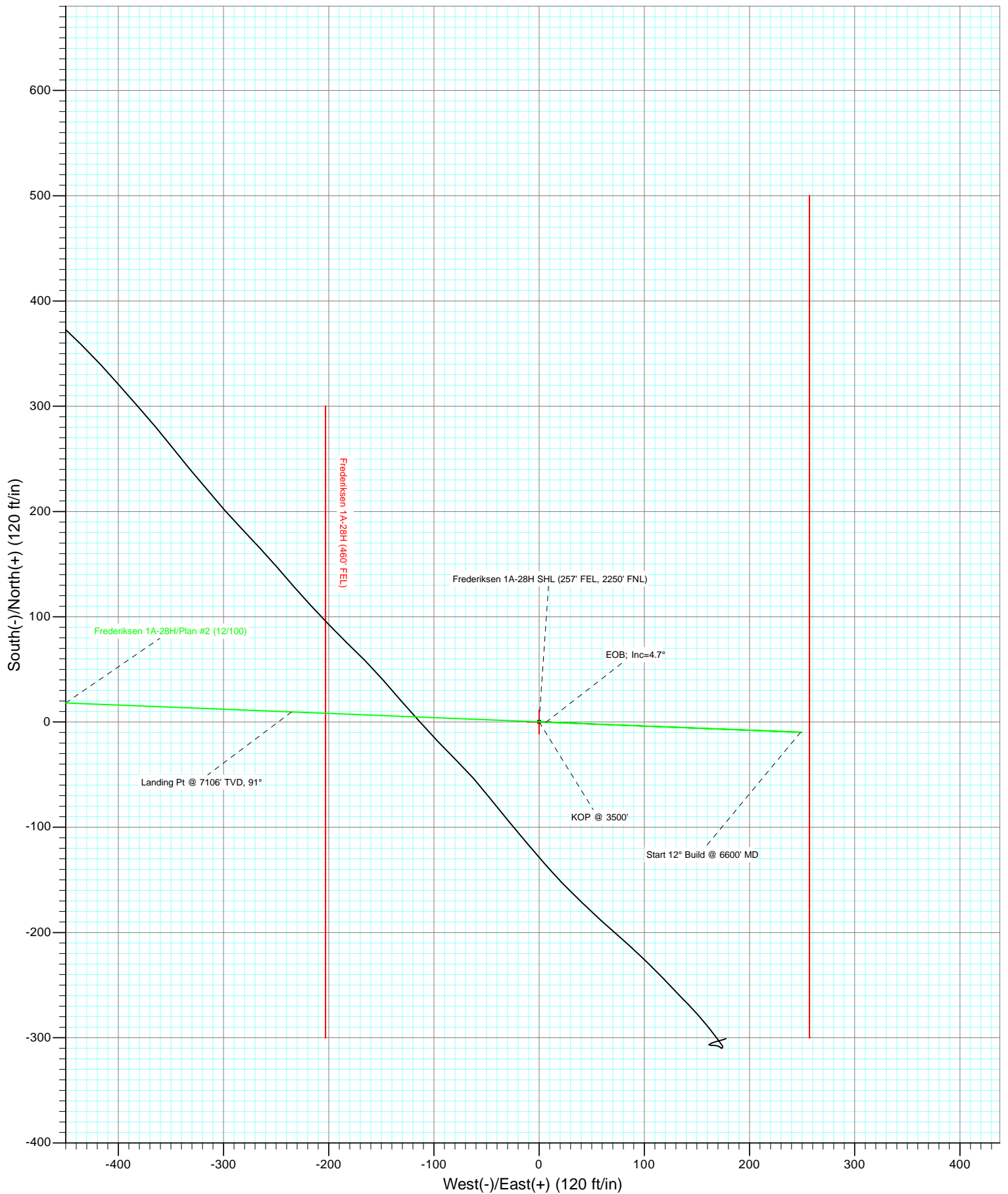




Project: DJ Wattenberg
Site: SENW S28-T3N-R68W
Well: Frederiksen 1A-28H
Wellbore: Hz
Design: Plan #2 (12/100)



Planning Report

Database:	EDM 5000.1 US Multi Users DB	Local Co-ordinate Reference:	Well Frederiksen 1A-28H
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	KBE @ 4988.0ft (Original Well Elev)
Project:	DJ Wattenberg	MD Reference:	KBE @ 4988.0ft (Original Well Elev)
Site:	SENW S28-T3N-R68W	North Reference:	True
Well:	Frederiksen 1A-28H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Hz		
Design:	Plan #2 (12/100)		

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		SENW S28-T3N-R68W			
Site Position:		Northing:	1,315,349.57 ft	Latitude:	40.197940
From:	Lat/Long	Easting:	3,139,876.89 ft	Longitude:	-104.999280
Position Uncertainty:	0.0 ft	Slot Radius:	13.200 in	Grid Convergence:	0.32 °

Well	Frederiksen 1A-28H					
Well Position	+N/-S	0.0 ft	Northing:	1,315,349.56 ft	Latitude:	40.197940
	+E/-W	0.0 ft	Easting:	3,139,876.89 ft	Longitude:	-104.999280
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,976.0 ft

Wellbore	Hz				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	3/16/2011	8.96	66.87	53,047

Design	Plan #2 (12/100)				
Audit Notes:					
Version:	Phase:	PROTOTYPE		Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)	
	0.0	0.0	0.0	272.28	

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	
3,500.0	0.00	0.00	3,500.0	0.0	0.0	0.00	0.00	0.00	0.00	
3,657.4	4.72	92.25	3,657.2	-0.3	6.5	3.00	3.00	0.00	92.25	
6,600.4	4.72	92.25	6,590.2	-9.7	248.5	0.00	0.00	0.00	0.00	
7,398.1	91.00	272.28	7,106.9	9.5	-235.3	12.00	10.82	-22.56	-179.97	
11,748.1	91.00	272.28	7,031.0	182.6	-4,581.2	0.00	0.00	0.00	0.00	Frederiksen 1A-28H F

Planning Report

Database:	EDM 5000.1 US Multi Users DB	Local Co-ordinate Reference:	Well Frederiksen 1A-28H
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	KBE @ 4988.0ft (Original Well Elev)
Project:	DJ Wattenberg	MD Reference:	KBE @ 4988.0ft (Original Well Elev)
Site:	SENW S28-T3N-R68W	North Reference:	True
Well:	Frederiksen 1A-28H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Hz		
Design:	Plan #2 (12/100)		

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	Frederiksen 1A-28H (460' FEL) - Frederiksen 1.
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	
700.0	0.00	0.00	700.0	0.0	0.0	0.0	0.00	0.00	
800.0	0.00	0.00	800.0	0.0	0.0	0.0	0.00	0.00	
900.0	0.00	0.00	900.0	0.0	0.0	0.0	0.00	0.00	
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.0	0.00	0.00	
1,100.0	0.00	0.00	1,100.0	0.0	0.0	0.0	0.00	0.00	
1,200.0	0.00	0.00	1,200.0	0.0	0.0	0.0	0.00	0.00	
1,300.0	0.00	0.00	1,300.0	0.0	0.0	0.0	0.00	0.00	
1,400.0	0.00	0.00	1,400.0	0.0	0.0	0.0	0.00	0.00	
1,500.0	0.00	0.00	1,500.0	0.0	0.0	0.0	0.00	0.00	
1,600.0	0.00	0.00	1,600.0	0.0	0.0	0.0	0.00	0.00	
1,700.0	0.00	0.00	1,700.0	0.0	0.0	0.0	0.00	0.00	
1,800.0	0.00	0.00	1,800.0	0.0	0.0	0.0	0.00	0.00	
1,900.0	0.00	0.00	1,900.0	0.0	0.0	0.0	0.00	0.00	
2,000.0	0.00	0.00	2,000.0	0.0	0.0	0.0	0.00	0.00	
2,100.0	0.00	0.00	2,100.0	0.0	0.0	0.0	0.00	0.00	
2,200.0	0.00	0.00	2,200.0	0.0	0.0	0.0	0.00	0.00	
2,300.0	0.00	0.00	2,300.0	0.0	0.0	0.0	0.00	0.00	
2,400.0	0.00	0.00	2,400.0	0.0	0.0	0.0	0.00	0.00	
2,500.0	0.00	0.00	2,500.0	0.0	0.0	0.0	0.00	0.00	
2,600.0	0.00	0.00	2,600.0	0.0	0.0	0.0	0.00	0.00	
2,700.0	0.00	0.00	2,700.0	0.0	0.0	0.0	0.00	0.00	
2,800.0	0.00	0.00	2,800.0	0.0	0.0	0.0	0.00	0.00	
2,900.0	0.00	0.00	2,900.0	0.0	0.0	0.0	0.00	0.00	
3,000.0	0.00	0.00	3,000.0	0.0	0.0	0.0	0.00	0.00	
3,100.0	0.00	0.00	3,100.0	0.0	0.0	0.0	0.00	0.00	
3,200.0	0.00	0.00	3,200.0	0.0	0.0	0.0	0.00	0.00	
3,300.0	0.00	0.00	3,300.0	0.0	0.0	0.0	0.00	0.00	
3,400.0	0.00	0.00	3,400.0	0.0	0.0	0.0	0.00	0.00	
3,500.0	0.00	0.00	3,500.0	0.0	0.0	0.0	0.00	0.00	
3,600.0	3.00	92.25	3,600.0	-0.1	2.6	-2.6	3.00	3.00	
3,657.4	4.72	92.25	3,657.2	-0.3	6.5	-6.5	3.00	3.00	
3,700.0	4.72	92.25	3,699.7	-0.4	10.0	-10.0	0.00	0.00	
3,800.0	4.72	92.25	3,799.3	-0.7	18.2	-18.2	0.00	0.00	
3,900.0	4.72	92.25	3,899.0	-1.0	26.4	-26.5	0.00	0.00	
4,000.0	4.72	92.25	3,998.7	-1.4	34.7	-34.7	0.00	0.00	
4,100.0	4.72	92.25	4,098.3	-1.7	42.9	-42.9	0.00	0.00	
4,196.0	4.72	92.25	4,194.0	-2.0	50.8	-50.8	0.00	0.00	
4,200.0	4.72	92.25	4,198.0	-2.0	51.1	-51.1	0.00	0.00	
4,300.0	4.72	92.25	4,297.6	-2.3	59.3	-59.4	0.00	0.00	
4,335.5	4.72	92.25	4,333.0	-2.4	62.2	-62.3	0.00	0.00	
4,400.0	4.72	92.25	4,397.3	-2.6	67.6	-67.6	0.00	0.00	
4,500.0	4.72	92.25	4,497.0	-3.0	75.8	-75.8	0.00	0.00	
4,600.0	4.72	92.25	4,596.6	-3.3	84.0	-84.1	0.00	0.00	
4,700.0	4.72	92.25	4,696.3	-3.6	92.2	-92.3	0.00	0.00	
4,800.0	4.72	92.25	4,795.9	-3.9	100.5	-100.5	0.00	0.00	

Planning Report

Database:	EDM 5000.1 US Multi Users DB	Local Co-ordinate Reference:	Well Frederiksen 1A-28H
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	KBE @ 4988.0ft (Original Well Elev)
Project:	DJ Wattenberg	MD Reference:	KBE @ 4988.0ft (Original Well Elev)
Site:	SENW S28-T3N-R68W	North Reference:	True
Well:	Frederiksen 1A-28H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Hz		
Design:	Plan #2 (12/100)		

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
4,879.3	4.72	92.25	4,875.0	-4.2	107.0	-107.1	0.00	0.00	Shannon
4,900.0	4.72	92.25	4,895.6	-4.3	108.7	-108.8	0.00	0.00	
5,000.0	4.72	92.25	4,995.3	-4.6	116.9	-117.0	0.00	0.00	
5,100.0	4.72	92.25	5,094.9	-4.9	125.1	-125.2	0.00	0.00	
5,200.0	4.72	92.25	5,194.6	-5.2	133.4	-133.5	0.00	0.00	
5,300.0	4.72	92.25	5,294.2	-5.6	141.6	-141.7	0.00	0.00	
5,400.0	4.72	92.25	5,393.9	-5.9	149.8	-149.9	0.00	0.00	
5,500.0	4.72	92.25	5,493.6	-6.2	158.0	-158.1	0.00	0.00	
5,600.0	4.72	92.25	5,593.2	-6.5	166.2	-166.4	0.00	0.00	
5,700.0	4.72	92.25	5,692.9	-6.8	174.5	-174.6	0.00	0.00	
5,800.0	4.72	92.25	5,792.6	-7.2	182.7	-182.8	0.00	0.00	
5,900.0	4.72	92.25	5,892.2	-7.5	190.9	-191.1	0.00	0.00	
6,000.0	4.72	92.25	5,991.9	-7.8	199.1	-199.3	0.00	0.00	
6,100.0	4.72	92.25	6,091.5	-8.1	207.4	-207.5	0.00	0.00	
6,200.0	4.72	92.25	6,191.2	-8.5	215.6	-215.8	0.00	0.00	
6,300.0	4.72	92.25	6,290.9	-8.8	223.8	-224.0	0.00	0.00	
6,400.0	4.72	92.25	6,390.5	-9.1	232.0	-232.2	0.00	0.00	
6,500.0	4.72	92.25	6,490.2	-9.4	240.3	-240.5	0.00	0.00	
6,600.0	4.72	92.25	6,589.8	-9.7	248.5	-248.7	0.00	0.00	
6,600.4	4.72	92.25	6,590.2	-9.7	248.5	-248.7	0.00	0.00	Start 12° Build @ 6600' MD
6,700.0	7.23	272.30	6,689.6	-9.7	246.4	-246.5	12.00	2.52	
6,800.0	19.23	272.29	6,786.8	-8.7	223.5	-223.7	12.00	12.00	
6,899.9	31.22	272.28	6,877.0	-7.0	181.1	-181.2	12.00	12.00	Sharon Springs
6,900.0	31.23	272.28	6,877.1	-7.0	181.0	-181.1	12.00	12.00	
7,000.0	43.23	272.28	6,956.6	-4.6	120.7	-120.8	12.00	12.00	
7,021.7	45.83	272.28	6,972.0	-4.0	105.5	-105.6	12.00	12.00	Niobrara
7,100.0	55.23	272.28	7,021.7	-1.6	45.1	-45.2	12.00	12.00	
7,116.6	57.23	272.28	7,031.0	-1.1	31.3	-31.3	12.00	12.00	B Bench
7,200.0	67.23	272.28	7,069.8	1.9	-42.3	42.3	12.00	12.00	
7,300.0	79.23	272.28	7,098.6	5.7	-137.8	137.9	12.00	12.00	
7,398.1	91.00	272.28	7,106.9	9.5	-235.3	235.5	12.00	12.00	Landing Pt @ 7106' TVD, 91°
7,400.0	91.00	272.28	7,106.9	9.6	-237.2	237.4	0.00	0.00	
7,500.0	91.00	272.28	7,105.1	13.6	-337.1	337.4	0.00	0.00	
7,600.0	91.00	272.28	7,103.4	17.6	-437.0	437.4	0.00	0.00	
7,700.0	91.00	272.28	7,101.6	21.6	-536.9	537.3	0.00	0.00	
7,800.0	91.00	272.28	7,099.9	25.5	-636.8	637.3	0.00	0.00	
7,900.0	91.00	272.28	7,098.2	29.5	-736.7	737.3	0.00	0.00	
8,000.0	91.00	272.28	7,096.4	33.5	-836.6	837.3	0.00	0.00	
8,100.0	91.00	272.28	7,094.7	37.5	-936.5	937.3	0.00	0.00	
8,200.0	91.00	272.28	7,092.9	41.4	-1,036.4	1,037.3	0.00	0.00	
8,300.0	91.00	272.28	7,091.2	45.4	-1,136.3	1,137.3	0.00	0.00	
8,400.0	91.00	272.28	7,089.4	49.4	-1,236.3	1,237.2	0.00	0.00	
8,500.0	91.00	272.28	7,087.7	53.4	-1,336.2	1,337.2	0.00	0.00	
8,600.0	91.00	272.28	7,085.9	57.4	-1,436.1	1,437.2	0.00	0.00	
8,700.0	91.00	272.28	7,084.2	61.3	-1,536.0	1,537.2	0.00	0.00	
8,800.0	91.00	272.28	7,082.5	65.3	-1,635.9	1,637.2	0.00	0.00	
8,900.0	91.00	272.28	7,080.7	69.3	-1,735.8	1,737.2	0.00	0.00	
9,000.0	91.00	272.28	7,079.0	73.3	-1,835.7	1,837.1	0.00	0.00	
9,100.0	91.00	272.28	7,077.2	77.2	-1,935.6	1,937.1	0.00	0.00	
9,200.0	91.00	272.28	7,075.5	81.2	-2,035.5	2,037.1	0.00	0.00	
9,300.0	91.00	272.28	7,073.7	85.2	-2,135.4	2,137.1	0.00	0.00	
9,400.0	91.00	272.28	7,072.0	89.2	-2,235.3	2,237.1	0.00	0.00	

Planning Report

Database:	EDM 5000.1 US Multi Users DB	Local Co-ordinate Reference:	Well Frederiksen 1A-28H
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Project:	DJ Wattenberg	MD Reference:	KBE @ 4988.0ft (Original Well Elev)
Site:	SENW S28-T3N-R68W	North Reference:	True
Well:	Frederiksen 1A-28H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Hz		
Design:	Plan #2 (12/100)		

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
9,500.0	91.00	272.28	7,070.2	93.2	-2,335.2	2,337.1	0.00	0.00	
9,600.0	91.00	272.28	7,068.5	97.1	-2,435.1	2,437.1	0.00	0.00	
9,700.0	91.00	272.28	7,066.7	101.1	-2,535.0	2,537.0	0.00	0.00	
9,800.0	91.00	272.28	7,065.0	105.1	-2,634.9	2,637.0	0.00	0.00	
9,900.0	91.00	272.28	7,063.3	109.1	-2,734.8	2,737.0	0.00	0.00	
10,000.0	91.00	272.28	7,061.5	113.0	-2,834.7	2,837.0	0.00	0.00	
10,100.0	91.00	272.28	7,059.8	117.0	-2,934.6	2,937.0	0.00	0.00	
10,200.0	91.00	272.28	7,058.0	121.0	-3,034.6	3,037.0	0.00	0.00	
10,300.0	91.00	272.28	7,056.3	125.0	-3,134.5	3,136.9	0.00	0.00	
10,400.0	91.00	272.28	7,054.5	129.0	-3,234.4	3,236.9	0.00	0.00	
10,500.0	91.00	272.28	7,052.8	132.9	-3,334.3	3,336.9	0.00	0.00	
10,600.0	91.00	272.28	7,051.0	136.9	-3,434.2	3,436.9	0.00	0.00	
10,700.0	91.00	272.28	7,049.3	140.9	-3,534.1	3,536.9	0.00	0.00	
10,800.0	91.00	272.28	7,047.5	144.9	-3,634.0	3,636.9	0.00	0.00	
10,900.0	91.00	272.28	7,045.8	148.8	-3,733.9	3,736.9	0.00	0.00	
11,000.0	91.00	272.28	7,044.1	152.8	-3,833.8	3,836.8	0.00	0.00	
11,100.0	91.00	272.28	7,042.3	156.8	-3,933.7	3,936.8	0.00	0.00	
11,200.0	91.00	272.28	7,040.6	160.8	-4,033.6	4,036.8	0.00	0.00	
11,300.0	91.00	272.28	7,038.8	164.8	-4,133.5	4,136.8	0.00	0.00	
11,400.0	91.00	272.28	7,037.1	168.7	-4,233.4	4,236.8	0.00	0.00	
11,500.0	91.00	272.28	7,035.3	172.7	-4,333.3	4,336.8	0.00	0.00	
11,600.0	91.00	272.28	7,033.6	176.7	-4,433.2	4,436.7	0.00	0.00	
11,700.0	91.00	272.28	7,031.8	180.7	-4,533.1	4,536.7	0.00	0.00	
11,748.1	91.00	272.28	7,031.0	182.6	-4,581.2	4,584.8	0.00	0.00	TD at 11748.1 - Frederiksen 1A-28H PBHL (46C)

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									
Frederiksen 1A-28H (46C)	0.00	0.00	-7,031.0	0.0	0.0	1,315,349.57	3,139,876.89	40.197940	-104.999280
- plan misses target center by 7031.0ft at 0.0ft MD (0.0 TVD, 0.0 N, 0.0 E)									
- Polygon									
Point 1			-7,031.0	300.0	-203.0	1,315,648.42	3,139,672.20		
Point 2			-7,031.0	-300.0	-203.0	1,315,048.43	3,139,675.58		
Frederiksen 1A-28H PBI	0.00	0.00	7,031.0	182.6	-4,581.2	1,315,506.27	3,135,294.77	40.198440	-105.015680
- plan hits target center									
- Polygon									
Point 1			7,031.0	400.0	-460.0	1,315,903.66	3,134,832.52		
Point 2			7,031.0	-400.0	-460.0	1,315,103.68	3,134,837.04		
Frederiksen 1A-28H SHI	0.00	0.00	-7,031.0	0.0	0.0	1,315,349.57	3,139,876.89	40.197940	-104.999280
- plan misses target center by 7031.0ft at 0.0ft MD (0.0 TVD, 0.0 N, 0.0 E)									
- Polygon									
Point 1			-7,031.0	500.0	257.0	1,315,851.01	3,140,131.06		
Point 2			-7,031.0	-300.0	257.0	1,315,051.02	3,140,135.58		

Planning Report

Database:	EDM 5000.1 US Multi Users DB	Local Co-ordinate Reference:	Well Frederiksen 1A-28H
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	KBE @ 4988.0ft (Original Well Elev)
Project:	DJ Wattenberg	MD Reference:	KBE @ 4988.0ft (Original Well Elev)
Site:	SENW S28-T3N-R68W	North Reference:	True
Well:	Frederiksen 1A-28H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Hz		
Design:	Plan #2 (12/100)		

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
4,196.0	4,194.0	Sussex Marker				
4,335.5	4,333.0	Sussex				
4,879.3	4,875.0	Shannon				
6,899.9	6,877.0	Sharon Springs				
7,021.7	6,972.0	Niobrara				
7,116.6	7,031.0	B Bench				

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates			
		+N/-S (ft)	+E/-W (ft)	Comment	
3,500.0	3,500.0	0.0	0.0	KOP @ 3500'	
3,657.4	3,657.2	-0.3	6.5	EOB; Inc=4.7°	
6,600.4	6,590.2	-9.7	248.5	Start 12° Build @ 6600' MD	
7,398.1	7,106.9	9.5	-235.3	Landing Pt @ 7106' TVD, 91°	
11,748.1	7,031.0	182.6	-4,581.2	TD at 11748.1	

EnCana Oil & Gas (USA) Inc

DJ Wattenberg

SENW S28-T3N-R68W

Frederiksen 1A-28H

Hz

Plan #2 (12/100)

Anticollision Report

17 March, 2011

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Frederiksen 1A-28H
Project:	DJ Wattenberg	TVD Reference:	KBE @ 4988.0ft (Original Well Elev)
Reference Site:	SENW S28-T3N-R68W	MD Reference:	KBE @ 4988.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Frederiksen 1A-28H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	EDM 5000.1 US Multi Users DB
Reference Design:	Plan #2 (12/100)	Offset TVD Reference:	Offset Datum

Reference	Plan #2 (12/100)		
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 1,000.0ft	Error Surface:	Elliptical Conic
Warning Levels Evaluated at:	2.00 Sigma		

Survey Tool Program	Date	3/17/2011		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.0	11,748.1	Plan #2 (12/100) (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						
SENW S28-T3N-R68W						
Frederiksen #1 (Existing) - DD - DD	8,066.7	7,089.8	565.5	524.9	13.931	CC, ES
Frederiksen #1 (Existing) - DD - DD	8,200.0	7,089.2	581.0	537.4	13.333	SF
Frederiksen 31-28 (Existing) - DD - DD	0.0	0.0	976.9			
Frederiksen 31-28 (Existing) - DD - DD	100.0	93.1	977.1	976.7	3,049.860	ES
Frederiksen 31-28 (Existing) - DD - DD	1,100.0	1,029.4	999.0	995.2	264.180	SF
Frederiksen 41-28 (Existing) - DD - DD	7,928.9	7,093.7	636.5	599.1	17.041	CC, ES
Frederiksen 41-28 (Existing) - DD - DD	8,200.0	7,088.9	691.8	648.5	15.965	SF
Frederiksen 8-4-28 (Existing) - DD - DD	4,005.8	4,144.3	111.4	86.2	4.422	CC, ES
Frederiksen 8-4-28 (Existing) - DD - DD	4,100.0	4,234.4	114.1	87.7	4.312	SF

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Frederiksen 1A-28H
Project:	DJ Wattenberg	TVD Reference:	KBE @ 4988.0ft (Original Well Elev)
Reference Site:	SENW S28-T3N-R68W	MD Reference:	KBE @ 4988.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Frederiksen 1A-28H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	EDM 5000.1 US Multi Users DB
Reference Design:	Plan #2 (12/100)	Offset TVD Reference:	Offset Datum

Offset Design SENW S28-T3N-R68W - Frederiksen #1 (Existing) - DD - DD													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)				
0.0	0.0	0.0	0.0	0.0	0.0	-51.61	586.5	-740.2	944.4					
100.0	100.0	94.5	94.5	0.2	0.1	-51.61	586.5	-740.3	944.5	944.2	0.30	3,162.051		
200.0	200.0	191.9	191.9	0.3	0.3	-51.62	586.5	-740.5	944.6	944.0	0.64	1,471.047		
300.0	300.0	288.8	288.8	0.5	0.5	-51.62	586.7	-740.9	945.1	944.1	0.99	958.414		
400.0	400.0	387.9	387.9	0.7	0.7	-51.60	587.6	-741.2	945.8	944.5	1.33	709.064		
500.0	500.0	485.9	485.9	0.9	0.8	-51.58	588.2	-741.7	946.7	945.0	1.68	563.447		
600.0	600.0	581.6	581.6	1.0	1.0	-51.58	589.0	-742.5	947.9	945.8	2.02	468.554		
700.0	700.0	678.2	678.2	1.2	1.2	-51.56	590.2	-743.6	949.5	947.1	2.37	400.968		
800.0	800.0	776.6	776.6	1.4	1.3	-51.52	591.8	-744.6	951.3	948.6	2.72	350.208		
900.0	900.0	873.3	873.2	1.5	1.5	-51.46	593.9	-745.6	953.4	950.4	3.06	311.289		
1,000.0	1,000.0	970.2	970.1	1.7	1.7	-51.40	596.2	-746.7	955.9	952.5	3.41	280.277		
1,100.0	1,100.0	1,066.5	1,066.4	1.9	1.9	-51.34	598.7	-748.2	958.7	954.9	3.76	255.074		
1,200.0	1,200.0	1,164.1	1,163.9	2.1	2.0	-51.31	601.0	-750.3	961.8	957.7	4.11	234.047		
1,300.0	1,300.0	1,265.8	1,265.6	2.2	2.2	-51.31	602.9	-752.9	965.0	960.5	4.47	215.979		
1,400.0	1,400.0	1,370.9	1,370.6	2.4	2.4	-51.38	603.9	-755.9	967.8	963.0	4.83	200.318		
1,500.0	1,500.0	1,470.5	1,470.2	2.6	2.6	-51.46	604.3	-758.7	970.3	965.1	5.19	187.126		
1,600.0	1,600.0	1,570.6	1,570.2	2.8	2.8	-51.54	604.8	-761.6	972.9	967.3	5.54	175.618		
1,700.0	1,700.0	1,673.0	1,672.6	2.9	3.0	-51.61	605.5	-764.3	975.3	969.4	5.90	165.374		
1,800.0	1,800.0	1,777.0	1,776.5	3.1	3.1	-51.68	606.0	-766.7	977.4	971.2	6.26	156.213		
1,900.0	1,900.0	1,877.5	1,877.1	3.3	3.3	-51.72	606.6	-768.5	979.2	972.6	6.61	148.145		
2,000.0	2,000.0	1,980.4	1,979.9	3.5	3.5	-51.72	607.6	-770.0	981.0	974.0	6.97	140.821		
2,100.0	2,100.0	2,084.9	2,084.4	3.6	3.7	-51.71	608.6	-771.0	982.3	975.0	7.32	134.127		
2,200.0	2,200.0	2,185.5	2,185.0	3.8	3.9	-51.72	609.1	-771.8	983.3	975.6	7.67	128.132		
2,300.0	2,300.0	2,290.2	2,289.7	4.0	4.0	-51.74	609.3	-772.7	984.1	976.1	8.03	122.550		
2,400.0	2,400.0	2,390.8	2,390.3	4.2	4.2	-51.77	609.2	-773.5	984.6	976.2	8.38	117.502		
2,500.0	2,500.0	2,493.0	2,492.5	4.3	4.4	-51.81	609.0	-774.1	985.0	976.2	8.73	112.817		
2,600.0	2,600.0	2,592.6	2,592.1	4.5	4.6	-51.85	608.6	-774.8	985.2	976.2	9.08	108.533		
2,700.0	2,700.0	2,694.8	2,694.3	4.7	4.7	-51.90	608.0	-775.5	985.4	976.0	9.43	104.513		
2,800.0	2,800.0	2,793.4	2,792.9	4.9	4.9	-51.96	607.3	-776.2	985.6	975.8	9.77	100.834		
2,900.0	2,900.0	2,891.9	2,891.3	5.0	5.1	-52.04	606.4	-777.3	985.9	975.7	10.12	97.419		
3,000.0	3,000.0	2,993.8	2,993.3	5.2	5.3	-52.13	605.4	-778.5	986.1	975.7	10.47	94.178		
3,100.0	3,100.0	3,094.3	3,093.8	5.4	5.4	-52.23	604.0	-779.7	986.3	975.5	10.82	91.155		
3,200.0	3,200.0	3,193.0	3,192.4	5.6	5.6	-52.35	602.5	-781.1	986.5	975.3	11.17	88.347		
3,300.0	3,300.0	3,289.7	3,289.1	5.7	5.8	-52.48	601.0	-782.7	986.9	975.4	11.51	85.748		
3,400.0	3,400.0	3,390.2	3,389.5	5.9	6.0	-52.63	599.4	-784.8	987.5	975.6	11.86	83.268		
3,500.0	3,500.0	3,486.5	3,485.8	6.1	6.1	-52.81	597.3	-787.2	988.2	976.0	12.20	80.981		
3,600.0	3,600.0	3,579.6	3,578.9	6.3	6.3	-145.28	595.3	-790.2	991.6	979.1	12.49	79.368		
3,700.0	3,699.7	3,678.1	3,677.3	6.4	6.5	-145.64	593.6	-793.6	999.4	986.6	12.83	77.887		
7,300.0	7,098.6	7,083.1	7,081.0	13.9	12.6	74.62	601.1	-880.6	952.1	926.3	25.82	36.880		
7,400.0	7,106.9	7,092.6	7,090.4	15.1	12.6	90.01	601.2	-880.7	874.2	846.5	27.71	31.550		
7,500.0	7,105.1	7,092.2	7,090.0	16.6	12.6	89.97	601.2	-880.7	800.5	771.3	29.24	27.379		
7,600.0	7,103.4	7,091.7	7,089.6	18.4	12.6	89.93	601.2	-880.7	733.2	702.2	30.98	23.669		
7,700.0	7,101.6	7,091.3	7,089.1	20.3	12.6	89.89	601.2	-880.7	673.9	641.1	32.87	20.505		
7,800.0	7,099.9	7,090.9	7,088.7	22.3	12.6	89.84	601.2	-880.7	625.2	590.3	34.87	17.929		
7,900.0	7,098.2	7,090.5	7,088.3	24.4	12.6	89.80	601.2	-880.7	589.5	552.6	36.96	15.949		
8,000.0	7,096.4	7,090.1	7,087.9	26.5	12.6	89.76	601.1	-880.7	569.4	530.3	39.12	14.555		
8,066.7	7,095.2	7,089.8	7,087.6	28.0	12.6	89.73	601.1	-880.7	565.5	524.9	40.59	13.931 CC, ES		
8,100.0	7,094.7	7,089.6	7,087.4	28.7	12.6	89.72	601.1	-880.7	566.4	525.1	41.33	13.707		
8,200.0	7,092.9	7,089.2	7,087.0	31.0	12.6	89.67	601.1	-880.7	581.0	537.4	43.57	13.333 SF		
8,300.0	7,091.2	7,088.8	7,086.6	33.3	12.6	89.63	601.1	-880.7	611.7	565.9	45.85	13.341		
8,400.0	7,089.4	7,088.3	7,086.1	35.6	12.6	89.58	601.1	-880.7	656.4	608.2	48.16	13.630		
8,500.0	7,087.7	7,087.9	7,085.7	37.9	12.6	89.54	601.1	-880.7	712.4	661.9	50.48	14.112		

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

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Frederiksen 1A-28H
Project:	DJ Wattenberg	TVD Reference:	KBE @ 4988.0ft (Original Well Elev)
Reference Site:	SENW S28-T3N-R68W	MD Reference:	KBE @ 4988.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Frederiksen 1A-28H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	EDM 5000.1 US Multi Users DB
Reference Design:	Plan #2 (12/100)	Offset TVD Reference:	Offset Datum

Offset Design													SENW S28-T3N-R68W - Frederiksen #1 (Existing) - DD - DD		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				
8,600.0	7,085.9	7,087.4	7,085.3	40.2	12.6	89.49	601.1	-880.7	777.3	724.5	52.83	14.714					
8,700.0	7,084.2	7,087.0	7,084.8	42.6	12.6	89.45	601.1	-880.7	849.0	793.8	55.18	15.386					
8,800.0	7,082.5	7,086.6	7,084.4	45.0	12.6	89.40	601.1	-880.6	926.0	868.5	57.55	16.090					

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Frederiksen 1A-28H
Project:	DJ Wattenberg	TVD Reference:	KBE @ 4988.0ft (Original Well Elev)
Reference Site:	SENW S28-T3N-R68W	MD Reference:	KBE @ 4988.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Frederiksen 1A-28H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	EDM 5000.1 US Multi Users DB
Reference Design:	Plan #2 (12/100)	Offset TVD Reference:	Offset Datum

Offset Design SENW S28-T3N-R68W - Frederiksen 31-28 (Existing) - DD - DD												Offset Site Error:	0.0 ft
Survey Program: 837-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	Separation	
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	Axis	Factor	
0.0	0.0	0.0	0.0	0.0	0.0	-49.26	637.5	-740.2	976.9				
100.0	100.0	93.1	93.1	0.2	0.2	-49.28	637.4	-740.5	977.1	976.7	0.32	3,049.860	ES
200.0	200.0	190.0	190.0	0.3	0.4	-49.33	637.0	-741.4	977.5	976.8	0.67	1,461.942	
300.0	300.0	287.0	287.0	0.5	0.6	-49.41	636.5	-742.9	978.3	977.3	1.02	961.959	
400.0	400.0	383.9	383.8	0.7	0.8	-49.53	635.6	-745.0	979.4	978.0	1.37	717.289	
500.0	500.0	480.8	480.7	0.9	1.0	-49.68	634.6	-747.6	980.8	979.0	1.71	572.253	
600.0	600.0	577.6	577.4	1.0	1.1	-49.86	633.3	-750.9	982.5	980.4	2.06	476.362	
700.0	700.0	674.4	674.1	1.2	1.3	-50.07	631.8	-754.8	984.5	982.1	2.41	408.312	
800.0	800.0	771.1	770.7	1.4	1.5	-50.32	630.0	-759.3	986.9	984.2	2.76	357.560	
900.0	900.0	866.2	865.7	1.5	1.7	-50.58	628.1	-764.2	989.7	986.6	3.11	318.395	
1,000.0	1,000.0	952.1	951.4	1.7	1.9	-50.81	627.0	-769.1	993.3	989.8	3.45	288.082	
1,100.0	1,100.0	1,029.4	1,028.5	1.9	2.1	-51.02	627.0	-774.8	999.0	995.2	3.78	264.180	SF

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Frederiksen 1A-28H
Project:	DJ Wattenberg	TVD Reference:	KBE @ 4988.0ft (Original Well Elev)
Reference Site:	SENW S28-T3N-R68W	MD Reference:	KBE @ 4988.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Frederiksen 1A-28H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	EDM 5000.1 US Multi Users DB
Reference Design:	Plan #2 (12/100)	Offset TVD Reference:	Offset Datum

Offset Design SENW S28-T3N-R68W - Frederiksen 41-28 (Existing) - DD - DD													Offset Site Error:	0.0 ft
Survey Program: 10000-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	-47.99	666.7	-740.2	996.2					
100.0	100.0	96.0	96.0	0.2	0.2	-47.99	666.7	-740.2	996.2	995.9	0.32	3,103.939		
200.0	200.0	196.0	196.0	0.3	0.3	-47.99	666.7	-740.2	996.2	995.5	0.67	1,487.284		
300.0	300.0	296.0	296.0	0.5	0.5	-47.99	666.7	-740.2	996.2	995.2	1.02	977.936		
400.0	400.0	396.0	396.0	0.7	0.7	-47.99	666.7	-740.2	996.2	994.8	1.37	728.461		
500.0	500.0	496.0	496.0	0.9	0.9	-47.99	666.7	-740.2	996.2	994.5	1.72	580.399		
600.0	600.0	596.0	596.0	1.0	1.0	-47.99	666.7	-740.2	996.2	994.1	2.07	482.358		
700.0	700.0	696.0	696.0	1.2	1.2	-47.99	666.7	-740.2	996.2	993.8	2.41	412.653		
800.0	800.0	796.0	796.0	1.4	1.4	-47.99	666.7	-740.2	996.2	993.4	2.76	360.550		
900.0	900.0	896.0	896.0	1.5	1.6	-47.99	666.7	-740.2	996.2	993.1	3.11	320.130		
1,000.0	1,000.0	996.0	996.0	1.7	1.7	-47.99	666.7	-740.2	996.2	992.7	3.46	287.859		
1,100.0	1,100.0	1,096.0	1,096.0	1.9	1.9	-47.99	666.7	-740.2	996.2	992.4	3.81	261.498		
1,200.0	1,200.0	1,196.0	1,196.0	2.1	2.1	-47.99	666.7	-740.2	996.2	992.0	4.16	239.560		
1,300.0	1,300.0	1,296.0	1,296.0	2.2	2.3	-47.99	666.7	-740.2	996.2	991.7	4.51	221.018		
1,400.0	1,400.0	1,396.0	1,396.0	2.4	2.4	-47.99	666.7	-740.2	996.2	991.3	4.86	205.140		
1,500.0	1,500.0	1,496.0	1,496.0	2.6	2.6	-47.99	666.7	-740.2	996.2	991.0	5.20	191.391		
1,600.0	1,600.0	1,596.0	1,596.0	2.8	2.8	-47.99	666.7	-740.2	996.2	990.6	5.55	179.369		
1,700.0	1,700.0	1,696.0	1,696.0	2.9	3.0	-47.99	666.7	-740.2	996.2	990.3	5.90	168.768		
1,800.0	1,800.0	1,796.0	1,796.0	3.1	3.1	-47.99	666.7	-740.2	996.2	989.9	6.25	159.350		
1,900.0	1,900.0	1,896.0	1,896.0	3.3	3.3	-47.99	666.7	-740.2	996.2	989.6	6.60	150.928		
2,000.0	2,000.0	1,996.0	1,996.0	3.5	3.5	-47.99	666.7	-740.2	996.2	989.2	6.95	143.351		
2,100.0	2,100.0	2,096.0	2,096.0	3.6	3.7	-47.99	666.7	-740.2	996.2	988.9	7.30	136.499		
2,200.0	2,200.0	2,196.0	2,196.0	3.8	3.8	-47.99	666.7	-740.2	996.2	988.5	7.65	130.272		
2,300.0	2,300.0	2,296.0	2,296.0	4.0	4.0	-47.99	666.7	-740.2	996.2	988.2	8.00	124.588		
2,400.0	2,400.0	2,396.0	2,396.0	4.2	4.2	-47.99	666.7	-740.2	996.2	987.8	8.34	119.379		
2,500.0	2,500.0	2,496.0	2,496.0	4.3	4.4	-47.99	666.7	-740.2	996.2	987.5	8.69	114.589		
2,600.0	2,600.0	2,596.0	2,596.0	4.5	4.5	-47.99	666.7	-740.2	996.2	987.1	9.04	110.168		
2,700.0	2,700.0	2,696.0	2,696.0	4.7	4.7	-47.99	666.7	-740.2	996.2	986.8	9.39	106.076		
2,800.0	2,800.0	2,796.0	2,796.0	4.9	4.9	-47.99	666.7	-740.2	996.2	986.4	9.74	102.276		
2,900.0	2,900.0	2,896.0	2,896.0	5.0	5.0	-47.99	666.7	-740.2	996.2	986.1	10.09	98.740		
3,000.0	3,000.0	2,996.0	2,996.0	5.2	5.2	-47.99	666.7	-740.2	996.2	985.7	10.44	95.440		
3,100.0	3,100.0	3,096.0	3,096.0	5.4	5.4	-47.99	666.7	-740.2	996.2	985.4	10.79	92.353		
3,200.0	3,200.0	3,196.0	3,196.0	5.6	5.6	-47.99	666.7	-740.2	996.2	985.0	11.14	89.460		
3,300.0	3,300.0	3,296.0	3,296.0	5.7	5.7	-47.99	666.7	-740.2	996.2	984.7	11.48	86.742		
3,400.0	3,400.0	3,396.0	3,396.0	5.9	5.9	-47.99	666.7	-740.2	996.2	984.3	11.83	84.185		
3,500.0	3,500.0	3,496.0	3,496.0	6.1	6.1	-47.99	666.7	-740.2	996.2	984.0	12.18	81.774		
3,600.0	3,600.0	3,596.0	3,596.0	6.3	6.3	-140.30	666.7	-740.2	998.2	985.7	12.52	79.700		
7,200.0	7,069.8	7,065.8	7,065.8	13.0	12.3	66.24	666.7	-740.2	963.9	939.8	24.09	40.007		
7,300.0	7,098.6	7,094.6	7,094.6	13.9	12.4	79.55	666.7	-740.2	894.3	868.4	25.93	34.484		
7,400.0	7,106.9	7,102.9	7,102.9	15.1	12.4	90.83	666.7	-740.2	827.5	800.0	27.48	30.107		
7,500.0	7,105.1	7,101.1	7,101.1	16.6	12.4	90.67	666.7	-740.2	767.5	738.4	29.01	26.451		
7,600.0	7,103.4	7,099.4	7,099.4	18.4	12.4	90.52	666.7	-740.2	716.4	685.7	30.75	23.298		
7,700.0	7,101.6	7,097.6	7,097.6	20.3	12.4	90.36	666.7	-740.2	676.4	643.7	32.64	20.724		
7,800.0	7,099.9	7,095.9	7,095.9	22.3	12.4	90.20	666.7	-740.2	649.4	614.8	34.64	18.747		
7,900.0	7,098.2	7,094.2	7,094.2	24.4	12.4	90.05	666.7	-740.2	637.2	600.4	36.73	17.347		
7,928.9	7,097.7	7,093.7	7,093.7	25.0	12.4	90.00	666.7	-740.2	636.5	599.1	37.35	17.041	CC, ES	
8,000.0	7,096.4	7,092.4	7,092.4	26.5	12.4	89.89	666.7	-740.2	640.5	601.6	38.88	16.471		
8,100.0	7,094.7	7,090.7	7,090.7	28.7	12.4	89.73	666.7	-740.2	659.1	618.0	41.09	16.041		
8,200.0	7,092.9	7,088.9	7,088.9	31.0	12.4	89.57	666.7	-740.2	691.8	648.5	43.33	15.965	SF	
8,300.0	7,091.2	7,087.2	7,087.2	33.3	12.4	89.42	666.7	-740.2	736.8	691.2	45.61	16.154		
8,400.0	7,089.4	7,085.4	7,085.4	35.6	12.4	89.26	666.7	-740.2	791.9	743.9	47.91	16.528		
8,500.0	7,087.7	7,083.7	7,083.7	37.9	12.3	89.10	666.7	-740.2	855.1	804.9	50.23	17.023		

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

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Frederiksen 1A-28H
Project:	DJ Wattenberg	TVD Reference:	KBE @ 4988.0ft (Original Well Elev)
Reference Site:	SENW S28-T3N-R68W	MD Reference:	KBE @ 4988.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Frederiksen 1A-28H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	EDM 5000.1 US Multi Users DB
Reference Design:	Plan #2 (12/100)	Offset TVD Reference:	Offset Datum

Offset Design												SENW S28-T3N-R68W - Frederiksen 41-28 (Existing) - DD - DD		Offset Site Error:		0.0 ft	
Survey Program:				10000-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	Separation Factor					
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	Axis						
8,600.0	7,085.9	7,081.9	7,081.9	40.2	12.3	88.95	666.7	-740.2	924.9	872.3	52.57	17.593					
8,700.0	7,084.2	7,080.2	7,080.2	42.6	12.3	88.79	666.7	-740.2	999.8	944.9	54.92	18.203					

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Frederiksen 1A-28H
Project:	DJ Wattenberg	TVD Reference:	KBE @ 4988.0ft (Original Well Elev)
Reference Site:	SENW S28-T3N-R68W	MD Reference:	KBE @ 4988.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Frederiksen 1A-28H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	EDM 5000.1 US Multi Users DB
Reference Design:	Plan #2 (12/100)	Offset TVD Reference:	Offset Datum

Offset Design SENW S28-T3N-R68W - Frederiksen 8-4-28 (Existing) - DD - DD													Offset Site Error:	0.0 ft
Survey Program:		141-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	-48.62	652.1	-740.2	986.5					
100.0	100.0	93.9	93.9	0.2	0.2	-48.65	651.7	-740.7	986.6	986.3	0.30	3,249.354		
200.0	200.0	193.2	193.2	0.3	0.3	-48.75	650.7	-741.9	986.9	986.2	0.64	1,531.053		
300.0	300.0	307.4	307.4	0.5	0.5	-48.86	649.1	-743.0	986.7	985.7	1.02	968.944		
400.0	400.0	462.7	462.5	0.7	0.8	-48.90	644.7	-739.1	983.0	981.6	1.48	664.425		
500.0	500.0	632.9	631.7	0.9	1.2	-48.86	633.7	-725.4	972.7	970.6	2.06	473.092		
600.0	600.0	770.0	767.0	1.0	1.6	-48.94	618.1	-709.4	956.3	953.7	2.65	361.330		
700.0	700.0	879.5	874.6	1.2	2.0	-49.13	602.5	-696.2	937.9	934.7	3.19	293.547		
800.0	800.0	995.9	988.7	1.4	2.4	-49.24	586.0	-679.8	918.0	914.2	3.81	241.248		
900.0	900.0	1,108.0	1,098.0	1.5	2.9	-49.22	570.2	-661.1	896.1	891.7	4.44	201.960		
1,000.0	1,000.0	1,214.5	1,201.7	1.7	3.4	-49.12	555.4	-641.6	873.2	868.1	5.07	172.158		
1,100.0	1,100.0	1,333.4	1,316.9	1.9	3.9	-48.99	537.6	-618.3	848.6	842.8	5.80	146.232		
1,200.0	1,200.0	1,450.8	1,429.8	2.1	4.5	-49.06	515.8	-594.7	821.2	814.6	6.57	124.944		
1,300.0	1,300.0	1,543.6	1,518.8	2.2	5.0	-49.26	496.6	-576.5	792.9	785.6	7.22	109.803		
1,400.0	1,400.0	1,632.3	1,604.0	2.4	5.4	-49.39	479.4	-559.1	765.3	757.5	7.84	97.631		
1,500.0	1,500.0	1,742.7	1,710.1	2.6	6.0	-49.51	458.2	-536.6	737.4	728.8	8.60	85.762		
1,600.0	1,600.0	1,844.5	1,807.2	2.8	6.6	-49.66	437.1	-514.7	707.5	698.1	9.33	75.835		
1,700.0	1,700.0	1,935.8	1,894.4	2.9	7.1	-49.89	417.7	-495.8	678.0	668.0	9.99	67.846		
1,800.0	1,800.0	2,023.7	1,978.5	3.1	7.5	-50.09	399.7	-477.8	649.1	638.5	10.62	61.100		
1,900.0	1,900.0	2,119.6	2,070.6	3.3	8.0	-50.30	380.9	-458.8	621.4	610.1	11.30	55.006		
2,000.0	2,000.0	2,222.2	2,168.9	3.5	8.6	-50.50	360.7	-437.5	592.7	580.7	12.02	49.310		
2,100.0	2,100.0	2,325.7	2,267.6	3.6	9.2	-50.85	338.4	-415.7	562.9	550.1	12.77	44.081		
2,200.0	2,200.0	2,418.0	2,355.5	3.8	9.7	-51.35	317.4	-397.0	532.7	519.3	13.44	39.628		
2,300.0	2,300.0	2,513.6	2,446.5	4.0	10.2	-51.94	295.6	-377.6	502.6	488.5	14.13	35.564		
2,400.0	2,400.0	2,604.4	2,533.2	4.2	10.7	-52.64	274.9	-360.0	473.3	458.5	14.78	32.027		
2,500.0	2,500.0	2,698.8	2,623.3	4.3	11.3	-53.54	253.0	-342.5	444.4	429.0	15.42	28.812		
2,600.0	2,600.0	2,793.9	2,714.3	4.5	11.8	-54.50	231.6	-324.7	416.0	399.9	16.07	25.890		
2,700.0	2,700.0	2,889.2	2,805.3	4.7	12.3	-55.57	210.2	-306.7	387.5	370.8	16.70	23.205		
2,800.0	2,800.0	2,981.9	2,894.1	4.9	12.8	-56.65	190.3	-289.1	359.7	342.4	17.30	20.797		
2,900.0	2,900.0	3,078.4	2,986.8	5.0	13.3	-57.75	170.8	-270.6	332.6	314.7	17.91	18.574		
3,000.0	3,000.0	3,172.5	3,077.1	5.2	13.8	-59.11	151.2	-252.8	305.5	287.0	18.47	16.537		
3,100.0	3,100.0	3,268.8	3,169.6	5.4	14.3	-60.89	131.0	-235.3	279.2	260.2	19.01	14.688		
3,200.0	3,200.0	3,366.9	3,263.8	5.6	14.8	-62.99	110.5	-216.8	252.6	233.1	19.52	12.941		
3,300.0	3,300.0	3,463.2	3,356.1	5.7	15.3	-65.43	90.5	-198.0	225.9	205.9	19.97	11.311		
3,400.0	3,400.0	3,558.3	3,447.4	5.9	15.8	-68.20	71.6	-179.0	199.5	179.2	20.34	9.812		
3,500.0	3,500.0	3,653.3	3,538.8	6.1	16.3	-71.58	53.6	-160.9	174.9	154.3	20.58	8.498		
3,600.0	3,600.0	3,752.5	3,633.6	6.3	16.9	-169.89	31.8	-141.4	152.2	135.2	17.05	8.925		
3,700.0	3,699.7	3,849.8	3,726.3	6.4	17.4	-177.91	9.7	-121.9	135.8	116.8	19.03	7.137		
3,800.0	3,799.3	3,946.0	3,818.0	6.6	17.9	-172.45	-12.1	-102.2	123.0	101.8	21.25	5.790		
3,900.0	3,899.0	4,043.1	3,911.0	6.8	18.5	-162.08	-32.1	-83.2	115.0	91.7	23.35	4.927		
4,000.0	3,998.7	4,138.8	4,003.2	7.0	18.9	-151.55	-50.6	-65.0	111.4	86.3	25.11	4.438		
4,005.8	4,004.4	4,144.3	4,008.4	7.0	19.0	-150.93	-51.7	-64.0	111.4	86.2	25.20	4.422 CC, ES		
4,100.0	4,098.3	4,234.4	4,094.9	7.2	19.5	-140.31	-71.0	-47.8	114.1	87.7	26.47	4.312 SF		
4,200.0	4,198.0	4,331.4	4,187.4	7.4	20.0	-128.63	-93.9	-29.3	122.3	95.1	27.26	4.488		
4,300.0	4,297.6	4,428.8	4,279.8	7.6	20.6	-118.10	-117.4	-9.5	134.8	107.4	27.40	4.919		
4,400.0	4,397.3	4,527.3	4,373.8	7.8	21.1	-110.00	-139.7	9.7	150.0	122.8	27.24	5.508		
4,500.0	4,497.0	4,626.5	4,468.6	8.0	21.7	-103.25	-160.8	29.9	166.2	139.2	26.95	6.167		
4,600.0	4,596.6	4,725.6	4,563.4	8.2	22.2	-97.62	-180.9	50.6	183.1	156.5	26.62	6.878		
4,700.0	4,696.3	4,824.9	4,658.6	8.4	22.7	-93.00	-199.9	71.4	200.2	173.9	26.33	7.605		
4,800.0	4,795.9	4,923.3	4,753.2	8.6	23.2	-89.20	-218.0	91.9	217.8	191.7	26.09	8.348		
4,900.0	4,895.6	5,025.0	4,851.6	8.8	23.7	-86.56	-235.9	110.3	235.1	209.0	26.01	9.037		
5,000.0	4,995.3	5,128.4	4,952.5	9.0	24.1	-84.92	-252.2	126.1	250.8	224.7	26.11	9.605		

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

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Frederiksen 1A-28H
Project:	DJ Wattenberg	TVD Reference:	KBE @ 4988.0ft (Original Well Elev)
Reference Site:	SENW S28-T3N-R68W	MD Reference:	KBE @ 4988.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Frederiksen 1A-28H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	EDM 5000.1 US Multi Users DB
Reference Design:	Plan #2 (12/100)	Offset TVD Reference:	Offset Datum

Offset Design SENW S28-T3N-R68W - Frederiksen 8-4-28 (Existing) - DD - DD													Offset Site Error:	0.0 ft
Survey Program: 141-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor		
5,100.0	5,094.9	5,232.9	5,055.0	9.2	24.5	83.90	-266.6	139.9	264.6	238.3	26.33	10.050		
5,200.0	5,194.6	5,338.4	5,159.2	9.4	24.8	83.44	-279.0	151.5	276.2	249.5	26.66	10.361		
5,300.0	5,294.2	5,442.5	5,262.3	9.6	25.1	83.53	-289.3	160.4	285.8	258.7	27.08	10.551		
5,400.0	5,393.9	5,546.8	5,366.0	9.8	25.3	84.00	-298.3	167.1	293.9	266.3	27.60	10.649		
5,500.0	5,493.6	5,658.4	5,477.3	10.0	25.5	84.86	-304.7	172.2	299.1	270.9	28.19	10.612		
5,600.0	5,593.2	5,763.9	5,582.7	10.2	25.6	86.14	-307.8	174.3	301.4	272.6	28.84	10.451		
5,700.0	5,692.9	5,866.2	5,685.0	10.4	25.7	87.75	-309.5	174.2	302.7	273.1	29.55	10.244		
5,800.0	5,792.6	5,969.1	5,787.9	10.6	25.7	89.51	-310.3	173.4	303.3	273.0	30.29	10.014		
5,900.0	5,892.2	6,072.4	5,891.3	10.8	25.8	91.20	-309.9	172.9	302.9	271.9	31.00	9.773		
6,000.0	5,991.9	6,171.3	5,990.1	11.0	25.8	92.88	-309.0	172.3	302.4	270.7	31.66	9.549		
6,055.0	6,046.7	6,225.6	6,044.4	11.2	25.9	93.87	-308.5	171.6	302.3	270.2	32.04	9.434		
6,100.0	6,091.5	6,270.0	6,088.8	11.2	25.9	94.71	-308.2	170.8	302.3	270.0	32.35	9.344		
6,200.0	6,191.2	6,369.1	6,187.8	11.5	25.9	96.57	-307.7	169.1	302.8	269.8	33.04	9.166		
6,300.0	6,290.9	6,467.9	6,286.7	11.7	26.0	98.39	-307.3	167.6	303.8	270.1	33.69	9.017		
6,400.0	6,390.5	6,566.5	6,385.2	11.9	26.1	100.14	-307.3	166.3	305.4	271.0	34.32	8.897		
6,500.0	6,490.2	6,666.4	6,485.1	12.1	26.1	101.87	-307.5	165.0	307.4	272.5	34.93	8.801		
6,600.0	6,589.8	6,766.8	6,585.5	12.3	26.2	103.66	-307.3	163.5	309.4	273.9	35.52	8.711		
6,700.0	6,689.6	6,866.9	6,685.6	12.5	26.2	-76.57	-306.9	162.0	309.0	273.3	35.71	8.654		
6,800.0	6,786.8	6,965.1	6,783.9	12.5	26.3	-81.07	-306.6	161.3	304.3	269.4	34.89	8.724		
6,900.0	6,877.1	7,057.8	6,876.5	12.4	26.4	-89.20	-306.0	162.1	299.5	266.2	33.32	8.990		
6,922.2	6,895.8	7,076.7	6,895.4	12.4	26.4	-91.24	-305.8	162.5	299.3	266.4	32.93	9.088		
7,000.0	6,956.6	7,136.5	6,955.2	12.4	26.5	-98.08	-305.0	164.4	303.5	271.9	31.66	9.588		
7,100.0	7,021.7	7,198.6	7,017.3	12.5	26.6	-104.26	-304.2	166.4	326.0	295.2	30.84	10.572		
7,200.0	7,069.8	7,244.0	7,062.6	13.0	26.6	-105.61	-303.8	167.8	370.9	339.3	31.55	11.754		
7,300.0	7,098.6	7,270.4	7,089.0	13.9	26.6	-100.30	-303.6	168.4	435.3	401.4	33.90	12.838		
7,400.0	7,106.9	7,276.2	7,094.8	15.1	26.6	-87.04	-303.5	168.6	512.6	476.5	36.14	14.185		
7,500.0	7,105.1	7,271.9	7,090.5	16.6	26.6	-86.22	-303.6	168.5	596.9	559.3	37.64	15.858		
7,600.0	7,103.4	7,267.6	7,086.2	18.4	26.6	-85.38	-303.6	168.4	685.4	646.1	39.34	17.422		
7,700.0	7,101.6	7,263.2	7,081.8	20.3	26.6	-84.54	-303.6	168.3	776.7	735.5	41.18	18.860		
7,800.0	7,099.9	7,258.7	7,077.3	22.3	26.6	-83.69	-303.7	168.1	869.9	826.8	43.12	20.173		
7,900.0	7,098.2	7,254.2	7,072.8	24.4	26.6	-82.83	-303.7	168.0	964.4	919.3	45.13	21.369		

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Frederiksen 1A-28H
Project:	DJ Wattenberg	TVD Reference:	KBE @ 4988.0ft (Original Well Elev)
Reference Site:	SENW S28-T3N-R68W	MD Reference:	KBE @ 4988.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Frederiksen 1A-28H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	EDM 5000.1 US Multi Users DB
Reference Design:	Plan #2 (12/100)	Offset TVD Reference:	Offset Datum

Reference Depths are relative to KBE @ 4988.0ft (Original Well Elev)
Offset Depths are relative to Offset Datum
Central Meridian is -105.500000 °

Coordinates are relative to: Frederiksen 1A-28H
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 0.32°

