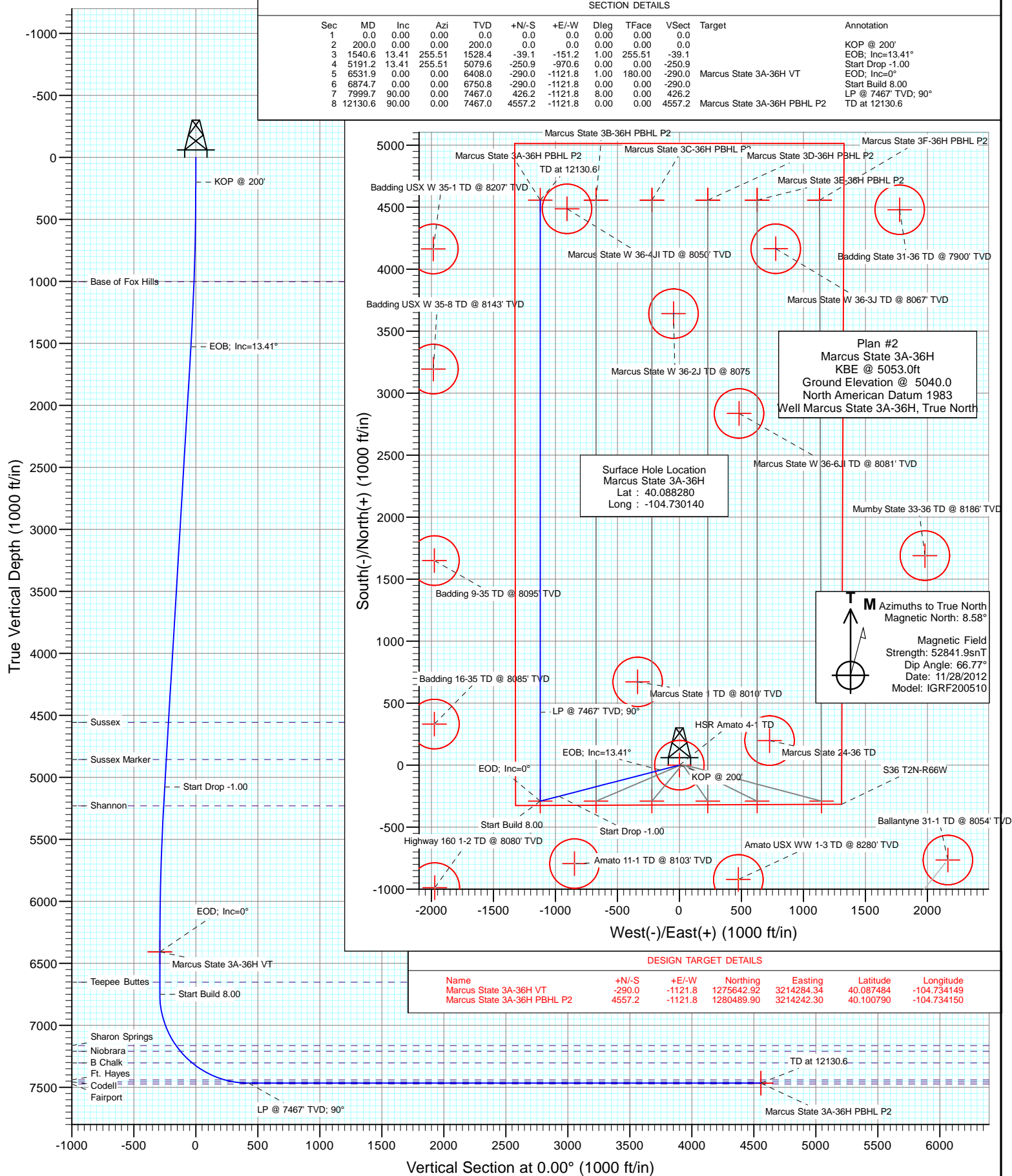




Project: DJ Wattenberg
Site: S36 T2N-R66W (Marcus State)
Well: Marcus State 3A-36H
Wellbore: HZ
Design: Plan #2



Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Marcus State 3A-36H
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	KBE @ 5053.0ft
Project:	DJ Wattenberg	MD Reference:	KBE @ 5053.0ft
Site:	S36 T2N-R66W (Marcus State)	North Reference:	True
Well:	Marcus State 3A-36H	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		S36 T2N-R66W (Marcus State)			
Site Position:		Northing:	1,275,942.66 ft	Latitude:	40.088280
From:	Lat/Long	Easting:	3,215,403.58 ft	Longitude:	-104.730140
Position Uncertainty:	0.0 ft	Slot Radius:	13.200 in	Grid Convergence:	0.50 °

Well	Marcus State 3A-36H					
Well Position	+N/-S	0.0 ft	Northing:	1,275,942.64 ft	Latitude:	40.088280
	+E/-W	0.0 ft	Easting:	3,215,403.58 ft	Longitude:	-104.730140
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	5,040.0 ft

Wellbore	HZ				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	11/28/2012	8.58	66.77	52,842

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

Plan Sections										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
200.0	0.00	0.00	200.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,540.6	13.41	255.51	1,528.4	-39.1	-151.2	1.00	1.00	0.00	255.51	
5,191.2	13.41	255.51	5,079.6	-250.9	-970.6	0.00	0.00	0.00	0.00	
6,531.9	0.00	0.00	6,408.0	-290.0	-1,121.8	1.00	-1.00	0.00	180.00	Marcus State 3A-36H
6,874.7	0.00	0.00	6,750.8	-290.0	-1,121.8	0.00	0.00	0.00	0.00	
7,999.7	90.00	0.00	7,467.0	426.2	-1,121.8	8.00	8.00	0.00	0.00	
12,130.6	90.00	0.00	7,467.0	4,557.2	-1,121.8	0.00	0.00	0.00	0.00	Marcus State 3A-36H

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Marcus State 3A-36H
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	KBE @ 5053.0ft
Project:	DJ Wattenberg	MD Reference:	KBE @ 5053.0ft
Site:	S36 T2N-R66W (Marcus State)	North Reference:	True
Well:	Marcus State 3A-36H	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	KOP @ 200'
300.0	1.00	255.51	300.0	-0.2	-0.8	-0.2	1.00	1.00	
400.0	2.00	255.51	400.0	-0.9	-3.4	-0.9	1.00	1.00	
500.0	3.00	255.51	499.9	-2.0	-7.6	-2.0	1.00	1.00	
600.0	4.00	255.51	599.7	-3.5	-13.5	-3.5	1.00	1.00	
700.0	5.00	255.51	699.4	-5.5	-21.1	-5.5	1.00	1.00	
800.0	6.00	255.51	798.9	-7.9	-30.4	-7.9	1.00	1.00	
900.0	7.00	255.51	898.3	-10.7	-41.3	-10.7	1.00	1.00	
1,000.0	8.00	255.51	997.4	-14.0	-54.0	-14.0	1.00	1.00	
1,005.7	8.06	255.51	1,003.0	-14.2	-54.7	-14.2	1.00	1.00	Base of Fox Hills
1,100.0	9.00	255.51	1,096.3	-17.7	-68.3	-17.7	1.00	1.00	
1,200.0	10.00	255.51	1,194.9	-21.8	-84.3	-21.8	1.00	1.00	
1,300.0	11.00	255.51	1,293.3	-26.3	-101.9	-26.3	1.00	1.00	
1,400.0	12.00	255.51	1,391.2	-31.3	-121.2	-31.3	1.00	1.00	
1,500.0	13.00	255.51	1,488.9	-36.8	-142.2	-36.8	1.00	1.00	
1,540.6	13.41	255.51	1,528.4	-39.1	-151.2	-39.1	1.00	1.00	EOB; Inc=13.41°
1,600.0	13.41	255.51	1,586.2	-42.5	-164.5	-42.5	0.00	0.00	
1,700.0	13.41	255.51	1,683.5	-48.3	-186.9	-48.3	0.00	0.00	
1,800.0	13.41	255.51	1,780.7	-54.1	-209.4	-54.1	0.00	0.00	
1,900.0	13.41	255.51	1,878.0	-59.9	-231.8	-59.9	0.00	0.00	
2,000.0	13.41	255.51	1,975.3	-65.7	-254.3	-65.7	0.00	0.00	
2,100.0	13.41	255.51	2,072.6	-71.5	-276.7	-71.5	0.00	0.00	
2,200.0	13.41	255.51	2,169.8	-77.3	-299.2	-77.3	0.00	0.00	
2,300.0	13.41	255.51	2,267.1	-83.1	-321.6	-83.1	0.00	0.00	
2,400.0	13.41	255.51	2,364.4	-88.9	-344.1	-88.9	0.00	0.00	
2,500.0	13.41	255.51	2,461.7	-94.7	-366.5	-94.7	0.00	0.00	
2,600.0	13.41	255.51	2,558.9	-100.6	-389.0	-100.6	0.00	0.00	
2,700.0	13.41	255.51	2,656.2	-106.4	-411.4	-106.4	0.00	0.00	
2,800.0	13.41	255.51	2,753.5	-112.2	-433.9	-112.2	0.00	0.00	
2,900.0	13.41	255.51	2,850.8	-118.0	-456.3	-118.0	0.00	0.00	
3,000.0	13.41	255.51	2,948.0	-123.8	-478.8	-123.8	0.00	0.00	
3,100.0	13.41	255.51	3,045.3	-129.6	-501.2	-129.6	0.00	0.00	
3,200.0	13.41	255.51	3,142.6	-135.4	-523.7	-135.4	0.00	0.00	
3,300.0	13.41	255.51	3,239.9	-141.2	-546.1	-141.2	0.00	0.00	
3,400.0	13.41	255.51	3,337.1	-147.0	-568.5	-147.0	0.00	0.00	
3,500.0	13.41	255.51	3,434.4	-152.8	-591.0	-152.8	0.00	0.00	
3,600.0	13.41	255.51	3,531.7	-158.6	-613.4	-158.6	0.00	0.00	
3,700.0	13.41	255.51	3,629.0	-164.4	-635.9	-164.4	0.00	0.00	
3,800.0	13.41	255.51	3,726.2	-170.2	-658.3	-170.2	0.00	0.00	
3,900.0	13.41	255.51	3,823.5	-176.0	-680.8	-176.0	0.00	0.00	
4,000.0	13.41	255.51	3,920.8	-181.8	-703.2	-181.8	0.00	0.00	
4,100.0	13.41	255.51	4,018.1	-187.6	-725.7	-187.6	0.00	0.00	
4,200.0	13.41	255.51	4,115.3	-193.4	-748.1	-193.4	0.00	0.00	
4,300.0	13.41	255.51	4,212.6	-199.2	-770.6	-199.2	0.00	0.00	
4,400.0	13.41	255.51	4,309.9	-205.0	-793.0	-205.0	0.00	0.00	
4,500.0	13.41	255.51	4,407.2	-210.8	-815.5	-210.8	0.00	0.00	
4,600.0	13.41	255.51	4,504.4	-216.6	-837.9	-216.6	0.00	0.00	
4,654.0	13.41	255.51	4,557.0	-219.7	-850.0	-219.7	0.00	0.00	Sussex
4,700.0	13.41	255.51	4,601.7	-222.4	-860.4	-222.4	0.00	0.00	
4,800.0	13.41	255.51	4,699.0	-228.2	-882.8	-228.2	0.00	0.00	

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Marcus State 3A-36H
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	KBE @ 5053.0ft
Project:	DJ Wattenberg	MD Reference:	KBE @ 5053.0ft
Site:	S36 T2N-R66W (Marcus State)	North Reference:	True
Well:	Marcus State 3A-36H	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
4,900.0	13.41	255.51	4,796.3	-234.0	-905.3	-234.0	0.00	0.00	
4,962.4	13.41	255.51	4,857.0	-237.6	-919.3	-237.6	0.00	0.00	Sussex Marker
5,000.0	13.41	255.51	4,893.5	-239.8	-927.7	-239.8	0.00	0.00	
5,100.0	13.41	255.51	4,990.8	-245.6	-950.2	-245.6	0.00	0.00	
5,191.2	13.41	255.51	5,079.6	-250.9	-970.6	-250.9	0.00	0.00	Start Drop -1.00
5,200.0	13.32	255.51	5,088.1	-251.4	-972.6	-251.4	1.00	-1.00	
5,300.0	12.32	255.51	5,185.6	-257.0	-994.1	-257.0	1.00	-1.00	
5,345.4	11.86	255.51	5,230.0	-259.4	-1,003.3	-259.4	1.00	-1.00	Shannon
5,400.0	11.32	255.51	5,283.5	-262.1	-1,013.9	-262.1	1.00	-1.00	
5,500.0	10.32	255.51	5,381.7	-266.8	-1,032.1	-266.8	1.00	-1.00	
5,600.0	9.32	255.51	5,480.2	-271.1	-1,048.6	-271.1	1.00	-1.00	
5,700.0	8.32	255.51	5,579.0	-274.9	-1,063.4	-274.9	1.00	-1.00	
5,800.0	7.32	255.51	5,678.1	-278.3	-1,076.6	-278.3	1.00	-1.00	
5,900.0	6.32	255.51	5,777.4	-281.3	-1,088.1	-281.3	1.00	-1.00	
6,000.0	5.32	255.51	5,876.9	-283.8	-1,097.9	-283.8	1.00	-1.00	
6,100.0	4.32	255.51	5,976.5	-285.9	-1,106.0	-285.9	1.00	-1.00	
6,200.0	3.32	255.51	6,076.3	-287.6	-1,112.5	-287.6	1.00	-1.00	
6,300.0	2.32	255.51	6,176.2	-288.8	-1,117.3	-288.8	1.00	-1.00	
6,400.0	1.32	255.51	6,276.1	-289.6	-1,120.3	-289.6	1.00	-1.00	
6,500.0	0.32	255.51	6,376.1	-290.0	-1,121.7	-290.0	1.00	-1.00	
6,531.9	0.00	0.00	6,408.0	-290.0	-1,121.8	-290.0	1.00	-1.00	EOD; Inc=0° - Marcus State 3A-36H VT
6,600.0	0.00	0.00	6,476.1	-290.0	-1,121.8	-290.0	0.00	0.00	
6,700.0	0.00	0.00	6,576.1	-290.0	-1,121.8	-290.0	0.00	0.00	
6,776.9	0.00	0.00	6,653.0	-290.0	-1,121.8	-290.0	0.00	0.00	Teepee Buttes
6,800.0	0.00	0.00	6,676.1	-290.0	-1,121.8	-290.0	0.00	0.00	
6,874.7	0.00	0.00	6,750.8	-290.0	-1,121.8	-290.0	0.00	0.00	Start Build 8.00
6,900.0	2.03	0.00	6,776.1	-289.5	-1,121.8	-289.5	8.00	8.00	
7,000.0	10.03	0.00	6,875.5	-279.1	-1,121.8	-279.1	8.00	8.00	
7,100.0	18.03	0.00	6,972.4	-254.8	-1,121.8	-254.8	8.00	8.00	
7,200.0	26.03	0.00	7,065.0	-217.4	-1,121.8	-217.4	8.00	8.00	
7,300.0	34.03	0.00	7,151.6	-167.4	-1,121.8	-167.4	8.00	8.00	
7,315.1	35.24	0.00	7,164.0	-158.8	-1,121.8	-158.8	8.00	8.00	Sharon Springs
7,373.2	39.88	0.00	7,210.0	-123.4	-1,121.8	-123.4	8.00	8.00	Niobrara
7,400.0	42.03	0.00	7,230.3	-105.8	-1,121.8	-105.8	8.00	8.00	
7,500.0	50.03	0.00	7,299.6	-33.9	-1,121.8	-33.9	8.00	8.00	
7,506.8	50.57	0.00	7,304.0	-28.7	-1,121.8	-28.7	8.00	8.00	B Chalk
7,600.0	58.03	0.00	7,358.3	46.9	-1,121.8	46.9	8.00	8.00	
7,700.0	66.03	0.00	7,405.2	135.2	-1,121.8	135.2	8.00	8.00	
7,800.0	74.03	0.00	7,439.3	229.1	-1,121.8	229.1	8.00	8.00	
7,802.4	74.22	0.00	7,440.0	231.4	-1,121.8	231.4	8.00	8.00	Ft. Hayes
7,879.9	80.41	0.00	7,457.0	306.9	-1,121.8	306.9	8.00	8.00	Codell
7,900.0	82.03	0.00	7,460.1	326.8	-1,121.8	326.8	8.00	8.00	
7,999.7	90.00	0.00	7,467.0	426.2	-1,121.8	426.2	8.00	8.00	LP @ 7467' TVD; 90°
8,000.0	90.00	0.00	7,467.0	426.5	-1,121.8	426.5	0.00	0.00	
8,100.0	90.00	0.00	7,467.0	526.5	-1,121.8	526.5	0.00	0.00	
8,200.0	90.00	0.00	7,467.0	626.5	-1,121.8	626.5	0.00	0.00	
8,300.0	90.00	0.00	7,467.0	726.5	-1,121.8	726.5	0.00	0.00	
8,400.0	90.00	0.00	7,467.0	826.5	-1,121.8	826.5	0.00	0.00	
8,500.0	90.00	0.00	7,467.0	926.5	-1,121.8	926.5	0.00	0.00	
8,600.0	90.00	0.00	7,467.0	1,026.5	-1,121.8	1,026.5	0.00	0.00	
8,700.0	90.00	0.00	7,467.0	1,126.5	-1,121.8	1,126.5	0.00	0.00	
8,800.0	90.00	0.00	7,467.0	1,226.5	-1,121.8	1,226.5	0.00	0.00	

Cathedral Energy Services

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Well:	Marcus State 3A-36H	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
8,900.0	90.00	0.00	7,467.0	1,326.5	-1,121.8	1,326.5	0.00	0.00	
9,000.0	90.00	0.00	7,467.0	1,426.5	-1,121.8	1,426.5	0.00	0.00	
9,100.0	90.00	0.00	7,467.0	1,526.5	-1,121.8	1,526.5	0.00	0.00	
9,200.0	90.00	0.00	7,467.0	1,626.5	-1,121.8	1,626.5	0.00	0.00	
9,300.0	90.00	0.00	7,467.0	1,726.5	-1,121.8	1,726.5	0.00	0.00	
9,400.0	90.00	0.00	7,467.0	1,826.5	-1,121.8	1,826.5	0.00	0.00	
9,500.0	90.00	0.00	7,467.0	1,926.5	-1,121.8	1,926.5	0.00	0.00	
9,600.0	90.00	0.00	7,467.0	2,026.5	-1,121.8	2,026.5	0.00	0.00	
9,700.0	90.00	0.00	7,467.0	2,126.5	-1,121.8	2,126.5	0.00	0.00	
9,800.0	90.00	0.00	7,467.0	2,226.5	-1,121.8	2,226.5	0.00	0.00	
9,900.0	90.00	0.00	7,467.0	2,326.5	-1,121.8	2,326.5	0.00	0.00	
10,000.0	90.00	0.00	7,467.0	2,426.5	-1,121.8	2,426.5	0.00	0.00	
10,100.0	90.00	0.00	7,467.0	2,526.5	-1,121.8	2,526.5	0.00	0.00	
10,200.0	90.00	0.00	7,467.0	2,626.5	-1,121.8	2,626.5	0.00	0.00	
10,300.0	90.00	0.00	7,467.0	2,726.5	-1,121.8	2,726.5	0.00	0.00	
10,400.0	90.00	0.00	7,467.0	2,826.5	-1,121.8	2,826.5	0.00	0.00	
10,500.0	90.00	0.00	7,467.0	2,926.5	-1,121.8	2,926.5	0.00	0.00	
10,600.0	90.00	0.00	7,467.0	3,026.5	-1,121.8	3,026.5	0.00	0.00	
10,700.0	90.00	0.00	7,467.0	3,126.5	-1,121.8	3,126.5	0.00	0.00	
10,800.0	90.00	0.00	7,467.0	3,226.5	-1,121.8	3,226.5	0.00	0.00	
10,900.0	90.00	0.00	7,467.0	3,326.5	-1,121.8	3,326.5	0.00	0.00	
11,000.0	90.00	0.00	7,467.0	3,426.5	-1,121.8	3,426.5	0.00	0.00	
11,100.0	90.00	0.00	7,467.0	3,526.5	-1,121.8	3,526.5	0.00	0.00	
11,200.0	90.00	0.00	7,467.0	3,626.5	-1,121.8	3,626.5	0.00	0.00	
11,300.0	90.00	0.00	7,467.0	3,726.5	-1,121.8	3,726.5	0.00	0.00	
11,400.0	90.00	0.00	7,467.0	3,826.5	-1,121.8	3,826.5	0.00	0.00	
11,500.0	90.00	0.00	7,467.0	3,926.5	-1,121.8	3,926.5	0.00	0.00	
11,600.0	90.00	0.00	7,467.0	4,026.5	-1,121.8	4,026.5	0.00	0.00	
11,700.0	90.00	0.00	7,467.0	4,126.5	-1,121.8	4,126.5	0.00	0.00	
11,800.0	90.00	0.00	7,467.0	4,226.5	-1,121.8	4,226.5	0.00	0.00	
11,900.0	90.00	0.00	7,467.0	4,326.5	-1,121.8	4,326.5	0.00	0.00	
12,000.0	90.00	0.00	7,467.0	4,426.5	-1,121.8	4,426.5	0.00	0.00	
12,100.0	90.00	0.00	7,467.0	4,526.5	-1,121.8	4,526.5	0.00	0.00	
12,130.6	90.00	0.00	7,467.0	4,557.2	-1,121.8	4,557.2	0.00	0.00	TD at 12130.6 - Marcus State 3A-36H PBHL P2

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									
Marcus State 3A-36H P1	0.00	0.00	7,467.0	4,557.2	-1,121.8	1,280,489.90	3,214,242.30	40.100790	-104.734150
- plan hits target center									
- Point									
Marcus State 3A-36H V1	0.00	0.00	6,408.0	-290.0	-1,121.8	1,275,642.92	3,214,284.34	40.087484	-104.734149
- plan hits target center									
- Point									

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Marcus State 3A-36H
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	KBE @ 5053.0ft
Project:	DJ Wattenberg	MD Reference:	KBE @ 5053.0ft
Site:	S36 T2N-R66W (Marcus State)	North Reference:	True
Well:	Marcus State 3A-36H	Survey Calculation Method:	Minimum Curvature
Wellbore:	HZ		
Design:	Plan #2		

Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
1,005.7	1,003.0	Base of Fox Hills		0.00	
4,654.0	4,557.0	Sussex		0.00	
4,962.4	4,857.0	Sussex Marker		0.00	
5,345.4	5,230.0	Shannon		0.00	
6,776.9	6,653.0	Teepee Buttes		0.00	
7,315.1	7,164.0	Sharon Springs		0.00	
7,373.2	7,210.0	Niobrara		0.00	
7,506.8	7,304.0	B Chalk		0.00	
7,802.4	7,440.0	Ft. Hayes		0.00	
7,879.9	7,457.0	Codell		0.00	

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
200.0	200.0	0.0	0.0	KOP @ 200'
1,540.6	1,528.4	-39.1	-151.2	EOB; Inc=13.41°
5,191.2	5,079.6	-250.9	-970.6	Start Drop -1.00
6,531.9	6,408.0	-290.0	-1,121.8	EOD; Inc=0°
6,874.7	6,750.8	-290.0	-1,121.8	Start Build 8.00
7,999.7	7,467.0	426.2	-1,121.8	LP @ 7467' TVD; 90°
12,130.6	7,467.0	4,557.2	-1,121.8	TD at 12130.6

EnCana Oil & Gas (USA) Inc

DJ Wattenberg

S36 T2N-R66W (Marcus State)

Marcus State 3A-36H

HZ

Plan #2

Anticollision Report

01 March, 2013

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Marcus State 3A-36H
Project:	DJ Wattenberg	TVD Reference:	KBE @ 5053.0ft
Reference Site:	S36 T2N-R66W (Marcus State)	MD Reference:	KBE @ 5053.0ft
Site Error:	0.0ft	North Reference:	True
Reference Well:	Marcus State 3A-36H	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:	MD Interval 100.0ft	Error Model:	Systematic Ellipse
Depth Range:	Unlimited	Scan Method:	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 500.0ft	Error Surface:	Elliptical Conic
Warning Levels Evaluated at:	2.00 Sigma		

Survey Tool Program		Date	3/1/2013		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
0.0	12,130.6	Plan #2 (HZ)	MWD	Geolink MWD	

Summary						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
S36 T2N-R66W (Marcus State)						
Amato 11-1 (Existing) - VT - Existing						Out of range
Amato USX WW 1-3 (Existing) - VT - Existing						Out of range
Badding 16-35 (Existing) - VT - Existing						Out of range
Badding 9-35 (Existing) - VT - Existing						Out of range
Badding State 1 (Existing) - VT - Existing						Out of range
Badding State 31-36 (Existing) - VT - Existing						Out of range
Badding State 42-36 (Existing) - VT - Existing						Out of range
Badding USX W 35-1 (Existing) - VT - Existing						Out of range
Badding USX W 35-8 (Existing) - VT - Existing						Out of range
Ballantyne 31-1 (Existing) - VT - Existing						Out of range
Ballantyne WW 01-18D (Existing) - DD - Existing						Out of range
Highway 160 1-2 (Existing) - VT - Existing						Out of range
HSR Amato 4-1 (Existing) - VT - Existing						Out of range
Marcus State 1 (Existing) - VT - Existing						Out of range
Marcus State 24-36 (Existing) - VT - Existing						Out of range
Marcus State 3B-36H - HZ - Plan #2	200.0	199.0	8.4	7.7	12.893	CC, ES
Marcus State 3B-36H - HZ - Plan #2	12,130.6	11,906.4	474.1	316.7	3.013	SF
Marcus State 3C-36H - HZ - Plan #2	200.0	199.0	19.6	18.9	30.085	CC, ES
Marcus State 3C-36H - HZ - Plan #2	500.0	498.9	27.3	25.6	16.058	SF
Marcus State 3D-36H - HZ - Plan #2	200.0	199.0	30.8	30.1	47.276	CC, ES
Marcus State 3D-36H - HZ - Plan #2	600.0	598.7	44.4	42.4	21.717	SF
Marcus State 3E-36H - HZ - Plan #2	200.0	199.0	39.2	38.5	60.169	CC, ES
Marcus State 3E-36H - HZ - Plan #2	700.0	698.4	60.5	58.1	25.288	SF
Marcus State 3F-36H - HZ - Plan #2	200.0	199.0	50.4	49.7	77.361	CC, ES
Marcus State 3F-36H - HZ - Plan #2	600.0	596.5	67.2	65.2	32.905	SF
Marcus State W 36-2J (Existing) - VT - Existing						Out of range
Marcus State W 36-3J (Existing) - VT - Existing						Out of range
Marcus State W 36-4J (Existing) - VT - Existing	12,060.7	7,467.0	216.0	121.5	2.285	CC, ES, SF
Marcus State W 36-6J (Existing) - VT - Existing						Out of range
Mumby State 1 (Existing) - VT - Existing						Out of range
Mumby State 33-36 (Existing) - VT - Existing						Out of range

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 Marcus State 3A-36H
Project:	DJ Wattenberg	TVD Reference:	KBE @ 5053.0ft
Reference Site:	S36 T2N-R66W (Marcus State)	MD Reference:	KBE @ 5053.0ft
Site Error:	0.0ft	North Reference:	True
Reference Well:	Marcus State 3A-36H	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 S36 T2N-R66W (Marcus State) - Marcus State 3B-36H - HZ - Plan #2													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)				Measured Depth (ft)	Vertical Depth (ft)	Offset (ft)
0.0	0.0	0.0	0.0	0.0	0.0	90.00	0.0	8.4	8.5					
100.0	100.0	99.0	99.0	0.2	0.2	90.00	0.0	8.4	8.4	8.1	0.30	27.778		
200.0	200.0	199.0	199.0	0.3	0.3	90.00	0.0	8.4	8.4	7.7	0.65	12.893	CC, ES	
300.0	300.0	299.0	299.0	0.5	0.5	-166.86	0.0	8.4	9.2	8.2	1.00	9.241		
400.0	400.0	399.1	399.1	0.7	0.7	-168.30	-0.3	7.6	11.0	9.6	1.35	8.151		
500.0	499.9	499.3	499.3	0.9	0.9	-168.21	-1.4	5.2	12.8	11.1	1.70	7.550		
600.0	599.7	599.5	599.4	1.1	1.0	-167.16	-3.1	1.2	14.7	12.7	2.05	7.183		
700.0	699.4	699.8	699.4	1.3	1.2	-165.49	-5.5	-4.4	16.7	14.3	2.41	6.946		
800.0	798.9	800.0	799.4	1.5	1.4	-163.41	-8.6	-11.7	18.8	16.0	2.77	6.789		
900.0	898.3	900.3	899.2	1.8	1.7	-161.09	-12.3	-20.5	21.0	17.9	3.14	6.680		
1,000.0	997.4	1,000.6	998.9	2.0	1.9	-158.62	-16.8	-31.0	23.3	19.8	3.54	6.597		
1,100.0	1,096.3	1,100.9	1,098.3	2.3	2.2	-156.08	-21.9	-43.0	25.8	21.9	3.96	6.528		
1,200.0	1,194.9	1,200.8	1,197.3	2.7	2.5	-154.70	-27.3	-55.7	29.3	24.9	4.38	6.691		
1,300.0	1,293.3	1,300.7	1,296.2	3.0	2.7	-154.89	-32.7	-68.3	34.4	29.6	4.80	7.170		
1,400.0	1,391.2	1,400.5	1,395.0	3.4	3.0	-156.04	-38.1	-81.0	41.1	35.9	5.20	7.905		
1,500.0	1,488.9	1,500.1	1,493.7	3.8	3.3	-157.66	-43.5	-93.6	49.4	43.8	5.58	8.852		
1,600.0	1,586.2	1,599.7	1,592.3	4.2	3.6	-159.33	-48.9	-106.2	59.1	53.1	5.95	9.924		
1,700.0	1,683.5	1,699.2	1,690.8	4.7	3.9	-160.58	-54.3	-118.8	68.9	62.6	6.33	10.887		
1,800.0	1,780.7	1,798.7	1,789.4	5.1	4.2	-161.51	-59.6	-131.4	78.8	72.1	6.71	11.742		
1,900.0	1,878.0	1,898.2	1,888.0	5.5	4.5	-162.24	-65.0	-144.0	88.6	81.5	7.09	12.504		
2,000.0	1,975.3	1,997.7	1,986.5	6.0	4.8	-162.82	-70.4	-156.6	98.5	91.0	7.47	13.187		
2,100.0	2,072.6	2,097.2	2,085.1	6.4	5.1	-163.30	-75.8	-169.2	108.4	100.6	7.85	13.804		
2,200.0	2,169.8	2,196.7	2,183.6	6.9	5.3	-163.69	-81.2	-181.8	118.3	110.1	8.24	14.362		
2,300.0	2,267.1	2,296.2	2,282.2	7.3	5.6	-164.03	-86.5	-194.5	128.2	119.6	8.62	14.870		
2,400.0	2,364.4	2,395.7	2,380.7	7.7	5.9	-164.31	-91.9	-207.1	138.1	129.1	9.01	15.334		
2,500.0	2,461.7	2,495.2	2,479.3	8.2	6.2	-164.56	-97.3	-219.7	148.0	138.7	9.39	15.760		
2,600.0	2,558.9	2,594.7	2,577.9	8.6	6.5	-164.78	-102.7	-232.3	158.0	148.2	9.78	16.152		
2,700.0	2,656.2	2,694.2	2,676.4	9.1	6.8	-164.97	-108.0	-244.9	167.9	157.7	10.17	16.514		
2,800.0	2,753.5	2,793.7	2,775.0	9.5	7.1	-165.14	-113.4	-257.5	177.8	167.2	10.55	16.850		
2,900.0	2,850.8	2,893.2	2,873.5	10.0	7.4	-165.29	-118.8	-270.1	187.7	176.8	10.94	17.161		
3,000.0	2,948.0	2,992.7	2,972.1	10.4	7.7	-165.43	-124.2	-282.7	197.6	186.3	11.32	17.452		
3,100.0	3,045.3	3,092.2	3,070.6	10.9	8.0	-165.55	-129.6	-295.3	207.6	195.8	11.71	17.722		
3,200.0	3,142.6	3,191.7	3,169.2	11.3	8.3	-165.67	-134.9	-307.9	217.5	205.4	12.10	17.976		
3,300.0	3,239.9	3,291.2	3,267.8	11.7	8.6	-165.77	-140.3	-320.5	227.4	214.9	12.49	18.214		
3,400.0	3,337.1	3,390.8	3,366.3	12.2	8.9	-165.86	-145.7	-333.1	237.3	224.5	12.87	18.437		
3,500.0	3,434.4	3,490.3	3,464.9	12.6	9.2	-165.95	-151.1	-345.8	247.3	234.0	13.26	18.647		
3,600.0	3,531.7	3,589.8	3,563.4	13.1	9.5	-166.03	-156.5	-358.4	257.2	243.5	13.65	18.845		
3,700.0	3,629.0	3,689.3	3,662.0	13.5	9.8	-166.10	-161.8	-371.0	267.1	253.1	14.03	19.032		
3,800.0	3,726.2	3,788.8	3,760.5	14.0	10.1	-166.17	-167.2	-383.6	277.0	262.6	14.42	19.209		
3,900.0	3,823.5	3,888.3	3,859.1	14.4	10.4	-166.24	-172.6	-396.2	287.0	272.2	14.81	19.377		
4,000.0	3,920.8	3,987.8	3,957.7	14.9	10.7	-166.30	-178.0	-408.8	296.9	281.7	15.20	19.536		
4,100.0	4,018.1	4,087.3	4,056.2	15.3	11.0	-166.35	-183.3	-421.4	306.8	291.2	15.58	19.687		
4,200.0	4,115.3	4,186.8	4,154.8	15.8	11.3	-166.40	-188.7	-434.0	316.7	300.8	15.97	19.831		
4,300.0	4,212.6	4,286.3	4,253.3	16.2	11.5	-166.45	-194.1	-446.6	326.7	310.3	16.36	19.968		
4,400.0	4,309.9	4,385.8	4,351.9	16.7	11.8	-166.50	-199.5	-459.2	336.6	319.9	16.75	20.099		
4,500.0	4,407.2	4,485.3	4,450.4	17.1	12.1	-166.54	-204.9	-471.8	346.5	329.4	17.13	20.223		
4,600.0	4,504.4	4,584.8	4,549.0	17.6	12.4	-166.58	-210.2	-484.4	356.5	338.9	17.52	20.343		
4,700.0	4,601.7	4,684.3	4,647.6	18.0	12.7	-166.62	-215.6	-497.1	366.4	348.5	17.91	20.457		
4,800.0	4,699.0	4,783.8	4,746.1	18.5	13.0	-166.66	-221.0	-509.7	376.3	358.0	18.30	20.566		
4,900.0	4,796.3	4,883.3	4,844.7	18.9	13.3	-166.69	-226.4	-522.3	386.2	367.6	18.69	20.670		
5,000.0	4,893.5	4,982.8	4,943.2	19.4	13.6	-166.73	-231.8	-534.9	396.2	377.1	19.07	20.771		

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 Marcus State 3A-36H
Project:	DJ Wattenberg	TVD Reference:	KBE @ 5053.0ft
Reference Site:	S36 T2N-R66W (Marcus State)	MD Reference:	KBE @ 5053.0ft
Site Error:	0.0ft	North Reference:	True
Reference Well:	Marcus State 3A-36H	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 S36 T2N-R66W (Marcus State) - Marcus State 3B-36H - 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 (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor		
5,100.0	4,990.8	5,082.3	5,041.8	19.8	13.9	-166.76	-237.1	-547.5	406.1	386.6	19.46	20.867		
5,200.0	5,088.1	5,181.9	5,140.3	20.3	14.2	-166.79	-242.5	-560.1	416.0	396.2	19.85	20.958		
5,300.0	5,185.6	5,281.5	5,239.0	20.7	14.5	-166.81	-247.9	-572.7	425.0	404.7	20.25	20.983		
5,400.0	5,283.5	5,381.2	5,337.8	21.1	14.8	-166.77	-253.3	-585.3	432.2	411.5	20.66	20.919		
5,500.0	5,381.7	5,481.0	5,436.7	21.4	15.1	-166.67	-258.7	-598.0	437.7	416.7	21.08	20.771		
5,600.0	5,480.2	5,580.9	5,535.6	21.8	15.4	-166.53	-264.1	-610.7	441.6	420.1	21.50	20.544		
5,700.0	5,579.0	5,679.8	5,633.5	22.1	15.7	-166.33	-269.4	-623.2	443.8	421.9	21.92	20.246		
5,800.0	5,678.1	5,773.0	5,726.0	22.4	16.0	-166.14	-274.1	-634.1	445.3	422.9	22.32	19.950		
5,900.0	5,777.4	5,866.3	5,818.7	22.6	16.2	-165.98	-278.1	-643.6	446.6	423.9	22.70	19.669		
6,000.0	5,876.9	5,959.6	5,911.6	22.8	16.4	-165.84	-281.6	-651.7	447.7	424.6	23.07	19.403		
6,100.0	5,976.5	6,052.9	6,004.6	23.0	16.6	-165.73	-284.4	-658.4	448.6	425.2	23.42	19.152		
6,200.0	6,076.3	6,146.1	6,097.6	23.2	16.8	-165.64	-286.7	-663.7	449.3	425.6	23.76	18.913		
6,300.0	6,176.2	6,239.4	6,190.8	23.3	16.9	-165.57	-288.4	-667.7	449.9	425.8	24.08	18.685		
6,400.0	6,276.1	6,332.6	6,284.0	23.5	17.0	-165.53	-289.5	-670.2	450.2	425.8	24.38	18.469		
6,500.0	6,376.1	6,425.9	6,377.3	23.5	17.2	-165.51	-290.0	-671.3	450.4	425.7	24.66	18.261		
6,600.0	6,476.1	6,523.7	6,475.1	23.6	17.3	90.00	-290.0	-671.4	450.4	425.4	24.97	18.038		
6,700.0	6,576.1	6,623.7	6,575.1	23.7	17.4	90.00	-290.0	-671.4	450.4	425.1	25.29	17.810		
6,741.7	6,617.8	6,665.5	6,616.8	23.7	17.4	89.98	-289.8	-671.4	450.4	425.0	25.41	17.724		
6,800.0	6,676.1	6,723.5	6,674.7	23.8	17.5	89.53	-286.3	-671.4	450.4	425.0	25.46	17.691		
6,900.0	6,776.1	6,820.6	6,770.4	23.9	17.5	87.48	-269.9	-671.4	450.8	425.6	25.23	17.866		
7,000.0	6,875.5	6,914.7	6,860.1	23.9	17.5	85.03	-241.8	-671.4	452.2	427.3	24.91	18.152		
7,100.0	6,972.4	7,006.5	6,943.4	23.9	17.4	82.70	-203.3	-671.4	454.2	429.5	24.70	18.392		
7,200.0	7,065.0	7,096.5	7,019.6	23.9	17.4	80.53	-155.5	-671.4	456.8	432.1	24.67	18.519		
7,300.0	7,151.6	7,184.8	7,088.0	23.9	17.4	78.56	-99.7	-671.4	459.7	434.9	24.85	18.503		
7,400.0	7,230.3	7,271.7	7,148.1	23.8	17.4	76.82	-37.0	-671.4	462.8	437.6	25.25	18.332		
7,500.0	7,299.6	7,357.5	7,199.5	23.9	17.5	75.31	31.6	-671.4	465.8	440.1	25.74	18.094		
7,600.0	7,358.3	7,442.2	7,241.9	24.0	17.8	74.06	104.9	-671.4	468.6	442.2	26.40	17.747		
7,700.0	7,405.2	7,526.2	7,275.1	24.2	18.1	73.08	182.0	-671.4	470.9	443.7	27.16	17.335		
7,800.0	7,439.3	7,609.7	7,298.9	24.5	18.5	72.37	261.9	-671.4	472.6	444.6	28.01	16.873		
7,900.0	7,460.1	7,692.8	7,313.2	25.0	19.0	71.95	343.7	-671.4	473.7	444.8	28.96	16.359		
8,000.0	7,467.0	7,775.7	7,318.0	25.5	19.7	71.81	426.5	-671.4	474.1	444.1	30.01	15.796		
8,100.0	7,467.0	7,875.7	7,318.0	26.2	20.6	71.81	526.5	-671.4	474.1	442.0	32.11	14.766		
8,200.0	7,467.0	7,975.7	7,318.0	26.9	21.5	71.81	626.5	-671.4	474.1	439.7	34.39	13.787		
8,300.0	7,467.0	8,075.7	7,318.0	27.8	22.6	71.81	726.5	-671.4	474.1	437.3	36.83	12.874		
8,400.0	7,467.0	8,175.7	7,318.0	28.7	23.8	71.81	826.5	-671.4	474.1	434.7	39.40	12.033		
8,500.0	7,467.0	8,275.7	7,318.0	29.7	25.0	71.81	926.5	-671.4	474.1	432.0	42.08	11.267		
8,600.0	7,467.0	8,375.7	7,318.0	30.8	26.3	71.81	1,026.5	-671.4	474.1	429.2	44.84	10.572		
8,700.0	7,467.0	8,475.7	7,318.0	32.0	27.6	71.81	1,126.5	-671.4	474.1	426.4	47.68	9.942		
8,800.0	7,467.0	8,575.7	7,318.0	33.2	29.0	71.81	1,226.5	-671.4	474.1	423.5	50.59	9.372		
8,900.0	7,467.0	8,675.7	7,318.0	34.4	30.4	71.81	1,326.5	-671.4	474.1	420.5	53.54	8.855		
9,000.0	7,467.0	8,775.7	7,318.0	35.7	31.9	71.81	1,426.5	-671.4	474.1	417.6	56.53	8.386		
9,100.0	7,467.0	8,875.7	7,318.0	37.0	33.4	71.81	1,526.5	-671.4	474.1	414.5	59.56	7.960		
9,200.0	7,467.0	8,975.7	7,318.0	38.4	34.9	71.81	1,626.5	-671.4	474.1	411.5	62.62	7.570		
9,300.0	7,467.0	9,075.7	7,318.0	39.8	36.4	71.81	1,726.5	-671.4	474.1	408.4	65.71	7.215		
9,400.0	7,467.0	9,175.7	7,318.0	41.2	38.0	71.81	1,826.5	-671.4	474.1	405.3	68.82	6.889		
9,500.0	7,467.0	9,275.7	7,318.0	42.6	39.5	71.81	1,926.5	-671.4	474.1	402.1	71.95	6.589		
9,600.0	7,467.0	9,375.7	7,318.0	44.1	41.1	71.81	2,026.5	-671.4	474.1	399.0	75.10	6.313		
9,700.0	7,467.0	9,475.7	7,318.0	45.6	42.7	71.81	2,126.5	-671.4	474.1	395.8	78.27	6.057		
9,800.0	7,467.0	9,575.7	7,318.0	47.1	44.3	71.81	2,226.5	-671.4	474.1	392.6	81.44	5.821		
9,900.0	7,467.0	9,675.7	7,318.0	48.6	45.9	71.81	2,326.5	-671.4	474.1	389.4	84.63	5.602		
10,000.0	7,467.0	9,775.7	7,318.0	50.2	47.6	71.81	2,426.5	-671.4	474.1	386.2	87.83	5.397		
10,100.0	7,467.0	9,875.7	7,318.0	51.7	49.2	71.81	2,526.5	-671.4	474.1	383.0	91.04	5.207		

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 Marcus State 3A-36H
Project:	DJ Wattenberg	TVD Reference:	KBE @ 5053.0ft
Reference Site:	S36 T2N-R66W (Marcus State)	MD Reference:	KBE @ 5053.0ft
Site Error:	0.0ft	North Reference:	True
Reference Well:	Marcus State 3A-36H	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 S36 T2N-R66W (Marcus State) - Marcus State 3B-36H - 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 (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		
10,200.0	7,467.0	9,975.7	7,318.0	53.3	50.8	71.81	2,626.5	-671.4	474.1	379.8	94.26	5.029	
10,300.0	7,467.0	10,075.7	7,318.0	54.9	52.5	71.81	2,726.5	-671.4	474.1	376.6	97.49	4.863	
10,400.0	7,467.0	10,175.7	7,318.0	56.5	54.1	71.81	2,826.5	-671.4	474.1	373.4	100.72	4.707	
10,500.0	7,467.0	10,275.7	7,318.0	58.1	55.8	71.81	2,926.5	-671.4	474.1	370.1	103.96	4.560	
10,600.0	7,467.0	10,375.7	7,318.0	59.7	57.5	71.81	3,026.5	-671.4	474.1	366.9	107.21	4.422	
10,700.0	7,467.0	10,475.7	7,318.0	61.3	59.2	71.81	3,126.5	-671.4	474.1	363.6	110.46	4.292	
10,800.0	7,467.0	10,575.7	7,318.0	62.9	60.8	71.81	3,226.5	-671.4	474.1	360.4	113.72	4.169	
10,900.0	7,467.0	10,675.7	7,318.0	64.5	62.5	71.81	3,326.5	-671.4	474.1	357.1	116.98	4.053	
11,000.0	7,467.0	10,775.7	7,318.0	66.2	64.2	71.81	3,426.5	-671.4	474.1	353.8	120.24	3.943	
11,100.0	7,467.0	10,875.7	7,318.0	67.8	65.9	71.81	3,526.5	-671.4	474.1	350.6	123.51	3.838	
11,200.0	7,467.0	10,975.7	7,318.0	69.5	67.6	71.81	3,626.5	-671.4	474.1	347.3	126.78	3.739	
11,300.0	7,467.0	11,075.7	7,318.0	71.1	69.3	71.81	3,726.5	-671.4	474.1	344.0	130.06	3.645	
11,400.0	7,467.0	11,175.7	7,318.0	72.8	71.0	71.81	3,826.5	-671.4	474.1	340.7	133.34	3.556	
11,500.0	7,467.0	11,275.7	7,318.0	74.4	72.7	71.81	3,926.5	-671.4	474.1	337.5	136.62	3.470	
11,600.0	7,467.0	11,375.7	7,318.0	76.1	74.4	71.81	4,026.5	-671.4	474.1	334.2	139.90	3.389	
11,700.0	7,467.0	11,475.7	7,318.0	77.8	76.1	71.81	4,126.5	-671.4	474.1	330.9	143.19	3.311	
11,800.0	7,467.0	11,575.7	7,318.0	79.4	77.8	71.81	4,226.5	-671.4	474.1	327.6	146.47	3.237	
11,900.0	7,467.0	11,675.7	7,318.0	81.1	79.5	71.81	4,326.5	-671.4	474.1	324.3	149.76	3.165	
12,000.0	7,467.0	11,775.7	7,318.0	82.8	81.2	71.81	4,426.5	-671.4	474.1	321.0	153.06	3.097	
12,100.0	7,467.0	11,875.7	7,318.0	84.5	82.9	71.81	4,526.5	-671.4	474.1	317.7	156.35	3.032	
12,121.6	7,467.0	11,897.4	7,318.0	84.8	83.3	71.81	4,548.2	-671.4	474.1	317.0	157.06	3.018	
12,130.6	7,467.0	11,906.4	7,318.0	85.0	83.5	71.81	4,557.1	-671.4	474.1	316.7	157.36	3.013 SF	

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Marcus State 3A-36H
Project:	DJ Wattenberg	TVD Reference:	KBE @ 5053.0ft
Reference Site:	S36 T2N-R66W (Marcus State)	MD Reference:	KBE @ 5053.0ft
Site Error:	0.0ft	North Reference:	True
Reference Well:	Marcus State 3A-36H	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 S36 T2N-R66W (Marcus State) - Marcus State 3C-36H - 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 (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor			
0.0	0.0	0.0	0.0	0.0	0.0	90.00	0.0	19.6	19.6						
100.0	100.0	99.0	99.0	0.2	0.2	90.00	0.0	19.6	19.6	19.3	0.30	64.816			
200.0	200.0	199.0	199.0	0.3	0.3	90.00	0.0	19.6	19.6	18.9	0.65	30.085 CC, ES			
300.0	300.0	299.0	299.0	0.5	0.5	-166.12	0.0	19.6	20.4	19.4	1.00	20.431			
400.0	400.0	399.0	399.0	0.7	0.7	-167.68	0.0	19.6	23.0	21.6	1.35	17.037			
500.0	499.9	498.9	498.9	0.9	0.8	-169.63	0.0	19.6	27.3	25.6	1.70	16.058 SF			
600.0	599.7	598.7	598.7	1.1	1.0	-171.51	0.0	19.6	33.3	31.2	2.05	16.272			
700.0	699.4	698.4	698.4	1.3	1.2	-173.12	0.0	19.6	41.1	38.7	2.39	17.163			
800.0	798.9	797.9	797.9	1.5	1.4	-174.41	0.0	19.6	50.6	47.8	2.74	18.475			
900.0	898.3	897.3	897.3	1.8	1.5	-175.42	0.0	19.6	61.9	58.8	3.08	20.068			
1,000.0	997.4	996.4	996.4	2.0	1.7	-176.21	0.0	19.6	74.9	71.5	3.43	21.857			
1,100.0	1,096.3	1,096.5	1,096.5	2.3	1.9	-176.50	-0.6	19.1	89.0	85.2	3.77	23.610			
1,200.0	1,194.9	1,196.7	1,196.7	2.7	2.1	-176.15	-2.6	17.4	103.5	99.4	4.12	25.159			
1,300.0	1,293.3	1,297.1	1,296.9	3.0	2.2	-175.39	-5.9	14.7	118.5	114.0	4.46	26.544			
1,400.0	1,391.2	1,397.5	1,397.2	3.4	2.4	-174.37	-10.6	10.8	133.8	129.0	4.81	27.790			
1,500.0	1,488.9	1,496.8	1,496.2	3.8	2.6	-173.28	-16.3	6.1	149.9	144.7	5.17	28.987			
1,600.0	1,586.2	1,595.3	1,594.4	4.2	2.8	-172.45	-22.0	1.3	167.3	161.8	5.53	30.233			
1,700.0	1,683.5	1,693.7	1,692.5	4.7	3.0	-171.79	-27.7	-3.4	184.9	179.0	5.91	31.311			
1,800.0	1,780.7	1,792.1	1,790.7	5.1	3.2	-171.24	-33.5	-8.2	202.6	196.3	6.28	32.250			
1,900.0	1,878.0	1,890.5	1,888.8	5.5	3.4	-170.79	-39.2	-12.9	220.2	213.5	6.66	33.071			
2,000.0	1,975.3	1,988.9	1,986.9	6.0	3.6	-170.40	-44.9	-17.7	237.9	230.8	7.04	33.795			
2,100.0	2,072.6	2,087.4	2,085.1	6.4	3.8	-170.06	-50.6	-22.4	255.5	248.1	7.42	34.437			
2,200.0	2,169.8	2,185.8	2,183.2	6.9	4.0	-169.77	-56.4	-27.2	273.2	265.4	7.80	35.009			
2,300.0	2,267.1	2,284.2	2,281.4	7.3	4.2	-169.51	-62.1	-31.9	290.9	282.7	8.19	35.522			
2,400.0	2,364.4	2,382.6	2,379.5	7.7	4.4	-169.28	-67.8	-36.7	308.6	300.0	8.57	35.984			
2,500.0	2,461.7	2,481.0	2,477.6	8.2	4.6	-169.08	-73.5	-41.4	326.2	317.3	8.96	36.402			
2,600.0	2,558.9	2,579.4	2,575.8	8.6	4.9	-168.90	-79.2	-46.2	343.9	334.6	9.35	36.782			
2,700.0	2,656.2	2,677.9	2,673.9	9.1	5.1	-168.74	-85.0	-50.9	361.6	351.9	9.74	37.128			
2,800.0	2,753.5	2,776.3	2,772.0	9.5	5.3	-168.59	-90.7	-55.7	379.3	369.2	10.13	37.445			
2,900.0	2,850.8	2,874.7	2,870.2	10.0	5.5	-168.45	-96.4	-60.4	397.0	386.5	10.52	37.736			
3,000.0	2,948.0	2,973.1	2,968.3	10.4	5.7	-168.33	-102.1	-65.1	414.7	403.8	10.91	38.004			
3,100.0	3,045.3	3,071.5	3,066.4	10.9	5.9	-168.21	-107.9	-69.9	432.4	421.1	11.30	38.252			
3,200.0	3,142.6	3,170.0	3,164.6	11.3	6.1	-168.11	-113.6	-74.6	450.1	438.4	11.70	38.482			
3,300.0	3,239.9	3,268.4	3,262.7	11.7	6.3	-168.01	-119.3	-79.4	467.8	455.7	12.09	38.695			
3,400.0	3,337.1	3,366.8	3,360.8	12.2	6.5	-167.92	-125.0	-84.1	485.5	473.1	12.48	38.893			

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Marcus State 3A-36H
Project:	DJ Wattenberg	TVD Reference:	KBE @ 5053.0ft
Reference Site:	S36 T2N-R66W (Marcus State)	MD Reference:	KBE @ 5053.0ft
Site Error:	0.0ft	North Reference:	True
Reference Well:	Marcus State 3A-36H	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 S36 T2N-R66W (Marcus State) - Marcus State 3D-36H - 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			
0.0	0.0	0.0	0.0	0.0	0.0	90.00	0.0	30.8	30.8					
100.0	100.0	99.0	99.0	0.2	0.2	90.00	0.0	30.8	30.8	30.5	0.30	101.854		
200.0	200.0	199.0	199.0	0.3	0.3	90.00	0.0	30.8	30.8	30.1	0.65	47.276 CC, ES		
300.0	300.0	299.0	299.0	0.5	0.5	-165.90	0.0	30.8	31.6	30.6	1.00	31.622		
400.0	400.0	399.0	399.0	0.7	0.7	-166.96	0.0	30.8	34.2	32.8	1.35	25.329		
500.0	499.9	498.9	498.9	0.9	0.8	-168.42	0.0	30.8	38.4	36.7	1.70	22.637		
600.0	599.7	598.7	598.7	1.1	1.0	-169.99	0.0	30.8	44.4	42.4	2.05	21.717 SF		
700.0	699.4	698.4	698.4	1.3	1.2	-171.48	0.0	30.8	52.2	49.8	2.39	21.802		
800.0	798.9	797.9	797.9	1.5	1.4	-172.79	0.0	30.8	61.7	58.9	2.74	22.513		
900.0	898.3	897.3	897.3	1.8	1.5	-173.89	0.0	30.8	72.9	69.8	3.08	23.642		
1,000.0	997.4	995.8	995.8	2.0	1.7	-174.31	-0.7	31.2	86.2	82.8	3.43	25.167		
1,100.0	1,096.3	1,093.8	1,093.8	2.3	1.9	-173.84	-2.7	32.6	102.0	98.3	3.77	27.059		
1,200.0	1,194.9	1,191.3	1,191.2	2.7	2.1	-172.86	-6.1	35.0	120.3	116.2	4.12	29.214		
1,300.0	1,293.3	1,288.0	1,287.8	3.0	2.2	-171.62	-10.8	38.2	141.0	136.6	4.47	31.553		
1,400.0	1,391.2	1,384.6	1,384.1	3.4	2.4	-170.32	-16.8	42.3	164.2	159.4	4.83	34.007		
1,500.0	1,488.9	1,481.4	1,480.6	3.8	2.6	-169.35	-22.9	46.4	189.3	184.1	5.19	36.441		
1,600.0	1,586.2	1,577.8	1,576.7	4.2	2.8	-168.70	-29.0	50.6	215.7	210.1	5.57	38.748		
1,700.0	1,683.5	1,674.2	1,672.8	4.7	3.0	-168.22	-35.1	54.8	242.3	236.4	5.95	40.742		
1,800.0	1,780.7	1,770.6	1,768.9	5.1	3.2	-167.83	-41.2	59.0	268.9	262.6	6.33	42.480		
1,900.0	1,878.0	1,867.0	1,865.0	5.5	3.4	-167.51	-47.3	63.2	295.5	288.8	6.72	44.007		
2,000.0	1,975.3	1,963.3	1,961.1	6.0	3.6	-167.24	-53.4	67.3	322.1	315.0	7.10	45.357		
2,100.0	2,072.6	2,059.7	2,057.2	6.4	3.8	-167.02	-59.5	71.5	348.8	341.3	7.49	46.559		
2,200.0	2,169.8	2,156.1	2,153.3	6.9	4.0	-166.83	-65.6	75.7	375.4	367.5	7.88	47.635		
2,300.0	2,267.1	2,252.5	2,249.4	7.3	4.2	-166.66	-71.7	79.9	402.0	393.7	8.27	48.603		
2,400.0	2,364.4	2,348.9	2,345.5	7.7	4.4	-166.51	-77.8	84.1	428.7	420.0	8.66	49.479		
2,500.0	2,461.7	2,445.3	2,441.6	8.2	4.6	-166.38	-83.9	88.2	455.3	446.2	9.06	50.274		
2,600.0	2,558.9	2,541.6	2,537.7	8.6	4.8	-166.27	-90.0	92.4	481.9	472.5	9.45	51.000		

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Marcus State 3A-36H
Project:	DJ Wattenberg	TVD Reference:	KBE @ 5053.0ft
Reference Site:	S36 T2N-R66W (Marcus State)	MD Reference:	KBE @ 5053.0ft
Site Error:	0.0ft	North Reference:	True
Reference Well:	Marcus State 3A-36H	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 S36 T2N-R66W (Marcus State) - Marcus State 3E-36H - 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	90.00	0.0	39.2	39.2					
100.0	100.0	99.0	99.0	0.2	0.2	90.00	0.0	39.2	39.2	38.9	0.30	129.632		
200.0	200.0	199.0	199.0	0.3	0.3	90.00	0.0	39.2	39.2	38.5	0.65	60.169 CC, ES		
300.0	300.0	299.0	299.0	0.5	0.5	-165.82	0.0	39.2	40.0	39.0	1.00	40.015		
400.0	400.0	399.0	399.0	0.7	0.7	-166.67	0.0	39.2	42.6	41.2	1.35	31.549		
500.0	499.9	498.9	498.9	0.9	0.8	-167.90	0.0	39.2	46.8	45.1	1.70	27.575		
600.0	599.7	598.7	598.7	1.1	1.0	-169.27	0.0	39.2	52.8	50.8	2.05	25.806		
700.0	699.4	698.4	698.4	1.3	1.2	-170.64	0.0	39.2	60.5	58.1	2.39	25.288 SF		
800.0	798.9	796.9	796.9	1.5	1.4	-171.53	-0.4	39.9	70.7	68.0	2.74	25.818		
900.0	898.3	894.9	894.9	1.8	1.5	-171.72	-1.5	42.1	84.0	81.0	3.08	27.260		
1,000.0	997.4	992.2	992.1	2.0	1.7	-171.47	-3.3	45.9	100.5	97.1	3.43	29.327		
1,100.0	1,096.3	1,088.7	1,088.4	2.3	1.9	-170.98	-5.8	51.0	120.1	116.3	3.77	31.835		
1,200.0	1,194.9	1,184.2	1,183.6	2.7	2.1	-170.38	-9.0	57.5	142.7	138.6	4.12	34.662		
1,300.0	1,293.3	1,278.6	1,277.7	3.0	2.3	-169.74	-12.9	65.4	168.4	164.0	4.47	37.720		
1,400.0	1,391.2	1,371.8	1,370.3	3.4	2.5	-169.12	-17.4	74.5	197.2	192.4	4.82	40.945		
1,500.0	1,488.9	1,464.0	1,461.7	3.8	2.7	-168.52	-22.5	84.8	228.9	223.7	5.17	44.291		
1,600.0	1,586.2	1,558.2	1,555.1	4.2	3.0	-168.07	-28.0	95.9	262.5	257.0	5.53	47.438		
1,700.0	1,683.5	1,652.3	1,648.4	4.7	3.2	-167.76	-33.4	107.0	296.2	290.3	5.91	50.164		
1,800.0	1,780.7	1,746.4	1,741.7	5.1	3.4	-167.51	-38.9	118.0	330.0	323.7	6.28	52.553		
1,900.0	1,878.0	1,840.6	1,835.0	5.5	3.7	-167.30	-44.4	129.1	363.7	357.1	6.65	54.661		
2,000.0	1,975.3	1,934.7	1,928.4	6.0	4.0	-167.13	-49.8	140.2	397.5	390.4	7.03	56.533		
2,100.0	2,072.6	2,028.8	2,021.7	6.4	4.2	-166.99	-55.3	151.3	431.2	423.8	7.41	58.207		
2,200.0	2,169.8	2,122.9	2,115.0	6.9	4.5	-166.87	-60.7	162.4	465.0	457.2	7.79	59.711		
2,300.0	2,267.1	2,217.1	2,208.3	7.3	4.7	-166.76	-66.2	173.5	498.7	490.6	8.17	61.070		

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Marcus State 3A-36H
Project:	DJ Wattenberg	TVD Reference:	KBE @ 5053.0ft
Reference Site:	S36 T2N-R66W (Marcus State)	MD Reference:	KBE @ 5053.0ft
Site Error:	0.0ft	North Reference:	True
Reference Well:	Marcus State 3A-36H	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 S36 T2N-R66W (Marcus State) - Marcus State 3F-36H - 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 (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor		
0.0	0.0	0.0	0.0	0.0	0.0	90.00	0.0	50.4	50.4					
100.0	100.0	99.0	99.0	0.2	0.2	90.00	0.0	50.4	50.4	50.1	0.30	166.670		
200.0	200.0	199.0	199.0	0.3	0.3	90.00	0.0	50.4	50.4	49.7	0.65	77.361 CC, ES		
300.0	300.0	299.0	299.0	0.5	0.5	-165.75	0.0	50.4	51.2	50.2	1.00	51.206		
400.0	400.0	399.0	399.0	0.7	0.7	-166.43	0.0	50.4	53.7	52.4	1.35	39.843		
500.0	499.9	497.9	497.9	0.9	0.8	-167.18	-0.2	51.2	58.8	57.1	1.70	34.670		
600.0	599.7	596.5	596.5	1.1	1.0	-167.69	-0.9	53.6	67.2	65.2	2.04	32.905 SF		
700.0	699.4	694.6	694.5	1.3	1.2	-167.97	-1.9	57.7	79.0	76.6	2.39	33.053		
800.0	798.9	792.1	791.8	1.5	1.4	-168.07	-3.4	63.3	94.0	91.3	2.73	34.380		
900.0	898.3	888.7	888.1	1.8	1.6	-168.05	-5.3	70.5	112.3	109.3	3.08	36.478		
1,000.0	997.4	984.4	983.4	2.0	1.8	-167.96	-7.6	79.2	133.9	130.5	3.42	39.104		
1,100.0	1,096.3	1,079.0	1,077.4	2.3	2.0	-167.83	-10.3	89.2	158.7	154.9	3.77	42.105		
1,200.0	1,194.9	1,172.3	1,170.0	2.7	2.3	-167.68	-13.3	100.6	186.6	182.5	4.11	45.376		
1,300.0	1,293.3	1,264.3	1,261.0	3.0	2.5	-167.52	-16.6	113.3	217.7	213.2	4.46	48.845		
1,400.0	1,391.2	1,354.8	1,350.3	3.4	2.8	-167.36	-20.3	127.1	251.7	246.9	4.80	52.459		
1,500.0	1,488.9	1,443.6	1,437.9	3.8	3.1	-167.21	-24.2	142.0	288.8	283.7	5.14	56.180		
1,600.0	1,586.2	1,530.9	1,523.6	4.2	3.4	-167.10	-28.5	157.9	328.5	323.0	5.49	59.853		
1,700.0	1,683.5	1,617.0	1,607.9	4.7	3.7	-166.98	-32.9	174.8	369.7	363.9	5.84	63.276		
1,800.0	1,780.7	1,700.0	1,688.9	5.1	4.1	-166.84	-37.6	192.3	412.2	406.0	6.19	66.550		
1,900.0	1,878.0	1,786.4	1,772.9	5.5	4.4	-166.66	-42.7	211.7	455.9	449.4	6.55	69.566		

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Marcus State 3A-36H
Project:	DJ Wattenberg	TVD Reference:	KBE @ 5053.0ft
Reference Site:	S36 T2N-R66W (Marcus State)	MD Reference:	KBE @ 5053.0ft
Site Error:	0.0ft	North Reference:	True
Reference Well:	Marcus State 3A-36H	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 S36 T2N-R66W (Marcus State) - Marcus State W 36-4Jl (Existing) - VT - Existing												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
11,700.0	7,467.0	7,467.0	7,467.0	77.8	13.0	90.00	4,487.2	-905.8	420.4	332.1	88.27	4.763	
11,800.0	7,467.0	7,467.0	7,467.0	79.4	13.0	90.00	4,487.2	-905.8	338.5	248.5	90.00	3.761	
11,900.0	7,467.0	7,467.0	7,467.0	81.1	13.0	90.00	4,487.2	-905.8	269.2	177.5	91.72	2.935	
12,000.0	7,467.0	7,467.0	7,467.0	82.8	13.0	90.00	4,487.2	-905.8	224.3	130.9	93.45	2.400	
12,060.7	7,467.0	7,467.0	7,467.0	83.8	13.0	90.00	4,487.2	-905.8	216.0	121.5	94.51	2.285 CC, ES, SF	
12,100.0	7,467.0	7,467.0	7,467.0	84.5	13.0	90.00	4,487.2	-905.8	219.5	124.3	95.19	2.306	
12,130.6	7,467.0	7,467.0	7,467.0	85.0	13.0	90.00	4,487.2	-905.8	227.0	131.3	95.72	2.372	

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Marcus State 3A-36H
Project:	DJ Wattenberg	TVD Reference:	KBE @ 5053.0ft
Reference Site:	S36 T2N-R66W (Marcus State)	MD Reference:	KBE @ 5053.0ft
Site Error:	0.0ft	North Reference:	True
Reference Well:	Marcus State 3A-36H	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 KBE @ 5053.0ft

Offset Depths are relative to Offset Datum

Central Meridian is -105.500000 °

Coordinates are relative to: Marcus State 3A-36H

Coordinate System is US State Plane 1983, Colorado Northern Zone

Grid Convergence at Surface is: 0.50°

