8	5,303.2	13.2	18.2	-82.39	-351.5	-839.9	1,046.3	1,021.5	24.82	42.150		
5,600.0	5,566.1	5,480.1	5,399.9	13.3	18.6	-82.90	-358.7	-856.2	1,061.9	1,036.7	25.14	42.241		
5,700.0	5,666.1	5,578.4	5,496.6	13.5	18.9	-83.39	-365.9	-872.6	1,077.6	1,052.1	25.45	42.336		
5,800.0	5,766.1	5,676.8	5,593.4	13.6	19.3	-83.87	-373.0	-888.9	1,093.3	1,067.6	25.77	42.434		
5,900.0	5,866.1	5,775.1	5,690.1	13.7	19.6	-84.33	-380.2	-905.2	1,109.2	1,083.1	26.08	42.533		
6,000.0	5,966.1	5,873.5	5,786.8	13.9	20.0	-84.78	-387.4	-921.6	1,125.1	1,098.7	26.39	42.634		
6,100.0	6,066.1	5,971.8	5,883.5	14.0	20.4	-85.22	-394.6	-937.9	1,141.0	1,114.3	26.70	42.737		
6,200.0	6,166.1	6,070.1	5,980.2	14.1	20.7	-85.65	-401.7	-954.2	1,157.1	1,130.1	27.01	42.840		
6,300.0	6,266.1	6,168.5	6,076.9	14.3	21.1	-86.06	-408.9	-970.6	1,173.2	1,145.9	27.32	42.945		
6,400.0	6,366.1	6,266.8	6,173.6	14.4	21.4	-86.47	-416.1	-986.9	1,189.3	1,161.7	27.63	43.050		
6,500.0	6,466.1	6,365.2	6,270.3	14.5	21.8	-86.86	-423.2	-1,003.2	1,205.5	1,177.6	27.94	43.155		
6,600.0	6,566.1	6,463.5	6,367.0	14.7	22.1	-87.24	-430.4	-1,019.6	1,221.8	1,193.6	28.24	43.261		
6,700.0	6,666.1	6,561.8	6,463.7	14.8	22.5	-87.62	-437.6	-1,035.9	1,238.1	1,209.6	28.55	43.367		
6,800.0	6,766.1	6,660.2	6,560.5	14.9	22.9	-87.98	-444.8	-1,052.2	1,254.5	1,225.6	28.86	43.472		
6,900.0	6,866.1	6,758.5	6,657.2	15.1	23.2	-88.33	-451.9	-1,068.6	1,270.9	1,241.8	29.16	43.577		
6,989.9	6,956.0	6,847.0	6,744.2	15.2	23.5	-88.64	-458.4	-1,083.2	1,285.7	1,256.3	29.44	43.672		
7,000.0	6,966.1	6,856.9	6,753.9	15.2	23.6	-88.51	-459.1	-1,084.9	1,287.4	1,257.9	29.50	43.647		
7,050.0	7,016.0	6,905.7	6,801.9	15.2	23.8	-87.99	-462.7	-1,093.0	1,295.5	1,265.8	29.71	43.611		
7,100.0	7,065.4	6,953.8	6,849.2	15.2	23.9	-87.65	-466.2	-1,101.0	1,303.6	1,273.8	29.85	43.679		
7,150.0	7,114.0	7,000.7	6,895.3	15.1	24.1	-87.48	-469.6	-1,108.8	1,311.7	1,281.8	29.92	43.846		
7,200.0	7,161.4	7,046.9	6,940.8	15.1	24.3	-87.44	-472.7	-1,116.4	1,319.8	1,289.8	29.92	44.114		
7,250.0	7,207.3	7,094.8	6,988.0	14.9	24.4	-87.46	-472.6	-1,124.4	1,327.9	1,298.0	29.83	44.516		
7,300.0	7,251.2	7,144.6	7,036.9	14.8	24.5	-87.51	-468.4	-1,132.7	1,336.0	1,306.3	29.67	45.027		
7,350.0	7,292.9	7,196.4	7,087.2	14.6	24.6	-87.59	-459.4	-1,141.2	1,344.0	1,314.5	29.45	45.642		
7,400.0	7,332.0	7,250.6	7,138.7	14.5	24.7	-87.71	-445.1	-1,149.9	1,351.8	1,322.7	29.16	46.352		
7,450.0	7,368.2	7,307.3	7,191.0	14.3	24.8	-87.86	-424.9	-1,158.7	1,359.5	1,330.6	28.83	47.151		
7,500.0	7,401.3	7,367.0	7,243.5	14.2	24.8	-88.06	-398.1	-1,167.6	1,366.8	1,338.3	28.47	48.011		
7,550.0	7,431.1	7,429.8	7,295.6	14.0	24.8	-88.29	-364.1	-1,176.4	1,373.7	1,345.6	28.09	48.900		
7,600.0	7,457.2	7,496.1	7,346.1	13.9	24.8	-88.55	-322.3	-1,184.9	1,380.0	1,352.3	27.73	49.771		
7,650.0	7,479.5	7,565.8	7,393.8	13.9	24.8	-88.84	-272.1	-1,193.0	1,385.7	1,358.3	27.41	50.560		
7,700.0	7,497.8	7,639.2	7,437.1	13.8	24.8	-89.13	-213.4	-1,200.3	1,390.6	1,363.5	27.17	51.186		
7,750.0	7,512.0	7,715.9	7,474.1	13.9	24.8	-89.41	-146.5	-1,206.5	1,394.7	1,367.6	27.06	51.545		
7,800.0	7,522.0	7,795.7	7,502.9	13.9	24.9	-89.66	-72.3	-1,211.4	1,397.7	1,370.6	27.11	51.560		
7,850.0	7,527.6	7,878.0	7,521.6	14.1	25.0	-89.86	7.7	-1,214.6	1,399.6	1,372.2	27.37	51.145		
7,889.9	7,529.0	7,944.9	7,528.4	14.2	25.1	-89.98	74.2	-1,215.7	1,400.3	1,372.6	27.72	50.523		
7,900.0	7,529.0	7,961.8	7,528.9	14.3	25.1	-90.00	91.1	-1,215.8	1,400.3	1,372.5	27.82	50.327		
8,000.0	7,529.0	8,065.3	7,529.0	14.8	25.4	-90.00	194.6	-1,215.8	1,400.3	1,371.4	28.92	48.418		
8,100.0	7,529.0	8,165.3	7,529.0	15.5	25.8	-90.00	294.6	-1,215.8	1,400.3	1,370.0	30.35	46.136		
8,200.0	7,529.0	8,265.3	7,529.0	16.3	26.3	-90.00	394.6	-1,215.8	1,400.3	1,368.2	32.10	43.619		
8,300.0	7,529.0	8,365.3	7,529.0	17.3	26.9	-90.00	494.6	-1,215.8	1,400.3	1,366.2	34.13	41.033		
8,400.0	7,529.0	8,465.3	7,529.0	18.5	27.7	-90.00	594.6	-1,215.8	1,400.3	1,363.9	36.38	38.496		
8,500.0	7,529.0	8,565.3	7,529.0	19.7	28.5	-90.00	694.6	-1,215.8	1,400.3	1,361.5	38.81	36.079		
8,600.0	7,529.0	8,665.3	7,529.0	20.9	29.3	-90.00	794.6	-1,215.8	1,400.3	1,358.9	41.40	33.821		
8,700.0	7,529.0	8,765.3	7,529.0	22.3	30.3	-90.00	894.6	-1,215.8	1,400.3	1,356.2	44.12	31.737		
8,800.0	7,529.0	8,865.3	7,529.0	23.7	31.3	-90.00	994.6	-1,215.8	1,400.3	1,353.4	46.95	29.828		
8,900.0	7,529.0	8,965.3	7,529.0	25.1	32.4	-90.00	1,094.6	-1,215.8	1,400.3	1,350.5	49.86	28.087		
9,000.0	7,529.0	9,065.3	7,529.0	26.6	33.6	-90.00	1,194.6	-1,215.8	1,400.3	1,347.5	52.84	26.501		

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 3F-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 3F-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 #1	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				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)				
9,100.0	7,529.0	9,165.3	7,529.0	28.1	34.8	-90.00	1,294.6	-1,215.8	1,400.3	1,344.4	55.88	25.058		
9,200.0	7,529.0	9,265.3	7,529.0	29.7	36.1	-90.00	1,394.6	-1,215.8	1,400.3	1,341.3	58.98	23.742		
9,300.0	7,529.0	9,365.3	7,529.0	31.2	37.3	-90.00	1,494.6	-1,215.8	1,400.3	1,338.2	62.12	22.542		
9,400.0	7,529.0	9,465.3	7,529.0	32.8	38.7	-90.00	1,594.6	-1,215.8	1,400.3	1,335.0	65.30	21.446		
9,500.0	7,529.0	9,565.3	7,529.0	34.4	40.0	-90.00	1,694.6	-1,215.8	1,400.3	1,331.8	68.51	20.441		
9,600.0	7,529.0	9,665.3	7,529.0	36.0	41.4	-90.00	1,794.6	-1,215.8	1,400.3	1,328.6	71.74	19.518		
9,700.0	7,529.0	9,765.3	7,529.0	37.6	42.8	-90.00	1,894.6	-1,215.8	1,400.3	1,325.3	75.00	18.669		
9,800.0	7,529.0	9,865.3	7,529.0	39.3	44.3	-90.00	1,994.6	-1,215.8	1,400.3	1,322.0	78.29	17.887		
9,900.0	7,529.0	9,965.3	7,529.0	40.9	45.7	-90.00	2,094.6	-1,215.8	1,400.3	1,318.7	81.59	17.163		
10,000.0	7,529.0	10,065.3	7,529.0	42.6	47.2	-90.00	2,194.6	-1,215.8	1,400.3	1,315.4	84.91	16.492		
10,100.0	7,529.0	10,165.3	7,529.0	44.2	48.7	-90.00	2,294.6	-1,215.8	1,400.3	1,312.1	88.24	15.869		
10,200.0	7,529.0	10,265.3	7,529.0	45.9	50.3	-90.00	2,394.6	-1,215.8	1,400.3	1,308.7	91.59	15.289		
10,300.0	7,529.0	10,365.3	7,529.0	47.6	51.8	-90.00	2,494.6	-1,215.8	1,400.3	1,305.3	94.95	14.748		
10,400.0	7,529.0	10,465.3	7,529.0	49.3	53.3	-90.00	2,594.6	-1,215.8	1,400.3	1,302.0	98.31	14.243		
10,500.0	7,529.0	10,565.3	7,529.0	50.9	54.9	-90.00	2,694.6	-1,215.8	1,400.3	1,298.6	101.69	13.770		
10,600.0	7,529.0	10,665.3	7,529.0	52.6	56.5	-90.00	2,794.6	-1,215.8	1,400.3	1,295.2	105.08	13.326		
10,700.0	7,529.0	10,765.3	7,529.0	54.3	58.0	-90.00	2,894.6	-1,215.8	1,400.3	1,291.8	108.47	12.909		
10,800.0	7,529.0	10,865.3	7,529.0	56.0	59.6	-90.00	2,994.6	-1,215.8	1,400.3	1,288.4	111.87	12.517		
10,900.0	7,529.0	10,965.3	7,529.0	57.7	61.2	-90.00	3,094.6	-1,215.8	1,400.3	1,285.0	115.28	12.147		
11,000.0	7,529.0	11,065.3	7,529.0	59.4	62.8	-90.00	3,194.6	-1,215.8	1,400.3	1,281.6	118.69	11.797		
11,100.0	7,529.0	11,165.3	7,529.0	61.1	64.5	-90.00	3,294.6	-1,215.8	1,400.3	1,278.2	122.11	11.467		
11,200.0	7,529.0	11,265.3	7,529.0	62.9	66.1	-90.00	3,394.6	-1,215.8	1,400.3	1,274.7	125.54	11.154		
11,300.0	7,529.0	11,365.3	7,529.0	64.6	67.7	-90.00	3,494.6	-1,215.8	1,400.3	1,271.3	128.96	10.858		
11,400.0	7,529.0	11,465.3	7,529.0	66.3	69.3	-90.00	3,594.6	-1,215.8	1,400.3	1,267.9	132.40	10.576		
11,500.0	7,529.0	11,565.3	7,529.0	68.0	71.0	-90.00	3,694.6	-1,215.8	1,400.3	1,264.4	135.83	10.309		
11,600.0	7,529.0	11,665.3	7,529.0	69.7	72.6	-90.00	3,794.6	-1,215.8	1,400.3	1,261.0	139.27	10.054		
11,700.0	7,529.0	11,765.3	7,529.0	71.4	74.3	-90.00	3,894.6	-1,215.8	1,400.3	1,257.6	142.72	9.812		
11,800.0	7,529.0	11,865.3	7,529.0	73.2	75.9	-90.00	3,994.6	-1,215.8	1,400.3	1,254.1	146.16	9.580		
11,900.0	7,529.0	11,965.3	7,529.0	74.9	77.6	-90.00	4,094.6	-1,215.8	1,400.3	1,250.7	149.61	9.359		
12,000.0	7,529.0	12,065.3	7,529.0	76.6	79.3	-90.00	4,194.6	-1,215.8	1,400.3	1,247.2	153.06	9.148		
12,100.0	7,529.0	12,165.3	7,529.0	78.3	80.9	-90.00	4,294.6	-1,215.8	1,400.3	1,243.7	156.52	8.946		
12,200.0	7,529.0	12,265.3	7,529.0	80.1	82.6	-90.00	4,394.6	-1,215.8	1,400.3	1,240.3	159.98	8.753		
12,300.0	7,529.0	12,365.3	7,529.0	81.8	84.3	-90.00	4,494.6	-1,215.8	1,400.3	1,236.8	163.43	8.568		
12,400.0	7,529.0	12,465.3	7,529.0	83.5	86.0	-90.00	4,594.6	-1,215.8	1,400.3	1,233.4	166.89	8.390		
12,500.0	7,529.0	12,565.3	7,529.0	85.2	87.6	-90.00	4,694.6	-1,215.8	1,400.3	1,229.9	170.36	8.220		
12,600.0	7,529.0	12,665.3	7,529.0	87.0	89.3	-90.00	4,794.6	-1,215.8	1,400.3	1,226.4	173.82	8.056		
12,700.0	7,529.0	12,765.3	7,529.0	88.7	91.0	-90.00	4,894.6	-1,215.8	1,400.3	1,223.0	177.29	7.898		
12,800.0	7,529.0	12,865.3	7,529.0	90.4	92.7	-90.00	4,994.6	-1,215.8	1,400.3	1,219.5	180.76	7.747		
12,900.0	7,529.0	12,965.3	7,529.0	92.2	94.4	-90.00	5,094.6	-1,215.8	1,400.3	1,216.0	184.23	7.601		
12,967.3	7,529.0	13,032.6	7,529.0	93.3	95.5	-90.00	5,161.9	-1,215.8	1,400.3	1,213.7	186.56	7.506 SF		



Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Sprague 3F-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 3F-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 #1	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					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		
300.0	300.0	300.0	300.0	0.5	0.5	-89.95	0.0	-30.8	30.8	29.8	0.94	32.627		
400.0	400.0	400.0	400.0	0.6	0.6	-89.95	0.0	-30.8	30.8	29.5	1.29	23.809 CC, ES		
500.0	500.0	499.5	499.5	0.8	0.8	-90.80	-0.4	-31.5	31.5	29.8	1.64	19.198		
600.0	600.0	599.0	599.0	1.0	1.0	108.97	-1.8	-33.7	34.0	32.0	1.99	17.095		
700.0	700.0	698.4	698.2	1.2	1.2	109.32	-4.1	-37.3	38.6	36.3	2.34	16.475		
800.0	799.9	797.5	797.2	1.4	1.4	110.51	-7.3	-42.4	45.3	42.5	2.70	16.739		
900.0	899.7	896.4	895.8	1.5	1.6	112.07	-11.5	-48.9	54.0	50.9	3.08	17.557		
1,000.0	999.4	995.0	993.9	1.8	1.8	113.71	-16.5	-56.8	64.9	61.4	3.46	18.727		
1,100.0	1,098.9	1,093.1	1,091.4	2.0	2.0	115.23	-22.4	-66.1	77.9	74.0	3.87	20.112		
1,200.0	1,198.3	1,190.8	1,188.3	2.2	2.3	116.58	-29.1	-76.8	93.1	88.8	4.31	21.615		
1,300.0	1,297.4	1,288.2	1,284.7	2.5	2.6	117.75	-36.7	-88.8	110.3	105.6	4.76	23.169		
1,400.0	1,396.4	1,386.5	1,381.8	2.7	2.9	118.92	-44.6	-101.3	128.5	123.2	5.23	24.540		
1,500.0	1,495.5	1,484.8	1,479.0	3.0	3.1	119.80	-52.6	-113.9	146.6	140.9	5.72	25.655		
1,600.0	1,594.5	1,583.1	1,576.2	3.3	3.4	120.48	-60.5	-126.4	164.8	158.6	6.20	26.574		
1,700.0	1,693.5	1,681.5	1,673.4	3.6	3.7	121.03	-68.5	-139.0	183.0	176.3	6.69	27.342		
1,800.0	1,792.5	1,779.8	1,770.6	3.9	4.0	121.48	-76.4	-151.5	201.3	194.1	7.19	27.991		
1,900.0	1,891.6	1,878.1	1,867.8	4.1	4.3	121.86	-84.3	-164.1	219.5	211.8	7.69	28.547		
2,000.0	1,990.6	1,976.4	1,965.0	4.4	4.6	122.17	-92.3	-176.6	237.7	229.5	8.19	29.026		
2,100.0	2,089.6	2,074.7	2,062.1	4.7	4.9	122.45	-100.2	-189.2	256.0	247.3	8.69	29.444		
2,200.0	2,188.6	2,173.0	2,159.3	5.0	5.2	122.68	-108.2	-201.7	274.2	265.0	9.20	29.811		
2,300.0	2,287.7	2,271.3	2,256.5	5.3	5.6	122.89	-116.1	-214.3	292.5	282.8	9.71	30.136		
2,400.0	2,386.7	2,369.7	2,353.7	5.6	5.9	123.07	-124.0	-226.8	310.8	300.5	10.21	30.425		
2,500.0	2,485.7	2,468.0	2,450.9	5.9	6.2	123.23	-132.0	-239.4	329.0	318.3	10.72	30.684		
2,600.0	2,584.8	2,566.3	2,548.1	6.2	6.5	123.38	-139.9	-251.9	347.3	336.0	11.23	30.917		
2,700.0	2,683.8	2,664.6	2,645.3	6.5	6.8	123.51	-147.9	-264.5	365.5	353.8	11.74	31.128		
2,800.0	2,782.8	2,762.9	2,742.4	6.8	7.1	123.63	-155.8	-277.0	383.8	371.6	12.25	31.319		
2,900.0	2,881.8	2,861.2	2,839.6	7.1	7.4	123.73	-163.7	-289.6	402.1	389.3	12.77	31.494		
3,000.0	2,980.9	2,959.5	2,936.8	7.4	7.7	123.83	-171.7	-302.1	420.4	407.1	13.28	31.654		
3,100.0	3,079.9	3,057.9	3,034.0	7.7	8.0	123.92	-179.6	-314.7	438.6	424.8	13.79	31.801		
3,200.0	3,178.9	3,156.2	3,131.2	8.0	8.3	124.00	-187.6	-327.2	456.9	442.6	14.31	31.937		
3,300.0	3,277.9	3,254.5	3,228.4	8.3	8.6	124.08	-195.5	-339.8	475.2	460.4	14.82	32.062		
3,400.0	3,377.0	3,352.8	3,325.6	8.5	9.0	124.15	-203.5	-352.3	493.5	478.1	15.33	32.179		
3,500.0	3,476.0	3,451.1	3,422.8	8.8	9.3	124.22	-211.4	-364.9	511.7	495.9	15.85	32.287		
3,600.0	3,575.0	3,549.4	3,519.9	9.1	9.6	124.28	-219.3	-377.4	530.0	513.6	16.36	32.388		
3,700.0	3,674.0	3,647.7	3,617.1	9.4	9.9	124.33	-227.3	-390.0	548.3	531.4	16.88	32.482		
3,800.0	3,773.1	3,746.1	3,714.3	9.7	10.2	124.39	-235.2	-402.5	566.6	549.2	17.39	32.571		
3,900.0	3,872.1	3,844.4	3,811.5	10.0	10.5	124.44	-243.2	-415.1	584.8	566.9	17.91	32.653		
4,000.0	3,971.1	3,942.7	3,908.7	10.3	10.8	124.48	-251.1	-427.6	603.1	584.7	18.43	32.731		
4,100.0	4,070.2	4,041.0	4,005.9	10.6	11.1	124.53	-259.0	-440.2	621.4	602.5	18.94	32.805		
4,200.0	4,169.2	4,139.3	4,103.1	10.9	11.4	124.57	-267.0	-452.7	639.7	620.2	19.46	32.874		
4,250.0	4,218.7	4,188.5	4,151.6	11.1	11.6	124.59	-270.9	-459.0	648.8	629.1	19.72	32.907		
4,300.0	4,268.2	4,237.7	4,200.3	11.2	11.7	124.67	-274.9	-465.3	657.8	637.9	19.98	32.927		
4,400.0	4,367.5	4,336.1	4,297.6	11.5	12.1	124.73	-282.9	-477.8	675.1	654.7	20.48	32.959		
4,500.0	4,466.9	4,434.8	4,395.1	11.7	12.4	124.66	-290.8	-490.4	691.5	670.5	20.97	32.974		
4,600.0	4,566.6	4,533.5	4,492.7	11.9	12.7	124.48	-298.8	-503.0	706.8	685.4	21.43	32.976		
4,700.0	4,666.3	4,632.3	4,590.4	12.1	13.0	124.18	-306.8	-515.6	721.2	699.4	21.88	32.966		
4,800.0	4,766.2	4,731.2	4,688.1	12.3	13.3	123.79	-314.8	-528.3	734.7	712.4	22.30	32.948		
4,900.0	4,866.1	4,830.1	4,785.9	12.5	13.6	123.29	-322.8	-540.9	747.3	724.6	22.70	32.925		
5,000.0	4,966.1	4,929.0	4,883.7	12.6	13.9	122.69	-330.8	-553.5	759.1	736.0	23.07	32.900		

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



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Site Error:	0.0ft	North Reference:	True
Reference Well:	Sprague 3F-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 #1	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				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)				
5,050.0	5,016.1	4,978.4	4,932.5	12.7	14.1	-78.34	-334.8	-559.8	764.6	741.4	23.25	32.886		
5,100.0	5,066.1	5,027.8	4,981.4	12.7	14.3	-78.73	-338.7	-566.1	770.1	746.7	23.43	32.873		
5,200.0	5,166.1	5,126.7	5,079.1	12.8	14.6	-79.49	-346.7	-578.7	781.2	757.4	23.77	32.857		
5,300.0	5,266.1	5,225.6	5,176.8	13.0	14.9	-80.23	-354.7	-591.4	792.4	768.3	24.12	32.852		
5,400.0	5,366.1	5,324.4	5,274.5	13.1	15.2	-80.94	-362.7	-604.0	803.7	779.3	24.46	32.857		
5,500.0	5,466.1	5,423.3	5,372.3	13.2	15.5	-81.64	-370.7	-616.6	815.2	790.4	24.80	32.870		
5,600.0	5,566.1	5,522.1	5,470.0	13.3	15.8	-82.32	-378.7	-629.2	826.7	801.6	25.14	32.891		
5,700.0	5,666.1	5,621.0	5,567.7	13.5	16.1	-82.98	-386.6	-641.8	838.4	812.9	25.47	32.920		
5,800.0	5,766.1	5,719.8	5,665.4	13.6	16.4	-83.62	-394.6	-654.5	850.2	824.4	25.80	32.955		
5,900.0	5,866.1	5,818.7	5,763.1	13.7	16.8	-84.25	-402.6	-667.1	862.1	836.0	26.13	32.995		
6,000.0	5,966.1	5,917.5	5,860.9	13.9	17.1	-84.86	-410.6	-679.7	874.1	847.6	26.45	33.041		
6,100.0	6,066.1	6,016.4	5,958.6	14.0	17.4	-85.45	-418.6	-692.3	886.2	859.4	26.78	33.092		
6,200.0	6,166.1	6,115.2	6,056.3	14.1	17.7	-86.03	-426.6	-704.9	898.4	871.3	27.10	33.147		
6,300.0	6,266.1	6,214.1	6,154.0	14.3	18.0	-86.59	-434.6	-717.5	910.6	883.2	27.42	33.205		
6,400.0	6,366.1	6,312.9	6,251.7	14.4	18.3	-87.13	-442.5	-730.2	923.0	895.2	27.74	33.267		
6,500.0	6,466.1	6,411.8	6,349.4	14.5	18.6	-87.66	-450.5	-742.8	935.4	907.3	28.06	33.332		
6,600.0	6,566.1	6,510.6	6,447.2	14.7	19.0	-88.18	-458.5	-755.4	947.9	919.5	28.38	33.399		
6,700.0	6,666.1	6,609.5	6,544.9	14.8	19.3	-88.68	-466.5	-768.0	960.5	931.8	28.70	33.469		
6,800.0	6,766.1	6,708.3	6,642.6	14.9	19.6	-89.17	-474.5	-780.6	973.1	944.1	29.01	33.541		
6,900.0	6,866.1	6,806.6	6,739.8	15.1	19.9	-89.54	-480.5	-793.2	985.9	956.6	29.30	33.649		
6,989.9	6,956.0	6,893.9	6,826.0	15.2	20.0	-89.15	-473.7	-804.3	997.5	968.0	29.48	33.831		
7,000.0	6,966.1	6,903.5	6,835.4	15.2	20.0	-88.93	-472.1	-805.5	998.8	969.3	29.51	33.841		
7,050.0	7,016.0	6,950.0	6,880.5	15.2	20.1	-87.87	-462.3	-811.4	1,005.3	975.7	29.59	33.972		
7,100.0	7,065.4	6,997.7	6,925.8	15.2	20.1	-86.83	-448.5	-817.2	1,011.9	982.3	29.59	34.200		
7,150.0	7,114.0	7,044.0	6,968.5	15.1	20.1	-85.83	-431.5	-822.7	1,018.3	988.8	29.50	34.518		
7,200.0	7,161.4	7,089.9	7,009.4	15.1	20.0	-84.87	-411.3	-828.0	1,024.6	995.3	29.34	34.920		
7,250.0	7,207.3	7,135.4	7,048.2	14.9	20.0	-83.95	-388.1	-833.0	1,030.8	1,001.7	29.12	35.401		
7,300.0	7,251.2	7,180.6	7,084.7	14.8	19.9	-83.09	-362.0	-837.7	1,036.7	1,007.9	28.84	35.952		
7,350.0	7,292.9	7,225.4	7,118.9	14.6	19.9	-82.28	-333.3	-842.1	1,042.3	1,013.8	28.51	36.560		
7,400.0	7,332.0	7,270.0	7,150.6	14.5	19.8	-81.54	-302.3	-846.2	1,047.6	1,019.4	28.15	37.209		
7,450.0	7,368.2	7,314.3	7,179.6	14.3	19.8	-80.86	-269.0	-850.0	1,052.5	1,024.7	27.79	37.877		
7,500.0	7,401.3	7,358.4	7,205.9	14.2	19.7	-80.24	-233.7	-853.4	1,057.0	1,029.6	27.43	38.538		
7,550.0	7,431.1	7,400.0	7,228.1	14.0	19.7	-79.71	-198.7	-856.2	1,061.0	1,033.9	27.10	39.149		
7,600.0	7,457.2	7,446.2	7,249.8	13.9	19.7	-79.23	-158.1	-859.0	1,064.6	1,037.8	26.81	39.702		
7,650.0	7,479.5	7,489.8	7,267.2	13.9	19.7	-78.84	-118.1	-861.3	1,067.6	1,041.0	26.61	40.124		
7,700.0	7,497.8	7,533.4	7,281.6	13.8	19.7	-78.53	-77.0	-863.1	1,070.1	1,043.6	26.49	40.392		
7,750.0	7,512.0	7,576.9	7,292.7	13.9	19.8	-78.30	-35.0	-864.6	1,072.0	1,045.5	26.48	40.487		
7,800.0	7,522.0	7,620.4	7,300.7	13.9	19.8	-78.14	7.7	-865.6	1,073.3	1,046.7	26.61	40.336		
7,850.0	7,527.6	7,663.9	7,305.5	14.1	19.9	-78.07	50.9	-866.2	1,074.0	1,047.2	26.85	40.004		
7,889.9	7,529.0	7,700.0	7,307.0	14.2	20.0	-78.07	87.0	-866.4	1,074.2	1,047.0	27.13	39.586		
7,900.0	7,529.0	7,707.6	7,307.0	14.3	20.0	-78.07	94.6	-866.4	1,074.2	1,046.9	27.21	39.476		
7,900.9	7,529.0	7,708.5	7,307.0	14.3	20.0	-78.07	95.5	-866.4	1,074.2	1,046.9	27.22	39.462		
8,000.0	7,529.0	7,807.6	7,307.0	14.8	20.4	-78.07	194.6	-866.4	1,074.2	1,045.9	28.27	38.003		
8,100.0	7,529.0	7,907.6	7,307.0	15.5	20.9	-78.07	294.6	-866.4	1,074.2	1,044.5	29.68	36.195		
8,200.0	7,529.0	8,007.6	7,307.0	16.3	21.5	-78.07	394.6	-866.4	1,074.2	1,042.7	31.40	34.206		
8,300.0	7,529.0	8,107.6	7,307.0	17.3	22.3	-78.07	494.6	-866.4	1,074.1	1,040.8	33.39	32.168		
8,400.0	7,529.0	8,207.6	7,307.0	18.5	23.1	-78.07	594.6	-866.4	1,074.1	1,038.5	35.60	30.170		
8,500.0	7,529.0	8,307.6	7,307.0	19.7	24.1	-78.07	694.6	-866.4	1,074.1	1,036.2	38.00	28.270		
8,600.0	7,529.0	8,407.6	7,307.0	20.9	25.2	-78.07	794.6	-866.4	1,074.1	1,033.6	40.54	26.497		
8,700.0	7,529.0	8,507.6	7,307.0	22.3	26.3	-78.07	894.6	-866.4	1,074.1	1,030.9	43.20	24.862		
8,800.0	7,529.0	8,607.6	7,307.0	23.7	27.5	-78.07	994.6	-866.4	1,074.1	1,028.2	45.97	23.365		
8,900.0	7,529.0	8,707.6	7,307.0	25.1	28.7	-78.07	1,094.6	-866.4	1,074.1	1,025.3	48.82	22.000		

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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)				
9,000.0	7,529.0	8,807.6	7,307.0	26.6	30.0	-78.07	1,194.6	-866.4	1,074.1	1,022.4	51.75	20.757		
9,100.0	7,529.0	8,907.6	7,307.0	28.1	31.4	-78.07	1,294.6	-866.4	1,074.1	1,019.4	54.73	19.626		
9,200.0	7,529.0	9,007.6	7,307.0	29.7	32.7	-78.07	1,394.6	-866.4	1,074.1	1,016.4	57.76	18.596		
9,300.0	7,529.0	9,107.6	7,307.0	31.2	34.2	-78.07	1,494.6	-866.4	1,074.1	1,013.3	60.84	17.656		
9,400.0	7,529.0	9,207.6	7,307.0	32.8	35.6	-78.07	1,594.6	-866.4	1,074.1	1,010.2	63.95	16.796		
9,500.0	7,529.0	9,307.6	7,307.0	34.4	37.1	-78.07	1,694.6	-866.4	1,074.1	1,007.0	67.09	16.010		
9,600.0	7,529.0	9,407.6	7,307.0	36.0	38.6	-78.07	1,794.6	-866.4	1,074.1	1,003.9	70.26	15.287		
9,700.0	7,529.0	9,507.6	7,307.0	37.6	40.1	-78.07	1,894.6	-866.4	1,074.1	1,000.7	73.46	14.623		
9,800.0	7,529.0	9,607.6	7,307.0	39.3	41.6	-78.07	1,994.6	-866.4	1,074.1	997.5	76.67	14.009		
9,900.0	7,529.0	9,707.6	7,307.0	40.9	43.2	-78.07	2,094.6	-866.4	1,074.1	994.2	79.90	13.443		
10,000.0	7,529.0	9,807.6	7,307.0	42.6	44.8	-78.07	2,194.6	-866.4	1,074.1	991.0	83.15	12.917		
10,100.0	7,529.0	9,907.6	7,307.0	44.2	46.3	-78.07	2,294.6	-866.4	1,074.1	987.7	86.42	12.430		
10,200.0	7,529.0	10,007.6	7,307.0	45.9	47.9	-78.07	2,394.6	-866.4	1,074.1	984.4	89.69	11.976		
10,300.0	7,529.0	10,107.6	7,307.0	47.6	49.5	-78.07	2,494.6	-866.4	1,074.1	981.1	92.98	11.552		
10,400.0	7,529.0	10,207.6	7,307.0	49.3	51.2	-78.07	2,594.6	-866.4	1,074.1	977.8	96.28	11.157		
10,500.0	7,529.0	10,307.6	7,307.0	50.9	52.8	-78.07	2,694.6	-866.4	1,074.1	974.5	99.58	10.786		
10,600.0	7,529.0	10,407.6	7,307.0	52.6	54.4	-78.07	2,794.6	-866.4	1,074.1	971.2	102.90	10.439		
10,700.0	7,529.0	10,507.6	7,307.0	54.3	56.0	-78.07	2,894.6	-866.4	1,074.1	967.9	106.22	10.112		
10,800.0	7,529.0	10,607.6	7,307.0	56.0	57.7	-78.07	2,994.6	-866.4	1,074.1	964.6	109.55	9.805		
10,900.0	7,529.0	10,707.6	7,307.0	57.7	59.3	-78.07	3,094.6	-866.4	1,074.1	961.2	112.89	9.515		
11,000.0	7,529.0	10,807.6	7,307.0	59.4	61.0	-78.07	3,194.6	-866.4	1,074.1	957.9	116.23	9.242		
11,100.0	7,529.0	10,907.6	7,307.0	61.1	62.7	-78.07	3,294.6	-866.4	1,074.1	954.5	119.57	8.983		
11,200.0	7,529.0	11,007.6	7,307.0	62.9	64.3	-78.07	3,394.6	-866.4	1,074.1	951.2	122.92	8.738		
11,300.0	7,529.0	11,107.6	7,307.0	64.6	66.0	-78.07	3,494.6	-866.4	1,074.1	947.8	126.28	8.506		
11,400.0	7,529.0	11,207.6	7,307.0	66.3	67.7	-78.07	3,594.6	-866.4	1,074.1	944.5	129.64	8.285		
11,500.0	7,529.0	11,307.6	7,307.0	68.0	69.4	-78.07	3,694.6	-866.4	1,074.1	941.1	133.00	8.076		
11,600.0	7,529.0	11,407.6	7,307.0	69.7	71.0	-78.07	3,794.6	-866.4	1,074.1	937.7	136.37	7.876		
11,700.0	7,529.0	11,507.6	7,307.0	71.4	72.7	-78.07	3,894.6	-866.4	1,074.1	934.4	139.74	7.686		
11,800.0	7,529.0	11,607.6	7,307.0	73.2	74.4	-78.07	3,994.6	-866.4	1,074.1	931.0	143.11	7.505		
11,900.0	7,529.0	11,707.6	7,307.0	74.9	76.1	-78.07	4,094.6	-866.4	1,074.1	927.6	146.49	7.332		
12,000.0	7,529.0	11,807.6	7,307.0	76.6	77.8	-78.07	4,194.6	-866.4	1,074.1	924.2	149.87	7.167		
12,100.0	7,529.0	11,907.6	7,307.0	78.3	79.5	-78.07	4,294.6	-866.4	1,074.1	920.8	153.25	7.009		
12,200.0	7,529.0	12,007.6	7,307.0	80.1	81.2	-78.07	4,394.6	-866.4	1,074.1	917.5	156.63	6.857		
12,300.0	7,529.0	12,107.6	7,307.0	81.8	82.9	-78.07	4,494.6	-866.4	1,074.1	914.1	160.02	6.712		
12,400.0	7,529.0	12,207.6	7,307.0	83.5	84.6	-78.07	4,594.6	-866.4	1,074.1	910.7	163.40	6.573		
12,500.0	7,529.0	12,307.6	7,307.0	85.2	86.3	-78.07	4,694.6	-866.4	1,074.1	907.3	166.79	6.440		
12,600.0	7,529.0	12,407.6	7,307.0	87.0	88.0	-78.07	4,794.6	-866.4	1,074.1	903.9	170.18	6.311		
12,700.0	7,529.0	12,507.6	7,307.0	88.7	89.7	-78.07	4,894.6	-866.4	1,074.1	900.5	173.58	6.188		
12,800.0	7,529.0	12,607.6	7,307.0	90.4	91.5	-78.07	4,994.6	-866.4	1,074.1	897.1	176.97	6.069		
12,900.0	7,529.0	12,707.6	7,307.0	92.2	93.2	-78.07	5,094.6	-866.4	1,074.1	893.7	180.37	5.955		
12,967.3	7,529.0	12,774.9	7,307.0	93.3	94.3	-78.07	5,161.9	-866.4	1,074.1	891.4	182.65	5.880 SF		



Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Sprague 3F-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 3F-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 #1	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: 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	-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		
500.0	500.0	500.0	500.0	0.8	0.8	-89.95	0.0	-19.6	19.6	17.9	1.64	11.928 CC, ES		
600.0	600.0	599.7	599.7	1.0	1.0	111.79	-0.4	-20.3	20.6	18.6	1.99	10.371		
700.0	700.0	699.3	699.3	1.2	1.2	114.36	-1.7	-22.6	23.9	21.5	2.34	10.192		
800.0	799.9	798.8	798.6	1.4	1.4	117.36	-3.9	-26.3	29.3	26.6	2.70	10.863		
900.0	899.7	898.0	897.7	1.5	1.5	120.05	-6.9	-31.5	37.0	34.0	3.07	12.078		
1,000.0	999.4	996.9	996.3	1.8	1.7	122.18	-10.8	-38.2	47.0	43.6	3.45	13.640		
1,100.0	1,098.9	1,095.5	1,094.4	2.0	2.0	123.80	-15.4	-46.3	59.3	55.4	3.85	15.412		
1,200.0	1,198.3	1,193.6	1,191.9	2.2	2.2	124.99	-21.0	-55.9	73.8	69.5	4.26	17.296		
1,300.0	1,297.4	1,291.2	1,288.7	2.5	2.5	125.86	-27.3	-66.8	90.4	85.7	4.71	19.221		
1,400.0	1,396.4	1,389.5	1,386.0	2.7	2.7	126.56	-34.1	-78.6	108.4	103.2	5.16	20.991		
1,500.0	1,495.5	1,487.9	1,483.5	3.0	3.0	127.06	-40.9	-90.5	126.3	120.6	5.63	22.443		
1,600.0	1,594.5	1,586.3	1,580.9	3.3	3.3	127.44	-47.8	-102.4	144.2	138.1	6.10	23.651		
1,700.0	1,693.5	1,684.6	1,678.3	3.6	3.5	127.73	-54.6	-114.2	162.1	155.6	6.57	24.667		
1,800.0	1,792.5	1,783.0	1,775.7	3.9	3.8	127.96	-61.5	-126.1	180.1	173.0	7.05	25.533		
1,900.0	1,891.6	1,881.4	1,873.1	4.1	4.1	128.15	-68.3	-137.9	198.0	190.5	7.54	26.278		
2,000.0	1,990.6	1,979.8	1,970.6	4.4	4.4	128.31	-75.2	-149.8	215.9	207.9	8.02	26.925		
2,100.0	2,089.6	2,078.1	2,068.0	4.7	4.7	128.45	-82.0	-161.6	233.9	225.4	8.51	27.491		
2,200.0	2,188.6	2,176.5	2,165.4	5.0	5.0	128.56	-88.9	-173.5	251.8	242.8	9.00	27.990		
2,300.0	2,287.7	2,274.9	2,262.8	5.3	5.2	128.66	-95.7	-185.4	269.8	260.3	9.49	28.433		
2,400.0	2,386.7	2,373.3	2,360.2	5.6	5.5	128.75	-102.5	-197.2	287.7	277.7	9.98	28.830		
2,500.0	2,485.7	2,471.6	2,457.7	5.9	5.8	128.83	-109.4	-209.1	305.7	295.2	10.47	29.185		
2,600.0	2,584.8	2,570.0	2,555.1	6.2	6.1	128.90	-116.2	-220.9	323.6	312.6	10.97	29.507		
2,700.0	2,683.8	2,668.4	2,652.5	6.5	6.4	128.96	-123.1	-232.8	341.5	330.1	11.46	29.798		
2,800.0	2,782.8	2,766.8	2,749.9	6.8	6.7	129.02	-129.9	-244.6	359.5	347.5	11.96	30.064		
2,900.0	2,881.8	2,865.2	2,847.3	7.1	7.0	129.07	-136.8	-256.5	377.4	365.0	12.45	30.306		
3,000.0	2,980.9	2,963.5	2,944.7	7.4	7.3	129.11	-143.6	-268.4	395.4	382.4	12.95	30.529		
3,100.0	3,079.9	3,061.9	3,042.2	7.7	7.6	129.15	-150.5	-280.2	413.3	399.9	13.45	30.735		
3,200.0	3,178.9	3,160.3	3,139.6	8.0	7.9	129.19	-157.3	-292.1	431.3	417.3	13.95	30.924		
3,300.0	3,277.9	3,258.7	3,237.0	8.3	8.2	129.23	-164.2	-303.9	449.2	434.8	14.44	31.100		
3,400.0	3,377.0	3,357.0	3,334.4	8.5	8.4	129.26	-171.0	-315.8	467.2	452.2	14.94	31.263		
3,500.0	3,476.0	3,455.4	3,431.8	8.8	8.7	129.29	-177.9	-327.6	485.1	469.7	15.44	31.415		
3,600.0	3,575.0	3,553.8	3,529.3	9.1	9.0	129.32	-184.7	-339.5	503.1	487.1	15.94	31.557		
3,700.0	3,674.0	3,652.2	3,626.7	9.4	9.3	129.34	-191.5	-351.4	521.0	504.6	16.44	31.690		
3,800.0	3,773.1	3,750.5	3,724.1	9.7	9.6	129.37	-198.4	-363.2	539.0	522.0	16.94	31.814		
3,900.0	3,872.1	3,848.9	3,821.5	10.0	9.9	129.39	-205.2	-375.1	556.9	539.5	17.44	31.931		
4,000.0	3,971.1	3,947.3	3,918.9	10.3	10.2	129.41	-212.1	-386.9	574.8	556.9	17.94	32.041		
4,100.0	4,070.2	4,045.7	4,016.3	10.6	10.5	129.43	-218.9	-398.8	592.8	574.4	18.44	32.145		
4,200.0	4,169.2	4,144.0	4,113.8	10.9	10.8	129.45	-225.8	-410.6	610.7	591.8	18.94	32.243		
4,250.0	4,218.7	4,193.2	4,162.5	11.1	10.9	129.46	-229.2	-416.6	619.7	600.5	19.19	32.290		
4,300.0	4,268.2	4,242.4	4,211.2	11.2	11.1	129.52	-232.6	-422.5	628.6	609.1	19.45	32.322		
4,400.0	4,367.5	4,341.0	4,308.8	11.5	11.4	129.55	-239.5	-434.4	645.4	625.5	19.94	32.369		
4,500.0	4,466.9	4,439.7	4,406.6	11.7	11.7	129.46	-246.3	-446.3	661.2	640.8	20.42	32.386		
4,600.0	4,566.6	4,538.6	4,504.5	11.9	12.0	129.25	-253.2	-458.2	675.9	655.0	20.87	32.377		
4,700.0	4,666.3	4,637.5	4,602.4	12.1	12.3	128.93	-260.1	-470.1	689.5	668.2	21.32	32.346		
4,800.0	4,766.2	4,736.5	4,700.5	12.3	12.6	128.51	-267.0	-482.1	702.1	680.3	21.74	32.295		
4,900.0	4,866.1	4,835.6	4,798.6	12.5	12.9	128.00	-273.9	-494.0	713.6	691.5	22.14	32.230		
5,000.0	4,966.1	4,934.6	4,896.6	12.6	13.2	127.38	-280.8	-505.9	724.2	701.7	22.52	32.154		

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 3F-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 3F-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 #1	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: 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)				
5,050.0	5,016.1	4,984.1	4,945.7	12.7	13.3	-73.66	-284.2	-511.9	729.2	706.4	22.71	32.111		
5,100.0	5,066.1	5,033.6	4,994.7	12.7	13.5	-74.05	-287.7	-517.9	734.0	711.1	22.89	32.067		
5,200.0	5,166.1	5,132.7	5,092.8	12.8	13.7	-74.82	-294.6	-529.8	743.8	720.5	23.25	31.989		
5,300.0	5,266.1	5,231.7	5,190.8	13.0	14.0	-75.57	-301.5	-541.7	753.7	730.1	23.61	31.924		
5,400.0	5,366.1	5,330.7	5,288.9	13.1	14.3	-76.29	-308.3	-553.7	763.8	739.8	23.96	31.871		
5,500.0	5,466.1	5,429.7	5,387.0	13.2	14.6	-77.00	-315.2	-565.6	773.9	749.6	24.32	31.828		
5,600.0	5,566.1	5,528.8	5,485.0	13.3	14.9	-77.69	-322.1	-577.5	784.2	759.5	24.66	31.795		
5,700.0	5,666.1	5,627.8	5,583.1	13.5	15.2	-78.37	-329.0	-589.5	794.6	769.6	25.01	31.771		
5,800.0	5,766.1	5,726.8	5,681.2	13.6	15.5	-79.02	-335.9	-601.4	805.1	779.7	25.35	31.755		
5,900.0	5,866.1	5,829.0	5,782.4	13.7	15.8	-79.68	-343.0	-613.7	815.7	790.0	25.70	31.741		
6,000.0	5,966.1	5,940.5	5,893.0	13.9	16.1	-80.30	-349.9	-625.7	825.2	799.2	26.05	31.682		
6,100.0	6,066.1	6,052.5	6,004.3	14.0	16.4	-80.82	-355.8	-635.9	833.4	807.0	26.39	31.583		
6,200.0	6,166.1	6,164.9	6,116.4	14.1	16.6	-81.24	-360.6	-644.2	840.0	813.3	26.72	31.442		
6,300.0	6,266.1	6,277.7	6,228.9	14.3	16.9	-81.55	-364.4	-650.7	845.2	818.2	27.04	31.258		
6,400.0	6,366.1	6,390.7	6,341.7	14.4	17.0	-81.77	-367.0	-655.2	848.8	821.5	27.35	31.030		
6,500.0	6,466.1	6,503.8	6,454.9	14.5	17.2	-81.90	-368.5	-657.8	850.9	823.3	27.66	30.760		
6,600.0	6,566.1	6,615.1	6,566.1	14.7	17.3	-81.93	-368.9	-658.5	851.5	823.5	27.96	30.450		
6,700.0	6,666.1	6,715.1	6,666.1	14.8	17.4	-81.93	-368.9	-658.5	851.5	823.2	28.25	30.141		
6,800.0	6,766.1	6,815.1	6,766.1	14.9	17.6	-81.93	-368.9	-658.5	851.5	823.0	28.54	29.836		
6,900.0	6,866.1	6,915.1	6,866.1	15.1	17.7	-81.93	-368.9	-658.5	851.5	822.7	28.83	29.536		
6,989.9	6,956.0	7,005.0	6,956.0	15.2	17.8	-81.93	-368.9	-658.5	851.5	822.4	29.09	29.270		
7,000.0	6,966.1	7,013.5	6,964.5	15.2	17.8	-81.93	-368.8	-658.5	851.5	822.4	29.11	29.250		
7,050.0	7,016.0	7,055.5	7,006.4	15.2	17.8	-81.97	-366.7	-658.5	851.4	822.2	29.16	29.199		
7,100.0	7,065.4	7,100.0	7,050.6	15.2	17.8	-82.06	-361.0	-658.4	851.2	822.0	29.13	29.221		
7,150.0	7,114.0	7,139.6	7,089.4	15.1	17.8	-82.20	-353.2	-658.3	850.8	821.8	29.03	29.310		
7,200.0	7,161.4	7,181.8	7,130.0	15.1	17.8	-82.39	-341.8	-658.2	850.3	821.4	28.87	29.457		
7,250.0	7,207.3	7,224.1	7,169.9	14.9	17.7	-82.64	-327.5	-658.0	849.7	821.0	28.65	29.654		
7,300.0	7,251.2	7,266.7	7,208.7	14.8	17.7	-82.93	-310.2	-657.8	848.9	820.5	28.40	29.893		
7,350.0	7,292.9	7,309.5	7,246.3	14.6	17.6	-83.27	-289.9	-657.6	848.1	820.0	28.12	30.160		
7,400.0	7,332.0	7,350.0	7,280.5	14.5	17.6	-83.64	-268.1	-657.3	847.2	819.4	27.83	30.437		
7,450.0	7,368.2	7,395.8	7,317.2	14.3	17.5	-84.09	-240.7	-657.0	846.2	818.7	27.54	30.727		
7,500.0	7,401.3	7,439.5	7,350.0	14.2	17.4	-84.56	-211.9	-656.7	845.2	817.9	27.27	30.990		
7,550.0	7,431.1	7,483.5	7,380.8	14.0	17.4	-85.06	-180.4	-656.3	844.2	817.1	27.05	31.212		
7,600.0	7,457.2	7,528.0	7,409.4	13.9	17.4	-85.61	-146.3	-655.9	843.1	816.2	26.87	31.374		
7,650.0	7,479.5	7,573.0	7,435.4	13.9	17.3	-86.19	-109.7	-655.5	842.1	815.3	26.77	31.455		
7,700.0	7,497.8	7,618.4	7,458.8	13.8	17.3	-86.79	-70.8	-655.0	841.0	814.3	26.75	31.441		
7,750.0	7,512.0	7,664.4	7,479.2	13.9	17.4	-87.43	-29.5	-654.5	840.1	813.3	26.82	31.319		
7,800.0	7,522.0	7,711.1	7,496.5	13.9	17.4	-88.08	13.8	-654.0	839.2	812.2	27.00	31.081		
7,850.0	7,527.6	7,758.4	7,510.3	14.1	17.5	-88.75	59.0	-653.5	838.3	811.1	27.28	30.734		
7,889.9	7,529.0	7,796.7	7,518.8	14.2	17.7	-89.30	96.3	-653.1	837.8	810.2	27.57	30.383		
7,900.0	7,529.0	7,806.4	7,520.5	14.3	17.7	-89.42	105.9	-653.0	837.6	810.0	27.66	30.283		
8,000.0	7,529.0	7,905.4	7,529.0	14.8	18.1	-90.00	204.4	-651.8	836.4	807.7	28.74	29.104		
8,100.0	7,529.0	8,005.4	7,529.0	15.5	18.7	-90.00	304.4	-650.6	835.2	805.0	30.20	27.655		
8,200.0	7,529.0	8,105.4	7,529.0	16.3	19.4	-90.00	404.4	-649.5	834.1	802.1	31.98	26.079		
8,300.0	7,529.0	8,205.4	7,529.0	17.3	20.2	-90.00	504.4	-648.3	832.9	798.8	34.03	24.474		
8,400.0	7,529.0	8,305.4	7,529.0	18.5	21.2	-90.00	604.4	-647.1	831.7	795.4	36.30	22.910		
8,500.0	7,529.0	8,405.4	7,529.0	19.7	22.3	-90.00	704.4	-646.0	830.5	791.8	38.76	21.427		
8,600.0	7,529.0	8,505.4	7,529.0	20.9	23.4	-90.00	804.3	-644.8	829.4	788.0	41.37	20.047		
8,700.0	7,529.0	8,605.4	7,529.0	22.3	24.6	-90.00	904.3	-643.6	828.2	784.1	44.11	18.777		
8,800.0	7,529.0	8,705.4	7,529.0	23.7	25.9	-90.00	1,004.3	-642.4	827.0	780.1	46.94	17.617		
8,900.0	7,529.0	8,805.4	7,529.0	25.1	27.2	-90.00	1,104.3	-641.3	825.8	776.0	49.87	16.561		
9,000.0	7,529.0	8,905.4	7,529.0	26.6	28.6	-90.00	1,204.3	-640.1	824.7	771.8	52.86	15.601		

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 3F-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 3F-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 #1	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)			
9,100.0	7,529.0	9,005.3	7,529.0	28.1	30.0	-90.00	1,304.3	-638.9	823.5	767.6	55.91	14.728	
9,200.0	7,529.0	9,105.3	7,529.0	29.7	31.5	-90.00	1,404.3	-637.8	822.3	763.3	59.02	13.933	
9,300.0	7,529.0	9,205.3	7,529.0	31.2	32.9	-90.00	1,504.3	-636.6	821.2	759.0	62.17	13.209	
9,400.0	7,529.0	9,305.3	7,529.0	32.8	34.4	-90.00	1,604.2	-635.4	820.0	754.6	65.35	12.548	
9,500.0	7,529.0	9,405.3	7,529.0	34.4	36.0	-90.00	1,704.2	-634.2	818.8	750.2	68.57	11.942	
9,600.0	7,529.0	9,505.3	7,529.0	36.0	37.5	-90.00	1,804.2	-633.1	817.6	745.8	71.81	11.386	
9,700.0	7,529.0	9,605.3	7,529.0	37.6	39.1	-90.00	1,904.2	-631.9	816.5	741.4	75.08	10.875	
9,800.0	7,529.0	9,705.3	7,529.0	39.3	40.7	-90.00	2,004.2	-630.7	815.3	736.9	78.36	10.404	
9,900.0	7,529.0	9,805.3	7,529.0	40.9	42.2	-90.00	2,104.2	-629.6	814.1	732.5	81.67	9.969	
10,000.0	7,529.0	9,905.3	7,529.0	42.6	43.9	-90.00	2,204.2	-628.4	812.9	728.0	84.99	9.565	
10,100.0	7,529.0	10,005.3	7,529.0	44.2	45.5	-90.00	2,304.1	-627.2	811.8	723.4	88.33	9.191	
10,200.0	7,529.0	10,105.3	7,529.0	45.9	47.1	-90.00	2,404.1	-626.0	810.6	718.9	91.68	8.842	
10,300.0	7,529.0	10,205.3	7,529.0	47.6	48.7	-90.00	2,504.1	-624.9	809.4	714.4	95.04	8.517	
10,400.0	7,529.0	10,305.3	7,529.0	49.3	50.4	-90.00	2,604.1	-623.7	808.3	709.9	98.41	8.213	
10,500.0	7,529.0	10,405.3	7,529.0	50.9	52.0	-90.00	2,704.1	-622.5	807.1	705.3	101.79	7.929	
10,600.0	7,529.0	10,505.2	7,529.0	52.6	53.7	-90.00	2,804.1	-621.4	805.9	700.7	105.18	7.662	
10,700.0	7,529.0	10,605.2	7,529.0	54.3	55.3	-90.00	2,904.1	-620.2	804.7	696.2	108.57	7.412	
10,800.0	7,529.0	10,705.2	7,529.0	56.0	57.0	-90.00	3,004.0	-619.0	803.6	691.6	111.98	7.176	
10,900.0	7,529.0	10,805.2	7,529.0	57.7	58.7	-90.00	3,104.0	-617.9	802.4	687.0	115.39	6.954	
11,000.0	7,529.0	10,905.2	7,529.0	59.4	60.4	-90.00	3,204.0	-616.7	801.2	682.4	118.80	6.744	
11,100.0	7,529.0	11,014.3	7,529.0	61.1	62.2	-90.00	3,313.1	-615.0	799.7	677.4	122.38	6.535	
11,200.0	7,529.0	11,130.4	7,529.0	62.9	64.1	-90.00	3,429.2	-611.2	796.4	670.3	126.08	6.317	
11,300.0	7,529.0	11,238.9	7,529.0	64.6	66.0	-90.00	3,537.4	-605.6	791.3	661.6	129.65	6.103	
11,400.0	7,529.0	11,338.7	7,529.0	66.3	67.6	-90.00	3,637.1	-600.2	785.9	652.8	133.08	5.905	
11,500.0	7,529.0	11,438.6	7,529.0	68.0	69.3	-90.00	3,736.8	-594.8	780.5	643.9	136.52	5.717	
11,600.0	7,529.0	11,538.4	7,529.0	69.7	71.0	-90.00	3,836.6	-589.4	775.1	635.1	139.95	5.538	
11,700.0	7,529.0	11,638.3	7,529.0	71.4	72.7	-90.00	3,936.3	-584.0	769.6	626.3	143.39	5.367	
11,800.0	7,529.0	11,738.1	7,529.0	73.2	74.4	-90.00	4,036.0	-578.6	764.2	617.4	146.84	5.205	
11,900.0	7,529.0	11,838.0	7,529.0	74.9	76.1	-90.00	4,135.7	-573.2	758.8	608.5	150.28	5.049	
12,000.0	7,529.0	11,937.8	7,529.0	76.6	77.8	-90.00	4,235.4	-567.8	753.4	599.7	153.73	4.901	
12,100.0	7,529.0	12,037.7	7,529.0	78.3	79.5	-90.00	4,335.1	-562.4	748.0	590.8	157.19	4.759	
12,200.0	7,529.0	12,137.5	7,529.0	80.1	81.2	-90.00	4,434.8	-557.0	742.6	582.0	160.64	4.623	
12,300.0	7,529.0	12,237.4	7,529.0	81.8	82.9	-90.00	4,534.5	-551.6	737.2	573.1	164.10	4.492	
12,400.0	7,529.0	12,337.2	7,529.0	83.5	84.6	-90.00	4,634.2	-546.2	731.8	564.2	167.55	4.367	
12,500.0	7,529.0	12,437.1	7,529.0	85.2	86.3	-90.00	4,733.9	-540.8	726.4	555.4	171.01	4.247	
12,600.0	7,529.0	12,536.9	7,529.0	87.0	88.0	-90.00	4,833.6	-535.4	721.0	546.5	174.48	4.132	
12,700.0	7,529.0	12,636.8	7,529.0	88.7	89.7	-90.00	4,933.3	-530.0	715.5	537.6	177.94	4.021	
12,800.0	7,529.0	12,736.7	7,529.0	90.4	91.5	-90.00	5,033.0	-524.6	710.1	528.7	181.41	3.915	
12,900.0	7,529.0	12,836.5	7,529.0	92.2	93.2	-90.00	5,132.8	-519.2	704.7	519.9	184.87	3.812	
12,967.3	7,529.0	12,876.7	7,529.0	93.3	93.9	-90.00	5,172.9	-517.1	701.6	514.9	186.74	3.757 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 3F-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 3F-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 #1	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					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)	Total Uncertainty Axis			
0.0	0.0	0.0	0.0	0.0	0.0	-89.96	0.0	-11.2	11.2					
100.0	100.0	100.0	100.0	0.1	0.1	-89.96	0.0	-11.2	11.2	10.9	0.24	45.763		
200.0	200.0	200.0	200.0	0.3	0.3	-89.96	0.0	-11.2	11.2	10.6	0.59	18.844 CC, ES		
300.0	300.0	299.9	299.9	0.5	0.5	-93.96	-0.8	-11.5	11.5	10.6	0.94	12.236		
400.0	400.0	399.8	399.7	0.6	0.7	-104.39	-3.2	-12.5	12.9	11.6	1.30	9.960		
500.0	500.0	499.5	499.4	0.8	0.8	-117.03	-7.2	-14.2	15.9	14.3	1.66	9.616		
600.0	600.0	599.1	598.8	1.0	1.0	75.05	-12.8	-16.5	20.7	18.7	2.00	10.335		
700.0	700.0	698.5	697.9	1.2	1.3	71.54	-20.0	-19.4	26.7	24.3	2.36	11.317		
800.0	799.9	797.8	796.8	1.4	1.5	70.76	-28.8	-23.1	33.7	31.0	2.73	12.368		
900.0	899.7	896.9	895.2	1.5	1.7	71.39	-39.1	-27.3	41.7	38.6	3.11	13.409		
1,000.0	999.4	995.8	993.3	1.8	2.0	72.72	-51.0	-32.2	50.7	47.2	3.52	14.408		
1,100.0	1,098.9	1,094.5	1,090.9	2.0	2.3	74.35	-64.4	-37.8	60.7	56.7	3.95	15.344		
1,200.0	1,198.3	1,192.9	1,187.9	2.2	2.6	76.10	-79.3	-43.9	71.7	67.3	4.42	16.203		
1,300.0	1,297.4	1,291.5	1,285.0	2.5	3.0	77.90	-95.7	-50.7	83.7	78.7	4.93	16.958		
1,400.0	1,396.4	1,390.8	1,382.5	2.7	3.3	79.76	-112.4	-57.6	95.8	90.3	5.47	17.517		
1,500.0	1,495.5	1,490.0	1,480.1	3.0	3.6	81.20	-129.1	-64.5	108.0	102.0	6.02	17.955		
1,600.0	1,594.5	1,589.2	1,577.6	3.3	4.0	82.35	-145.8	-71.3	120.3	113.7	6.57	18.303		
1,700.0	1,693.5	1,688.4	1,675.2	3.6	4.3	83.29	-162.5	-78.2	132.6	125.4	7.13	18.586		
1,800.0	1,792.5	1,787.6	1,772.8	3.9	4.7	84.06	-179.3	-85.1	144.9	137.2	7.70	18.818		
1,900.0	1,891.6	1,886.9	1,870.3	4.1	5.0	84.72	-196.0	-92.0	157.2	149.0	8.27	19.012		
2,000.0	1,990.6	1,986.1	1,967.9	4.4	5.4	85.28	-212.7	-98.9	169.6	160.8	8.84	19.176		
2,100.0	2,089.6	2,085.3	2,065.4	4.7	5.8	85.76	-229.4	-105.8	182.0	172.6	9.42	19.317		
2,200.0	2,188.6	2,184.5	2,163.0	5.0	6.1	86.18	-246.1	-112.7	194.4	184.4	10.00	19.438		
2,300.0	2,287.7	2,283.7	2,260.6	5.3	6.5	86.55	-262.8	-119.6	206.8	196.2	10.58	19.543		
2,400.0	2,386.7	2,383.0	2,358.1	5.6	6.8	86.88	-279.5	-126.5	219.2	208.0	11.16	19.635		
2,500.0	2,485.7	2,482.2	2,455.7	5.9	7.2	87.18	-296.3	-133.4	231.6	219.8	11.75	19.717		
2,600.0	2,584.8	2,581.4	2,553.2	6.2	7.5	87.44	-313.0	-140.3	244.0	231.7	12.33	19.790		
2,700.0	2,683.8	2,680.6	2,650.8	6.5	7.9	87.68	-329.7	-147.2	256.4	243.5	12.92	19.855		
2,800.0	2,782.8	2,779.8	2,748.3	6.8	8.2	87.90	-346.4	-154.1	268.9	255.4	13.50	19.913		
2,900.0	2,881.8	2,879.1	2,845.9	7.1	8.6	88.09	-363.1	-161.0	281.3	267.2	14.09	19.966		
3,000.0	2,980.9	2,978.3	2,943.5	7.4	9.0	88.27	-379.8	-167.9	293.7	279.1	14.68	20.014		
3,100.0	3,079.9	3,077.5	3,041.0	7.7	9.3	88.44	-396.5	-174.8	306.2	290.9	15.26	20.058		
3,200.0	3,178.9	3,179.8	3,141.7	8.0	9.7	88.67	-413.3	-181.7	318.2	302.4	15.85	20.072		
3,300.0	3,277.9	3,283.2	3,243.8	8.3	10.0	89.11	-428.5	-188.0	329.1	312.7	16.45	20.008		
3,400.0	3,377.0	3,386.8	3,346.3	8.5	10.3	89.76	-442.1	-193.6	338.8	321.7	17.04	19.878		
3,500.0	3,476.0	3,490.5	3,449.3	8.8	10.6	90.60	-454.0	-198.5	347.3	329.6	17.64	19.690		
3,600.0	3,575.0	3,594.3	3,552.4	9.1	10.8	91.63	-464.1	-202.7	354.6	336.4	18.23	19.457		
3,700.0	3,674.0	3,698.0	3,655.8	9.4	11.0	92.84	-472.6	-206.2	360.9	342.1	18.81	19.188		
3,800.0	3,773.1	3,801.7	3,759.2	9.7	11.2	94.24	-479.2	-208.9	366.3	346.9	19.39	18.893		
3,900.0	3,872.1	3,905.2	3,862.6	10.0	11.4	95.82	-484.2	-211.0	370.7	350.7	19.95	18.581		
4,000.0	3,971.1	4,008.5	3,965.8	10.3	11.6	97.58	-487.4	-212.3	374.3	353.8	20.50	18.264		
4,100.0	4,070.2	4,111.5	4,068.8	10.6	11.7	99.54	-488.9	-212.9	377.3	356.3	21.02	17.949		
4,200.0	4,169.2	4,211.9	4,169.2	10.9	11.8	101.61	-489.0	-212.9	380.0	358.5	21.53	17.652		
4,250.0	4,218.7	4,261.4	4,218.7	11.1	11.8	102.62	-489.0	-212.9	381.5	359.7	21.77	17.522		
4,300.0	4,268.2	4,311.0	4,268.2	11.2	11.9	103.61	-489.0	-212.9	383.0	361.0	22.00	17.405		
4,400.0	4,367.5	4,410.2	4,367.5	11.5	12.0	105.39	-489.0	-212.9	386.1	363.6	22.44	17.207		
4,500.0	4,466.9	4,509.7	4,466.9	11.7	12.1	106.89	-489.0	-212.9	389.0	366.2	22.83	17.039		
4,600.0	4,566.6	4,609.3	4,566.6	11.9	12.2	108.13	-489.0	-212.9	391.6	368.4	23.19	16.890		
4,700.0	4,666.3	4,709.0	4,666.3	12.1	12.3	109.12	-489.0	-212.9	393.9	370.3	23.52	16.748		
4,800.0	4,766.2	4,808.9	4,766.2	12.3	12.5	109.85	-489.0	-212.9	395.6	371.8	23.82	16.608		
4,900.0	4,866.1	4,908.8	4,866.1	12.5	12.6	110.33	-489.0	-212.9	396.8	372.7	24.10	16.465		
5,000.0	4,966.1	5,008.8	4,966.1	12.6	12.7	110.58	-489.0	-212.9	397.4	373.1	24.36	16.315		

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 3F-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 3F-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 #1	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		
5,050.0	5,016.1	5,058.8	5,016.1	12.7	12.8	-90.09	-489.0	-212.9	397.5	373.0	24.48	16.234		
5,100.0	5,066.1	5,108.8	5,066.1	12.7	12.8	-90.09	-489.0	-212.9	397.5	372.9	24.61	16.152		
5,200.0	5,166.1	5,208.8	5,166.1	12.8	12.9	-90.09	-489.0	-212.9	397.5	372.6	24.86	15.988		
5,300.0	5,266.1	5,308.8	5,266.1	13.0	13.1	-90.09	-489.0	-212.9	397.5	372.4	25.12	15.826		
5,400.0	5,366.1	5,408.8	5,366.1	13.1	13.2	-90.09	-489.0	-212.9	397.5	372.1	25.37	15.665		
5,500.0	5,466.1	5,508.8	5,466.1	13.2	13.3	-90.09	-489.0	-212.9	397.5	371.9	25.63	15.507		
5,600.0	5,566.1	5,608.8	5,566.1	13.3	13.4	-90.09	-489.0	-212.9	397.5	371.6	25.89	15.350		
5,700.0	5,666.1	5,708.8	5,666.1	13.5	13.6	-90.09	-489.0	-212.9	397.5	371.3	26.16	15.196		
5,800.0	5,766.1	5,808.8	5,766.1	13.6	13.7	-90.09	-489.0	-212.9	397.5	371.1	26.42	15.043		
5,900.0	5,866.1	5,908.8	5,866.1	13.7	13.8	-90.09	-489.0	-212.9	397.5	370.8	26.69	14.893		
6,000.0	5,966.1	6,008.8	5,966.1	13.9	13.9	-90.09	-489.0	-212.9	397.5	370.5	26.96	14.744		
6,100.0	6,066.1	6,108.8	6,066.1	14.0	14.1	-90.09	-489.0	-212.9	397.5	370.3	27.23	14.597		
6,200.0	6,166.1	6,208.8	6,166.1	14.1	14.2	-90.09	-489.0	-212.9	397.5	370.0	27.50	14.453		
6,300.0	6,266.1	6,308.8	6,266.1	14.3	14.3	-90.09	-489.0	-212.9	397.5	369.7	27.78	14.310		
6,400.0	6,366.1	6,408.8	6,366.1	14.4	14.5	-90.09	-489.0	-212.9	397.5	369.4	28.05	14.169		
6,500.0	6,466.1	6,508.8	6,466.1	14.5	14.6	-90.09	-489.0	-212.9	397.5	369.2	28.33	14.030		
6,600.0	6,566.1	6,608.8	6,566.1	14.7	14.7	-90.09	-489.0	-212.9	397.5	368.9	28.61	13.893		
6,700.0	6,666.1	6,708.8	6,666.1	14.8	14.9	-90.09	-489.0	-212.9	397.5	368.6	28.89	13.758		
6,775.9	6,742.0	6,784.7	6,742.0	14.9	15.0	-90.09	-489.0	-212.9	397.5	368.4	29.10	13.659		
6,800.0	6,766.1	6,808.8	6,766.1	14.9	15.0	-89.96	-488.1	-212.9	397.5	368.3	29.15	13.635		
6,900.0	6,866.1	6,906.7	6,862.9	15.1	15.0	-87.98	-474.4	-212.9	397.7	368.5	29.25	13.596		
6,989.9	6,956.0	6,988.8	6,941.3	15.2	14.8	-84.52	-450.2	-212.9	399.6	370.4	29.21	13.682		
7,000.0	6,966.1	6,997.5	6,949.4	15.2	14.8	-84.03	-447.0	-212.9	400.0	370.8	29.19	13.701		
7,050.0	7,016.0	7,040.3	6,988.4	15.2	14.7	-81.65	-429.5	-212.9	402.3	373.3	29.05	13.847		
7,100.0	7,065.4	7,082.1	7,025.2	15.2	14.6	-79.35	-409.6	-212.9	405.3	376.5	28.85	14.050		
7,150.0	7,114.0	7,123.1	7,059.7	15.1	14.4	-77.16	-387.5	-212.9	408.8	380.2	28.58	14.303		
7,200.0	7,161.4	7,163.4	7,092.0	15.1	14.3	-75.07	-363.5	-212.9	412.7	384.5	28.27	14.602		
7,250.0	7,207.3	7,200.0	7,119.8	14.9	14.2	-73.22	-339.7	-212.9	417.0	389.0	27.92	14.932		
7,300.0	7,251.2	7,242.0	7,149.8	14.8	14.0	-71.28	-310.3	-212.9	421.3	393.8	27.52	15.312		
7,350.0	7,292.9	7,280.4	7,175.3	14.6	13.9	-69.59	-281.5	-212.9	425.8	398.7	27.10	15.709		
7,400.0	7,332.0	7,318.5	7,198.6	14.5	13.8	-68.04	-251.4	-212.9	430.2	403.5	26.68	16.121		
7,450.0	7,368.2	7,356.1	7,219.6	14.3	13.7	-66.64	-220.2	-212.9	434.4	408.2	26.27	16.538		
7,500.0	7,401.3	7,393.4	7,238.4	14.2	13.6	-65.39	-188.0	-212.9	438.5	412.6	25.88	16.946		
7,550.0	7,431.1	7,430.4	7,254.8	14.0	13.6	-64.29	-154.9	-212.9	442.2	416.7	25.52	17.328		
7,600.0	7,457.2	7,467.1	7,269.1	13.9	13.6	-63.35	-121.0	-212.9	445.6	420.4	25.22	17.669		
7,650.0	7,479.5	7,500.0	7,280.0	13.9	13.6	-62.60	-90.0	-212.9	448.5	423.5	24.99	17.949		
7,700.0	7,497.8	7,540.0	7,290.8	13.8	13.6	-61.90	-51.5	-212.9	451.0	426.1	24.84	18.155		
7,750.0	7,512.0	7,576.3	7,298.2	13.9	13.6	-61.41	-16.0	-212.9	452.9	428.1	24.80	18.261		
7,800.0	7,522.0	7,612.4	7,303.4	13.9	13.7	-61.06	19.7	-212.9	454.2	429.4	24.86	18.273		
7,850.0	7,527.6	7,650.0	7,306.4	14.1	13.8	-60.86	57.2	-212.9	455.0	430.0	25.04	18.175		
7,889.9	7,529.0	7,677.4	7,307.0	14.2	13.9	-60.81	84.6	-212.9	455.2	430.0	25.26	18.022		
7,900.0	7,529.0	7,687.5	7,307.0	14.3	14.0	-60.81	94.7	-212.9	455.2	429.9	25.34	17.965		
8,000.0	7,529.0	7,787.5	7,307.0	14.8	14.5	-60.81	194.7	-212.9	455.2	428.9	26.32	17.292		
8,100.0	7,529.0	7,887.5	7,307.0	15.5	15.2	-60.81	294.7	-212.9	455.2	427.6	27.61	16.488		
8,200.0	7,529.0	7,987.5	7,307.0	16.3	16.1	-60.81	394.7	-212.8	455.2	426.0	29.16	15.610		
8,300.0	7,529.0	8,087.5	7,307.0	17.3	17.1	-60.81	494.7	-212.8	455.2	424.2	30.94	14.712		
8,400.0	7,529.0	8,187.5	7,307.0	18.5	18.2	-60.81	594.7	-212.8	455.2	422.3	32.91	13.832		
8,500.0	7,529.0	8,287.5	7,307.0	19.7	19.4	-60.81	694.7	-212.8	455.2	420.1	35.03	12.991		
8,600.0	7,529.0	8,387.5	7,307.0	20.9	20.7	-60.81	794.7	-212.8	455.1	417.8	37.29	12.204		
8,700.0	7,529.0	8,487.5	7,307.0	22.3	22.1	-60.81	894.7	-212.8	455.1	415.5	39.66	11.475		
8,800.0	7,529.0	8,587.5	7,307.0	23.7	23.5	-60.80	994.7	-212.8	455.1	413.0	42.12	10.805		
8,900.0	7,529.0	8,687.5	7,307.0	25.1	24.9	-60.80	1,094.7	-212.8	455.1	410.5	44.65	10.192		

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 3F-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 3F-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 #1	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				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)				
9,000.0	7,529.0	8,787.5	7,307.0	26.6	26.4	-60.80	1,194.7	-212.8	455.1	407.8	47.25	9.631		
9,100.0	7,529.0	8,887.5	7,307.0	28.1	28.0	-60.80	1,294.7	-212.7	455.1	405.2	49.90	9.120		
9,200.0	7,529.0	8,987.5	7,307.0	29.7	29.5	-60.80	1,394.7	-212.7	455.1	402.5	52.60	8.652		
9,300.0	7,529.0	9,087.5	7,307.0	31.2	31.1	-60.80	1,494.7	-212.7	455.1	399.7	55.33	8.224		
9,400.0	7,529.0	9,188.2	7,307.0	32.8	32.7	-60.80	1,595.4	-212.7	455.0	396.9	58.11	7.831		
9,500.0	7,529.0	9,295.7	7,307.0	34.4	34.4	-60.72	1,702.8	-211.5	454.1	393.1	60.97	7.447		
9,600.0	7,529.0	9,403.0	7,307.0	36.0	36.1	-60.52	1,810.1	-208.3	451.4	387.6	63.79	7.077		
9,700.0	7,529.0	9,510.2	7,307.0	37.6	37.9	-60.19	1,917.2	-203.0	447.2	380.6	66.54	6.720		
9,800.0	7,529.0	9,617.2	7,307.0	39.3	39.6	-59.73	2,023.9	-195.8	441.3	372.1	69.21	6.377		
9,900.0	7,529.0	9,723.8	7,307.0	40.9	41.3	-59.11	2,130.2	-186.6	433.9	362.2	71.75	6.047		
10,000.0	7,529.0	9,826.7	7,307.0	42.6	43.0	-58.38	2,232.5	-176.1	425.2	351.0	74.14	5.735		
10,100.0	7,529.0	9,926.2	7,307.0	44.2	44.7	-57.63	2,331.4	-165.7	416.3	339.9	76.42	5.448		
10,200.0	7,529.0	10,025.6	7,307.0	45.9	46.3	-56.85	2,430.4	-155.3	407.5	328.9	78.62	5.183		
10,300.0	7,529.0	10,125.1	7,307.0	47.6	48.0	-56.03	2,529.3	-144.9	398.8	318.0	80.75	4.939		
10,400.0	7,529.0	10,224.5	7,307.0	49.3	49.6	-55.17	2,628.2	-134.5	390.1	307.3	82.78	4.713		
10,500.0	7,529.0	10,324.0	7,307.0	50.9	51.3	-54.27	2,727.1	-124.1	381.6	296.9	84.71	4.504		
10,600.0	7,529.0	10,423.4	7,307.0	52.6	53.0	-53.34	2,826.0	-113.8	373.1	286.6	86.54	4.312		
10,700.0	7,529.0	10,522.9	7,307.0	54.3	54.7	-52.36	2,924.9	-103.4	364.8	276.5	88.24	4.134		
10,800.0	7,529.0	10,621.2	7,307.0	56.0	56.3	-51.35	3,022.6	-93.1	356.6	266.8	89.80	3.971		
10,900.0	7,529.0	10,716.2	7,307.0	57.7	57.9	-50.46	3,117.3	-84.4	349.4	258.0	91.37	3.824		
11,000.0	7,529.0	10,811.5	7,307.0	59.4	59.6	-49.69	3,212.3	-77.2	343.6	250.6	93.01	3.694		
11,100.0	7,529.0	10,907.0	7,307.0	61.1	61.2	-49.07	3,307.6	-71.6	339.1	244.3	94.79	3.578		
11,200.0	7,529.0	11,002.7	7,307.0	62.9	62.8	-48.62	3,403.2	-67.5	336.0	239.2	96.73	3.473		
11,300.0	7,529.0	11,100.0	7,307.0	64.6	64.5	-48.34	3,500.5	-65.0	334.0	235.2	98.89	3.378		
11,400.0	7,529.0	11,194.3	7,307.0	66.3	66.1	-48.25	3,594.8	-64.2	333.4	232.1	101.25	3.293		
11,402.9	7,529.0	11,197.1	7,307.0	66.3	66.2	-48.25	3,597.6	-64.2	333.4	232.1	101.32	3.290		
11,500.0	7,529.0	11,290.1	7,307.0	68.0	67.8	-48.33	3,690.6	-65.0	334.0	230.1	103.89	3.215		
11,600.0	7,529.0	11,385.9	7,307.0	69.7	69.4	-48.60	3,786.3	-67.3	335.8	229.0	106.80	3.144		
11,700.0	7,529.0	11,481.5	7,307.0	71.4	71.1	-49.04	3,881.9	-71.3	338.9	228.9	110.00	3.081		
11,800.0	7,529.0	11,577.1	7,307.0	73.2	72.7	-49.65	3,977.3	-76.8	343.3	229.8	113.47	3.026		
11,900.0	7,529.0	11,674.2	7,307.0	74.9	74.4	-50.41	4,074.1	-83.9	348.9	231.7	117.23	2.976		
12,000.0	7,529.0	11,773.9	7,307.0	76.6	76.1	-51.19	4,173.5	-91.5	354.9	233.7	121.12	2.930		
12,100.0	7,529.0	11,873.6	7,307.0	78.3	77.9	-51.95	4,272.9	-99.2	360.8	235.8	125.00	2.887		
12,200.0	7,529.0	11,973.3	7,307.0	80.1	79.6	-52.68	4,372.4	-106.8	366.9	238.0	128.88	2.847		
12,300.0	7,529.0	12,073.0	7,307.0	81.8	81.3	-53.39	4,471.8	-114.4	373.0	240.2	132.77	2.809		
12,400.0	7,529.0	12,172.7	7,307.0	83.5	83.0	-54.08	4,571.2	-122.0	379.1	242.5	136.65	2.774		
12,500.0	7,529.0	12,272.4	7,307.0	85.2	84.8	-54.74	4,670.6	-129.6	385.3	244.8	140.53	2.742		
12,600.0	7,529.0	12,372.1	7,307.0	87.0	86.5	-55.39	4,770.0	-137.2	391.6	247.2	144.40	2.712		
12,700.0	7,529.0	12,471.8	7,307.0	88.7	88.2	-56.01	4,869.5	-144.8	397.9	249.6	148.27	2.684		
12,800.0	7,529.0	12,571.5	7,307.0	90.4	90.0	-56.61	4,968.9	-152.4	404.2	252.1	152.14	2.657		
12,900.0	7,529.0	12,671.2	7,307.0	92.2	91.7	-57.20	5,068.3	-160.0	410.6	254.6	156.00	2.632		
12,967.3	7,529.0	12,738.3	7,307.0	93.3	92.9	-57.58	5,135.2	-165.1	415.0	256.4	158.60	2.616 SF		



Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Sprague 3F-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 3F-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 #1	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	90.04	0.0	11.2	11.2					
100.0	100.0	100.0	100.0	0.1	0.1	90.04	0.0	11.2	11.2	10.9	0.24	45.763		
200.0	200.0	200.0	200.0	0.3	0.3	90.04	0.0	11.2	11.2	10.6	0.59	18.844		
300.0	300.0	300.0	300.0	0.5	0.5	90.04	0.0	11.2	11.2	10.2	0.94	11.864		
400.0	400.0	400.0	400.0	0.6	0.6	90.04	0.0	11.2	11.2	9.9	1.29	8.658	CC, ES	
500.0	500.0	499.8	499.8	0.8	0.8	92.97	-0.6	11.8	11.8	10.2	1.64	7.208		
600.0	600.0	599.7	599.6	1.0	1.0	-62.42	-2.4	13.7	13.5	11.5	1.99	6.769		
700.0	700.0	699.4	699.3	1.2	1.2	-61.28	-5.4	16.8	15.7	13.4	2.35	6.712		
800.0	799.9	799.1	798.8	1.4	1.4	-62.01	-9.7	21.2	18.6	15.9	2.71	6.860		
900.0	899.7	898.8	898.2	1.5	1.6	-63.82	-15.1	26.8	22.0	18.9	3.09	7.131		
1,000.0	999.4	998.4	997.3	1.8	1.8	-66.15	-21.7	33.6	26.0	22.6	3.48	7.475		
1,100.0	1,098.9	1,097.9	1,096.2	2.0	2.0	-68.65	-29.5	41.7	30.7	26.8	3.91	7.858		
1,200.0	1,198.3	1,197.4	1,194.8	2.2	2.3	-71.12	-38.5	51.0	36.1	31.8	4.38	8.252		
1,300.0	1,297.4	1,297.2	1,293.6	2.5	2.6	-74.30	-48.1	61.0	41.7	36.8	4.89	8.531		
1,400.0	1,396.4	1,397.0	1,392.5	2.7	2.9	-77.81	-57.8	71.0	47.1	41.7	5.42	8.695		
1,500.0	1,495.5	1,496.8	1,491.3	3.0	3.1	-80.58	-67.4	81.0	52.7	46.8	5.97	8.834		
1,600.0	1,594.5	1,596.6	1,590.1	3.3	3.4	-82.81	-77.1	91.0	58.4	51.9	6.53	8.952		
1,700.0	1,693.5	1,696.4	1,689.0	3.6	3.7	-84.65	-86.7	101.0	64.2	57.1	7.09	9.054		
1,800.0	1,792.5	1,796.2	1,787.8	3.9	4.0	-86.18	-96.4	111.0	70.0	62.4	7.66	9.142		
1,900.0	1,891.6	1,896.0	1,886.7	4.1	4.3	-87.47	-106.0	121.0	75.9	67.7	8.23	9.219		
2,000.0	1,990.6	1,995.9	1,985.5	4.4	4.6	-88.58	-115.7	131.0	81.8	73.0	8.81	9.287		
2,100.0	2,089.6	2,095.7	2,084.4	4.7	4.9	-89.54	-125.3	141.0	87.7	78.3	9.38	9.347		
2,200.0	2,188.6	2,195.5	2,183.2	5.0	5.2	-90.38	-135.0	151.0	93.7	83.7	9.96	9.401		
2,300.0	2,287.7	2,295.3	2,282.0	5.3	5.5	-91.12	-144.6	160.9	99.6	89.1	10.54	9.449		
2,400.0	2,386.7	2,395.1	2,380.9	5.6	5.8	-91.77	-154.3	170.9	105.6	94.5	11.12	9.493		
2,500.0	2,485.7	2,494.9	2,479.7	5.9	6.1	-92.35	-163.9	180.9	111.6	99.9	11.71	9.533		
2,600.0	2,584.8	2,594.7	2,578.6	6.2	6.3	-92.88	-173.6	190.9	117.6	105.3	12.29	9.569		
2,700.0	2,683.8	2,694.6	2,677.4	6.5	6.6	-93.35	-183.2	200.9	123.6	110.7	12.87	9.602		
2,800.0	2,782.8	2,794.4	2,776.3	6.8	6.9	-93.78	-192.9	210.9	129.6	116.2	13.46	9.633		
2,900.0	2,881.8	2,894.2	2,875.1	7.1	7.2	-94.17	-202.5	220.9	135.7	121.6	14.04	9.661		
3,000.0	2,980.9	2,994.0	2,973.9	7.4	7.5	-94.53	-212.2	230.9	141.7	127.1	14.63	9.687		
3,100.0	3,079.9	3,093.8	3,072.8	7.7	7.8	-94.86	-221.8	240.9	147.7	132.5	15.21	9.711		
3,200.0	3,178.9	3,193.6	3,171.6	8.0	8.1	-95.16	-231.5	250.9	153.8	138.0	15.80	9.733		
3,300.0	3,277.9	3,293.4	3,270.5	8.3	8.4	-95.44	-241.1	260.9	159.8	143.4	16.38	9.754		
3,400.0	3,377.0	3,393.3	3,369.3	8.5	8.7	-95.70	-250.8	270.9	165.9	148.9	16.97	9.773		
3,500.0	3,476.0	3,493.1	3,468.2	8.8	9.0	-95.94	-260.4	280.9	171.9	154.4	17.56	9.792		
3,600.0	3,575.0	3,592.9	3,567.0	9.1	9.3	-96.17	-270.1	290.9	178.0	159.8	18.14	9.809		
3,700.0	3,674.0	3,692.7	3,665.8	9.4	9.6	-96.38	-279.7	300.8	184.0	165.3	18.73	9.825		
3,800.0	3,773.1	3,792.5	3,764.7	9.7	9.9	-96.58	-289.4	310.8	190.1	170.8	19.32	9.840		
3,900.0	3,872.1	3,892.3	3,863.5	10.0	10.2	-96.76	-299.0	320.8	196.1	176.2	19.90	9.854		
4,000.0	3,971.1	3,992.1	3,962.4	10.3	10.5	-96.93	-308.7	330.8	202.2	181.7	20.49	9.868		
4,100.0	4,070.2	4,092.0	4,061.2	10.6	10.8	-97.10	-318.3	340.8	208.3	187.2	21.08	9.881		
4,200.0	4,169.2	4,191.8	4,160.1	10.9	11.1	-97.25	-328.0	350.8	214.3	192.7	21.67	9.893		
4,250.0	4,218.7	4,241.7	4,209.5	11.1	11.3	-97.33	-332.8	355.8	217.4	195.4	21.96	9.899		
4,300.0	4,268.2	4,291.6	4,258.9	11.2	11.4	-97.37	-337.6	360.8	220.4	198.1	22.25	9.905		
4,400.0	4,367.5	4,391.4	4,357.8	11.5	11.7	-97.13	-347.3	370.8	226.2	203.4	22.79	9.924		
4,500.0	4,466.9	4,491.2	4,456.6	11.7	12.0	-96.47	-356.9	380.8	231.9	208.6	23.31	9.948		
4,600.0	4,566.6	4,591.0	4,555.4	11.9	12.3	-95.43	-366.6	390.8	237.4	213.6	23.79	9.980		
4,700.0	4,666.3	4,690.6	4,654.1	12.1	12.6	-94.03	-376.2	400.7	242.9	218.6	24.22	10.027		
4,800.0	4,766.2	4,790.2	4,752.6	12.3	12.9	-92.29	-385.8	410.7	248.4	223.8	24.61	10.095		
4,900.0	4,866.1	4,889.6	4,851.1	12.5	13.2	-90.25	-395.4	420.7	254.2	229.2	24.94	10.192		
5,000.0	4,966.1	4,988.8	4,949.3	12.6	13.5	-87.93	-405.0	430.6	260.3	235.1	25.21	10.328		

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 3F-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 3F-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 #1	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				
5,050.0	5,016.1	5,038.3	4,998.4	12.7	13.6	72.62	-409.8	435.6	263.6	238.3	25.32	10.411				
5,100.0	5,066.1	5,087.9	5,047.4	12.7	13.8	73.92	-414.6	440.5	267.0	241.6	25.42	10.505				
5,200.0	5,166.1	5,186.9	5,145.5	12.8	14.1	76.43	-424.2	450.4	274.3	248.7	25.61	10.711				
5,300.0	5,266.1	5,285.9	5,243.5	13.0	14.4	78.80	-433.8	460.3	282.1	256.3	25.78	10.941				
5,400.0	5,366.1	5,384.9	5,341.6	13.1	14.7	81.04	-443.3	470.3	290.3	264.3	25.94	11.191				
5,500.0	5,466.1	5,484.0	5,439.7	13.2	15.0	83.16	-452.9	480.2	298.9	272.8	26.09	11.457				
5,600.0	5,566.1	5,583.0	5,537.7	13.3	15.3	85.16	-462.5	490.1	307.9	281.7	26.24	11.737				
5,700.0	5,666.1	5,684.5	5,638.3	13.5	15.6	87.04	-472.0	500.0	317.1	290.7	26.38	12.021				
5,800.0	5,766.1	5,787.8	5,740.9	13.6	15.8	88.62	-480.6	508.8	325.4	298.8	26.53	12.262				
5,900.0	5,866.1	5,891.5	5,844.0	13.7	16.1	89.91	-487.9	516.4	332.6	305.9	26.71	12.452				
6,000.0	5,966.1	5,995.6	5,947.8	13.9	16.3	90.93	-493.9	522.6	338.6	311.7	26.90	12.587				
6,100.0	6,066.1	6,099.9	6,051.9	14.0	16.5	91.70	-498.6	527.5	343.4	316.3	27.11	12.664				
6,200.0	6,166.1	6,204.5	6,156.4	14.1	16.7	92.25	-502.0	531.0	346.8	319.5	27.35	12.684				
6,300.0	6,266.1	6,309.2	6,261.0	14.3	16.8	92.57	-504.0	533.1	349.0	321.4	27.60	12.646				
6,400.0	6,366.1	6,414.0	6,365.8	14.4	16.9	92.69	-504.8	533.9	349.7	321.9	27.87	12.550				
6,500.0	6,466.1	6,514.3	6,466.1	14.5	17.0	92.69	-504.8	533.9	349.7	321.6	28.15	12.425				
6,600.0	6,566.1	6,614.3	6,566.1	14.7	17.2	92.69	-504.8	533.9	349.7	321.3	28.43	12.303				
6,700.0	6,666.1	6,714.3	6,666.1	14.8	17.3	92.69	-504.8	533.9	349.7	321.0	28.71	12.181				
6,800.0	6,766.1	6,815.2	6,767.0	14.9	17.4	92.53	-503.8	533.9	349.7	320.7	28.99	12.061				
6,900.0	6,866.1	6,915.7	6,866.3	15.1	17.3	90.15	-489.3	533.9	349.4	320.0	29.40	11.883				
6,904.1	6,870.2	6,919.7	6,870.2	15.1	17.3	90.00	-488.4	533.9	349.4	319.9	29.42	11.875				
6,989.9	6,956.0	7,000.0	6,946.6	15.2	17.2	85.99	-463.9	533.9	350.3	320.5	29.86	11.732				
7,000.0	6,966.1	7,008.6	6,954.6	15.2	17.2	85.45	-460.7	533.9	350.6	320.7	29.91	11.723				
7,050.0	7,016.0	7,052.2	6,994.1	15.2	17.1	82.67	-442.4	533.9	352.7	322.6	30.09	11.719				
7,100.0	7,065.4	7,094.8	7,031.3	15.2	17.0	79.99	-421.6	533.9	355.5	325.3	30.16	11.786				
7,150.0	7,114.0	7,136.4	7,066.1	15.1	16.8	77.41	-398.8	533.9	359.0	328.9	30.12	11.921				
7,200.0	7,161.4	7,177.2	7,098.5	15.1	16.7	74.97	-373.9	533.9	363.1	333.1	29.95	12.122				
7,250.0	7,207.3	7,217.3	7,128.5	14.9	16.6	72.66	-347.4	533.9	367.6	337.9	29.68	12.385				
7,300.0	7,251.2	7,256.8	7,156.1	14.8	16.5	70.50	-319.3	533.9	372.4	343.1	29.31	12.707				
7,350.0	7,292.9	7,300.0	7,184.1	14.6	16.4	68.33	-286.4	533.9	377.4	348.6	28.83	13.093				
7,400.0	7,332.0	7,334.0	7,204.4	14.5	16.3	66.67	-259.0	533.9	382.4	354.1	28.31	13.507				
7,450.0	7,368.2	7,371.9	7,225.0	14.3	16.2	65.00	-227.2	533.9	387.3	359.6	27.72	13.969				
7,500.0	7,401.3	7,409.5	7,243.3	14.2	16.1	63.51	-194.4	533.9	392.0	364.9	27.12	14.455				
7,550.0	7,431.1	7,450.0	7,260.6	14.0	16.1	62.10	-157.8	533.9	396.5	370.0	26.51	14.957				
7,600.0	7,457.2	7,483.6	7,272.9	13.9	16.0	61.02	-126.5	533.9	400.6	374.6	25.97	15.422				
7,650.0	7,479.5	7,520.2	7,284.2	13.9	16.0	60.03	-91.7	533.9	404.2	378.7	25.50	15.853				
7,700.0	7,497.8	7,556.7	7,293.3	13.8	16.0	59.21	-56.4	533.9	407.4	382.2	25.12	16.216				
7,750.0	7,512.0	7,593.0	7,300.1	13.9	16.1	58.55	-20.7	533.9	410.0	385.1	24.91	16.458				
7,800.0	7,522.0	7,629.2	7,304.5	13.9	16.1	58.05	15.2	533.9	412.0	387.1	24.87	16.568				
7,850.0	7,527.6	7,665.3	7,306.7	14.1	16.2	57.71	51.2	533.9	413.4	388.4	24.98	16.547				
7,889.9	7,529.0	7,698.7	7,307.0	14.2	16.3	57.57	84.6	533.9	413.9	388.7	25.23	16.405				
7,900.0	7,529.0	7,708.7	7,307.0	14.3	16.4	57.57	94.6	533.9	413.9	388.6	25.32	16.351				
8,000.0	7,529.0	7,808.7	7,307.0	14.8	16.8	57.57	194.6	533.9	413.9	387.7	26.26	15.765				
8,100.0	7,529.0	7,908.7	7,307.0	15.5	17.4	57.57	294.6	533.9	413.9	386.4	27.49	15.059				
8,200.0	7,529.0	8,008.7	7,307.0	16.3	18.2	57.57	394.6	533.9	413.9	385.0	28.97	14.288				
8,300.0	7,529.0	8,108.7	7,307.0	17.3	19.1	57.57	494.6	533.9	413.9	383.3	30.67	13.496				
8,400.0	7,529.0	8,208.7	7,307.0	18.5	20.1	57.57	594.6	533.9	413.9	381.4	32.55	12.716				
8,500.0	7,529.0	8,308.7	7,307.0	19.7	21.2	57.57	694.6	533.9	413.9	379.3	34.59	11.968				
8,600.0	7,529.0	8,408.7	7,307.0	20.9	22.4	57.57	794.6	533.9	413.9	377.2	36.75	11.264				
8,700.0	7,529.0	8,508.7	7,307.0	22.3	23.7	57.57	894.6	533.9	413.9	374.9	39.02	10.609				
8,800.0	7,529.0	8,608.7	7,307.0	23.7	25.0	57.57	994.6	533.9	413.9	372.6	41.37	10.005				
8,900.0	7,529.0	8,708.7	7,307.0	25.1	26.3	57.57	1,094.6	533.9	413.9	370.1	43.81	9.449				

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 3F-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 3F-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 #1	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)			
9,000.0	7,529.0	8,808.7	7,307.0	26.6	27.8	57.57	1,194.6	533.9	413.9	367.6	46.30	8.940	
9,100.0	7,529.0	8,908.7	7,307.0	28.1	29.2	57.57	1,294.6	533.9	413.9	365.1	48.85	8.474	
9,200.0	7,529.0	9,008.7	7,307.0	29.7	30.7	57.57	1,394.6	533.9	413.9	362.5	51.44	8.047	
9,300.0	7,529.0	9,108.7	7,307.0	31.2	32.2	57.57	1,494.6	533.9	413.9	359.9	54.07	7.655	
9,400.0	7,529.0	9,208.7	7,307.0	32.8	33.7	57.57	1,594.6	533.9	413.9	357.2	56.73	7.296	
9,500.0	7,529.0	9,308.7	7,307.0	34.4	35.3	57.57	1,694.6	533.9	413.9	354.5	59.43	6.965	
9,600.0	7,529.0	9,408.7	7,307.0	36.0	36.9	57.57	1,794.6	533.9	413.9	351.8	62.15	6.661	
9,700.0	7,529.0	9,508.7	7,307.0	37.6	38.5	57.57	1,894.6	533.9	413.9	349.0	64.89	6.379	
9,800.0	7,529.0	9,608.7	7,307.0	39.3	40.1	57.57	1,994.6	533.9	413.9	346.3	67.65	6.119	
9,900.0	7,529.0	9,708.7	7,307.0	40.9	41.7	57.57	2,094.6	533.9	413.9	343.5	70.42	5.878	
10,000.0	7,529.0	9,808.7	7,307.0	42.6	43.3	57.57	2,194.6	533.9	413.9	340.7	73.21	5.654	
10,100.0	7,529.0	9,908.7	7,307.0	44.2	44.9	57.57	2,294.6	533.9	413.9	337.9	76.02	5.445	
10,200.0	7,529.0	10,008.7	7,307.0	45.9	46.6	57.57	2,394.6	533.9	413.9	335.1	78.83	5.251	
10,300.0	7,529.0	10,108.7	7,307.0	47.6	48.2	57.57	2,494.6	533.9	413.9	332.3	81.66	5.069	
10,400.0	7,529.0	10,208.7	7,307.0	49.3	49.9	57.57	2,594.6	533.9	413.9	329.4	84.50	4.899	
10,500.0	7,529.0	10,308.7	7,307.0	50.9	51.5	57.57	2,694.6	533.9	413.9	326.6	87.35	4.739	
10,600.0	7,529.0	10,408.7	7,307.0	52.6	53.2	57.57	2,794.6	533.9	413.9	323.7	90.20	4.589	
10,700.0	7,529.0	10,508.7	7,307.0	54.3	54.9	57.57	2,894.6	533.9	413.9	320.9	93.06	4.448	
10,800.0	7,529.0	10,608.7	7,307.0	56.0	56.6	57.57	2,994.6	533.9	413.9	318.0	95.93	4.315	
10,900.0	7,529.0	10,708.7	7,307.0	57.7	58.3	57.57	3,094.6	533.9	413.9	315.1	98.80	4.190	
11,000.0	7,529.0	10,808.7	7,307.0	59.4	59.9	57.57	3,194.6	533.9	413.9	312.3	101.68	4.071	
11,100.0	7,529.0	10,908.7	7,307.0	61.1	61.6	57.57	3,294.6	533.9	413.9	309.4	104.56	3.959	
11,200.0	7,529.0	11,008.7	7,307.0	62.9	63.3	57.57	3,394.6	533.9	413.9	306.5	107.45	3.852	
11,300.0	7,529.0	11,108.7	7,307.0	64.6	65.0	57.57	3,494.6	533.9	413.9	303.6	110.35	3.751	
11,400.0	7,529.0	11,208.7	7,307.0	66.3	66.7	57.57	3,594.6	533.8	413.9	300.7	113.24	3.655	
11,500.0	7,529.0	11,308.7	7,307.0	68.0	68.4	57.57	3,694.6	533.8	413.9	297.8	116.14	3.564	
11,600.0	7,529.0	11,408.7	7,307.0	69.7	70.1	57.57	3,794.6	533.8	413.9	294.9	119.05	3.477	
11,700.0	7,529.0	11,508.7	7,307.0	71.4	71.9	57.57	3,894.6	533.8	413.9	292.0	121.95	3.394	
11,800.0	7,529.0	11,608.7	7,307.0	73.2	73.6	57.57	3,994.6	533.8	413.9	289.1	124.86	3.315	
11,900.0	7,529.0	11,708.7	7,307.0	74.9	75.3	57.57	4,094.6	533.8	413.9	286.2	127.77	3.240	
12,000.0	7,529.0	11,808.7	7,307.0	76.6	77.0	57.57	4,194.6	533.8	413.9	283.2	130.69	3.167	
12,100.0	7,529.0	11,908.7	7,307.0	78.3	78.7	57.57	4,294.6	533.8	413.9	280.3	133.61	3.098	
12,200.0	7,529.0	12,008.7	7,307.0	80.1	80.4	57.57	4,394.6	533.8	413.9	277.4	136.53	3.032	
12,300.0	7,529.0	12,108.7	7,307.0	81.8	82.1	57.57	4,494.6	533.8	413.9	274.5	139.45	2.968	
12,400.0	7,529.0	12,208.7	7,307.0	83.5	83.9	57.57	4,594.6	533.8	413.9	271.6	142.37	2.907	
12,500.0	7,529.0	12,308.7	7,307.0	85.2	85.6	57.57	4,694.6	533.8	413.9	268.6	145.30	2.849	
12,600.0	7,529.0	12,408.7	7,307.0	87.0	87.3	57.57	4,794.6	533.8	413.9	265.7	148.22	2.793	
12,700.0	7,529.0	12,508.7	7,307.0	88.7	89.0	57.57	4,894.6	533.8	413.9	262.8	151.15	2.739	
12,800.0	7,529.0	12,608.7	7,307.0	90.4	90.8	57.57	4,994.6	533.8	413.9	259.9	154.08	2.686	
12,900.0	7,529.0	12,708.7	7,307.0	92.2	92.5	57.57	5,094.6	533.8	413.9	256.9	157.01	2.636	
12,938.0	7,529.0	12,746.7	7,307.0	92.8	93.1	57.57	5,132.7	533.8	413.9	255.8	158.13	2.618	
12,967.3	7,529.0	12,772.4	7,307.0	93.3	93.6	57.57	5,158.3	533.8	413.9	255.0	158.93	2.605 SF	



Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Sprague 3F-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 3F-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 #1	Offset TVD Reference:	Offset Datum

Offset Design S9-T2N-R67W (Sprague) - Sprague 3H-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	90.05	0.0	19.6	19.6					
100.0	100.0	100.0	100.0	0.1	0.1	90.05	0.0	19.6	19.6	19.3	0.24	80.085		
200.0	200.0	200.0	200.0	0.3	0.3	90.05	0.0	19.6	19.6	19.0	0.59	32.976		
300.0	300.0	300.0	300.0	0.5	0.5	90.05	0.0	19.6	19.6	18.6	0.94	20.763		
400.0	400.0	400.0	400.0	0.6	0.6	90.05	0.0	19.6	19.6	18.3	1.29	15.151 CC, ES		
500.0	500.0	499.4	499.4	0.8	0.8	92.53	-0.9	21.0	21.1	19.4	1.64	12.846		
600.0	600.0	598.6	598.4	1.0	1.0	-62.79	-3.7	25.4	25.3	23.3	1.99	12.713		
700.0	700.0	697.4	696.9	1.2	1.2	-60.27	-8.2	32.7	32.0	29.6	2.35	13.624		
800.0	799.9	795.9	794.6	1.4	1.5	-58.91	-14.5	42.7	40.9	38.2	2.71	15.116		
900.0	899.7	894.7	892.4	1.5	1.7	-58.52	-22.2	55.2	51.6	48.6	3.08	16.759		
1,000.0	999.4	994.2	990.7	1.8	2.0	-59.53	-30.2	68.0	61.7	58.3	3.47	17.768		
1,100.0	1,098.9	1,093.8	1,089.1	2.0	2.3	-61.46	-38.2	80.9	71.0	67.1	3.89	18.237		
1,200.0	1,198.3	1,193.3	1,187.5	2.2	2.6	-64.06	-46.2	93.7	79.5	75.2	4.35	18.306		
1,300.0	1,297.4	1,292.9	1,285.9	2.5	2.9	-67.18	-54.2	106.5	87.6	82.7	4.84	18.086		
1,400.0	1,396.4	1,392.5	1,384.3	2.7	3.2	-70.33	-62.2	119.3	95.5	90.1	5.37	17.796		
1,500.0	1,495.5	1,492.0	1,482.8	3.0	3.5	-72.99	-70.2	132.1	103.7	97.8	5.91	17.551		
1,600.0	1,594.5	1,591.6	1,581.2	3.3	3.9	-75.25	-78.2	144.9	112.0	105.6	6.46	17.344		
1,700.0	1,693.5	1,691.1	1,679.6	3.6	4.2	-77.20	-86.1	157.7	120.5	113.5	7.02	17.170		
1,800.0	1,792.5	1,790.7	1,778.0	3.9	4.5	-78.89	-94.1	170.6	129.2	121.6	7.59	17.022		
1,900.0	1,891.6	1,890.3	1,876.4	4.1	4.8	-80.37	-102.1	183.4	137.9	129.8	8.16	16.897		
2,000.0	1,990.6	1,989.8	1,974.8	4.4	5.1	-81.67	-110.1	196.2	146.7	138.0	8.74	16.791		
2,100.0	2,089.6	2,089.4	2,073.2	4.7	5.4	-82.82	-118.1	209.0	155.6	146.3	9.32	16.700		
2,200.0	2,188.6	2,188.9	2,171.6	5.0	5.7	-83.85	-126.1	221.8	164.5	154.6	9.90	16.621		
2,300.0	2,287.7	2,288.5	2,270.0	5.3	6.0	-84.77	-134.1	234.6	173.5	163.0	10.48	16.553		
2,400.0	2,386.7	2,388.1	2,368.4	5.6	6.4	-85.60	-142.0	247.5	182.6	171.5	11.07	16.494		
2,500.0	2,485.7	2,487.6	2,466.8	5.9	6.7	-86.36	-150.0	260.3	191.6	180.0	11.65	16.443		
2,600.0	2,584.8	2,587.2	2,565.2	6.2	7.0	-87.04	-158.0	273.1	200.7	188.5	12.24	16.397		
2,700.0	2,683.8	2,686.7	2,663.6	6.5	7.3	-87.67	-166.0	285.9	209.8	197.0	12.83	16.357		
2,800.0	2,782.8	2,786.3	2,762.0	6.8	7.6	-88.24	-174.0	298.7	219.0	205.5	13.42	16.322		
2,900.0	2,881.8	2,885.8	2,860.4	7.1	7.9	-88.77	-182.0	311.5	228.1	214.1	14.00	16.290		
3,000.0	2,980.9	2,985.4	2,958.9	7.4	8.3	-89.26	-190.0	324.4	237.3	222.7	14.59	16.262		
3,100.0	3,079.9	3,085.0	3,057.3	7.7	8.6	-89.71	-198.0	337.2	246.5	231.3	15.18	16.236		
3,200.0	3,178.9	3,184.5	3,155.7	8.0	8.9	-90.12	-205.9	350.0	255.7	239.9	15.77	16.213		
3,300.0	3,277.9	3,284.1	3,254.1	8.3	9.2	-90.51	-213.9	362.8	264.9	248.5	16.36	16.193		
3,400.0	3,377.0	3,383.6	3,352.5	8.5	9.5	-90.88	-221.9	375.6	274.1	257.2	16.95	16.174		
3,500.0	3,476.0	3,483.2	3,450.9	8.8	9.8	-91.22	-229.9	388.4	283.4	265.8	17.54	16.157		
3,600.0	3,575.0	3,582.8	3,549.3	9.1	10.2	-91.53	-237.9	401.2	292.6	274.5	18.13	16.142		
3,700.0	3,674.0	3,682.3	3,647.7	9.4	10.5	-91.83	-245.9	414.1	301.9	283.2	18.72	16.127		
3,800.0	3,773.1	3,781.9	3,746.1	9.7	10.8	-92.11	-253.9	426.9	311.1	291.8	19.31	16.115		
3,900.0	3,872.1	3,881.4	3,844.5	10.0	11.1	-92.38	-261.9	439.7	320.4	300.5	19.90	16.103		
4,000.0	3,971.1	3,981.0	3,942.9	10.3	11.4	-92.63	-269.8	452.5	329.7	309.2	20.49	16.092		
4,100.0	4,070.2	4,080.6	4,041.3	10.6	11.7	-92.86	-277.8	465.3	339.0	317.9	21.08	16.082		
4,200.0	4,169.2	4,180.1	4,139.7	10.9	12.1	-93.08	-285.8	478.1	348.3	326.6	21.67	16.072		
4,250.0	4,218.7	4,229.9	4,188.9	11.1	12.2	-93.19	-289.8	484.6	352.9	330.9	21.96	16.068		
4,300.0	4,268.2	4,279.7	4,238.1	11.2	12.4	-93.31	-293.8	491.0	357.5	335.3	22.25	16.066		
4,400.0	4,367.5	4,379.2	4,336.6	11.5	12.7	-93.33	-301.8	503.8	366.7	343.9	22.80	16.085		
4,500.0	4,466.9	4,478.8	4,435.0	11.7	13.0	-93.08	-309.8	516.6	375.8	352.5	23.30	16.128		
4,600.0	4,566.6	4,578.3	4,533.3	11.9	13.3	-92.60	-317.8	529.4	384.9	361.1	23.77	16.194		
4,700.0	4,666.3	4,677.8	4,631.6	12.1	13.6	-91.88	-325.7	542.2	393.9	369.7	24.19	16.286		
4,800.0	4,766.2	4,777.1	4,729.8	12.3	14.0	-90.95	-333.7	555.0	402.9	378.4	24.56	16.406		
4,900.0	4,866.1	4,876.3	4,827.9	12.5	14.3	-89.83	-341.7	567.8	412.1	387.2	24.89	16.559		
5,000.0	4,966.1	4,975.3	4,925.8	12.6	14.6	-88.53	-349.6	580.5	421.5	396.3	25.17	16.750		

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 3F-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 3F-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 #1	Offset TVD Reference:	Offset Datum

Offset Design S9-T2N-R67W (Sprague) - Sprague 3H-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)				
5,050.0	5,016.1	5,024.8	4,974.6	12.7	14.7	71.48	-353.6	586.9	426.3	401.0	25.29	16.858		
5,100.0	5,066.1	5,074.2	5,023.5	12.7	14.9	72.25	-357.6	593.2	431.2	405.8	25.40	16.976		
5,200.0	5,166.1	5,173.1	5,121.2	12.8	15.2	73.74	-365.5	606.0	441.3	415.6	25.63	17.219		
5,300.0	5,266.1	5,271.9	5,218.9	13.0	15.5	75.17	-373.4	618.7	451.6	425.7	25.85	17.472		
5,400.0	5,366.1	5,370.7	5,316.6	13.1	15.8	76.53	-381.3	631.4	462.2	436.1	26.06	17.733		
5,500.0	5,466.1	5,469.6	5,414.3	13.2	16.2	77.83	-389.3	644.1	473.0	446.7	26.28	18.001		
5,600.0	5,566.1	5,568.4	5,512.0	13.3	16.5	79.07	-397.2	656.9	484.1	457.6	26.49	18.275		
5,700.0	5,666.1	5,667.3	5,609.7	13.5	16.8	80.26	-405.1	669.6	495.4	468.7	26.70	18.553		
5,800.0	5,766.1	5,766.1	5,707.4	13.6	17.1	81.40	-413.1	682.3	506.8	479.9	26.91	18.835		
5,900.0	5,866.1	5,865.0	5,805.1	13.7	17.4	82.48	-421.0	695.0	518.5	491.4	27.12	19.118		
6,000.0	5,966.1	5,963.8	5,902.8	13.9	17.7	83.52	-428.9	707.7	530.4	503.0	27.33	19.403		
6,100.0	6,066.1	6,062.6	6,000.5	14.0	18.0	84.51	-436.9	720.5	542.4	514.8	27.55	19.688		
6,200.0	6,166.1	6,161.5	6,098.2	14.1	18.4	85.46	-444.8	733.2	554.6	526.8	27.76	19.974		
6,300.0	6,266.1	6,260.3	6,195.9	14.3	18.7	86.37	-452.7	745.9	566.9	538.9	27.98	20.258		
6,400.0	6,366.1	6,359.2	6,293.6	14.4	19.0	87.23	-460.6	758.6	579.3	551.1	28.20	20.541		
6,500.0	6,466.1	6,458.0	6,391.3	14.5	19.3	88.07	-468.6	771.4	591.9	563.5	28.43	20.823		
6,600.0	6,566.1	6,556.9	6,489.0	14.7	19.6	88.87	-476.5	784.1	604.6	576.0	28.65	21.102		
6,700.0	6,666.1	6,655.7	6,586.7	14.8	19.9	89.63	-484.4	796.8	617.4	588.5	28.88	21.379		
6,800.0	6,766.1	6,754.5	6,684.4	14.9	20.3	90.37	-492.4	809.5	630.3	601.2	29.11	21.653		
6,900.0	6,866.1	6,853.4	6,782.1	15.1	20.6	91.07	-500.3	822.3	643.3	614.0	29.34	21.923		
6,989.9	6,956.0	6,942.3	6,870.0	15.2	20.8	91.68	-507.4	833.7	655.1	625.6	29.56	22.164		
7,000.0	6,966.1	6,952.2	6,879.8	15.2	20.9	91.62	-508.2	835.0	656.4	626.8	29.60	22.175		
7,050.0	7,016.0	7,001.9	6,928.9	15.2	21.0	91.53	-512.0	841.4	663.1	633.4	29.74	22.295		
7,100.0	7,065.4	7,053.7	6,980.2	15.2	21.2	91.54	-512.6	848.1	669.9	640.1	29.78	22.497		
7,150.0	7,114.0	7,106.2	7,032.1	15.1	21.2	91.54	-508.4	854.8	676.6	646.9	29.73	22.759		
7,200.0	7,161.4	7,159.6	7,084.2	15.1	21.3	91.53	-499.3	861.6	683.2	653.6	29.60	23.078		
7,250.0	7,207.3	7,213.8	7,136.1	14.9	21.3	91.50	-485.0	868.4	689.7	660.3	29.41	23.449		
7,300.0	7,251.2	7,268.8	7,187.1	14.8	21.3	91.46	-465.6	875.0	695.9	666.8	29.16	23.866		
7,350.0	7,292.9	7,324.7	7,236.8	14.6	21.3	91.41	-440.8	881.5	701.9	673.1	28.86	24.320		
7,400.0	7,332.0	7,381.4	7,284.5	14.5	21.2	91.34	-410.9	887.7	707.6	679.0	28.53	24.799		
7,450.0	7,368.2	7,438.9	7,329.6	14.3	21.1	91.26	-375.8	893.6	712.8	684.6	28.19	25.289		
7,500.0	7,401.3	7,497.1	7,371.5	14.2	21.1	91.17	-335.9	899.0	717.6	689.8	27.85	25.770		
7,550.0	7,431.1	7,555.9	7,409.6	14.0	21.0	91.06	-291.4	904.0	721.9	694.4	27.54	26.217		
7,600.0	7,457.2	7,615.2	7,443.2	13.9	20.9	90.94	-242.7	908.4	725.7	698.4	27.28	26.602		
7,650.0	7,479.5	7,675.0	7,471.9	13.9	20.9	90.80	-190.4	912.1	728.8	701.7	27.10	26.897		
7,700.0	7,497.8	7,735.1	7,495.1	13.8	20.9	90.64	-135.1	915.1	731.3	704.3	27.01	27.076		
7,750.0	7,512.0	7,795.3	7,512.4	13.9	20.9	90.48	-77.5	917.4	733.2	706.2	27.04	27.119		
7,800.0	7,522.0	7,855.6	7,523.7	13.9	20.9	90.29	-18.3	918.8	734.4	707.2	27.19	27.007		
7,850.0	7,527.6	7,915.7	7,528.7	14.1	21.0	90.10	41.6	919.5	735.0	707.5	27.48	26.741		
7,889.9	7,529.0	7,958.7	7,529.0	14.2	21.1	90.00	84.6	919.5	735.0	707.2	27.80	26.442		
7,900.0	7,529.0	7,968.8	7,529.0	14.3	21.2	90.00	94.6	919.5	735.0	707.1	27.88	26.361		
8,000.0	7,529.0	8,068.8	7,529.0	14.8	21.5	90.00	194.6	919.5	735.0	706.0	28.95	25.387		
8,100.0	7,529.0	8,168.8	7,529.0	15.5	22.0	90.00	294.6	919.5	735.0	704.6	30.38	24.193		
8,200.0	7,529.0	8,268.8	7,529.0	16.3	22.6	90.00	394.6	919.5	735.0	702.9	32.13	22.875		
8,300.0	7,529.0	8,368.8	7,529.0	17.3	23.3	90.00	494.6	919.5	735.0	700.9	34.15	21.521		
8,400.0	7,529.0	8,468.8	7,529.0	18.5	24.2	90.00	594.6	919.5	735.0	698.6	36.40	20.192		
8,500.0	7,529.0	8,568.8	7,529.0	19.7	25.1	90.00	694.6	919.5	735.0	696.2	38.84	18.926		
8,600.0	7,529.0	8,668.8	7,529.0	20.9	26.1	90.00	794.6	919.5	735.0	693.6	41.43	17.742		
8,700.0	7,529.0	8,768.8	7,529.0	22.3	27.2	90.00	894.6	919.5	735.0	690.9	44.14	16.650		
8,800.0	7,529.0	8,868.8	7,529.0	23.7	28.3	90.00	994.6	919.5	735.0	688.0	46.97	15.650		
8,900.0	7,529.0	8,968.8	7,529.0	25.1	29.5	90.00	1,094.6	919.5	735.0	685.1	49.88	14.737		
9,000.0	7,529.0	9,068.8	7,529.0	26.6	30.8	90.00	1,194.6	919.5	735.0	682.2	52.86	13.906		

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 3F-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 3F-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 #1	Offset TVD Reference:	Offset Datum

Offset Design S9-T2N-R67W (Sprague) - Sprague 3H-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	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre	Between Centres	Between Ellipses	Total Uncertainty Axis	Separation Factor		
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)			
9,100.0	7,529.0	9,168.8	7,529.0	28.1	32.1	90.00	1,294.6	919.5	735.0	679.1	55.90	13.149	
9,200.0	7,529.0	9,268.8	7,529.0	29.7	33.5	90.00	1,394.6	919.5	735.0	676.0	59.00	12.459	
9,300.0	7,529.0	9,368.8	7,529.0	31.2	34.9	90.00	1,494.6	919.5	735.0	672.9	62.13	11.829	
9,400.0	7,529.0	9,468.8	7,529.0	32.8	36.3	90.00	1,594.6	919.5	735.0	669.7	65.31	11.254	
9,500.0	7,529.0	9,568.8	7,529.0	34.4	37.7	90.00	1,694.6	919.5	735.0	666.5	68.52	10.727	
9,600.0	7,529.0	9,668.8	7,529.0	36.0	39.2	90.00	1,794.6	919.5	735.0	663.3	71.76	10.243	
9,700.0	7,529.0	9,768.8	7,529.0	37.6	40.7	90.00	1,894.6	919.5	735.0	660.0	75.02	9.798	
9,800.0	7,529.0	9,868.8	7,529.0	39.3	42.2	90.00	1,994.6	919.5	735.0	656.7	78.30	9.387	
9,900.0	7,529.0	9,968.8	7,529.0	40.9	43.8	90.00	2,094.6	919.5	735.0	653.4	81.60	9.007	
10,000.0	7,529.0	10,068.8	7,529.0	42.6	45.3	90.00	2,194.6	919.5	735.0	650.1	84.92	8.655	
10,100.0	7,529.0	10,168.8	7,529.0	44.2	46.9	90.00	2,294.6	919.5	735.0	646.8	88.25	8.329	
10,200.0	7,529.0	10,268.8	7,529.0	45.9	48.5	90.00	2,394.6	919.5	735.0	643.4	91.60	8.024	
10,300.0	7,529.0	10,368.8	7,529.0	47.6	50.0	90.00	2,494.6	919.5	735.0	640.1	94.96	7.741	
10,400.0	7,529.0	10,468.8	7,529.0	49.3	51.6	90.00	2,594.6	919.5	735.0	636.7	98.32	7.476	
10,500.0	7,529.0	10,568.8	7,529.0	50.9	53.3	90.00	2,694.6	919.5	735.0	633.3	101.70	7.227	
10,600.0	7,529.0	10,668.8	7,529.0	52.6	54.9	90.00	2,794.6	919.5	735.0	629.9	105.09	6.994	
10,700.0	7,529.0	10,768.8	7,529.0	54.3	56.5	90.00	2,894.6	919.5	735.0	626.6	108.48	6.776	
10,800.0	7,529.0	10,868.8	7,529.0	56.0	58.1	90.00	2,994.6	919.5	735.0	623.2	111.88	6.570	
10,900.0	7,529.0	10,968.8	7,529.0	57.7	59.8	90.00	3,094.6	919.5	735.0	619.7	115.29	6.376	
11,000.0	7,529.0	11,068.8	7,529.0	59.4	61.4	90.00	3,194.6	919.5	735.0	616.3	118.70	6.192	
11,100.0	7,529.0	11,168.8	7,529.0	61.1	63.1	90.00	3,294.6	919.5	735.0	612.9	122.12	6.019	
11,200.0	7,529.0	11,268.8	7,529.0	62.9	64.7	90.00	3,394.6	919.5	735.0	609.5	125.55	5.855	
11,300.0	7,529.0	11,368.8	7,529.0	64.6	66.4	90.00	3,494.6	919.5	735.0	606.1	128.97	5.699	
11,400.0	7,529.0	11,468.8	7,529.0	66.3	68.1	90.00	3,594.6	919.5	735.0	602.6	132.41	5.551	
11,500.0	7,529.0	11,568.8	7,529.0	68.0	69.7	90.00	3,694.6	919.5	735.0	599.2	135.84	5.411	
11,600.0	7,529.0	11,668.8	7,529.0	69.7	71.4	90.00	3,794.6	919.5	735.0	595.8	139.28	5.277	
11,700.0	7,529.0	11,768.8	7,529.0	71.4	73.1	90.00	3,894.6	919.5	735.0	592.3	142.72	5.150	
11,800.0	7,529.0	11,868.8	7,529.0	73.2	74.8	90.00	3,994.6	919.5	735.1	588.9	146.17	5.029	
11,900.0	7,529.0	11,968.8	7,529.0	74.9	76.5	90.00	4,094.6	919.5	735.1	585.4	149.62	4.913	
12,000.0	7,529.0	12,068.8	7,529.0	76.6	78.2	90.00	4,194.6	919.5	735.1	582.0	153.07	4.802	
12,100.0	7,529.0	12,168.8	7,529.0	78.3	79.8	90.00	4,294.6	919.5	735.1	578.5	156.53	4.696	
12,200.0	7,529.0	12,268.8	7,529.0	80.1	81.5	90.00	4,394.6	919.5	735.1	575.1	159.98	4.595	
12,300.0	7,529.0	12,368.8	7,529.0	81.8	83.2	90.00	4,494.6	919.5	735.1	571.6	163.44	4.497	
12,400.0	7,529.0	12,468.8	7,529.0	83.5	84.9	90.00	4,594.6	919.5	735.1	568.2	166.90	4.404	
12,500.0	7,529.0	12,568.8	7,529.0	85.2	86.6	90.00	4,694.6	919.5	735.1	564.7	170.36	4.315	
12,600.0	7,529.0	12,668.8	7,529.0	87.0	88.3	90.00	4,794.6	919.5	735.1	561.2	173.83	4.229	
12,700.0	7,529.0	12,768.8	7,529.0	88.7	90.0	90.00	4,894.6	919.5	735.1	557.8	177.30	4.146	
12,800.0	7,529.0	12,868.8	7,529.0	90.4	91.8	90.00	4,994.6	919.5	735.1	554.3	180.76	4.066	
12,900.0	7,529.0	12,968.8	7,529.0	92.2	93.5	90.00	5,094.6	919.5	735.1	550.8	184.23	3.990	
12,967.3	7,529.0	12,974.1	7,529.0	93.3	93.6	90.00	5,100.0	919.5	737.7	552.2	185.49	3.977 SF	



Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Sprague 3F-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 3F-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 #1	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							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	96.68	-3.6	30.8	31.0					
100.0	100.0	100.0	100.0	0.1	0.1	96.68	-3.6	30.8	31.0	30.7	0.24	126.708		
200.0	200.0	200.0	200.0	0.3	0.3	96.68	-3.6	30.8	31.0	30.4	0.59	52.174		
300.0	300.0	300.0	300.0	0.5	0.5	96.68	-3.6	30.8	31.0	30.0	0.94	32.850 CC, ES		
400.0	400.0	398.9	398.9	0.6	0.6	97.54	-4.3	32.3	32.6	31.3	1.29	25.292		
500.0	500.0	497.6	497.5	0.8	0.8	99.65	-6.3	37.0	37.6	36.0	1.64	22.987		
600.0	600.0	595.9	595.4	1.0	1.1	-58.00	-9.6	44.8	45.6	43.6	1.99	22.946		
700.0	700.0	693.7	692.5	1.2	1.3	-57.62	-14.3	55.6	55.9	53.6	2.34	23.937		
800.0	799.9	790.8	788.4	1.4	1.6	-57.98	-20.2	69.3	68.7	66.0	2.69	25.497		
900.0	899.7	887.7	883.6	1.5	1.9	-58.69	-27.3	85.9	83.7	80.7	3.06	27.344		
1,000.0	999.4	986.6	980.5	1.8	2.3	-59.90	-35.0	103.7	98.9	95.5	3.45	28.664		
1,100.0	1,098.9	1,085.5	1,077.5	2.0	2.7	-61.53	-42.7	121.6	113.3	109.5	3.86	29.328		
1,200.0	1,198.3	1,184.4	1,174.5	2.2	3.0	-63.48	-50.4	139.4	127.0	122.7	4.31	29.485		
1,300.0	1,297.4	1,283.4	1,271.6	2.5	3.4	-65.67	-58.1	157.3	140.1	135.3	4.79	29.250		
1,400.0	1,396.4	1,382.4	1,368.7	2.7	3.8	-67.89	-65.8	175.2	153.1	147.8	5.30	28.882		
1,500.0	1,495.5	1,481.4	1,465.7	3.0	4.2	-69.76	-73.5	193.1	166.3	160.4	5.83	28.532		
1,600.0	1,594.5	1,580.4	1,562.8	3.3	4.5	-71.36	-81.2	210.9	179.6	173.2	6.37	28.208		
1,700.0	1,693.5	1,679.4	1,659.8	3.6	4.9	-72.73	-88.9	228.8	193.0	186.1	6.92	27.912		
1,800.0	1,792.5	1,778.4	1,756.9	3.9	5.3	-73.93	-96.6	246.7	206.5	199.1	7.47	27.643		
1,900.0	1,891.6	1,877.4	1,854.0	4.1	5.7	-74.98	-104.3	264.6	220.2	212.1	8.03	27.401		
2,000.0	1,990.6	1,976.4	1,951.0	4.4	6.1	-75.91	-112.0	282.5	233.8	225.2	8.60	27.182		
2,100.0	2,089.6	2,075.4	2,048.1	4.7	6.4	-76.73	-119.7	300.3	247.5	238.4	9.17	26.984		
2,200.0	2,188.6	2,174.4	2,145.2	5.0	6.8	-77.47	-127.4	318.2	261.3	251.6	9.75	26.805		
2,300.0	2,287.7	2,273.4	2,242.2	5.3	7.2	-78.13	-135.1	336.1	275.1	264.8	10.33	26.643		
2,400.0	2,386.7	2,372.4	2,339.3	5.6	7.6	-78.73	-142.7	354.0	289.0	278.0	10.91	26.496		
2,500.0	2,485.7	2,471.3	2,436.3	5.9	8.0	-79.28	-150.4	371.8	302.8	291.3	11.49	26.362		
2,600.0	2,584.8	2,570.3	2,533.4	6.2	8.4	-79.78	-158.1	389.7	316.7	304.6	12.07	26.239		
2,700.0	2,683.8	2,669.3	2,630.5	6.5	8.7	-80.23	-165.8	407.6	330.6	318.0	12.65	26.126		
2,800.0	2,782.8	2,768.3	2,727.5	6.8	9.1	-80.65	-173.5	425.5	344.6	331.3	13.24	26.023		
2,900.0	2,881.8	2,867.3	2,824.6	7.1	9.5	-81.04	-181.2	443.3	358.5	344.7	13.83	25.928		
3,000.0	2,980.9	2,966.3	2,921.6	7.4	9.9	-81.40	-188.9	461.2	372.5	358.1	14.41	25.839		
3,100.0	3,079.9	3,065.3	3,018.7	7.7	10.3	-81.73	-196.6	479.1	386.4	371.4	15.00	25.758		
3,200.0	3,178.9	3,164.3	3,115.8	8.0	10.7	-82.04	-204.3	497.0	400.4	384.8	15.59	25.682		
3,300.0	3,277.9	3,263.3	3,212.8	8.3	11.1	-82.32	-212.0	514.9	414.4	398.3	16.18	25.611		
3,400.0	3,377.0	3,362.3	3,309.9	8.5	11.4	-82.59	-219.7	532.7	428.4	411.7	16.77	25.545		
3,500.0	3,476.0	3,461.3	3,407.0	8.8	11.8	-82.84	-227.4	550.6	442.5	425.1	17.36	25.484		
3,600.0	3,575.0	3,560.3	3,504.0	9.1	12.2	-83.08	-235.1	568.5	456.5	438.5	17.95	25.426		
3,700.0	3,674.0	3,659.3	3,601.1	9.4	12.6	-83.30	-242.8	586.4	470.5	452.0	18.54	25.372		
3,800.0	3,773.1	3,758.3	3,698.1	9.7	13.0	-83.51	-250.5	604.2	484.6	465.4	19.14	25.321		
3,900.0	3,872.1	3,857.3	3,795.2	10.0	13.4	-83.71	-258.2	622.1	498.6	478.9	19.73	25.273		
4,000.0	3,971.1	3,956.3	3,892.3	10.3	13.8	-83.90	-265.9	640.0	512.7	492.3	20.32	25.228		
4,100.0	4,070.2	4,055.3	3,989.3	10.6	14.1	-84.07	-273.6	657.9	526.7	505.8	20.91	25.185		
4,200.0	4,169.2	4,154.3	4,086.4	10.9	14.5	-84.24	-281.3	675.7	540.8	519.3	21.51	25.145		
4,250.0	4,218.7	4,203.7	4,134.9	11.1	14.7	-84.32	-285.1	684.7	547.8	526.0	21.80	25.125		
4,300.0	4,268.2	4,253.2	4,183.5	11.2	14.9	-84.45	-289.0	693.6	554.9	532.8	22.10	25.107		
4,400.0	4,367.5	4,352.2	4,280.5	11.5	15.3	-84.57	-296.7	711.5	569.1	546.4	22.65	25.123		
4,500.0	4,466.9	4,451.2	4,377.5	11.7	15.7	-84.52	-304.4	729.4	583.5	560.3	23.16	25.196		
4,600.0	4,566.6	4,550.0	4,474.4	11.9	16.1	-84.31	-312.0	747.2	598.1	574.5	23.62	25.324		
4,700.0	4,666.3	4,648.8	4,571.3	12.1	16.4	-83.96	-319.7	765.0	612.9	588.8	24.03	25.505		
4,800.0	4,766.2	4,747.4	4,668.0	12.3	16.8	-83.47	-327.4	782.9	627.9	603.5	24.39	25.739		
4,900.0	4,866.1	4,845.9	4,764.5	12.5	17.2	-82.86	-335.0	800.6	643.2	618.5	24.71	26.027		
5,000.0	4,966.1	4,944.2	4,860.9	12.6	17.6	-82.15	-342.7	818.4	658.9	633.9	24.98	26.371		

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 3F-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 3F-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 #1	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						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		
5,050.0	5,016.1	4,993.2	4,909.0	12.7	17.8	77.55	-346.5	827.2	666.8	641.7	25.11	26.561		
5,100.0	5,066.1	5,042.2	4,957.0	12.7	18.0	78.04	-350.3	836.1	674.9	649.7	25.21	26.770		
5,200.0	5,166.1	5,140.3	5,053.2	12.8	18.4	78.97	-357.9	853.8	691.1	665.7	25.42	27.187		
5,300.0	5,266.1	5,238.3	5,149.3	13.0	18.7	79.86	-365.6	871.5	707.6	681.9	25.63	27.602		
5,400.0	5,366.1	5,336.4	5,245.4	13.1	19.1	80.72	-373.2	889.2	724.1	698.3	25.85	28.016		
5,500.0	5,466.1	5,434.4	5,341.6	13.2	19.5	81.53	-380.8	906.9	740.9	714.8	26.06	28.426		
5,600.0	5,566.1	5,532.5	5,437.7	13.3	19.9	82.31	-388.4	924.6	757.8	731.5	26.28	28.833		
5,700.0	5,666.1	5,630.5	5,533.9	13.5	20.3	83.05	-396.0	942.3	774.8	748.3	26.50	29.236		
5,800.0	5,766.1	5,728.6	5,630.0	13.6	20.7	83.77	-403.7	960.0	791.9	765.2	26.72	29.634		
5,900.0	5,866.1	5,826.6	5,726.1	13.7	21.0	84.45	-411.3	977.7	809.1	782.2	26.95	30.028		
6,000.0	5,966.1	5,924.7	5,822.3	13.9	21.4	85.10	-418.9	995.4	826.5	799.3	27.17	30.416		
6,100.0	6,066.1	6,022.7	5,918.4	14.0	21.8	85.73	-426.5	1,013.2	843.9	816.5	27.40	30.799		
6,200.0	6,166.1	6,120.8	6,014.5	14.1	22.2	86.33	-434.2	1,030.9	861.5	833.9	27.63	31.176		
6,300.0	6,266.1	6,218.8	6,110.7	14.3	22.6	86.91	-441.8	1,048.6	879.1	851.3	27.87	31.546		
6,400.0	6,366.1	6,316.9	6,206.8	14.4	22.9	87.47	-449.4	1,066.3	896.9	868.7	28.10	31.911		
6,500.0	6,466.1	6,414.9	6,302.9	14.5	23.3	88.00	-457.0	1,084.0	914.7	886.3	28.34	32.270		
6,600.0	6,566.1	6,513.0	6,399.1	14.7	23.7	88.52	-464.6	1,101.7	932.5	903.9	28.59	32.622		
6,700.0	6,666.1	6,611.0	6,495.2	14.8	24.1	89.01	-472.3	1,119.4	950.5	921.6	28.83	32.968		
6,800.0	6,766.1	6,709.0	6,591.3	14.9	24.5	89.49	-479.9	1,137.1	968.5	939.4	29.08	33.308		
6,900.0	6,866.1	6,807.1	6,687.5	15.1	24.9	89.95	-487.5	1,154.8	986.6	957.2	29.33	33.641		
6,989.9	6,956.0	6,895.6	6,774.4	15.2	25.2	90.06	-489.4	1,170.8	1,002.9	973.3	29.54	33.948		
7,000.0	6,966.1	6,905.5	6,784.1	15.2	25.2	89.84	-488.7	1,172.6	1,004.7	975.1	29.61	33.932		
7,050.0	7,016.0	6,954.6	6,832.0	15.2	25.3	88.77	-483.1	1,181.4	1,013.7	983.8	29.88	33.930		
7,100.0	7,065.4	7,003.4	6,879.1	15.2	25.4	87.73	-473.4	1,190.1	1,022.7	992.6	30.05	34.030		
7,150.0	7,114.0	7,052.1	6,925.0	15.1	25.5	86.71	-459.7	1,198.6	1,031.5	1,001.4	30.13	34.235		
7,200.0	7,161.4	7,100.6	6,969.5	15.1	25.5	85.72	-442.1	1,206.7	1,040.1	1,010.0	30.11	34.547		
7,250.0	7,207.3	7,149.1	7,012.3	14.9	25.6	84.78	-420.8	1,214.6	1,048.4	1,018.4	29.98	34.965		
7,300.0	7,251.2	7,197.4	7,053.1	14.8	25.6	83.89	-396.0	1,222.1	1,056.4	1,026.6	29.77	35.486		
7,350.0	7,292.9	7,245.7	7,091.6	14.6	25.6	83.05	-367.8	1,229.2	1,064.0	1,034.5	29.47	36.102		
7,400.0	7,332.0	7,293.9	7,127.6	14.5	25.6	82.27	-336.5	1,235.9	1,071.1	1,042.0	29.10	36.800		
7,450.0	7,368.2	7,342.1	7,160.9	14.3	25.6	81.56	-302.2	1,242.0	1,077.6	1,049.0	28.69	37.561		
7,500.0	7,401.3	7,390.3	7,191.2	14.2	25.6	80.91	-265.2	1,247.6	1,083.7	1,055.4	28.25	38.355		
7,550.0	7,431.1	7,438.5	7,218.4	14.0	25.6	80.33	-225.7	1,252.6	1,089.1	1,061.2	27.82	39.145		
7,600.0	7,457.2	7,486.6	7,242.2	13.9	25.6	79.83	-184.1	1,257.0	1,093.8	1,066.4	27.43	39.881		
7,650.0	7,479.5	7,534.8	7,262.4	13.9	25.6	79.40	-140.6	1,260.7	1,097.9	1,070.8	27.10	40.506		
7,700.0	7,497.8	7,583.0	7,279.1	13.8	25.6	79.04	-95.5	1,263.8	1,101.2	1,074.3	26.88	40.962		
7,750.0	7,512.0	7,631.1	7,291.9	13.9	25.7	78.77	-49.1	1,266.1	1,103.8	1,077.0	26.79	41.195		
7,800.0	7,522.0	7,679.3	7,300.8	13.9	25.7	78.58	-1.8	1,267.8	1,105.6	1,078.7	26.88	41.131		
7,850.0	7,527.6	7,727.5	7,305.8	14.1	25.8	78.46	46.1	1,268.7	1,106.6	1,079.5	27.11	40.825		
7,889.9	7,529.0	7,766.0	7,307.0	14.2	25.9	78.43	84.6	1,268.9	1,106.9	1,079.4	27.41	40.380		
7,900.0	7,529.0	7,776.1	7,307.0	14.3	25.9	78.43	94.6	1,268.9	1,106.9	1,079.4	27.50	40.253		
8,000.0	7,529.0	7,876.1	7,307.0	14.8	26.2	78.43	194.6	1,268.9	1,106.9	1,078.3	28.56	38.753		
8,100.0	7,529.0	7,976.1	7,307.0	15.5	26.6	78.43	294.6	1,268.9	1,106.9	1,076.9	29.97	36.931		
8,200.0	7,529.0	8,076.1	7,307.0	16.3	27.1	78.43	394.6	1,268.9	1,106.9	1,075.2	31.69	34.927		
8,300.0	7,529.0	8,176.1	7,307.0	17.3	27.7	78.43	494.6	1,268.9	1,106.9	1,073.2	33.68	32.868		
8,400.0	7,529.0	8,276.1	7,307.0	18.5	28.4	78.43	594.6	1,268.9	1,106.9	1,071.0	35.88	30.849		
8,500.0	7,529.0	8,376.1	7,307.0	19.7	29.1	78.43	694.6	1,268.9	1,106.9	1,068.6	38.27	28.924		
8,600.0	7,529.0	8,476.1	7,307.0	20.9	30.0	78.43	794.6	1,268.9	1,106.9	1,066.1	40.81	27.126		
8,700.0	7,529.0	8,576.1	7,307.0	22.3	31.0	78.43	894.6	1,268.9	1,106.9	1,063.4	43.47	25.465		
8,800.0	7,529.0	8,676.1	7,307.0	23.7	32.0	78.43	994.6	1,268.9	1,106.9	1,060.6	46.23	23.942		
8,900.0	7,529.0	8,776.1	7,307.0	25.1	33.0	78.43	1,094.6	1,268.9	1,106.9	1,057.8	49.08	22.552		
9,000.0	7,529.0	8,876.1	7,307.0	26.6	34.2	78.43	1,194.6	1,268.9	1,106.9	1,054.9	52.00	21.286		

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 3F-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 3F-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 #1	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 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)				
9,100.0	7,529.0	8,976.1	7,307.0	28.1	35.4	78.43	1,294.6	1,268.9	1,106.9	1,051.9	54.98	20.132		
9,200.0	7,529.0	9,076.1	7,307.0	29.7	36.6	78.43	1,394.6	1,268.9	1,106.9	1,048.9	58.01	19.080		
9,300.0	7,529.0	9,176.1	7,307.0	31.2	37.9	78.43	1,494.6	1,268.9	1,106.9	1,045.8	61.09	18.120		
9,400.0	7,529.0	9,276.1	7,307.0	32.8	39.2	78.43	1,594.6	1,268.9	1,106.9	1,042.7	64.20	17.242		
9,500.0	7,529.0	9,376.1	7,307.0	34.4	40.5	78.43	1,694.6	1,268.9	1,106.9	1,039.5	67.34	16.437		
9,600.0	7,529.0	9,476.1	7,307.0	36.0	41.9	78.43	1,794.6	1,268.9	1,106.9	1,036.4	70.51	15.698		
9,700.0	7,529.0	9,576.1	7,307.0	37.6	43.3	78.43	1,894.6	1,268.9	1,106.9	1,033.2	73.71	15.018		
9,800.0	7,529.0	9,676.1	7,307.0	39.3	44.7	78.43	1,994.6	1,268.9	1,106.9	1,030.0	76.92	14.390		
9,900.0	7,529.0	9,776.1	7,307.0	40.9	46.2	78.43	2,094.6	1,268.9	1,106.9	1,026.7	80.15	13.809		
10,000.0	7,529.0	9,876.1	7,307.0	42.6	47.6	78.43	2,194.6	1,268.9	1,106.9	1,023.5	83.40	13.271		
10,100.0	7,529.0	9,976.1	7,307.0	44.2	49.1	78.43	2,294.6	1,268.9	1,106.9	1,020.2	86.67	12.771		
10,200.0	7,529.0	10,076.1	7,307.0	45.9	50.6	78.43	2,394.6	1,268.9	1,106.9	1,016.9	89.95	12.306		
10,300.0	7,529.0	10,176.1	7,307.0	47.6	52.2	78.43	2,494.6	1,268.9	1,106.9	1,013.7	93.24	11.872		
10,400.0	7,529.0	10,276.1	7,307.0	49.3	53.7	78.43	2,594.6	1,268.9	1,106.9	1,010.4	96.54	11.466		
10,500.0	7,529.0	10,376.1	7,307.0	50.9	55.3	78.43	2,694.6	1,268.9	1,106.9	1,007.0	99.84	11.086		
10,600.0	7,529.0	10,476.1	7,307.0	52.6	56.8	78.43	2,794.6	1,268.9	1,106.9	1,003.7	103.16	10.730		
10,700.0	7,529.0	10,576.1	7,307.0	54.3	58.4	78.43	2,894.6	1,268.9	1,106.9	1,000.4	106.49	10.395		
10,800.0	7,529.0	10,676.1	7,307.0	56.0	60.0	78.43	2,994.6	1,268.9	1,106.9	997.1	109.82	10.079		
10,900.0	7,529.0	10,776.1	7,307.0	57.7	61.6	78.43	3,094.6	1,268.9	1,106.9	993.7	113.16	9.782		
11,000.0	7,529.0	10,876.1	7,307.0	59.4	63.2	78.43	3,194.6	1,268.9	1,106.9	990.4	116.50	9.501		
11,100.0	7,529.0	10,976.1	7,307.0	61.1	64.8	78.43	3,294.6	1,268.9	1,106.9	987.1	119.85	9.236		
11,200.0	7,529.0	11,076.1	7,307.0	62.9	66.4	78.43	3,394.6	1,268.9	1,106.9	983.7	123.20	8.984		
11,300.0	7,529.0	11,176.1	7,307.0	64.6	68.0	78.43	3,494.6	1,268.9	1,106.9	980.3	126.56	8.746		
11,400.0	7,529.0	11,276.1	7,307.0	66.3	69.6	78.43	3,594.6	1,268.9	1,106.9	977.0	129.93	8.520		
11,500.0	7,529.0	11,376.1	7,307.0	68.0	71.3	78.43	3,694.6	1,268.9	1,106.9	973.6	133.29	8.304		
11,600.0	7,529.0	11,476.1	7,307.0	69.7	72.9	78.43	3,794.6	1,268.9	1,106.9	970.2	136.66	8.100		
11,700.0	7,529.0	11,576.1	7,307.0	71.4	74.6	78.43	3,894.6	1,268.9	1,106.9	966.9	140.04	7.904		
11,800.0	7,529.0	11,676.1	7,307.0	73.2	76.2	78.43	3,994.6	1,268.9	1,106.9	963.5	143.41	7.718		
11,900.0	7,529.0	11,776.1	7,307.0	74.9	77.9	78.43	4,094.6	1,268.9	1,106.9	960.1	146.79	7.541		
12,000.0	7,529.0	11,876.1	7,307.0	76.6	79.5	78.43	4,194.6	1,268.9	1,106.9	956.7	150.17	7.371		
12,100.0	7,529.0	11,976.1	7,307.0	78.3	81.2	78.43	4,294.6	1,268.9	1,106.9	953.4	153.56	7.208		
12,200.0	7,529.0	12,076.1	7,307.0	80.1	82.9	78.43	4,394.6	1,268.9	1,106.9	950.0	156.94	7.053		
12,300.0	7,529.0	12,176.1	7,307.0	81.8	84.5	78.43	4,494.6	1,268.9	1,106.9	946.6	160.33	6.904		
12,400.0	7,529.0	12,276.1	7,307.0	83.5	86.2	78.43	4,594.6	1,268.9	1,106.9	943.2	163.72	6.761		
12,500.0	7,529.0	12,376.1	7,307.0	85.2	87.9	78.43	4,694.6	1,268.9	1,106.9	939.8	167.12	6.624		
12,600.0	7,529.0	12,476.1	7,307.0	87.0	89.6	78.43	4,794.6	1,268.9	1,106.9	936.4	170.51	6.492		
12,700.0	7,529.0	12,576.1	7,307.0	88.7	91.2	78.43	4,894.6	1,268.9	1,106.9	933.0	173.91	6.365		
12,800.0	7,529.0	12,676.1	7,307.0	90.4	92.9	78.43	4,994.6	1,268.9	1,106.9	929.6	177.31	6.243		
12,860.1	7,529.0	12,736.2	7,307.0	91.5	93.9	78.43	5,054.7	1,268.9	1,106.9	927.6	179.35	6.172		
12,900.0	7,529.0	12,774.2	7,307.0	92.2	94.6	78.43	5,092.7	1,268.9	1,106.9	926.3	180.67	6.127		
12,967.3	7,529.0	12,774.2	7,307.0	93.3	94.6	78.43	5,092.7	1,268.9	1,109.1	927.3	181.82	6.100 SF		



Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Sprague 3F-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 3F-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 #1	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: 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	95.27	-3.6	39.1	39.3					
100.0	100.0	100.0	100.0	0.1	0.1	95.27	-3.6	39.1	39.3	39.1	0.24	160.850		
200.0	200.0	200.0	200.0	0.3	0.3	95.27	-3.6	39.1	39.3	38.7	0.59	66.232 CC, ES		
300.0	300.0	298.6	298.6	0.5	0.5	95.84	-4.2	40.7	41.0	40.0	0.94	43.583		
400.0	400.0	397.1	396.9	0.6	0.7	97.30	-5.8	45.5	46.0	44.7	1.29	35.749		
500.0	500.0	495.0	494.5	0.8	0.9	99.13	-8.6	53.5	54.4	52.8	1.63	33.301		
600.0	600.0	592.3	591.1	1.0	1.1	-58.93	-12.4	64.5	65.8	63.8	1.98	33.218		
700.0	700.0	689.0	686.6	1.2	1.5	-58.73	-17.3	78.5	79.6	77.3	2.33	34.167		
800.0	799.9	784.7	780.7	1.4	1.8	-59.11	-23.2	95.3	95.8	93.1	2.68	35.683		
900.0	899.7	879.9	873.5	1.5	2.2	-59.80	-30.0	115.0	114.4	111.3	3.05	37.498		
1,000.0	999.4	978.0	968.9	1.8	2.6	-60.81	-37.5	136.5	133.5	130.0	3.44	38.827		
1,100.0	1,098.9	1,076.2	1,064.5	2.0	3.0	-62.12	-45.0	158.1	151.8	147.9	3.85	39.449		
1,200.0	1,198.3	1,174.5	1,160.1	2.2	3.5	-63.65	-52.5	179.7	169.4	165.1	4.29	39.510		
1,300.0	1,297.4	1,272.9	1,255.8	2.5	3.9	-65.35	-60.0	201.3	186.5	181.7	4.77	39.129		
1,400.0	1,396.4	1,371.3	1,351.5	2.7	4.3	-67.13	-67.6	222.9	203.3	198.1	5.27	38.589		
1,500.0	1,495.5	1,469.7	1,447.1	3.0	4.8	-68.64	-75.1	244.5	220.4	214.6	5.79	38.068		
1,600.0	1,594.5	1,568.1	1,542.8	3.3	5.2	-69.93	-82.6	266.1	237.5	231.2	6.32	37.580		
1,700.0	1,693.5	1,666.5	1,638.5	3.6	5.7	-71.04	-90.1	287.8	254.8	247.9	6.86	37.130		
1,800.0	1,792.5	1,764.8	1,734.2	3.9	6.1	-72.02	-97.6	309.4	272.1	264.7	7.41	36.718		
1,900.0	1,891.6	1,863.2	1,829.9	4.1	6.5	-72.87	-105.2	331.0	289.5	281.6	7.97	36.342		
2,000.0	1,990.6	1,961.6	1,925.6	4.4	7.0	-73.63	-112.7	352.6	307.0	298.5	8.53	36.001		
2,100.0	2,089.6	2,060.0	2,021.3	4.7	7.4	-74.31	-120.2	374.2	324.5	315.4	9.09	35.690		
2,200.0	2,188.6	2,158.4	2,117.0	5.0	7.9	-74.92	-127.7	395.8	342.0	332.4	9.66	35.407		
2,300.0	2,287.7	2,256.8	2,212.6	5.3	8.3	-75.47	-135.2	417.4	359.6	349.4	10.23	35.149		
2,400.0	2,386.7	2,355.2	2,308.3	5.6	8.7	-75.97	-142.8	439.1	377.2	366.4	10.80	34.913		
2,500.0	2,485.7	2,453.5	2,404.0	5.9	9.2	-76.42	-150.3	460.7	394.9	383.5	11.38	34.697		
2,600.0	2,584.8	2,551.9	2,499.7	6.2	9.6	-76.84	-157.8	482.3	412.5	400.6	11.96	34.498		
2,700.0	2,683.8	2,650.3	2,595.4	6.5	10.1	-77.22	-165.3	503.9	430.2	417.7	12.54	34.314		
2,800.0	2,782.8	2,748.7	2,691.1	6.8	10.5	-77.57	-172.9	525.5	447.9	434.8	13.12	34.145		
2,900.0	2,881.8	2,847.1	2,786.8	7.1	11.0	-77.89	-180.4	547.1	465.6	451.9	13.70	33.988		
3,000.0	2,980.9	2,945.5	2,882.5	7.4	11.4	-78.19	-187.9	568.7	483.3	469.0	14.28	33.843		
3,100.0	3,079.9	3,043.9	2,978.2	7.7	11.8	-78.47	-195.4	590.4	501.1	486.2	14.86	33.707		
3,200.0	3,178.9	3,142.3	3,073.8	8.0	12.3	-78.73	-202.9	612.0	518.8	503.4	15.45	33.581		
3,300.0	3,277.9	3,240.6	3,169.5	8.3	12.7	-78.98	-210.5	633.6	536.6	520.5	16.03	33.464		
3,400.0	3,377.0	3,339.0	3,265.2	8.5	13.2	-79.20	-218.0	655.2	554.3	537.7	16.62	33.353		
3,500.0	3,476.0	3,437.4	3,360.9	8.8	13.6	-79.42	-225.5	676.8	572.1	554.9	17.21	33.250		
3,600.0	3,575.0	3,535.8	3,456.6	9.1	14.1	-79.62	-233.0	698.4	589.9	572.1	17.79	33.153		
3,700.0	3,674.0	3,634.2	3,552.3	9.4	14.5	-79.81	-240.5	720.0	607.7	589.3	18.38	33.062		
3,800.0	3,773.1	3,732.6	3,648.0	9.7	14.9	-79.98	-248.1	741.6	625.4	606.5	18.97	32.975		
3,900.0	3,872.1	3,831.0	3,743.7	10.0	15.4	-80.15	-255.6	763.3	643.2	623.7	19.55	32.894		
4,000.0	3,971.1	3,929.3	3,839.3	10.3	15.8	-80.31	-263.1	784.9	661.0	640.9	20.14	32.817		
4,100.0	4,070.2	4,027.7	3,935.0	10.6	16.3	-80.46	-270.6	806.5	678.8	658.1	20.73	32.745		
4,200.0	4,169.2	4,126.1	4,030.7	10.9	16.7	-80.61	-278.1	828.1	696.7	675.3	21.32	32.676		
4,250.0	4,218.7	4,175.3	4,078.6	11.1	16.9	-80.67	-281.9	838.9	705.6	684.0	21.61	32.643		
4,300.0	4,268.2	4,224.5	4,126.4	11.2	17.2	-80.81	-285.7	849.7	714.5	692.6	21.92	32.604		
4,400.0	4,367.5	4,322.9	4,222.1	11.5	17.6	-80.99	-293.2	871.3	732.6	710.1	22.48	32.596		
4,500.0	4,466.9	4,421.1	4,317.6	11.7	18.0	-81.03	-300.7	892.9	751.0	728.0	22.99	32.665		
4,600.0	4,566.6	4,519.3	4,413.1	11.9	18.5	-80.95	-308.2	914.5	769.6	746.1	23.46	32.808		
4,700.0	4,666.3	4,617.4	4,508.5	12.1	18.9	-80.77	-315.7	936.0	788.5	764.7	23.88	33.022		
4,800.0	4,766.2	4,715.3	4,603.7	12.3	19.4	-80.48	-323.2	957.5	807.8	783.5	24.25	33.304		
4,900.0	4,866.1	4,813.0	4,698.8	12.5	19.8	-80.09	-330.6	979.0	827.4	802.8	24.59	33.654		
5,000.0	4,966.1	4,910.5	4,793.6	12.6	20.2	-79.62	-338.1	1,000.4	847.4	822.5	24.87	34.071		

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 3F-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 3F-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 #1	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				
5,050.0	5,016.1	4,959.2	4,840.9	12.7	20.5	79.95	-341.8	1,011.1	857.5	832.5	25.00	34.301				
5,100.0	5,066.1	5,007.8	4,888.2	12.7	20.7	80.32	-345.5	1,021.8	867.8	842.7	25.11	34.565				
5,200.0	5,166.1	5,105.0	4,982.8	12.8	21.1	81.04	-353.0	1,043.2	888.3	863.0	25.32	35.089				
5,300.0	5,266.1	5,202.3	5,077.4	13.0	21.6	81.73	-360.4	1,064.5	909.0	883.5	25.53	35.606				
5,400.0	5,366.1	5,299.6	5,172.0	13.1	22.0	82.38	-367.8	1,085.9	929.9	904.1	25.75	36.116				
5,500.0	5,466.1	5,396.8	5,266.6	13.2	22.4	83.01	-375.3	1,107.2	950.8	924.8	25.96	36.619				
5,600.0	5,566.1	5,494.1	5,361.2	13.3	22.9	83.61	-382.7	1,128.6	971.8	945.6	26.19	37.113				
5,700.0	5,666.1	5,591.3	5,455.8	13.5	23.3	84.19	-390.1	1,150.0	993.0	966.5	26.41	37.599				
5,800.0	5,766.1	5,688.6	5,550.3	13.6	23.8	84.74	-397.6	1,171.3	1,014.2	987.5	26.64	38.077				
5,900.0	5,866.1	5,785.8	5,644.9	13.7	24.2	85.27	-405.0	1,192.7	1,035.5	1,008.6	26.86	38.546				
6,000.0	5,966.1	5,883.1	5,739.5	13.9	24.6	85.78	-412.4	1,214.1	1,056.9	1,029.8	27.10	39.007				
6,100.0	6,066.1	5,980.4	5,834.1	14.0	25.1	86.27	-419.9	1,235.4	1,078.4	1,051.0	27.33	39.459				
6,200.0	6,166.1	6,077.6	5,928.7	14.1	25.5	86.74	-427.3	1,256.8	1,099.9	1,072.4	27.57	39.902				
6,300.0	6,266.1	6,174.9	6,023.3	14.3	25.9	87.19	-434.8	1,278.2	1,121.5	1,093.7	27.80	40.336				
6,400.0	6,366.1	6,272.1	6,117.9	14.4	26.4	87.63	-442.2	1,299.5	1,143.2	1,115.2	28.05	40.762				
6,500.0	6,466.1	6,369.4	6,212.5	14.5	26.8	88.05	-449.6	1,320.9	1,165.0	1,136.7	28.29	41.179				
6,600.0	6,566.1	6,466.7	6,307.1	14.7	27.3	88.45	-457.1	1,342.3	1,186.8	1,158.2	28.54	41.587				
6,700.0	6,666.1	6,563.9	6,401.6	14.8	27.7	88.84	-464.5	1,363.6	1,208.6	1,179.8	28.79	41.987				
6,800.0	6,766.1	6,661.2	6,496.2	14.9	28.1	89.21	-471.9	1,385.0	1,230.5	1,201.5	29.04	42.378				
6,900.0	6,866.1	6,758.4	6,590.8	15.1	28.6	89.58	-479.4	1,406.4	1,252.5	1,223.2	29.29	42.761				
6,989.9	6,956.0	6,845.9	6,675.9	15.2	29.0	89.89	-486.0	1,425.6	1,272.3	1,242.7	29.52	43.099				
7,000.0	6,966.1	6,855.7	6,685.4	15.2	29.0	89.70	-486.8	1,427.7	1,274.5	1,244.9	29.61	43.043				
7,050.0	7,016.0	6,904.0	6,732.4	15.2	29.2	88.88	-490.5	1,438.3	1,285.5	1,255.5	29.98	42.876				
7,100.0	7,065.4	6,951.5	6,778.6	15.2	29.4	88.24	-494.1	1,448.8	1,296.5	1,266.2	30.26	42.849				
7,150.0	7,114.0	6,997.9	6,823.7	15.1	29.7	87.76	-497.7	1,459.0	1,307.5	1,277.0	30.44	42.955				
7,200.0	7,161.4	7,042.7	6,867.3	15.1	29.9	87.41	-501.1	1,468.8	1,318.5	1,288.0	30.53	43.182				
7,250.0	7,207.3	7,085.8	6,909.2	14.9	30.0	87.16	-504.4	1,478.3	1,329.7	1,299.1	30.56	43.515				
7,300.0	7,251.2	7,131.4	6,953.6	14.8	30.2	87.06	-507.2	1,488.3	1,341.1	1,310.6	30.48	43.992				
7,350.0	7,292.9	7,182.8	7,003.7	14.6	30.4	87.09	-506.5	1,499.6	1,352.5	1,322.2	30.31	44.617				
7,400.0	7,332.0	7,237.6	7,056.8	14.5	30.6	87.18	-500.6	1,511.6	1,363.9	1,333.8	30.06	45.365				
7,450.0	7,368.2	7,296.5	7,113.1	14.3	30.8	87.35	-488.4	1,524.3	1,375.1	1,345.3	29.74	46.234				
7,500.0	7,401.3	7,360.5	7,172.4	14.2	30.9	87.60	-468.6	1,537.7	1,385.9	1,356.5	29.34	47.227				
7,550.0	7,431.1	7,430.4	7,234.3	14.0	31.0	87.94	-439.5	1,551.7	1,396.2	1,367.3	28.90	48.319				
7,600.0	7,457.2	7,507.1	7,297.6	13.9	31.1	88.35	-398.8	1,566.0	1,405.8	1,377.4	28.42	49.472				
7,650.0	7,479.5	7,591.4	7,360.5	13.9	31.2	88.81	-344.5	1,580.2	1,414.4	1,386.5	27.94	50.624				
7,700.0	7,497.8	7,683.9	7,419.7	13.8	31.3	89.29	-274.9	1,593.6	1,421.8	1,394.2	27.53	51.646				
7,750.0	7,512.0	7,784.2	7,470.7	13.9	31.3	89.70	-189.4	1,605.1	1,427.6	1,400.3	27.27	52.356				
7,800.0	7,522.0	7,891.0	7,508.1	13.9	31.4	89.98	-89.9	1,613.5	1,431.6	1,404.3	27.25	52.542				
7,850.0	7,527.6	8,001.8	7,527.2	14.1	31.5	90.05	19.0	1,617.9	1,433.6	1,406.0	27.54	52.047				
7,889.9	7,529.0	8,067.4	7,529.0	14.2	31.6	90.00	84.6	1,618.3	1,433.7	1,405.8	27.92	51.344				
7,900.0	7,529.0	8,077.5	7,529.0	14.3	31.6	90.00	94.6	1,618.3	1,433.7	1,405.7	28.01	51.187				
8,000.0	7,529.0	8,177.5	7,529.0	14.8	31.8	90.00	194.6	1,618.3	1,433.7	1,404.7	29.09	49.294				
8,100.0	7,529.0	8,277.5	7,529.0	15.5	32.2	90.00	294.6	1,618.3	1,433.7	1,403.2	30.52	46.979				
8,200.0	7,529.0	8,377.5	7,529.0	16.3	32.6	90.00	394.6	1,618.3	1,433.7	1,401.5	32.27	44.429				
8,300.0	7,529.0	8,477.5	7,529.0	17.3	33.1	90.00	494.6	1,618.3	1,433.7	1,399.4	34.29	41.808				
8,400.0	7,529.0	8,577.5	7,529.0	18.5	33.6	90.00	594.6	1,618.3	1,433.7	1,397.2	36.54	39.236				
8,500.0	7,529.0	8,677.5	7,529.0	19.7	34.3	90.00	694.6	1,618.3	1,433.7	1,394.8	38.98	36.785				
8,600.0	7,529.0	8,777.5	7,529.0	20.9	35.0	90.00	794.6	1,618.3	1,433.7	1,392.2	41.56	34.494				
8,700.0	7,529.0	8,877.5	7,529.0	22.3	35.8	90.00	894.6	1,618.3	1,433.7	1,389.5	44.28	32.379				
8,800.0	7,529.0	8,977.5	7,529.0	23.7	36.7	90.00	994.6	1,618.3	1,433.7	1,386.6	47.10	30.440				
8,900.0	7,529.0	9,077.5	7,529.0	25.1	37.6	90.00	1,094.6	1,618.3	1,433.7	1,383.7	50.01	28.670				
9,000.0	7,529.0	9,177.5	7,529.0	26.6	38.6	90.00	1,194.6	1,618.3	1,433.8	1,380.8	52.99	27.058				

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 3F-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 3F-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 #1	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	
9,100.0	7,529.0	9,277.5	7,529.0	28.1	39.7	90.00	1,294.6	1,618.3	1,433.8	1,377.7	56.03	25.589		
9,200.0	7,529.0	9,377.5	7,529.0	29.7	40.8	90.00	1,394.6	1,618.3	1,433.8	1,374.6	59.12	24.250		
9,300.0	7,529.0	9,477.5	7,529.0	31.2	41.9	90.00	1,494.6	1,618.3	1,433.8	1,371.5	62.26	23.028		
9,400.0	7,529.0	9,577.5	7,529.0	32.8	43.1	90.00	1,594.6	1,618.3	1,433.8	1,368.3	65.44	21.911		
9,500.0	7,529.0	9,677.5	7,529.0	34.4	44.3	90.00	1,694.6	1,618.3	1,433.8	1,365.1	68.64	20.887		
9,600.0	7,529.0	9,777.5	7,529.0	36.0	45.6	90.00	1,794.6	1,618.3	1,433.8	1,361.9	71.88	19.947		
9,700.0	7,529.0	9,877.5	7,529.0	37.6	46.9	90.00	1,894.6	1,618.3	1,433.8	1,358.6	75.14	19.082		
9,800.0	7,529.0	9,977.5	7,529.0	39.3	48.2	90.00	1,994.6	1,618.3	1,433.8	1,355.3	78.42	18.283		
9,900.0	7,529.0	10,077.5	7,529.0	40.9	49.5	90.00	2,094.6	1,618.3	1,433.8	1,352.0	81.72	17.545		
10,000.0	7,529.0	10,177.5	7,529.0	42.6	50.9	90.00	2,194.6	1,618.3	1,433.8	1,348.7	85.04	16.860		
10,100.0	7,529.0	10,277.5	7,529.0	44.2	52.3	90.00	2,294.6	1,618.3	1,433.8	1,345.4	88.37	16.225		
10,200.0	7,529.0	10,377.5	7,529.0	45.9	53.7	90.00	2,394.6	1,618.3	1,433.8	1,342.1	91.71	15.633		
10,300.0	7,529.0	10,477.5	7,529.0	47.6	55.1	90.00	2,494.6	1,618.3	1,433.8	1,338.7	95.07	15.081		
10,400.0	7,529.0	10,577.5	7,529.0	49.3	56.6	90.00	2,594.6	1,618.3	1,433.8	1,335.3	98.44	14.565		
10,500.0	7,529.0	10,677.5	7,529.0	50.9	58.1	90.00	2,694.6	1,618.3	1,433.8	1,332.0	101.81	14.082		
10,600.0	7,529.0	10,777.5	7,529.0	52.6	59.6	90.00	2,794.6	1,618.3	1,433.8	1,328.6	105.20	13.629		
10,700.0	7,529.0	10,877.5	7,529.0	54.3	61.1	90.00	2,894.6	1,618.3	1,433.8	1,325.2	108.59	13.203		
10,800.0	7,529.0	10,977.5	7,529.0	56.0	62.6	90.00	2,994.6	1,618.3	1,433.8	1,321.8	111.99	12.802		
10,900.0	7,529.0	11,077.5	7,529.0	57.7	64.1	90.00	3,094.6	1,618.3	1,433.8	1,318.4	115.40	12.424		
11,000.0	7,529.0	11,177.5	7,529.0	59.4	65.6	90.00	3,194.6	1,618.3	1,433.8	1,315.0	118.81	12.068		
11,100.0	7,529.0	11,277.5	7,529.0	61.1	67.2	90.00	3,294.6	1,618.3	1,433.8	1,311.5	122.23	11.730		
11,200.0	7,529.0	11,377.5	7,529.0	62.9	68.7	90.00	3,394.6	1,618.3	1,433.8	1,308.1	125.65	11.411		
11,300.0	7,529.0	11,477.5	7,529.0	64.6	70.3	90.00	3,494.6	1,618.3	1,433.8	1,304.7	129.08	11.108		
11,400.0	7,529.0	11,577.5	7,529.0	66.3	71.9	90.00	3,594.6	1,618.3	1,433.8	1,301.3	132.51	10.820		
11,500.0	7,529.0	11,677.5	7,529.0	68.0	73.5	90.00	3,694.6	1,618.3	1,433.8	1,297.8	135.95	10.547		
11,600.0	7,529.0	11,777.5	7,529.0	69.7	75.1	90.00	3,794.6	1,618.3	1,433.8	1,294.4	139.39	10.286		
11,700.0	7,529.0	11,877.5	7,529.0	71.4	76.7	90.00	3,894.6	1,618.3	1,433.8	1,291.0	142.83	10.038		
11,800.0	7,529.0	11,977.5	7,529.0	73.2	78.3	90.00	3,994.6	1,618.3	1,433.8	1,287.5	146.28	9.802		
11,900.0	7,529.0	12,077.5	7,529.0	74.9	79.9	90.00	4,094.6	1,618.3	1,433.8	1,284.1	149.72	9.576		
12,000.0	7,529.0	12,177.5	7,529.0	76.6	81.5	90.00	4,194.6	1,618.3	1,433.8	1,280.6	153.18	9.360		
12,100.0	7,529.0	12,277.5	7,529.0	78.3	83.1	90.00	4,294.6	1,618.3	1,433.8	1,277.2	156.63	9.154		
12,200.0	7,529.0	12,377.5	7,529.0	80.1	84.8	90.00	4,394.6	1,618.3	1,433.8	1,273.7	160.09	8.956		
12,300.0	7,529.0	12,477.5	7,529.0	81.8	86.4	90.00	4,494.6	1,618.3	1,433.8	1,270.2	163.54	8.767		
12,400.0	7,529.0	12,577.5	7,529.0	83.5	88.0	90.00	4,594.6	1,618.3	1,433.8	1,266.8	167.00	8.585		
12,500.0	7,529.0	12,677.5	7,529.0	85.2	89.7	90.00	4,694.6	1,618.3	1,433.8	1,263.3	170.47	8.411		
12,600.0	7,529.0	12,777.5	7,529.0	87.0	91.3	90.00	4,794.6	1,618.3	1,433.8	1,259.9	173.93	8.243		
12,700.0	7,529.0	12,877.5	7,529.0	88.7	93.0	90.00	4,894.6	1,618.3	1,433.8	1,256.4	177.40	8.082		
12,800.0	7,529.0	12,977.5	7,529.0	90.4	94.6	90.00	4,994.6	1,618.3	1,433.8	1,252.9	180.86	7.927		
12,857.6	7,529.0	13,035.1	7,529.0	91.4	95.6	90.00	5,052.3	1,618.3	1,433.8	1,250.9	182.86	7.841		
12,900.0	7,529.0	13,068.3	7,529.0	92.2	96.1	90.00	5,085.5	1,618.3	1,433.8	1,249.7	184.17	7.785		
12,967.3	7,529.0	13,068.3	7,529.0	93.3	96.1	90.00	5,085.5	1,618.3	1,435.8	1,250.5	185.34	7.747 SF		



Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Sprague 3F-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 3F-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 #1	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 3F-9H-N267

Coordinate System is US State Plane 1983, Colorado Northern Zone

Grid Convergence at Surface is: 0.39°

