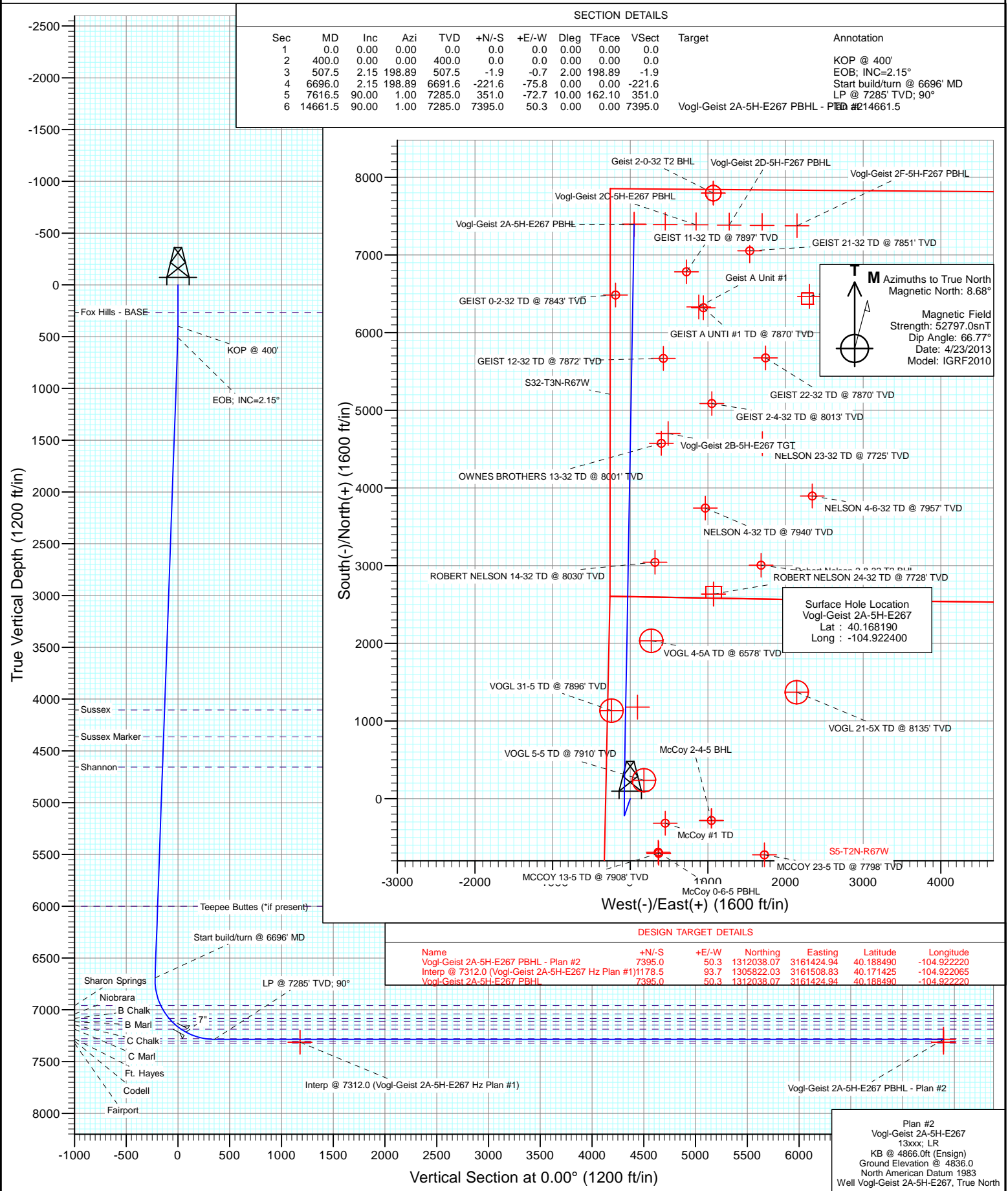




Project: DJ Wattenberg
Site: S5-T2N-R67W (Vogl-McCoy)
Well: Vogl-Geist 2A-5H-E267
Wellbore: Hz
Design: Plan #2



Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Vogl-Geist 2A-5H-E267
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	KB @ 4866.0ft (Ensign)
Project:	DJ Wattenberg	MD Reference:	KB @ 4866.0ft (Ensign)
Site:	S5-T2N-R67W (Vogl-McCoy)	North Reference:	True
Well:	Vogl-Geist 2A-5H-E267	Survey Calculation Method:	Minimum Curvature
Wellbore:	Hz		
Design:	Plan #2		

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

Site		S5-T2N-R67W (Vogl-McCoy)			
Site Position:		Northing:	1,303,967.76 ft	Latitude:	40.166330
From:	Lat/Long	Easting:	3,161,787.74 ft	Longitude:	-104.921110
Position Uncertainty:	0.0 ft	Slot Radius:	13.200 in	Grid Convergence:	0.37 °

Well	Vogl-Geist 2A-5H-E267					
Well Position	+N/-S	0.0 ft	Northing:	1,304,642.94 ft	Latitude:	40.168190
	+E/-W	0.0 ft	Easting:	3,161,422.82 ft	Longitude:	-104.922400
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,836.0 ft

Wellbore	Hz				
Magnetics	Model Name	Sample Date	Declination	Dip Angle	Field Strength
			(°)	(°)	(nT)
	IGRF2010	4/23/2013	8.68	66.77	52,797

Design	Plan #2			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W	Direction
	(ft)	(ft)	(ft)	(°)
	0.0	0.0	0.0	0.00

Plan Sections										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
400.0	0.00	0.00	400.0	0.0	0.0	0.00	0.00	0.00	0.00	
507.5	2.15	198.89	507.5	-1.9	-0.7	2.00	2.00	0.00	198.89	
6,696.0	2.15	198.89	6,691.6	-221.6	-75.8	0.00	0.00	0.00	0.00	
7,616.5	90.00	1.00	7,285.0	351.0	-72.7	10.00	9.54	17.61	162.10	
14,661.5	90.00	1.00	7,285.0	7,395.0	50.3	0.00	0.00	0.00	0.00	Vogl-Geist 2A-5H-E267

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Vogl-Geist 2A-5H-E267
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	KB @ 4866.0ft (Ensign)
Project:	DJ Wattenberg	MD Reference:	KB @ 4866.0ft (Ensign)
Site:	S5-T2N-R67W (Vogl-McCoy)	North Reference:	True
Well:	Vogl-Geist 2A-5H-E267	Survey Calculation Method:	Minimum Curvature
Wellbore:	Hz		
Design:	Plan #2		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Comments / Formations
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	
266.0	0.00	0.00	266.0	0.0	0.0	0.0	0.00	0.00	Fox Hills - BASE
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	KOP @ 400'
507.5	2.15	198.89	507.5	-1.9	-0.7	-1.9	2.00	2.00	EOB; INC=2.15°
600.0	2.15	198.89	599.9	-5.2	-1.8	-5.2	0.00	0.00	
700.0	2.15	198.89	699.8	-8.7	-3.0	-8.7	0.00	0.00	
800.0	2.15	198.89	799.8	-12.3	-4.2	-12.3	0.00	0.00	
900.0	2.15	198.89	899.7	-15.8	-5.4	-15.8	0.00	0.00	
1,000.0	2.15	198.89	999.6	-19.4	-6.6	-19.4	0.00	0.00	
1,100.0	2.15	198.89	1,099.6	-22.9	-7.8	-22.9	0.00	0.00	
1,200.0	2.15	198.89	1,199.5	-26.5	-9.1	-26.5	0.00	0.00	
1,300.0	2.15	198.89	1,299.4	-30.0	-10.3	-30.0	0.00	0.00	
1,400.0	2.15	198.89	1,399.3	-33.6	-11.5	-33.6	0.00	0.00	
1,500.0	2.15	198.89	1,499.3	-37.1	-12.7	-37.1	0.00	0.00	
1,600.0	2.15	198.89	1,599.2	-40.7	-13.9	-40.7	0.00	0.00	
1,700.0	2.15	198.89	1,699.1	-44.2	-15.1	-44.2	0.00	0.00	
1,800.0	2.15	198.89	1,799.1	-47.8	-16.4	-47.8	0.00	0.00	
1,900.0	2.15	198.89	1,899.0	-51.3	-17.6	-51.3	0.00	0.00	
2,000.0	2.15	198.89	1,998.9	-54.9	-18.8	-54.9	0.00	0.00	
2,100.0	2.15	198.89	2,098.9	-58.4	-20.0	-58.4	0.00	0.00	
2,200.0	2.15	198.89	2,198.8	-62.0	-21.2	-62.0	0.00	0.00	
2,300.0	2.15	198.89	2,298.7	-65.5	-22.4	-65.5	0.00	0.00	
2,400.0	2.15	198.89	2,398.6	-69.1	-23.6	-69.1	0.00	0.00	
2,500.0	2.15	198.89	2,498.6	-72.6	-24.9	-72.6	0.00	0.00	
2,600.0	2.15	198.89	2,598.5	-76.2	-26.1	-76.2	0.00	0.00	
2,700.0	2.15	198.89	2,698.4	-79.7	-27.3	-79.7	0.00	0.00	
2,800.0	2.15	198.89	2,798.4	-83.3	-28.5	-83.3	0.00	0.00	
2,900.0	2.15	198.89	2,898.3	-86.8	-29.7	-86.8	0.00	0.00	
3,000.0	2.15	198.89	2,998.2	-90.4	-30.9	-90.4	0.00	0.00	
3,100.0	2.15	198.89	3,098.1	-93.9	-32.1	-93.9	0.00	0.00	
3,200.0	2.15	198.89	3,198.1	-97.5	-33.4	-97.5	0.00	0.00	
3,300.0	2.15	198.89	3,298.0	-101.0	-34.6	-101.0	0.00	0.00	
3,400.0	2.15	198.89	3,397.9	-104.6	-35.8	-104.6	0.00	0.00	
3,500.0	2.15	198.89	3,497.9	-108.1	-37.0	-108.1	0.00	0.00	
3,600.0	2.15	198.89	3,597.8	-111.7	-38.2	-111.7	0.00	0.00	
3,700.0	2.15	198.89	3,697.7	-115.2	-39.4	-115.2	0.00	0.00	
3,800.0	2.15	198.89	3,797.7	-118.8	-40.6	-118.8	0.00	0.00	
3,900.0	2.15	198.89	3,897.6	-122.3	-41.9	-122.3	0.00	0.00	
4,000.0	2.15	198.89	3,997.5	-125.9	-43.1	-125.9	0.00	0.00	
4,100.0	2.15	198.89	4,097.4	-129.4	-44.3	-129.4	0.00	0.00	
4,107.6	2.15	198.89	4,105.0	-129.7	-44.4	-129.7	0.00	0.00	Sussex
4,200.0	2.15	198.89	4,197.4	-133.0	-45.5	-133.0	0.00	0.00	
4,300.0	2.15	198.89	4,297.3	-136.5	-46.7	-136.5	0.00	0.00	
4,366.7	2.15	198.89	4,364.0	-138.9	-47.5	-138.9	0.00	0.00	Sussex Marker
4,400.0	2.15	198.89	4,397.2	-140.1	-47.9	-140.1	0.00	0.00	
4,500.0	2.15	198.89	4,497.2	-143.6	-49.1	-143.6	0.00	0.00	
4,600.0	2.15	198.89	4,597.1	-147.2	-50.4	-147.2	0.00	0.00	
4,658.9	2.15	198.89	4,656.0	-149.3	-51.1	-149.3	0.00	0.00	Shannon
4,700.0	2.15	198.89	4,697.0	-150.7	-51.6	-150.7	0.00	0.00	

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Vogl-Geist 2A-5H-E267
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	KB @ 4866.0ft (Ensign)
Project:	DJ Wattenberg	MD Reference:	KB @ 4866.0ft (Ensign)
Site:	S5-T2N-R67W (Vogl-McCoy)	North Reference:	True
Well:	Vogl-Geist 2A-5H-E267	Survey Calculation Method:	Minimum Curvature
Wellbore:	Hz		
Design:	Plan #2		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Comments / Formations
4,800.0	2.15	198.89	4,797.0	-154.3	-52.8	-154.3	0.00	0.00	
4,900.0	2.15	198.89	4,896.9	-157.8	-54.0	-157.8	0.00	0.00	
5,000.0	2.15	198.89	4,996.8	-161.4	-55.2	-161.4	0.00	0.00	
5,100.0	2.15	198.89	5,096.7	-164.9	-56.4	-164.9	0.00	0.00	
5,200.0	2.15	198.89	5,196.7	-168.5	-57.6	-168.5	0.00	0.00	
5,300.0	2.15	198.89	5,296.6	-172.0	-58.9	-172.0	0.00	0.00	
5,400.0	2.15	198.89	5,396.5	-175.6	-60.1	-175.6	0.00	0.00	
5,500.0	2.15	198.89	5,496.5	-179.1	-61.3	-179.1	0.00	0.00	
5,600.0	2.15	198.89	5,596.4	-182.7	-62.5	-182.7	0.00	0.00	
5,700.0	2.15	198.89	5,696.3	-186.2	-63.7	-186.2	0.00	0.00	
5,800.0	2.15	198.89	5,796.2	-189.8	-64.9	-189.8	0.00	0.00	
5,900.0	2.15	198.89	5,896.2	-193.3	-66.1	-193.3	0.00	0.00	
6,000.0	2.15	198.89	5,996.1	-196.9	-67.4	-196.9	0.00	0.00	
6,003.9	2.15	198.89	6,000.0	-197.0	-67.4	-197.0	0.00	0.00	Teepee Buttes (*if present)
6,100.0	2.15	198.89	6,096.0	-200.4	-68.6	-200.4	0.00	0.00	
6,200.0	2.15	198.89	6,196.0	-204.0	-69.8	-204.0	0.00	0.00	
6,300.0	2.15	198.89	6,295.9	-207.5	-71.0	-207.5	0.00	0.00	
6,400.0	2.15	198.89	6,395.8	-211.1	-72.2	-211.1	0.00	0.00	
6,500.0	2.15	198.89	6,495.8	-214.6	-73.4	-214.6	0.00	0.00	
6,600.0	2.15	198.89	6,595.7	-218.2	-74.6	-218.2	0.00	0.00	
6,696.0	2.15	198.89	6,691.6	-221.6	-75.8	-221.6	0.00	0.00	Start build/turn @ 6696' MD
6,700.0	1.77	202.85	6,695.6	-221.7	-75.9	-221.7	9.98	-9.39	
6,750.0	3.42	349.87	6,745.6	-221.0	-76.4	-221.0	10.00	3.29	
6,800.0	8.38	356.51	6,795.3	-215.9	-76.9	-215.9	10.00	9.92	
6,850.0	13.37	358.22	6,844.4	-206.4	-77.3	-206.4	10.00	9.98	
6,900.0	18.36	359.01	6,892.5	-192.8	-77.6	-192.8	10.00	9.99	
6,950.0	23.36	359.47	6,939.2	-175.0	-77.9	-175.0	10.00	9.99	
6,970.7	25.43	359.61	6,958.0	-166.4	-77.9	-166.4	10.00	10.00	Sharon Springs
7,000.0	28.36	359.78	6,984.2	-153.2	-78.0	-153.2	10.00	10.00	
7,050.0	33.36	360.00	7,027.1	-127.5	-78.0	-127.5	10.00	10.00	
7,065.6	34.92	0.05	7,040.0	-118.8	-78.0	-118.8	10.00	10.00	Niobrara
7,100.0	38.36	0.17	7,067.6	-98.3	-78.0	-98.3	10.00	10.00	
7,119.9	40.35	0.22	7,083.0	-85.6	-78.0	-85.6	10.00	10.00	B Chalk
7,150.0	43.36	0.30	7,105.4	-65.6	-77.9	-65.6	10.00	10.00	
7,162.0	44.55	0.33	7,114.0	-57.3	-77.8	-57.3	10.00	10.00	B Marl
7,200.0	48.36	0.41	7,140.2	-29.7	-77.6	-29.7	10.00	10.00	
7,210.3	49.39	0.43	7,147.0	-21.9	-77.6	-21.9	10.00	10.00	C Chalk
7,250.0	53.36	0.51	7,171.8	9.1	-77.3	9.1	10.00	10.00	
7,276.4	55.99	0.55	7,187.0	30.6	-77.1	30.6	10.00	10.00	C Marl
7,300.0	58.36	0.59	7,199.8	50.4	-76.9	50.4	10.00	10.00	
7,332.3	61.59	0.64	7,216.0	78.4	-76.6	78.4	10.00	10.00	7"
7,350.0	63.36	0.67	7,224.1	94.1	-76.4	94.1	10.00	10.00	
7,400.0	68.35	0.74	7,244.6	139.7	-75.9	139.7	10.00	10.00	
7,450.0	73.35	0.80	7,261.0	186.9	-75.3	186.9	10.00	10.00	
7,500.0	78.35	0.86	7,273.2	235.4	-74.5	235.4	10.00	10.00	
7,533.5	81.70	0.90	7,279.0	268.3	-74.0	268.3	10.00	10.00	Ft. Hayes
7,550.0	83.35	0.92	7,281.1	284.7	-73.8	284.7	10.00	10.00	
7,600.0	88.35	0.98	7,284.8	334.6	-72.9	334.6	10.00	10.00	
7,616.5	90.00	1.00	7,285.0	351.1	-72.7	351.1	9.98	9.98	LP @ 7285' TVD; 90°
7,700.0	90.00	1.00	7,285.0	434.6	-71.2	434.6	0.00	0.00	
7,800.0	90.00	1.00	7,285.0	534.5	-69.5	534.5	0.00	0.00	
7,900.0	90.00	1.00	7,285.0	634.5	-67.7	634.5	0.00	0.00	

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Vogl-Geist 2A-5H-E267
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	KB @ 4866.0ft (Ensign)
Project:	DJ Wattenberg	MD Reference:	KB @ 4866.0ft (Ensign)
Site:	S5-T2N-R67W (Vogl-McCoy)	North Reference:	True
Well:	Vogl-Geist 2A-5H-E267	Survey Calculation Method:	Minimum Curvature
Wellbore:	Hz		
Design:	Plan #2		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Comments / Formations
8,000.0	90.00	1.00	7,285.0	734.5	-66.0	734.5	0.00	0.00	
8,100.0	90.00	1.00	7,285.0	834.5	-64.2	834.5	0.00	0.00	
8,200.0	90.00	1.00	7,285.0	934.5	-62.5	934.5	0.00	0.00	
8,300.0	90.00	1.00	7,285.0	1,034.5	-60.7	1,034.5	0.00	0.00	
8,400.0	90.00	1.00	7,285.0	1,134.4	-59.0	1,134.4	0.00	0.00	
8,500.0	90.00	1.00	7,285.0	1,234.4	-57.2	1,234.4	0.00	0.00	
8,600.0	90.00	1.00	7,285.0	1,334.4	-55.5	1,334.4	0.00	0.00	
8,700.0	90.00	1.00	7,285.0	1,434.4	-53.8	1,434.4	0.00	0.00	
8,800.0	90.00	1.00	7,285.0	1,534.4	-52.0	1,534.4	0.00	0.00	
8,900.0	90.00	1.00	7,285.0	1,634.4	-50.3	1,634.4	0.00	0.00	
9,000.0	90.00	1.00	7,285.0	1,734.4	-48.5	1,734.4	0.00	0.00	
9,100.0	90.00	1.00	7,285.0	1,834.3	-46.8	1,834.3	0.00	0.00	
9,200.0	90.00	1.00	7,285.0	1,934.3	-45.0	1,934.3	0.00	0.00	
9,300.0	90.00	1.00	7,285.0	2,034.3	-43.3	2,034.3	0.00	0.00	
9,400.0	90.00	1.00	7,285.0	2,134.3	-41.5	2,134.3	0.00	0.00	
9,500.0	90.00	1.00	7,285.0	2,234.3	-39.8	2,234.3	0.00	0.00	
9,600.0	90.00	1.00	7,285.0	2,334.3	-38.0	2,334.3	0.00	0.00	
9,700.0	90.00	1.00	7,285.0	2,434.2	-36.3	2,434.2	0.00	0.00	
9,800.0	90.00	1.00	7,285.0	2,534.2	-34.6	2,534.2	0.00	0.00	
9,900.0	90.00	1.00	7,285.0	2,634.2	-32.8	2,634.2	0.00	0.00	
10,000.0	90.00	1.00	7,285.0	2,734.2	-31.1	2,734.2	0.00	0.00	
10,100.0	90.00	1.00	7,285.0	2,834.2	-29.3	2,834.2	0.00	0.00	
10,200.0	90.00	1.00	7,285.0	2,934.2	-27.6	2,934.2	0.00	0.00	
10,300.0	90.00	1.00	7,285.0	3,034.2	-25.8	3,034.2	0.00	0.00	
10,400.0	90.00	1.00	7,285.0	3,134.1	-24.1	3,134.1	0.00	0.00	
10,500.0	90.00	1.00	7,285.0	3,234.1	-22.3	3,234.1	0.00	0.00	
10,600.0	90.00	1.00	7,285.0	3,334.1	-20.6	3,334.1	0.00	0.00	
10,700.0	90.00	1.00	7,285.0	3,434.1	-18.8	3,434.1	0.00	0.00	
10,800.0	90.00	1.00	7,285.0	3,534.1	-17.1	3,534.1	0.00	0.00	
10,900.0	90.00	1.00	7,285.0	3,634.1	-15.4	3,634.1	0.00	0.00	
11,000.0	90.00	1.00	7,285.0	3,734.0	-13.6	3,734.0	0.00	0.00	
11,100.0	90.00	1.00	7,285.0	3,834.0	-11.9	3,834.0	0.00	0.00	
11,200.0	90.00	1.00	7,285.0	3,934.0	-10.1	3,934.0	0.00	0.00	
11,300.0	90.00	1.00	7,285.0	4,034.0	-8.4	4,034.0	0.00	0.00	
11,400.0	90.00	1.00	7,285.0	4,134.0	-6.6	4,134.0	0.00	0.00	
11,500.0	90.00	1.00	7,285.0	4,234.0	-4.9	4,234.0	0.00	0.00	
11,600.0	90.00	1.00	7,285.0	4,334.0	-3.1	4,334.0	0.00	0.00	
11,700.0	90.00	1.00	7,285.0	4,433.9	-1.4	4,433.9	0.00	0.00	
11,800.0	90.00	1.00	7,285.0	4,533.9	0.3	4,533.9	0.00	0.00	
11,900.0	90.00	1.00	7,285.0	4,633.9	2.1	4,633.9	0.00	0.00	
12,000.0	90.00	1.00	7,285.0	4,733.9	3.8	4,733.9	0.00	0.00	
12,100.0	90.00	1.00	7,285.0	4,833.9	5.6	4,833.9	0.00	0.00	
12,200.0	90.00	1.00	7,285.0	4,933.9	7.3	4,933.9	0.00	0.00	
12,300.0	90.00	1.00	7,285.0	5,033.9	9.1	5,033.9	0.00	0.00	
12,400.0	90.00	1.00	7,285.0	5,133.8	10.8	5,133.8	0.00	0.00	
12,500.0	90.00	1.00	7,285.0	5,233.8	12.6	5,233.8	0.00	0.00	
12,600.0	90.00	1.00	7,285.0	5,333.8	14.3	5,333.8	0.00	0.00	
12,700.0	90.00	1.00	7,285.0	5,433.8	16.1	5,433.8	0.00	0.00	
12,800.0	90.00	1.00	7,285.0	5,533.8	17.8	5,533.8	0.00	0.00	
12,900.0	90.00	1.00	7,285.0	5,633.8	19.5	5,633.8	0.00	0.00	
13,000.0	90.00	1.00	7,285.0	5,733.7	21.3	5,733.7	0.00	0.00	
13,100.0	90.00	1.00	7,285.0	5,833.7	23.0	5,833.7	0.00	0.00	

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Vogl-Geist 2A-5H-E267
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	KB @ 4866.0ft (Ensign)
Project:	DJ Wattenberg	MD Reference:	KB @ 4866.0ft (Ensign)
Site:	S5-T2N-R67W (Vogl-McCoy)	North Reference:	True
Well:	Vogl-Geist 2A-5H-E267	Survey Calculation Method:	Minimum Curvature
Wellbore:	Hz		
Design:	Plan #2		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Comments / Formations
13,200.0	90.00	1.00	7,285.0	5,933.7	24.8	5,933.7	0.00	0.00	
13,300.0	90.00	1.00	7,285.0	6,033.7	26.5	6,033.7	0.00	0.00	
13,400.0	90.00	1.00	7,285.0	6,133.7	28.3	6,133.7	0.00	0.00	
13,500.0	90.00	1.00	7,285.0	6,233.7	30.0	6,233.7	0.00	0.00	
13,600.0	90.00	1.00	7,285.0	6,333.7	31.8	6,333.7	0.00	0.00	
13,700.0	90.00	1.00	7,285.0	6,433.6	33.5	6,433.6	0.00	0.00	
13,800.0	90.00	1.00	7,285.0	6,533.6	35.3	6,533.6	0.00	0.00	
13,900.0	90.00	1.00	7,285.0	6,633.6	37.0	6,633.6	0.00	0.00	
14,000.0	90.00	1.00	7,285.0	6,733.6	38.7	6,733.6	0.00	0.00	
14,100.0	90.00	1.00	7,285.0	6,833.6	40.5	6,833.6	0.00	0.00	
14,200.0	90.00	1.00	7,285.0	6,933.6	42.2	6,933.6	0.00	0.00	
14,300.0	90.00	1.00	7,285.0	7,033.5	44.0	7,033.5	0.00	0.00	
14,400.0	90.00	1.00	7,285.0	7,133.5	45.7	7,133.5	0.00	0.00	
14,500.0	90.00	1.00	7,285.0	7,233.5	47.5	7,233.5	0.00	0.00	
14,600.0	90.00	1.00	7,285.0	7,333.5	49.2	7,333.5	0.00	0.00	
14,661.5	90.00	1.00	7,285.0	7,395.0	50.3	7,395.0	0.00	0.00	TD at 14661.5

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									
Vogl-Geist 2A-5H-E267	0.00	0.00	7,285.0	7,395.0	50.3	1,312,038.07	3,161,424.94	40.188490	-104.922220
- plan hits target center									
- Point									
Interp @ 7312.0 (Vogl-G	0.00	0.00	7,312.0	1,178.5	93.7	1,305,822.03	3,161,508.83	40.171425	-104.922065
- plan misses target center by 154.3ft at 8446.7ft MD (7285.0 TVD, 1181.2 N, -58.2 E)									
- Point									
Vogl-Geist 2A-5H-E267	0.00	0.00	7,312.0	7,395.0	50.3	1,312,038.07	3,161,424.94	40.188490	-104.922220
- plan misses target center by 27.0ft at 14661.5ft MD (7285.0 TVD, 7395.0 N, 50.3 E)									
- Point									

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name		Casing Diameter (in)	Hole Diameter (in)
7,332.3	7,216.0	7"		0.000	0.000

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Vogl-Geist 2A-5H-E267
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	KB @ 4866.0ft (Ensign)
Project:	DJ Wattenberg	MD Reference:	KB @ 4866.0ft (Ensign)
Site:	S5-T2N-R67W (Vogl-McCoy)	North Reference:	True
Well:	Vogl-Geist 2A-5H-E267	Survey Calculation Method:	Minimum Curvature
Wellbore:	Hz		
Design:	Plan #2		

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
266.0	266.0	Fox Hills - BASE				
4,107.6	4,105.0	Sussex				
4,366.7	4,364.0	Sussex Marker				
4,658.9	4,656.0	Shannon				
6,003.9	6,000.0	Teepee Buttes (*if present)				
6,970.7	6,958.0	Sharon Springs				
7,065.6	7,040.0	Niobrara				
7,119.9	7,083.0	B Chalk				
7,162.0	7,114.0	B Marl				
7,210.3	7,147.0	C Chalk				
7,276.4	7,187.0	C Marl				
7,533.5	7,279.0	Ft. Hayes				

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates			
		+N/-S (ft)	+E/-W (ft)	Comment	
400.0	400.0	0.0	0.0	KOP @ 400'	
507.5	507.5	-1.9	-0.7	EOB; INC=2.15°	
6,696.0	6,691.6	-221.6	-75.8	Start build/turn @ 6696' MD	
7,616.5	7,285.0	351.1	-72.7	LP @ 7285' TVD; 90°	
14,661.5	7,285.0	7,395.0	50.3	TD at 14661.5	



EnCana Oil & Gas (USA) Inc

DJ Wattenberg

S5-T2N-R67W (Vogl-McCoy)

Vogl-Geist 2A-5H-E267

Hz

Plan #2

Anticollision Report

12 February, 2014



Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Vogl-Geist 2A-5H-E267
Project:	DJ Wattenberg	TVD Reference:	KB @ 4866.0ft (Ensign)
Reference Site:	S5-T2N-R67W (Vogl-McCoy)	MD Reference:	KB @ 4866.0ft (Ensign)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Vogl-Geist 2A-5H-E267	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

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

Survey Tool Program		Date	2/12/2014		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
0.0	14,661.5	Plan #2 (Hz)	MWD	Geolink MWD	



Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Vogl-Geist 2A-5H-E267
Project:	DJ Wattenberg	TVD Reference:	KB @ 4866.0ft (Ensign)
Reference Site:	S5-T2N-R67W (Vogl-McCoy)	MD Reference:	KB @ 4866.0ft (Ensign)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Vogl-Geist 2A-5H-E267	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Summary

Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Between Ellipses (ft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
S32-T3N-R67W (Geist)						
Geist 2-4-32 (Existing) - DD - DD	12,368.7	7,422.7	980.2	863.6	8.403	CC
Geist 2-4-32 (Existing) - DD - DD	12,400.0	7,422.7	980.7	863.5	8.368	ES
Geist 2-4-32 (Existing) - DD - DD	12,500.0	7,422.5	989.0	870.0	8.315	SF
Geist 4-2-32 - DD - DD						Out of range
Geist 4-2-32 - DD - Plan #2						Out of range
Geist A Unit #1 (Existing) - DD - DD	13,611.0	7,234.0	849.9	723.7	6.732	CC, ES
Geist A Unit #1 (Existing) - DD - DD	13,700.0	7,234.0	854.6	726.8	6.686	SF
S32-T3N-R67W (Robert Nelson)						
GEIST 2-0-32 (EXISTING) - DD - DD	14,661.5	7,331.9	1,064.4	914.5	7.098	CC, ES, SF
GEIST 2-0-32 (EXISTING) - DD - Plan #1	14,661.5	7,305.7	1,095.7	945.6	7.298	CC, ES, SF
Geist 21-32(Existing) - Surveys Only - Surveys Only	14,347.0	7,241.0	1,480.1	1,340.9	10.640	CC, ES
Geist 21-32(Existing) - Surveys Only - Surveys Only	14,600.0	7,241.0	1,501.5	1,358.0	10.462	SF
Robert Nelson 14-31 - DD - DD	10,339.4	7,241.0	345.3	275.7	4.963	CC, ES, SF
Robert Nelson 2-8-32 - DD - DD	9,933.1	7,314.3	1,104.1	1,039.4	17.072	CC, ES
Robert Nelson 2-8-32 - DD - DD	10,300.0	7,309.8	1,163.5	1,092.5	16.406	SF
Robert Nelson 2-8-32 - DD - Plan #2	9,918.9	7,339.4	1,105.7	1,041.0	17.104	CC, ES
Robert Nelson 2-8-32 - DD - Plan #2	10,200.0	7,339.4	1,140.8	1,071.4	16.431	SF
S5-T2N-R67W (Vogl-McCoy)						
GEIST 0-2-32 (EXISTING) - ENCANA WELL - NO SURV	13,747.2	7,296.6	223.4	94.1	1.728	CC, ES, SF
GEIST 11-32 (EXISTING) - ENCANA WELL - NO SURVE	14,062.1	7,221.0	684.2	550.0	5.101	CC, ES
GEIST 11-32 (EXISTING) - ENCANA WELL - NO SURVE	14,100.0	7,221.0	685.2	550.4	5.084	SF
GEIST 12-32 (EXISTING) - ENCANA WELL - SURVEYS	12,944.0	7,227.5	407.7	293.1	3.556	CC, ES, SF
GEIST 2-0-32 (EXISTING) - ENCANA WELL - Plan #1	14,661.5	7,305.7	1,095.6	945.5	7.298	CC, ES, SF
GEIST 2-0-32 (EXISTING) - ENCANA WELL - SURVEYS	14,661.5	7,331.8	1,064.4	914.4	7.098	CC, ES, SF
GEIST 21-32 (EXISTING) - ENCANA WELL - NO SURVE	14,346.2	7,229.0	1,494.6	1,355.5	10.745	CC, ES
GEIST 21-32 (EXISTING) - ENCANA WELL - NO SURVE	14,600.0	7,229.0	1,516.0	1,372.4	10.562	SF
GEIST 22-32 (EXISTING) - ENCANA WELL - NO SURVE						Out of range
GEIST 2-4-32 (EXISTING) - ENCANA WELL - SURVEYS	12,374.0	7,423.6	1,048.9	932.2	8.985	CC
GEIST 2-4-32 (EXISTING) - ENCANA WELL - SURVEYS	12,400.0	7,423.5	1,049.2	932.0	8.953	ES
GEIST 2-4-32 (EXISTING) - ENCANA WELL - SURVEYS	12,500.0	7,423.4	1,056.5	937.5	8.883	SF
GEIST 4-2-32 (EXISTING) - ENCANA WELL - Plan #2						Out of range
GEIST 4-2-32 (EXISTING) - ENCANA WELL - SURVEYS						Out of range
GEIST A UNIT #1 (EXISTING) - ENCANA WELL - SURVE	13,603.7	7,219.0	910.1	784.0	7.216	CC, ES
GEIST A UNIT #1 (EXISTING) - ENCANA WELL - SURVE	13,700.0	7,219.0	915.2	787.4	7.161	SF
MCCOY #1 (EXISTING) - ENCANA WELL - SURVEYS	5,332.2	5,347.9	529.1	510.0	27.676	CC, ES
MCCOY #1 (EXISTING) - ENCANA WELL - SURVEYS	5,400.0	5,350.0	532.6	513.4	27.669	SF
MCCOY 0-6-5 (EXISTING) - ENCANA WELL - NO SURV	6,710.1	6,797.7	638.9	614.9	26.557	CC, ES
MCCOY 0-6-5 (EXISTING) - ENCANA WELL - NO SURV	6,750.0	6,837.6	639.9	615.8	26.484	SF
MCCOY 13-5 (EXISTING) - ENCANA WELL - SURVEYS	6,714.6	6,704.9	595.5	571.6	24.897	CC, ES
MCCOY 13-5 (EXISTING) - ENCANA WELL - SURVEYS	6,750.0	6,739.0	596.4	572.4	24.847	SF
MCCOY 2-4-5 (EXISTING) - ENCANA WELL - SURVEYS	1,315.9	1,299.2	757.5	752.8	161.056	CC
MCCOY 2-4-5 (EXISTING) - ENCANA WELL - SURVEYS	1,400.0	1,380.8	757.8	752.7	149.413	ES
MCCOY 2-4-5 (EXISTING) - ENCANA WELL - SURVEYS	7,050.0	7,082.7	1,132.9	1,106.0	42.024	SF
NELSON 23-32 (EXISTING) - ENCANA WELL - SURVEY						Out of range
NELSON 4-32 (EXISTING) - ENCANA WELL - NO SURV	11,024.6	7,229.0	980.1	898.8	12.047	CC, ES
NELSON 4-32 (EXISTING) - ENCANA WELL - NO SURV	11,200.0	7,229.0	995.7	911.3	11.800	SF
OWENS BROTHERS 13-32 (EXISTING) - ENCANA WEL	11,855.7	7,228.1	322.5	226.7	3.369	CC, ES, SF
ROBERT NELSON 14-32 (EXISTING) - ENCANA WELL	10,315.1	7,225.0	344.2	275.0	4.977	CC, ES, SF
ROBERT NELSON 2-8-32 (EXISTING) - ENCANA WELL	9,918.9	7,343.2	1,105.7	1,041.1	17.120	CC, ES
ROBERT NELSON 2-8-32 (EXISTING) - ENCANA WELL	10,200.0	7,343.2	1,140.9	1,071.5	16.446	SF
ROBERT NELSON 2-8-32 (EXISTING) - ENCANA WELL	9,925.5	7,314.9	1,081.9	1,017.4	16.762	CC, ES

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



Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Vogl-Geist 2A-5H-E267
Project:	DJ Wattenberg	TVD Reference:	KB @ 4866.0ft (Ensign)
Reference Site:	S5-T2N-R67W (Vogl-McCoy)	MD Reference:	KB @ 4866.0ft (Ensign)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Vogl-Geist 2A-5H-E267	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Summary

Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
S5-T2N-R67W (Vogl-McCoy)						
ROBERT NELSON 2-8-32 (EXISTING) - ENCANA WELL	10,200.0	7,311.5	1,116.2	1,047.0	16.127	SF
VOGL 21-5X (EXISTING) - KMG WELL - NO SURVEYS						Out of range
VOGL 31-5 (EXISTING) - KMG WELL - NO SURVEYS	8,384.1	7,448.1	187.7	136.9	3.693	CC, ES
VOGL 31-5 (EXISTING) - KMG WELL - NO SURVEYS	8,400.0	7,448.1	188.4	137.3	3.689	SF
VOGL 4-5A (EXISTING) - KMG WELL - GYRO	9,304.1	6,580.0	740.3	712.3	26.506	CC, ES
VOGL 4-5A (EXISTING) - KMG WELL - GYRO	9,400.0	6,580.0	746.4	717.8	26.093	SF
VOGL 5-5 (EXISTING) - KMG WELL - NO SURVEYS	7,505.3	7,248.3	250.6	224.1	9.462	CC, ES, SF
Vogl-Geist 2B-5H-E267 - Hz - Plan #2	400.0	400.0	19.6	18.3	15.147	CC, ES
Vogl-Geist 2B-5H-E267 - Hz - Plan #2	14,661.5	14,504.3	443.3	204.4	1.856	SF
Vogl-Geist 2C-5H-E267 - Hz - Plan #2	300.0	300.0	39.1	38.2	41.513	CC, ES
Vogl-Geist 2C-5H-E267 - Hz - Plan #2	14,661.5	14,684.9	799.1	535.0	3.026	SF
Vogl-Geist 2D-5H-F267 - Hz - SURVEYS						Out of range
Vogl-Geist 2E-5H-F267 - Hz - SURVEYS						Out of range
Vogl-Geist 2F-5H-F267 - Hz - SURVEYS						Out of range
Vogl-McCoy 2A-5H-E267 - Hz - Plan #1	200.0	199.0	8.4	7.8	14.170	CC, ES
Vogl-McCoy 2A-5H-E267 - Hz - Plan #1	400.0	398.7	11.2	9.9	8.645	SF
Vogl-McCoy 2B-5H-E267 - Hz - Plan #3	400.0	399.0	11.2	9.9	8.667	CC, ES
Vogl-McCoy 2B-5H-E267 - Hz - Plan #3	7,277.5	7,265.1	80.4	55.1	3.175	SF
Vogl-McCoy 2C-5H-E267 - Hz - Plan #2	400.0	400.0	30.7	29.4	23.802	CC, ES
Vogl-McCoy 2C-5H-E267 - Hz - Plan #2	700.0	698.6	38.3	35.9	16.311	SF
Vogl-McCoy 2D-5H-E267 - Hz - Plan #2	200.0	200.0	50.3	49.7	84.770	CC, ES
Vogl-McCoy 2D-5H-E267 - Hz - Plan #2	7,450.0	7,188.5	760.0	734.1	29.329	SF
Vogl-McCoy 2E-5H-F267 - Hz - SURVEYS						Out of range
Vogl-McCoy 2F-5H-F267 - Hz - SURVEYS						Out of range
Vogl-McCoy 2G-5H-F267 - Hz - SURVEYS						Out of range
Vogl-McCoy 2H-5H-F267 - Hz - Hz						Out of range



Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Vogl-Geist 2A-5H-E267
Project:	DJ Wattenberg	TVD Reference:	KB @ 4866.0ft (Ensign)
Reference Site:	S5-T2N-R67W (Vogl-McCoy)	MD Reference:	KB @ 4866.0ft (Ensign)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Vogl-Geist 2A-5H-E267	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design S32-T3N-R67W (Geist) - Geist 2-4-32 (Existing) - DD - DD												Offset Site Error:	0.0 ft
Survey Program: 762-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
11,200.0	7,285.0	7,424.6	7,247.7	71.8	24.8	90.80	5,085.5	990.2	1,525.4	1,429.0	96.40	15.824	
11,300.0	7,285.0	7,424.4	7,247.6	73.5	24.8	90.79	5,085.5	990.2	1,450.2	1,352.1	98.12	14.779	
11,400.0	7,285.0	7,424.3	7,247.4	75.2	24.8	90.78	5,085.5	990.2	1,378.1	1,278.3	99.85	13.802	
11,500.0	7,285.0	7,424.1	7,247.3	77.0	24.7	90.77	5,085.5	990.2	1,309.8	1,208.2	101.58	12.894	
11,600.0	7,285.0	7,424.0	7,247.1	78.7	24.7	90.76	5,085.5	990.3	1,245.7	1,142.4	103.31	12.057	
11,700.0	7,285.0	7,423.8	7,246.9	80.4	24.7	90.76	5,085.5	990.3	1,186.6	1,081.6	105.05	11.296	
11,800.0	7,285.0	7,423.6	7,246.8	82.2	24.7	90.75	5,085.5	990.3	1,133.3	1,026.5	106.78	10.613	
11,900.0	7,285.0	7,423.5	7,246.6	83.9	24.7	90.74	5,085.5	990.3	1,086.5	978.0	108.51	10.013	
12,000.0	7,285.0	7,423.3	7,246.5	85.6	24.7	90.73	5,085.5	990.3	1,047.3	937.0	110.25	9.499	
12,100.0	7,285.0	7,423.2	7,246.3	87.4	24.7	90.72	5,085.5	990.3	1,016.4	904.4	111.99	9.076	
12,200.0	7,285.0	7,423.0	7,246.1	89.1	24.7	90.71	5,085.5	990.3	994.6	880.9	113.72	8.746	
12,300.0	7,285.0	7,422.8	7,246.0	90.8	24.7	90.70	5,085.5	990.3	982.6	867.2	115.46	8.511	
12,368.7	7,285.0	7,422.7	7,245.9	92.0	24.7	90.69	5,085.5	990.3	980.2	863.6	116.65	8.403 CC	
12,400.0	7,285.0	7,422.7	7,245.8	92.6	24.7	90.69	5,085.5	990.3	980.7	863.5	117.20	8.368 ES	
12,500.0	7,285.0	7,422.5	7,245.7	94.3	24.7	90.68	5,085.5	990.3	989.0	870.0	118.93	8.315 SF	
12,600.0	7,285.0	7,422.4	7,245.5	96.1	24.7	90.67	5,085.5	990.3	1,007.1	886.4	120.67	8.346	
12,700.0	7,285.0	7,422.2	7,245.4	97.8	24.7	90.66	5,085.5	990.3	1,034.7	912.3	122.41	8.452	
12,800.0	7,285.0	7,422.1	7,245.2	99.5	24.7	90.65	5,085.5	990.3	1,070.9	946.7	124.15	8.626	
12,900.0	7,285.0	7,421.9	7,245.0	101.3	24.7	90.64	5,085.5	990.3	1,114.9	989.0	125.89	8.856	
13,000.0	7,285.0	7,421.8	7,244.9	103.0	24.7	90.64	5,085.5	990.3	1,165.9	1,038.3	127.64	9.135	
13,100.0	7,285.0	7,421.6	7,244.7	104.8	24.7	90.63	5,085.5	990.3	1,222.9	1,093.6	129.38	9.452	
13,200.0	7,285.0	7,421.4	7,244.6	106.5	24.7	90.62	5,085.5	990.3	1,285.2	1,154.1	131.12	9.802	
13,300.0	7,285.0	7,421.3	7,244.4	108.2	24.7	90.61	5,085.5	990.3	1,352.1	1,219.2	132.86	10.176	
13,400.0	7,285.0	7,421.1	7,244.3	110.0	24.7	90.60	5,085.5	990.3	1,422.8	1,288.2	134.60	10.570	
13,500.0	7,285.0	7,421.0	7,244.1	111.7	24.7	90.59	5,085.5	990.3	1,496.8	1,360.5	136.35	10.978	



Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Vogl-Geist 2A-5H-E267
Project:	DJ Wattenberg	TVD Reference:	KB @ 4866.0ft (Ensign)
Reference Site:	S5-T2N-R67W (Vogl-McCoy)	MD Reference:	KB @ 4866.0ft (Ensign)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Vogl-Geist 2A-5H-E267	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design S32-T3N-R67W (Geist) - Geist A Unit #1 (Existing) - DD - DD												Offset Site Error:	0.0 ft
Survey Program: 7870-MWD												Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Total Uncertainty Axis	Separation Factor	Warning		
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)		Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)					
12,400.0	7,285.0	7,234.0	7,234.0	92.6	12.6	90.00	6,329.8	881.8	1,479.5	1,374.3	105.17	14.067	
12,500.0	7,285.0	7,234.0	7,234.0	94.3	12.6	90.00	6,329.8	881.8	1,398.8	1,291.9	106.91	13.084	
12,600.0	7,285.0	7,234.0	7,234.0	96.1	12.6	90.00	6,329.8	881.8	1,320.8	1,212.1	108.65	12.156	
12,700.0	7,285.0	7,234.0	7,234.0	97.8	12.6	90.00	6,329.8	881.8	1,245.9	1,135.5	110.39	11.287	
12,800.0	7,285.0	7,234.0	7,234.0	99.5	12.6	90.00	6,329.8	881.8	1,174.8	1,062.6	112.13	10.477	
12,900.0	7,285.0	7,234.0	7,234.0	101.3	12.6	90.00	6,329.8	881.8	1,108.1	994.2	113.87	9.731	
13,000.0	7,285.0	7,234.0	7,234.0	103.0	12.6	90.00	6,329.8	881.8	1,046.8	931.1	115.61	9.054	
13,100.0	7,285.0	7,234.0	7,234.0	104.8	12.6	90.00	6,329.8	881.8	991.7	874.4	117.35	8.451	
13,200.0	7,285.0	7,234.0	7,234.0	106.5	12.6	90.00	6,329.8	881.8	944.1	825.0	119.09	7.927	
13,300.0	7,285.0	7,234.0	7,234.0	108.2	12.6	90.00	6,329.8	881.8	905.0	784.2	120.84	7.490	
13,400.0	7,285.0	7,234.0	7,234.0	110.0	12.6	90.00	6,329.8	881.8	875.7	753.2	122.58	7.144	
13,500.0	7,285.0	7,234.0	7,234.0	111.7	12.6	90.00	6,329.8	881.8	857.2	732.8	124.32	6.895	
13,600.0	7,285.0	7,234.0	7,234.0	113.5	12.6	90.00	6,329.8	881.8	850.0	723.9	126.07	6.743	
13,611.0	7,285.0	7,234.0	7,234.0	113.7	12.6	90.00	6,329.8	881.8	849.9	723.7	126.26	6.732 CC, ES	
13,700.0	7,285.0	7,234.0	7,234.0	115.2	12.6	90.00	6,329.8	881.8	854.6	726.8	127.81	6.686 SF	
13,800.0	7,285.0	7,234.0	7,234.0	117.0	12.6	90.00	6,329.8	881.8	870.7	741.1	129.55	6.721	
13,900.0	7,285.0	7,234.0	7,234.0	118.7	12.6	90.00	6,329.8	881.8	897.7	766.4	131.30	6.837	
14,000.0	7,285.0	7,234.0	7,234.0	120.4	12.6	90.00	6,329.8	881.8	934.7	801.7	133.04	7.026	
14,100.0	7,285.0	7,234.0	7,234.0	122.2	12.6	90.00	6,329.8	881.8	980.6	845.8	134.79	7.275	
14,200.0	7,285.0	7,234.0	7,234.0	123.9	12.6	90.00	6,329.8	881.8	1,034.1	897.5	136.53	7.574	
14,300.0	7,285.0	7,234.0	7,234.0	125.7	12.6	90.00	6,329.8	881.8	1,094.1	955.9	138.28	7.913	
14,400.0	7,285.0	7,234.0	7,234.0	127.4	12.6	90.00	6,329.8	881.8	1,159.7	1,019.7	140.02	8.282	
14,500.0	7,285.0	7,234.0	7,234.0	129.2	12.6	90.00	6,329.8	881.8	1,229.9	1,088.2	141.77	8.676	
14,600.0	7,285.0	7,234.0	7,234.0	130.9	12.6	90.00	6,329.8	881.8	1,304.0	1,160.5	143.52	9.086	
14,661.5	7,285.0	7,234.0	7,234.0	132.0	12.6	90.00	6,329.8	881.8	1,351.3	1,206.7	144.59	9.346	



Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Vogl-Geist 2A-5H-E267
Project:	DJ Wattenberg	TVD Reference:	KB @ 4866.0ft (Ensign)
Reference Site:	S5-T2N-R67W (Vogl-McCoy)	MD Reference:	KB @ 4866.0ft (Ensign)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Vogl-Geist 2A-5H-E267	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design S32-T3N-R67W (Robert Nelson) - GEIST 2-0-32 (EXISTING) - DD - DD													Offset Site Error: 0.0 ft
Survey Program: 650-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	
13,900.0	7,285.0	7,344.9	7,258.1	118.7	19.7	91.34	7,774.8	1,044.4	1,522.4	1,385.8	136.65	11.141	
14,000.0	7,285.0	7,343.2	7,256.4	120.4	19.7	91.24	7,774.8	1,044.4	1,447.8	1,309.4	138.40	10.461	
14,100.0	7,285.0	7,341.5	7,254.7	122.2	19.7	91.14	7,774.9	1,044.5	1,376.4	1,236.2	140.15	9.821	
14,200.0	7,285.0	7,339.8	7,253.0	123.9	19.7	91.04	7,774.9	1,044.5	1,308.7	1,166.8	141.89	9.223	
14,300.0	7,285.0	7,338.0	7,251.3	125.7	19.7	90.94	7,774.9	1,044.5	1,245.3	1,101.7	143.64	8.670	
14,400.0	7,285.0	7,336.3	7,249.6	127.4	19.7	90.84	7,775.0	1,044.5	1,187.1	1,041.7	145.39	8.165	
14,500.0	7,285.0	7,334.6	7,247.8	129.2	19.7	90.74	7,775.0	1,044.5	1,134.6	987.5	147.13	7.712	
14,600.0	7,285.0	7,332.9	7,246.1	130.9	19.6	90.65	7,775.0	1,044.5	1,088.9	940.0	148.88	7.314	
14,661.5	7,285.0	7,331.9	7,245.1	132.0	19.6	90.58	7,775.0	1,044.5	1,064.4	914.5	149.95	7.098 CC, ES, SF	



Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Vogl-Geist 2A-5H-E267
Project:	DJ Wattenberg	TVD Reference:	KB @ 4866.0ft (Ensign)
Reference Site:	S5-T2N-R67W (Vogl-McCoy)	MD Reference:	KB @ 4866.0ft (Ensign)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Vogl-Geist 2A-5H-E267	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design S32-T3N-R67W (Robert Nelson) - GEIST 2-0-32 (EXISTING) - 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		
14,000.0	7,285.0	7,305.7	7,235.0	120.4	19.7	90.00	7,795.7	1,070.1	1,480.4	1,341.9	138.58	10.683		
14,100.0	7,285.0	7,305.7	7,235.0	122.2	19.7	90.00	7,795.7	1,070.1	1,409.1	1,268.8	140.33	10.042		
14,200.0	7,285.0	7,305.7	7,235.0	123.9	19.7	90.00	7,795.7	1,070.1	1,341.5	1,199.5	142.07	9.443		
14,300.0	7,285.0	7,305.7	7,235.0	125.7	19.7	90.00	7,795.7	1,070.1	1,278.2	1,134.4	143.82	8.888		
14,400.0	7,285.0	7,305.7	7,235.0	127.4	19.7	90.00	7,795.7	1,070.1	1,219.7	1,074.2	145.56	8.379		
14,500.0	7,285.0	7,305.7	7,235.0	129.2	19.7	90.00	7,795.7	1,070.1	1,166.9	1,019.6	147.31	7.922		
14,600.0	7,285.0	7,305.7	7,235.0	130.9	19.7	90.00	7,795.7	1,070.1	1,120.6	971.5	149.05	7.518		
14,661.5	7,285.0	7,305.7	7,235.0	132.0	19.7	90.00	7,795.7	1,070.1	1,095.7	945.6	150.13	7.298	CC, ES, SF	



Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Vogl-Geist 2A-5H-E267
Project:	DJ Wattenberg	TVD Reference:	KB @ 4866.0ft (Ensign)
Reference Site:	S5-T2N-R67W (Vogl-McCoy)	MD Reference:	KB @ 4866.0ft (Ensign)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Vogl-Geist 2A-5H-E267	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design S32-T3N-R67W (Robert Nelson) - Geist 21-32(Existing) - Surveys Only - Surveys Only												Offset Site Error:	0.0 ft
Survey Program: 9000-MWD												Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning
13,900.0	7,285.0	7,241.0	7,241.0	118.7	12.6	90.00	7,054.7	1,524.6	1,546.1	1,414.8	131.31	11.774	
14,000.0	7,285.0	7,241.0	7,241.0	120.4	12.6	90.00	7,054.7	1,524.6	1,520.2	1,387.1	133.05	11.425	
14,100.0	7,285.0	7,241.0	7,241.0	122.2	12.6	90.00	7,054.7	1,524.6	1,500.5	1,365.7	134.80	11.132	
14,200.0	7,285.0	7,241.0	7,241.0	123.9	12.6	90.00	7,054.7	1,524.6	1,487.3	1,350.8	136.54	10.893	
14,300.0	7,285.0	7,241.0	7,241.0	125.7	12.6	90.00	7,054.7	1,524.6	1,480.8	1,342.5	138.29	10.708	
14,347.0	7,285.0	7,241.0	7,241.0	126.5	12.6	90.00	7,054.7	1,524.6	1,480.1	1,340.9	139.11	10.640 CC, ES	
14,400.0	7,285.0	7,241.0	7,241.0	127.4	12.6	90.00	7,054.7	1,524.6	1,481.0	1,341.0	140.03	10.576	
14,500.0	7,285.0	7,241.0	7,241.0	129.2	12.6	90.00	7,054.7	1,524.6	1,487.9	1,346.2	141.78	10.495	
14,600.0	7,285.0	7,241.0	7,241.0	130.9	12.6	90.00	7,054.7	1,524.6	1,501.5	1,358.0	143.53	10.462 SF	
14,661.5	7,285.0	7,241.0	7,241.0	132.0	12.6	90.00	7,054.7	1,524.6	1,513.1	1,368.5	144.60	10.464	



Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Vogl-Geist 2A-5H-E267
Project:	DJ Wattenberg	TVD Reference:	KB @ 4866.0ft (Ensign)
Reference Site:	S5-T2N-R67W (Vogl-McCoy)	MD Reference:	KB @ 4866.0ft (Ensign)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Vogl-Geist 2A-5H-E267	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design S32-T3N-R67W (Robert Nelson) - Robert Nelson 14-31 - DD - DD												Offset Site Error:	0.0 ft
Survey Program: 8000-MWD												Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance					Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis		Separation Factor
8,900.0	7,285.0	7,241.0	7,241.0	32.8	12.6	90.00	3,067.6	320.1	1,480.3	1,434.9	45.41	32.595	
9,000.0	7,285.0	7,241.0	7,241.0	34.5	12.6	90.00	3,067.6	320.1	1,383.2	1,336.2	47.04	29.404	
9,100.0	7,285.0	7,241.0	7,241.0	36.1	12.6	90.00	3,067.6	320.1	1,286.6	1,238.0	48.68	26.430	
9,200.0	7,285.0	7,241.0	7,241.0	37.7	12.6	90.00	3,067.6	320.1	1,190.6	1,140.3	50.33	23.656	
9,300.0	7,285.0	7,241.0	7,241.0	39.4	12.6	90.00	3,067.6	320.1	1,095.3	1,043.3	51.99	21.067	
9,400.0	7,285.0	7,241.0	7,241.0	41.1	12.6	90.00	3,067.6	320.1	1,000.9	947.2	53.66	18.653	
9,500.0	7,285.0	7,241.0	7,241.0	42.7	12.6	90.00	3,067.6	320.1	907.7	852.4	55.33	16.405	
9,600.0	7,285.0	7,241.0	7,241.0	44.4	12.6	90.00	3,067.6	320.1	816.1	759.1	57.01	14.315	
9,700.0	7,285.0	7,241.0	7,241.0	46.1	12.6	90.00	3,067.6	320.1	726.7	668.0	58.70	12.381	
9,800.0	7,285.0	7,241.0	7,241.0	47.8	12.6	90.00	3,067.6	320.1	640.5	580.1	60.39	10.606	
9,900.0	7,285.0	7,241.0	7,241.0	49.5	12.6	90.00	3,067.6	320.1	558.9	496.8	62.08	9.002	
10,000.0	7,285.0	7,241.0	7,241.0	51.2	12.6	90.00	3,067.6	320.1	484.2	420.4	63.78	7.592	
10,100.0	7,285.0	7,241.0	7,241.0	52.9	12.6	90.00	3,067.6	320.1	420.2	354.7	65.48	6.417	
10,200.0	7,285.0	7,241.0	7,241.0	54.6	12.6	90.00	3,067.6	320.1	372.4	305.2	67.19	5.542	
10,300.0	7,285.0	7,241.0	7,241.0	56.3	12.6	90.00	3,067.6	320.1	347.5	278.6	68.90	5.044	
10,339.4	7,285.0	7,241.0	7,241.0	57.0	12.6	90.00	3,067.6	320.1	345.3	275.7	69.57	4.963 CC, ES, SF	
10,400.0	7,285.0	7,241.0	7,241.0	58.0	12.6	90.00	3,067.6	320.1	350.6	280.0	70.61	4.965	
10,500.0	7,285.0	7,241.0	7,241.0	59.7	12.6	90.00	3,067.6	320.1	380.8	308.5	72.33	5.265	
10,600.0	7,285.0	7,241.0	7,241.0	61.4	12.6	90.00	3,067.6	320.1	432.6	358.5	74.04	5.842	
10,700.0	7,285.0	7,241.0	7,241.0	63.2	12.6	90.00	3,067.6	320.1	499.2	423.5	75.76	6.590	
10,800.0	7,285.0	7,241.0	7,241.0	64.9	12.6	90.00	3,067.6	320.1	575.6	498.1	77.48	7.429	
10,900.0	7,285.0	7,241.0	7,241.0	66.6	12.6	90.00	3,067.6	320.1	658.4	579.2	79.20	8.313	
11,000.0	7,285.0	7,241.0	7,241.0	68.3	12.6	90.00	3,067.6	320.1	745.4	664.4	80.93	9.210	
11,100.0	7,285.0	7,241.0	7,241.0	70.1	12.6	90.00	3,067.6	320.1	835.3	752.6	82.65	10.106	
11,200.0	7,285.0	7,241.0	7,241.0	71.8	12.6	90.00	3,067.6	320.1	927.2	842.9	84.38	10.989	
11,300.0	7,285.0	7,241.0	7,241.0	73.5	12.6	90.00	3,067.6	320.1	1,020.7	934.6	86.11	11.854	
11,400.0	7,285.0	7,241.0	7,241.0	75.2	12.6	90.00	3,067.6	320.1	1,115.4	1,027.5	87.84	12.698	
11,500.0	7,285.0	7,241.0	7,241.0	77.0	12.6	90.00	3,067.6	320.1	1,210.8	1,121.3	89.57	13.519	
11,600.0	7,285.0	7,241.0	7,241.0	78.7	12.6	90.00	3,067.6	320.1	1,307.0	1,215.7	91.30	14.316	
11,700.0	7,285.0	7,241.0	7,241.0	80.4	12.6	90.00	3,067.6	320.1	1,403.7	1,310.7	93.03	15.089	
11,800.0	7,285.0	7,241.0	7,241.0	82.2	12.6	90.00	3,067.6	320.1	1,500.8	1,406.1	94.76	15.838	

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 Vogl-Geist 2A-5H-E267
Project:	DJ Wattenberg	TVD Reference:	KB @ 4866.0ft (Ensign)
Reference Site:	S5-T2N-R67W (Vogl-McCoy)	MD Reference:	KB @ 4866.0ft (Ensign)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Vogl-Geist 2A-5H-E267	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design S32-T3N-R67W (Robert Nelson) - Robert Nelson 2-8-32 - DD - DD													Offset Site Error:	0.0 ft
Survey Program: 100-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor		
8,900.0	7,285.0	7,326.8	7,227.5	32.8	19.6	89.30	2,647.9	1,071.7	1,512.0	1,464.6	47.47	31.855		
9,000.0	7,285.0	7,325.6	7,226.3	34.5	19.6	89.24	2,647.9	1,071.7	1,445.6	1,396.5	49.09	29.446		
9,100.0	7,285.0	7,324.4	7,225.1	36.1	19.6	89.18	2,648.0	1,071.6	1,383.1	1,332.4	50.73	27.264		
9,200.0	7,285.0	7,323.2	7,224.0	37.7	19.6	89.11	2,648.0	1,071.6	1,325.3	1,272.9	52.38	25.303		
9,300.0	7,285.0	7,322.0	7,222.8	39.4	19.6	89.05	2,648.0	1,071.6	1,272.7	1,218.7	54.04	23.554		
9,400.0	7,285.0	7,320.8	7,221.6	41.1	19.5	88.99	2,648.0	1,071.6	1,226.1	1,170.4	55.70	22.012		
9,500.0	7,285.0	7,319.6	7,220.4	42.7	19.5	88.93	2,648.0	1,071.5	1,186.0	1,128.7	57.37	20.672		
9,600.0	7,285.0	7,318.4	7,219.1	44.4	19.5	88.87	2,648.0	1,071.5	1,153.3	1,094.2	59.05	19.530		
9,700.0	7,285.0	7,317.2	7,217.9	46.1	19.5	88.80	2,648.0	1,071.5	1,128.5	1,067.7	60.73	18.581		
9,800.0	7,285.0	7,316.0	7,216.7	47.8	19.5	88.74	2,648.1	1,071.4	1,112.1	1,049.7	62.42	17.816		
9,900.0	7,285.0	7,314.8	7,215.5	49.5	19.5	88.68	2,648.1	1,071.4	1,104.6	1,040.5	64.11	17.229		
9,933.1	7,285.0	7,314.3	7,215.1	50.1	19.5	88.65	2,648.1	1,071.4	1,104.1	1,039.4	64.67	17.072 CC, ES		
10,000.0	7,285.0	7,313.5	7,214.3	51.2	19.5	88.61	2,648.1	1,071.4	1,106.1	1,040.3	65.81	16.808		
10,100.0	7,285.0	7,312.3	7,213.0	52.9	19.5	88.55	2,648.1	1,071.4	1,116.7	1,049.1	67.51	16.541		
10,200.0	7,285.0	7,311.0	7,211.8	54.6	19.5	88.48	2,648.1	1,071.3	1,135.9	1,066.7	69.21	16.412		
10,300.0	7,285.0	7,309.8	7,210.5	56.3	19.5	88.42	2,648.1	1,071.3	1,163.5	1,092.5	70.92	16.406 SF		
10,400.0	7,285.0	7,308.6	7,209.3	58.0	19.5	88.35	2,648.1	1,071.3	1,198.8	1,126.1	72.62	16.506		
10,500.0	7,285.0	7,307.3	7,208.0	59.7	19.5	88.29	2,648.2	1,071.2	1,241.1	1,166.8	74.33	16.697		
10,600.0	7,285.0	7,306.0	7,206.8	61.4	19.5	88.22	2,648.2	1,071.2	1,289.9	1,213.8	76.05	16.962		
10,700.0	7,285.0	7,304.8	7,205.5	63.2	19.5	88.16	2,648.2	1,071.2	1,344.3	1,266.5	77.76	17.288		
10,800.0	7,285.0	7,303.5	7,204.2	64.9	19.5	88.09	2,648.2	1,071.2	1,403.7	1,324.2	79.47	17.662		
10,900.0	7,285.0	7,302.2	7,203.0	66.6	19.5	88.03	2,648.2	1,071.1	1,467.6	1,386.4	81.19	18.075		
11,000.0	7,285.0	7,300.9	7,201.7	68.3	19.5	87.96	2,648.2	1,071.1	1,535.3	1,452.4	82.91	18.517		



Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Vogl-Geist 2A-5H-E267
Project:	DJ Wattenberg	TVD Reference:	KB @ 4866.0ft (Ensign)
Reference Site:	S5-T2N-R67W (Vogl-McCoy)	MD Reference:	KB @ 4866.0ft (Ensign)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Vogl-Geist 2A-5H-E267	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design		S32-T3N-R67W (Robert Nelson) - Robert Nelson 2-8-32 - DD - Plan #2											Offset Site Error:		0.0 ft	
Survey Program: 0-MWD													Offset Well Error:		0.0 ft	
Reference		Offset		Semi Major Axis			Distance									
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Total Uncertainty Axis	Separation Factor	Warning			
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)						
8,900.0	7,285.0	7,339.4	7,241.0	32.8	19.9	90.00	2,633.8	1,073.0	1,503.5	1,455.9	47.65	31.551				
9,000.0	7,285.0	7,339.4	7,241.0	34.5	19.9	90.00	2,633.8	1,073.0	1,437.7	1,388.4	49.28	29.172				
9,100.0	7,285.0	7,339.4	7,241.0	36.1	19.9	90.00	2,633.8	1,073.0	1,375.9	1,325.0	50.92	27.019				
9,200.0	7,285.0	7,339.4	7,241.0	37.7	19.9	90.00	2,633.8	1,073.0	1,318.8	1,266.2	52.57	25.086				
9,300.0	7,285.0	7,339.4	7,241.0	39.4	19.9	90.00	2,633.8	1,073.0	1,267.1	1,212.9	54.23	23.365				
9,400.0	7,285.0	7,339.4	7,241.0	41.1	19.9	90.00	2,633.8	1,073.0	1,221.4	1,165.5	55.90	21.850				
9,500.0	7,285.0	7,339.4	7,241.0	42.7	19.9	90.00	2,633.8	1,073.0	1,182.4	1,124.8	57.57	20.537				
9,600.0	7,285.0	7,339.4	7,241.0	44.4	19.9	90.00	2,633.8	1,073.0	1,150.7	1,091.5	59.25	19.421				
9,700.0	7,285.0	7,339.4	7,241.0	46.1	19.9	90.00	2,633.8	1,073.0	1,127.1	1,066.2	60.94	18.496				
9,800.0	7,285.0	7,339.4	7,241.0	47.8	19.9	90.00	2,633.8	1,073.0	1,112.0	1,049.4	62.63	17.756				
9,900.0	7,285.0	7,339.4	7,241.0	49.5	19.9	90.00	2,633.8	1,073.0	1,105.8	1,041.5	64.32	17.192				
9,918.9	7,285.0	7,339.4	7,241.0	49.8	19.9	90.00	2,633.8	1,073.0	1,105.7	1,041.0	64.64	17.104	CC, ES			
10,000.0	7,285.0	7,339.4	7,241.0	51.2	19.9	90.00	2,633.8	1,073.0	1,108.6	1,042.6	66.02	16.792				
10,100.0	7,285.0	7,339.4	7,241.0	52.9	19.9	90.00	2,633.8	1,073.0	1,120.4	1,052.7	67.73	16.543				
10,200.0	7,285.0	7,339.4	7,241.0	54.6	19.9	90.00	2,633.8	1,073.0	1,140.8	1,071.4	69.43	16.431	SF			
10,300.0	7,285.0	7,339.4	7,241.0	56.3	19.9	90.00	2,633.8	1,073.0	1,169.5	1,098.4	71.14	16.440				
10,400.0	7,285.0	7,339.4	7,241.0	58.0	19.9	90.00	2,633.8	1,073.0	1,205.8	1,133.0	72.85	16.552				
10,500.0	7,285.0	7,339.4	7,241.0	59.7	19.9	90.00	2,633.8	1,073.0	1,249.1	1,174.5	74.57	16.751				
10,600.0	7,285.0	7,339.4	7,241.0	61.4	19.9	90.00	2,633.8	1,073.0	1,298.6	1,222.3	76.28	17.024				
10,700.0	7,285.0	7,339.4	7,241.0	63.2	19.9	90.00	2,633.8	1,073.0	1,353.8	1,275.8	78.00	17.356				
10,800.0	7,285.0	7,339.4	7,241.0	64.9	19.9	90.00	2,633.8	1,073.0	1,413.8	1,334.1	79.72	17.735				
10,900.0	7,285.0	7,339.4	7,241.0	66.6	19.9	90.00	2,633.8	1,073.0	1,478.2	1,396.8	81.44	18.150				
11,000.0	7,285.0	7,339.4	7,241.0	68.3	19.9	90.00	2,633.8	1,073.0	1,546.4	1,463.2	83.17	18.594				

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 Vogl-Geist 2A-5H-E267
Project:	DJ Wattenberg	TVD Reference:	KB @ 4866.0ft (Ensign)
Reference Site:	S5-T2N-R67W (Vogl-McCoy)	MD Reference:	KB @ 4866.0ft (Ensign)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Vogl-Geist 2A-5H-E267	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design S5-T2N-R67W (Vogl-McCoy) - GEIST 0-2-32 (EXISTING) - ENCANA WELL - NO SURVEYS													Offset Site Error: 0.0 ft
Survey Program: 0-MWD													Offset Well Error: 0.0 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	
12,300.0	7,285.0	7,296.6	7,219.0	90.8	21.4	-90.00	6,484.7	-189.1	1,464.3	1,360.2	104.11	14.065	
12,400.0	7,285.0	7,296.6	7,219.0	92.6	21.4	-90.00	6,484.7	-189.1	1,365.6	1,259.7	105.85	12.901	
12,500.0	7,285.0	7,296.6	7,219.0	94.3	21.4	-90.00	6,484.7	-189.1	1,267.0	1,159.4	107.58	11.777	
12,600.0	7,285.0	7,296.6	7,219.0	96.1	21.4	-90.00	6,484.7	-189.1	1,168.7	1,059.4	109.32	10.690	
12,700.0	7,285.0	7,296.6	7,219.0	97.8	21.4	-90.00	6,484.7	-189.1	1,070.7	959.7	111.06	9.641	
12,800.0	7,285.0	7,296.6	7,219.0	99.5	21.4	-90.00	6,484.7	-189.1	973.1	860.3	112.80	8.627	
12,900.0	7,285.0	7,296.6	7,219.0	101.3	21.4	-90.00	6,484.7	-189.1	876.1	761.6	114.54	7.649	
13,000.0	7,285.0	7,296.6	7,219.0	103.0	21.4	-90.00	6,484.7	-189.1	779.8	663.6	116.28	6.706	
13,100.0	7,285.0	7,296.6	7,219.0	104.8	21.4	-90.00	6,484.7	-189.1	684.6	566.6	118.03	5.801	
13,200.0	7,285.0	7,296.6	7,219.0	106.5	21.4	-90.00	6,484.7	-189.1	591.0	471.2	119.77	4.935	
13,300.0	7,285.0	7,296.6	7,219.0	108.2	21.4	-90.00	6,484.7	-189.1	499.9	378.4	121.51	4.114	
13,400.0	7,285.0	7,296.6	7,219.0	110.0	21.4	-90.00	6,484.7	-189.1	412.8	289.6	123.25	3.349	
13,500.0	7,285.0	7,296.6	7,219.0	111.7	21.4	-90.00	6,484.7	-189.1	333.2	208.2	125.00	2.665	
13,600.0	7,285.0	7,296.6	7,219.0	113.5	21.4	-90.00	6,484.7	-189.1	267.5	140.8	126.74	2.111	
13,700.0	7,285.0	7,296.6	7,219.0	115.2	21.4	-90.00	6,484.7	-189.1	228.3	99.9	128.48	1.777	
13,747.2	7,285.0	7,296.6	7,219.0	116.0	21.4	-90.00	6,484.7	-189.1	223.4	94.1	129.31	1.728 CC, ES, SF	
13,800.0	7,285.0	7,296.6	7,219.0	117.0	21.4	-90.00	6,484.7	-189.1	229.6	99.4	130.23	1.763	
13,900.0	7,285.0	7,296.6	7,219.0	118.7	21.4	-90.00	6,484.7	-189.1	270.7	138.7	131.97	2.051	
14,000.0	7,285.0	7,296.6	7,219.0	120.4	21.4	-90.00	6,484.7	-189.1	337.4	203.7	133.72	2.523	
14,100.0	7,285.0	7,296.6	7,219.0	122.2	21.4	-90.00	6,484.7	-189.1	417.6	282.2	135.46	3.083	
14,200.0	7,285.0	7,296.6	7,219.0	123.9	21.4	-90.00	6,484.7	-189.1	505.0	367.8	137.21	3.680	
14,300.0	7,285.0	7,296.6	7,219.0	125.7	21.4	-90.00	6,484.7	-189.1	596.3	457.3	138.95	4.291	
14,400.0	7,285.0	7,296.6	7,219.0	127.4	21.4	-90.00	6,484.7	-189.1	690.0	549.3	140.70	4.904	
14,500.0	7,285.0	7,296.6	7,219.0	129.2	21.4	-90.00	6,484.7	-189.1	785.3	642.9	142.44	5.513	
14,600.0	7,285.0	7,296.6	7,219.0	130.9	21.4	-90.00	6,484.7	-189.1	881.6	737.4	144.19	6.114	
14,661.5	7,285.0	7,296.6	7,219.0	132.0	21.4	-90.00	6,484.7	-189.1	941.2	796.0	145.26	6.479	



Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Vogl-Geist 2A-5H-E267
Project:	DJ Wattenberg	TVD Reference:	KB @ 4866.0ft (Ensign)
Reference Site:	S5-T2N-R67W (Vogl-McCoy)	MD Reference:	KB @ 4866.0ft (Ensign)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Vogl-Geist 2A-5H-E267	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design S5-T2N-R67W (Vogl-McCoy) - GEIST 11-32 (EXISTING) - ENCANA WELL - NO SURVEYS													Offset Site Error: 0.0 ft
Survey Program: 7897-MWD													Offset Well Error: 0.0 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	
12,700.0	7,285.0	7,221.0	7,221.0	97.8	12.6	90.00	6,783.7	723.9	1,524.2	1,413.8	110.39	13.808	
12,800.0	7,285.0	7,221.0	7,221.0	99.5	12.6	90.00	6,783.7	723.9	1,435.6	1,323.4	112.13	12.803	
12,900.0	7,285.0	7,221.0	7,221.0	101.3	12.6	90.00	6,783.7	723.9	1,348.5	1,234.6	113.87	11.843	
13,000.0	7,285.0	7,221.0	7,221.0	103.0	12.6	90.00	6,783.7	723.9	1,263.3	1,147.7	115.61	10.928	
13,100.0	7,285.0	7,221.0	7,221.0	104.8	12.6	90.00	6,783.7	723.9	1,180.5	1,063.2	117.35	10.060	
13,200.0	7,285.0	7,221.0	7,221.0	106.5	12.6	90.00	6,783.7	723.9	1,100.6	981.5	119.09	9.241	
13,300.0	7,285.0	7,221.0	7,221.0	108.2	12.6	90.00	6,783.7	723.9	1,024.1	903.3	120.83	8.475	
13,400.0	7,285.0	7,221.0	7,221.0	110.0	12.6	90.00	6,783.7	723.9	952.1	829.5	122.58	7.767	
13,500.0	7,285.0	7,221.0	7,221.0	111.7	12.6	90.00	6,783.7	723.9	885.4	761.1	124.32	7.122	
13,600.0	7,285.0	7,221.0	7,221.0	113.5	12.6	90.00	6,783.7	723.9	825.6	699.5	126.06	6.549	
13,700.0	7,285.0	7,221.0	7,221.0	115.2	12.6	90.00	6,783.7	723.9	774.1	646.3	127.81	6.056	
13,800.0	7,285.0	7,221.0	7,221.0	117.0	12.6	90.00	6,783.7	723.9	732.6	603.1	129.55	5.655	
13,900.0	7,285.0	7,221.0	7,221.0	118.7	12.6	90.00	6,783.7	723.9	703.1	571.8	131.30	5.355	
14,000.0	7,285.0	7,221.0	7,221.0	120.4	12.6	90.00	6,783.7	723.9	687.0	553.9	133.04	5.164	
14,062.1	7,285.0	7,221.0	7,221.0	121.5	12.6	90.00	6,783.7	723.9	684.2	550.0	134.12	5.101 CC, ES	
14,100.0	7,285.0	7,221.0	7,221.0	122.2	12.6	90.00	6,783.7	723.9	685.2	550.4	134.79	5.084 SF	
14,200.0	7,285.0	7,221.0	7,221.0	123.9	12.6	90.00	6,783.7	723.9	697.9	561.4	136.53	5.112	
14,300.0	7,285.0	7,221.0	7,221.0	125.7	12.6	90.00	6,783.7	723.9	724.4	586.1	138.28	5.239	
14,400.0	7,285.0	7,221.0	7,221.0	127.4	12.6	90.00	6,783.7	723.9	763.1	623.1	140.02	5.450	
14,500.0	7,285.0	7,221.0	7,221.0	129.2	12.6	90.00	6,783.7	723.9	812.3	670.6	141.77	5.730	
14,600.0	7,285.0	7,221.0	7,221.0	130.9	12.6	90.00	6,783.7	723.9	870.3	726.8	143.51	6.064	
14,661.5	7,285.0	7,221.0	7,221.0	132.0	12.6	90.00	6,783.7	723.9	909.6	765.0	144.59	6.291	



Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Vogl-Geist 2A-5H-E267
Project:	DJ Wattenberg	TVD Reference:	KB @ 4866.0ft (Ensign)
Reference Site:	S5-T2N-R67W (Vogl-McCoy)	MD Reference:	KB @ 4866.0ft (Ensign)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Vogl-Geist 2A-5H-E267	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design S5-T2N-R67W (Vogl-McCoy) - GEIST 12-32 (EXISTING) - ENCANA WELL - SURVEYS													Offset Site Error:	0.0 ft
Survey Program: 100-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis		Distance		Total		Separation		Warning		
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Uncertainty Axis			
11,500.0	7,285.0	7,228.9	7,227.8	77.0	12.7	90.11	5,670.6	428.0	1,500.5	1,410.9	89.58	16.751		
11,600.0	7,285.0	7,228.8	7,227.7	78.7	12.7	90.10	5,670.6	428.0	1,404.5	1,313.2	91.31	15.382		
11,700.0	7,285.0	7,228.7	7,227.6	80.4	12.7	90.08	5,670.6	428.0	1,309.1	1,216.1	93.04	14.071		
11,800.0	7,285.0	7,228.6	7,227.5	82.2	12.7	90.07	5,670.6	428.0	1,214.5	1,119.7	94.77	12.815		
11,900.0	7,285.0	7,228.5	7,227.4	83.9	12.7	90.06	5,670.6	428.0	1,120.8	1,024.3	96.51	11.614		
12,000.0	7,285.0	7,228.4	7,227.3	85.6	12.7	90.04	5,670.6	428.0	1,028.3	930.0	98.24	10.467		
12,100.0	7,285.0	7,228.3	7,227.2	87.4	12.7	90.03	5,670.6	428.0	937.3	837.3	99.98	9.375		
12,200.0	7,285.0	7,228.2	7,227.1	89.1	12.7	90.02	5,670.6	428.0	848.4	746.7	101.71	8.341		
12,300.0	7,285.0	7,228.1	7,227.0	90.8	12.7	90.01	5,670.6	428.0	762.2	658.8	103.45	7.368		
12,400.0	7,285.0	7,228.0	7,227.0	92.6	12.7	89.99	5,670.6	428.0	679.8	574.6	105.19	6.463		
12,500.0	7,285.0	7,227.9	7,226.9	94.3	12.7	89.98	5,670.6	428.0	602.8	495.9	106.93	5.638		
12,600.0	7,285.0	7,227.8	7,226.8	96.1	12.7	89.97	5,670.6	428.0	533.4	424.8	108.66	4.909		
12,700.0	7,285.0	7,227.8	7,226.7	97.8	12.7	89.96	5,670.6	428.0	475.1	364.7	110.40	4.304		
12,800.0	7,285.0	7,227.7	7,226.6	99.5	12.7	89.94	5,670.6	428.0	432.4	320.2	112.14	3.856		
12,900.0	7,285.0	7,227.6	7,226.5	101.3	12.7	89.93	5,670.6	428.0	410.1	296.2	113.88	3.601		
12,944.0	7,285.0	7,227.5	7,226.5	102.0	12.7	89.93	5,670.6	428.0	407.7	293.1	114.65	3.556 CC, ES, SF		
13,000.0	7,285.0	7,227.5	7,226.4	103.0	12.7	89.92	5,670.6	428.0	411.5	295.9	115.63	3.559		
13,100.0	7,285.0	7,227.4	7,226.4	104.8	12.7	89.91	5,670.6	428.0	436.5	319.2	117.37	3.719		
13,200.0	7,285.0	7,227.3	7,226.3	106.5	12.7	89.90	5,670.6	428.0	481.4	362.3	119.11	4.042		
13,300.0	7,285.0	7,227.3	7,226.2	108.2	12.7	89.89	5,670.6	428.0	541.2	420.4	120.85	4.479		
13,400.0	7,285.0	7,227.2	7,226.1	110.0	12.7	89.87	5,670.6	428.0	611.7	489.1	122.59	4.989		
13,500.0	7,285.0	7,227.1	7,226.0	111.7	12.7	89.86	5,670.6	428.0	689.5	565.1	124.34	5.545		
13,600.0	7,285.0	7,227.0	7,226.0	113.5	12.7	89.85	5,670.6	428.0	772.4	646.3	126.08	6.126		
13,700.0	7,285.0	7,226.9	7,225.9	115.2	12.7	89.84	5,670.6	428.0	858.9	731.1	127.82	6.720		
13,800.0	7,285.0	7,226.9	7,225.8	117.0	12.7	89.83	5,670.6	428.0	948.1	818.6	129.57	7.318		
13,900.0	7,285.0	7,226.8	7,225.7	118.7	12.7	89.82	5,670.6	428.0	1,039.3	908.0	131.31	7.915		
14,000.0	7,285.0	7,226.7	7,225.6	120.4	12.7	89.81	5,670.7	428.0	1,132.0	998.9	133.05	8.507		
14,100.0	7,285.0	7,226.6	7,225.6	122.2	12.7	89.80	5,670.7	428.0	1,225.8	1,091.0	134.80	9.093		
14,200.0	7,285.0	7,226.6	7,225.5	123.9	12.7	89.79	5,670.7	428.0	1,320.5	1,184.0	136.54	9.671		
14,300.0	7,285.0	7,226.5	7,225.4	125.7	12.7	89.78	5,670.7	428.0	1,416.0	1,277.7	138.29	10.239		
14,400.0	7,285.0	7,226.4	7,225.4	127.4	12.7	89.77	5,670.7	428.0	1,512.0	1,372.0	140.03	10.797		



Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Vogl-Geist 2A-5H-E267
Project:	DJ Wattenberg	TVD Reference:	KB @ 4866.0ft (Ensign)
Reference Site:	S5-T2N-R67W (Vogl-McCoy)	MD Reference:	KB @ 4866.0ft (Ensign)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Vogl-Geist 2A-5H-E267	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design S5-T2N-R67W (Vogl-McCoy) - GEIST 2-0-32 (EXISTING) - ENCANA WELL - Plan #1													Offset Site Error: 0.0 ft
Survey Program: 0-MWD													Offset Well Error: 0.0 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	
14,000.0	7,285.0	7,305.7	7,235.0	120.4	19.7	90.00	7,795.7	1,070.0	1,480.4	1,341.8	138.58	10.682	
14,100.0	7,285.0	7,305.7	7,235.0	122.2	19.7	90.00	7,795.7	1,070.0	1,409.1	1,268.8	140.33	10.042	
14,200.0	7,285.0	7,305.7	7,235.0	123.9	19.7	90.00	7,795.7	1,070.0	1,341.5	1,199.4	142.07	9.442	
14,300.0	7,285.0	7,305.7	7,235.0	125.7	19.7	90.00	7,795.7	1,070.0	1,278.1	1,134.3	143.82	8.887	
14,400.0	7,285.0	7,305.7	7,235.0	127.4	19.7	90.00	7,795.7	1,070.0	1,219.7	1,074.1	145.56	8.379	
14,500.0	7,285.0	7,305.7	7,235.0	129.2	19.7	90.00	7,795.7	1,070.0	1,166.9	1,019.6	147.31	7.921	
14,600.0	7,285.0	7,305.7	7,235.0	130.9	19.7	90.00	7,795.7	1,070.0	1,120.5	971.5	149.05	7.518	
14,661.5	7,285.0	7,305.7	7,235.0	132.0	19.7	90.00	7,795.7	1,070.0	1,095.6	945.5	150.13	7.298 CC, ES, SF	



Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Vogl-Geist 2A-5H-E267
Project:	DJ Wattenberg	TVD Reference:	KB @ 4866.0ft (Ensign)
Reference Site:	S5-T2N-R67W (Vogl-McCoy)	MD Reference:	KB @ 4866.0ft (Ensign)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Vogl-Geist 2A-5H-E267	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design S5-T2N-R67W (Vogl-McCoy) - GEIST 2-0-32 (EXISTING) - ENCANA WELL - SURVEYS													Offset Site Error: 0.0 ft
Survey Program: 650-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	
13,900.0	7,285.0	7,344.9	7,258.1	118.7	19.7	91.34	7,774.8	1,044.4	1,522.4	1,385.7	136.65	11.141	
14,000.0	7,285.0	7,343.2	7,256.4	120.4	19.7	91.24	7,774.8	1,044.4	1,447.7	1,309.3	138.40	10.461	
14,100.0	7,285.0	7,341.5	7,254.7	122.2	19.7	91.14	7,774.8	1,044.4	1,376.3	1,236.2	140.15	9.821	
14,200.0	7,285.0	7,339.8	7,253.0	123.9	19.7	91.04	7,774.9	1,044.4	1,308.6	1,166.7	141.89	9.223	
14,300.0	7,285.0	7,338.0	7,251.3	125.7	19.7	90.94	7,774.9	1,044.4	1,245.3	1,101.7	143.64	8.670	
14,400.0	7,285.0	7,336.3	7,249.6	127.4	19.7	90.84	7,774.9	1,044.4	1,187.0	1,041.6	145.39	8.165	
14,500.0	7,285.0	7,334.6	7,247.8	129.2	19.7	90.74	7,775.0	1,044.4	1,134.6	987.4	147.13	7.711	
14,600.0	7,285.0	7,332.9	7,246.1	130.9	19.6	90.65	7,775.0	1,044.4	1,088.8	939.9	148.88	7.313	
14,661.5	7,285.0	7,331.8	7,245.1	132.0	19.6	90.58	7,775.0	1,044.4	1,064.4	914.4	149.95	7.098 CC, ES, SF	



Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Vogl-Geist 2A-5H-E267
Project:	DJ Wattenberg	TVD Reference:	KB @ 4866.0ft (Ensign)
Reference Site:	S5-T2N-R67W (Vogl-McCoy)	MD Reference:	KB @ 4866.0ft (Ensign)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Vogl-Geist 2A-5H-E267	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design S5-T2N-R67W (Vogl-McCoy) - GEIST 21-32 (EXISTING) - ENCANA WELL - NO SURVEYS													Offset Site Error: 0.0 ft
Survey Program: 7851-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	
14,000.0	7,285.0	7,229.0	7,229.0	120.4	12.6	90.00	7,053.7	1,539.1	1,534.1	1,401.1	133.05	11.530	
14,100.0	7,285.0	7,229.0	7,229.0	122.2	12.6	90.00	7,053.7	1,539.1	1,514.7	1,379.9	134.80	11.237	
14,200.0	7,285.0	7,229.0	7,229.0	123.9	12.6	90.00	7,053.7	1,539.1	1,501.7	1,365.2	136.54	10.998	
14,300.0	7,285.0	7,229.0	7,229.0	125.7	12.6	90.00	7,053.7	1,539.1	1,495.3	1,357.0	138.29	10.813	
14,346.2	7,285.0	7,229.0	7,229.0	126.5	12.6	90.00	7,053.7	1,539.1	1,494.6	1,355.5	139.10	10.745 CC, ES	
14,400.0	7,285.0	7,229.0	7,229.0	127.4	12.6	90.00	7,053.7	1,539.1	1,495.5	1,355.5	140.04	10.680	
14,500.0	7,285.0	7,229.0	7,229.0	129.2	12.6	90.00	7,053.7	1,539.1	1,502.5	1,360.7	141.78	10.597	
14,600.0	7,285.0	7,229.0	7,229.0	130.9	12.6	90.00	7,053.7	1,539.1	1,516.0	1,372.4	143.53	10.562 SF	
14,661.5	7,285.0	7,229.0	7,229.0	132.0	12.6	90.00	7,053.7	1,539.1	1,527.5	1,382.9	144.60	10.563	



Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Vogl-Geist 2A-5H-E267
Project:	DJ Wattenberg	TVD Reference:	KB @ 4866.0ft (Ensign)
Reference Site:	S5-T2N-R67W (Vogl-McCoy)	MD Reference:	KB @ 4866.0ft (Ensign)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Vogl-Geist 2A-5H-E267	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design S5-T2N-R67W (Vogl-McCoy) - GEIST 2-4-32 (EXISTING) - ENCANA WELL - SURVEYS													Offset Site Error:	0.0 ft
Survey Program: 762-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor		
11,300.0	7,285.0	7,425.3	7,248.4	73.5	24.8	90.79	5,089.5	1,059.0	1,501.2	1,403.1	98.12	15.299		
11,400.0	7,285.0	7,425.1	7,248.3	75.2	24.8	90.78	5,089.5	1,059.0	1,431.4	1,331.5	99.85	14.334		
11,500.0	7,285.0	7,425.0	7,248.1	77.0	24.8	90.77	5,089.5	1,059.0	1,365.3	1,263.7	101.58	13.440		
11,600.0	7,285.0	7,424.8	7,247.9	78.7	24.8	90.76	5,089.5	1,059.0	1,303.5	1,200.2	103.32	12.617		
11,700.0	7,285.0	7,424.6	7,247.8	80.4	24.8	90.75	5,089.5	1,059.0	1,246.8	1,141.7	105.05	11.868		
11,800.0	7,285.0	7,424.5	7,247.6	82.2	24.8	90.74	5,089.5	1,059.0	1,195.7	1,088.9	106.78	11.197		
11,900.0	7,285.0	7,424.3	7,247.5	83.9	24.8	90.73	5,089.5	1,059.0	1,151.0	1,042.5	108.52	10.607		
12,000.0	7,285.0	7,424.2	7,247.3	85.6	24.7	90.73	5,089.5	1,059.0	1,113.6	1,003.3	110.25	10.100		
12,100.0	7,285.0	7,424.0	7,247.1	87.4	24.7	90.72	5,089.5	1,059.0	1,084.1	972.1	111.99	9.681		
12,200.0	7,285.0	7,423.8	7,247.0	89.1	24.7	90.71	5,089.5	1,059.0	1,063.2	949.5	113.72	9.349		
12,300.0	7,285.0	7,423.7	7,246.8	90.8	24.7	90.70	5,089.5	1,059.0	1,051.5	936.0	115.46	9.107		
12,374.0	7,285.0	7,423.6	7,246.7	92.1	24.7	90.69	5,089.5	1,059.0	1,048.9	932.2	116.74	8.985 CC		
12,400.0	7,285.0	7,423.5	7,246.7	92.6	24.7	90.69	5,089.5	1,059.0	1,049.2	932.0	117.20	8.953 ES		
12,500.0	7,285.0	7,423.4	7,246.5	94.3	24.7	90.68	5,089.5	1,059.0	1,056.5	937.5	118.94	8.883 SF		
12,600.0	7,285.0	7,423.2	7,246.4	96.1	24.7	90.67	5,089.5	1,059.0	1,073.0	952.3	120.67	8.892		
12,700.0	7,285.0	7,423.1	7,246.2	97.8	24.7	90.67	5,089.5	1,059.0	1,098.4	976.0	122.41	8.973		
12,800.0	7,285.0	7,422.9	7,246.0	99.5	24.7	90.66	5,089.5	1,059.0	1,132.1	1,008.0	124.15	9.119		
12,900.0	7,285.0	7,422.7	7,245.9	101.3	24.7	90.65	5,089.5	1,059.0	1,173.4	1,047.5	125.89	9.321		
13,000.0	7,285.0	7,422.6	7,245.7	103.0	24.7	90.64	5,089.5	1,059.0	1,221.5	1,093.9	127.64	9.570		
13,100.0	7,285.0	7,422.4	7,245.6	104.8	24.7	90.63	5,089.5	1,059.0	1,275.7	1,146.3	129.38	9.860		
13,200.0	7,285.0	7,422.3	7,245.4	106.5	24.7	90.62	5,089.5	1,059.0	1,335.1	1,204.0	131.12	10.183		
13,300.0	7,285.0	7,422.1	7,245.3	108.2	24.7	90.61	5,089.5	1,059.1	1,399.2	1,266.3	132.86	10.531		
13,400.0	7,285.0	7,422.0	7,245.1	110.0	24.7	90.61	5,089.5	1,059.1	1,467.3	1,332.7	134.60	10.901		
13,500.0	7,285.0	7,421.8	7,244.9	111.7	24.7	90.60	5,089.5	1,059.1	1,538.9	1,402.5	136.35	11.287		

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 Vogl-Geist 2A-5H-E267
Project:	DJ Wattenberg	TVD Reference:	KB @ 4866.0ft (Ensign)
Reference Site:	S5-T2N-R67W (Vogl-McCoy)	MD Reference:	KB @ 4866.0ft (Ensign)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Vogl-Geist 2A-5H-E267	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design S5-T2N-R67W (Vogl-McCoy) - GEIST A UNIT #1 (EXISTING) - ENCANA WELL - SURVEYS													Offset Site Error:	0.0 ft
Survey Program: 7870-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor		
12,400.0	7,285.0	7,219.0	7,219.0	92.6	12.6	90.00	6,321.4	941.8	1,509.0	1,403.9	105.17	14.349		
12,500.0	7,285.0	7,219.0	7,219.0	94.3	12.6	90.00	6,321.4	941.8	1,430.5	1,323.6	106.90	13.381		
12,600.0	7,285.0	7,219.0	7,219.0	96.1	12.6	90.00	6,321.4	941.8	1,354.9	1,246.2	108.64	12.471		
12,700.0	7,285.0	7,219.0	7,219.0	97.8	12.6	90.00	6,321.4	941.8	1,282.6	1,172.2	110.38	11.619		
12,800.0	7,285.0	7,219.0	7,219.0	99.5	12.6	90.00	6,321.4	941.8	1,214.2	1,102.1	112.12	10.829		
12,900.0	7,285.0	7,219.0	7,219.0	101.3	12.6	90.00	6,321.4	941.8	1,150.4	1,036.6	113.86	10.104		
13,000.0	7,285.0	7,219.0	7,219.0	103.0	12.6	90.00	6,321.4	941.8	1,092.1	976.5	115.61	9.447		
13,100.0	7,285.0	7,219.0	7,219.0	104.8	12.6	90.00	6,321.4	941.8	1,040.2	922.9	117.35	8.864		
13,200.0	7,285.0	7,219.0	7,219.0	106.5	12.6	90.00	6,321.4	941.8	995.6	876.6	119.09	8.360		
13,300.0	7,285.0	7,219.0	7,219.0	108.2	12.6	90.00	6,321.4	941.8	959.5	838.6	120.83	7.941		
13,400.0	7,285.0	7,219.0	7,219.0	110.0	12.6	90.00	6,321.4	941.8	932.6	810.1	122.57	7.609		
13,500.0	7,285.0	7,219.0	7,219.0	111.7	12.6	90.00	6,321.4	941.8	916.0	791.7	124.32	7.368		
13,600.0	7,285.0	7,219.0	7,219.0	113.5	12.6	90.00	6,321.4	941.8	910.1	784.1	126.06	7.220		
13,603.7	7,285.0	7,219.0	7,219.0	113.5	12.6	90.00	6,321.4	941.8	910.1	784.0	126.12	7.216 CC, ES		
13,700.0	7,285.0	7,219.0	7,219.0	115.2	12.6	90.00	6,321.4	941.8	915.2	787.4	127.80	7.161 SF		
13,800.0	7,285.0	7,219.0	7,219.0	117.0	12.6	90.00	6,321.4	941.8	931.1	801.5	129.55	7.187		
13,900.0	7,285.0	7,219.0	7,219.0	118.7	12.6	90.00	6,321.4	941.8	957.2	825.9	131.29	7.290		
14,000.0	7,285.0	7,219.0	7,219.0	120.4	12.6	90.00	6,321.4	941.8	992.7	859.7	133.04	7.462		
14,100.0	7,285.0	7,219.0	7,219.0	122.2	12.6	90.00	6,321.4	941.8	1,036.7	901.9	134.78	7.692		
14,200.0	7,285.0	7,219.0	7,219.0	123.9	12.6	90.00	6,321.4	941.8	1,088.1	951.6	136.53	7.970		
14,300.0	7,285.0	7,219.0	7,219.0	125.7	12.6	90.00	6,321.4	941.8	1,146.0	1,007.7	138.27	8.288		
14,400.0	7,285.0	7,219.0	7,219.0	127.4	12.6	90.00	6,321.4	941.8	1,209.3	1,069.3	140.02	8.637		
14,500.0	7,285.0	7,219.0	7,219.0	129.2	12.6	90.00	6,321.4	941.8	1,277.4	1,135.6	141.76	9.011		
14,600.0	7,285.0	7,219.0	7,219.0	130.9	12.6	90.00	6,321.4	941.8	1,349.5	1,206.0	143.51	9.403		
14,661.5	7,285.0	7,219.0	7,219.0	132.0	12.6	90.00	6,321.4	941.8	1,395.5	1,250.9	144.58	9.652		

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 Vogl-Geist 2A-5H-E267
Project:	DJ Wattenberg	TVD Reference:	KB @ 4866.0ft (Ensign)
Reference Site:	S5-T2N-R67W (Vogl-McCoy)	MD Reference:	KB @ 4866.0ft (Ensign)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Vogl-Geist 2A-5H-E267	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design S5-T2N-R67W (Vogl-McCoy) - MCCOY #1 (EXISTING) - ENCANA WELL - SURVEYS												Offset Site Error:	0.0 ft
Survey Program: 100-Geolink MWD												Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis		Distance		Total		Separation		Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Uncertainty Axis		
0.0	0.0	12.7	12.7	0.0	0.0	122.50	-314.0	493.0	584.5				
100.0	100.0	110.9	110.9	0.1	0.2	122.47	-313.9	493.3	584.7	584.4	0.30	1,959.849	
200.0	200.0	210.9	210.9	0.3	0.4	122.45	-313.9	493.7	585.1	584.4	0.65	903.662	
300.0	300.0	312.6	312.6	0.5	0.5	122.44	-313.9	494.0	585.3	584.3	1.00	585.629	
400.0	400.0	412.7	412.7	0.6	0.7	122.41	-313.8	494.1	585.3	584.0	1.35	433.993	
507.5	507.5	520.2	520.2	0.8	0.9	-76.71	-313.4	494.4	584.9	583.2	1.73	338.702	
600.0	599.9	612.1	612.1	1.0	1.1	-77.08	-313.1	494.7	584.2	582.1	2.05	284.367	
700.0	699.8	709.6	709.6	1.2	1.2	-77.48	-312.9	495.2	583.7	581.3	2.41	242.561	
800.0	799.8	810.0	810.0	1.4	1.4	-77.88	-312.8	495.9	583.5	580.7	2.77	211.006	
900.0	899.7	910.5	910.4	1.6	1.6	-78.29	-312.7	496.5	583.1	580.0	3.12	186.634	
1,000.0	999.6	1,010.8	1,010.8	1.7	1.7	-78.66	-312.7	496.9	582.7	579.2	3.48	167.262	
1,100.0	1,099.6	1,111.9	1,111.9	1.9	1.9	-79.03	-312.9	497.1	582.2	578.4	3.84	151.435	
1,200.0	1,199.5	1,214.9	1,214.8	2.1	2.1	-79.38	-313.0	496.8	581.3	577.1	4.21	138.107	
1,300.0	1,299.4	1,314.3	1,314.2	2.3	2.3	-79.71	-313.1	496.3	580.3	575.7	4.57	127.042	
1,400.0	1,399.3	1,414.9	1,414.9	2.5	2.5	-80.05	-313.2	495.9	579.3	574.4	4.93	117.532	
1,500.0	1,499.3	1,516.8	1,516.7	2.7	2.6	-80.39	-313.1	495.1	578.0	572.7	5.29	109.222	
1,600.0	1,599.2	1,615.7	1,615.7	2.9	2.8	-80.68	-313.4	494.2	576.7	571.0	5.65	102.065	
1,700.0	1,699.1	1,714.5	1,714.4	3.0	3.0	-80.96	-313.9	493.4	575.6	569.6	6.01	95.804	
1,800.0	1,799.1	1,815.3	1,815.3	3.2	3.2	-81.22	-314.7	492.4	574.5	568.2	6.37	90.187	
1,900.0	1,899.0	1,913.1	1,913.1	3.4	3.3	-81.44	-315.8	491.4	573.6	566.9	6.73	85.267	
2,000.0	1,998.9	2,013.8	2,013.7	3.6	3.5	-81.65	-317.2	490.5	572.8	565.7	7.09	80.801	
2,100.0	2,098.9	2,116.6	2,116.5	3.8	3.7	-81.86	-318.5	489.2	571.7	564.3	7.46	76.684	
2,200.0	2,198.8	2,218.3	2,218.2	4.0	3.9	-82.09	-319.3	487.6	570.2	562.4	7.82	72.915	
2,300.0	2,298.7	2,317.9	2,317.8	4.2	4.0	-82.31	-320.2	486.0	568.6	560.5	8.18	69.509	
2,400.0	2,398.6	2,420.3	2,420.2	4.3	4.2	-82.57	-320.7	484.1	566.8	558.2	8.55	66.319	
2,500.0	2,498.6	2,519.3	2,519.1	4.5	4.4	-82.83	-321.1	482.5	564.9	556.0	8.91	63.435	
2,600.0	2,598.5	2,621.5	2,621.4	4.7	4.6	-83.11	-321.3	480.6	562.9	553.6	9.27	60.715	
2,700.0	2,698.4	2,721.2	2,721.0	4.9	4.7	-83.41	-321.2	478.6	560.7	551.1	9.63	58.213	
2,800.0	2,798.4	2,819.3	2,819.1	5.1	4.9	-83.72	-321.2	477.0	558.7	548.7	9.99	55.931	
2,900.0	2,898.3	2,918.5	2,918.3	5.3	5.1	-84.04	-321.2	475.6	557.0	546.7	10.35	53.825	
3,000.0	2,998.2	3,019.8	3,019.6	5.5	5.3	-84.40	-320.8	474.2	555.2	544.5	10.71	51.832	
3,100.0	3,098.1	3,118.3	3,118.0	5.6	5.4	-84.78	-320.3	472.9	553.5	542.4	11.07	49.999	
3,200.0	3,198.1	3,216.2	3,216.0	5.8	5.6	-85.19	-319.6	472.1	552.1	540.7	11.43	48.315	
3,300.0	3,298.0	3,314.5	3,314.3	6.0	5.8	-85.62	-318.9	471.6	551.1	539.3	11.78	46.761	
3,400.0	3,397.9	3,413.2	3,413.0	6.2	6.0	-86.04	-318.4	471.3	550.3	538.2	12.14	45.320	
3,500.0	3,497.9	3,513.0	3,512.8	6.4	6.1	-86.46	-317.9	471.1	549.7	537.2	12.50	43.965	
3,600.0	3,597.8	3,612.9	3,612.7	6.6	6.3	-86.87	-317.6	470.9	549.2	536.3	12.86	42.691	
3,700.0	3,697.7	3,715.0	3,714.8	6.8	6.5	-87.30	-317.2	470.4	548.4	535.2	13.23	41.458	
3,800.0	3,797.7	3,816.2	3,815.9	6.9	6.7	-87.70	-316.8	469.6	547.4	533.8	13.59	40.274	
3,900.0	3,897.6	3,915.5	3,915.2	7.1	6.8	-88.07	-316.6	468.8	546.4	532.4	13.95	39.161	
4,000.0	3,997.5	4,015.9	4,015.6	7.3	7.0	-88.44	-316.6	467.8	545.4	531.1	14.31	38.103	
4,100.0	4,097.4	4,117.6	4,117.3	7.5	7.2	-88.80	-316.6	466.6	544.2	529.5	14.68	37.075	
4,200.0	4,197.4	4,217.7	4,217.4	7.7	7.4	-89.13	-316.7	465.2	542.8	527.8	15.04	36.094	
4,300.0	4,297.3	4,317.7	4,317.4	7.9	7.5	-89.45	-317.0	463.7	541.5	526.1	15.40	35.160	
4,400.0	4,397.2	4,418.2	4,417.9	8.1	7.7	-89.78	-317.2	462.2	540.1	524.3	15.76	34.264	
4,500.0	4,497.2	4,518.3	4,518.0	8.3	7.9	-90.12	-317.2	460.7	538.6	522.5	16.12	33.405	
4,600.0	4,597.1	4,617.1	4,616.8	8.4	8.1	-90.47	-317.1	459.3	537.3	520.8	16.48	32.600	
4,700.0	4,697.0	4,718.1	4,717.8	8.6	8.2	-90.82	-317.2	457.8	535.9	519.1	16.84	31.817	
4,800.0	4,797.0	4,816.0	4,815.7	8.8	8.4	-91.16	-317.3	456.5	534.8	517.6	17.20	31.091	
4,900.0	4,896.9	4,918.2	4,917.9	9.0	8.6	-91.54	-317.2	455.1	533.6	516.0	17.57	30.374	
5,000.0	4,996.8	5,017.3	5,016.9	9.2	8.8	-91.93	-316.8	453.8	532.2	514.3	17.92	29.694	
5,100.0	5,096.7	5,116.4	5,116.0	9.4	8.9	-92.36	-316.3	452.6	531.1	512.8	18.28	29.049	

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 Vogl-Geist 2A-5H-E267
Project:	DJ Wattenberg	TVD Reference:	KB @ 4866.0ft (Ensign)
Reference Site:	S5-T2N-R67W (Vogl-McCoy)	MD Reference:	KB @ 4866.0ft (Ensign)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Vogl-Geist 2A-5H-E267	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design S5-T2N-R67W (Vogl-McCoy) - MCCOY #1 (EXISTING) - ENCANA WELL - SURVEYS													Offset Site Error:	0.0 ft
Survey Program: 100-Geolink MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor		
5,200.0	5,196.7	5,215.4	5,215.1	9.6	9.1	-92.77	-315.9	451.6	530.2	511.5	18.64	28.440		
5,300.0	5,296.6	5,315.3	5,314.9	9.7	9.3	-93.18	-315.5	450.7	529.4	510.4	19.00	27.860		
5,332.2	5,328.8	5,347.9	5,347.6	9.8	9.3	-93.32	-315.4	450.4	529.1	510.0	19.12	27.676 CC, ES		
5,400.0	5,396.5	5,350.0	5,349.6	9.9	9.4	-93.33	-315.3	450.4	532.6	513.4	19.25	27.669 SF		
5,500.0	5,496.5	5,350.0	5,349.6	10.1	9.4	-93.33	-315.3	450.4	553.1	533.6	19.44	28.457		
5,600.0	5,596.4	5,350.0	5,349.6	10.3	9.4	-93.33	-315.3	450.4	590.0	570.4	19.62	30.069		
5,700.0	5,696.3	5,350.0	5,349.6	10.5	9.4	-93.33	-315.3	450.4	640.6	620.8	19.81	32.339		
5,800.0	5,796.2	5,350.0	5,349.6	10.7	9.4	-93.33	-315.3	450.4	701.8	681.8	19.99	35.101		
5,900.0	5,896.2	5,350.0	5,349.6	10.9	9.4	-93.33	-315.3	450.4	771.2	751.0	20.18	38.216		
6,000.0	5,996.1	5,350.0	5,349.6	11.0	9.4	-93.33	-315.3	450.4	846.7	826.4	20.37	41.575		
6,100.0	6,096.0	5,350.0	5,349.6	11.2	9.4	-93.33	-315.3	450.4	926.9	906.4	20.55	45.099		
6,200.0	6,196.0	5,350.0	5,349.6	11.4	9.4	-93.33	-315.3	450.4	1,010.7	989.9	20.74	48.731		
6,300.0	6,295.9	5,350.0	5,349.6	11.6	9.4	-93.33	-315.3	450.4	1,097.1	1,076.2	20.93	52.428		
6,400.0	6,395.8	5,350.0	5,349.6	11.8	9.4	-93.33	-315.3	450.4	1,185.7	1,164.6	21.11	56.162		
6,500.0	6,495.8	5,350.0	5,349.6	12.0	9.4	-93.33	-315.3	450.4	1,276.0	1,254.7	21.30	59.909		
6,600.0	6,595.7	5,350.0	5,349.6	12.2	9.4	-93.33	-315.3	450.4	1,367.6	1,346.1	21.48	63.654		
6,696.0	6,691.6	5,350.0	5,349.6	12.3	9.4	-93.33	-315.3	450.4	1,456.6	1,434.9	21.66	67.237		
6,700.0	6,695.6	5,350.0	5,349.6	12.4	9.4	-98.29	-315.3	450.4	1,460.3	1,438.6	21.67	67.392		
6,750.0	6,745.6	5,350.0	5,349.6	12.4	9.4	101.41	-315.3	450.4	1,507.2	1,485.5	21.67	69.538		



Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Vogl-Geist 2A-5H-E267
Project:	DJ Wattenberg	TVD Reference:	KB @ 4866.0ft (Ensign)
Reference Site:	S5-T2N-R67W (Vogl-McCoy)	MD Reference:	KB @ 4866.0ft (Ensign)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Vogl-Geist 2A-5H-E267	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design S5-T2N-R67W (Vogl-McCoy) - MCCOY 0-6-5 (EXISTING) - ENCANA WELL - NO SURVEYS												Offset Site Error:	0.0 ft
Survey Program: O-MWD												Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis		Distance		Total		Separation		Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Uncertainty Axis		
0.0	0.0	92.0	92.0	0.0	0.1	152.36	-688.5	360.5	777.2				
100.0	100.0	192.0	192.0	0.1	0.3	152.36	-688.5	360.5	777.2	776.7	0.44	1,767.003	
200.0	200.0	292.0	292.0	0.3	0.5	152.36	-688.5	360.5	777.2	776.4	0.79	985.144	
300.0	300.0	392.0	392.0	0.5	0.7	152.36	-688.5	360.5	777.2	776.0	1.14	682.953	
400.0	400.0	492.0	492.0	0.6	0.8	152.36	-688.5	360.5	777.2	775.7	1.49	522.635	
507.5	507.5	599.5	599.5	0.8	1.0	-46.65	-688.5	360.5	775.8	773.9	1.86	416.318	
600.0	599.9	691.9	691.9	1.0	1.2	-46.84	-688.5	360.5	773.4	771.2	2.19	353.284	
700.0	699.8	791.8	791.8	1.2	1.4	-47.04	-688.5	360.5	770.8	768.3	2.54	303.200	
800.0	799.8	891.8	891.8	1.4	1.5	-47.25	-688.5	360.5	768.3	765.4	2.90	265.277	
900.0	899.7	991.7	991.7	1.6	1.7	-47.46	-688.5	360.5	765.7	762.5	3.25	235.581	
1,000.0	999.6	1,091.6	1,091.6	1.7	1.9	-47.66	-688.5	360.5	763.2	759.6	3.61	211.705	
1,100.0	1,099.6	1,191.6	1,191.6	1.9	2.1	-47.87	-688.5	360.5	760.7	756.7	3.96	192.096	
1,200.0	1,199.5	1,291.5	1,291.5	2.1	2.2	-48.08	-688.5	360.5	758.2	753.9	4.32	175.705	
1,300.0	1,299.4	1,391.4	1,391.4	2.3	2.4	-48.29	-688.5	360.5	755.7	751.0	4.67	161.802	
1,400.0	1,399.3	1,491.3	1,491.3	2.5	2.6	-48.51	-688.5	360.5	753.2	748.2	5.03	149.862	
1,500.0	1,499.3	1,591.3	1,591.3	2.7	2.8	-48.72	-688.5	360.5	750.7	745.3	5.38	139.498	
1,600.0	1,599.2	1,691.2	1,691.2	2.9	2.9	-48.94	-688.5	360.5	748.2	742.5	5.74	130.417	
1,700.0	1,699.1	1,791.1	1,791.1	3.0	3.1	-49.15	-688.5	360.5	745.8	739.7	6.09	122.395	
1,800.0	1,799.1	1,891.1	1,891.1	3.2	3.3	-49.37	-688.5	360.5	743.3	736.9	6.45	115.259	
1,900.0	1,899.0	1,991.0	1,991.0	3.4	3.5	-49.59	-688.5	360.5	740.9	734.1	6.81	108.869	
2,000.0	1,998.9	2,090.9	2,090.9	3.6	3.6	-49.81	-688.5	360.5	738.5	731.3	7.16	103.114	
2,100.0	2,098.9	2,190.9	2,190.9	3.8	3.8	-50.04	-688.5	360.5	736.0	728.5	7.52	97.904	
2,200.0	2,198.8	2,290.8	2,290.8	4.0	4.0	-50.26	-688.5	360.5	733.6	725.8	7.87	93.167	
2,300.0	2,298.7	2,390.7	2,390.7	4.2	4.2	-50.49	-688.5	360.5	731.2	723.0	8.23	88.839	
2,400.0	2,398.6	2,490.6	2,490.6	4.3	4.3	-50.71	-688.5	360.5	728.9	720.3	8.59	84.872	
2,500.0	2,498.6	2,590.6	2,590.6	4.5	4.5	-50.94	-688.5	360.5	726.5	717.5	8.94	81.221	
2,600.0	2,598.5	2,690.5	2,690.5	4.7	4.7	-51.17	-688.5	360.5	724.1	714.8	9.30	77.851	
2,700.0	2,698.4	2,790.4	2,790.4	4.9	4.9	-51.41	-688.5	360.5	721.8	712.1	9.66	74.730	
2,800.0	2,798.4	2,890.4	2,890.4	5.1	5.0	-51.64	-688.5	360.5	719.4	709.4	10.02	71.832	
2,900.0	2,898.3	2,990.3	2,990.3	5.3	5.2	-51.87	-688.5	360.5	717.1	706.7	10.37	69.134	
3,000.0	2,998.2	3,090.2	3,090.2	5.5	5.4	-52.11	-688.5	360.5	714.8	704.1	10.73	66.616	
3,100.0	3,098.1	3,190.1	3,190.1	5.6	5.6	-52.35	-688.5	360.5	712.5	701.4	11.09	64.261	
3,200.0	3,198.1	3,290.1	3,290.1	5.8	5.7	-52.59	-688.5	360.5	710.2	698.8	11.45	62.054	
3,300.0	3,298.0	3,390.0	3,390.0	6.0	5.9	-52.83	-688.5	360.5	708.0	696.1	11.80	59.981	
3,400.0	3,397.9	3,489.9	3,489.9	6.2	6.1	-53.07	-688.5	360.5	705.7	693.5	12.16	58.030	
3,500.0	3,497.9	3,589.9	3,589.9	6.4	6.2	-53.32	-688.5	360.5	703.4	690.9	12.52	56.192	
3,600.0	3,597.8	3,689.8	3,689.8	6.6	6.4	-53.56	-688.5	360.5	701.2	688.3	12.88	54.456	
3,700.0	3,697.7	3,789.7	3,789.7	6.8	6.6	-53.81	-688.5	360.5	699.0	685.7	13.23	52.814	
3,800.0	3,797.7	3,889.7	3,889.7	6.9	6.8	-54.06	-688.5	360.5	696.8	683.2	13.59	51.260	
3,900.0	3,897.6	3,989.6	3,989.6	7.1	6.9	-54.31	-688.5	360.5	694.6	680.6	13.95	49.786	
4,000.0	3,997.5	4,089.5	4,089.5	7.3	7.1	-54.56	-688.5	360.5	692.4	678.1	14.31	48.387	
4,100.0	4,097.4	4,189.4	4,189.4	7.5	7.3	-54.81	-688.5	360.5	690.2	675.6	14.67	47.056	
4,200.0	4,197.4	4,289.4	4,289.4	7.7	7.5	-55.07	-688.5	360.5	688.1	673.0	15.03	45.790	
4,300.0	4,297.3	4,389.3	4,389.3	7.9	7.6	-55.33	-688.5	360.5	685.9	670.5	15.39	44.583	
4,400.0	4,397.2	4,489.2	4,489.2	8.1	7.8	-55.59	-688.5	360.5	683.8	668.1	15.74	43.431	
4,500.0	4,497.2	4,589.2	4,589.2	8.3	8.0	-55.85	-688.5	360.5	681.7	665.6	16.10	42.332	
4,600.0	4,597.1	4,689.1	4,689.1	8.4	8.2	-56.11	-688.5	360.5	679.6	663.1	16.46	41.281	
4,700.0	4,697.0	4,789.0	4,789.0	8.6	8.3	-56.37	-688.5	360.5	677.5	660.7	16.82	40.276	
4,800.0	4,797.0	4,889.0	4,889.0	8.8	8.5	-56.63	-688.5	360.5	675.4	658.2	17.18	39.313	
4,900.0	4,896.9	4,988.9	4,988.9	9.0	8.7	-56.90	-688.5	360.5	673.4	655.8	17.54	38.390	
5,000.0	4,996.8	5,088.8	5,088.8	9.2	8.9	-57.17	-688.5	360.5	671.3	653.4	17.90	37.505	
5,100.0	5,096.7	5,188.7	5,188.7	9.4	9.0	-57.44	-688.5	360.5	669.3	651.0	18.26	36.656	

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 Vogl-Geist 2A-5H-E267
Project:	DJ Wattenberg	TVD Reference:	KB @ 4866.0ft (Ensign)
Reference Site:	S5-T2N-R67W (Vogl-McCoy)	MD Reference:	KB @ 4866.0ft (Ensign)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Vogl-Geist 2A-5H-E267	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design S5-T2N-R67W (Vogl-McCoy) - MCCOY 0-6-5 (EXISTING) - ENCANA WELL - NO SURVEYS													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance				Total	Separation	Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Uncertainty Axis	Factor		
5,200.0	5,196.7	5,288.7	5,288.7	9.6	9.2	-57.71	-688.5	360.5	667.3	648.7	18.62	35.839		
5,300.0	5,296.6	5,388.6	5,388.6	9.7	9.4	-57.98	-688.5	360.5	665.3	646.3	18.98	35.055		
5,400.0	5,396.5	5,488.5	5,488.5	9.9	9.6	-58.26	-688.5	360.5	663.3	644.0	19.34	34.300		
5,500.0	5,496.5	5,588.5	5,588.5	10.1	9.7	-58.53	-688.5	360.5	661.3	641.6	19.70	33.573		
5,600.0	5,596.4	5,688.4	5,688.4	10.3	9.9	-58.81	-688.5	360.5	659.4	639.3	20.06	32.873		
5,700.0	5,696.3	5,788.3	5,788.3	10.5	10.1	-59.09	-688.5	360.5	657.4	637.0	20.42	32.198		
5,800.0	5,796.2	5,888.2	5,888.2	10.7	10.3	-59.37	-688.5	360.5	655.5	634.7	20.78	31.548		
5,900.0	5,896.2	5,988.2	5,988.2	10.9	10.4	-59.66	-688.5	360.5	653.6	632.5	21.14	30.920		
6,000.0	5,996.1	6,088.1	6,088.1	11.0	10.6	-59.94	-688.5	360.5	651.7	630.2	21.50	30.314		
6,100.0	6,096.0	6,188.0	6,188.0	11.2	10.8	-60.23	-688.5	360.5	649.9	628.0	21.86	29.728		
6,200.0	6,196.0	6,288.0	6,288.0	11.4	11.0	-60.51	-688.5	360.5	648.0	625.8	22.22	29.162		
6,300.0	6,295.9	6,387.9	6,387.9	11.6	11.1	-60.80	-688.5	360.5	646.2	623.6	22.58	28.614		
6,400.0	6,395.8	6,487.8	6,487.8	11.8	11.3	-61.10	-688.5	360.5	644.3	621.4	22.94	28.085		
6,500.0	6,495.8	6,587.8	6,587.8	12.0	11.5	-61.39	-688.5	360.5	642.5	619.2	23.30	27.572		
6,600.0	6,595.7	6,687.7	6,687.7	12.2	11.7	-61.68	-688.5	360.5	640.7	617.1	23.66	27.076		
6,696.0	6,691.6	6,783.6	6,783.6	12.3	11.8	-61.97	-688.5	360.5	639.0	615.0	24.01	26.614		
6,700.0	6,695.6	6,787.6	6,787.6	12.4	11.8	-65.94	-688.5	360.5	639.0	615.0	24.03	26.595		
6,710.1	6,705.7	6,797.7	6,797.7	12.4	11.8	-89.99	-688.5	360.5	638.9	614.9	24.06	26.557 CC, ES		
6,750.0	6,745.6	6,837.6	6,837.6	12.4	11.9	147.02	-688.5	360.5	639.9	615.8	24.16	26.484 SF		
6,800.0	6,795.3	6,887.3	6,887.3	12.5	12.0	140.40	-688.5	360.5	644.0	619.8	24.22	26.590		
6,850.0	6,844.4	6,936.4	6,936.4	12.5	12.1	138.75	-688.5	360.5	651.2	627.0	24.20	26.910		
6,900.0	6,892.5	6,984.5	6,984.5	12.5	12.2	138.03	-688.5	360.5	661.6	637.5	24.11	27.443		
6,950.0	6,939.2	7,031.2	7,031.2	12.5	12.3	137.62	-688.5	360.5	675.2	651.2	23.95	28.192		
7,000.0	6,984.2	7,076.2	7,076.2	12.5	12.3	137.28	-688.5	360.5	692.0	668.3	23.74	29.153		
7,050.0	7,027.1	7,119.1	7,119.1	12.5	12.4	136.90	-688.5	360.5	712.0	688.6	23.49	30.318		
7,100.0	7,067.6	7,159.6	7,159.6	12.5	12.5	136.37	-688.5	360.5	735.3	712.1	23.22	31.671		
7,150.0	7,105.4	7,197.4	7,197.4	12.5	12.5	135.62	-688.5	360.5	761.7	738.8	22.96	33.174		
7,200.0	7,140.2	7,232.2	7,232.2	12.6	12.6	134.53	-688.5	360.5	791.2	768.4	22.76	34.768		
7,250.0	7,171.8	7,263.8	7,263.8	12.7	12.7	133.00	-688.5	360.5	823.6	800.9	22.65	36.363		
7,300.0	7,199.8	7,291.8	7,291.8	12.8	12.7	130.88	-688.5	360.5	858.7	836.0	22.69	37.838		
7,350.0	7,224.1	7,316.1	7,316.1	13.0	12.8	128.01	-688.5	360.5	896.3	873.4	22.95	39.053		
7,400.0	7,244.6	7,336.6	7,336.6	13.2	12.8	124.16	-688.5	360.5	936.1	912.7	23.47	39.883		
7,450.0	7,261.0	7,353.0	7,353.0	13.5	12.8	119.07	-688.5	360.5	977.9	953.6	24.28	40.267		
7,500.0	7,273.2	7,365.2	7,365.2	13.9	12.8	112.41	-688.5	360.5	1,021.2	995.8	25.35	40.285		
7,550.0	7,281.1	7,373.1	7,373.1	14.2	12.9	103.96	-688.5	360.5	1,065.7	1,039.2	26.50	40.210		
7,600.0	7,284.8	7,376.8	7,376.8	14.7	12.9	93.70	-688.5	360.5	1,111.1	1,083.7	27.43	40.510		
7,616.5	7,285.0	7,377.0	7,377.0	14.8	12.9	90.00	-688.5	360.5	1,126.2	1,098.6	27.61	40.783		
7,700.0	7,285.0	7,377.0	7,377.0	15.6	12.9	90.00	-688.5	360.5	1,203.2	1,174.7	28.44	42.309		
7,800.0	7,285.0	7,377.0	7,377.0	16.7	12.9	90.00	-688.5	360.5	1,296.4	1,266.9	29.54	43.886		
7,900.0	7,285.0	7,377.0	7,377.0	17.9	12.9	90.00	-688.5	360.5	1,390.6	1,359.8	30.75	45.226		
8,000.0	7,285.0	7,377.0	7,377.0	19.2	12.9	90.00	-688.5	360.5	1,485.5	1,453.5	32.04	46.366		

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 Vogl-Geist 2A-5H-E267
Project:	DJ Wattenberg	TVD Reference:	KB @ 4866.0ft (Ensign)
Reference Site:	S5-T2N-R67W (Vogl-McCoy)	MD Reference:	KB @ 4866.0ft (Ensign)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Vogl-Geist 2A-5H-E267	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design S5-T2N-R67W (Vogl-McCoy) - MCCOY 13-5 (EXISTING) - ENCANA WELL - SURVEYS														Offset Site Error:	0.0 ft
Survey Program: 100-MWD														Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis		Distance									
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning		
0.0	0.0	0.0	0.0	0.0	0.0	152.48	-703.8	366.7	793.6						
100.0	100.0	100.0	100.0	0.1	0.2	152.49	-703.3	366.2	792.9	792.7	0.28	2,839.302			
200.0	200.0	194.4	194.4	0.3	0.3	152.52	-702.6	365.5	792.0	791.4	0.62	1,280.436			
300.0	300.0	298.1	298.1	0.5	0.5	152.56	-702.4	364.6	791.4	790.4	0.97	812.287			
400.0	400.0	392.3	392.3	0.6	0.7	152.63	-702.3	363.6	790.9	789.6	1.31	602.081			
507.5	507.5	502.4	502.4	0.8	0.9	-46.29	-702.7	362.2	789.2	787.5	1.70	465.039			
600.0	599.9	597.0	597.0	1.0	1.0	-46.40	-702.7	360.9	786.2	784.2	2.03	387.839			
700.0	699.8	692.9	692.9	1.2	1.2	-46.50	-702.8	359.7	783.1	780.7	2.37	329.751			
800.0	799.8	795.2	795.1	1.4	1.4	-46.58	-703.2	358.0	780.1	777.4	2.73	285.256			
900.0	899.7	896.7	896.7	1.6	1.6	-46.66	-703.4	356.1	776.9	773.8	3.09	251.109			
1,000.0	999.6	993.1	993.0	1.7	1.7	-46.73	-703.7	354.4	773.7	770.3	3.44	224.645			
1,100.0	1,099.6	1,086.4	1,086.3	1.9	1.9	-46.79	-704.6	353.0	771.3	767.5	3.79	203.529			
1,200.0	1,199.5	1,191.8	1,191.7	2.1	2.1	-46.85	-705.9	351.3	769.0	764.9	4.16	184.968			
1,300.0	1,299.4	1,295.8	1,295.7	2.3	2.3	-46.90	-706.5	349.1	766.0	761.5	4.52	169.366			
1,400.0	1,399.3	1,388.0	1,387.8	2.5	2.4	-46.96	-707.1	347.6	763.3	758.4	4.87	156.858			
1,500.0	1,499.3	1,495.6	1,495.4	2.7	2.6	-47.05	-708.0	345.9	760.7	755.4	5.24	145.219			
1,600.0	1,599.2	1,588.2	1,588.0	2.9	2.8	-47.11	-708.6	344.3	757.9	752.3	5.58	135.768			
1,700.0	1,699.1	1,696.5	1,696.3	3.0	3.0	-47.18	-709.4	342.4	755.2	749.2	5.96	126.785			
1,800.0	1,799.1	1,797.7	1,797.4	3.2	3.2	-47.20	-709.8	339.7	751.7	745.4	6.32	118.975			
1,900.0	1,899.0	1,896.6	1,896.3	3.4	3.3	-47.23	-710.1	337.2	748.3	741.6	6.68	112.085			
2,000.0	1,998.9	1,995.0	1,994.7	3.6	3.5	-47.25	-710.6	334.8	745.0	737.9	7.03	105.918			
2,100.0	2,098.9	2,092.8	2,092.4	3.8	3.7	-47.28	-711.2	332.6	741.9	734.5	7.39	100.424			
2,200.0	2,198.8	2,191.1	2,190.8	4.0	3.9	-47.32	-712.1	330.4	739.1	731.4	7.75	95.416			
2,300.0	2,298.7	2,290.2	2,289.7	4.2	4.0	-47.30	-713.5	327.8	736.5	728.4	8.11	90.861			
2,400.0	2,398.6	2,389.2	2,388.8	4.3	4.2	-47.28	-714.9	325.2	734.0	725.6	8.47	86.700			
2,500.0	2,498.6	2,489.1	2,488.5	4.5	4.4	-47.25	-716.5	322.5	731.6	722.8	8.83	82.869			
2,600.0	2,598.5	2,587.0	2,586.5	4.7	4.6	-47.22	-718.2	319.9	729.3	720.2	9.19	79.383			
2,700.0	2,698.4	2,685.4	2,684.8	4.9	4.8	-47.19	-720.2	317.4	727.3	717.8	9.55	76.184			
2,800.0	2,798.4	2,791.8	2,791.1	5.1	5.0	-47.16	-722.0	314.7	725.1	715.1	9.92	73.083			
2,900.0	2,898.3	2,888.7	2,888.0	5.3	5.1	-47.18	-723.1	312.4	722.4	712.1	10.27	70.310			
3,000.0	2,998.2	2,994.2	2,993.5	5.5	5.3	-47.22	-724.1	310.3	719.7	709.1	10.65	67.608			
3,100.0	3,098.1	3,091.9	3,091.1	5.6	5.5	-47.28	-724.6	308.4	716.7	705.7	11.00	65.168			
3,200.0	3,198.1	3,193.4	3,192.7	5.8	5.7	-47.42	-724.8	307.2	713.8	702.5	11.36	62.853			
3,300.0	3,298.0	3,293.3	3,292.6	6.0	5.9	-47.54	-724.7	305.6	710.4	698.7	11.72	60.598			
3,400.0	3,397.9	3,396.4	3,395.6	6.2	6.0	-47.66	-724.3	304.0	706.8	694.7	12.08	58.531			
3,500.0	3,497.9	3,498.1	3,497.3	6.4	6.2	-47.83	-723.7	302.9	703.2	690.8	12.43	56.557			
3,600.0	3,597.8	3,594.5	3,593.7	6.6	6.4	-48.00	-723.2	301.9	699.8	687.0	12.78	54.737			
3,700.0	3,697.7	3,692.6	3,691.8	6.8	6.5	-48.11	-723.4	300.4	696.7	683.5	13.14	53.019			
3,800.0	3,797.7	3,785.6	3,784.8	6.9	6.7	-48.17	-724.3	298.8	694.2	680.7	13.49	51.471			
3,900.0	3,897.6	3,891.3	3,890.5	7.1	6.9	-48.20	-725.9	296.7	692.0	678.1	13.86	49.928			
4,000.0	3,997.5	3,991.0	3,990.1	7.3	7.1	-48.17	-727.1	293.8	689.2	675.0	14.22	48.458			
4,100.0	4,097.4	4,100.6	4,099.6	7.5	7.3	-48.16	-727.8	290.6	685.8	671.2	14.60	46.973			
4,200.0	4,197.4	4,200.0	4,199.0	7.7	7.5	-48.23	-727.5	288.0	681.7	666.8	14.96	45.578			
4,300.0	4,297.3	4,306.6	4,305.6	7.9	7.6	-48.35	-726.3	285.7	677.2	661.8	15.33	44.183			
4,400.0	4,397.2	4,406.1	4,405.0	8.1	7.8	-48.48	-724.7	283.3	672.1	656.5	15.68	42.857			
4,500.0	4,497.2	4,503.1	4,502.0	8.3	8.0	-48.62	-723.3	281.2	667.4	651.3	16.03	41.621			
4,600.0	4,597.1	4,600.0	4,598.9	8.4	8.2	-48.80	-722.1	279.8	663.1	646.7	16.38	40.469			
4,700.0	4,697.0	4,697.0	4,695.9	8.6	8.3	-48.97	-721.4	278.4	659.2	642.5	16.74	39.388			
4,800.0	4,797.0	4,796.7	4,795.6	8.8	8.5	-49.12	-720.9	276.9	655.6	638.5	17.09	38.352			
4,900.0	4,896.9	4,900.0	4,898.8	9.0	8.7	-49.30	-720.0	275.3	651.7	634.2	17.46	37.332			
5,000.0	4,996.8	4,998.4	4,997.2	9.2	8.9	-49.52	-718.8	274.2	647.6	629.8	17.81	36.365			
5,100.0	5,096.7	5,099.2	5,098.0	9.4	9.0	-49.75	-717.7	273.2	643.6	625.5	18.17	35.432			

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 Vogl-Geist 2A-5H-E267
Project:	DJ Wattenberg	TVD Reference:	KB @ 4866.0ft (Ensign)
Reference Site:	S5-T2N-R67W (Vogl-McCoy)	MD Reference:	KB @ 4866.0ft (Ensign)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Vogl-Geist 2A-5H-E267	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design S5-T2N-R67W (Vogl-McCoy) - MCCOY 13-5 (EXISTING) - ENCANA WELL - SURVEYS													Offset Site Error:	0.0 ft
Survey Program: 100-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance				Total Uncertainty Axis	Separation Factor	Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)				
5,200.0	5,196.7	5,197.8	5,196.6	9.6	9.2	-49.98	-716.5	272.3	639.7	621.2	18.52	34.545		
5,300.0	5,296.6	5,297.1	5,295.9	9.7	9.4	-50.23	-715.4	271.5	636.0	617.1	18.87	33.696		
5,400.0	5,396.5	5,394.2	5,393.0	9.9	9.5	-50.47	-714.6	270.9	632.5	613.3	19.22	32.901		
5,500.0	5,496.5	5,493.9	5,492.7	10.1	9.7	-50.73	-713.9	270.3	629.3	609.7	19.58	32.138		
5,600.0	5,596.4	5,589.1	5,587.9	10.3	9.9	-50.93	-713.8	269.6	626.4	606.5	19.93	31.431		
5,700.0	5,696.3	5,688.2	5,686.9	10.5	10.1	-51.09	-714.4	268.7	624.1	603.8	20.29	30.762		
5,800.0	5,796.2	5,788.6	5,787.3	10.7	10.2	-51.23	-715.2	267.5	621.8	601.1	20.65	30.114		
5,900.0	5,896.2	5,891.0	5,889.8	10.9	10.4	-51.43	-715.5	266.7	619.2	598.2	21.01	29.475		
6,000.0	5,996.1	5,996.2	5,995.0	11.0	10.6	-51.68	-715.0	265.9	616.0	594.7	21.37	28.821		
6,100.0	6,096.0	6,096.3	6,095.0	11.2	10.8	-51.92	-714.0	264.9	612.4	590.7	21.73	28.181		
6,200.0	6,196.0	6,189.9	6,188.7	11.4	10.9	-52.18	-713.4	264.5	609.3	587.2	22.08	27.598		
6,300.0	6,295.9	6,295.6	6,294.3	11.6	11.1	-52.48	-712.8	264.1	606.4	583.9	22.45	27.015		
6,400.0	6,395.8	6,390.7	6,389.5	11.8	11.3	-52.71	-712.4	263.3	603.2	580.4	22.80	26.462		
6,500.0	6,495.8	6,486.2	6,484.9	12.0	11.4	-52.92	-712.7	262.8	600.9	577.7	23.15	25.961		
6,600.0	6,595.7	6,592.2	6,591.0	12.2	11.6	-53.16	-713.0	262.1	598.5	575.0	23.52	25.454		
6,696.0	6,691.6	6,686.8	6,685.5	12.3	11.8	-53.38	-712.8	261.3	595.8	571.9	23.86	24.973		
6,700.0	6,695.6	6,690.7	6,689.4	12.4	11.8	-57.35	-712.8	261.3	595.7	571.8	23.87	24.953		
6,714.6	6,710.2	6,704.9	6,703.6	12.4	11.8	-109.58	-712.7	261.3	595.5	571.6	23.92	24.897 CC, ES		
6,750.0	6,745.6	6,739.0	6,737.7	12.4	11.9	155.63	-712.7	261.1	596.4	572.4	24.00	24.847 SF		
6,800.0	6,795.3	6,786.8	6,785.6	12.5	12.0	149.00	-712.8	261.0	600.9	576.9	24.05	24.991		
6,850.0	6,844.4	6,836.3	6,835.1	12.5	12.1	147.34	-713.0	260.8	609.0	585.0	24.00	25.379		
6,900.0	6,892.5	6,885.7	6,884.4	12.5	12.1	146.61	-713.0	260.7	620.6	596.7	23.86	26.005		
6,950.0	6,939.2	6,933.8	6,932.5	12.5	12.2	146.19	-713.0	260.5	635.6	611.9	23.65	26.876		
7,000.0	6,984.2	6,980.1	6,978.8	12.5	12.3	145.85	-712.9	260.2	654.0	630.6	23.36	27.993		
7,050.0	7,027.1	7,021.3	7,020.0	12.5	12.4	145.39	-712.8	260.0	675.9	652.9	23.02	29.358		
7,100.0	7,067.6	7,057.6	7,056.3	12.5	12.4	144.68	-712.8	260.1	701.4	678.7	22.65	30.961		
7,150.0	7,105.4	7,091.2	7,089.9	12.5	12.5	143.70	-712.9	260.3	730.4	708.1	22.29	32.764		
7,200.0	7,140.2	7,123.8	7,122.6	12.6	12.6	142.43	-713.1	260.6	762.6	740.6	21.98	34.701		
7,250.0	7,171.8	7,154.1	7,152.9	12.7	12.6	140.70	-713.2	261.2	797.7	776.0	21.76	36.661		
7,300.0	7,199.8	7,181.2	7,179.9	12.8	12.6	138.33	-713.3	261.9	835.6	813.9	21.71	38.483		
7,350.0	7,224.1	7,204.9	7,203.6	13.0	12.7	135.13	-713.3	262.6	875.8	853.9	21.91	39.967		
7,400.0	7,244.6	7,225.6	7,224.3	13.2	12.7	130.82	-713.3	263.3	918.0	895.6	22.44	40.913		
7,450.0	7,261.0	7,242.4	7,241.1	13.5	12.7	124.96	-713.2	264.0	962.0	938.7	23.36	41.180		
7,500.0	7,273.2	7,255.2	7,253.8	13.9	12.8	117.02	-713.2	264.6	1,007.4	982.8	24.67	40.837		
7,550.0	7,281.1	7,263.7	7,262.3	14.2	12.8	106.50	-713.1	265.0	1,053.8	1,027.7	26.15	40.305		
7,600.0	7,284.8	7,267.8	7,266.5	14.7	12.8	93.32	-713.1	265.2	1,100.9	1,073.7	27.25	40.397		
7,616.5	7,285.0	7,268.2	7,266.9	14.8	12.8	88.53	-713.1	265.3	1,116.5	1,089.1	27.41	40.729		
7,700.0	7,285.0	7,269.0	7,267.6	15.6	12.8	88.65	-713.1	265.3	1,196.0	1,167.7	28.24	42.351		
7,800.0	7,285.0	7,269.9	7,268.5	16.7	12.8	88.79	-713.1	265.3	1,291.8	1,262.4	29.35	44.019		
7,900.0	7,285.0	7,270.8	7,269.4	17.9	12.8	88.94	-713.1	265.4	1,388.2	1,357.6	30.56	45.430		
8,000.0	7,285.0	7,271.8	7,270.4	19.2	12.8	89.10	-713.1	265.4	1,485.0	1,453.2	31.85	46.625		



Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Vogl-Geist 2A-5H-E267
Project:	DJ Wattenberg	TVD Reference:	KB @ 4866.0ft (Ensign)
Reference Site:	S5-T2N-R67W (Vogl-McCoy)	MD Reference:	KB @ 4866.0ft (Ensign)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Vogl-Geist 2A-5H-E267	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design S5-T2N-R67W (Vogl-McCoy) - MCCOY 2-4-5 (EXISTING) - ENCANA WELL - SURVEYS													Offset Site Error:	0.0 ft
Survey Program: 718-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis		Distance		Total		Separation		Warning		
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Uncertainty Axis			
0.0	0.0	0.0	0.0	0.0	0.0	148.04	-663.0	413.6	781.4					
100.0	100.0	99.8	99.8	0.1	0.2	148.04	-662.9	413.6	781.3	781.0	0.29		2,660.778	
200.0	200.0	201.7	201.7	0.3	0.3	148.03	-662.5	413.5	781.0	780.3	0.64		1,214.329	
300.0	300.0	303.5	303.5	0.5	0.5	148.02	-661.9	413.3	780.4	779.4	0.99		786.190	
400.0	400.0	405.4	405.4	0.6	0.7	148.00	-661.1	413.1	779.5	778.2	1.34		580.852	
507.5	507.5	514.8	514.8	0.8	0.9	-51.07	-659.9	412.8	777.1	775.4	1.72		452.878	
600.0	599.9	608.9	608.9	1.0	1.1	-51.30	-658.6	412.4	773.7	771.7	2.04		378.936	
700.0	699.8	710.6	710.6	1.2	1.2	-51.56	-657.1	412.0	769.9	767.5	2.40		321.403	
800.0	799.8	804.3	804.3	1.4	1.4	-51.85	-655.5	412.3	766.3	763.6	2.74		279.650	
900.0	899.7	902.0	901.9	1.6	1.6	-52.28	-653.4	414.3	763.3	760.2	3.10		246.498	
1,000.0	999.6	997.4	997.2	1.7	1.8	-52.88	-650.3	418.4	760.7	757.3	3.46		219.989	
1,100.0	1,099.6	1,090.2	1,089.7	1.9	1.9	-53.61	-646.7	424.5	759.0	755.2	3.83		198.349	
1,200.0	1,199.5	1,188.1	1,187.1	2.1	2.1	-54.57	-642.3	433.1	758.2	753.9	4.22		179.521	
1,300.0	1,299.4	1,284.5	1,282.8	2.3	2.4	-55.67	-636.5	443.4	757.5	752.9	4.64		163.341	
1,315.9	1,315.3	1,299.2	1,297.3	2.3	2.4	-55.85	-635.6	445.1	757.5	752.8	4.70		161.056 CC	
1,400.0	1,399.3	1,380.8	1,378.1	2.5	2.6	-56.90	-630.2	455.3	757.8	752.7	5.07		149.413 ES	
1,500.0	1,499.3	1,479.3	1,475.4	2.7	2.9	-58.26	-622.9	468.6	758.5	752.9	5.53		137.115	
1,600.0	1,599.2	1,579.5	1,574.3	2.9	3.2	-59.74	-614.6	483.0	759.5	753.5	6.01		126.287	
1,700.0	1,699.1	1,681.9	1,675.2	3.0	3.5	-61.27	-605.5	497.8	760.7	754.1	6.51		116.880	
1,800.0	1,799.1	1,778.5	1,770.5	3.2	3.8	-62.67	-597.1	511.1	762.0	755.0	6.98		109.209	
1,900.0	1,899.0	1,872.8	1,863.7	3.4	4.1	-63.97	-589.8	523.7	764.2	756.8	7.44		102.773	
2,000.0	1,998.9	1,964.5	1,954.3	3.6	4.4	-65.20	-583.3	536.2	767.5	759.6	7.89		97.279	
2,100.0	2,098.9	2,058.1	2,046.6	3.8	4.7	-66.49	-576.8	550.1	772.2	763.8	8.35		92.463	
2,200.0	2,198.8	2,160.2	2,147.4	4.0	5.0	-67.86	-570.0	564.9	777.2	768.4	8.83		88.046	
2,300.0	2,298.7	2,268.6	2,254.6	4.2	5.3	-69.25	-562.6	579.6	781.8	772.5	9.32		83.920	
2,400.0	2,398.6	2,361.7	2,346.5	4.3	5.6	-70.46	-555.6	592.2	786.5	776.7	9.77		80.521	
2,500.0	2,498.6	2,466.0	2,449.5	4.5	5.9	-71.86	-547.3	606.8	791.6	781.3	10.25		77.197	
2,600.0	2,598.5	2,569.9	2,552.0	4.7	6.3	-73.25	-538.1	620.8	796.1	785.4	10.74		74.155	
2,700.0	2,698.4	2,666.6	2,647.5	4.9	6.6	-74.52	-529.6	633.5	800.9	789.7	11.19		71.602	
2,800.0	2,798.4	2,764.5	2,744.3	5.1	6.9	-75.72	-522.0	645.9	806.3	794.6	11.63		69.350	
2,900.0	2,898.3	2,857.8	2,836.6	5.3	7.2	-76.81	-515.2	657.6	812.1	800.0	12.06		67.354	
3,000.0	2,998.2	2,950.4	2,927.9	5.5	7.5	-77.97	-507.8	670.8	819.3	806.8	12.49		65.588	
3,100.0	3,098.1	3,054.3	3,030.5	5.6	7.8	-79.26	-499.3	685.4	826.8	813.8	12.95		63.864	
3,200.0	3,198.1	3,149.9	3,124.9	5.8	8.1	-80.40	-491.7	698.4	834.3	820.9	13.37		62.384	
3,300.0	3,298.0	3,247.4	3,221.1	6.0	8.4	-81.54	-484.1	712.0	842.4	828.6	13.80		61.044	
3,400.0	3,397.9	3,351.7	3,324.1	6.2	8.8	-82.75	-475.6	726.3	850.7	836.4	14.24		59.728	
3,500.0	3,497.9	3,446.6	3,417.8	6.4	9.1	-83.83	-467.8	739.1	859.0	844.3	14.65		58.621	
3,600.0	3,597.8	3,552.1	3,522.1	6.6	9.4	-84.98	-459.4	753.0	867.4	852.3	15.08		57.520	
3,700.0	3,697.7	3,645.1	3,614.0	6.8	9.7	-85.98	-452.0	765.2	876.0	860.6	15.48		56.597	
3,800.0	3,797.7	3,743.7	3,711.3	6.9	10.0	-87.06	-443.6	778.5	885.2	869.3	15.89		55.696	
3,900.0	3,897.6	3,837.0	3,803.3	7.1	10.4	-88.08	-435.3	791.5	895.0	878.7	16.29		54.935	
4,000.0	3,997.5	3,934.1	3,899.0	7.3	10.7	-89.14	-426.7	805.5	905.5	888.8	16.69		54.237	
4,100.0	4,097.4	4,028.9	3,992.4	7.5	11.0	-90.12	-418.7	819.1	916.4	899.3	17.08		53.654	
4,200.0	4,197.4	4,140.5	4,102.7	7.7	11.3	-91.16	-410.6	834.4	927.3	909.8	17.48		53.056	
4,300.0	4,297.3	4,244.2	4,205.4	7.9	11.7	-92.04	-403.7	847.0	937.1	919.3	17.86		52.474	
4,400.0	4,397.2	4,348.3	4,308.6	8.1	12.0	-92.90	-396.5	859.0	946.5	928.2	18.24		51.894	
4,500.0	4,497.2	4,449.3	4,408.7	8.3	12.3	-93.73	-389.4	870.7	956.0	937.4	18.61		51.376	
4,600.0	4,597.1	4,555.1	4,513.6	8.4	12.5	-94.53	-382.5	881.9	965.0	946.0	18.98		50.847	
4,700.0	4,697.0	4,650.8	4,608.6	8.6	12.8	-95.25	-376.3	891.8	973.8	954.5	19.33		50.376	
4,800.0	4,797.0	4,750.8	4,707.8	8.8	13.1	-95.99	-369.6	902.5	983.2	963.5	19.69		49.940	
4,900.0	4,896.9	4,851.6	4,807.9	9.0	13.4	-96.70	-363.3	912.9	992.3	972.2	20.04		49.505	
5,000.0	4,996.8	4,949.2	4,904.8	9.2	13.6	-97.38	-357.0	923.0	1,001.6	981.3	20.39		49.120	

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 Vogl-Geist 2A-5H-E267
Project:	DJ Wattenberg	TVD Reference:	KB @ 4866.0ft (Ensign)
Reference Site:	S5-T2N-R67W (Vogl-McCoy)	MD Reference:	KB @ 4866.0ft (Ensign)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Vogl-Geist 2A-5H-E267	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design S5-T2N-R67W (Vogl-McCoy) - MCCOY 2-4-5 (EXISTING) - ENCANA WELL - SURVEYS													Offset Site Error:	0.0 ft
Survey Program: 718-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance				Total	Separation	Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Uncertainty Axis	Factor		
5,100.0	5,096.7	5,046.0	5,000.8	9.4	13.9	-98.05	-350.7	933.2	1,011.3	990.5	20.74	48.761		
5,200.0	5,196.7	5,138.8	5,092.9	9.6	14.2	-98.68	-344.7	943.3	1,021.4	1,000.4	21.08	48.461		
5,300.0	5,296.6	5,247.4	5,200.7	9.7	14.5	-99.39	-338.1	955.0	1,031.6	1,010.2	21.44	48.122		
5,400.0	5,396.5	5,344.2	5,296.7	9.9	14.7	-100.01	-332.0	964.9	1,041.5	1,019.7	21.78	47.823		
5,500.0	5,496.5	5,445.0	5,396.8	10.1	15.0	-100.63	-325.8	975.3	1,051.4	1,029.3	22.12	47.531		
5,600.0	5,596.4	5,547.2	5,498.2	10.3	15.3	-101.25	-319.6	985.7	1,061.5	1,039.0	22.47	47.250		
5,700.0	5,696.3	5,651.4	5,601.9	10.5	15.6	-101.84	-313.6	995.4	1,070.8	1,048.0	22.81	46.950		
5,800.0	5,796.2	5,739.6	5,689.5	10.7	15.8	-102.30	-309.2	1,004.1	1,080.7	1,057.6	23.12	46.742		
5,900.0	5,896.2	5,846.4	5,795.6	10.9	16.1	-102.81	-304.6	1,014.9	1,091.3	1,067.8	23.46	46.516		
6,000.0	5,996.1	5,977.2	5,925.9	11.0	16.3	-103.39	-299.3	1,025.4	1,099.7	1,075.8	23.83	46.148		
6,100.0	6,096.0	6,083.4	6,031.8	11.2	16.6	-103.88	-294.4	1,031.9	1,106.2	1,082.0	24.17	45.772		
6,200.0	6,196.0	6,197.5	6,145.7	11.4	16.8	-104.34	-290.2	1,038.2	1,112.4	1,087.9	24.51	45.388		
6,300.0	6,295.9	6,317.2	6,265.2	11.6	17.0	-104.74	-287.0	1,042.5	1,116.7	1,091.9	24.85	44.935		
6,400.0	6,395.8	6,431.1	6,379.0	11.8	17.1	-105.07	-284.8	1,044.8	1,119.5	1,094.3	25.18	44.453		
6,500.0	6,495.8	6,538.9	6,486.8	12.0	17.3	-105.34	-283.7	1,045.9	1,121.5	1,096.0	25.51	43.966		
6,600.0	6,595.7	6,644.0	6,592.0	12.2	17.4	-105.57	-282.9	1,046.3	1,122.8	1,097.0	25.83	43.473		
6,696.0	6,691.6	6,744.0	6,691.9	12.3	17.5	-105.77	-282.5	1,046.3	1,123.8	1,097.6	26.13	43.000		
6,700.0	6,695.6	6,748.1	6,696.1	12.4	17.5	-109.75	-282.5	1,046.3	1,123.8	1,097.7	26.15	42.981		
6,750.0	6,745.6	6,800.7	6,748.7	12.4	17.6	103.26	-282.4	1,046.1	1,124.2	1,098.0	26.29	42.767		
6,800.0	6,795.3	6,853.2	6,801.1	12.5	17.6	96.86	-282.3	1,045.8	1,124.7	1,098.3	26.43	42.561		
6,850.0	6,844.4	6,902.2	6,850.2	12.5	17.7	95.59	-282.3	1,045.5	1,125.4	1,098.8	26.56	42.378		
6,900.0	6,892.5	6,950.3	6,898.3	12.5	17.8	95.39	-282.2	1,045.2	1,126.4	1,099.7	26.68	42.223		
6,950.0	6,939.2	6,997.1	6,945.0	12.5	17.8	95.65	-282.2	1,044.8	1,127.8	1,101.0	26.79	42.104		
7,000.0	6,984.2	7,042.1	6,990.1	12.5	17.9	96.16	-282.1	1,044.5	1,129.9	1,103.0	26.88	42.030		
7,050.0	7,027.1	7,082.7	7,030.7	12.5	17.9	96.72	-282.1	1,044.3	1,132.9	1,106.0	26.96	42.024 SF		
7,100.0	7,067.6	7,120.9	7,068.8	12.5	18.0	97.29	-282.1	1,044.1	1,137.1	1,110.1	27.02	42.081		
7,150.0	7,105.4	7,156.5	7,104.4	12.5	18.0	97.80	-282.1	1,044.1	1,142.6	1,115.6	27.08	42.200		
7,200.0	7,140.2	7,190.6	7,138.6	12.6	18.0	98.24	-282.1	1,044.1	1,149.7	1,122.6	27.14	42.368		
7,250.0	7,171.8	7,222.8	7,170.7	12.7	18.1	98.53	-282.1	1,044.0	1,158.6	1,131.3	27.21	42.575		
7,300.0	7,199.8	7,251.4	7,199.4	12.8	18.1	98.58	-282.1	1,044.0	1,169.2	1,141.9	27.31	42.809		
7,350.0	7,224.1	7,276.6	7,224.5	13.0	18.1	98.34	-282.1	1,044.0	1,181.9	1,154.4	27.45	43.048		
7,400.0	7,244.6	7,298.5	7,246.5	13.2	18.2	97.79	-282.1	1,043.9	1,196.6	1,168.9	27.65	43.269		
7,450.0	7,261.0	7,316.2	7,264.2	13.5	18.2	96.83	-282.1	1,043.8	1,213.4	1,185.5	27.92	43.457		
7,500.0	7,273.2	7,329.4	7,277.4	13.9	18.2	95.43	-282.1	1,043.8	1,232.3	1,204.0	28.26	43.600		
7,550.0	7,281.1	7,338.1	7,286.1	14.2	18.2	93.57	-282.0	1,043.7	1,253.0	1,224.4	28.67	43.701		
7,600.0	7,284.8	7,342.2	7,290.1	14.7	18.2	91.25	-282.0	1,043.7	1,275.6	1,246.5	29.14	43.776		
7,616.5	7,285.0	7,342.4	7,290.4	14.8	18.2	90.38	-282.0	1,043.7	1,283.4	1,254.1	29.30	43.798		
7,700.0	7,285.0	7,342.7	7,290.6	15.6	18.2	90.39	-282.0	1,043.7	1,325.4	1,295.2	30.13	43.993		
7,800.0	7,285.0	7,342.9	7,290.9	16.7	18.2	90.40	-282.0	1,043.7	1,380.6	1,349.4	31.23	44.207		
7,900.0	7,285.0	7,343.2	7,291.2	17.9	18.2	90.41	-282.0	1,043.7	1,440.6	1,408.2	32.44	44.413		
8,000.0	7,285.0	7,343.5	7,291.4	19.2	18.2	90.43	-282.0	1,043.7	1,504.9	1,471.2	33.73	44.618		



Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Vogl-Geist 2A-5H-E267
Project:	DJ Wattenberg	TVD Reference:	KB @ 4866.0ft (Ensign)
Reference Site:	S5-T2N-R67W (Vogl-McCoy)	MD Reference:	KB @ 4866.0ft (Ensign)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Vogl-Geist 2A-5H-E267	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design S5-T2N-R67W (Vogl-McCoy) - NELSON 4-32 (EXISTING) - ENCANA WELL - NO SURVEYS													Offset Site Error:	0.0 ft
Survey Program: 7940-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	
9,900.0	7,285.0	7,229.0	7,229.0	49.5	12.6	90.00	3,741.6	966.8	1,491.8	1,429.7	62.09	24.027		
10,000.0	7,285.0	7,229.0	7,229.0	51.2	12.6	90.00	3,741.6	966.8	1,417.9	1,354.1	63.79	22.229		
10,100.0	7,285.0	7,229.0	7,229.0	52.9	12.6	90.00	3,741.6	966.8	1,347.4	1,282.0	65.49	20.575		
10,200.0	7,285.0	7,229.0	7,229.0	54.6	12.6	90.00	3,741.6	966.8	1,280.9	1,213.7	67.19	19.062		
10,300.0	7,285.0	7,229.0	7,229.0	56.3	12.6	90.00	3,741.6	966.8	1,218.9	1,150.0	68.90	17.690		
10,400.0	7,285.0	7,229.0	7,229.0	58.0	12.6	90.00	3,741.6	966.8	1,162.2	1,091.6	70.62	16.459		
10,500.0	7,285.0	7,229.0	7,229.0	59.7	12.6	90.00	3,741.6	966.8	1,111.7	1,039.4	72.33	15.370		
10,600.0	7,285.0	7,229.0	7,229.0	61.4	12.6	90.00	3,741.6	966.8	1,068.2	994.1	74.05	14.426		
10,700.0	7,285.0	7,229.0	7,229.0	63.2	12.6	90.00	3,741.6	966.8	1,032.5	956.7	75.76	13.628		
10,800.0	7,285.0	7,229.0	7,229.0	64.9	12.6	90.00	3,741.6	966.8	1,005.5	928.1	77.48	12.977		
10,900.0	7,285.0	7,229.0	7,229.0	66.6	12.6	90.00	3,741.6	966.8	988.0	908.8	79.21	12.474		
11,000.0	7,285.0	7,229.0	7,229.0	68.3	12.6	90.00	3,741.6	966.8	980.4	899.5	80.93	12.115		
11,024.6	7,285.0	7,229.0	7,229.0	68.8	12.6	90.00	3,741.6	966.8	980.1	898.8	81.36	12.047	CC, ES	
11,100.0	7,285.0	7,229.0	7,229.0	70.1	12.6	90.00	3,741.6	966.8	983.0	900.4	82.66	11.893		
11,200.0	7,285.0	7,229.0	7,229.0	71.8	12.6	90.00	3,741.6	966.8	995.7	911.3	84.38	11.800	SF	
11,300.0	7,285.0	7,229.0	7,229.0	73.5	12.6	90.00	3,741.6	966.8	1,018.1	932.0	86.11	11.823		
11,400.0	7,285.0	7,229.0	7,229.0	75.2	12.6	90.00	3,741.6	966.8	1,049.5	961.7	87.84	11.948		
11,500.0	7,285.0	7,229.0	7,229.0	77.0	12.6	90.00	3,741.6	966.8	1,089.3	999.8	89.57	12.162		
11,600.0	7,285.0	7,229.0	7,229.0	78.7	12.6	90.00	3,741.6	966.8	1,136.5	1,045.2	91.30	12.448		
11,700.0	7,285.0	7,229.0	7,229.0	80.4	12.6	90.00	3,741.6	966.8	1,190.3	1,097.2	93.03	12.794		
11,800.0	7,285.0	7,229.0	7,229.0	82.2	12.6	90.00	3,741.6	966.8	1,249.7	1,155.0	94.77	13.187		
11,900.0	7,285.0	7,229.0	7,229.0	83.9	12.6	90.00	3,741.6	966.8	1,314.1	1,217.6	96.50	13.618		
12,000.0	7,285.0	7,229.0	7,229.0	85.6	12.6	90.00	3,741.6	966.8	1,382.7	1,284.5	98.24	14.076		
12,100.0	7,285.0	7,229.0	7,229.0	87.4	12.6	90.00	3,741.6	966.8	1,455.0	1,355.0	99.97	14.554		
12,200.0	7,285.0	7,229.0	7,229.0	89.1	12.6	90.00	3,741.6	966.8	1,530.4	1,428.7	101.71	15.047		

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 Vogl-Geist 2A-5H-E267
Project:	DJ Wattenberg	TVD Reference:	KB @ 4866.0ft (Ensign)
Reference Site:	S5-T2N-R67W (Vogl-McCoy)	MD Reference:	KB @ 4866.0ft (Ensign)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Vogl-Geist 2A-5H-E267	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design S5-T2N-R67W (Vogl-McCoy) - OWENS BROTHERS 13-32 (EXISTING) - ENCANA WELL - SURVEYS													Offset Site Error: 0.0 ft
Survey Program: 100-MWD													Offset Well Error: 0.0 ft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance				Total Uncertainty Axis	Separation Factor	Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)		Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)			
10,400.0	7,285.0	7,283.9	7,282.2	58.0	12.8	100.60	4,582.1	322.9	1,490.1	1,420.5	69.67	21.390	
10,500.0	7,285.0	7,279.6	7,277.8	59.7	12.8	99.84	4,582.2	322.9	1,392.7	1,321.2	71.49	19.481	
10,600.0	7,285.0	7,275.3	7,273.5	61.4	12.8	99.10	4,582.4	323.0	1,295.7	1,222.4	73.31	17.674	
10,700.0	7,285.0	7,271.1	7,269.3	63.2	12.8	98.37	4,582.5	323.1	1,199.2	1,124.1	75.13	15.961	
10,800.0	7,285.0	7,267.0	7,265.2	64.9	12.8	97.65	4,582.7	323.1	1,103.3	1,026.3	76.95	14.338	
10,900.0	7,285.0	7,262.9	7,261.2	66.6	12.7	96.94	4,582.8	323.2	1,008.1	929.4	78.76	12.800	
11,000.0	7,285.0	7,259.0	7,257.2	68.3	12.7	96.25	4,583.0	323.3	914.0	833.4	80.56	11.345	
11,100.0	7,285.0	7,255.1	7,253.4	70.1	12.7	95.56	4,583.1	323.3	821.2	738.9	82.36	9.971	
11,200.0	7,285.0	7,251.3	7,249.6	71.8	12.7	94.89	4,583.2	323.4	730.4	646.2	84.15	8.679	
11,300.0	7,285.0	7,247.6	7,245.9	73.5	12.7	94.23	4,583.4	323.4	642.2	556.3	85.94	7.473	
11,400.0	7,285.0	7,243.9	7,242.2	75.2	12.7	93.59	4,583.5	323.5	558.1	470.4	87.72	6.362	
11,500.0	7,285.0	7,240.3	7,238.6	77.0	12.7	92.95	4,583.6	323.5	480.0	390.5	89.49	5.364	
11,600.0	7,285.0	7,236.8	7,235.1	78.7	12.7	92.33	4,583.7	323.6	411.5	320.2	91.25	4.509	
11,700.0	7,285.0	7,233.4	7,231.6	80.4	12.7	91.71	4,583.9	323.6	358.1	265.1	93.01	3.850	
11,800.0	7,285.0	7,230.0	7,228.2	82.2	12.7	91.11	4,584.0	323.7	327.2	232.5	94.75	3.454	
11,855.7	7,285.0	7,228.1	7,226.4	83.1	12.7	90.78	4,584.0	323.7	322.5	226.7	95.73	3.369 CC, ES, SF	
11,900.0	7,285.0	7,226.6	7,224.9	83.9	12.7	90.52	4,584.1	323.7	325.5	229.0	96.49	3.373	
12,000.0	7,285.0	7,223.4	7,221.6	85.6	12.7	89.94	4,584.2	323.8	353.2	255.0	98.23	3.596	
12,100.0	7,285.0	7,220.1	7,218.4	87.4	12.7	89.37	4,584.3	323.8	404.5	304.5	99.95	4.047	
12,200.0	7,285.0	7,217.0	7,215.3	89.1	12.7	88.81	4,584.4	323.9	471.6	369.9	101.67	4.638	
12,300.0	7,285.0	7,213.9	7,212.2	90.8	12.7	88.26	4,584.5	323.9	548.8	445.4	103.37	5.309	
12,400.0	7,285.0	7,210.8	7,209.1	92.6	12.7	87.72	4,584.6	324.0	632.4	527.3	105.07	6.019	
12,500.0	7,285.0	7,207.8	7,206.1	94.3	12.7	87.18	4,584.7	324.0	720.2	613.4	106.76	6.746	
12,600.0	7,285.0	7,204.9	7,203.2	96.1	12.6	86.66	4,584.8	324.0	810.8	702.3	108.44	7.476	
12,700.0	7,285.0	7,200.0	7,198.3	97.8	12.6	85.80	4,584.9	324.1	903.4	793.3	110.07	8.207	
12,800.0	7,285.0	7,200.0	7,198.3	99.5	12.6	85.80	4,584.9	324.1	997.4	885.6	111.80	8.921	
12,900.0	7,285.0	7,196.2	7,194.5	101.3	12.6	85.12	4,585.0	324.1	1,092.4	979.0	113.43	9.630	
13,000.0	7,285.0	7,193.2	7,191.5	103.0	12.6	84.61	4,585.1	324.2	1,188.3	1,073.2	115.08	10.326	
13,100.0	7,285.0	7,190.4	7,188.7	104.8	12.6	84.10	4,585.2	324.2	1,284.8	1,168.1	116.71	11.008	
13,200.0	7,285.0	7,187.5	7,185.8	106.5	12.6	83.60	4,585.3	324.3	1,381.8	1,263.4	118.33	11.677	
13,300.0	7,285.0	7,184.6	7,182.9	108.2	12.6	83.11	4,585.4	324.3	1,479.1	1,359.2	119.95	12.332	



Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Vogl-Geist 2A-5H-E267
Project:	DJ Wattenberg	TVD Reference:	KB @ 4866.0ft (Ensign)
Reference Site:	S5-T2N-R67W (Vogl-McCoy)	MD Reference:	KB @ 4866.0ft (Ensign)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Vogl-Geist 2A-5H-E267	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design S5-T2N-R67W (Vogl-McCoy) - ROBERT NELSON 14-32 (EXISTING) - ENCANA WELL - NO SURVEYS										Offset Site Error: 0.0 ft			
Survey Program: 8030-MWD										Offset Well Error: 0.0 ft			
Reference		Offset		Semi Major Axis			Distance					Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis		Separation Factor
8,900.0	7,285.0	7,225.0	7,225.0	32.8	12.6	90.00	3,043.2	318.5	1,456.3	1,410.9	45.41	32.070	
9,000.0	7,285.0	7,225.0	7,225.0	34.5	12.6	90.00	3,043.2	318.5	1,359.4	1,312.3	47.04	28.899	
9,100.0	7,285.0	7,225.0	7,225.0	36.1	12.6	90.00	3,043.2	318.5	1,262.9	1,214.2	48.68	25.943	
9,200.0	7,285.0	7,225.0	7,225.0	37.7	12.6	90.00	3,043.2	318.5	1,167.0	1,116.7	50.33	23.187	
9,300.0	7,285.0	7,225.0	7,225.0	39.4	12.6	90.00	3,043.2	318.5	1,071.8	1,019.9	51.99	20.617	
9,400.0	7,285.0	7,225.0	7,225.0	41.1	12.6	90.00	3,043.2	318.5	977.7	924.0	53.65	18.221	
9,500.0	7,285.0	7,225.0	7,225.0	42.7	12.6	90.00	3,043.2	318.5	884.8	829.4	55.33	15.991	
9,600.0	7,285.0	7,225.0	7,225.0	44.4	12.6	90.00	3,043.2	318.5	793.6	736.6	57.01	13.921	
9,700.0	7,285.0	7,225.0	7,225.0	46.1	12.6	90.00	3,043.2	318.5	704.8	646.1	58.69	12.008	
9,800.0	7,285.0	7,225.0	7,225.0	47.8	12.6	90.00	3,043.2	318.5	619.5	559.1	60.39	10.259	
9,900.0	7,285.0	7,225.0	7,225.0	49.5	12.6	90.00	3,043.2	318.5	539.2	477.1	62.08	8.686	
10,000.0	7,285.0	7,225.0	7,225.0	51.2	12.6	90.00	3,043.2	318.5	466.6	402.8	63.78	7.316	
10,100.0	7,285.0	7,225.0	7,225.0	52.9	12.6	90.00	3,043.2	318.5	405.8	340.4	65.48	6.198	
10,200.0	7,285.0	7,225.0	7,225.0	54.6	12.6	90.00	3,043.2	318.5	362.9	295.7	67.19	5.401	
10,300.0	7,285.0	7,225.0	7,225.0	56.3	12.6	90.00	3,043.2	318.5	344.5	275.6	68.90	5.000	
10,315.1	7,285.0	7,225.0	7,225.0	56.6	12.6	90.00	3,043.2	318.5	344.2	275.0	69.15	4.977 CC, ES, SF	
10,400.0	7,285.0	7,225.0	7,225.0	58.0	12.6	90.00	3,043.2	318.5	354.5	283.9	70.61	5.021	
10,500.0	7,285.0	7,225.0	7,225.0	59.7	12.6	90.00	3,043.2	318.5	390.7	318.4	72.32	5.402	
10,600.0	7,285.0	7,225.0	7,225.0	61.4	12.6	90.00	3,043.2	318.5	446.8	372.8	74.04	6.035	
10,700.0	7,285.0	7,225.0	7,225.0	63.2	12.6	90.00	3,043.2	318.5	516.3	440.6	75.76	6.816	
10,800.0	7,285.0	7,225.0	7,225.0	64.9	12.6	90.00	3,043.2	318.5	594.6	517.2	77.48	7.675	
10,900.0	7,285.0	7,225.0	7,225.0	66.6	12.6	90.00	3,043.2	318.5	678.7	599.5	79.20	8.569	
11,000.0	7,285.0	7,225.0	7,225.0	68.3	12.6	90.00	3,043.2	318.5	766.5	685.6	80.92	9.472	
11,100.0	7,285.0	7,225.0	7,225.0	70.1	12.6	90.00	3,043.2	318.5	857.1	774.4	82.65	10.370	
11,200.0	7,285.0	7,225.0	7,225.0	71.8	12.6	90.00	3,043.2	318.5	949.5	865.1	84.38	11.253	
11,300.0	7,285.0	7,225.0	7,225.0	73.5	12.6	90.00	3,043.2	318.5	1,043.3	957.2	86.10	12.117	
11,400.0	7,285.0	7,225.0	7,225.0	75.2	12.6	90.00	3,043.2	318.5	1,138.2	1,050.4	87.83	12.959	
11,500.0	7,285.0	7,225.0	7,225.0	77.0	12.6	90.00	3,043.2	318.5	1,233.9	1,144.3	89.56	13.777	
11,600.0	7,285.0	7,225.0	7,225.0	78.7	12.6	90.00	3,043.2	318.5	1,330.2	1,238.9	91.29	14.571	
11,700.0	7,285.0	7,225.0	7,225.0	80.4	12.6	90.00	3,043.2	318.5	1,427.0	1,334.0	93.03	15.340	
11,800.0	7,285.0	7,225.0	7,225.0	82.2	12.6	90.00	3,043.2	318.5	1,524.3	1,429.5	94.76	16.086	



Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Vogl-Geist 2A-5H-E267
Project:	DJ Wattenberg	TVD Reference:	KB @ 4866.0ft (Ensign)
Reference Site:	S5-T2N-R67W (Vogl-McCoy)	MD Reference:	KB @ 4866.0ft (Ensign)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Vogl-Geist 2A-5H-E267	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design		S5-T2N-R67W (Vogl-McCoy) - ROBERT NELSON 2-8-32 (EXISTING) - ENCANA WELL - Plan #2										Offset Site Error:		0.0 ft
Survey Program: 0-MWD												Offset Well Error:		0.0 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth	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)				
8,900.0	7,285.0	7,343.2	7,241.0	32.8	20.1	90.00	2,633.8	1,073.0	1,503.5	1,456.0	47.59	31.592		
9,000.0	7,285.0	7,343.2	7,241.0	34.5	20.1	90.00	2,633.8	1,073.0	1,437.7	1,388.4	49.22	29.209		
9,100.0	7,285.0	7,343.2	7,241.0	36.1	20.1	90.00	2,633.8	1,073.0	1,375.9	1,325.0	50.86	27.053		
9,200.0	7,285.0	7,343.2	7,241.0	37.7	20.1	90.00	2,633.8	1,073.0	1,318.8	1,266.3	52.51	25.116		
9,300.0	7,285.0	7,343.2	7,241.0	39.4	20.1	90.00	2,633.8	1,073.0	1,267.1	1,212.9	54.17	23.392		
9,400.0	7,285.0	7,343.2	7,241.0	41.1	20.1	90.00	2,633.8	1,073.0	1,221.4	1,165.5	55.84	21.874		
9,500.0	7,285.0	7,343.2	7,241.0	42.7	20.1	90.00	2,633.8	1,073.0	1,182.4	1,124.9	57.51	20.559		
9,600.0	7,285.0	7,343.2	7,241.0	44.4	20.1	90.00	2,633.8	1,073.0	1,150.7	1,091.5	59.19	19.442		
9,700.0	7,285.0	7,343.2	7,241.0	46.1	20.1	90.00	2,633.8	1,073.0	1,127.1	1,066.3	60.88	18.515		
9,800.0	7,285.0	7,343.2	7,241.0	47.8	20.1	90.00	2,633.8	1,073.0	1,112.0	1,049.5	62.57	17.774		
9,900.0	7,285.0	7,343.2	7,241.0	49.5	20.1	90.00	2,633.8	1,073.0	1,105.8	1,041.6	64.26	17.208		
9,918.9	7,285.0	7,343.2	7,241.0	49.8	20.1	90.00	2,633.8	1,073.0	1,105.7	1,041.1	64.58	17.120 CC, ES		
10,000.0	7,285.0	7,343.2	7,241.0	51.2	20.1	90.00	2,633.8	1,073.0	1,108.6	1,042.7	65.96	16.808		
10,100.0	7,285.0	7,343.2	7,241.0	52.9	20.1	90.00	2,633.8	1,073.0	1,120.4	1,052.7	67.66	16.559		
10,200.0	7,285.0	7,343.2	7,241.0	54.6	20.1	90.00	2,633.8	1,073.0	1,140.9	1,071.5	69.37	16.446 SF		
10,300.0	7,285.0	7,343.2	7,241.0	56.3	20.1	90.00	2,633.8	1,073.0	1,169.5	1,098.4	71.08	16.454		
10,400.0	7,285.0	7,343.2	7,241.0	58.0	20.1	90.00	2,633.8	1,073.0	1,205.8	1,133.0	72.79	16.566		
10,500.0	7,285.0	7,343.2	7,241.0	59.7	20.1	90.00	2,633.8	1,073.0	1,249.1	1,174.6	74.50	16.765		
10,600.0	7,285.0	7,343.2	7,241.0	61.4	20.1	90.00	2,633.8	1,073.0	1,298.6	1,222.4	76.22	17.038		
10,700.0	7,285.0	7,343.2	7,241.0	63.2	20.1	90.00	2,633.8	1,073.0	1,353.8	1,275.8	77.94	17.370		
10,800.0	7,285.0	7,343.2	7,241.0	64.9	20.1	90.00	2,633.8	1,073.0	1,413.8	1,334.2	79.66	17.748		
10,900.0	7,285.0	7,343.2	7,241.0	66.6	20.1	90.00	2,633.8	1,073.0	1,478.2	1,396.8	81.38	18.164		
11,000.0	7,285.0	7,343.2	7,241.0	68.3	20.1	90.00	2,633.8	1,073.0	1,546.4	1,463.3	83.10	18.608		

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 Vogl-Geist 2A-5H-E267
Project:	DJ Wattenberg	TVD Reference:	KB @ 4866.0ft (Ensign)
Reference Site:	S5-T2N-R67W (Vogl-McCoy)	MD Reference:	KB @ 4866.0ft (Ensign)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Vogl-Geist 2A-5H-E267	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design S5-T2N-R67W (Vogl-McCoy) - ROBERT NELSON 2-8-32 (EXISTING) - ENCANA WELL - SURVEYS													Offset Site Error:	0.0 ft
Survey Program: 100-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor		
8,900.0	7,285.0	7,327.2	7,227.9	32.8	19.6	89.31	2,640.6	1,049.4	1,490.6	1,443.1	47.47	31.403		
9,000.0	7,285.0	7,326.0	7,226.8	34.5	19.6	89.25	2,640.7	1,049.3	1,423.7	1,374.6	49.09	28.999		
9,100.0	7,285.0	7,324.9	7,225.6	36.1	19.6	89.18	2,640.7	1,049.3	1,360.8	1,310.1	50.73	26.824		
9,200.0	7,285.0	7,323.7	7,224.4	37.7	19.6	89.12	2,640.7	1,049.3	1,302.6	1,250.2	52.38	24.868		
9,300.0	7,285.0	7,322.5	7,223.2	39.4	19.6	89.06	2,640.7	1,049.3	1,249.7	1,195.6	54.04	23.126		
9,400.0	7,285.0	7,321.3	7,222.0	41.1	19.5	88.99	2,640.7	1,049.2	1,202.7	1,147.0	55.70	21.593		
9,500.0	7,285.0	7,320.1	7,220.8	42.7	19.5	88.93	2,640.7	1,049.2	1,162.5	1,105.2	57.37	20.263		
9,600.0	7,285.0	7,318.9	7,219.6	44.4	19.5	88.87	2,640.7	1,049.2	1,129.8	1,070.7	59.05	19.133		
9,700.0	7,285.0	7,317.6	7,218.4	46.1	19.5	88.80	2,640.8	1,049.1	1,105.1	1,044.4	60.73	18.197		
9,800.0	7,285.0	7,316.4	7,217.1	47.8	19.5	88.74	2,640.8	1,049.1	1,089.2	1,026.7	62.42	17.448		
9,900.0	7,285.0	7,315.2	7,215.9	49.5	19.5	88.67	2,640.8	1,049.1	1,082.2	1,018.1	64.11	16.880		
9,925.5	7,285.0	7,314.9	7,215.6	49.9	19.5	88.65	2,640.8	1,049.1	1,081.9	1,017.4	64.55	16.762 CC, ES		
10,000.0	7,285.0	7,314.0	7,214.7	51.2	19.5	88.61	2,640.8	1,049.1	1,084.5	1,018.7	65.81	16.479		
10,100.0	7,285.0	7,312.7	7,213.5	52.9	19.5	88.54	2,640.8	1,049.0	1,095.9	1,028.4	67.51	16.233		
10,200.0	7,285.0	7,311.5	7,212.2	54.6	19.5	88.48	2,640.8	1,049.0	1,116.2	1,047.0	69.21	16.127 SF		
10,300.0	7,285.0	7,310.3	7,211.0	56.3	19.5	88.41	2,640.8	1,049.0	1,144.9	1,074.0	70.92	16.144		
10,400.0	7,285.0	7,309.0	7,209.7	58.0	19.5	88.34	2,640.9	1,048.9	1,181.4	1,108.8	72.62	16.267		
10,500.0	7,285.0	7,307.8	7,208.5	59.7	19.5	88.28	2,640.9	1,048.9	1,225.0	1,150.6	74.33	16.479		
10,600.0	7,285.0	7,306.5	7,207.2	61.4	19.5	88.21	2,640.9	1,048.9	1,274.9	1,198.9	76.05	16.765		
10,700.0	7,285.0	7,305.2	7,206.0	63.2	19.5	88.14	2,640.9	1,048.8	1,330.5	1,252.8	77.76	17.111		
10,800.0	7,285.0	7,304.0	7,204.7	64.9	19.5	88.08	2,640.9	1,048.8	1,391.1	1,311.7	79.48	17.504		
10,900.0	7,285.0	7,302.7	7,203.4	66.6	19.5	88.01	2,640.9	1,048.8	1,456.1	1,374.9	81.19	17.934		
11,000.0	7,285.0	7,301.4	7,202.1	68.3	19.5	87.94	2,641.0	1,048.8	1,524.8	1,441.9	82.91	18.391		



Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Vogl-Geist 2A-5H-E267
Project:	DJ Wattenberg	TVD Reference:	KB @ 4866.0ft (Ensign)
Reference Site:	S5-T2N-R67W (Vogl-McCoy)	MD Reference:	KB @ 4866.0ft (Ensign)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Vogl-Geist 2A-5H-E267	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design S5-T2N-R67W (Vogl-McCoy) - VOGL 31-5 (EXISTING) - KMG WELL - NO SURVEYS												Offset Site Error:	0.0 ft
Survey Program: 500-MWD												Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis		Distance		Total		Separation		Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Uncertainty Axis		
3,200.0	3,198.1	3,812.6	3,653.0	5.8	21.0	155.52	1,348.2	-182.1	1,534.0	1,518.5	15.46	99.210	
3,300.0	3,298.0	3,907.8	3,742.4	6.0	21.5	155.10	1,316.9	-191.1	1,505.3	1,489.3	16.01	94.024	
3,400.0	3,397.9	4,003.0	3,831.8	6.2	22.1	154.67	1,285.6	-200.0	1,476.6	1,460.1	16.57	89.126	
3,500.0	3,497.9	4,098.2	3,921.3	6.4	22.7	154.21	1,254.3	-209.0	1,448.1	1,430.9	17.14	84.495	
3,600.0	3,597.8	4,193.4	4,010.7	6.6	23.3	153.74	1,223.0	-218.0	1,419.6	1,401.9	17.72	80.110	
3,700.0	3,697.7	4,288.5	4,100.2	6.8	23.9	153.25	1,191.7	-227.0	1,391.2	1,372.9	18.32	75.956	
3,800.0	3,797.7	4,383.7	4,189.6	6.9	24.5	152.74	1,160.4	-235.9	1,363.0	1,344.0	18.93	72.015	
3,900.0	3,897.6	4,400.0	4,204.9	7.1	24.6	152.65	1,155.1	-237.5	1,337.1	1,318.0	19.18	69.719	
4,000.0	3,997.5	4,400.0	4,204.9	7.3	24.6	152.65	1,155.1	-237.5	1,318.3	1,298.9	19.36	68.108	
4,100.0	4,097.4	4,488.4	4,289.9	7.5	24.7	152.28	1,132.3	-244.0	1,297.7	1,278.0	19.74	65.748	
4,200.0	4,197.4	4,520.9	4,322.0	7.7	24.7	152.20	1,127.1	-245.5	1,285.9	1,266.0	19.97	64.388	
4,300.0	4,297.3	4,600.0	4,400.9	7.9	24.7	152.16	1,121.9	-247.0	1,281.9	1,261.6	20.24	63.317	
4,397.2	4,394.5	4,600.0	4,400.9	8.1	24.7	152.16	1,121.9	-247.0	1,278.2	1,257.7	20.42	62.602	
4,400.0	4,397.2	4,600.0	4,400.9	8.1	24.7	152.16	1,121.9	-247.0	1,278.2	1,257.7	20.42	62.587	
4,500.0	4,497.2	4,660.3	4,461.2	8.3	24.8	152.21	1,121.9	-247.0	1,280.9	1,260.2	20.66	62.000	
4,600.0	4,597.1	4,760.2	4,561.1	8.4	24.8	152.29	1,121.9	-247.0	1,284.2	1,263.3	20.94	61.337	
4,700.0	4,697.0	4,860.1	4,661.0	8.6	24.9	152.37	1,121.9	-247.0	1,287.5	1,266.3	21.22	60.688	
4,800.0	4,797.0	4,960.1	4,761.0	8.8	25.0	152.44	1,121.9	-247.0	1,290.8	1,269.3	21.49	60.053	
4,900.0	4,896.9	5,060.0	4,860.9	9.0	25.1	152.52	1,121.9	-247.0	1,294.2	1,272.4	21.78	59.432	
5,000.0	4,996.8	5,159.9	4,960.8	9.2	25.1	152.60	1,121.9	-247.0	1,297.5	1,275.4	22.06	58.825	
5,100.0	5,096.7	5,259.9	5,060.7	9.4	25.2	152.67	1,121.9	-247.0	1,300.8	1,278.5	22.34	58.230	
5,200.0	5,196.7	5,359.8	5,160.7	9.6	25.3	152.75	1,121.9	-247.0	1,304.2	1,281.5	22.62	57.647	
5,300.0	5,296.6	5,459.7	5,260.6	9.7	25.4	152.82	1,121.9	-247.0	1,307.5	1,284.6	22.91	57.077	
5,400.0	5,396.5	5,559.6	5,360.5	9.9	25.4	152.90	1,121.9	-247.0	1,310.8	1,287.7	23.19	56.519	
5,500.0	5,496.5	5,659.6	5,460.5	10.1	25.5	152.97	1,121.9	-247.0	1,314.2	1,290.7	23.48	55.973	
5,600.0	5,596.4	5,759.5	5,560.4	10.3	25.6	153.05	1,121.9	-247.0	1,317.5	1,293.8	23.77	55.437	
5,700.0	5,696.3	5,859.4	5,660.3	10.5	25.7	153.12	1,121.9	-247.0	1,320.9	1,296.8	24.05	54.913	
5,800.0	5,796.2	5,959.4	5,760.2	10.7	25.7	153.19	1,121.9	-247.0	1,324.2	1,299.9	24.34	54.399	
5,900.0	5,896.2	6,059.3	5,860.2	10.9	25.8	153.27	1,121.9	-247.0	1,327.6	1,302.9	24.63	53.896	
6,000.0	5,996.1	6,159.2	5,960.1	11.0	25.9	153.34	1,121.9	-247.0	1,330.9	1,306.0	24.92	53.403	
6,100.0	6,096.0	6,259.1	6,060.0	11.2	26.0	153.41	1,121.9	-247.0	1,334.3	1,309.1	25.21	52.920	
6,200.0	6,196.0	6,359.1	6,160.0	11.4	26.0	153.48	1,121.9	-247.0	1,337.6	1,312.1	25.51	52.446	
6,300.0	6,295.9	6,459.0	6,259.9	11.6	26.1	153.56	1,121.9	-247.0	1,341.0	1,315.2	25.80	51.981	
6,400.0	6,395.8	6,558.9	6,359.8	11.8	26.2	153.63	1,121.9	-247.0	1,344.4	1,318.3	26.09	51.526	
6,500.0	6,495.8	6,658.9	6,459.8	12.0	26.3	153.70	1,121.9	-247.0	1,347.7	1,321.3	26.38	51.080	
6,600.0	6,595.7	6,758.8	6,559.7	12.2	26.3	153.77	1,121.9	-247.0	1,351.1	1,324.4	26.68	50.642	
6,696.0	6,691.6	6,854.7	6,655.6	12.3	26.4	153.84	1,121.9	-247.0	1,354.3	1,327.4	26.96	50.229	
6,700.0	6,695.6	6,858.7	6,659.6	12.4	26.4	149.88	1,121.9	-247.0	1,354.4	1,327.5	26.97	50.223	
6,750.0	6,745.6	6,908.7	6,709.6	12.4	26.4	2.90	1,121.9	-247.0	1,353.6	1,326.6	26.98	50.174	
6,800.0	6,795.3	6,958.4	6,759.3	12.5	26.5	-3.80	1,121.9	-247.0	1,348.5	1,321.6	26.88	50.174	
6,850.0	6,844.4	7,007.5	6,808.4	12.5	26.5	-5.65	1,121.9	-247.0	1,339.1	1,312.4	26.66	50.220	
6,900.0	6,892.5	7,055.6	6,856.5	12.5	26.5	-6.69	1,121.9	-247.0	1,325.5	1,299.2	26.35	50.299	
6,950.0	6,939.2	7,102.3	6,903.2	12.5	26.6	-7.51	1,121.9	-247.0	1,307.8	1,281.9	25.95	50.396	
7,000.0	6,984.2	7,147.3	6,948.2	12.5	26.6	-8.31	1,121.9	-247.0	1,286.2	1,260.7	25.48	50.483	
7,050.0	7,027.1	7,190.2	6,991.1	12.5	26.6	-9.19	1,121.9	-247.0	1,260.8	1,235.8	24.96	50.521	
7,100.0	7,067.6	7,230.7	7,031.6	12.5	26.7	-10.22	1,121.9	-247.0	1,231.8	1,207.4	24.42	50.449	
7,150.0	7,105.4	7,268.5	7,069.4	12.5	26.7	-11.49	1,121.9	-247.0	1,199.4	1,175.5	23.90	50.176	
7,200.0	7,140.2	7,303.3	7,104.2	12.6	26.7	-13.08	1,121.9	-247.0	1,163.9	1,140.5	23.48	49.571	
7,250.0	7,171.8	7,334.9	7,135.8	12.7	26.8	-15.15	1,121.9	-247.0	1,125.6	1,102.4	23.23	48.451	
7,300.0	7,199.8	7,362.9	7,163.8	12.8	26.8	-17.89	1,121.9	-247.0	1,084.8	1,061.5	23.29	46.576	
7,350.0	7,224.1	7,387.3	7,188.1	13.0	26.8	-21.64	1,121.9	-247.0	1,041.8	1,018.0	23.85	43.676	
7,400.0	7,244.6	7,407.7	7,208.6	13.2	26.8	-26.95	1,121.9	-247.0	997.0	971.7	25.21	39.543	

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 Vogl-Geist 2A-5H-E267
Project:	DJ Wattenberg	TVD Reference:	KB @ 4866.0ft (Ensign)
Reference Site:	S5-T2N-R67W (Vogl-McCoy)	MD Reference:	KB @ 4866.0ft (Ensign)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Vogl-Geist 2A-5H-E267	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design S5-T2N-R67W (Vogl-McCoy) - VOGL 31-5 (EXISTING) - KMG WELL - NO SURVEYS													Offset Site Error: 0.0 ft
Survey Program: 500-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)			
7,450.0	7,261.0	7,424.1	7,225.0	13.5	26.8	-34.68	1,121.9	-247.0	950.6	922.8	27.77	34.228	
7,500.0	7,273.2	7,436.3	7,237.2	13.9	26.8	-46.16	1,121.9	-247.0	903.1	871.2	31.88	28.331	
7,550.0	7,281.1	7,444.3	7,245.1	14.2	26.8	-62.65	1,121.9	-247.0	854.9	817.9	36.99	23.111	
7,600.0	7,284.8	7,447.9	7,248.8	14.7	26.8	-83.15	1,121.9	-247.0	806.3	765.7	40.56	19.878	
7,616.5	7,285.0	7,448.1	7,249.0	14.8	26.8	-90.00	1,121.9	-247.0	790.3	749.4	40.91	19.317	
7,700.0	7,285.0	7,448.1	7,249.0	15.6	26.8	-90.00	1,121.9	-247.0	709.4	667.7	41.74	16.999	
7,800.0	7,285.0	7,448.1	7,249.0	16.7	26.8	-90.00	1,121.9	-247.0	613.6	570.7	42.84	14.323	
7,900.0	7,285.0	7,448.1	7,249.0	17.9	26.8	-90.00	1,121.9	-247.0	519.3	475.2	44.05	11.790	
8,000.0	7,285.0	7,448.1	7,249.0	19.2	26.8	-90.00	1,121.9	-247.0	427.6	382.2	45.34	9.431	
8,100.0	7,285.0	7,448.1	7,249.0	20.6	26.8	-90.00	1,121.9	-247.0	340.6	293.9	46.70	7.293	
8,200.0	7,285.0	7,448.1	7,249.0	22.0	26.8	-90.00	1,121.9	-247.0	263.0	214.9	48.11	5.466	
8,300.0	7,285.0	7,448.1	7,249.0	23.5	26.8	-90.00	1,121.9	-247.0	205.7	156.2	49.58	4.150	
8,384.1	7,285.0	7,448.1	7,249.0	24.7	26.8	-90.00	1,121.9	-247.0	187.7	136.9	50.84	3.693 CC, ES	
8,400.0	7,285.0	7,448.1	7,249.0	25.0	26.8	-90.00	1,121.9	-247.0	188.4	137.3	51.08	3.689 SF	
8,500.0	7,285.0	7,448.1	7,249.0	26.5	26.8	-90.00	1,121.9	-247.0	220.6	168.0	52.61	4.194	
8,600.0	7,285.0	7,448.1	7,249.0	28.0	26.8	-90.00	1,121.9	-247.0	286.1	231.9	54.16	5.282	
8,700.0	7,285.0	7,448.1	7,249.0	29.6	26.8	-90.00	1,121.9	-247.0	367.4	311.7	55.74	6.592	
8,800.0	7,285.0	7,448.1	7,249.0	31.2	26.8	-90.00	1,121.9	-247.0	456.3	398.9	57.34	7.957	
8,900.0	7,285.0	7,448.1	7,249.0	32.8	26.8	-90.00	1,121.9	-247.0	549.0	490.0	58.96	9.311	
9,000.0	7,285.0	7,448.1	7,249.0	34.5	26.8	-90.00	1,121.9	-247.0	643.8	583.3	60.58	10.627	
9,100.0	7,285.0	7,448.1	7,249.0	36.1	26.8	-90.00	1,121.9	-247.0	740.1	677.8	62.22	11.894	
9,200.0	7,285.0	7,448.1	7,249.0	37.7	26.8	-90.00	1,121.9	-247.0	837.2	773.3	63.87	13.107	
9,300.0	7,285.0	7,448.1	7,249.0	39.4	26.8	-90.00	1,121.9	-247.0	934.9	869.4	65.53	14.266	
9,400.0	7,285.0	7,448.1	7,249.0	41.1	26.8	-90.00	1,121.9	-247.0	1,033.1	965.9	67.20	15.373	
9,500.0	7,285.0	7,448.1	7,249.0	42.7	26.8	-90.00	1,121.9	-247.0	1,131.5	1,062.7	68.87	16.429	
9,600.0	7,285.0	7,448.1	7,249.0	44.4	26.8	-90.00	1,121.9	-247.0	1,230.3	1,159.7	70.55	17.437	
9,700.0	7,285.0	7,448.1	7,249.0	46.1	26.8	-90.00	1,121.9	-247.0	1,329.2	1,256.9	72.24	18.400	
9,800.0	7,285.0	7,448.1	7,249.0	47.8	26.8	-90.00	1,121.9	-247.0	1,428.3	1,354.3	73.93	19.319	
9,900.0	7,285.0	7,448.1	7,249.0	49.5	26.8	-90.00	1,121.9	-247.0	1,527.4	1,451.8	75.63	20.197	

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 Vogl-Geist 2A-5H-E267
Project:	DJ Wattenberg	TVD Reference:	KB @ 4866.0ft (Ensign)
Reference Site:	S5-T2N-R67W (Vogl-McCoy)	MD Reference:	KB @ 4866.0ft (Ensign)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Vogl-Geist 2A-5H-E267	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design S5-T2N-R67W (Vogl-McCoy) - VOGL 4-5A (EXISTING) - KMG WELL - GYRO												Offset Site Error:	0.0 ft
Survey Program: 100-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)			
8,000.0	7,285.0	6,580.0	6,578.7	19.2	11.5	25.11	2,032.9	270.8	1,499.5	1,480.2	19.38	77.389	
8,100.0	7,285.0	6,580.0	6,578.7	20.6	11.5	25.11	2,032.9	270.8	1,413.4	1,393.5	19.96	70.827	
8,200.0	7,285.0	6,580.0	6,578.7	22.0	11.5	25.11	2,032.9	270.8	1,329.3	1,308.7	20.56	64.668	
8,300.0	7,285.0	6,580.0	6,578.7	23.5	11.5	25.11	2,032.9	270.8	1,247.5	1,226.3	21.17	58.923	
8,400.0	7,285.0	6,580.0	6,578.7	25.0	11.5	25.11	2,032.9	270.8	1,168.5	1,146.7	21.80	53.596	
8,500.0	7,285.0	6,580.0	6,578.7	26.5	11.5	25.11	2,032.9	270.8	1,092.9	1,070.5	22.44	48.694	
8,600.0	7,285.0	6,580.0	6,578.7	28.0	11.5	25.11	2,032.9	270.8	1,021.6	998.5	23.10	44.227	
8,700.0	7,285.0	6,580.0	6,578.7	29.6	11.5	25.11	2,032.9	270.8	955.4	931.7	23.76	40.207	
8,800.0	7,285.0	6,580.0	6,578.7	31.2	11.5	25.11	2,032.9	270.8	895.6	871.1	24.44	36.650	
8,900.0	7,285.0	6,580.0	6,578.7	32.8	11.5	25.11	2,032.9	270.8	843.4	818.2	25.12	33.577	
9,000.0	7,285.0	6,580.0	6,578.7	34.5	11.5	25.11	2,032.9	270.8	800.3	774.5	25.80	31.013	
9,100.0	7,285.0	6,580.0	6,578.7	36.1	11.5	25.11	2,032.9	270.8	767.9	741.4	26.50	28.979	
9,200.0	7,285.0	6,580.0	6,578.7	37.7	11.5	25.11	2,032.9	270.8	747.5	720.3	27.20	27.487	
9,300.0	7,285.0	6,580.0	6,578.7	39.4	11.5	25.11	2,032.9	270.8	740.3	712.4	27.90	26.533	
9,304.1	7,285.0	6,580.0	6,578.7	39.5	11.5	25.11	2,032.9	270.8	740.3	712.3	27.93	26.506 CC, ES	
9,400.0	7,285.0	6,580.0	6,578.7	41.1	11.5	25.11	2,032.9	270.8	746.4	717.8	28.61	26.093 SF	
9,500.0	7,285.0	6,580.0	6,578.7	42.7	11.5	25.11	2,032.9	270.8	765.7	736.4	29.32	26.118	
9,600.0	7,285.0	6,580.0	6,578.7	44.4	11.5	25.11	2,032.9	270.8	797.2	767.2	30.03	26.544	
9,700.0	7,285.0	6,580.0	6,578.7	46.1	11.5	25.11	2,032.9	270.8	839.5	808.7	30.75	27.298	
9,800.0	7,285.0	6,580.0	6,578.7	47.8	11.5	25.11	2,032.9	270.8	891.0	859.5	31.47	28.310	
9,900.0	7,285.0	6,580.0	6,578.7	49.5	11.5	25.11	2,032.9	270.8	950.3	918.1	32.20	29.515	
10,000.0	7,285.0	6,580.0	6,578.7	51.2	11.5	25.11	2,032.9	270.8	1,016.0	983.1	32.92	30.859	
10,100.0	7,285.0	6,580.0	6,578.7	52.9	11.5	25.11	2,032.9	270.8	1,087.0	1,053.3	33.65	32.299	
10,200.0	7,285.0	6,580.0	6,578.7	54.6	11.5	25.11	2,032.9	270.8	1,162.2	1,127.8	34.38	33.801	
10,300.0	7,285.0	6,580.0	6,578.7	56.3	11.5	25.11	2,032.9	270.8	1,240.9	1,205.8	35.12	35.337	
10,400.0	7,285.0	6,580.0	6,578.7	58.0	11.5	25.11	2,032.9	270.8	1,322.5	1,286.7	35.85	36.890	
10,500.0	7,285.0	6,580.0	6,578.7	59.7	11.5	25.11	2,032.9	270.8	1,406.5	1,369.9	36.59	38.443	
10,600.0	7,285.0	6,580.0	6,578.7	61.4	11.5	25.11	2,032.9	270.8	1,492.4	1,455.1	37.32	39.987	

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 Vogl-Geist 2A-5H-E267
Project:	DJ Wattenberg	TVD Reference:	KB @ 4866.0ft (Ensign)
Reference Site:	S5-T2N-R67W (Vogl-McCoy)	MD Reference:	KB @ 4866.0ft (Ensign)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Vogl-Geist 2A-5H-E267	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design S5-T2N-R67W (Vogl-McCoy) - VOGL 5-5 (EXISTING) - KMG WELL - NO SURVEYS													Offset Site Error: 0.0 ft			
Survey Program: 7910-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	36.63	236.8	176.1	296.2							
100.0	100.0	74.0	74.0	0.1	0.1	36.63	236.8	176.1	295.1	294.8	0.25	1,173.144				
200.0	200.0	174.0	174.0	0.3	0.3	36.63	236.8	176.1	295.1	294.5	0.60	491.311				
300.0	300.0	274.0	274.0	0.5	0.5	36.63	236.8	176.1	295.1	294.1	0.95	310.720				
400.0	400.0	374.0	374.0	0.6	0.7	36.63	236.8	176.1	295.1	293.8	1.30	227.206				
507.5	507.5	481.5	481.5	0.8	0.8	-162.36	236.8	176.1	297.0	295.3	1.67	177.466				
600.0	599.9	573.9	573.9	1.0	1.0	-162.56	236.8	176.1	300.3	298.3	2.00	150.395				
700.0	699.8	673.8	673.8	1.2	1.2	-162.78	236.8	176.1	303.9	301.5	2.35	129.514				
800.0	799.8	773.8	773.8	1.4	1.4	-162.98	236.8	176.1	307.5	304.8	2.70	114.047				
900.0	899.7	873.7	873.7	1.6	1.5	-163.19	236.8	176.1	311.1	308.0	3.05	102.132				
1,000.0	999.6	973.6	973.6	1.7	1.7	-163.38	236.8	176.1	314.7	311.3	3.40	92.672				
1,100.0	1,099.6	1,073.6	1,073.6	1.9	1.9	-163.58	236.8	176.1	318.3	314.5	3.75	84.980				
1,200.0	1,199.5	1,173.5	1,173.5	2.1	2.0	-163.76	236.8	176.1	321.9	317.8	4.09	78.603				
1,300.0	1,299.4	1,273.4	1,273.4	2.3	2.2	-163.95	236.8	176.1	325.5	321.0	4.44	73.230				
1,400.0	1,399.3	1,373.3	1,373.3	2.5	2.4	-164.13	236.8	176.1	329.1	324.3	4.79	68.642				
1,500.0	1,499.3	1,473.3	1,473.3	2.7	2.6	-164.31	236.8	176.1	332.7	327.5	5.14	64.679				
1,600.0	1,599.2	1,573.2	1,573.2	2.9	2.7	-164.48	236.8	176.1	336.3	330.8	5.49	61.221				
1,700.0	1,699.1	1,673.1	1,673.1	3.0	2.9	-164.65	236.8	176.1	339.9	334.1	5.84	58.177				
1,800.0	1,799.1	1,773.1	1,773.1	3.2	3.1	-164.81	236.8	176.1	343.5	337.3	6.19	55.478				
1,900.0	1,899.0	1,873.0	1,873.0	3.4	3.3	-164.98	236.8	176.1	347.2	340.6	6.54	53.068				
2,000.0	1,998.9	1,972.9	1,972.9	3.6	3.4	-165.14	236.8	176.1	350.8	343.9	6.89	50.903				
2,100.0	2,098.9	2,072.9	2,072.9	3.8	3.6	-165.29	236.8	176.1	354.4	347.2	7.24	48.947				
2,200.0	2,198.8	2,172.8	2,172.8	4.0	3.8	-165.44	236.8	176.1	358.0	350.4	7.59	47.172				
2,300.0	2,298.7	2,272.7	2,272.7	4.2	4.0	-165.59	236.8	176.1	361.7	353.7	7.94	45.554				
2,400.0	2,398.6	2,372.6	2,372.6	4.3	4.1	-165.74	236.8	176.1	365.3	357.0	8.29	44.072				
2,500.0	2,498.6	2,472.6	2,472.6	4.5	4.3	-165.88	236.8	176.1	368.9	360.3	8.64	42.711				
2,600.0	2,598.5	2,572.5	2,572.5	4.7	4.5	-166.02	236.8	176.1	372.6	363.6	8.99	41.456				
2,700.0	2,698.4	2,672.4	2,672.4	4.9	4.7	-166.16	236.8	176.1	376.2	366.9	9.34	40.295				
2,800.0	2,798.4	2,772.4	2,772.4	5.1	4.8	-166.30	236.8	176.1	379.9	370.2	9.69	39.218				
2,900.0	2,898.3	2,872.3	2,872.3	5.3	5.0	-166.43	236.8	176.1	383.5	373.5	10.04	38.216				
3,000.0	2,998.2	2,972.2	2,972.2	5.5	5.2	-166.56	236.8	176.1	387.2	376.8	10.38	37.282				
3,100.0	3,098.1	3,072.1	3,072.1	5.6	5.4	-166.69	236.8	176.1	390.8	380.1	10.73	36.409				
3,200.0	3,198.1	3,172.1	3,172.1	5.8	5.5	-166.81	236.8	176.1	394.5	383.4	11.08	35.591				
3,300.0	3,298.0	3,272.0	3,272.0	6.0	5.7	-166.94	236.8	176.1	398.1	386.7	11.43	34.824				
3,400.0	3,397.9	3,371.9	3,371.9	6.2	5.9	-167.06	236.8	176.1	401.8	390.0	11.78	34.102				
3,500.0	3,497.9	3,471.9	3,471.9	6.4	6.1	-167.18	236.8	176.1	405.4	393.3	12.13	33.422				
3,600.0	3,597.8	3,571.8	3,571.8	6.6	6.2	-167.29	236.8	176.1	409.1	396.6	12.48	32.780				
3,700.0	3,697.7	3,671.7	3,671.7	6.8	6.4	-167.41	236.8	176.1	412.8	399.9	12.83	32.173				
3,800.0	3,797.7	3,771.7	3,771.7	6.9	6.6	-167.52	236.8	176.1	416.4	403.2	13.18	31.599				
3,900.0	3,897.6	3,871.6	3,871.6	7.1	6.8	-167.63	236.8	176.1	420.1	406.5	13.53	31.054				
4,000.0	3,997.5	3,971.5	3,971.5	7.3	6.9	-167.74	236.8	176.1	423.7	409.9	13.88	30.537				
4,100.0	4,097.4	4,071.4	4,071.4	7.5	7.1	-167.85	236.8	176.1	427.4	413.2	14.23	30.045				
4,200.0	4,197.4	4,171.4	4,171.4	7.7	7.3	-167.95	236.8	176.1	431.1	416.5	14.57	29.577				
4,300.0	4,297.3	4,271.3	4,271.3	7.9	7.5	-168.05	236.8	176.1	434.7	419.8	14.92	29.131				
4,400.0	4,397.2	4,371.2	4,371.2	8.1	7.6	-168.16	236.8	176.1	438.4	423.1	15.27	28.706				
4,500.0	4,497.2	4,471.2	4,471.2	8.3	7.8	-168.26	236.8	176.1	442.1	426.5	15.62	28.299				
4,600.0	4,597.1	4,571.1	4,571.1	8.4	8.0	-168.35	236.8	176.1	445.8	429.8	15.97	27.911				
4,700.0	4,697.0	4,671.0	4,671.0	8.6	8.2	-168.45	236.8	176.1	449.4	433.1	16.32	27.539				
4,800.0	4,797.0	4,771.0	4,771.0	8.8	8.3	-168.55	236.8	176.1	453.1	436.5	16.67	27.183				
4,900.0	4,896.9	4,870.9	4,870.9	9.0	8.5	-168.64	236.8	176.1	456.8	439.8	17.02	26.842				
5,000.0	4,996.8	4,970.8	4,970.8	9.2	8.7	-168.73	236.8	176.1	460.5	443.1	17.37	26.514				
5,100.0	5,096.7	5,070.7	5,070.7	9.4	8.9	-168.82	236.8	176.1	464.2	446.4	17.72	26.199				

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 Vogl-Geist 2A-5H-E267
Project:	DJ Wattenberg	TVD Reference:	KB @ 4866.0ft (Ensign)
Reference Site:	S5-T2N-R67W (Vogl-McCoy)	MD Reference:	KB @ 4866.0ft (Ensign)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Vogl-Geist 2A-5H-E267	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design S5-T2N-R67W (Vogl-McCoy) - VOGL 5-5 (EXISTING) - KMG WELL - NO SURVEYS												Offset Site Error:	0.0 ft
Survey Program: 7910-MWD												Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis		Distance		Total		Separation		Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Uncertainty Axis		
5,200.0	5,196.7	5,170.7	5,170.7	9.6	9.0	-168.91	236.8	176.1	467.8	449.8	18.07	25.897	
5,300.0	5,296.6	5,270.6	5,270.6	9.7	9.2	-169.00	236.8	176.1	471.5	453.1	18.41	25.606	
5,400.0	5,396.5	5,370.5	5,370.5	9.9	9.4	-169.08	236.8	176.1	475.2	456.4	18.76	25.326	
5,500.0	5,496.5	5,470.5	5,470.5	10.1	9.5	-169.17	236.8	176.1	478.9	459.8	19.11	25.056	
5,600.0	5,596.4	5,570.4	5,570.4	10.3	9.7	-169.25	236.8	176.1	482.6	463.1	19.46	24.796	
5,700.0	5,696.3	5,670.3	5,670.3	10.5	9.9	-169.34	236.8	176.1	486.3	466.5	19.81	24.546	
5,800.0	5,796.2	5,770.2	5,770.2	10.7	10.1	-169.42	236.8	176.1	489.9	469.8	20.16	24.304	
5,900.0	5,896.2	5,870.2	5,870.2	10.9	10.2	-169.50	236.8	176.1	493.6	473.1	20.51	24.070	
6,000.0	5,996.1	5,970.1	5,970.1	11.0	10.4	-169.58	236.8	176.1	497.3	476.5	20.86	23.844	
6,100.0	6,096.0	6,070.0	6,070.0	11.2	10.6	-169.65	236.8	176.1	501.0	479.8	21.21	23.626	
6,200.0	6,196.0	6,170.0	6,170.0	11.4	10.8	-169.73	236.8	176.1	504.7	483.2	21.56	23.415	
6,300.0	6,295.9	6,269.9	6,269.9	11.6	10.9	-169.80	236.8	176.1	508.4	486.5	21.90	23.210	
6,400.0	6,395.8	6,369.8	6,369.8	11.8	11.1	-169.88	236.8	176.1	512.1	489.8	22.25	23.012	
6,500.0	6,495.8	6,469.8	6,469.8	12.0	11.3	-169.95	236.8	176.1	515.8	493.2	22.60	22.820	
6,600.0	6,595.7	6,569.7	6,569.7	12.2	11.5	-170.02	236.8	176.1	519.5	496.5	22.95	22.634	
6,696.0	6,691.6	6,665.6	6,665.6	12.3	11.6	-170.09	236.8	176.1	523.0	499.7	23.29	22.461	
6,700.0	6,695.6	6,669.6	6,669.6	12.4	11.6	-174.07	236.8	176.1	523.2	499.9	23.30	22.452	
6,750.0	6,745.6	6,719.6	6,719.6	12.4	11.7	39.06	236.8	176.1	522.8	499.3	23.44	22.298	
6,800.0	6,795.3	6,769.3	6,769.3	12.5	11.8	32.97	236.8	176.1	518.5	495.1	23.50	22.070	
6,850.0	6,844.4	6,818.4	6,818.4	12.5	11.9	32.24	236.8	176.1	510.5	487.1	23.46	21.761	
6,900.0	6,892.5	6,866.5	6,866.5	12.5	12.0	32.91	236.8	176.1	498.9	475.5	23.36	21.360	
6,950.0	6,939.2	6,913.2	6,913.2	12.5	12.1	34.44	236.8	176.1	483.8	460.6	23.20	20.850	
7,000.0	6,984.2	6,958.2	6,958.2	12.5	12.1	36.75	236.8	176.1	465.4	442.4	23.03	20.206	
7,050.0	7,027.1	7,001.1	7,001.1	12.5	12.2	39.87	236.8	176.1	444.2	421.3	22.90	19.397	
7,100.0	7,067.6	7,041.6	7,041.6	12.5	12.3	43.87	236.8	176.1	420.5	397.6	22.86	18.394	
7,150.0	7,105.4	7,079.4	7,079.4	12.5	12.4	48.81	236.8	176.1	394.8	371.9	22.98	17.185	
7,200.0	7,140.2	7,114.2	7,114.2	12.6	12.4	54.70	236.8	176.1	367.9	344.6	23.29	15.797	
7,250.0	7,171.8	7,145.8	7,145.8	12.7	12.5	61.36	236.8	176.1	340.7	316.9	23.80	14.312	
7,300.0	7,199.8	7,173.8	7,173.8	12.8	12.5	68.45	236.8	176.1	314.2	289.8	24.43	12.860	
7,350.0	7,224.1	7,198.1	7,198.1	13.0	12.6	75.40	236.8	176.1	290.0	265.0	25.06	11.572	
7,400.0	7,244.6	7,218.6	7,218.6	13.2	12.6	81.60	236.8	176.1	270.0	244.4	25.61	10.544	
7,450.0	7,261.0	7,235.0	7,235.0	13.5	12.6	86.51	236.8	176.1	256.2	230.2	26.05	9.835	
7,500.0	7,273.2	7,247.2	7,247.2	13.9	12.6	89.76	236.8	176.1	250.6	224.2	26.44	9.479	
7,505.3	7,274.3	7,248.3	7,248.3	13.9	12.7	90.00	236.8	176.1	250.6	224.1	26.48	9.462 CC, ES, SF	
7,550.0	7,281.1	7,255.1	7,255.1	14.2	12.7	91.16	236.8	176.1	254.4	227.6	26.83	9.480	
7,600.0	7,284.8	7,258.8	7,258.8	14.7	12.7	90.61	236.8	176.1	267.5	240.2	27.27	9.808	
7,616.5	7,285.0	7,259.0	7,259.0	14.8	12.7	90.00	236.8	176.1	273.7	246.3	27.43	9.980	
7,700.0	7,285.0	7,259.0	7,259.0	15.6	12.7	90.00	236.8	176.1	316.6	288.4	28.25	11.208	
7,800.0	7,285.0	7,259.0	7,259.0	16.7	12.7	90.00	236.8	176.1	385.9	356.6	29.35	13.148	
7,900.0	7,285.0	7,259.0	7,259.0	17.9	12.7	90.00	236.8	176.1	466.5	435.9	30.56	15.265	
8,000.0	7,285.0	7,259.0	7,259.0	19.2	12.7	90.00	236.8	176.1	553.4	521.6	31.85	17.376	
8,100.0	7,285.0	7,259.0	7,259.0	20.6	12.7	90.00	236.8	176.1	644.2	611.0	33.21	19.396	
8,200.0	7,285.0	7,259.0	7,259.0	22.0	12.7	90.00	236.8	176.1	737.3	702.7	34.63	21.293	
8,300.0	7,285.0	7,259.0	7,259.0	23.5	12.7	90.00	236.8	176.1	832.1	796.0	36.09	23.055	
8,400.0	7,285.0	7,259.0	7,259.0	25.0	12.7	90.00	236.8	176.1	927.9	890.3	37.59	24.685	
8,500.0	7,285.0	7,259.0	7,259.0	26.5	12.7	90.00	236.8	176.1	1,024.5	985.4	39.12	26.189	
8,600.0	7,285.0	7,259.0	7,259.0	28.0	12.7	90.00	236.8	176.1	1,121.8	1,081.1	40.68	27.576	
8,700.0	7,285.0	7,259.0	7,259.0	29.6	12.7	90.00	236.8	176.1	1,219.5	1,177.2	42.26	28.857	
8,800.0	7,285.0	7,259.0	7,259.0	31.2	12.7	90.00	236.8	176.1	1,317.5	1,273.6	43.86	30.041	
8,900.0	7,285.0	7,259.0	7,259.0	32.8	12.7	90.00	236.8	176.1	1,415.8	1,370.3	45.47	31.136	
9,000.0	7,285.0	7,259.0	7,259.0	34.5	12.7	90.00	236.8	176.1	1,514.3	1,467.2	47.10	32.152	

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 Vogl-Geist 2A-5H-E267
Project:	DJ Wattenberg	TVD Reference:	KB @ 4866.0ft (Ensign)
Reference Site:	S5-T2N-R67W (Vogl-McCoy)	MD Reference:	KB @ 4866.0ft (Ensign)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Vogl-Geist 2A-5H-E267	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design S5-T2N-R67W (Vogl-McCoy) - Vogl-Geist 2B-5H-E267 - Hz - Plan #2													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis		Distance		Total		Separation		Warning		
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Uncertainty Axis	Factor		
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	80.060		
200.0	200.0	200.0	200.0	0.3	0.3	90.05	0.0	19.6	19.6	19.0	0.59	32.966		
300.0	300.0	300.0	300.0	0.5	0.5	90.05	0.0	19.6	19.6	18.6	0.94	20.756		
400.0	400.0	400.0	400.0	0.6	0.6	90.05	0.0	19.6	19.6	18.3	1.29	15.147 CC, ES		
507.5	507.5	507.5	507.5	0.8	0.8	-114.22	0.0	19.6	20.3	18.6	1.67	12.164		
600.0	599.9	599.9	599.9	1.0	1.0	-122.50	0.0	19.6	22.0	20.0	2.00	11.004		
700.0	699.8	699.6	699.6	1.2	1.2	-128.45	-0.4	20.3	24.7	22.4	2.35	10.537		
800.0	799.8	799.2	799.1	1.4	1.3	-130.37	-1.7	22.6	28.8	26.1	2.70	10.655		
900.0	899.7	898.7	898.6	1.6	1.5	-129.49	-3.9	26.3	34.0	30.9	3.06	11.092		
1,000.0	999.6	998.1	997.7	1.7	1.7	-126.97	-6.8	31.6	40.3	36.8	3.43	11.756		
1,100.0	1,099.6	1,097.2	1,096.6	1.9	1.9	-123.66	-10.7	38.3	47.9	44.1	3.79	12.613		
1,200.0	1,199.5	1,196.9	1,195.9	2.1	2.1	-120.70	-14.9	45.8	56.2	52.0	4.17	13.486		
1,300.0	1,299.4	1,296.5	1,295.1	2.3	2.3	-118.50	-19.1	53.2	64.6	60.1	4.54	14.240		
1,400.0	1,399.3	1,396.1	1,394.4	2.5	2.5	-116.81	-23.4	60.7	73.1	68.2	4.91	14.895		
1,500.0	1,499.3	1,495.7	1,493.6	2.7	2.8	-115.47	-27.6	68.2	81.6	76.4	5.28	15.467		
1,600.0	1,599.2	1,595.3	1,592.9	2.9	3.0	-114.39	-31.8	75.6	90.2	84.6	5.65	15.971		
1,700.0	1,699.1	1,694.9	1,692.1	3.0	3.2	-113.50	-36.1	83.1	98.8	92.8	6.02	16.417		
1,800.0	1,799.1	1,794.6	1,791.3	3.2	3.4	-112.74	-40.3	90.6	107.4	101.1	6.39	16.815		
1,900.0	1,899.0	1,894.2	1,890.6	3.4	3.6	-112.11	-44.5	98.0	116.1	109.3	6.76	17.171		
2,000.0	1,998.9	1,993.8	1,989.8	3.6	3.9	-111.55	-48.8	105.5	124.7	117.6	7.13	17.493		
2,100.0	2,098.9	2,093.4	2,089.1	3.8	4.1	-111.08	-53.0	112.9	133.4	125.9	7.50	17.784		
2,200.0	2,198.8	2,193.0	2,188.3	4.0	4.3	-110.65	-57.2	120.4	142.1	134.2	7.87	18.048		
2,300.0	2,298.7	2,292.7	2,287.6	4.2	4.5	-110.28	-61.5	127.9	150.8	142.5	8.24	18.290		
2,400.0	2,398.6	2,392.3	2,386.8	4.3	4.8	-109.95	-65.7	135.3	159.4	150.8	8.61	18.511		
2,500.0	2,498.6	2,491.9	2,486.1	4.5	5.0	-109.65	-69.9	142.8	168.1	159.1	8.98	18.715		
2,600.0	2,598.5	2,591.5	2,585.3	4.7	5.2	-109.38	-74.2	150.2	176.8	167.5	9.35	18.903		
2,700.0	2,698.4	2,691.1	2,684.6	4.9	5.5	-109.14	-78.4	157.7	185.5	175.8	9.72	19.077		
2,800.0	2,798.4	2,790.7	2,783.8	5.1	5.7	-108.92	-82.6	165.2	194.2	184.1	10.09	19.239		
2,900.0	2,898.3	2,890.4	2,883.1	5.3	5.9	-108.72	-86.9	172.6	202.9	192.5	10.47	19.389		
3,000.0	2,998.2	2,990.0	2,982.3	5.5	6.1	-108.53	-91.1	180.1	211.6	200.8	10.84	19.530		
3,100.0	3,098.1	3,089.6	3,081.6	5.6	6.4	-108.36	-95.3	187.6	220.3	209.1	11.21	19.661		
3,200.0	3,198.1	3,189.2	3,180.8	5.8	6.6	-108.20	-99.6	195.0	229.0	217.5	11.58	19.784		
3,300.0	3,298.0	3,288.8	3,280.1	6.0	6.8	-108.06	-103.8	202.5	237.7	225.8	11.95	19.900		
3,400.0	3,397.9	3,388.5	3,379.3	6.2	7.0	-107.92	-108.0	209.9	246.5	234.1	12.32	20.009		
3,500.0	3,497.9	3,488.1	3,478.6	6.4	7.3	-107.79	-112.3	217.4	255.2	242.5	12.69	20.111		
3,600.0	3,597.8	3,587.7	3,577.8	6.6	7.5	-107.68	-116.5	224.9	263.9	250.8	13.06	20.208		
3,700.0	3,697.7	3,687.3	3,677.1	6.8	7.7	-107.56	-120.7	232.3	272.6	259.2	13.43	20.299		
3,800.0	3,797.7	3,786.9	3,776.3	6.9	8.0	-107.46	-125.0	239.8	281.3	267.5	13.80	20.386		
3,900.0	3,897.6	3,886.5	3,875.6	7.1	8.2	-107.36	-129.2	247.3	290.0	275.9	14.17	20.468		
4,000.0	3,997.5	3,986.2	3,974.8	7.3	8.4	-107.27	-133.4	254.7	298.7	284.2	14.54	20.546		
4,100.0	4,097.4	4,085.8	4,074.1	7.5	8.6	-107.18	-137.7	262.2	307.5	292.6	14.91	20.621		
4,200.0	4,197.4	4,185.4	4,173.3	7.7	8.9	-107.10	-141.9	269.6	316.2	300.9	15.28	20.691		
4,300.0	4,297.3	4,285.0	4,272.5	7.9	9.1	-107.02	-146.1	277.1	324.9	309.3	15.65	20.759		
4,400.0	4,397.2	4,384.6	4,371.8	8.1	9.3	-106.95	-150.4	284.6	333.6	317.6	16.02	20.823		
4,500.0	4,497.2	4,484.3	4,471.0	8.3	9.6	-106.88	-154.6	292.0	342.3	326.0	16.39	20.885		
4,600.0	4,597.1	4,583.9	4,570.3	8.4	9.8	-106.81	-158.8	299.5	351.1	334.3	16.76	20.943		
4,700.0	4,697.0	4,683.5	4,669.5	8.6	10.0	-106.75	-163.1	307.0	359.8	342.7	17.13	21.000		
4,800.0	4,797.0	4,783.1	4,768.8	8.8	10.2	-106.69	-167.3	314.4	368.5	351.0	17.50	21.053		
4,900.0	4,896.9	4,882.7	4,868.0	9.0	10.5	-106.63	-171.5	321.9	377.2	359.4	17.87	21.105		
5,000.0	4,996.8	4,982.3	4,967.3	9.2	10.7	-106.58	-175.8	329.3	386.0	367.7	18.24	21.155		
5,100.0	5,096.7	5,082.0	5,066.5	9.4	10.9	-106.53	-180.0	336.8	394.7	376.1	18.61	21.202		

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 Vogl-Geist 2A-5H-E267
Project:	DJ Wattenberg	TVD Reference:	KB @ 4866.0ft (Ensign)
Reference Site:	S5-T2N-R67W (Vogl-McCoy)	MD Reference:	KB @ 4866.0ft (Ensign)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Vogl-Geist 2A-5H-E267	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design S5-T2N-R67W (Vogl-McCoy) - Vogl-Geist 2B-5H-E267 - Hz - Plan #2												Offset Site Error:	0.0 ft
Survey Program: O-MWD												Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis		Distance		Total		Separation		Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Uncertainty Axis		
5,200.0	5,196.7	5,181.6	5,165.8	9.6	11.2	-106.48	-184.2	344.3	403.4	384.4	18.99	21.248	
5,300.0	5,296.6	5,281.2	5,265.0	9.7	11.4	-106.43	-188.5	351.7	412.1	392.8	19.36	21.292	
5,400.0	5,396.5	5,380.8	5,364.3	9.9	11.6	-106.38	-192.7	359.2	420.8	401.1	19.73	21.335	
5,500.0	5,496.5	5,480.4	5,463.5	10.1	11.8	-106.34	-196.9	366.6	429.6	409.5	20.10	21.375	
5,600.0	5,596.4	5,580.1	5,562.8	10.3	12.1	-106.30	-201.2	374.1	438.3	417.8	20.47	21.415	
5,700.0	5,696.3	5,679.7	5,662.0	10.5	12.3	-106.26	-205.4	381.6	447.0	426.2	20.84	21.453	
5,800.0	5,796.2	5,779.3	5,761.3	10.7	12.5	-106.22	-209.6	389.0	455.7	434.5	21.21	21.490	
5,900.0	5,896.2	5,878.9	5,860.5	10.9	12.8	-106.18	-213.9	396.5	464.5	442.9	21.58	21.525	
6,000.0	5,996.1	5,978.5	5,959.8	11.0	13.0	-106.14	-218.1	404.0	473.2	451.2	21.95	21.559	
6,100.0	6,096.0	6,078.1	6,059.0	11.2	13.2	-106.11	-222.3	411.4	481.9	459.6	22.32	21.592	
6,200.0	6,196.0	6,177.8	6,158.3	11.4	13.4	-106.07	-226.6	418.9	490.6	468.0	22.69	21.624	
6,300.0	6,295.9	6,277.4	6,257.5	11.6	13.7	-106.04	-230.8	426.3	499.4	476.3	23.06	21.656	
6,400.0	6,395.8	6,377.0	6,356.8	11.8	13.9	-106.01	-235.0	433.8	508.1	484.7	23.43	21.686	
6,500.0	6,495.8	6,476.6	6,456.0	12.0	14.1	-105.98	-239.3	441.3	516.8	493.0	23.80	21.715	
6,600.0	6,595.7	6,578.7	6,557.7	12.2	14.3	-106.30	-240.4	448.9	525.4	501.3	24.16	21.751	
6,696.0	6,691.6	6,675.1	6,652.7	12.3	14.5	-108.22	-226.3	456.1	533.3	508.9	24.46	21.803	
6,700.0	6,695.6	6,679.0	6,656.5	12.4	14.5	-112.33	-225.4	456.3	533.7	509.2	24.47	21.805	
6,750.0	6,745.6	6,726.8	6,702.3	12.4	14.5	98.90	-212.1	459.8	538.0	513.4	24.60	21.871	
6,800.0	6,795.3	6,773.7	6,746.0	12.5	14.5	90.56	-195.5	463.1	542.6	517.9	24.69	21.981	
6,850.0	6,844.4	6,819.7	6,787.4	12.5	14.5	87.21	-175.8	466.2	547.3	522.6	24.73	22.130	
6,900.0	6,892.5	6,864.8	6,826.4	12.5	14.5	84.85	-153.2	469.1	552.1	527.4	24.75	22.311	
6,950.0	6,939.2	6,909.2	6,862.9	12.5	14.6	82.89	-128.1	471.9	557.0	532.2	24.74	22.516	
7,000.0	6,984.2	6,952.9	6,896.8	12.5	14.6	81.18	-100.7	474.4	561.7	537.0	24.71	22.733	
7,050.0	7,027.1	6,996.0	6,928.2	12.5	14.6	79.64	-71.2	476.8	566.4	541.7	24.68	22.950	
7,100.0	7,067.6	7,038.6	6,966.8	12.5	14.7	78.25	-39.8	478.9	570.8	546.2	24.65	23.154	
7,150.0	7,105.4	7,080.7	6,982.8	12.5	14.7	76.99	-6.8	480.9	575.0	550.4	24.68	23.304	
7,200.0	7,140.2	7,122.3	7,006.1	12.6	14.8	75.86	27.7	482.6	578.9	554.2	24.71	23.434	
7,250.0	7,171.8	7,163.6	7,026.6	12.7	15.0	74.86	63.4	484.2	582.5	557.7	24.80	23.488	
7,300.0	7,199.8	7,204.5	7,044.4	12.8	15.1	73.97	100.2	485.5	585.6	560.7	24.96	23.460	
7,350.0	7,224.1	7,245.1	7,059.4	13.0	15.3	73.20	137.9	486.6	588.3	563.1	25.22	23.329	
7,400.0	7,244.6	7,285.4	7,071.7	13.2	15.5	72.55	176.3	487.6	590.5	564.9	25.57	23.091	
7,450.0	7,261.0	7,325.6	7,081.1	13.5	15.7	72.02	215.3	488.3	592.2	566.2	26.03	22.747	
7,500.0	7,273.2	7,365.5	7,087.8	13.9	16.0	71.61	254.7	488.8	593.3	566.7	26.60	22.304	
7,550.0	7,281.1	7,405.3	7,091.8	14.2	16.3	71.32	294.3	489.1	593.9	566.6	27.28	21.772	
7,600.0	7,284.8	7,445.6	7,093.0	14.7	16.6	71.14	334.6	489.2	593.9	565.9	28.07	21.160	
7,616.5	7,285.0	7,462.1	7,093.0	14.8	16.7	71.13	351.0	489.2	593.7	565.3	28.38	20.918	
7,700.0	7,285.0	7,545.6	7,093.0	15.6	17.4	71.08	434.6	489.2	592.3	562.4	29.96	19.769	
7,800.0	7,285.0	7,645.6	7,093.0	16.7	18.4	71.03	534.5	489.2	590.7	558.6	32.05	18.429	
7,900.0	7,285.0	7,745.6	7,093.0	17.9	19.5	70.97	634.5	489.2	589.0	554.7	34.33	17.156	
8,000.0	7,285.0	7,845.6	7,093.0	19.2	20.7	70.92	734.5	489.2	587.4	550.6	36.77	15.974	
8,100.0	7,285.0	7,945.6	7,093.0	20.6	22.0	70.86	834.5	489.2	585.7	546.4	39.34	14.891	
8,200.0	7,285.0	8,045.5	7,093.0	22.0	23.3	70.81	934.5	489.2	584.1	542.1	42.00	13.906	
8,300.0	7,285.0	8,145.5	7,093.0	23.5	24.7	70.75	1,034.5	489.2	582.5	537.7	44.75	13.015	
8,400.0	7,285.0	8,245.5	7,093.0	25.0	26.1	70.69	1,134.4	489.2	580.8	533.2	47.57	12.209	
8,500.0	7,285.0	8,345.5	7,093.0	26.5	27.6	70.64	1,234.4	489.2	579.2	528.7	50.45	11.481	
8,600.0	7,285.0	8,445.5	7,093.0	28.0	29.1	70.58	1,334.4	489.2	577.5	524.1	53.37	10.821	
8,700.0	7,285.0	8,545.5	7,093.0	29.6	30.6	70.52	1,434.4	489.2	575.9	519.5	56.33	10.223	
8,800.0	7,285.0	8,645.5	7,093.0	31.2	32.1	70.46	1,534.4	489.2	574.2	514.9	59.32	9.679	
8,900.0	7,285.0	8,745.4	7,093.0	32.8	33.7	70.40	1,634.4	489.2	572.6	510.2	62.35	9.184	
9,000.0	7,285.0	8,845.4	7,093.0	34.5	35.3	70.35	1,734.4	489.2	570.9	505.5	65.39	8.731	
9,100.0	7,285.0	8,945.4	7,093.0	36.1	36.9	70.29	1,834.3	489.2	569.3	500.8	68.46	8.316	
9,200.0	7,285.0	9,045.4	7,093.0	37.7	38.5	70.23	1,934.3	489.2	567.6	496.1	71.54	7.935	

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 Vogl-Geist 2A-5H-E267
Project:	DJ Wattenberg	TVD Reference:	KB @ 4866.0ft (Ensign)
Reference Site:	S5-T2N-R67W (Vogl-McCoy)	MD Reference:	KB @ 4866.0ft (Ensign)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Vogl-Geist 2A-5H-E267	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design S5-T2N-R67W (Vogl-McCoy) - Vogl-Geist 2B-5H-E267 - Hz - Plan #2												Offset Site Error:	0.0 ft
Survey Program:		O-MWD										Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	
9,300.0	7,285.0	9,145.4	7,093.0	39.4	40.1	70.17	2,034.3	489.2	566.0	491.4	74.64	7.583	
9,400.0	7,285.0	9,245.4	7,093.0	41.1	41.8	70.11	2,134.3	489.2	564.4	486.6	77.75	7.259	
9,500.0	7,285.0	9,345.3	7,093.0	42.7	43.4	70.05	2,234.3	489.2	562.7	481.9	80.87	6.959	
9,600.0	7,285.0	9,445.3	7,093.0	44.4	45.1	69.99	2,334.3	489.2	561.1	477.1	84.00	6.680	
9,700.0	7,285.0	9,545.3	7,093.0	46.1	46.7	69.93	2,434.2	489.2	559.4	472.3	87.13	6.421	
9,800.0	7,285.0	9,645.3	7,093.0	47.8	48.4	69.86	2,534.2	489.2	557.8	467.5	90.28	6.179	
9,900.0	7,285.0	9,745.3	7,093.0	49.5	50.1	69.80	2,634.2	489.2	556.2	462.7	93.43	5.953	
10,000.0	7,285.0	9,845.3	7,093.0	51.2	51.7	69.74	2,734.2	489.2	554.5	457.9	96.58	5.742	
10,100.0	7,285.0	9,945.3	7,093.0	52.9	53.4	69.68	2,834.2	489.2	552.9	453.2	99.74	5.543	
10,200.0	7,285.0	10,045.2	7,093.0	54.6	55.1	69.61	2,934.2	489.2	551.3	448.4	102.90	5.357	
10,300.0	7,285.0	10,145.2	7,093.0	56.3	56.8	69.55	3,034.2	489.2	549.6	443.6	106.06	5.182	
10,400.0	7,285.0	10,245.2	7,093.0	58.0	58.5	69.49	3,134.1	489.2	548.0	438.8	109.23	5.017	
10,500.0	7,285.0	10,345.2	7,093.0	59.7	60.2	69.42	3,234.1	489.2	546.3	434.0	112.40	4.861	
10,600.0	7,285.0	10,445.2	7,093.0	61.4	61.9	69.36	3,334.1	489.2	544.7	429.1	115.56	4.713	
10,700.0	7,285.0	10,545.2	7,093.0	63.2	63.6	69.29	3,434.1	489.2	543.1	424.3	118.73	4.574	
10,800.0	7,285.0	10,645.1	7,093.0	64.9	65.3	69.23	3,534.1	489.2	541.4	419.5	121.90	4.442	
10,900.0	7,285.0	10,745.1	7,093.0	66.6	67.0	69.16	3,634.1	489.2	539.8	414.7	125.08	4.316	
11,000.0	7,285.0	10,845.1	7,093.0	68.3	68.7	69.10	3,734.0	489.2	538.2	409.9	128.25	4.197	
11,100.0	7,285.0	10,945.1	7,093.0	70.1	70.4	69.03	3,834.0	489.2	536.6	405.1	131.41	4.083	
11,200.0	7,285.0	11,045.1	7,093.0	71.8	72.2	68.96	3,934.0	489.2	534.9	400.3	134.58	3.975	
11,300.0	7,285.0	11,145.1	7,093.0	73.5	73.9	68.90	4,034.0	489.2	533.3	395.5	137.75	3.871	
11,400.0	7,285.0	11,245.1	7,093.0	75.2	75.6	68.83	4,134.0	489.2	531.7	390.8	140.92	3.773	
11,500.0	7,285.0	11,345.0	7,093.0	77.0	77.3	68.76	4,234.0	489.2	530.0	386.0	144.08	3.679	
11,600.0	7,285.0	11,445.0	7,093.0	78.7	79.0	68.69	4,334.0	489.2	528.4	381.2	147.25	3.589	
11,700.0	7,285.0	11,545.0	7,093.0	80.4	80.8	68.62	4,433.9	489.2	526.8	376.4	150.41	3.502	
11,800.0	7,285.0	11,645.0	7,093.0	82.2	82.5	68.55	4,533.9	489.2	525.2	371.6	153.57	3.420	
11,900.0	7,285.0	11,745.0	7,093.0	83.9	84.2	68.48	4,633.9	489.2	523.5	366.8	156.73	3.340	
12,000.0	7,285.0	11,840.3	7,093.0	85.6	85.9	68.42	4,729.2	489.3	522.1	362.2	159.82	3.267	
12,026.0	7,285.0	11,862.5	7,093.0	86.1	86.2	68.42	4,751.4	489.6	522.0	361.4	160.60	3.250	
12,100.0	7,285.0	11,932.3	7,093.0	87.4	87.5	68.44	4,821.2	491.3	522.5	359.5	162.94	3.206	
12,200.0	7,285.0	12,032.3	7,093.0	89.1	89.2	68.47	4,921.1	493.9	523.3	357.1	166.21	3.148	
12,300.0	7,285.0	12,132.2	7,093.0	90.8	90.9	68.51	5,021.1	496.5	524.1	354.6	169.48	3.092	
12,400.0	7,285.0	12,232.2	7,093.0	92.6	92.7	68.54	5,121.0	499.2	524.9	352.1	172.76	3.038	
12,500.0	7,285.0	12,332.2	7,093.0	94.3	94.4	68.58	5,221.0	501.8	525.7	349.7	176.03	2.986	
12,600.0	7,285.0	12,432.2	7,093.0	96.1	96.1	68.61	5,321.0	504.4	526.5	347.2	179.31	2.936	
12,700.0	7,285.0	12,532.2	7,093.0	97.8	97.9	68.65	5,420.9	507.0	527.3	344.7	182.60	2.888	
12,800.0	7,285.0	12,632.2	7,093.0	99.5	99.6	68.68	5,520.9	509.6	528.1	342.3	185.88	2.841	
12,900.0	7,285.0	12,732.2	7,093.0	101.3	101.3	68.72	5,620.9	512.3	529.0	339.8	189.17	2.796	
13,000.0	7,285.0	12,832.2	7,093.0	103.0	103.1	68.75	5,720.8	514.9	529.8	337.3	192.46	2.753	
13,100.0	7,285.0	12,941.5	7,093.0	104.8	105.0	68.77	5,830.1	517.2	530.2	334.3	195.88	2.707	
13,200.0	7,285.0	13,062.3	7,093.0	106.5	107.1	68.62	5,950.8	515.6	527.3	328.0	199.27	2.646	
13,300.0	7,285.0	13,167.4	7,093.0	108.2	108.9	68.36	6,055.9	510.9	521.5	319.3	202.26	2.579	
13,400.0	7,285.0	13,267.2	7,093.0	110.0	110.6	68.10	6,155.6	506.4	515.7	310.5	205.14	2.514	
13,500.0	7,285.0	13,367.0	7,093.0	111.7	112.3	67.84	6,255.3	501.8	509.8	301.8	208.00	2.451	
13,600.0	7,285.0	13,466.8	7,093.0	113.5	114.1	67.57	6,355.0	497.2	504.0	293.1	210.83	2.390	
13,700.0	7,285.0	13,566.6	7,093.0	115.2	115.8	67.29	6,454.7	492.7	498.1	284.5	213.64	2.332	
13,800.0	7,285.0	13,666.4	7,093.0	117.0	117.5	67.00	6,554.3	488.1	492.3	275.9	216.42	2.275	
13,900.0	7,285.0	13,766.2	7,093.0	118.7	119.3	66.71	6,654.0	483.5	486.5	267.3	219.18	2.220	
14,000.0	7,285.0	13,866.0	7,093.0	120.4	121.0	66.42	6,753.7	479.0	480.7	258.8	221.90	2.166	
14,100.0	7,285.0	13,965.8	7,093.0	122.2	122.7	66.11	6,853.4	474.4	474.9	250.3	224.59	2.115	
14,200.0	7,285.0	14,065.6	7,093.0	123.9	124.5	65.80	6,953.1	469.9	469.2	241.9	227.25	2.064	
14,300.0	7,285.0	14,165.4	7,093.0	125.7	126.2	65.48	7,052.8	465.3	463.4	233.5	229.87	2.016	

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 Vogl-Geist 2A-5H-E267
Project:	DJ Wattenberg	TVD Reference:	KB @ 4866.0ft (Ensign)
Reference Site:	S5-T2N-R67W (Vogl-McCoy)	MD Reference:	KB @ 4866.0ft (Ensign)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Vogl-Geist 2A-5H-E267	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design												S5-T2N-R67W (Vogl-McCoy) - Vogl-Geist 2B-5H-E267 - Hz - Plan #2		Offset Site Error:		0.0 ft	
Survey Program:												0-MWD		Offset Well Error:		0.0 ft	
Reference		Offset		Semi Major Axis			Distance						Warning				
Measured Depth Vertical Depth (ft)	(ft)	Measured Depth Vertical Depth (ft)	(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					
14,400.0	7,285.0	14,265.2	7,093.0	127.4	127.9	65.15	7,152.5	460.7	457.7	225.2	232.46	1.969					
14,500.0	7,285.0	14,365.0	7,093.0	129.2	129.7	64.82	7,252.2	456.2	451.9	216.9	235.01	1.923					
14,600.0	7,285.0	14,464.8	7,093.0	130.9	131.4	64.47	7,351.9	451.6	446.2	208.7	237.52	1.879					
14,661.5	7,285.0	14,504.3	7,093.0	132.0	132.1	64.33	7,391.3	449.8	443.3	204.4	238.84	1.856 SF					



Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Vogl-Geist 2A-5H-E267
Project:	DJ Wattenberg	TVD Reference:	KB @ 4866.0ft (Ensign)
Reference Site:	S5-T2N-R67W (Vogl-McCoy)	MD Reference:	KB @ 4866.0ft (Ensign)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Vogl-Geist 2A-5H-E267	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design S5-T2N-R67W (Vogl-McCoy) - Vogl-Geist 2C-5H-E267 - Hz - Plan #2														Offset Site Error:	0.0 ft
Survey Program: 0-MWD														Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis		Distance									
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning		
0.0	0.0	0.0	0.0	0.0	0.0	90.05	0.0	39.1	39.1						
100.0	100.0	100.0	100.0	0.1	0.1	90.05	0.0	39.1	39.1	38.9	0.24	160.120			
200.0	200.0	200.0	200.0	0.3	0.3	90.05	0.0	39.1	39.1	38.5	0.59	65.932			
300.0	300.0	300.0	300.0	0.5	0.5	90.05	0.0	39.1	39.1	38.2	0.94	41.513 CC, ES			
400.0	400.0	399.3	399.3	0.6	0.6	90.38	-0.3	40.0	40.0	38.7	1.29	30.963			
507.5	507.5	506.0	506.0	0.8	0.8	-109.97	-1.0	42.7	43.4	41.7	1.67	26.019			
600.0	599.9	597.7	597.5	1.0	1.0	-112.42	-2.1	46.6	48.5	46.5	1.99	24.319			
700.0	699.8	696.6	696.2	1.2	1.2	-113.93	-3.7	52.3	55.7	53.3	2.35	23.682			
800.0	799.8	795.2	794.6	1.4	1.4	-114.53	-5.8	59.7	64.5	61.8	2.71	23.792			
900.0	899.7	893.5	892.5	1.6	1.6	-114.50	-8.3	68.7	74.9	71.8	3.07	24.379			
1,000.0	999.6	991.5	989.9	1.7	1.9	-114.08	-11.2	79.3	86.8	83.4	3.43	25.293			
1,100.0	1,099.6	1,090.2	1,087.7	1.9	2.1	-113.48	-14.5	91.2	100.1	96.3	3.80	26.344			
1,200.0	1,199.5	1,189.3	1,186.0	2.1	2.4	-113.01	-17.9	103.2	113.4	109.2	4.16	27.225			
1,300.0	1,299.4	1,288.4	1,284.4	2.3	2.7	-112.64	-21.3	115.2	126.7	122.2	4.53	27.963			
1,400.0	1,399.3	1,387.5	1,382.7	2.5	2.9	-112.34	-24.6	127.2	140.0	135.1	4.90	28.589			
1,500.0	1,499.3	1,486.6	1,481.0	2.7	3.2	-112.09	-28.0	139.3	153.3	148.1	5.26	29.129			
1,600.0	1,599.2	1,585.7	1,579.3	2.9	3.5	-111.88	-31.3	151.3	166.7	161.0	5.63	29.597			
1,700.0	1,699.1	1,684.8	1,677.6	3.0	3.7	-111.70	-34.7	163.3	180.0	174.0	6.00	30.008			
1,800.0	1,799.1	1,783.9	1,775.9	3.2	4.0	-111.55	-38.0	175.4	193.3	187.0	6.37	30.371			
1,900.0	1,899.0	1,883.0	1,874.3	3.4	4.3	-111.41	-41.4	187.4	206.7	199.9	6.73	30.695			
2,000.0	1,998.9	1,982.1	1,972.6	3.6	4.6	-111.30	-44.7	199.4	220.0	212.9	7.10	30.984			
2,100.0	2,098.9	2,081.2	2,070.9	3.8	4.8	-111.19	-48.1	211.4	233.3	225.9	7.47	31.246			
2,200.0	2,198.8	2,180.3	2,169.2	4.0	5.1	-111.10	-51.4	223.5	246.7	238.8	7.84	31.482			
2,300.0	2,298.7	2,279.5	2,267.5	4.2	5.4	-111.02	-54.8	235.5	260.0	251.8	8.20	31.698			
2,400.0	2,398.6	2,378.6	2,365.8	4.3	5.7	-110.94	-58.2	247.5	273.4	264.8	8.57	31.894			
2,500.0	2,498.6	2,477.7	2,464.2	4.5	5.9	-110.87	-61.5	259.6	286.7	277.8	8.94	32.075			
2,600.0	2,598.5	2,576.8	2,562.5	4.7	6.2	-110.81	-64.9	271.6	300.0	290.7	9.31	32.241			
2,700.0	2,698.4	2,675.9	2,660.8	4.9	6.5	-110.75	-68.2	283.6	313.4	303.7	9.67	32.395			
2,800.0	2,798.4	2,775.0	2,759.1	5.1	6.8	-110.70	-71.6	295.6	326.7	316.7	10.04	32.537			
2,900.0	2,898.3	2,874.1	2,857.4	5.3	7.0	-110.65	-74.9	307.7	340.0	329.6	10.41	32.669			
3,000.0	2,998.2	2,973.2	2,955.7	5.5	7.3	-110.61	-78.3	319.7	353.4	342.6	10.78	32.792			
3,100.0	3,098.1	3,072.3	3,054.1	5.6	7.6	-110.57	-81.6	331.7	366.7	355.6	11.14	32.907			
3,200.0	3,198.1	3,171.4	3,152.4	5.8	7.9	-110.53	-85.0	343.7	380.1	368.6	11.51	33.015			
3,300.0	3,298.0	3,270.5	3,250.7	6.0	8.2	-110.49	-88.3	355.8	393.4	381.5	11.88	33.116			
3,400.0	3,397.9	3,369.6	3,349.0	6.2	8.4	-110.46	-91.7	367.8	406.7	394.5	12.25	33.211			
3,500.0	3,497.9	3,468.7	3,447.3	6.4	8.7	-110.43	-95.1	379.8	420.1	407.5	12.62	33.300			
3,600.0	3,597.8	3,567.8	3,545.6	6.6	9.0	-110.40	-98.4	391.9	433.4	420.4	12.98	33.385			
3,700.0	3,697.7	3,666.9	3,644.0	6.8	9.3	-110.37	-101.8	403.9	446.8	433.4	13.35	33.464			
3,800.0	3,797.7	3,766.0	3,742.3	6.9	9.6	-110.34	-105.1	415.9	460.1	446.4	13.72	33.539			
3,900.0	3,897.6	3,865.2	3,840.6	7.1	9.8	-110.32	-108.5	427.9	473.4	459.4	14.09	33.611			
4,000.0	3,997.5	3,964.3	3,938.9	7.3	10.1	-110.30	-111.8	440.0	486.8	472.3	14.45	33.679			
4,100.0	4,097.4	4,063.4	4,037.2	7.5	10.4	-110.27	-115.2	452.0	500.1	485.3	14.82	33.743			
4,200.0	4,197.4	4,162.5	4,135.5	7.7	10.7	-110.25	-118.5	464.0	513.5	498.3	15.19	33.804			
4,300.0	4,297.3	4,261.6	4,233.8	7.9	10.9	-110.23	-121.9	476.1	526.8	511.3	15.56	33.863			
4,400.0	4,397.2	4,360.7	4,332.2	8.1	11.2	-110.22	-125.2	488.1	540.1	524.2	15.93	33.918			
4,500.0	4,497.2	4,459.8	4,430.5	8.3	11.5	-110.20	-128.6	500.1	553.5	537.2	16.29	33.971			
4,600.0	4,597.1	4,558.9	4,528.8	8.4	11.8	-110.18	-132.0	512.1	566.8	550.2	16.66	34.022			
4,700.0	4,697.0	4,658.0	4,627.1	8.6	12.1	-110.16	-135.3	524.2	580.2	563.1	17.03	34.071			
4,800.0	4,797.0	4,757.1	4,725.4	8.8	12.3	-110.15	-138.7	536.2	593.5	576.1	17.40	34.117			
4,900.0	4,896.9	4,856.2	4,823.7	9.0	12.6	-110.13	-142.0	548.2	606.9	589.1	17.76	34.162			
5,000.0	4,996.8	4,955.3	4,922.1	9.2	12.9	-110.12	-145.4	560.2	620.2	602.1	18.13	34.204			
5,100.0	5,096.7	5,054.4	5,020.4	9.4	13.2	-110.11	-148.7	572.3	633.5	615.0	18.50	34.246			

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 Vogl-Geist 2A-5H-E267
Project:	DJ Wattenberg	TVD Reference:	KB @ 4866.0ft (Ensign)
Reference Site:	S5-T2N-R67W (Vogl-McCoy)	MD Reference:	KB @ 4866.0ft (Ensign)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Vogl-Geist 2A-5H-E267	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design S5-T2N-R67W (Vogl-McCoy) - Vogl-Geist 2C-5H-E267 - Hz - Plan #2													Offset Site Error: 0.0 ft			
Survey Program: 0-MWD															Offset Well Error: 0.0 ft	
Reference		Offset		Semi Major Axis			Distance									
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning			
5,200.0	5,196.7	5,153.5	5,118.7	9.6	13.5	-110.09	-152.1	584.3	646.9	628.0	18.87	34.285				
5,300.0	5,296.6	5,252.6	5,217.0	9.7	13.7	-110.08	-155.4	596.3	660.2	641.0	19.24	34.323				
5,400.0	5,396.5	5,351.7	5,315.3	9.9	14.0	-110.07	-158.8	608.4	673.6	654.0	19.60	34.359				
5,500.0	5,496.5	5,450.8	5,413.6	10.1	14.3	-110.06	-162.2	620.4	686.9	666.9	19.97	34.395				
5,600.0	5,596.4	5,550.0	5,512.0	10.3	14.6	-110.05	-165.5	632.4	700.2	679.9	20.34	34.429				
5,700.0	5,696.3	5,649.1	5,610.3	10.5	14.9	-110.03	-168.9	644.4	713.6	692.9	20.71	34.461				
5,800.0	5,796.2	5,748.2	5,708.6	10.7	15.1	-110.02	-172.2	656.5	726.9	705.8	21.07	34.493				
5,900.0	5,896.2	5,847.3	5,806.9	10.9	15.4	-110.01	-175.6	668.5	740.3	718.8	21.44	34.523				
6,000.0	5,996.1	5,946.4	5,905.2	11.0	15.7	-110.00	-178.9	680.5	753.6	731.8	21.81	34.553				
6,100.0	6,096.0	6,045.5	6,003.5	11.2	16.0	-110.00	-182.3	692.6	766.9	744.8	22.18	34.581				
6,200.0	6,196.0	6,144.6	6,101.9	11.4	16.2	-109.99	-185.6	704.6	780.3	757.7	22.55	34.609				
6,300.0	6,295.9	6,243.7	6,200.2	11.6	16.5	-109.98	-189.0	716.6	793.6	770.7	22.91	34.635				
6,400.0	6,395.8	6,342.8	6,298.5	11.8	16.8	-109.97	-192.3	728.6	807.0	783.7	23.28	34.661				
6,500.0	6,495.8	6,441.9	6,396.8	12.0	17.1	-109.96	-195.7	740.7	820.3	796.7	23.65	34.686				
6,600.0	6,595.7	6,541.0	6,495.1	12.2	17.4	-109.95	-199.1	752.7	833.7	809.6	24.02	34.710				
6,696.0	6,691.6	6,636.2	6,589.5	12.3	17.6	-109.95	-202.3	764.2	846.5	822.1	24.37	34.733				
6,700.0	6,695.6	6,640.1	6,593.4	12.4	17.6	-113.96	-202.4	764.7	847.0	822.6	24.39	34.729				
6,750.0	6,745.6	6,689.6	6,642.5	12.4	17.8	98.57	-204.1	770.7	853.6	829.0	24.58	34.724				
6,800.0	6,795.3	6,738.7	6,691.2	12.5	17.9	91.76	-205.7	776.7	860.0	835.2	24.73	34.772				
6,850.0	6,844.4	6,787.0	6,739.2	12.5	18.0	90.07	-205.8	782.6	866.3	841.5	24.83	34.892				
6,900.0	6,892.5	6,836.0	6,787.7	12.5	18.2	89.32	-201.7	788.5	872.5	847.6	24.88	35.064				
6,950.0	6,939.2	6,885.9	6,836.5	12.5	18.3	88.92	-193.3	794.5	878.5	853.6	24.91	35.275				
7,000.0	6,984.2	6,936.8	6,885.2	12.5	18.3	88.69	-180.4	800.4	884.4	859.5	24.91	35.509				
7,050.0	7,027.1	6,988.6	6,933.6	12.5	18.4	88.58	-162.8	806.3	890.0	865.1	24.90	35.746				
7,100.0	7,067.6	7,041.4	6,981.0	12.5	18.5	88.54	-140.4	812.1	895.3	870.4	24.90	35.962				
7,150.0	7,105.4	7,095.2	7,027.1	12.5	18.6	88.56	-113.1	817.8	900.3	875.4	24.92	36.127				
7,200.0	7,140.2	7,150.2	7,071.3	12.6	18.7	88.62	-81.0	823.2	904.9	879.9	24.99	36.210				
7,250.0	7,171.8	7,206.2	7,112.9	12.7	18.8	88.71	-43.9	828.3	909.1	883.9	25.13	36.175				
7,300.0	7,199.8	7,263.2	7,151.5	12.8	18.9	88.84	-2.2	833.0	912.7	887.4	25.36	35.992				
7,350.0	7,224.1	7,321.3	7,186.3	13.0	19.0	88.99	44.1	837.3	915.8	890.2	25.69	35.643				
7,400.0	7,244.6	7,380.3	7,216.7	13.2	19.2	89.15	94.5	841.0	918.4	892.2	26.15	35.117				
7,450.0	7,261.0	7,440.3	7,242.2	13.5	19.4	89.33	148.6	844.1	920.3	893.6	26.74	34.419				
7,500.0	7,273.2	7,501.0	7,262.1	13.9	19.7	89.52	205.9	846.5	921.6	894.2	27.46	33.564				
7,550.0	7,281.1	7,562.3	7,276.1	14.2	20.0	89.72	265.5	848.2	922.2	893.9	28.31	32.571				
7,600.0	7,284.8	7,624.1	7,283.6	14.7	20.4	89.91	326.8	849.2	922.1	892.9	29.28	31.489				
7,616.5	7,285.0	7,644.5	7,284.7	14.8	20.6	89.98	347.2	849.3	922.0	892.3	29.62	31.123				
7,700.0	7,285.0	7,731.8	7,285.0	15.6	21.2	90.00	434.6	849.3	920.5	889.2	31.34	29.376				
7,800.0	7,285.0	7,831.8	7,285.0	16.7	22.0	90.00	534.5	849.3	918.8	885.2	33.56	27.380				
7,900.0	7,285.0	7,931.8	7,285.0	17.9	22.9	90.00	634.5	849.3	917.0	881.1	35.98	25.485				
8,000.0	7,285.0	8,031.8	7,285.0	19.2	23.9	90.00	734.5	849.3	915.3	876.7	38.58	23.726				
8,100.0	7,285.0	8,131.7	7,285.0	20.6	25.0	90.00	834.5	849.3	913.6	872.2	41.31	22.117				
8,200.0	7,285.0	8,231.7	7,285.0	22.0	26.2	90.00	934.5	849.3	911.8	867.7	44.15	20.655				
8,300.0	7,285.0	8,331.7	7,285.0	23.5	27.5	90.00	1,034.5	849.3	910.1	863.0	47.07	19.332				
8,400.0	7,285.0	8,431.7	7,285.0	25.0	28.7	90.00	1,134.4	849.3	908.3	858.2	50.08	18.138				
8,500.0	7,285.0	8,531.7	7,285.0	26.5	30.1	90.00	1,234.4	849.3	906.6	853.4	53.14	17.059				
8,600.0	7,285.0	8,631.7	7,285.0	28.0	31.5	90.00	1,334.4	849.3	904.8	848.6	56.26	16.082				
8,700.0	7,285.0	8,731.7	7,285.0	29.6	32.9	90.00	1,434.4	849.3	903.1	843.7	59.42	15.197				
8,800.0	7,285.0	8,831.6	7,285.0	31.2	34.3	90.00	1,534.4	849.3	901.3	838.7	62.62	14.393				
8,900.0	7,285.0	8,931.6	7,285.0	32.8	35.8	90.00	1,634.4	849.3	899.6	833.7	65.85	13.661				
9,000.0	7,285.0	9,031.6	7,285.0	34.5	37.3	90.00	1,734.4	849.3	897.8	828.7	69.11	12.992				
9,100.0	7,285.0	9,131.6	7,285.0	36.1	38.8	90.00	1,834.3	849.3	896.1	823.7	72.39	12.379				
9,200.0	7,285.0	9,231.6	7,285.0	37.7	40.4	90.00	1,934.3	849.3	894.4	818.7	75.69	11.816				

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 Vogl-Geist 2A-5H-E267
Project:	DJ Wattenberg	TVD Reference:	KB @ 4866.0ft (Ensign)
Reference Site:	S5-T2N-R67W (Vogl-McCoy)	MD Reference:	KB @ 4866.0ft (Ensign)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Vogl-Geist 2A-5H-E267	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design S5-T2N-R67W (Vogl-McCoy) - Vogl-Geist 2C-5H-E267 - Hz - Plan #2												Offset Site Error:	0.0 ft
Survey Program: 0-MWD												Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis		Distance		Total		Separation		Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Uncertainty Axis		
9,300.0	7,285.0	9,331.6	7,285.0	39.4	41.9	90.00	2,034.3	849.3	892.6	813.6	79.01	11.298	
9,400.0	7,285.0	9,431.5	7,285.0	41.1	43.5	90.00	2,134.3	849.3	890.9	808.5	82.34	10.819	
9,500.0	7,285.0	9,531.5	7,285.0	42.7	45.1	90.00	2,234.3	849.3	889.1	803.4	85.69	10.376	
9,600.0	7,285.0	9,631.5	7,285.0	44.4	46.7	90.00	2,334.3	849.3	887.4	798.3	89.05	9.965	
9,700.0	7,285.0	9,731.5	7,285.0	46.1	48.3	90.00	2,434.2	849.3	885.6	793.2	92.42	9.582	
9,800.0	7,285.0	9,831.5	7,285.0	47.8	49.9	90.00	2,534.2	849.3	883.9	788.1	95.80	9.226	
9,900.0	7,285.0	9,931.5	7,285.0	49.5	51.5	90.00	2,634.2	849.3	882.1	782.9	99.19	8.893	
10,000.0	7,285.0	10,031.5	7,285.0	51.2	53.1	90.00	2,734.2	849.3	880.4	777.8	102.59	8.582	
10,100.0	7,285.0	10,131.4	7,285.0	52.9	54.8	90.00	2,834.2	849.3	878.6	772.6	106.00	8.289	
10,200.0	7,285.0	10,231.4	7,285.0	54.6	56.4	90.00	2,934.2	849.3	876.9	767.5	109.41	8.015	
10,300.0	7,285.0	10,331.4	7,285.0	56.3	58.1	90.00	3,034.2	849.3	875.2	762.3	112.82	7.757	
10,400.0	7,285.0	10,431.4	7,285.0	58.0	59.7	90.00	3,134.1	849.3	873.4	757.2	116.25	7.513	
10,500.0	7,285.0	10,531.4	7,285.0	59.7	61.4	90.00	3,234.1	849.3	871.7	752.0	119.67	7.284	
10,600.0	7,285.0	10,631.4	7,285.0	61.4	63.1	90.00	3,334.1	849.3	869.9	746.8	123.11	7.066	
10,700.0	7,285.0	10,731.4	7,285.0	63.2	64.8	90.00	3,434.1	849.3	868.2	741.6	126.54	6.861	
10,800.0	7,285.0	10,831.3	7,285.0	64.9	66.4	90.00	3,534.1	849.3	866.4	736.4	129.98	6.666	
10,900.0	7,285.0	10,931.3	7,285.0	66.6	68.1	90.00	3,634.1	849.3	864.7	731.3	133.43	6.481	
11,000.0	7,285.0	11,031.3	7,285.0	68.3	69.8	90.00	3,734.0	849.3	862.9	726.1	136.87	6.305	
11,100.0	7,285.0	11,131.3	7,285.0	70.1	71.5	90.00	3,834.0	849.3	861.2	720.9	140.32	6.137	
11,200.0	7,285.0	11,231.3	7,285.0	71.8	73.2	90.00	3,934.0	849.3	859.4	715.7	143.78	5.978	
11,300.0	7,285.0	11,331.3	7,285.0	73.5	74.9	90.00	4,034.0	849.3	857.7	710.5	147.23	5.825	
11,400.0	7,285.0	11,431.2	7,285.0	75.2	76.6	90.00	4,134.0	849.3	856.0	705.3	150.69	5.680	
11,500.0	7,285.0	11,531.2	7,285.0	77.0	78.3	90.00	4,234.0	849.3	854.2	700.1	154.15	5.541	
11,600.0	7,285.0	11,631.2	7,285.0	78.7	80.0	90.00	4,334.0	849.3	852.5	694.8	157.61	5.409	
11,700.0	7,285.0	11,731.2	7,285.0	80.4	81.7	90.00	4,433.9	849.3	850.7	689.6	161.08	5.281	
11,800.0	7,285.0	11,831.2	7,285.0	82.2	83.4	90.00	4,533.9	849.3	849.0	684.4	164.54	5.160	
11,900.0	7,285.0	11,931.2	7,285.0	83.9	85.1	90.00	4,633.9	849.3	847.2	679.2	168.01	5.043	
12,000.0	7,285.0	12,031.2	7,285.0	85.6	86.8	90.00	4,733.9	849.3	845.5	674.0	171.48	4.930	
12,100.0	7,285.0	12,131.1	7,285.0	87.4	88.5	90.00	4,833.9	849.3	843.7	668.8	174.95	4.823	
12,200.0	7,285.0	12,231.1	7,285.0	89.1	90.2	90.00	4,933.9	849.3	842.0	663.6	178.42	4.719	
12,300.0	7,285.0	12,331.1	7,285.0	90.8	91.9	90.00	5,033.9	849.3	840.2	658.3	181.90	4.619	
12,400.0	7,285.0	12,431.1	7,285.0	92.6	93.7	90.00	5,133.8	849.3	838.5	653.1	185.37	4.523	
12,500.0	7,285.0	12,531.1	7,285.0	94.3	95.4	90.00	5,233.8	849.3	836.8	647.9	188.85	4.431	
12,600.0	7,285.0	12,631.1	7,285.0	96.1	97.1	90.00	5,333.8	849.3	835.0	642.7	192.33	4.342	
12,700.0	7,285.0	12,731.0	7,285.0	97.8	98.8	90.00	5,433.8	849.3	833.3	637.5	195.80	4.256	
12,800.0	7,285.0	12,831.0	7,285.0	99.5	100.5	90.00	5,533.8	849.3	831.5	632.2	199.28	4.173	
12,900.0	7,285.0	12,931.0	7,285.0	101.3	102.3	90.00	5,633.8	849.3	829.8	627.0	202.76	4.092	
13,000.0	7,285.0	13,031.0	7,285.0	103.0	104.0	90.00	5,733.7	849.3	828.0	621.8	206.25	4.015	
13,100.0	7,285.0	13,131.0	7,285.0	104.8	105.7	90.00	5,833.7	849.3	826.3	616.6	209.73	3.940	
13,200.0	7,285.0	13,231.0	7,285.0	106.5	107.4	90.00	5,933.7	849.3	824.5	611.3	213.21	3.867	
13,300.0	7,285.0	13,331.0	7,285.0	108.2	109.2	90.00	6,033.7	849.3	822.8	606.1	216.69	3.797	
13,400.0	7,285.0	13,430.9	7,285.0	110.0	110.9	90.00	6,133.7	849.3	821.0	600.9	220.18	3.729	
13,500.0	7,285.0	13,530.9	7,285.0	111.7	112.6	90.00	6,233.7	849.3	819.3	595.6	223.66	3.663	
13,600.0	7,285.0	13,630.9	7,285.0	113.5	114.4	90.00	6,333.7	849.3	817.6	590.4	227.15	3.599	
13,700.0	7,285.0	13,730.9	7,285.0	115.2	116.1	90.00	6,433.6	849.3	815.8	585.2	230.64	3.537	
13,800.0	7,285.0	13,830.9	7,285.0	117.0	117.8	90.00	6,533.6	849.3	814.1	579.9	234.13	3.477	
13,900.0	7,285.0	13,930.9	7,285.0	118.7	119.5	90.00	6,633.6	849.3	812.3	574.7	237.61	3.419	
14,000.0	7,285.0	14,030.8	7,285.0	120.4	121.3	90.00	6,733.6	849.3	810.6	569.5	241.10	3.362	
14,100.0	7,285.0	14,130.8	7,285.0	122.2	123.0	90.00	6,833.6	849.3	808.8	564.2	244.59	3.307	
14,200.0	7,285.0	14,230.8	7,285.0	123.9	124.7	90.00	6,933.6	849.3	807.1	559.0	248.08	3.253	
14,300.0	7,285.0	14,330.8	7,285.0	125.7	126.5	90.00	7,033.5	849.3	805.3	553.8	251.57	3.201	
14,400.0	7,285.0	14,430.8	7,285.0	127.4	128.2	90.00	7,133.5	849.3	803.6	548.5	255.06	3.151	

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 Vogl-Geist 2A-5H-E267
Project:	DJ Wattenberg	TVD Reference:	KB @ 4866.0ft (Ensign)
Reference Site:	S5-T2N-R67W (Vogl-McCoy)	MD Reference:	KB @ 4866.0ft (Ensign)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Vogl-Geist 2A-5H-E267	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	
S5-T2N-R67W (Vogl-McCoy) - Vogl-Geist 2C-5H-E267 - Hz - Plan #2													0.0 ft	
Survey Program: 0-MWD													Offset Well Error:	
													0.0 ft	
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Total Uncertainty Axis	Separation Factor		
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)				
14,500.0	7,285.0	14,530.8	7,285.0	129.2	129.9	90.00	7,233.5	849.3	801.8	543.3	258.55	3.101		
14,600.0	7,285.0	14,630.8	7,285.0	130.9	131.7	90.00	7,333.5	849.3	800.1	538.1	262.04	3.053		
14,661.5	7,285.0	14,684.9	7,285.0	132.0	132.6	90.00	7,387.7	849.3	799.1	535.0	264.06	3.026 SF		



Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Vogl-Geist 2A-5H-E267
Project:	DJ Wattenberg	TVD Reference:	KB @ 4866.0ft (Ensign)
Reference Site:	S5-T2N-R67W (Vogl-McCoy)	MD Reference:	KB @ 4866.0ft (Ensign)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Vogl-Geist 2A-5H-E267	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design S5-T2N-R67W (Vogl-McCoy) - Vogl-McCoy 2A-5H-E267 - Hz - Plan #1													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance				Total Uncertainty Axis	Separation Factor	Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)				
0.0	0.0	0.0	0.0	0.0	0.0	-89.94	0.0	-8.4	8.4					
100.0	100.0	99.0	99.0	0.1	0.1	-89.94	0.0	-8.4	8.4	8.1	0.24	34.484		
200.0	200.0	199.0	199.0	0.3	0.3	-89.94	0.0	-8.4	8.4	7.8	0.59	14.170 CC, ES		
300.0	300.0	298.9	298.9	0.5	0.5	-86.29	0.6	-9.0	9.0	8.1	0.94	9.597		
400.0	400.0	398.7	398.7	0.6	0.6	-77.94	2.3	-10.9	11.2	9.9	1.29	8.645 SF		
507.5	507.5	505.8	505.7	0.8	0.9	99.37	5.5	-14.4	15.6	14.0	1.67	9.381		
600.0	599.9	597.9	597.6	1.0	1.0	111.81	9.2	-18.4	22.0	20.0	1.99	11.031		
700.0	699.8	697.6	697.1	1.2	1.2	118.92	13.2	-22.8	29.6	27.2	2.35	12.609		
800.0	799.8	797.2	796.6	1.4	1.4	123.08	17.2	-27.2	37.5	34.8	2.70	13.866		
900.0	899.7	896.9	896.0	1.6	1.6	125.79	21.2	-31.6	45.5	42.4	3.06	14.867		
1,000.0	999.6	996.5	995.5	1.7	1.8	127.68	25.3	-36.0	53.5	50.1	3.42	15.678		
1,100.0	1,099.6	1,096.2	1,095.0	1.9	2.0	129.08	29.3	-40.4	61.7	57.9	3.77	16.345		
1,200.0	1,199.5	1,195.9	1,194.5	2.1	2.2	130.15	33.3	-44.8	69.8	65.7	4.13	16.902		
1,300.0	1,299.4	1,295.5	1,294.0	2.3	2.4	131.00	37.4	-49.2	78.0	73.5	4.49	17.374		
1,400.0	1,399.3	1,395.2	1,393.4	2.5	2.6	131.68	41.4	-53.6	86.1	81.3	4.85	17.778		
1,500.0	1,499.3	1,494.8	1,492.9	2.7	2.8	132.25	45.4	-58.0	94.3	89.1	5.20	18.128		
1,600.0	1,599.2	1,594.5	1,592.4	2.9	3.0	132.73	49.5	-62.4	102.5	97.0	5.56	18.434		
1,700.0	1,699.1	1,694.2	1,691.9	3.0	3.2	133.13	53.5	-66.8	110.7	104.8	5.92	18.704		
1,800.0	1,799.1	1,793.8	1,791.4	3.2	3.4	133.49	57.5	-71.2	118.9	112.7	6.28	18.943		
1,900.0	1,899.0	1,893.5	1,890.9	3.4	3.6	133.79	61.6	-75.6	127.1	120.5	6.64	19.158		
2,000.0	1,998.9	1,993.1	1,990.3	3.6	3.8	134.06	65.6	-80.0	135.4	128.4	7.00	19.350		
2,100.0	2,098.9	2,092.8	2,089.8	3.8	4.0	134.30	69.6	-84.4	143.6	136.2	7.35	19.524		
2,200.0	2,198.8	2,192.5	2,189.3	4.0	4.2	134.51	73.6	-88.8	151.8	144.1	7.71	19.682		
2,300.0	2,298.7	2,292.1	2,288.8	4.2	4.5	134.70	77.7	-93.2	160.0	151.9	8.07	19.826		
2,400.0	2,398.6	2,391.8	2,388.3	4.3	4.7	134.87	81.7	-97.6	168.2	159.8	8.43	19.958		
2,500.0	2,498.6	2,491.4	2,487.7	4.5	4.9	135.02	85.7	-102.0	176.5	167.7	8.79	20.079		
2,600.0	2,598.5	2,591.1	2,587.2	4.7	5.1	135.17	89.8	-106.4	184.7	175.5	9.15	20.191		
2,700.0	2,698.4	2,690.8	2,686.7	4.9	5.3	135.30	93.8	-110.8	192.9	183.4	9.51	20.294		
2,800.0	2,798.4	2,790.4	2,786.2	5.1	5.5	135.41	97.8	-115.2	201.1	191.3	9.86	20.390		
2,900.0	2,898.3	2,890.1	2,885.7	5.3	5.7	135.52	101.9	-119.6	209.4	199.1	10.22	20.480		
3,000.0	2,998.2	2,989.7	2,985.1	5.5	5.9	135.62	105.9	-124.1	217.6	207.0	10.58	20.563		
3,100.0	3,098.1	3,089.4	3,084.6	5.6	6.1	135.72	109.9	-128.5	225.8	214.9	10.94	20.641		
3,200.0	3,198.1	3,189.1	3,184.1	5.8	6.3	135.81	113.9	-132.9	234.0	222.7	11.30	20.714		
3,300.0	3,298.0	3,288.7	3,283.6	6.0	6.5	135.89	118.0	-137.3	242.3	230.6	11.66	20.782		
3,400.0	3,397.9	3,388.4	3,383.1	6.2	6.7	135.96	122.0	-141.7	250.5	238.5	12.02	20.846		
3,500.0	3,497.9	3,488.0	3,482.6	6.4	6.9	136.03	126.0	-146.1	258.7	246.3	12.37	20.907		
3,600.0	3,597.8	3,587.7	3,582.0	6.6	7.1	136.10	130.1	-150.5	267.0	254.2	12.73	20.964		
3,700.0	3,697.7	3,687.4	3,681.5	6.8	7.3	136.16	134.1	-154.9	275.2	262.1	13.09	21.019		
3,800.0	3,797.7	3,787.0	3,781.0	6.9	7.5	136.22	138.1	-159.3	283.4	270.0	13.45	21.070		
3,900.0	3,897.6	3,886.7	3,880.5	7.1	7.7	136.28	142.2	-163.7	291.6	277.8	13.81	21.119		
4,000.0	3,997.5	3,986.3	3,980.0	7.3	7.9	136.33	146.2	-168.1	299.9	285.7	14.17	21.165		
4,100.0	4,097.4	4,086.0	4,079.4	7.5	8.1	136.38	150.2	-172.5	308.1	293.6	14.53	21.209		
4,200.0	4,197.4	4,185.7	4,178.9	7.7	8.3	136.43	154.2	-176.9	316.3	301.5	14.89	21.250		
4,300.0	4,297.3	4,285.3	4,278.4	7.9	8.5	136.47	158.3	-181.3	324.6	309.3	15.24	21.290		
4,400.0	4,397.2	4,385.0	4,377.9	8.1	8.7	136.52	162.3	-185.7	332.8	317.2	15.60	21.328		
4,500.0	4,497.2	4,484.6	4,477.4	8.3	8.9	136.56	166.3	-190.1	341.0	325.1	15.96	21.365		
4,600.0	4,597.1	4,584.3	4,576.8	8.4	9.1	136.60	170.4	-194.5	349.3	332.9	16.32	21.399		
4,700.0	4,697.0	4,684.0	4,676.3	8.6	9.3	136.63	174.4	-198.9	357.5	340.8	16.68	21.433		
4,800.0	4,797.0	4,783.6	4,775.8	8.8	9.5	136.67	178.4	-203.3	365.7	348.7	17.04	21.464		
4,900.0	4,896.9	4,883.3	4,875.3	9.0	9.7	136.70	182.5	-207.7	374.0	356.6	17.40	21.495		
5,000.0	4,996.8	4,982.9	4,974.8	9.2	9.9	136.73	186.5	-212.1	382.2	364.4	17.76	21.524		
5,100.0	5,096.7	5,082.6	5,074.3	9.4	10.1	136.77	190.5	-216.5	390.4	372.3	18.12	21.552		

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 Vogl-Geist 2A-5H-E267
Project:	DJ Wattenberg	TVD Reference:	KB @ 4866.0ft (Ensign)
Reference Site:	S5-T2N-R67W (Vogl-McCoy)	MD Reference:	KB @ 4866.0ft (Ensign)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Vogl-Geist 2A-5H-E267	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design S5-T2N-R67W (Vogl-McCoy) - Vogl-McCoy 2A-5H-E267 - Hz - Plan #1													Offset Site Error: 0.0 ft		
Survey Program: 0-MWD														Offset Well Error: 0.0 ft	
Reference		Offset		Semi Major Axis			Distance							Warning	
Measured Depth	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)					
5,200.0	5,196.7	5,182.3	5,173.7	9.6	10.3	136.80	194.5	-220.9	398.7	380.2	18.47	21.579			
5,300.0	5,296.6	5,281.9	5,273.2	9.7	10.5	136.82	198.6	-225.3	406.9	388.1	18.83	21.605			
5,400.0	5,396.5	5,381.6	5,372.7	9.9	10.7	136.85	202.6	-229.7	415.1	395.9	19.19	21.631			
5,500.0	5,496.5	5,481.3	5,472.2	10.1	10.9	136.88	206.6	-234.1	423.4	403.8	19.55	21.655			
5,600.0	5,596.4	5,580.9	5,571.7	10.3	11.1	136.90	210.7	-238.5	431.6	411.7	19.91	21.678			
5,700.0	5,696.3	5,680.6	5,671.1	10.5	11.3	136.93	214.7	-242.9	439.8	419.6	20.27	21.700			
5,800.0	5,796.2	5,780.2	5,770.6	10.7	11.5	136.95	218.7	-247.3	448.1	427.4	20.63	21.722			
5,900.0	5,896.2	5,879.9	5,870.1	10.9	11.7	136.97	222.8	-251.7	456.3	435.3	20.99	21.743			
6,000.0	5,996.1	5,979.6	5,969.6	11.0	12.0	136.99	226.8	-256.1	464.5	443.2	21.34	21.763			
6,100.0	6,096.0	6,079.2	6,069.1	11.2	12.2	137.02	230.8	-260.5	472.8	451.1	21.70	21.783			
6,200.0	6,196.0	6,178.9	6,168.6	11.4	12.4	137.04	234.8	-264.9	481.0	458.9	22.06	21.802			
6,300.0	6,295.9	6,278.5	6,268.0	11.6	12.6	137.06	238.9	-269.4	489.2	466.8	22.42	21.820			
6,400.0	6,395.8	6,378.2	6,367.5	11.8	12.8	137.07	242.9	-273.8	497.5	474.7	22.78	21.838			
6,500.0	6,495.8	6,477.9	6,467.0	12.0	13.0	137.09	246.9	-278.2	505.7	482.6	23.14	21.855			
6,600.0	6,595.7	6,577.8	6,567.0	12.2	13.3	135.94	230.8	-288.7	509.5	485.7	23.79	21.414			
6,696.0	6,691.6	7,075.8	7,000.7	12.3	13.3	121.90	39.9	-301.8	464.3	439.3	25.02	18.556			
6,700.0	6,695.6	7,085.1	7,006.5	12.4	13.4	116.95	32.7	-302.0	461.7	436.6	25.06	18.422			
6,750.0	6,745.6	7,170.4	7,054.2	12.4	13.5	-43.62	-37.9	-304.1	425.7	400.3	25.40	16.759			
6,800.0	6,795.3	7,216.7	7,075.6	12.5	13.7	-63.80	-79.0	-305.1	387.2	361.7	25.49	15.188			
6,850.0	6,844.4	7,240.3	7,085.2	12.5	13.8	-76.49	-100.5	-305.5	348.9	323.5	25.43	13.721			
6,900.0	6,892.5	7,250.2	7,088.9	12.5	13.8	-84.86	-109.7	-305.7	312.9	287.6	25.32	12.356			
6,950.0	6,939.2	7,251.4	7,089.4	12.5	13.8	-89.78	-110.8	-305.7	280.9	255.6	25.23	11.134			
7,000.0	6,984.2	7,246.8	7,087.6	12.5	13.8	-91.96	-106.5	-305.6	254.8	229.6	25.16	10.127			
7,050.0	7,027.1	7,238.1	7,084.3	12.5	13.8	-91.95	-98.5	-305.5	236.6	211.4	25.13	9.414			
7,100.0	7,067.6	7,226.5	7,079.7	12.5	13.7	-90.12	-87.9	-305.3	227.9	202.8	25.13	9.067			
7,117.4	7,081.1	7,221.9	7,077.8	12.5	13.7	-89.11	-83.7	-305.2	227.3	202.1	25.14	9.039			
7,150.0	7,105.4	7,212.7	7,073.9	12.5	13.7	-86.73	-75.4	-305.0	229.4	204.3	25.15	9.122			
7,200.0	7,140.2	7,197.3	7,067.0	12.6	13.6	-82.04	-61.5	-304.7	240.4	215.3	25.13	9.566			
7,250.0	7,171.8	7,180.5	7,059.2	12.7	13.6	-76.34	-46.7	-304.4	259.1	234.0	25.01	10.356			
7,300.0	7,199.8	7,162.8	7,050.4	12.8	13.5	-70.01	-31.3	-304.0	283.3	258.6	24.72	11.460			
7,350.0	7,224.1	7,150.0	7,043.8	13.0	13.5	-64.48	-20.4	-303.7	311.3	287.0	24.33	12.795			
7,400.0	7,244.6	7,124.9	7,030.1	13.2	13.4	-57.04	0.7	-303.1	341.4	317.9	23.52	14.517			
7,450.0	7,261.0	7,100.0	7,015.6	13.5	13.4	-50.44	20.9	-302.4	372.7	350.1	22.62	16.480			
7,500.0	7,273.2	7,084.8	7,006.3	13.9	13.4	-45.71	32.9	-302.0	404.3	382.4	21.90	18.459			
7,550.0	7,281.1	7,064.1	6,993.2	14.2	13.3	-41.02	48.9	-301.4	435.7	414.5	21.14	20.607			
7,600.0	7,284.8	7,050.0	6,983.9	14.7	13.3	-37.44	59.5	-301.0	466.5	445.8	20.63	22.611			
7,616.5	7,285.0	7,036.2	6,974.5	14.8	13.3	-35.78	69.7	-300.6	476.3	455.9	20.37	23.381			
7,700.0	7,285.0	7,000.0	6,949.0	15.6	13.3	-33.57	95.3	-299.5	528.6	508.3	20.35	25.973			
7,800.0	7,285.0	6,967.4	6,924.6	16.7	13.3	-31.66	116.9	-298.4	596.7	576.2	20.51	29.099			
7,900.0	7,285.0	6,936.6	6,900.5	17.9	13.3	-29.94	136.0	-297.3	669.6	648.9	20.69	32.358			
8,000.0	7,285.0	6,900.0	6,870.5	19.2	13.3	-28.01	156.9	-296.0	746.6	725.8	20.80	35.892			
8,100.0	7,285.0	6,900.0	6,870.5	20.6	13.3	-28.01	156.9	-296.0	826.9	805.5	21.43	38.578			
8,200.0	7,285.0	6,865.2	6,840.9	22.0	13.3	-26.29	175.1	-294.7	909.4	887.8	21.55	42.190			
8,300.0	7,285.0	6,850.0	6,827.6	23.5	13.3	-25.58	182.4	-294.1	994.4	972.4	21.96	45.288			
8,400.0	7,285.0	6,830.2	6,810.0	25.0	13.3	-24.68	191.4	-293.3	1,081.1	1,058.9	22.28	48.523			
8,500.0	7,285.0	6,800.0	6,782.5	26.5	13.3	-23.39	204.0	-292.1	1,169.8	1,147.3	22.43	52.146			
8,600.0	7,285.0	6,800.0	6,782.5	28.0	13.3	-23.39	204.0	-292.1	1,259.0	1,236.0	23.04	54.636			
8,700.0	7,285.0	6,800.0	6,782.5	29.6	13.3	-23.39	204.0	-292.1	1,349.8	1,326.2	23.67	57.038			
8,800.0	7,285.0	6,779.3	6,763.4	31.2	13.3	-22.55	211.8	-291.3	1,441.3	1,417.4	23.93	60.236			
8,900.0	7,285.0	6,769.4	6,754.1	32.8	13.3	-22.16	215.3	-290.9	1,533.7	1,509.4	24.37	62.945			

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 Vogl-Geist 2A-5H-E267
Project:	DJ Wattenberg	TVD Reference:	KB @ 4866.0ft (Ensign)
Reference Site:	S5-T2N-R67W (Vogl-McCoy)	MD Reference:	KB @ 4866.0ft (Ensign)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Vogl-Geist 2A-5H-E267	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design S5-T2N-R67W (Vogl-McCoy) - Vogl-McCoy 2B-5H-E267 - Hz - Plan #3													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Total Uncertainty Axis	Separation Factor	Warning			
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)		Between Centres (ft)	Between Ellipses (ft)						
0.0	0.0	0.0	0.0	0.0	0.0	90.04	0.0	11.2	11.2					
100.0	100.0	99.0	99.0	0.1	0.1	90.04	0.0	11.2	11.2	10.9	0.24	45.979		
200.0	200.0	199.0	199.0	0.3	0.3	90.04	0.0	11.2	11.2	10.6	0.59	18.893		
300.0	300.0	299.0	299.0	0.5	0.5	90.04	0.0	11.2	11.2	10.2	0.94	11.883		
400.0	400.0	399.0	399.0	0.6	0.6	90.04	0.0	11.2	11.2	9.9	1.29	8.667 CC, ES		
507.5	507.5	506.5	506.5	0.8	0.8	-117.99	0.0	11.2	12.0	10.3	1.67	7.188		
600.0	599.9	598.9	598.9	1.0	1.0	-130.67	0.0	11.2	14.0	12.0	1.99	7.003		
700.0	699.8	698.8	698.8	1.2	1.2	-140.52	0.0	11.2	16.6	14.3	2.34	7.104		
800.0	799.8	798.8	798.8	1.4	1.3	-147.47	0.0	11.2	19.7	17.0	2.69	7.312		
900.0	899.7	898.7	898.7	1.6	1.5	-152.52	0.0	11.2	22.9	19.9	3.04	7.542		
1,000.0	999.6	998.6	998.6	1.7	1.7	-156.29	0.0	11.2	26.3	22.9	3.39	7.765		
1,100.0	1,099.6	1,098.6	1,098.6	1.9	1.9	-159.19	0.0	11.2	29.8	26.1	3.74	7.970		
1,200.0	1,199.5	1,198.5	1,198.5	2.1	2.0	-161.48	0.0	11.2	33.3	29.2	4.09	8.155		
1,300.0	1,299.4	1,298.4	1,298.4	2.3	2.2	-163.33	0.0	11.2	36.9	32.5	4.44	8.321		
1,400.0	1,399.3	1,398.3	1,398.3	2.5	2.4	-164.85	0.0	11.2	40.5	35.7	4.78	8.469		
1,500.0	1,499.3	1,498.3	1,498.3	2.7	2.6	-166.13	0.0	11.2	44.2	39.0	5.13	8.601		
1,600.0	1,599.2	1,598.2	1,598.2	2.9	2.7	-167.21	0.0	11.2	47.8	42.3	5.48	8.720		
1,700.0	1,699.1	1,698.1	1,698.1	3.0	2.9	-168.13	0.0	11.2	51.5	45.6	5.83	8.828		
1,800.0	1,799.1	1,798.1	1,798.1	3.2	3.1	-168.93	0.0	11.2	55.1	49.0	6.18	8.925		
1,900.0	1,899.0	1,898.0	1,898.0	3.4	3.3	-169.63	0.0	11.2	58.8	52.3	6.53	9.013		
2,000.0	1,998.9	1,997.9	1,997.9	3.6	3.4	-170.25	0.0	11.2	62.5	55.6	6.88	9.093		
2,100.0	2,098.9	2,097.9	2,097.9	3.8	3.6	-170.80	0.0	11.2	66.2	59.0	7.22	9.166		
2,200.0	2,198.8	2,197.8	2,197.8	4.0	3.8	-171.29	0.0	11.2	69.9	62.4	7.57	9.234		
2,300.0	2,298.7	2,297.7	2,297.7	4.2	4.0	-171.73	0.0	11.2	73.6	65.7	7.92	9.296		
2,400.0	2,398.6	2,397.6	2,397.6	4.3	4.1	-172.13	0.0	11.2	77.4	69.1	8.27	9.353		
2,500.0	2,498.6	2,497.6	2,497.6	4.5	4.3	-172.50	0.0	11.2	81.1	72.5	8.62	9.406		
2,600.0	2,598.5	2,597.5	2,597.5	4.7	4.5	-172.83	0.0	11.2	84.8	75.8	8.97	9.455		
2,700.0	2,698.4	2,697.4	2,697.4	4.9	4.7	-173.13	0.0	11.2	88.5	79.2	9.32	9.501		
2,800.0	2,798.4	2,797.4	2,797.4	5.1	4.8	-173.41	0.0	11.2	92.2	82.6	9.67	9.543		
2,900.0	2,898.3	2,897.3	2,897.3	5.3	5.0	-173.67	0.0	11.2	96.0	86.0	10.01	9.583		
3,000.0	2,998.2	2,997.2	2,997.2	5.5	5.2	-173.90	0.0	11.2	99.7	89.3	10.36	9.621		
3,100.0	3,098.1	3,097.1	3,097.1	5.6	5.4	-174.13	0.0	11.2	103.4	92.7	10.71	9.656		
3,200.0	3,198.1	3,197.1	3,197.1	5.8	5.5	-174.33	0.0	11.2	107.2	96.1	11.06	9.689		
3,300.0	3,298.0	3,297.0	3,297.0	6.0	5.7	-174.52	0.0	11.2	110.9	99.5	11.41	9.720		
3,400.0	3,397.9	3,396.9	3,396.9	6.2	5.9	-174.70	0.0	11.2	114.6	102.9	11.76	9.749		
3,500.0	3,497.9	3,496.9	3,496.9	6.4	6.1	-174.87	0.0	11.2	118.4	106.3	12.11	9.777		
3,600.0	3,597.8	3,596.8	3,596.8	6.6	6.2	-175.03	0.0	11.2	122.1	109.7	12.46	9.803		
3,700.0	3,697.7	3,696.7	3,696.7	6.8	6.4	-175.17	0.0	11.2	125.9	113.0	12.81	9.828		
3,800.0	3,797.7	3,796.7	3,796.7	6.9	6.6	-175.31	0.0	11.2	129.6	116.4	13.15	9.852		
3,900.0	3,897.6	3,896.6	3,896.6	7.1	6.7	-175.45	0.0	11.2	133.3	119.8	13.50	9.874		
4,000.0	3,997.5	3,996.5	3,996.5	7.3	6.9	-175.57	0.0	11.2	137.1	123.2	13.85	9.895		
4,100.0	4,097.4	4,096.4	4,096.4	7.5	7.1	-175.90	1.3	11.2	142.0	127.8	14.19	10.007		
4,200.0	4,197.4	4,188.7	4,188.6	7.7	7.3	-176.63	5.3	11.1	149.7	135.1	14.54	10.296		
4,300.0	4,297.3	4,284.0	4,283.7	7.9	7.4	-177.68	12.1	10.9	159.9	145.1	14.88	10.752		
4,400.0	4,397.2	4,381.5	4,380.7	8.1	7.6	-178.90	21.3	10.8	172.4	157.2	15.22	11.330		
4,500.0	4,497.2	4,480.6	4,479.3	8.3	7.8	-179.99	30.9	10.6	185.2	169.6	15.57	11.897		
4,600.0	4,597.1	4,579.7	4,578.0	8.4	8.0	179.05	40.4	10.4	198.1	182.1	15.92	12.443		
4,700.0	4,697.0	4,678.8	4,676.7	8.6	8.2	178.21	50.0	10.2	210.9	194.7	16.27	12.968		
4,800.0	4,797.0	4,778.0	4,775.3	8.8	8.4	177.47	59.6	10.0	223.9	207.2	16.61	13.474		
4,900.0	4,896.9	4,877.1	4,874.0	9.0	8.6	176.81	69.2	9.9	236.8	219.8	16.96	13.960		
5,000.0	4,996.8	4,976.2	4,972.6	9.2	8.8	176.22	78.7	9.7	249.8	232.5	17.31	14.429		
5,100.0	5,096.7	5,075.3	5,071.3	9.4	9.0	175.69	88.3	9.5	262.8	245.1	17.66	14.880		

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 Vogl-Geist 2A-5H-E267
Project:	DJ Wattenberg	TVD Reference:	KB @ 4866.0ft (Ensign)
Reference Site:	S5-T2N-R67W (Vogl-McCoy)	MD Reference:	KB @ 4866.0ft (Ensign)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Vogl-Geist 2A-5H-E267	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design S5-T2N-R67W (Vogl-McCoy) - Vogl-McCoy 2B-5H-E267 - Hz - Plan #3												Offset Site Error:	0.0 ft	
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth	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)				
5,200.0	5,196.7	5,174.4	5,170.0	9.6	9.2	175.20	97.9	9.3	275.8	257.8	18.01	15.315		
5,300.0	5,296.6	5,273.6	5,268.6	9.7	9.4	174.76	107.4	9.1	288.9	270.5	18.36	15.734		
5,400.0	5,396.5	5,372.7	5,367.3	9.9	9.6	174.36	117.0	8.9	301.9	283.2	18.71	16.138		
5,500.0	5,496.5	5,471.8	5,465.9	10.1	9.8	173.99	126.6	8.8	315.0	295.9	19.06	16.529		
5,600.0	5,596.4	5,570.9	5,564.6	10.3	10.0	173.65	136.1	8.6	328.1	308.7	19.41	16.906		
5,700.0	5,696.3	5,670.1	5,663.3	10.5	10.2	173.34	145.7	8.4	341.2	321.4	19.76	17.270		
5,800.0	5,796.2	5,769.2	5,761.9	10.7	10.4	173.05	155.3	8.2	354.3	334.2	20.11	17.622		
5,900.0	5,896.2	5,868.3	5,860.6	10.9	10.6	172.78	164.8	8.0	367.4	346.9	20.45	17.962		
6,000.0	5,996.1	5,967.4	5,959.2	11.0	10.8	172.53	174.4	7.8	380.5	359.7	20.80	18.292		
6,100.0	6,096.0	6,066.6	6,057.9	11.2	11.0	172.30	184.0	7.7	393.6	372.5	21.15	18.610		
6,200.0	6,196.0	6,165.7	6,156.6	11.4	11.3	172.08	193.5	7.5	406.8	385.3	21.50	18.919		
6,300.0	6,295.9	6,264.8	6,255.2	11.6	11.5	171.87	203.1	7.3	419.9	398.1	21.85	19.218		
6,400.0	6,395.8	6,363.9	6,353.9	11.8	11.7	171.68	212.7	7.1	433.1	410.9	22.20	19.508		
6,500.0	6,495.8	6,463.0	6,452.5	12.0	11.9	171.50	222.2	6.9	446.2	423.7	22.55	19.790		
6,600.0	6,595.7	6,562.2	6,551.2	12.2	12.1	171.33	231.8	6.7	459.4	436.5	22.90	20.063		
6,696.0	6,691.6	6,657.3	6,645.9	12.3	12.3	171.17	241.0	6.6	472.0	448.8	23.23	20.317		
6,700.0	6,695.6	6,661.3	6,649.9	12.4	12.3	167.19	241.4	6.6	472.5	449.3	23.25	20.324		
6,750.0	6,745.6	6,786.9	6,775.2	12.4	12.6	20.28	246.0	6.3	475.3	451.7	23.54	20.190		
6,800.0	6,795.3	7,023.3	7,001.4	12.5	12.6	16.48	183.2	5.1	457.0	433.1	23.89	19.131		
6,850.0	6,844.4	7,166.6	7,119.1	12.5	12.6	21.24	102.2	4.1	421.8	397.8	23.96	17.602		
6,900.0	6,892.5	7,242.6	7,172.3	12.5	12.6	31.58	48.0	3.5	378.7	354.8	23.95	15.815		
6,950.0	6,939.2	7,281.5	7,196.7	12.5	12.7	48.32	17.7	3.1	332.4	308.3	24.18	13.748		
7,000.0	6,984.2	7,299.7	7,207.4	12.5	12.7	69.42	3.0	3.0	285.0	260.2	24.75	11.515		
7,050.0	7,027.1	7,305.6	7,210.7	12.5	12.7	87.60	-1.9	2.9	237.6	212.5	25.11	9.463		
7,100.0	7,067.6	7,303.8	7,209.7	12.5	12.7	98.40	-0.4	2.9	191.3	166.3	25.09	7.628		
7,150.0	7,105.4	7,296.8	7,205.7	12.5	12.7	102.43	5.3	3.0	147.7	122.8	24.99	5.912		
7,200.0	7,140.2	7,286.3	7,199.6	12.6	12.7	101.11	13.9	3.1	109.8	84.8	25.03	4.387		
7,250.0	7,171.8	7,273.2	7,191.7	12.7	12.6	95.15	24.3	3.2	84.6	59.4	25.22	3.354		
7,277.5	7,187.6	7,265.1	7,186.7	12.8	12.6	90.05	30.7	3.3	80.4	55.1	25.32	3.175 SF		
7,300.0	7,199.8	7,258.1	7,182.3	12.8	12.6	85.04	36.1	3.3	83.2	57.9	25.32	3.285		
7,350.0	7,224.1	7,241.6	7,171.7	13.0	12.6	72.03	48.8	3.5	105.3	80.4	24.89	4.230		
7,400.0	7,244.6	7,224.0	7,160.0	13.2	12.6	58.44	62.0	3.6	139.1	115.5	23.67	5.878		
7,450.0	7,261.0	7,200.0	7,143.4	13.5	12.6	44.78	79.2	3.8	177.3	155.6	21.68	8.177		
7,500.0	7,273.2	7,186.1	7,133.4	13.9	12.6	37.12	89.0	3.9	216.4	196.1	20.30	10.660		
7,550.0	7,281.1	7,166.2	7,118.8	14.2	12.6	30.11	102.4	4.1	255.6	236.6	18.96	13.480		
7,600.0	7,284.8	7,150.0	7,106.5	14.7	12.5	25.35	113.0	4.2	294.0	275.9	18.09	16.249		
7,616.5	7,285.0	7,139.1	7,098.1	14.8	12.5	23.54	120.0	4.3	306.4	288.6	17.79	17.224		
7,700.0	7,285.0	7,100.0	7,066.9	15.6	12.6	20.43	143.5	4.6	370.9	353.4	17.55	21.135		
7,800.0	7,285.0	7,074.0	7,045.3	16.7	12.6	18.70	157.9	4.8	452.0	434.4	17.64	25.623		
7,900.0	7,285.0	7,050.0	7,024.8	17.9	12.6	17.30	170.4	4.9	536.6	518.8	17.78	30.174		
8,000.0	7,285.0	7,022.4	7,000.6	19.2	12.6	15.89	183.6	5.1	623.6	605.7	17.91	34.826		
8,100.0	7,285.0	7,000.0	6,980.4	20.6	12.6	14.88	193.5	5.2	712.7	694.6	18.09	39.387		
8,200.0	7,285.0	6,984.1	6,966.0	22.0	12.6	14.23	200.0	5.3	803.3	784.9	18.35	43.783		
8,300.0	7,285.0	6,968.6	6,951.6	23.5	12.6	13.63	206.0	5.4	895.1	876.5	18.60	48.126		
8,400.0	7,285.0	6,950.0	6,934.3	25.0	12.6	12.98	212.6	5.5	988.1	969.2	18.82	52.488		
8,500.0	7,285.0	6,950.0	6,934.3	26.5	12.6	12.98	212.6	5.5	1,081.8	1,062.6	19.21	56.314		
8,600.0	7,285.0	6,931.9	6,917.2	28.0	12.6	12.39	218.5	5.6	1,176.2	1,156.8	19.43	60.533		
8,700.0	7,285.0	6,922.2	6,907.9	29.6	12.6	12.10	221.5	5.7	1,271.3	1,251.5	19.72	64.456		
8,800.0	7,285.0	6,900.0	6,886.6	31.2	12.6	11.47	227.7	5.8	1,367.0	1,347.1	19.90	68.689		
8,900.0	7,285.0	6,900.0	6,886.6	32.8	12.6	11.47	227.7	5.8	1,462.8	1,442.6	20.27	72.167		

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 Vogl-Geist 2A-5H-E267
Project:	DJ Wattenberg	TVD Reference:	KB @ 4866.0ft (Ensign)
Reference Site:	S5-T2N-R67W (Vogl-McCoy)	MD Reference:	KB @ 4866.0ft (Ensign)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Vogl-Geist 2A-5H-E267	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design S5-T2N-R67W (Vogl-McCoy) - Vogl-McCoy 2C-5H-E267 - Hz - Plan #2													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis		Distance		Total		Separation		Warning		
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Uncertainty Axis	Factor		
0.0	0.0	0.0	0.0	0.0	0.0	90.05	0.0	30.7	30.7					
100.0	100.0	100.0	100.0	0.1	0.1	90.05	0.0	30.7	30.7	30.5	0.24	125.809		
200.0	200.0	200.0	200.0	0.3	0.3	90.05	0.0	30.7	30.7	30.1	0.59	51.804		
300.0	300.0	300.0	300.0	0.5	0.5	90.05	0.0	30.7	30.7	29.8	0.94	32.617		
400.0	400.0	400.0	400.0	0.6	0.6	90.05	0.0	30.7	30.7	29.4	1.29	23.802 CC, ES		
507.5	507.5	507.4	507.4	0.8	0.8	-112.31	0.0	30.7	31.5	29.8	1.67	18.845		
600.0	599.9	599.3	599.3	1.0	1.0	-118.16	0.3	31.5	33.8	31.8	2.00	16.929		
700.0	699.8	698.6	698.5	1.2	1.2	-123.83	1.2	34.0	38.3	35.9	2.35	16.311 SF		
800.0	799.8	797.6	797.4	1.4	1.4	-128.31	2.7	38.0	44.8	42.1	2.70	16.608		
900.0	899.7	897.0	896.8	1.6	1.5	-131.61	4.6	43.1	52.8	49.7	3.05	17.296		
1,000.0	999.6	996.7	996.2	1.7	1.7	-134.03	6.5	48.3	60.9	57.5	3.40	17.890		
1,100.0	1,099.6	1,096.3	1,095.7	1.9	1.9	-135.89	8.5	53.5	69.1	65.3	3.76	18.394		
1,200.0	1,199.5	1,196.0	1,195.2	2.1	2.1	-137.35	10.4	58.7	77.3	73.2	4.11	18.825		
1,300.0	1,299.4	1,295.6	1,294.7	2.3	2.3	-138.53	12.4	64.0	85.6	81.2	4.46	19.196		
1,400.0	1,399.3	1,395.3	1,394.2	2.5	2.5	-139.50	14.3	69.2	93.9	89.1	4.81	19.518		
1,500.0	1,499.3	1,494.9	1,493.7	2.7	2.7	-140.31	16.2	74.4	102.3	97.1	5.17	19.800		
1,600.0	1,599.2	1,594.5	1,593.2	2.9	2.9	-141.00	18.2	79.6	110.6	105.1	5.52	20.048		
1,700.0	1,699.1	1,694.2	1,692.7	3.0	3.1	-141.59	20.1	84.8	119.0	113.2	5.87	20.269		
1,800.0	1,799.1	1,793.8	1,792.1	3.2	3.3	-142.10	22.1	90.0	127.4	121.2	6.23	20.466		
1,900.0	1,899.0	1,893.5	1,891.6	3.4	3.5	-142.55	24.0	95.2	135.8	129.2	6.58	20.643		
2,000.0	1,998.9	1,993.1	1,991.1	3.6	3.7	-142.95	26.0	100.4	144.2	137.3	6.93	20.802		
2,100.0	2,098.9	2,092.7	2,090.6	3.8	3.9	-143.31	27.9	105.6	152.6	145.3	7.29	20.947		
2,200.0	2,198.8	2,192.4	2,190.1	4.0	4.1	-143.62	29.8	110.8	161.0	153.4	7.64	21.079		
2,300.0	2,298.7	2,292.0	2,289.6	4.2	4.3	-143.91	31.8	116.0	169.5	161.5	7.99	21.199		
2,400.0	2,398.6	2,391.7	2,389.1	4.3	4.5	-144.17	33.7	121.2	177.9	169.5	8.35	21.310		
2,500.0	2,498.6	2,491.3	2,488.5	4.5	4.7	-144.40	35.7	126.4	186.3	177.6	8.70	21.412		
2,600.0	2,598.5	2,591.0	2,588.0	4.7	4.9	-144.62	37.6	131.6	194.7	185.7	9.05	21.506		
2,700.0	2,698.4	2,690.6	2,687.5	4.9	5.1	-144.81	39.5	136.8	203.2	193.8	9.41	21.593		
2,800.0	2,798.4	2,790.2	2,787.0	5.1	5.3	-145.00	41.5	142.0	211.6	201.8	9.76	21.674		
2,900.0	2,898.3	2,889.9	2,886.5	5.3	5.5	-145.16	43.4	147.2	220.0	209.9	10.12	21.750		
3,000.0	2,998.2	2,989.5	2,986.0	5.5	5.7	-145.32	45.4	152.4	228.5	218.0	10.47	21.820		
3,100.0	3,098.1	3,089.2	3,085.5	5.6	5.9	-145.46	47.3	157.6	236.9	226.1	10.82	21.886		
3,200.0	3,198.1	3,188.8	3,185.0	5.8	6.1	-145.60	49.2	162.8	245.3	234.2	11.18	21.948		
3,300.0	3,298.0	3,288.4	3,284.4	6.0	6.3	-145.72	51.2	168.0	253.8	242.3	11.53	22.006		
3,400.0	3,397.9	3,388.1	3,383.9	6.2	6.5	-145.84	53.1	173.2	262.2	250.3	11.89	22.061		
3,500.0	3,497.9	3,487.7	3,483.4	6.4	6.7	-145.95	55.1	178.4	270.7	258.4	12.24	22.113		
3,600.0	3,597.8	3,587.4	3,582.9	6.6	6.9	-146.05	57.0	183.7	279.1	266.5	12.59	22.161		
3,700.0	3,697.7	3,687.0	3,682.4	6.8	7.1	-146.15	58.9	188.9	287.6	274.6	12.95	22.208		
3,800.0	3,797.7	3,786.7	3,781.9	6.9	7.2	-146.24	60.9	194.1	296.0	282.7	13.30	22.251		
3,900.0	3,897.6	3,886.3	3,881.4	7.1	7.4	-146.33	62.8	199.3	304.5	290.8	13.66	22.293		
4,000.0	3,997.5	3,985.9	3,980.8	7.3	7.6	-146.41	64.8	204.5	312.9	298.9	14.01	22.332		
4,100.0	4,097.4	4,085.6	4,080.3	7.5	7.8	-146.49	66.7	209.7	321.3	307.0	14.37	22.370		
4,200.0	4,197.4	4,185.2	4,179.8	7.7	8.0	-146.56	68.7	214.9	329.8	315.1	14.72	22.405		
4,300.0	4,297.3	4,284.9	4,279.3	7.9	8.2	-146.63	70.6	220.1	338.2	323.2	15.07	22.439		
4,400.0	4,397.2	4,384.5	4,378.8	8.1	8.4	-146.70	72.5	225.3	346.7	331.3	15.43	22.472		
4,500.0	4,497.2	4,484.1	4,478.3	8.3	8.6	-146.76	74.5	230.5	355.1	339.4	15.78	22.503		
4,600.0	4,597.1	4,583.8	4,577.8	8.4	8.8	-146.82	76.4	235.7	363.6	347.5	16.14	22.533		
4,700.0	4,697.0	4,683.4	4,677.3	8.6	9.0	-146.88	78.4	240.9	372.0	355.6	16.49	22.561		
4,800.0	4,797.0	4,783.1	4,776.7	8.8	9.2	-146.93	80.3	246.1	380.5	363.7	16.84	22.588		
4,900.0	4,896.9	4,882.7	4,876.2	9.0	9.4	-146.99	82.2	251.3	388.9	371.7	17.20	22.614		
5,000.0	4,996.8	4,982.4	4,975.7	9.2	9.6	-147.04	84.2	256.5	397.4	379.8	17.55	22.640		
5,100.0	5,096.7	5,082.0	5,075.2	9.4	9.8	-147.09	86.1	261.7	405.9	387.9	17.91	22.664		

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 Vogl-Geist 2A-5H-E267
Project:	DJ Wattenberg	TVD Reference:	KB @ 4866.0ft (Ensign)
Reference Site:	S5-T2N-R67W (Vogl-McCoy)	MD Reference:	KB @ 4866.0ft (Ensign)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Vogl-Geist 2A-5H-E267	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design S5-T2N-R67W (Vogl-McCoy) - Vogl-McCoy 2C-5H-E267 - Hz - Plan #2													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance				Total Uncertainty Axis	Separation Factor	Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)				
5,200.0	5,196.7	5,181.6	5,174.7	9.6	10.0	-147.13	88.1	266.9	414.3	396.0	18.26	22.687		
5,300.0	5,296.6	5,281.3	5,274.2	9.7	10.2	-147.18	90.0	272.1	422.8	404.1	18.62	22.709		
5,400.0	5,396.5	5,380.9	5,373.7	9.9	10.4	-147.22	91.9	277.3	431.2	412.2	18.97	22.731		
5,500.0	5,496.5	5,480.6	5,473.1	10.1	10.6	-147.26	93.9	282.5	439.7	420.3	19.32	22.751		
5,600.0	5,596.4	5,580.2	5,572.6	10.3	10.8	-147.30	95.8	287.7	448.1	428.4	19.68	22.771		
5,700.0	5,696.3	5,679.8	5,672.1	10.5	11.0	-147.34	97.8	292.9	456.6	436.5	20.03	22.791		
5,800.0	5,796.2	5,779.5	5,771.6	10.7	11.2	-147.37	99.7	298.1	465.0	444.6	20.39	22.809		
5,900.0	5,896.2	5,879.1	5,871.1	10.9	11.4	-147.41	101.7	303.4	473.5	452.7	20.74	22.827		
6,000.0	5,996.1	5,978.8	5,970.6	11.0	11.6	-147.44	103.6	308.6	481.9	460.8	21.10	22.845		
6,100.0	6,096.0	6,078.4	6,070.1	11.2	11.8	-147.48	105.5	313.8	490.4	468.9	21.45	22.861		
6,200.0	6,196.0	6,178.1	6,169.6	11.4	12.0	-147.51	107.5	319.0	498.8	477.0	21.80	22.878		
6,300.0	6,295.9	6,277.7	6,269.0	11.6	12.2	-147.54	109.4	324.2	507.3	485.1	22.16	22.893		
6,400.0	6,395.8	6,377.3	6,368.5	11.8	12.4	-147.57	111.4	329.4	515.7	493.2	22.51	22.909		
6,500.0	6,495.8	6,477.0	6,468.0	12.0	12.6	-147.60	113.3	334.6	524.2	501.3	22.87	22.923		
6,600.0	6,595.7	6,596.8	6,587.6	12.2	12.9	-147.52	114.3	340.9	532.3	509.0	23.26	22.882		
6,696.0	6,691.6	6,788.6	6,773.7	12.3	13.2	-143.55	73.7	354.2	528.0	504.1	23.89	22.099		
6,700.0	6,695.6	6,795.9	6,780.4	12.4	13.2	-147.20	70.9	354.7	527.5	503.6	23.92	22.051		
6,750.0	6,745.6	6,878.8	6,854.1	12.4	13.3	70.69	33.7	361.6	518.2	493.9	24.26	21.361		
6,800.0	6,795.3	6,944.4	6,908.1	12.5	13.5	69.91	-3.0	367.4	505.4	480.9	24.49	20.640		
6,850.0	6,844.4	6,993.2	6,945.3	12.5	13.6	73.98	-34.3	371.9	491.5	466.9	24.67	19.920		
6,900.0	6,892.5	7,028.0	6,970.1	12.5	13.7	78.13	-58.4	375.1	478.6	453.8	24.79	19.304		
6,950.0	6,939.2	7,051.5	6,986.0	12.5	13.8	81.42	-75.6	377.3	468.3	443.4	24.86	18.836		
7,000.0	6,984.2	7,066.3	6,995.7	12.5	13.9	83.57	-86.7	378.7	461.7	436.8	24.90	18.541		
7,046.8	7,024.4	7,074.0	7,000.6	12.5	13.9	84.55	-92.6	379.5	459.6	434.7	24.92	18.442		
7,050.0	7,027.1	7,074.3	7,000.8	12.5	13.9	84.58	-92.8	379.5	459.6	434.7	24.92	18.441		
7,100.0	7,067.6	7,077.2	7,002.6	12.5	13.9	84.52	-95.0	379.8	462.4	437.4	24.94	18.539		
7,150.0	7,105.4	7,075.9	7,001.8	12.5	13.9	83.50	-94.0	379.6	469.9	445.0	24.96	18.828		
7,200.0	7,140.2	7,071.4	6,999.0	12.6	13.9	81.63	-90.6	379.2	482.0	457.1	24.98	19.298		
7,250.0	7,171.8	7,064.3	6,994.4	12.7	13.8	79.04	-85.2	378.5	498.1	473.2	24.98	19.938		
7,300.0	7,199.8	7,050.0	6,985.1	12.8	13.8	75.27	-74.5	377.2	517.6	492.7	24.91	20.782		
7,350.0	7,224.1	7,050.0	6,985.1	13.0	13.8	72.86	-74.5	377.2	539.8	514.9	24.92	21.663		
7,400.0	7,244.6	7,031.8	6,972.8	13.2	13.7	68.29	-61.2	375.5	563.9	539.2	24.69	22.842		
7,450.0	7,261.0	7,018.3	6,963.3	13.5	13.7	64.22	-51.5	374.2	589.5	565.0	24.43	24.134		
7,500.0	7,273.2	7,000.0	6,950.3	13.9	13.6	59.83	-38.9	372.5	615.9	591.9	24.03	25.630		
7,550.0	7,281.1	6,988.4	6,941.7	14.2	13.6	56.20	-31.0	371.4	642.8	619.1	23.70	27.115		
7,600.0	7,284.8	6,972.3	6,929.7	14.7	13.5	52.46	-20.5	370.0	669.6	646.3	23.32	28.710		
7,616.5	7,285.0	6,966.9	6,925.5	14.8	13.5	51.29	-17.0	369.5	678.4	655.2	23.20	29.235		
7,700.0	7,285.0	6,950.0	6,912.5	15.6	13.5	50.18	-6.5	367.9	725.3	701.7	23.61	30.722		
7,800.0	7,285.0	6,900.0	6,872.0	16.7	13.4	46.93	22.5	363.5	787.5	763.8	23.70	33.222		
7,900.0	7,285.0	6,900.0	6,872.0	17.9	13.4	46.93	22.5	363.5	855.0	830.4	24.58	34.781		
8,000.0	7,285.0	6,867.4	6,844.3	19.2	13.3	44.87	39.4	360.7	927.0	902.0	24.97	37.121		
8,100.0	7,285.0	6,850.0	6,829.1	20.6	13.3	43.79	47.8	359.2	1,002.9	977.3	25.61	39.157		
8,200.0	7,285.0	6,831.8	6,813.0	22.0	13.2	42.69	56.1	357.7	1,082.0	1,055.8	26.24	41.231		
8,300.0	7,285.0	6,816.8	6,799.5	23.5	13.2	41.80	62.6	356.4	1,163.8	1,136.8	26.93	43.214		
8,400.0	7,285.0	6,800.0	6,784.2	25.0	13.2	40.82	69.3	355.1	1,247.7	1,220.1	27.57	45.247		
8,500.0	7,285.0	6,800.0	6,784.2	26.5	13.2	40.82	69.3	355.1	1,333.5	1,304.9	28.56	46.684		
8,600.0	7,285.0	6,780.2	6,765.9	28.0	13.1	39.69	76.8	353.5	1,420.7	1,391.6	29.13	48.777		
8,700.0	7,285.0	6,770.2	6,756.5	29.6	13.1	39.14	80.3	352.7	1,509.3	1,479.5	29.89	50.493		

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 Vogl-Geist 2A-5H-E267
Project:	DJ Wattenberg	TVD Reference:	KB @ 4866.0ft (Ensign)
Reference Site:	S5-T2N-R67W (Vogl-McCoy)	MD Reference:	KB @ 4866.0ft (Ensign)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Vogl-Geist 2A-5H-E267	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design S5-T2N-R67W (Vogl-McCoy) - Vogl-McCoy 2D-5H-E267 - Hz - Plan #2														Offset Site Error:	0.0 ft
Survey Program: 0-MWD														Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis		Distance		Total		Separation		Warning			
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Uncertainty Axis	Factor			
0.0	0.0	0.0	0.0	0.0	0.0	90.05	0.0	50.3	50.3						
100.0	100.0	100.0	100.0	0.1	0.1	90.05	0.0	50.3	50.3	50.1	0.24	205.869			
200.0	200.0	200.0	200.0	0.3	0.3	90.05	0.0	50.3	50.3	49.7	0.59	84.770	CC, ES		
300.0	300.0	299.2	299.2	0.5	0.5	89.66	0.3	51.1	51.1	50.2	0.94	54.298			
400.0	400.0	398.3	398.3	0.6	0.6	88.59	1.3	53.5	53.5	52.2	1.29	41.515			
507.5	507.5	504.7	504.5	0.8	0.8	-113.75	3.2	57.7	58.7	57.0	1.67	35.219			
600.0	599.9	595.8	595.5	1.0	1.0	-118.03	5.4	62.8	65.6	63.6	1.99	32.957			
700.0	699.8	694.1	693.5	1.2	1.2	-121.96	8.4	69.8	75.1	72.8	2.34	32.062			
800.0	799.8	792.2	791.1	1.4	1.5	-125.14	12.1	78.4	86.5	83.8	2.69	32.137			
900.0	899.7	891.3	889.8	1.6	1.7	-127.63	16.0	87.5	98.8	95.7	3.04	32.454			
1,000.0	999.6	990.5	988.4	1.7	1.9	-129.57	20.0	96.7	111.2	107.8	3.39	32.749			
1,100.0	1,099.6	1,089.7	1,087.1	1.9	2.2	-131.12	24.0	105.9	123.7	119.9	3.75	33.015			
1,200.0	1,199.5	1,188.8	1,185.8	2.1	2.4	-132.39	27.9	115.1	136.2	132.1	4.10	33.251			
1,300.0	1,299.4	1,288.0	1,284.4	2.3	2.7	-133.44	31.9	124.2	148.9	144.4	4.45	33.460			
1,400.0	1,399.3	1,387.2	1,383.1	2.5	2.9	-134.32	35.9	133.4	161.5	156.7	4.80	33.645			
1,500.0	1,499.3	1,486.3	1,481.7	2.7	3.1	-135.08	39.8	142.6	174.2	169.1	5.15	33.810			
1,600.0	1,599.2	1,585.5	1,580.4	2.9	3.4	-135.74	43.8	151.8	187.0	181.4	5.51	33.957			
1,700.0	1,699.1	1,684.7	1,679.1	3.0	3.6	-136.31	47.8	161.0	199.7	193.8	5.86	34.088			
1,800.0	1,799.1	1,783.8	1,777.7	3.2	3.9	-136.81	51.7	170.1	212.5	206.2	6.21	34.206			
1,900.0	1,899.0	1,883.0	1,876.4	3.4	4.1	-137.25	55.7	179.3	225.2	218.7	6.56	34.313			
2,000.0	1,998.9	1,982.2	1,975.0	3.6	4.4	-137.65	59.7	188.5	238.0	231.1	6.92	34.410			
2,100.0	2,098.9	2,081.3	2,073.7	3.8	4.6	-138.01	63.6	197.7	250.8	243.6	7.27	34.499			
2,200.0	2,198.8	2,180.5	2,172.4	4.0	4.9	-138.33	67.6	206.8	263.6	256.0	7.62	34.579			
2,300.0	2,298.7	2,279.7	2,271.0	4.2	5.1	-138.62	71.6	216.0	276.5	268.5	7.98	34.653			
2,400.0	2,398.6	2,378.8	2,369.7	4.3	5.3	-138.89	75.5	225.2	289.3	280.9	8.33	34.721			
2,500.0	2,498.6	2,478.0	2,468.3	4.5	5.6	-139.13	79.5	234.4	302.1	293.4	8.68	34.784			
2,600.0	2,598.5	2,577.1	2,567.0	4.7	5.8	-139.36	83.5	243.6	314.9	305.9	9.04	34.842			
2,700.0	2,698.4	2,676.3	2,665.7	4.9	6.1	-139.57	87.4	252.7	327.8	318.4	9.39	34.896			
2,800.0	2,798.4	2,775.5	2,764.3	5.1	6.3	-139.76	91.4	261.9	340.6	330.9	9.75	34.947			
2,900.0	2,898.3	2,874.6	2,863.0	5.3	6.6	-139.93	95.4	271.1	353.5	343.4	10.10	34.993			
3,000.0	2,998.2	2,973.8	2,961.6	5.5	6.8	-140.10	99.3	280.3	366.3	355.8	10.45	35.037			
3,100.0	3,098.1	3,073.0	3,060.3	5.6	7.1	-140.25	103.3	289.5	379.2	368.3	10.81	35.078			
3,200.0	3,198.1	3,172.1	3,159.0	5.8	7.3	-140.40	107.3	298.6	392.0	380.8	11.16	35.116			
3,300.0	3,298.0	3,271.3	3,257.6	6.0	7.6	-140.53	111.2	307.8	404.9	393.3	11.52	35.153			
3,400.0	3,397.9	3,370.5	3,356.3	6.2	7.8	-140.66	115.2	317.0	417.7	405.8	11.87	35.187			
3,500.0	3,497.9	3,469.6	3,454.9	6.4	8.0	-140.77	119.2	326.2	430.6	418.4	12.23	35.219			
3,600.0	3,597.8	3,568.8	3,553.6	6.6	8.3	-140.89	123.1	335.3	443.4	430.9	12.58	35.249			
3,700.0	3,697.7	3,668.0	3,652.3	6.8	8.5	-140.99	127.1	344.5	456.3	443.4	12.93	35.278			
3,800.0	3,797.7	3,767.1	3,750.9	6.9	8.8	-141.09	131.1	353.7	469.2	455.9	13.29	35.305			
3,900.0	3,897.6	3,866.3	3,849.6	7.1	9.0	-141.19	135.0	362.9	482.0	468.4	13.64	35.331			
4,000.0	3,997.5	3,965.5	3,948.2	7.3	9.3	-141.27	139.0	372.1	494.9	480.9	14.00	35.355			
4,100.0	4,097.4	4,064.6	4,046.9	7.5	9.5	-141.36	143.0	381.2	507.8	493.4	14.35	35.379			
4,200.0	4,197.4	4,163.8	4,145.6	7.7	9.8	-141.44	146.9	390.4	520.6	505.9	14.71	35.401			
4,300.0	4,297.3	4,263.0	4,244.2	7.9	10.0	-141.52	150.9	399.6	533.5	518.4	15.06	35.422			
4,400.0	4,397.2	4,362.1	4,342.9	8.1	10.3	-141.59	154.9	408.8	546.4	531.0	15.42	35.442			
4,500.0	4,497.2	4,461.3	4,441.6	8.3	10.5	-141.66	158.8	417.9	559.2	543.5	15.77	35.462			
4,600.0	4,597.1	4,560.5	4,540.2	8.4	10.7	-141.73	162.8	427.1	572.1	556.0	16.12	35.480			
4,700.0	4,697.0	4,659.6	4,638.9	8.6	11.0	-141.79	166.8	436.3	585.0	568.5	16.48	35.498			
4,800.0	4,797.0	4,758.8	4,737.5	8.8	11.2	-141.85	170.7	445.5	597.9	581.0	16.83	35.515			
4,900.0	4,896.9	4,858.0	4,836.2	9.0	11.5	-141.91	174.7	454.7	610.7	593.5	17.19	35.531			
5,000.0	4,996.8	4,957.1	4,934.9	9.2	11.7	-141.97	178.7	463.8	623.6	606.1	17.54	35.547			
5,100.0	5,096.7	5,056.3	5,033.5	9.4	12.0	-142.02	182.6	473.0	636.5	618.6	17.90	35.562			

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 Vogl-Geist 2A-5H-E267
Project:	DJ Wattenberg	TVD Reference:	KB @ 4866.0ft (Ensign)
Reference Site:	S5-T2N-R67W (Vogl-McCoy)	MD Reference:	KB @ 4866.0ft (Ensign)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Vogl-Geist 2A-5H-E267	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design S5-T2N-R67W (Vogl-McCoy) - Vogl-McCoy 2D-5H-E267 - Hz - Plan #2													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance				Total Uncertainty Axis	Separation Factor	Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)				
5,200.0	5,196.7	5,155.5	5,132.2	9.6	12.2	-142.07	186.6	482.2	649.4	631.1	18.25	35.576		
5,300.0	5,296.6	5,254.6	5,230.8	9.7	12.5	-142.12	190.6	491.4	662.2	643.6	18.61	35.590		
5,400.0	5,396.5	5,353.8	5,329.5	9.9	12.7	-142.17	194.5	500.5	675.1	656.1	18.96	35.604		
5,500.0	5,496.5	5,453.0	5,428.2	10.1	13.0	-142.21	198.5	509.7	688.0	668.7	19.32	35.617		
5,600.0	5,596.4	5,552.1	5,526.8	10.3	13.2	-142.26	202.5	518.9	700.9	681.2	19.67	35.629		
5,700.0	5,696.3	5,651.3	5,625.5	10.5	13.5	-142.30	206.4	528.1	713.7	693.7	20.03	35.641		
5,800.0	5,796.2	5,750.5	5,724.1	10.7	13.7	-142.34	210.4	537.3	726.6	706.2	20.38	35.653		
5,900.0	5,896.2	5,849.6	5,822.8	10.9	13.9	-142.38	214.4	546.4	739.5	718.8	20.74	35.664		
6,000.0	5,996.1	5,948.8	5,921.5	11.0	14.2	-142.42	218.3	555.6	752.4	731.3	21.09	35.675		
6,100.0	6,096.0	6,048.0	6,020.1	11.2	14.4	-142.46	222.3	564.8	765.3	743.8	21.44	35.685		
6,200.0	6,196.0	6,147.1	6,118.8	11.4	14.7	-142.49	226.3	574.0	778.1	756.3	21.80	35.695		
6,300.0	6,295.9	6,246.3	6,217.4	11.6	14.9	-142.53	230.2	583.2	791.0	768.9	22.15	35.705		
6,400.0	6,395.8	6,345.5	6,316.1	11.8	15.2	-142.56	234.2	592.3	803.9	781.4	22.51	35.715		
6,500.0	6,495.8	6,444.6	6,414.8	12.0	15.4	-142.59	238.2	601.5	816.8	793.9	22.86	35.724		
6,600.0	6,595.7	6,543.8	6,513.4	12.2	15.7	-142.63	242.1	610.7	829.7	806.4	23.22	35.733		
6,696.0	6,691.6	6,639.0	6,608.1	12.3	15.9	-142.65	245.9	619.5	842.0	818.5	23.56	35.741		
6,700.0	6,695.6	6,643.0	6,612.1	12.4	15.9	-146.66	246.1	619.9	842.5	819.0	23.58	35.734		
6,750.0	6,745.6	6,692.7	6,661.5	12.4	16.0	66.07	248.1	624.5	847.5	823.8	23.77	35.654		
6,800.0	6,795.3	6,742.3	6,710.9	12.5	16.2	59.61	250.1	629.1	850.1	826.2	23.90	35.568		
6,850.0	6,844.4	6,952.7	6,917.5	12.5	16.5	62.88	222.5	648.3	846.1	821.8	24.29	34.825		
6,900.0	6,892.5	7,106.9	7,055.3	12.5	16.6	70.26	155.7	661.1	832.9	808.2	24.63	33.809		
6,950.0	6,939.2	7,191.1	7,121.5	12.5	16.6	76.63	104.3	667.3	816.3	791.5	24.84	32.868		
7,000.0	6,984.2	7,235.1	7,153.0	12.5	16.7	81.13	73.7	670.2	799.8	774.9	24.95	32.060		
7,050.0	7,027.1	7,256.5	7,167.4	12.5	16.7	84.09	57.9	671.5	784.8	759.8	25.00	31.387		
7,100.0	7,067.6	7,264.6	7,172.7	12.5	16.7	85.87	51.8	672.0	772.1	747.0	25.04	30.830		
7,150.0	7,105.4	7,264.3	7,172.5	12.5	16.7	86.77	52.0	672.0	762.0	736.9	25.08	30.383		
7,200.0	7,140.2	7,258.5	7,168.7	12.6	16.7	86.98	56.4	671.6	754.8	729.6	25.13	30.031		
7,250.0	7,171.8	7,248.8	7,162.3	12.7	16.7	86.62	63.6	671.0	750.4	725.2	25.21	29.762		
7,300.0	7,199.8	7,236.3	7,153.8	12.8	16.7	85.80	72.7	670.3	748.9	723.6	25.34	29.558		
7,301.8	7,200.7	7,235.8	7,153.5	12.8	16.7	85.76	73.1	670.2	748.9	723.6	25.34	29.551		
7,350.0	7,224.1	7,221.8	7,143.8	13.0	16.7	84.57	83.1	669.3	750.2	724.7	25.50	29.422		
7,400.0	7,244.6	7,205.8	7,132.3	13.2	16.7	83.02	94.3	668.3	753.9	728.3	25.69	29.350		
7,450.0	7,261.0	7,188.5	7,119.6	13.5	16.6	81.19	106.0	667.1	760.0	734.1	25.91	29.329 SF		
7,500.0	7,273.2	7,170.3	7,105.9	13.9	16.6	79.14	117.9	665.8	768.1	741.9	26.16	29.358		
7,550.0	7,281.1	7,150.0	7,090.2	14.2	16.6	76.83	130.6	664.3	777.9	751.4	26.42	29.443		
7,600.0	7,284.8	7,131.7	7,075.6	14.7	16.6	74.58	141.5	663.0	789.1	762.3	26.71	29.545		
7,616.5	7,285.0	7,125.2	7,070.3	14.8	16.6	73.79	145.4	662.5	793.0	766.2	26.80	29.587		
7,700.0	7,285.0	7,100.0	7,049.5	15.6	16.6	72.27	159.5	660.6	816.5	789.0	27.47	29.725		
7,800.0	7,285.0	7,063.2	7,018.1	16.7	16.6	70.00	178.4	657.6	852.5	824.2	28.29	30.132		
7,900.0	7,285.0	7,037.2	6,995.2	17.9	16.5	68.37	190.5	655.5	896.8	867.5	29.23	30.678		
8,000.0	7,285.0	7,015.2	6,975.4	19.2	16.5	66.99	200.0	653.7	948.4	918.2	30.24	31.363		
8,100.0	7,285.0	7,000.0	6,961.6	20.6	16.5	66.03	206.0	652.4	1,006.5	975.2	31.34	32.117		
8,200.0	7,285.0	6,980.2	6,943.3	22.0	16.5	64.78	213.4	650.7	1,070.2	1,037.8	32.41	33.020		
8,300.0	7,285.0	6,966.1	6,930.1	23.5	16.5	63.90	218.2	649.4	1,138.7	1,105.1	33.56	33.933		
8,400.0	7,285.0	6,950.0	6,914.9	25.0	16.5	62.89	223.4	648.0	1,211.2	1,176.5	34.68	34.921		
8,500.0	7,285.0	6,950.0	6,914.9	26.5	16.5	62.89	223.4	648.0	1,287.1	1,251.1	36.04	35.711		
8,600.0	7,285.0	6,933.1	6,898.8	28.0	16.5	61.83	228.3	646.5	1,365.8	1,328.7	37.16	36.757		
8,700.0	7,285.0	6,924.4	6,890.5	29.6	16.5	61.29	230.6	645.8	1,447.1	1,408.7	38.40	37.683		
8,800.0	7,285.0	6,900.0	6,866.9	31.2	16.4	59.79	236.6	643.6	1,530.7	1,491.3	39.35	38.895		

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



Cathedral Energy Services

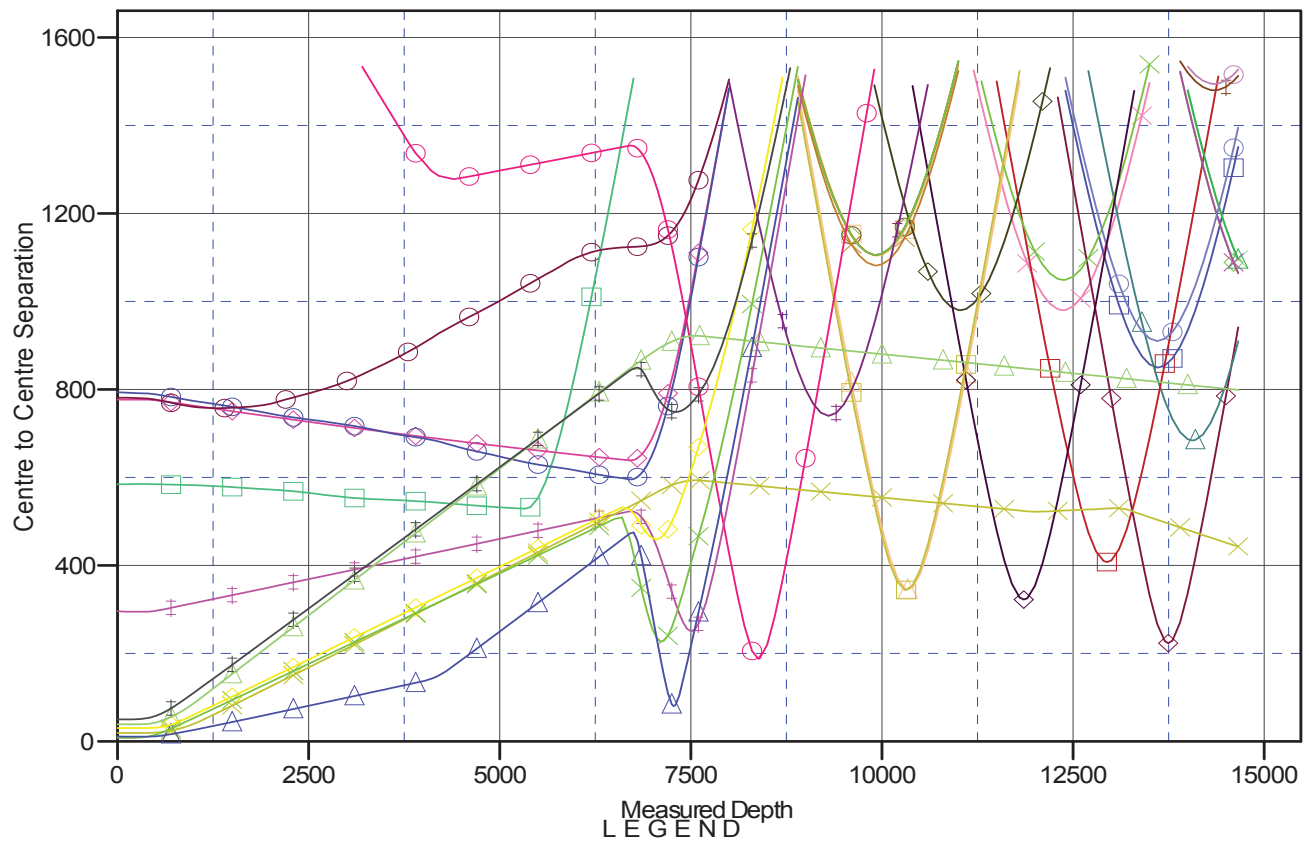
Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Vogl-Geist 2A-5H-E267
Project:	DJ Wattenberg	TVD Reference:	KB @ 4866.0ft (Ensign)
Reference Site:	S5-T2N-R67W (Vogl-McCoy)	MD Reference:	KB @ 4866.0ft (Ensign)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Vogl-Geist 2A-5H-E267	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Reference Depths are relative to KB @ 4866.0ft (Ensign)
Offset Depths are relative to Offset Datum
Central Meridian is -105.500000 °

Coordinates are relative to: Vogl-Geist 2A-5H-E267
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 0.37°

Ladder Plot



VO	✕ GEIST2-0-32 (EXISTING), ENCANA WELL, SURVEYS V0	✕ ROBERT NELSON 2-8-32 (EXISTING), ENCANA WELL, NO SURVEYS V0
VO	○ GEIST21-32 (EXISTING), ENCANA WELL, NO SURVEYS V0	○ VOGL 31-5 (EXISTING), KMG WELL, NO SURVEYS V0
an #1 V0	✕ GEIST2-4-32 (EXISTING), ENCANA WELL, SURVEYS V0	✕ VOGL 4-5A (EXISTING), KMG WELL, NO SURVEYS V0
SurveysOnlyV0	○ GEIST A UNIT #1 (EXISTING), ENCANA WELL, SURVEYS V0	✕ VOGL 5-5 (EXISTING), KMG WELL, NO SURVEYS V0
VO	□ MCCOY #1 (EXISTING), ENCANA WELL, SURVEYS V0	✕ Vogl-Geist2B-5H-E267, Hz, Plan #
JA WELL, NO SURVEYS V0	✕ MCCOY 0-6-5 (EXISTING), ENCANA WELL, NO SURVEYS V0	△ Vogl-Geist2C-5H-E267, Hz, Plan #
A WELL, NO SURVEYS V0	○ MCCOY 13-5 (EXISTING), ENCANA WELL, SURVEYS V0	✕ Vogl-McCoy 2A-5H-E267, Hz, Plan #
A WELL, SURVEYS V0	○ MCCOY 2-4-5 (EXISTING), ENCANA WELL, SURVEYS V0	△ Vogl-McCoy 2B-5H-E267, Hz, Plan #
	✕ NELSON 4-32 (EXISTING), ENCANA WELL, NO SURVEYS V0	✕ Vogl-McCoy 2C-5H-E267, Hz, Plan #
	✕ OWENS BROTHERS 13-32 (EXISTING), ENCANA WELL, SURVEYS V0	✕ Vogl-McCoy 2D-5H-E267, Hz, Plan #
	✕ ROBERT NELSON 14-32 (EXISTING), ENCANA WELL, NO SURVEYS V0	

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