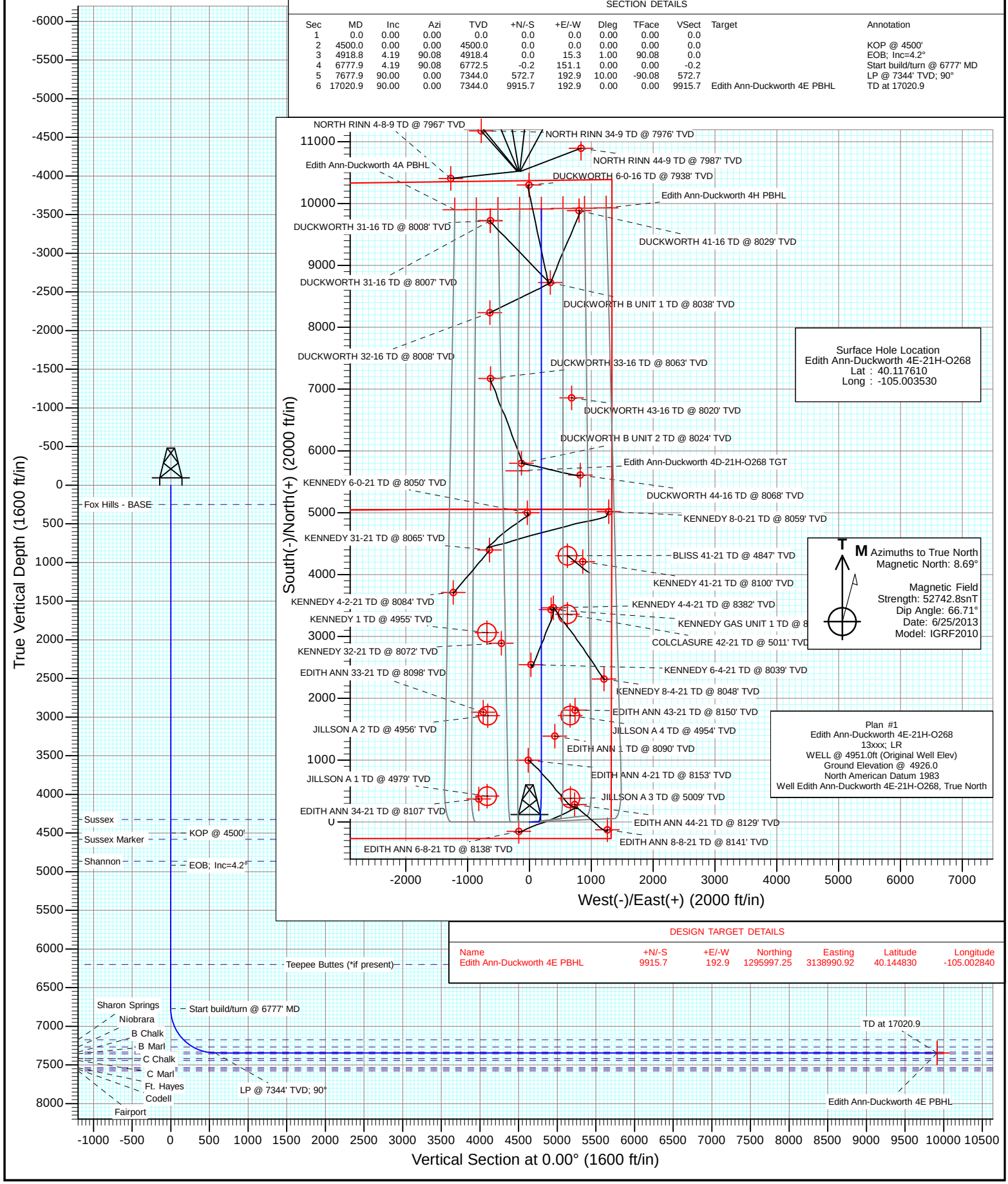
encana

Project: DJ Wattenberg
Site: S21-T2N-R68W (Edith Ann-Duckworth)
Well: Edith Ann-Duckworth 4E-21H-O268
Vellbore: Hz
Design: Plan #1

CATHEDRAL

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target	Annotation
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0		
2	4500.0	0.00	0.00	4500.0	0.0	0.0	0.00	0.00	0.0		KOP @ 4500'
3	4918.8	4.19	90.08	4918.4	0.0	15.3	1.00	90.08	0.0		EOB; Inc=4.2°
4	6777.9	4.19	90.08	6772.5	-0.2	151.1	0.00	0.00	-0.2		Start build/turn @ 6777' MD
5	7677.9	90.00	0.00	7344.0	572.7	192.9	10.00	-90.08	572.7		LP @ 7344' TVD; 90°
6	17020.9	90.00	0.00	7344.0	9915.7	192.9	0.00	0.00	9915.7	Edith Ann-Duckworth 4E PBHL	TD at 17020.9



DESIGN TARGET DETAILS

Name	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
Edith Ann-Duckworth 4E PBHL	9915.7	192.9	1295997.25	3138990.92	40.144830	-105.002840

Planning Report

Database:	USA EDM 5000 Multi Users DB	**Local Co-ordinate Reference:**	Well Edith Ann-Duckworth 4E-21H-O268
Company:	EnCana Oil & Gas (USA) Inc	**TVD Reference:**	WELL @ 4951.0ft (Original Well Elev)
Project:	DJ Wattenberg	**MD Reference:**	WELL @ 4951.0ft (Original Well Elev)
Site:	S21-T2N-R68W (Edith Ann-Duckworth)	**North Reference:**	True
Well:	Edith Ann-Duckworth 4E-21H-O268	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Hz		
Design:	Plan #1		

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 S21-T2N-R68W (Edith Ann-Duckworth)

Site Position:		**Northing:**	1,290,455.50 ft	**Latitude:**	40.129630
From:	Lat/Long	**Easting:**	3,138,171.93 ft	**Longitude:**	-105.005880
Position Uncertainty:	0.0 ft	**Slot Radius:**	13.200 in	**Grid Convergence:**	0.32 °

Well Edith Ann-Duckworth 4E-21H-O268

Well Position	**+N/-S**	0.0 ft	**Northing:**	1,286,080.57 ft	**Latitude:**	40.117610
	+E/-W	0.0 ft	**Easting:**	3,138,853.54 ft	**Longitude:**	-105.003530
Position Uncertainty		0.0 ft	**Wellhead Elevation:**	ft	**Ground Level:**	4,926.0 ft

Wellbore Hz

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	6/25/2013	8.69	66.71	52,743

Design Plan #1

Audit Notes:

Version:		**Phase:**	PLAN	**Tie On Depth:**	0.0

Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.0	0.0	0.0	0.00

Plan Sections

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
4,500.0	0.00	0.00	4,500.0	0.0	0.0	0.00	0.00	0.00	0.00	
4,918.8	4.19	90.08	4,918.4	0.0	15.3	1.00	1.00	0.00	90.08	
6,777.9	4.19	90.08	6,772.5	-0.2	151.1	0.00	0.00	0.00	0.00	
7,677.9	90.00	0.00	7,344.0	572.7	192.9	10.00	9.53	-10.01	-90.08	
17,020.9	90.00	0.00	7,344.0	9,915.7	192.9	0.00	0.00	0.00	0.00	Edith Ann-Duckworth

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Project:	DJ Wattenberg	**MD Reference:**	WELL @ 4951.0ft (Original Well Elev)
Site:	S21-T2N-R68W (Edith Ann-Duckworth)	**North Reference:**	True
Well:	Edith Ann-Duckworth 4E-21H-O268	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Hz		
Design:	Plan #1		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Comments / Formations
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	
251.0	0.00	0.00	251.0	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	
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	0.00	0.00	3,600.0	0.0	0.0	0.0	0.00	0.00	
3,700.0	0.00	0.00	3,700.0	0.0	0.0	0.0	0.00	0.00	
3,800.0	0.00	0.00	3,800.0	0.0	0.0	0.0	0.00	0.00	
3,900.0	0.00	0.00	3,900.0	0.0	0.0	0.0	0.00	0.00	
4,000.0	0.00	0.00	4,000.0	0.0	0.0	0.0	0.00	0.00	
4,100.0	0.00	0.00	4,100.0	0.0	0.0	0.0	0.00	0.00	
4,200.0	0.00	0.00	4,200.0	0.0	0.0	0.0	0.00	0.00	
4,300.0	0.00	0.00	4,300.0	0.0	0.0	0.0	0.00	0.00	
4,325.0	0.00	0.00	4,325.0	0.0	0.0	0.0	0.00	0.00	Sussex
4,400.0	0.00	0.00	4,400.0	0.0	0.0	0.0	0.00	0.00	
4,500.0	0.00	0.00	4,500.0	0.0	0.0	0.0	0.00	0.00	KOP @ 4500'
4,582.0	0.82	90.08	4,582.0	0.0	0.6	0.0	1.00	1.00	Sussex Marker
4,600.0	1.00	90.08	4,600.0	0.0	0.9	0.0	1.00	1.00	
4,700.0	2.00	90.08	4,700.0	0.0	3.5	0.0	1.00	1.00	
4,800.0	3.00	90.08	4,799.9	0.0	7.9	0.0	1.00	1.00	

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Well:	Edith Ann-Duckworth 4E-21H-O268	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Hz		
Design:	Plan #1		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Comments / Formations
4,867.3	3.67	90.08	4,867.0	0.0	11.8	0.0	1.00	1.00	Shannon
4,900.0	4.00	90.08	4,899.7	0.0	14.0	0.0	1.00	1.00	
4,918.8	4.19	90.08	4,918.4	0.0	15.3	0.0	1.00	1.00	EOB; Inc=4.2°
5,000.0	4.19	90.08	4,999.4	0.0	21.2	0.0	0.00	0.00	
5,100.0	4.19	90.08	5,099.1	0.0	28.5	0.0	0.00	0.00	
5,200.0	4.19	90.08	5,198.9	0.0	35.8	0.0	0.00	0.00	
5,300.0	4.19	90.08	5,298.6	-0.1	43.1	-0.1	0.00	0.00	
5,400.0	4.19	90.08	5,398.3	-0.1	50.4	-0.1	0.00	0.00	
5,500.0	4.19	90.08	5,498.1	-0.1	57.7	-0.1	0.00	0.00	
5,600.0	4.19	90.08	5,597.8	-0.1	65.0	-0.1	0.00	0.00	
5,700.0	4.19	90.08	5,697.5	-0.1	72.3	-0.1	0.00	0.00	
5,800.0	4.19	90.08	5,797.3	-0.1	79.6	-0.1	0.00	0.00	
5,900.0	4.19	90.08	5,897.0	-0.1	86.9	-0.1	0.00	0.00	
6,000.0	4.19	90.08	5,996.7	-0.1	94.3	-0.1	0.00	0.00	
6,100.0	4.19	90.08	6,096.5	-0.1	101.6	-0.1	0.00	0.00	
6,200.0	4.19	90.08	6,196.2	-0.1	108.9	-0.1	0.00	0.00	
6,203.8	4.19	90.08	6,200.0	-0.2	109.1	-0.2	0.00	0.00	Teepee Buttes (*if present)
6,300.0	4.19	90.08	6,295.9	-0.2	116.2	-0.2	0.00	0.00	
6,400.0	4.19	90.08	6,395.7	-0.2	123.5	-0.2	0.00	0.00	
6,500.0	4.19	90.08	6,495.4	-0.2	130.8	-0.2	0.00	0.00	
6,600.0	4.19	90.08	6,595.1	-0.2	138.1	-0.2	0.00	0.00	
6,700.0	4.19	90.08	6,694.9	-0.2	145.4	-0.2	0.00	0.00	
6,777.9	4.19	90.08	6,772.5	-0.2	151.1	-0.2	0.00	0.00	Start build/turn @ 6777' MD
6,800.0	4.73	62.15	6,794.6	0.2	152.7	0.2	10.00	2.47	
6,900.0	12.90	18.65	6,893.4	12.8	159.9	12.8	10.00	8.16	
7,000.0	22.58	10.14	6,988.6	42.3	166.9	42.3	10.00	9.68	
7,100.0	32.45	6.61	7,077.2	88.0	173.4	88.0	10.00	9.87	
7,200.0	42.38	4.60	7,156.5	148.4	179.2	148.4	10.00	9.93	
7,225.6	44.92	4.21	7,175.0	166.0	180.5	166.0	10.00	9.94	Sharon Springs
7,300.0	52.33	3.24	7,224.1	221.7	184.1	221.7	10.00	9.95	
7,379.0	60.20	2.40	7,268.0	287.2	187.3	287.2	10.00	9.96	Niobrara
7,400.0	62.29	2.20	7,278.1	305.6	188.1	305.6	10.00	9.97	
7,500.0	72.26	1.34	7,316.7	397.7	190.9	397.7	10.00	9.97	
7,570.6	79.29	0.79	7,334.0	466.0	192.2	466.0	10.00	9.97	B Chalk
7,600.0	82.23	0.57	7,338.7	495.1	192.5	495.1	10.00	9.97	
7,677.9	90.00	0.00	7,344.0	572.7	192.9	572.7	10.00	9.97	LP @ 7344' TVD; 90°
7,700.0	90.00	0.00	7,344.0	594.8	192.9	594.8	0.00	0.00	
7,800.0	90.00	0.00	7,344.0	694.8	192.9	694.8	0.00	0.00	
7,900.0	90.00	0.00	7,344.0	794.8	192.9	794.8	0.00	0.00	
8,000.0	90.00	0.00	7,344.0	894.8	192.9	894.8	0.00	0.00	
8,100.0	90.00	0.00	7,344.0	994.8	192.9	994.8	0.00	0.00	
8,200.0	90.00	0.00	7,344.0	1,094.8	192.9	1,094.8	0.00	0.00	
8,300.0	90.00	0.00	7,344.0	1,194.8	192.9	1,194.8	0.00	0.00	
8,400.0	90.00	0.00	7,344.0	1,294.8	192.9	1,294.8	0.00	0.00	
8,500.0	90.00	0.00	7,344.0	1,394.8	192.9	1,394.8	0.00	0.00	
8,600.0	90.00	0.00	7,344.0	1,494.8	192.9	1,494.8	0.00	0.00	
8,700.0	90.00	0.00	7,344.0	1,594.8	192.9	1,594.8	0.00	0.00	
8,800.0	90.00	0.00	7,344.0	1,694.8	192.9	1,694.8	0.00	0.00	
8,900.0	90.00	0.00	7,344.0	1,794.8	192.9	1,794.8	0.00	0.00	
9,000.0	90.00	0.00	7,344.0	1,894.8	192.9	1,894.8	0.00	0.00	
9,100.0	90.00	0.00	7,344.0	1,994.8	192.9	1,994.8	0.00	0.00	
9,200.0	90.00	0.00	7,344.0	2,094.8	192.9	2,094.8	0.00	0.00	

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Wellbore:	Hz		
Design:	Plan #1		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Comments / Formations
9,300.0	90.00	0.00	7,344.0	2,194.8	192.9	2,194.8	0.00	0.00	
9,400.0	90.00	0.00	7,344.0	2,294.8	192.9	2,294.8	0.00	0.00	
9,500.0	90.00	0.00	7,344.0	2,394.8	192.9	2,394.8	0.00	0.00	
9,600.0	90.00	0.00	7,344.0	2,494.8	192.9	2,494.8	0.00	0.00	
9,700.0	90.00	0.00	7,344.0	2,594.8	192.9	2,594.8	0.00	0.00	
9,800.0	90.00	0.00	7,344.0	2,694.8	192.9	2,694.8	0.00	0.00	
9,900.0	90.00	0.00	7,344.0	2,794.8	192.9	2,794.8	0.00	0.00	
10,000.0	90.00	0.00	7,344.0	2,894.8	192.9	2,894.8	0.00	0.00	
10,100.0	90.00	0.00	7,344.0	2,994.8	192.9	2,994.8	0.00	0.00	
10,200.0	90.00	0.00	7,344.0	3,094.8	192.9	3,094.8	0.00	0.00	
10,300.0	90.00	0.00	7,344.0	3,194.8	192.9	3,194.8	0.00	0.00	
10,400.0	90.00	0.00	7,344.0	3,294.8	192.9	3,294.8	0.00	0.00	
10,500.0	90.00	0.00	7,344.0	3,394.8	192.9	3,394.8	0.00	0.00	
10,600.0	90.00	0.00	7,344.0	3,494.8	192.9	3,494.8	0.00	0.00	
10,700.0	90.00	0.00	7,344.0	3,594.8	192.9	3,594.8	0.00	0.00	
10,800.0	90.00	0.00	7,344.0	3,694.8	192.9	3,694.8	0.00	0.00	
10,900.0	90.00	0.00	7,344.0	3,794.8	192.9	3,794.8	0.00	0.00	
11,000.0	90.00	0.00	7,344.0	3,894.8	192.9	3,894.8	0.00	0.00	
11,100.0	90.00	0.00	7,344.0	3,994.8	192.9	3,994.8	0.00	0.00	
11,200.0	90.00	0.00	7,344.0	4,094.8	192.9	4,094.8	0.00	0.00	
11,300.0	90.00	0.00	7,344.0	4,194.8	192.9	4,194.8	0.00	0.00	
11,400.0	90.00	0.00	7,344.0	4,294.8	192.9	4,294.8	0.00	0.00	
11,500.0	90.00	0.00	7,344.0	4,394.8	192.9	4,394.8	0.00	0.00	
11,600.0	90.00	0.00	7,344.0	4,494.8	192.9	4,494.8	0.00	0.00	
11,700.0	90.00	0.00	7,344.0	4,594.8	192.9	4,594.8	0.00	0.00	
11,800.0	90.00	0.00	7,344.0	4,694.8	192.9	4,694.8	0.00	0.00	
11,900.0	90.00	0.00	7,344.0	4,794.8	192.9	4,794.8	0.00	0.00	
12,000.0	90.00	0.00	7,344.0	4,894.8	192.9	4,894.8	0.00	0.00	
12,100.0	90.00	0.00	7,344.0	4,994.8	192.9	4,994.8	0.00	0.00	
12,200.0	90.00	0.00	7,344.0	5,094.8	192.9	5,094.8	0.00	0.00	
12,300.0	90.00	0.00	7,344.0	5,194.8	192.9	5,194.8	0.00	0.00	
12,400.0	90.00	0.00	7,344.0	5,294.8	192.9	5,294.8	0.00	0.00	
12,500.0	90.00	0.00	7,344.0	5,394.8	192.9	5,394.8	0.00	0.00	
12,600.0	90.00	0.00	7,344.0	5,494.8	192.9	5,494.8	0.00	0.00	
12,700.0	90.00	0.00	7,344.0	5,594.8	192.9	5,594.8	0.00	0.00	
12,800.0	90.00	0.00	7,344.0	5,694.8	192.9	5,694.8	0.00	0.00	
12,900.0	90.00	0.00	7,344.0	5,794.8	192.9	5,794.8	0.00	0.00	
13,000.0	90.00	0.00	7,344.0	5,894.8	192.9	5,894.8	0.00	0.00	
13,100.0	90.00	0.00	7,344.0	5,994.8	192.9	5,994.8	0.00	0.00	
13,200.0	90.00	0.00	7,344.0	6,094.8	192.9	6,094.8	0.00	0.00	
13,300.0	90.00	0.00	7,344.0	6,194.8	192.9	6,194.8	0.00	0.00	
13,400.0	90.00	0.00	7,344.0	6,294.8	192.9	6,294.8	0.00	0.00	
13,500.0	90.00	0.00	7,344.0	6,394.8	192.9	6,394.8	0.00	0.00	
13,600.0	90.00	0.00	7,344.0	6,494.8	192.9	6,494.8	0.00	0.00	
13,700.0	90.00	0.00	7,344.0	6,594.8	192.9	6,594.8	0.00	0.00	
13,800.0	90.00	0.00	7,344.0	6,694.8	192.9	6,694.8	0.00	0.00	
13,900.0	90.00	0.00	7,344.0	6,794.8	192.9	6,794.8	0.00	0.00	
14,000.0	90.00	0.00	7,344.0	6,894.8	192.9	6,894.8	0.00	0.00	
14,100.0	90.00	0.00	7,344.0	6,994.8	192.9	6,994.8	0.00	0.00	
14,200.0	90.00	0.00	7,344.0	7,094.8	192.9	7,094.8	0.00	0.00	
14,300.0	90.00	0.00	7,344.0	7,194.8	192.9	7,194.8	0.00	0.00	
14,400.0	90.00	0.00	7,344.0	7,294.8	192.9	7,294.8	0.00	0.00	

Database:	USA EDM 5000 Multi Users DB	**Local Co-ordinate Reference:**	Well Edith Ann-Duckworth 4E-21H-O268
Company:	EnCana Oil & Gas (USA) Inc	**TVD Reference:**	WELL @ 4951.0ft (Original Well Elev)
Project:	DJ Wattenberg	**MD Reference:**	WELL @ 4951.0ft (Original Well Elev)
Site:	S21-T2N-R68W (Edith Ann-Duckworth)	**North Reference:**	True
Well:	Edith Ann-Duckworth 4E-21H-O268	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Hz		
Design:	Plan #1		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Comments / Formations
14,500.0	90.00	0.00	7,344.0	7,394.8	192.9	7,394.8	0.00	0.00	
14,600.0	90.00	0.00	7,344.0	7,494.8	192.9	7,494.8	0.00	0.00	
14,700.0	90.00	0.00	7,344.0	7,594.8	192.9	7,594.8	0.00	0.00	
14,800.0	90.00	0.00	7,344.0	7,694.8	192.9	7,694.8	0.00	0.00	
14,900.0	90.00	0.00	7,344.0	7,794.8	192.9	7,794.8	0.00	0.00	
15,000.0	90.00	0.00	7,344.0	7,894.8	192.9	7,894.8	0.00	0.00	
15,100.0	90.00	0.00	7,344.0	7,994.8	192.9	7,994.8	0.00	0.00	
15,200.0	90.00	0.00	7,344.0	8,094.8	192.9	8,094.8	0.00	0.00	
15,300.0	90.00	0.00	7,344.0	8,194.8	192.9	8,194.8	0.00	0.00	
15,400.0	90.00	0.00	7,344.0	8,294.8	192.9	8,294.8	0.00	0.00	
15,500.0	90.00	0.00	7,344.0	8,394.8	192.9	8,394.8	0.00	0.00	
15,600.0	90.00	0.00	7,344.0	8,494.8	192.9	8,494.8	0.00	0.00	
15,700.0	90.00	0.00	7,344.0	8,594.8	192.9	8,594.8	0.00	0.00	
15,800.0	90.00	0.00	7,344.0	8,694.8	192.9	8,694.8	0.00	0.00	
15,900.0	90.00	0.00	7,344.0	8,794.8	192.9	8,794.8	0.00	0.00	
16,000.0	90.00	0.00	7,344.0	8,894.8	192.9	8,894.8	0.00	0.00	
16,100.0	90.00	0.00	7,344.0	8,994.8	192.9	8,994.8	0.00	0.00	
16,200.0	90.00	0.00	7,344.0	9,094.8	192.9	9,094.8	0.00	0.00	
16,300.0	90.00	0.00	7,344.0	9,194.8	192.9	9,194.8	0.00	0.00	
16,400.0	90.00	0.00	7,344.0	9,294.8	192.9	9,294.8	0.00	0.00	
16,500.0	90.00	0.00	7,344.0	9,394.8	192.9	9,394.8	0.00	0.00	
16,600.0	90.00	0.00	7,344.0	9,494.8	192.9	9,494.8	0.00	0.00	
16,700.0	90.00	0.00	7,344.0	9,594.8	192.9	9,594.8	0.00	0.00	
16,800.0	90.00	0.00	7,344.0	9,694.8	192.9	9,694.8	0.00	0.00	
16,900.0	90.00	0.00	7,344.0	9,794.8	192.9	9,794.8	0.00	0.00	
17,000.0	90.00	0.00	7,344.0	9,894.8	192.9	9,894.8	0.00	0.00	
17,020.9	90.00	0.00	7,344.0	9,915.7	192.9	9,915.7	0.00	0.00	TD at 17020.9

Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
Edith Ann-Duckworth 4E - plan hits target center - Point	0.00	0.00	7,344.0	9,915.7	192.9	1,295,997.25	3,138,990.92	40.144830	-105.002840

Database:	USA EDM 5000 Multi Users DB	**Local Co-ordinate Reference:**	Well Edith Ann-Duckworth 4E-21H-O268
Company:	EnCana Oil & Gas (USA) Inc	**TVD Reference:**	WELL @ 4951.0ft (Original Well Elev)
Project:	DJ Wattenberg	**MD Reference:**	WELL @ 4951.0ft (Original Well Elev)
Site:	S21-T2N-R68W (Edith Ann-Duckworth)	**North Reference:**	True
Well:	Edith Ann-Duckworth 4E-21H-O268	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Hz		
Design:	Plan #1		

Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
251.0	251.0	Fox Hills - BASE			
4,325.0	4,325.0	Sussex			
4,582.0	4,582.0	Sussex Marker			
4,867.3	4,867.0	Shannon			
6,203.8	6,200.0	Teepee Buttes (*if present)			
7,225.6	7,175.0	Sharon Springs			
7,379.0	7,268.0	Niobrara			
7,570.6	7,334.0	B Chalk			

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates +N/-S (ft)	Local Coordinates +E/-W (ft)	Comment
4,500.0	4,500.0	0.0	0.0	KOP @ 4500'
4,918.8	4,918.4	0.0	15.3	EOB; Inc=4.2°
6,777.9	6,772.5	-0.2	151.1	Start build/turn @ 6777' MD
7,677.9	7,344.0	572.7	192.9	LP @ 7344' TVD; 90°
17,020.9	7,344.0	9,915.7	192.9	TD at 17020.9

EnCana Oil & Gas (USA) Inc

DJ Wattenberg
S21-T2N-R68W (Edith Ann-Duckworth)
Edith Ann-Duckworth 4E-21H-O268
Hz
Plan #1

Anticollision Report

26 June, 2013

Company:	EnCana Oil & Gas (USA) Inc	**Local Co-ordinate Reference:**	Well Edith Ann-Duckworth 4E-21H-O268
Project:	DJ Wattenberg	**TVD Reference:**	WELL @ 4951.0ft (Original Well Elev)
Reference Site:	S21-T2N-R68W (Edith Ann-Duckworth)	**MD Reference:**	WELL @ 4951.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Edith Ann-Duckworth 4E-21H-O268	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Hz	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Reference	Plan #1

Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	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** 6/26/2013

From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.0	17,020.9	Plan #1 (Hz)	Geolink MWD	Geolink MWD

Company:	EnCana Oil & Gas (USA) Inc	**Local Co-ordinate Reference:**	Well Edith Ann-Duckworth 4E-21H-O268
Project:	DJ Wattenberg	**TVD Reference:**	WELL @ 4951.0ft (Original Well Elev)
Reference Site:	S21-T2N-R68W (Edith Ann-Duckworth)	**MD Reference:**	WELL @ 4951.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Edith Ann-Duckworth 4E-21H-O268	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Hz	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Summary

Site Name Offset Well - Wellbore - Design	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
S21-T2N-R68W (Edith Ann-Duckworth)						
BLISS 41-21 (EXISTING) - KPK WELL - SURVEYS						Out of range
COLCLASURE 42-21 (EXISTING) - KPK WELL - NO SU						Out of range
DUCKWORTH 31-16 (EXISTING) - ENCANA WELL - SU						Out of range
DUCKWORTH 32-16 (EXISTING) - ENCANA WELL - SU						Out of range
DUCKWORTH 33-16 (EXISTING) - ENCANA WELL - SU						Out of range
DUCKWORTH 41-16 (EXISING) - ENCANA WELL - SUR						Out of range
DUCKWORTH 43-16 (EXISTING) - ENCANA WELL - NO	13,964.6	7,268.0	489.3	354.0	3.617	CC, ES
DUCKWORTH 43-16 (EXISTING) - ENCANA WELL - NO	14,000.0	7,268.0	490.6	354.7	3.610	SF
DUCKWORTH 44-16 (EXISTING) - ENCANA WELL - SU						Out of range
DUCKWORTH 6-0-16 (EXISTING) - ENCANA WELL - S	17,020.9	7,504.9	431.7	225.0	2.089	CC, ES, SF
DUCKWORTH B UNIT 1 (EXISTING) - ENCANA WELL -	15,829.7	7,279.0	145.4	-22.5	0.866	Level 1, CC, ES, SF
DUCKWORTH B UNIT 2 (EXISTING) - ENCANA WELL -	12,905.6	7,272.0	322.6	205.8	2.762	CC, ES, SF
EDITH ANN 1 (EXISTING) - ENCANA WELL - NO SURV	8,494.9	7,297.0	217.4	175.9	5.237	CC
EDITH ANN 1 (EXISTING) - ENCANA WELL - NO SURV	8,500.0	7,297.0	217.4	175.8	5.228	ES, SF
EDITH ANN 33-21 (EXISTING) - ENCANA WELL - NO S						Out of range
EDITH ANN 34-21 (EXISTING) - ENCANA WELL - NO S						Out of range
EDITH ANN 4-21 (EXISTING) - ENCANA WELL - SURVE	8,102.0	7,455.9	200.7	159.2	4.831	CC, ES, SF
EDITH ANN 43-21 (EXISTING) - ENCANA WELL - NO S						Out of range
EDITH ANN 44-21 (EXISTING) - ENCANA WELL - NO S						Out of range
EDITH ANN 6-8-21 (EXISTING) - ENCANA WELL - SUR	4,017.4	4,120.7	84.6	70.6	6.010	CC, ES
EDITH ANN 6-8-21 (EXISTING) - ENCANA WELL - SUR	4,200.0	4,294.8	105.0	86.2	5.577	SF
EDITH ANN 8-8-21 (EXISTING) - ENCANA WELL - SUR						Out of range
Edith Ann-Duckworth 4A-21H-O268 - Hz - Plan #1	200.0	199.0	39.2	38.5	64.280	CC, ES
Edith Ann-Duckworth 4A-21H-O268 - Hz - Plan #1	800.0	792.8	70.2	67.3	24.772	SF
Edith Ann-Duckworth 4B-21H-O268 - Hz - Plan #1	300.0	300.0	28.0	27.0	29.134	CC, ES
Edith Ann-Duckworth 4B-21H-O268 - Hz - Plan #1	700.0	697.4	41.8	39.5	17.509	SF
Edith Ann-Duckworth 4C-21H-O268 - Hz - Plan #1	400.0	400.0	19.6	18.3	14.956	CC, ES
Edith Ann-Duckworth 4C-21H-O268 - Hz - Plan #1	600.0	599.2	23.1	21.0	11.470	SF
Edith Ann-Duckworth 4D-21H-O268 - Hz - Plan #1	500.0	500.0	8.4	6.7	5.060	CC, ES
Edith Ann-Duckworth 4D-21H-O268 - Hz - Plan #1	17,020.9	17,234.1	416.4	117.0	1.391	Level 3, SF
Edith Ann-Duckworth 4F-21H-O268 - Hz - Plan #1	366.3	367.3	11.2	10.0	9.375	CC
Edith Ann-Duckworth 4F-21H-O268 - Hz - Plan #1	400.0	401.0	11.2	9.9	8.535	ES
Edith Ann-Duckworth 4F-21H-O268 - Hz - Plan #1	17,020.9	17,256.8	413.5	114.3	1.382	Level 3, SF
Edith Ann-Duckworth 4G-21H-O268 - Hz - Plan #1	266.3	267.3	22.4	21.5	26.505	CC
Edith Ann-Duckworth 4G-21H-O268 - Hz - Plan #1	300.0	301.0	22.4	21.4	23.265	ES
Edith Ann-Duckworth 4G-21H-O268 - Hz - Plan #1	600.0	599.6	30.2	28.2	14.951	SF
Edith Ann-Duckworth 4H-21H-O268 - Hz - Plan #1	166.3	167.3	30.8	30.3	62.139	CC
Edith Ann-Duckworth 4H-21H-O268 - Hz - Plan #1	200.0	201.0	30.8	30.2	50.218	ES
Edith Ann-Duckworth 4H-21H-O268 - Hz - Plan #1	700.0	697.1	52.5	50.1	21.559	SF
JILLSON A 1 (EXISTING) - FOUNDATION WELL - NO S						Out of range
JILLSON A 2 (EXISTING) - FOUNDATION WELL - NO S						Out of range
JILLSON A 3 (EXISTING) - FOUNDATION WELL - NO S						Out of range
JILLSON A 4 (EXISTING) - FOUNDATION WELL - NO S						Out of range
KENNEDY 1 (EXISTING) - MACEY & MERSHON WELL						Out of range
KENNEDY 31-21 (EXISTING) - ENCANA WELL - NO SU	10,551.3	7,299.0	139.9	63.9	1.840	CC, ES, SF
KENNEDY 32-21 (EXISTING) - ENCANA WELL - NO SU						Out of range
KENNEDY 41-21 (EXISTING) - ENCANA WELL - NO SU						Out of range
KENNEDY 4-2-21 (EXISTING) - ENCANA WELL - SURV						Out of range
KENNEDY 6-0-21 (EXISTING) - ENCANA WELL - SURV	12,090.1	7,389.8	226.0	120.0	2.132	CC, ES
KENNEDY 6-0-21 (EXISTING) - ENCANA WELL - SURV	12,100.0	7,390.1	226.3	120.1	2.131	SF
KENNEDY 6-4-21 (EXISTING) - ENCANA WELL - SURV	9,640.6	7,418.0	163.7	95.2	2.390	CC, ES, SF
KENNEDY 8-0-21 (EXISTING) - ENCANA WELL - SURV						Out of range
KENNEDY 8-4-21 (EXISTING) - ENCANA WELL - SURV						Out of range

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

Company:	EnCana Oil & Gas (USA) Inc	**Local Co-ordinate Reference:**	Well Edith Ann-Duckworth 4E-21H-O268
Project:	DJ Wattenberg	**TVD Reference:**	WELL @ 4951.0ft (Original Well Elev)
Reference Site:	S21-T2N-R68W (Edith Ann-Duckworth)	**MD Reference:**	WELL @ 4951.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Edith Ann-Duckworth 4E-21H-O268	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Hz	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Summary

Site Name Offset Well - Wellbore - Design	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
S21-T2N-R68W (Edith Ann-Duckworth)						
KENNEDY GAS UNIT 1 (EXISTING) - ENCANA WELL -	10,539.3	7,279.0	157.5	81.7	2.078	CC, ES, SF
NORTH RINN 33-9 (EXISTING) - ENCANA WELL - PLA						Out of range
NORTH RINN 34-9 (EXISTING) - ENCANA WELL - PLA						Out of range
NORTH RINN 43-9 (EXISTING) - ENCANA WELL - PLA						Out of range
NORTH RINN 44-9 (EXISTING) - ENCANA WELL - PLA						Out of range
NORTH RINN 4-4-9 (EXISTING) - ENCANA WELL - PLA						Out of range
NORTH RINN 4-6-9 (EXISTING) - ENCANA WELL - PLA						Out of range
NORTH RINN 4-8-9 (EXISTING) - ENCANA WELL - PLA						Out of range
NORTH RINN 6-6-9 (EXISTING) - ENCANA WELL - PLA						Out of range

Company:	EnCana Oil & Gas (USA) Inc	**Local Co-ordinate Reference:**	Well Edith Ann-Duckworth 4E-21H-O268
Project:	DJ Wattenberg	**TVD Reference:**	WELL @ 4951.0ft (Original Well Elev)
Reference Site:	S21-T2N-R68W (Edith Ann-Duckworth)	**MD Reference:**	WELL @ 4951.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Edith Ann-Duckworth 4E-21H-O268	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Hz	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Offset Design S21-T2N-R68W (Edith Ann-Duckworth) - DUCKWORTH 43-16 (EXISTING) - ENCANA WELL - NO SUR

Offset Site Error: 0.0 ft

Survey Program: 8020-Geolink MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning
13,900.0	7,344.0	7,268.0	7,268.0	121.5	12.7	90.00	6,859.4	682.2	493.6	359.4	134.14	3.680	
13,964.6	7,344.0	7,268.0	7,268.0	122.6	12.7	90.00	6,859.4	682.2	489.3	354.0	135.26	3.617	CC, ES
14,000.0	7,344.0	7,268.0	7,268.0	123.2	12.7	90.00	6,859.4	682.2	490.6	354.7	135.88	3.610	SF

Company:	EnCana Oil & Gas (USA) Inc	**Local Co-ordinate Reference:**	Well Edith Ann-Duckworth 4E-21H-O268
Project:	DJ Wattenberg	**TVD Reference:**	WELL @ 4951.0ft (Original Well Elev)
Reference Site:	S21-T2N-R68W (Edith Ann-Duckworth)	**MD Reference:**	WELL @ 4951.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Edith Ann-Duckworth 4E-21H-O268	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Hz	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Offset Design S21-T2N-R68W (Edith Ann-Duckworth) - DUCKWORTH 6-0-16 (EXISTING) - ENCANA WELL - SURVE

Offset Site Error: 0.0 ft

Survey Program: 59-MWD

Offset Well Error: 0.0 ft

Reference		Offset		Semi Major Axis			Offset Wellbore Centre		Distance				
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	+N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning
17,000.0	7,344.0	7,504.5	7,273.6	175.7	31.3	-88.57	10,290.3	-21.6	450.0	243.7	206.32	2.181	
17,020.9	7,344.0	7,504.9	7,274.0	176.0	31.3	-88.66	10,290.4	-21.6	431.7	225.0	206.69	2.089	CC, ES, SF

Company:	EnCana Oil & Gas (USA) Inc	**Local Co-ordinate Reference:**	Well Edith Ann-Duckworth 4E-21H-O268
Project:	DJ Wattenberg	**TVD Reference:**	WELL @ 4951.0ft (Original Well Elev)
Reference Site:	S21-T2N-R68W (Edith Ann-Duckworth)	**MD Reference:**	WELL @ 4951.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Edith Ann-Duckworth 4E-21H-O268	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Hz	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Offset Design S21-T2N-R68W (Edith Ann-Duckworth) - DUCKWORTH B UNIT 1 (EXISTING) - ENCANA WELL - NO S

Offset Site Error: 0.0 ft

Survey Program: 8038-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning
15,400.0	7,344.0	7,279.0	7,279.0	147.7	12.7	90.00	8,724.5	338.3	453.6	293.3	160.33	2.829	
15,500.0	7,344.0	7,279.0	7,279.0	149.4	12.7	90.00	8,724.5	338.3	360.3	198.3	162.08	2.223	
15,600.0	7,344.0	7,279.0	7,279.0	151.2	12.7	90.00	8,724.5	338.3	271.8	108.0	163.83	1.659	
15,700.0	7,344.0	7,279.0	7,279.0	152.9	12.7	90.00	8,724.5	338.3	194.8	29.3	165.58	1.177	Level 2
15,800.0	7,344.0	7,279.0	7,279.0	154.7	12.7	90.00	8,724.5	338.3	148.4	-18.9	167.33	0.887	Level 1
15,829.7	7,344.0	7,279.0	7,279.0	155.2	12.7	90.00	8,724.5	338.3	145.4	-22.5	167.84	0.866	Level 1, CC, ES, SF
15,900.0	7,344.0	7,279.0	7,279.0	156.4	12.7	90.00	8,724.5	338.3	161.5	-7.6	169.07	0.955	Level 1
16,000.0	7,344.0	7,279.0	7,279.0	158.2	12.7	90.00	8,724.5	338.3	223.9	53.1	170.82	1.311	Level 3
16,100.0	7,344.0	7,279.0	7,279.0	159.9	12.7	90.00	8,724.5	338.3	306.9	134.3	172.57	1.778	
16,200.0	7,344.0	7,279.0	7,279.0	161.7	12.7	90.00	8,724.5	338.3	397.8	223.5	174.32	2.282	
16,300.0	7,344.0	7,279.0	7,279.0	163.4	12.7	90.00	8,724.5	338.3	492.3	316.2	176.07	2.796	

Company:	EnCana Oil & Gas (USA) Inc	**Local Co-ordinate Reference:**	Well Edith Ann-Duckworth 4E-21H-O268
Project:	DJ Wattenberg	**TVD Reference:**	WELL @ 4951.0ft (Original Well Elev)
Reference Site:	S21-T2N-R68W (Edith Ann-Duckworth)	**MD Reference:**	WELL @ 4951.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Edith Ann-Duckworth 4E-21H-O268	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Hz	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Offset Design S21-T2N-R68W (Edith Ann-Duckworth) - DUCKWORTH B UNIT 2 (EXISTING) - ENCANA WELL - NO S

Offset Site Error: 0.0 ft

Survey Program: 8024-Geolink MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning
12,600.0	7,344.0	7,272.0	7,272.0	98.9	12.7	-90.00	5,800.5	-129.7	444.4	332.9	111.48	3.986	
12,700.0	7,344.0	7,272.0	7,272.0	100.6	12.7	-90.00	5,800.5	-129.7	382.6	269.4	113.23	3.379	
12,800.0	7,344.0	7,272.0	7,272.0	102.3	12.7	-90.00	5,800.5	-129.7	339.5	224.5	114.97	2.953	
12,900.0	7,344.0	7,272.0	7,272.0	104.1	12.7	-90.00	5,800.5	-129.7	322.7	206.0	116.71	2.765	
12,905.6	7,344.0	7,272.0	7,272.0	104.2	12.7	-90.00	5,800.5	-129.7	322.6	205.8	116.81	2.762	CC, ES, SF
13,000.0	7,344.0	7,272.0	7,272.0	105.8	12.7	-90.00	5,800.5	-129.7	336.2	217.7	118.45	2.838	
13,100.0	7,344.0	7,272.0	7,272.0	107.6	12.7	-90.00	5,800.5	-129.7	376.7	256.5	120.19	3.134	
13,200.0	7,344.0	7,272.0	7,272.0	109.3	12.7	-90.00	5,800.5	-129.7	436.8	314.8	121.94	3.582	

Company:	EnCana Oil & Gas (USA) Inc	**Local Co-ordinate Reference:**	Well Edith Ann-Duckworth 4E-21H-O268
Project:	DJ Wattenberg	**TVD Reference:**	WELL @ 4951.0ft (Original Well Elev)
Reference Site:	S21-T2N-R68W (Edith Ann-Duckworth)	**MD Reference:**	WELL @ 4951.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Edith Ann-Duckworth 4E-21H-O268	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Hz	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Offset Design S21-T2N-R68W (Edith Ann-Duckworth) - EDITH ANN 1 (EXISTING) - ENCANA WELL - NO SURVEYS

Offset Site Error: 0.0 ft

Survey Program: 8090-Geolink MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning
8,100.0	7,344.0	7,297.0	7,297.0	22.9	12.7	90.00	1,389.8	410.3	450.8	415.4	35.43	12.724	
8,200.0	7,344.0	7,297.0	7,297.0	24.4	12.7	90.00	1,389.8	410.3	366.4	329.4	36.92	9.922	
8,300.0	7,344.0	7,297.0	7,297.0	25.9	12.7	90.00	1,389.8	410.3	292.0	253.5	38.45	7.593	
8,400.0	7,344.0	7,297.0	7,297.0	27.5	12.7	90.00	1,389.8	410.3	237.2	197.2	40.01	5.929	
8,494.9	7,344.0	7,297.0	7,297.0	29.0	12.7	90.00	1,389.8	410.3	217.4	175.9	41.50	5.237	CC
8,500.0	7,344.0	7,297.0	7,297.0	29.0	12.7	90.00	1,389.8	410.3	217.4	175.8	41.58	5.228	ES, SF
8,600.0	7,344.0	7,297.0	7,297.0	30.6	12.7	90.00	1,389.8	410.3	241.4	198.2	43.18	5.591	
8,700.0	7,344.0	7,297.0	7,297.0	32.2	12.7	90.00	1,389.8	410.3	298.8	254.0	44.79	6.671	
8,800.0	7,344.0	7,297.0	7,297.0	33.9	12.7	90.00	1,389.8	410.3	374.6	328.2	46.42	8.069	
8,900.0	7,344.0	7,297.0	7,297.0	35.5	12.7	90.00	1,389.8	410.3	459.7	411.6	48.06	9.565	

Company:	EnCana Oil & Gas (USA) Inc	**Local Co-ordinate Reference:**	Well Edith Ann-Duckworth 4E-21H-O268
Project:	DJ Wattenberg	**TVD Reference:**	WELL @ 4951.0ft (Original Well Elev)
Reference Site:	S21-T2N-R68W (Edith Ann-Duckworth)	**MD Reference:**	WELL @ 4951.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Edith Ann-Duckworth 4E-21H-O268	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Hz	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Offset Design S21-T2N-R68W (Edith Ann-Duckworth) - EDITH ANN 4-21 (EXISTING) - ENCANA WELL - SURVEYS

Offset Site Error: 0.0 ft

Survey Program: 140-Geolink MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning
7,700.0	7,344.0	7,453.3	7,331.5	17.5	23.2	-88.37	996.8	-7.8	449.3	413.3	36.03	12.468	
7,800.0	7,344.0	7,454.0	7,332.2	18.8	23.2	-88.56	996.8	-7.8	362.6	325.3	37.31	9.718	
7,900.0	7,344.0	7,454.6	7,332.8	20.1	23.2	-88.74	996.8	-7.8	284.7	246.1	38.66	7.366	
8,000.0	7,344.0	7,455.3	7,333.5	21.5	23.2	-88.93	996.8	-7.8	225.1	185.1	40.07	5.619	
8,100.0	7,344.0	7,455.9	7,334.1	22.9	23.2	-89.11	996.8	-7.8	200.7	159.2	41.52	4.834	
8,102.0	7,344.0	7,455.9	7,334.1	23.0	23.2	-89.12	996.8	-7.8	200.7	159.2	41.55	4.831	CC, ES, SF
8,200.0	7,344.0	7,456.6	7,334.7	24.4	23.2	-89.30	996.8	-7.8	223.4	180.4	43.02	5.193	
8,300.0	7,344.0	7,457.2	7,335.4	25.9	23.2	-89.49	996.8	-7.8	282.0	237.4	44.55	6.330	
8,400.0	7,344.0	7,457.9	7,336.0	27.5	23.2	-89.67	996.8	-7.8	359.3	313.2	46.10	7.794	
8,500.0	7,344.0	7,458.5	7,336.7	29.0	23.2	-89.86	996.8	-7.8	445.8	398.1	47.68	9.350	

Company:	EnCana Oil & Gas (USA) Inc	**Local Co-ordinate Reference:**	Well Edith Ann-Duckworth 4E-21H-O268
Project:	DJ Wattenberg	**TVD Reference:**	WELL @ 4951.0ft (Original Well Elev)
Reference Site:	S21-T2N-R68W (Edith Ann-Duckworth)	**MD Reference:**	WELL @ 4951.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Edith Ann-Duckworth 4E-21H-O268	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Hz	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Offset Design S21-T2N-R68W (Edith Ann-Duckworth) - EDITH ANN 6-8-21 (EXISTING) - ENCANA WELL - SURVEYS

Offset Site Error: 0.0 ft

Survey Program: 80-Geolink MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning
2,500.0	2,500.0	2,684.5	2,647.1	4.3	7.7	79.35	85.3	453.4	486.4	474.5	11.85	41.036	
2,600.0	2,600.0	2,777.5	2,735.2	4.5	8.2	80.20	73.5	425.7	454.8	442.3	12.52	36.313	
2,700.0	2,700.0	2,871.2	2,824.0	4.7	8.8	81.18	61.8	398.4	423.8	410.6	13.19	32.131	
2,800.0	2,800.0	2,962.3	2,910.5	4.8	9.3	82.39	49.7	372.2	393.4	379.6	13.82	28.465	
2,900.0	2,900.0	3,056.3	2,999.9	5.0	9.8	83.75	37.9	345.8	363.9	349.4	14.45	25.185	
3,000.0	3,000.0	3,153.0	3,091.9	5.2	10.4	85.18	26.8	318.4	334.4	319.3	15.09	22.161	
3,100.0	3,100.0	3,246.5	3,180.9	5.4	10.9	86.85	16.0	291.9	305.2	289.5	15.68	19.461	
3,200.0	3,200.0	3,340.3	3,270.5	5.5	11.4	88.81	5.5	265.9	277.0	260.7	16.24	17.057	
3,300.0	3,300.0	3,438.6	3,364.2	5.7	11.9	91.24	-5.2	238.2	248.6	231.8	16.78	14.812	
3,400.0	3,400.0	3,535.6	3,456.7	5.9	12.5	93.67	-13.5	210.3	220.1	202.8	17.31	12.715	
3,500.0	3,500.0	3,632.2	3,548.5	6.1	13.0	96.95	-22.1	181.4	190.9	173.2	17.74	10.760	
3,600.0	3,600.0	3,726.7	3,638.2	6.2	13.6	101.43	-30.9	153.1	162.6	144.6	17.99	9.034	
3,700.0	3,700.0	3,820.6	3,727.2	6.4	14.2	108.16	-41.0	125.1	136.0	118.1	17.89	7.603	
3,800.0	3,800.0	3,916.5	3,818.0	6.6	14.7	118.53	-52.4	96.5	112.6	95.4	17.15	6.564	
3,900.0	3,900.0	4,010.4	3,906.8	6.8	15.3	133.15	-63.4	67.6	93.7	78.1	15.61	6.002	
4,000.0	4,000.0	4,104.3	3,995.3	6.9	15.9	152.90	-75.5	38.6	84.9	70.8	14.09	6.021	
4,017.4	4,017.4	4,120.7	4,010.6	7.0	16.0	156.69	-77.7	33.5	84.6	70.6	14.08	6.010	CC, ES
4,100.0	4,100.0	4,197.7	4,082.8	7.1	16.5	174.43	-88.5	8.6	89.5	73.9	15.63	5.727	
4,200.0	4,200.0	4,294.8	4,174.2	7.3	17.1	-168.00	-101.0	-21.5	105.0	86.2	18.83	5.577	SF
4,300.0	4,300.0	4,393.1	4,268.4	7.5	17.6	-157.14	-112.4	-47.4	124.5	103.3	21.16	5.881	
4,400.0	4,400.0	4,493.6	4,365.9	7.6	18.0	-150.92	-123.4	-68.6	143.8	121.2	22.67	6.345	
4,500.0	4,500.0	4,592.9	4,462.8	7.8	18.4	-146.78	-133.7	-87.6	162.7	138.9	23.80	6.835	
4,600.0	4,600.0	4,693.8	4,561.6	8.0	18.8	126.42	-143.3	-105.7	181.4	161.7	19.71	9.203	
4,700.0	4,700.0	4,800.0	4,666.2	8.2	19.2	129.43	-151.5	-122.4	198.8	179.2	19.54	10.171	
4,800.0	4,799.9	4,904.0	4,769.1	8.3	19.5	132.17	-156.6	-135.8	213.8	194.4	19.42	11.014	
4,900.0	4,899.7	5,005.5	4,870.0	8.5	19.7	134.59	-160.9	-147.1	228.8	209.5	19.33	11.834	
5,000.0	4,999.4	5,111.9	4,975.9	8.7	19.9	136.86	-164.3	-156.3	242.4	223.1	19.30	12.558	
5,100.0	5,099.1	5,217.4	5,081.2	8.9	20.1	138.73	-166.1	-162.5	253.4	234.0	19.36	13.088	
5,200.0	5,198.9	5,320.4	5,184.1	9.1	20.2	140.31	-166.8	-166.8	262.5	243.1	19.46	13.488	
5,300.0	5,298.6	5,424.9	5,288.6	9.2	20.3	141.68	-167.0	-169.5	270.3	250.7	19.62	13.778	
5,400.0	5,398.3	5,526.9	5,390.5	9.4	20.4	142.99	-166.1	-171.2	276.9	257.1	19.80	13.988	
5,500.0	5,498.1	5,629.1	5,492.8	9.6	20.5	144.17	-165.0	-171.8	282.6	262.6	20.00	14.129	
5,600.0	5,597.8	5,729.9	5,593.5	9.8	20.6	145.30	-163.4	-172.0	287.9	267.7	20.23	14.232	
5,700.0	5,697.5	5,829.2	5,692.8	10.0	20.7	146.38	-161.8	-172.1	293.1	272.6	20.46	14.322	
5,800.0	5,797.3	5,927.4	5,791.0	10.2	20.7	147.23	-161.2	-172.0	298.7	278.0	20.72	14.416	
5,900.0	5,897.0	6,026.1	5,889.7	10.4	20.8	147.90	-161.5	-171.8	304.9	283.9	21.01	14.514	
6,000.0	5,996.7	6,124.9	5,988.5	10.6	20.9	148.52	-162.0	-171.8	311.4	290.1	21.30	14.621	
6,100.0	6,096.5	6,225.5	6,089.1	10.8	21.0	149.16	-162.5	-171.9	318.0	296.4	21.61	14.719	
6,200.0	6,196.2	6,325.6	6,189.2	11.0	21.1	149.83	-162.5	-172.0	324.4	302.5	21.91	14.806	
6,300.0	6,295.9	6,424.7	6,288.3	11.2	21.2	150.49	-162.4	-172.2	330.9	308.7	22.22	14.893	
6,400.0	6,395.7	6,524.1	6,387.7	11.3	21.3	151.11	-162.5	-172.5	337.6	315.1	22.53	14.981	
6,500.0	6,495.4	6,623.8	6,487.4	11.5	21.4	151.70	-162.6	-172.8	344.3	321.5	22.86	15.066	
6,600.0	6,595.1	6,725.5	6,589.1	11.7	21.5	152.27	-162.7	-172.9	350.9	327.7	23.19	15.135	
6,700.0	6,694.9	6,827.3	6,690.9	11.9	21.6	152.85	-162.3	-172.5	356.8	333.3	23.52	15.174	
6,800.0	6,794.6	6,924.6	6,788.3	12.1	21.7	-178.66	-161.8	-172.3	363.1	339.3	23.81	15.252	
6,900.0	6,893.4	7,022.0	6,885.7	12.3	21.8	-135.54	-161.4	-172.7	375.4	351.5	23.90	15.711	
7,000.0	6,988.6	7,118.3	6,981.9	12.6	21.9	-128.77	-160.9	-173.0	396.0	372.2	23.87	16.589	
7,100.0	7,077.2	7,207.6	7,071.2	12.9	22.0	-127.50	-160.3	-173.3	426.4	402.7	23.70	17.989	
7,200.0	7,156.5	7,287.1	7,150.7	13.2	22.0	-127.24	-159.7	-173.5	468.3	444.9	23.46	19.966	

Company:	EnCana Oil & Gas (USA) Inc	**Local Co-ordinate Reference:**	Well Edith Ann-Duckworth 4E-21H-O268
Project:	DJ Wattenberg	**TVD Reference:**	WELL @ 4951.0ft (Original Well Elev)
Reference Site:	S21-T2N-R68W (Edith Ann-Duckworth)	**MD Reference:**	WELL @ 4951.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Edith Ann-Duckworth 4E-21H-O268	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Hz	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Offset Design S21-T2N-R68W (Edith Ann-Duckworth) - Edith Ann-Duckworth 4A-21H-O268 - Hz - Plan #1

Offset Site Error: 0.0 ft

Survey Program: 0-Geolink MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	-89.95	0.0	-39.2	39.2				
100.0	100.0	99.0	99.0	0.1	0.1	-89.95	0.0	-39.2	39.2	38.9	0.26	150.308	
200.0	200.0	199.0	199.0	0.3	0.3	-89.95	0.0	-39.2	39.2	38.5	0.61	64.280	CC, ES
300.0	300.0	298.3	298.3	0.5	0.5	-89.95	0.0	-40.0	40.0	39.0	0.96	41.760	
400.0	400.0	397.6	397.5	0.7	0.7	-89.94	0.0	-42.6	42.6	41.3	1.31	32.484	
500.0	500.0	496.7	496.6	0.8	0.8	-89.94	0.1	-46.8	46.9	45.2	1.67	28.052	
600.0	600.0	595.7	595.3	1.0	1.0	-89.93	0.1	-52.8	52.9	50.9	2.04	25.902	
700.0	700.0	694.4	693.8	1.2	1.3	-89.92	0.1	-60.5	60.7	58.3	2.43	24.979	
800.0	800.0	792.8	791.8	1.4	1.5	-89.92	0.1	-69.8	70.2	67.3	2.83	24.772	SF
900.0	900.0	890.9	889.2	1.5	1.7	-89.91	0.1	-80.8	81.3	78.1	3.25	24.998	
1,000.0	1,000.0	988.6	986.1	1.7	2.0	-89.91	0.2	-93.3	94.2	90.5	3.70	25.491	
1,100.0	1,100.0	1,085.8	1,082.2	1.9	2.3	-89.90	0.2	-107.5	108.8	104.6	4.16	26.149	
1,200.0	1,200.0	1,182.5	1,177.7	2.1	2.6	-89.90	0.2	-123.2	125.0	120.4	4.65	26.905	
1,300.0	1,300.0	1,278.6	1,272.3	2.2	2.9	-89.89	0.3	-140.4	142.9	137.7	5.16	27.716	
1,400.0	1,400.0	1,374.7	1,366.5	2.4	3.3	-89.89	0.3	-159.1	162.4	156.7	5.68	28.576	
1,500.0	1,500.0	1,472.7	1,462.5	2.6	3.7	-89.89	0.3	-178.7	182.4	176.2	6.23	29.301	
1,600.0	1,600.0	1,570.6	1,558.5	2.7	4.0	-89.89	0.4	-198.3	202.4	195.7	6.77	29.893	
1,700.0	1,700.0	1,668.6	1,654.5	2.9	4.4	-89.89	0.4	-218.0	222.5	215.1	7.32	30.385	
1,800.0	1,800.0	1,766.6	1,750.5	3.1	4.8	-89.89	0.5	-237.6	242.5	234.6	7.87	30.800	
1,900.0	1,900.0	1,864.6	1,846.4	3.3	5.2	-89.88	0.5	-257.2	262.5	254.1	8.43	31.153	
2,000.0	2,000.0	1,962.5	1,942.4	3.4	5.5	-89.88	0.6	-276.8	282.5	273.5	8.98	31.459	
2,100.0	2,100.0	2,060.5	2,038.4	3.6	5.9	-89.88	0.6	-296.4	302.5	293.0	9.54	31.725	
2,200.0	2,200.0	2,158.5	2,134.4	3.8	6.3	-89.88	0.6	-316.0	322.6	312.5	10.09	31.958	
2,300.0	2,300.0	2,256.5	2,230.4	4.0	6.7	-89.88	0.7	-335.6	342.6	331.9	10.65	32.165	
2,400.0	2,400.0	2,354.4	2,326.4	4.1	7.1	-89.88	0.7	-355.3	362.6	351.4	11.21	32.350	
2,500.0	2,500.0	2,452.4	2,422.4	4.3	7.4	-89.88	0.8	-374.9	382.6	370.8	11.77	32.515	
2,600.0	2,600.0	2,550.4	2,518.4	4.5	7.8	-89.88	0.8	-394.5	402.6	390.3	12.33	32.665	
2,700.0	2,700.0	2,648.4	2,614.4	4.7	8.2	-89.88	0.9	-414.1	422.7	409.8	12.89	32.800	
2,800.0	2,800.0	2,746.4	2,710.4	4.8	8.6	-89.88	0.9	-433.7	442.7	429.2	13.45	32.923	
2,900.0	2,900.0	2,844.3	2,806.4	5.0	9.0	-89.88	1.0	-453.3	462.7	448.7	14.01	33.036	
3,000.0	3,000.0	2,942.3	2,902.4	5.2	9.4	-89.88	1.0	-472.9	482.7	468.1	14.57	33.139	

Company:	EnCana Oil & Gas (USA) Inc	**Local Co-ordinate Reference:**	Well Edith Ann-Duckworth 4E-21H-O268
Project:	DJ Wattenberg	**TVD Reference:**	WELL @ 4951.0ft (Original Well Elev)
Reference Site:	S21-T2N-R68W (Edith Ann-Duckworth)	**MD Reference:**	WELL @ 4951.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Edith Ann-Duckworth 4E-21H-O268	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Hz	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Offset Design S21-T2N-R68W (Edith Ann-Duckworth) - Edith Ann-Duckworth 4B-21H-O268 - Hz - Plan #1

Offset Site Error: 0.0 ft

Survey Program: 0-Geolink MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	-89.95	0.0	-28.0	28.0				
100.0	100.0	100.0	100.0	0.1	0.1	-89.95	0.0	-28.0	28.0	27.7	0.26	106.826	
200.0	200.0	200.0	200.0	0.3	0.3	-89.95	0.0	-28.0	28.0	27.4	0.61	45.783	
300.0	300.0	300.0	300.0	0.5	0.5	-89.95	0.0	-28.0	28.0	27.0	0.96	29.134	CC, ES
400.0	400.0	399.5	399.5	0.7	0.7	-89.95	0.0	-28.8	28.8	27.5	1.31	22.031	
500.0	500.0	498.9	498.9	0.8	0.8	-89.94	0.0	-31.4	31.4	29.8	1.66	18.926	
600.0	600.0	598.3	598.1	1.0	1.0	-89.94	0.0	-35.7	35.8	33.8	2.02	17.708	
700.0	700.0	697.4	697.1	1.2	1.2	-89.93	0.1	-41.7	41.8	39.5	2.39	17.509	SF
800.0	800.0	796.3	795.7	1.4	1.4	-89.92	0.1	-49.5	49.6	46.9	2.77	17.901	
900.0	900.0	894.9	893.9	1.5	1.6	-89.92	0.1	-58.8	59.1	56.0	3.17	18.648	
1,000.0	1,000.0	993.2	991.5	1.7	1.9	-89.92	0.1	-69.8	70.4	66.8	3.59	19.604	
1,100.0	1,100.0	1,091.5	1,089.0	1.9	2.1	-89.91	0.1	-82.5	83.2	79.2	4.02	20.682	
1,200.0	1,200.0	1,190.7	1,187.3	2.1	2.4	-89.91	0.2	-95.5	96.4	91.9	4.46	21.591	
1,300.0	1,300.0	1,289.8	1,285.5	2.2	2.7	-89.91	0.2	-108.6	109.6	104.7	4.91	22.317	
1,400.0	1,400.0	1,388.9	1,383.8	2.4	3.0	-89.91	0.2	-121.7	122.8	117.4	5.36	22.909	
1,500.0	1,500.0	1,488.0	1,482.1	2.6	3.2	-89.90	0.2	-134.8	136.0	130.2	5.81	23.400	
1,600.0	1,600.0	1,587.2	1,580.3	2.7	3.5	-89.90	0.2	-147.9	149.2	142.9	6.26	23.813	
1,700.0	1,700.0	1,686.3	1,678.6	2.9	3.8	-89.90	0.3	-160.9	162.4	155.6	6.72	24.166	
1,800.0	1,800.0	1,785.4	1,776.8	3.1	4.1	-89.90	0.3	-174.0	175.6	168.4	7.17	24.470	
1,900.0	1,900.0	1,884.5	1,875.1	3.3	4.4	-89.90	0.3	-187.1	188.8	181.1	7.63	24.735	
2,000.0	2,000.0	1,983.7	1,973.4	3.4	4.6	-89.90	0.3	-200.2	201.9	193.9	8.09	24.967	
2,100.0	2,100.0	2,082.8	2,071.6	3.6	4.9	-89.90	0.4	-213.3	215.1	206.6	8.55	25.174	
2,200.0	2,200.0	2,181.9	2,169.9	3.8	5.2	-89.90	0.4	-226.3	228.3	219.3	9.00	25.357	
2,300.0	2,300.0	2,281.0	2,268.1	4.0	5.5	-89.90	0.4	-239.4	241.5	232.1	9.46	25.522	
2,400.0	2,400.0	2,380.2	2,366.4	4.1	5.8	-89.90	0.4	-252.5	254.7	244.8	9.92	25.671	
2,500.0	2,500.0	2,479.3	2,464.6	4.3	6.1	-89.90	0.5	-265.6	267.9	257.5	10.38	25.805	
2,600.0	2,600.0	2,578.4	2,562.9	4.5	6.3	-89.90	0.5	-278.7	281.1	270.3	10.84	25.928	
2,700.0	2,700.0	2,677.5	2,661.2	4.7	6.6	-89.90	0.5	-291.7	294.3	283.0	11.30	26.040	
2,800.0	2,800.0	2,776.7	2,759.4	4.8	6.9	-89.90	0.5	-304.8	307.5	295.8	11.76	26.143	
2,900.0	2,900.0	2,875.8	2,857.7	5.0	7.2	-89.90	0.6	-317.9	320.7	308.5	12.22	26.237	
3,000.0	3,000.0	2,974.9	2,955.9	5.2	7.5	-89.90	0.6	-331.0	333.9	321.2	12.68	26.325	
3,100.0	3,100.0	3,074.0	3,054.2	5.4	7.8	-89.90	0.6	-344.1	347.1	334.0	13.14	26.406	
3,200.0	3,200.0	3,173.2	3,152.5	5.5	8.1	-89.90	0.6	-357.1	360.3	346.7	13.61	26.481	
3,300.0	3,300.0	3,272.3	3,250.7	5.7	8.4	-89.90	0.7	-370.2	373.5	359.4	14.07	26.552	
3,400.0	3,400.0	3,371.4	3,349.0	5.9	8.6	-89.90	0.7	-383.3	386.7	372.2	14.53	26.617	
3,500.0	3,500.0	3,470.5	3,447.2	6.1	8.9	-89.90	0.7	-396.4	399.9	384.9	14.99	26.679	
3,600.0	3,600.0	3,569.7	3,545.5	6.2	9.2	-89.90	0.7	-409.5	413.1	397.6	15.45	26.736	
3,700.0	3,700.0	3,668.8	3,643.7	6.4	9.5	-89.90	0.8	-422.5	426.3	410.4	15.91	26.790	
3,800.0	3,800.0	3,767.9	3,742.0	6.6	9.8	-89.90	0.8	-435.6	439.5	423.1	16.37	26.841	
3,900.0	3,900.0	3,867.0	3,840.3	6.8	10.1	-89.90	0.8	-448.7	452.7	435.8	16.83	26.889	
4,000.0	4,000.0	3,966.2	3,938.5	6.9	10.4	-89.90	0.8	-461.8	465.9	448.6	17.30	26.934	
4,100.0	4,100.0	4,065.3	4,036.8	7.1	10.6	-89.90	0.9	-474.9	479.1	461.3	17.76	26.977	
4,200.0	4,200.0	4,164.4	4,135.0	7.3	10.9	-89.90	0.9	-487.9	492.3	474.0	18.22	27.018	

Company:	EnCana Oil & Gas (USA) Inc	**Local Co-ordinate Reference:**	Well Edith Ann-Duckworth 4E-21H-O268
Project:	DJ Wattenberg	**TVD Reference:**	WELL @ 4951.0ft (Original Well Elev)
Reference Site:	S21-T2N-R68W (Edith Ann-Duckworth)	**MD Reference:**	WELL @ 4951.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Edith Ann-Duckworth 4E-21H-O268	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Hz	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Offset Design S21-T2N-R68W (Edith Ann-Duckworth) - Edith Ann-Duckworth 4C-21H-O268 - Hz - Plan #1

Offset Site Error: 0.0 ft

Survey Program: 0-Geolink MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	-89.95	0.0	-19.6	19.6				
100.0	100.0	100.0	100.0	0.1	0.1	-89.95	0.0	-19.6	19.6	19.3	0.26	74.778	
200.0	200.0	200.0	200.0	0.3	0.3	-89.95	0.0	-19.6	19.6	19.0	0.61	32.048	
300.0	300.0	300.0	300.0	0.5	0.5	-89.95	0.0	-19.6	19.6	18.6	0.96	20.394	
400.0	400.0	400.0	400.0	0.7	0.7	-89.95	0.0	-19.6	19.6	18.3	1.31	14.956	CC, ES
500.0	500.0	499.6	499.6	0.8	0.8	-89.93	0.0	-20.4	20.4	18.8	1.66	12.332	
600.0	600.0	599.2	599.2	1.0	1.0	-89.89	0.0	-23.0	23.1	21.0	2.01	11.470	SF
700.0	700.0	698.9	698.7	1.2	1.2	-89.83	0.1	-27.3	27.3	24.9	2.37	11.537	
800.0	800.0	798.8	798.5	1.4	1.4	-89.78	0.1	-31.9	31.9	29.2	2.73	11.716	
900.0	900.0	898.6	898.3	1.5	1.6	-89.75	0.2	-36.5	36.6	33.5	3.09	11.847	
1,000.0	1,000.0	998.5	998.1	1.7	1.7	-89.72	0.2	-41.2	41.2	37.8	3.45	11.946	
1,100.0	1,100.0	1,098.4	1,097.9	1.9	1.9	-89.70	0.2	-45.8	45.9	42.0	3.81	12.024	
1,200.0	1,200.0	1,198.3	1,197.7	2.1	2.1	-89.68	0.3	-50.4	50.5	46.3	4.18	12.087	
1,300.0	1,300.0	1,298.2	1,297.4	2.2	2.3	-89.67	0.3	-55.1	55.1	50.6	4.54	12.138	
1,400.0	1,400.0	1,398.1	1,397.2	2.4	2.5	-89.66	0.4	-59.7	59.8	54.9	4.91	12.181	
1,500.0	1,500.0	1,498.0	1,497.0	2.6	2.7	-89.65	0.4	-64.3	64.4	59.1	5.27	12.218	
1,600.0	1,600.0	1,597.9	1,596.8	2.7	2.9	-89.64	0.4	-69.0	69.1	63.4	5.64	12.249	
1,700.0	1,700.0	1,697.8	1,696.6	2.9	3.1	-89.63	0.5	-73.6	73.7	67.7	6.00	12.276	
1,800.0	1,800.0	1,797.7	1,796.4	3.1	3.3	-89.62	0.5	-78.3	78.3	72.0	6.37	12.300	
1,900.0	1,900.0	1,897.6	1,896.2	3.3	3.5	-89.62	0.6	-82.9	83.0	76.2	6.73	12.320	
2,000.0	2,000.0	1,997.5	1,995.9	3.4	3.7	-89.61	0.6	-87.5	87.6	80.5	7.10	12.339	
2,100.0	2,100.0	2,097.4	2,095.7	3.6	3.8	-89.61	0.6	-92.2	92.3	84.8	7.47	12.356	
2,200.0	2,200.0	2,197.2	2,195.5	3.8	4.0	-89.60	0.7	-96.8	96.9	89.1	7.83	12.370	
2,300.0	2,300.0	2,297.1	2,295.3	4.0	4.2	-89.60	0.7	-101.4	101.5	93.3	8.20	12.384	
2,400.0	2,400.0	2,397.0	2,395.1	4.1	4.4	-89.59	0.8	-106.1	106.2	97.6	8.57	12.396	
2,500.0	2,500.0	2,496.9	2,494.9	4.3	4.6	-89.59	0.8	-110.7	110.8	101.9	8.93	12.407	
2,600.0	2,600.0	2,596.8	2,594.6	4.5	4.8	-89.59	0.8	-115.3	115.5	106.2	9.30	12.418	
2,700.0	2,700.0	2,696.7	2,694.4	4.7	5.0	-89.58	0.9	-120.0	120.1	110.4	9.66	12.427	
2,800.0	2,800.0	2,796.6	2,794.2	4.8	5.2	-89.58	0.9	-124.6	124.7	114.7	10.03	12.436	
2,900.0	2,900.0	2,896.5	2,894.0	5.0	5.4	-89.58	1.0	-129.2	129.4	119.0	10.40	12.444	
3,000.0	3,000.0	2,996.4	2,993.8	5.2	5.6	-89.58	1.0	-133.9	134.0	123.2	10.76	12.451	
3,100.0	3,100.0	3,096.3	3,093.6	5.4	5.8	-89.57	1.0	-138.5	138.7	127.5	11.13	12.458	
3,200.0	3,200.0	3,196.2	3,193.4	5.5	6.0	-89.57	1.1	-143.1	143.3	131.8	11.50	12.465	
3,300.0	3,300.0	3,296.1	3,293.1	5.7	6.1	-89.57	1.1	-147.8	147.9	136.1	11.86	12.471	
3,400.0	3,400.0	3,396.0	3,392.9	5.9	6.3	-89.57	1.1	-152.4	152.6	140.3	12.23	12.476	
3,500.0	3,500.0	3,495.8	3,492.7	6.1	6.5	-89.57	1.2	-157.0	157.2	144.6	12.60	12.482	
3,600.0	3,600.0	3,595.7	3,592.5	6.2	6.7	-89.57	1.2	-161.7	161.8	148.9	12.96	12.487	
3,700.0	3,700.0	3,695.6	3,692.3	6.4	6.9	-89.56	1.3	-166.3	166.5	153.2	13.33	12.491	
3,800.0	3,800.0	3,795.5	3,792.1	6.6	7.1	-89.56	1.3	-170.9	171.1	157.4	13.69	12.496	
3,900.0	3,900.0	3,895.4	3,891.8	6.8	7.3	-89.56	1.3	-175.6	175.8	161.7	14.06	12.500	
4,000.0	4,000.0	3,995.3	3,991.6	6.9	7.5	-89.56	1.4	-180.2	180.4	166.0	14.43	12.504	
4,100.0	4,100.0	4,095.2	4,091.4	7.1	7.7	-89.56	1.4	-184.8	185.0	170.3	14.79	12.508	
4,200.0	4,200.0	4,195.1	4,191.2	7.3	7.9	-89.56	1.5	-189.5	189.7	174.5	15.16	12.511	
4,300.0	4,300.0	4,295.0	4,291.0	7.5	8.1	-89.56	1.5	-194.1	194.3	178.8	15.53	12.515	
4,400.0	4,400.0	4,394.9	4,390.8	7.6	8.3	-89.56	1.5	-198.7	199.0	183.1	15.89	12.518	
4,500.0	4,500.0	4,494.8	4,490.6	7.8	8.5	-89.55	1.6	-203.4	203.6	187.3	16.26	12.521	
4,600.0	4,600.0	4,594.6	4,590.3	8.0	8.6	-179.63	1.6	-208.0	209.1	193.2	15.95	13.109	
4,700.0	4,700.0	4,694.4	4,689.9	8.2	8.8	-179.64	1.7	-212.6	216.4	200.1	16.29	13.281	
4,800.0	4,799.9	4,793.9	4,789.4	8.3	9.0	-179.64	1.7	-217.3	225.4	208.7	16.63	13.553	
4,900.0	4,899.7	4,893.4	4,888.7	8.5	9.2	-179.65	1.7	-221.9	236.1	219.1	16.96	13.921	
5,000.0	4,999.4	4,992.7	4,987.9	8.7	9.4	-179.66	1.8	-226.5	248.0	230.7	17.30	14.331	
5,100.0	5,099.1	5,091.9	5,087.1	8.9	9.6	-179.67	1.8	-231.1	259.9	242.2	17.65	14.725	

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

Company:	EnCana Oil & Gas (USA) Inc	**Local Co-ordinate Reference:**	Well Edith Ann-Duckworth 4E-21H-O268
Project:	DJ Wattenberg	**TVD Reference:**	WELL @ 4951.0ft (Original Well Elev)
Reference Site:	S21-T2N-R68W (Edith Ann-Duckworth)	**MD Reference:**	WELL @ 4951.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Edith Ann-Duckworth 4E-21H-O268	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Hz	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Offset Design S21-T2N-R68W (Edith Ann-Duckworth) - Edith Ann-Duckworth 4C-21H-O268 - Hz - Plan #1

Offset Site Error: 0.0 ft

Survey Program: 0-Geolink MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning
5,200.0	5,198.9	5,191.2	5,186.3	9.1	9.8	-179.67	1.9	-235.7	271.8	253.8	18.00	15.103	
5,300.0	5,298.6	5,290.5	5,285.4	9.2	10.0	-179.68	1.9	-240.3	283.7	265.4	18.35	15.467	
5,400.0	5,398.3	5,389.8	5,384.6	9.4	10.2	-179.69	1.9	-244.9	295.7	277.0	18.69	15.817	
5,500.0	5,498.1	5,489.1	5,483.8	9.6	10.4	-179.69	2.0	-249.5	307.6	288.5	19.04	16.155	
5,600.0	5,597.8	5,588.4	5,583.0	9.8	10.6	-179.70	2.0	-254.1	319.5	300.1	19.39	16.480	
5,700.0	5,697.5	5,687.7	5,682.2	10.0	10.7	-179.70	2.1	-258.7	331.4	311.7	19.73	16.795	
5,800.0	5,797.3	5,787.0	5,781.3	10.2	10.9	-179.71	2.1	-263.3	343.3	323.3	20.08	17.098	
5,900.0	5,897.0	5,886.2	5,880.5	10.4	11.1	-179.71	2.1	-267.9	355.3	334.8	20.43	17.391	
6,000.0	5,996.7	5,985.5	5,979.7	10.6	11.3	-179.72	2.2	-272.5	367.2	346.4	20.78	17.674	
6,100.0	6,096.5	6,084.8	6,078.9	10.8	11.5	-179.72	2.2	-277.1	379.1	358.0	21.12	17.948	
6,200.0	6,196.2	6,184.1	6,178.1	11.0	11.7	-179.73	2.2	-281.8	391.0	369.6	21.47	18.213	
6,300.0	6,295.9	6,283.4	6,277.2	11.2	11.9	-179.73	2.3	-286.4	403.0	381.1	21.82	18.469	
6,400.0	6,395.7	6,382.7	6,376.4	11.3	12.1	-179.73	2.3	-291.0	414.9	392.7	22.17	18.718	
6,500.0	6,495.4	6,482.0	6,475.6	11.5	12.3	-179.74	2.4	-295.6	426.8	404.3	22.51	18.958	
6,600.0	6,595.1	6,581.2	6,574.8	11.7	12.5	-179.74	2.4	-300.2	438.7	415.9	22.86	19.192	
6,700.0	6,694.9	6,680.5	6,674.0	11.9	12.7	-179.74	2.4	-304.8	450.6	427.4	23.21	19.418	
6,800.0	6,794.6	6,779.8	6,773.1	12.1	12.8	-151.69	2.5	-309.4	462.6	439.0	23.55	19.638	
6,900.0	6,893.4	6,877.6	6,870.3	12.3	13.0	-107.82	11.0	-314.0	474.5	450.6	23.91	19.844	
7,000.0	6,988.6	6,976.0	6,965.2	12.6	13.2	-99.01	36.1	-318.9	486.4	462.0	24.32	20.001	
7,100.0	7,077.2	7,075.2	7,055.1	12.9	13.5	-95.25	77.4	-323.8	497.7	472.9	24.84	20.040	

Company:	EnCana Oil & Gas (USA) Inc	**Local Co-ordinate Reference:**	Well Edith Ann-Duckworth 4E-21H-O268
Project:	DJ Wattenberg	**TVD Reference:**	WELL @ 4951.0ft (Original Well Elev)
Reference Site:	S21-T2N-R68W (Edith Ann-Duckworth)	**MD Reference:**	WELL @ 4951.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Edith Ann-Duckworth 4E-21H-O268	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Hz	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Offset Design S21-T2N-R68W (Edith Ann-Duckworth) - Edith Ann-Duckworth 4D-21H-O268 - Hz - Plan #1

Offset Site Error: 0.0 ft

Survey Program: 0-Geolink MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	-89.94	0.0	-8.4	8.4				
100.0	100.0	100.0	100.0	0.1	0.1	-89.94	0.0	-8.4	8.4	8.1	0.26	32.048	
200.0	200.0	200.0	200.0	0.3	0.3	-89.94	0.0	-8.4	8.4	7.8	0.61	13.735	
300.0	300.0	300.0	300.0	0.5	0.5	-89.94	0.0	-8.4	8.4	7.4	0.96	8.740	
400.0	400.0	400.0	400.0	0.7	0.7	-89.94	0.0	-8.4	8.4	7.1	1.31	6.410	
500.0	500.0	500.0	500.0	0.8	0.8	-89.94	0.0	-8.4	8.4	6.7	1.66	5.060	CC, ES
600.0	600.0	599.8	599.8	1.0	1.0	-89.93	0.0	-9.3	9.3	7.3	2.01	4.614	
700.0	700.0	699.7	699.7	1.2	1.2	-89.91	0.0	-11.6	11.6	9.3	2.36	4.938	
800.0	800.0	799.7	799.6	1.4	1.4	-89.90	0.0	-14.2	14.2	11.5	2.71	5.251	
900.0	900.0	899.7	899.6	1.5	1.5	-89.89	0.0	-16.8	16.8	13.8	3.06	5.492	
1,000.0	1,000.0	999.6	999.5	1.7	1.7	-89.88	0.0	-19.4	19.4	16.0	3.42	5.682	
1,100.0	1,100.0	1,099.6	1,099.4	1.9	1.9	-89.88	0.0	-22.0	22.0	18.2	3.77	5.836	
1,200.0	1,200.0	1,199.6	1,199.4	2.1	2.1	-89.87	0.1	-24.6	24.6	20.5	4.12	5.963	
1,300.0	1,300.0	1,299.5	1,299.3	2.2	2.3	-89.87	0.1	-27.2	27.2	22.7	4.48	6.070	
1,400.0	1,400.0	1,399.5	1,399.2	2.4	2.4	-89.87	0.1	-29.7	29.8	24.9	4.83	6.161	
1,500.0	1,500.0	1,499.5	1,499.2	2.6	2.6	-89.86	0.1	-32.3	32.3	27.2	5.18	6.239	
1,600.0	1,600.0	1,599.4	1,599.1	2.7	2.8	-89.86	0.1	-34.9	34.9	29.4	5.54	6.307	
1,700.0	1,700.0	1,699.4	1,699.0	2.9	3.0	-89.86	0.1	-37.5	37.5	31.6	5.89	6.367	
1,800.0	1,800.0	1,799.4	1,799.0	3.1	3.1	-89.86	0.1	-40.1	40.1	33.9	6.25	6.421	
1,900.0	1,900.0	1,899.3	1,898.9	3.3	3.3	-89.86	0.1	-42.7	42.7	36.1	6.60	6.468	
2,000.0	2,000.0	1,999.3	1,998.8	3.4	3.5	-89.86	0.1	-45.3	45.3	38.3	6.96	6.510	
2,100.0	2,100.0	2,099.3	2,098.8	3.6	3.7	-89.85	0.1	-47.9	47.9	40.6	7.31	6.549	
2,200.0	2,200.0	2,199.2	2,198.7	3.8	3.9	-89.85	0.1	-50.4	50.5	42.8	7.66	6.584	
2,300.0	2,300.0	2,299.2	2,298.6	4.0	4.0	-89.85	0.1	-53.0	53.1	45.0	8.02	6.615	
2,400.0	2,400.0	2,399.2	2,398.6	4.1	4.2	-89.85	0.1	-55.6	55.6	47.3	8.37	6.644	
2,500.0	2,500.0	2,499.1	2,498.5	4.3	4.4	-89.85	0.2	-58.2	58.2	49.5	8.73	6.671	
2,600.0	2,600.0	2,599.1	2,598.4	4.5	4.6	-89.85	0.2	-60.8	60.8	51.7	9.08	6.695	
2,700.0	2,700.0	2,699.1	2,698.4	4.7	4.8	-89.85	0.2	-63.4	63.4	54.0	9.44	6.718	
2,800.0	2,800.0	2,799.0	2,798.3	4.8	4.9	-89.85	0.2	-66.0	66.0	56.2	9.79	6.739	
2,900.0	2,900.0	2,899.0	2,898.2	5.0	5.1	-89.85	0.2	-68.6	68.6	58.4	10.15	6.759	
3,000.0	3,000.0	2,999.0	2,998.2	5.2	5.3	-89.85	0.2	-71.1	71.2	60.7	10.50	6.777	
3,100.0	3,100.0	3,098.9	3,098.1	5.4	5.5	-89.85	0.2	-73.7	73.8	62.9	10.86	6.794	
3,200.0	3,200.0	3,198.9	3,198.0	5.5	5.7	-89.85	0.2	-76.3	76.3	65.1	11.21	6.810	
3,300.0	3,300.0	3,298.9	3,298.0	5.7	5.8	-89.85	0.2	-78.9	78.9	67.4	11.57	6.825	
3,400.0	3,400.0	3,398.8	3,397.9	5.9	6.0	-89.85	0.2	-81.5	81.5	69.6	11.92	6.839	
3,500.0	3,500.0	3,498.8	3,497.8	6.1	6.2	-89.85	0.2	-84.1	84.1	71.8	12.27	6.852	
3,600.0	3,600.0	3,598.8	3,597.8	6.2	6.4	-89.85	0.2	-86.7	86.7	74.1	12.63	6.865	
3,700.0	3,700.0	3,698.7	3,697.7	6.4	6.6	-89.85	0.2	-89.3	89.3	76.3	12.98	6.876	
3,800.0	3,800.0	3,798.7	3,797.6	6.6	6.7	-89.85	0.2	-91.8	91.9	78.5	13.34	6.888	
3,900.0	3,900.0	3,898.7	3,897.6	6.8	6.9	-89.85	0.3	-94.4	94.5	80.8	13.69	6.898	
4,000.0	4,000.0	3,998.6	3,997.5	6.9	7.1	-89.84	0.3	-97.0	97.0	83.0	14.05	6.908	
4,100.0	4,100.0	4,098.6	4,097.4	7.1	7.3	-89.84	0.3	-99.6	99.6	85.2	14.40	6.918	
4,200.0	4,200.0	4,198.6	4,197.4	7.3	7.5	-89.84	0.3	-102.2	102.2	87.5	14.76	6.927	
4,300.0	4,300.0	4,298.5	4,297.3	7.5	7.7	-89.84	0.3	-104.8	104.8	89.7	15.11	6.936	
4,400.0	4,400.0	4,398.5	4,397.2	7.6	7.8	-89.84	0.3	-107.4	107.4	91.9	15.47	6.944	
4,500.0	4,500.0	4,498.5	4,497.2	7.8	8.0	-89.84	0.3	-109.9	110.0	94.2	15.82	6.952	
4,600.0	4,600.0	4,598.4	4,597.1	8.0	8.2	-179.92	0.3	-112.5	113.4	97.5	15.96	7.107	
4,700.0	4,700.0	4,698.3	4,696.9	8.2	8.4	-179.92	0.3	-115.1	118.6	102.3	16.30	7.277	
4,800.0	4,799.9	4,798.0	4,796.6	8.3	8.6	-179.93	0.3	-117.7	125.6	109.0	16.64	7.547	
4,900.0	4,899.7	4,897.6	4,896.2	8.5	8.7	-179.93	0.3	-120.3	134.3	117.3	16.98	7.910	
5,000.0	4,999.4	4,997.2	4,995.7	8.7	8.9	-179.93	0.3	-122.9	144.1	126.8	17.32	8.321	
5,100.0	5,099.1	5,096.7	5,095.2	8.9	9.1	-179.94	0.3	-125.4	154.0	136.3	17.67	8.716	

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

Company:	EnCana Oil & Gas (USA) Inc	**Local Co-ordinate Reference:**	Well Edith Ann-Duckworth 4E-21H-O268
Project:	DJ Wattenberg	**TVD Reference:**	WELL @ 4951.0ft (Original Well Elev)
Reference Site:	S21-T2N-R68W (Edith Ann-Duckworth)	**MD Reference:**	WELL @ 4951.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Edith Ann-Duckworth 4E-21H-O268	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Hz	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Offset Design S21-T2N-R68W (Edith Ann-Duckworth) - Edith Ann-Duckworth 4D-21H-O268 - Hz - Plan #1

Offset Site Error: 0.0 ft

Survey Program: 0-Geolink MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning
5,200.0	5,198.9	5,196.2	5,194.6	9.1	9.3	-179.94	0.4	-128.0	163.9	145.9	18.02	9.097	
5,300.0	5,298.6	5,295.7	5,294.1	9.2	9.4	-179.94	0.4	-130.6	173.8	155.4	18.36	9.462	
5,400.0	5,398.3	5,395.2	5,393.6	9.4	9.6	-179.94	0.4	-133.2	183.7	164.9	18.71	9.814	
5,500.0	5,498.1	5,494.7	5,493.1	9.6	9.8	-179.94	0.4	-135.7	193.5	174.5	19.06	10.154	
5,600.0	5,597.8	5,594.2	5,592.5	9.8	10.0	-179.95	0.4	-138.3	203.4	184.0	19.41	10.481	
5,700.0	5,697.5	5,693.7	5,692.0	10.0	10.2	-179.95	0.4	-140.9	213.3	193.5	19.76	10.796	
5,800.0	5,797.3	5,793.2	5,791.5	10.2	10.3	-179.95	0.4	-143.5	223.2	203.1	20.10	11.101	
5,900.0	5,897.0	5,892.7	5,891.0	10.4	10.5	-179.95	0.4	-146.0	233.1	212.6	20.45	11.395	
6,000.0	5,996.7	5,992.3	5,990.5	10.6	10.7	-179.95	0.4	-148.6	242.9	222.1	20.80	11.680	
6,100.0	6,096.5	6,091.8	6,089.9	10.8	10.9	-179.95	0.4	-151.2	252.8	231.7	21.15	11.955	
6,200.0	6,196.2	6,191.3	6,189.4	11.0	11.1	-179.95	0.4	-153.8	262.7	241.2	21.50	12.221	
6,300.0	6,295.9	6,290.8	6,288.9	11.2	11.2	-179.95	0.4	-156.3	272.6	250.7	21.84	12.479	
6,400.0	6,395.7	6,390.3	6,388.4	11.3	11.4	-179.95	0.4	-158.9	282.5	260.3	22.19	12.728	
6,500.0	6,495.4	6,489.8	6,487.8	11.5	11.6	-179.96	0.4	-161.5	292.3	269.8	22.54	12.970	
6,600.0	6,595.1	6,589.3	6,587.3	11.7	11.8	-179.96	0.5	-164.1	302.2	279.3	22.89	13.205	
6,700.0	6,694.9	6,688.8	6,686.8	11.9	12.0	-179.96	0.5	-166.6	312.1	288.9	23.24	13.432	
6,800.0	6,794.6	6,788.3	6,786.3	12.1	12.1	-151.97	0.5	-169.2	322.0	298.4	23.58	13.653	
6,900.0	6,893.4	6,886.9	6,884.8	12.3	12.3	-109.98	0.5	-171.8	332.0	308.1	23.93	13.875	
7,000.0	6,988.6	6,981.9	6,979.7	12.6	12.5	-105.34	0.5	-174.2	343.8	319.5	24.25	14.175	
7,100.0	7,077.2	7,083.1	7,080.5	12.9	12.7	-107.01	7.2	-176.8	359.4	334.8	24.55	14.642	
7,200.0	7,156.5	7,194.6	7,188.4	13.2	12.9	-109.94	34.8	-179.6	377.7	352.8	24.85	15.196	
7,300.0	7,224.1	7,317.4	7,298.5	13.8	13.2	-113.07	88.6	-182.5	397.0	371.7	25.26	15.717	
7,400.0	7,278.1	7,453.3	7,403.8	14.5	13.7	-115.96	174.0	-185.2	415.3	389.4	25.91	16.029	
7,500.0	7,316.7	7,602.9	7,493.0	15.4	14.7	-118.30	293.5	-187.5	430.3	403.2	27.03	15.921	
7,600.0	7,338.7	7,764.1	7,551.0	16.4	16.1	-119.76	443.3	-189.0	439.7	410.8	28.82	15.256	
7,700.0	7,344.0	7,916.8	7,566.0	17.5	17.8	-120.14	594.8	-189.4	442.1	410.9	31.21	14.165	
7,800.0	7,344.0	8,016.8	7,566.0	18.8	19.0	-120.14	694.8	-189.4	442.1	408.7	33.39	13.239	
7,900.0	7,344.0	8,116.8	7,566.0	20.1	20.4	-120.14	794.8	-189.4	442.1	406.4	35.70	12.382	
8,000.0	7,344.0	8,216.8	7,566.0	21.5	21.7	-120.14	894.8	-189.4	442.1	404.0	38.11	11.599	
8,100.0	7,344.0	8,316.8	7,566.0	22.9	23.2	-120.14	994.8	-189.4	442.1	401.5	40.61	10.886	
8,200.0	7,344.0	8,416.8	7,566.0	24.4	24.6	-120.14	1,094.8	-189.4	442.1	398.9	43.18	10.239	
8,300.0	7,344.0	8,516.8	7,566.0	25.9	26.1	-120.14	1,194.8	-189.4	442.1	396.3	45.80	9.652	
8,400.0	7,344.0	8,616.8	7,566.0	27.5	27.7	-120.14	1,294.8	-189.4	442.1	393.6	48.47	9.120	
8,500.0	7,344.0	8,716.8	7,566.0	29.0	29.2	-120.14	1,394.8	-189.4	442.1	390.9	51.19	8.636	
8,600.0	7,344.0	8,816.8	7,566.0	30.6	30.8	-120.14	1,494.8	-189.4	442.1	388.1	53.94	8.196	
8,700.0	7,344.0	8,916.8	7,566.0	32.2	32.4	-120.14	1,594.8	-189.4	442.1	385.4	56.72	7.795	
8,800.0	7,344.0	9,016.8	7,566.0	33.9	34.0	-120.14	1,694.8	-189.4	442.1	382.6	59.52	7.427	
8,900.0	7,344.0	9,116.8	7,566.0	35.5	35.6	-120.14	1,794.8	-189.4	442.1	379.7	62.35	7.091	
9,000.0	7,344.0	9,216.8	7,566.0	37.1	37.3	-120.14	1,894.8	-189.4	442.1	376.9	65.19	6.781	
9,100.0	7,344.0	9,316.8	7,566.0	38.8	38.9	-120.14	1,994.8	-189.4	442.1	374.0	68.05	6.496	
9,200.0	7,344.0	9,416.8	7,566.0	40.4	40.6	-120.14	2,094.8	-189.4	442.1	371.1	70.93	6.232	
9,300.0	7,344.0	9,516.8	7,566.0	42.1	42.2	-120.14	2,194.8	-189.4	442.1	368.2	73.82	5.988	
9,400.0	7,344.0	9,616.8	7,566.0	43.8	43.9	-120.14	2,294.8	-189.4	442.1	365.3	76.72	5.762	
9,500.0	7,344.0	9,716.8	7,566.0	45.5	45.6	-120.14	2,394.8	-189.4	442.1	362.4	79.63	5.551	
9,600.0	7,344.0	9,816.8	7,566.0	47.2	47.3	-120.14	2,494.8	-189.4	442.1	359.5	82.56	5.355	
9,700.0	7,344.0	9,916.8	7,566.0	48.8	49.0	-120.14	2,594.8	-189.4	442.1	356.6	85.48	5.171	
9,800.0	7,344.0	10,016.8	7,566.0	50.5	50.7	-120.14	2,694.8	-189.4	442.1	353.6	88.42	5.000	
9,900.0	7,344.0	10,116.8	7,566.0	52.2	52.4	-120.14	2,794.8	-189.4	442.1	350.7	91.37	4.838	
10,000.0	7,344.0	10,216.8	7,566.0	53.9	54.1	-120.14	2,894.8	-189.4	442.1	347.8	94.32	4.687	
10,100.0	7,344.0	10,316.8	7,566.0	55.7	55.8	-120.14	2,994.8	-189.4	442.1	344.8	97.27	4.545	
10,200.0	7,344.0	10,416.8	7,566.0	57.4	57.5	-120.14	3,094.8	-189.4	442.1	341.8	100.23	4.410	
10,300.0	7,344.0	10,516.8	7,566.0	59.1	59.2	-120.14	3,194.8	-189.4	442.1	338.9	103.20	4.284	

Company:	EnCana Oil & Gas (USA) Inc	**Local Co-ordinate Reference:**	Well Edith Ann-Duckworth 4E-21H-O268
Project:	DJ Wattenberg	**TVD Reference:**	WELL @ 4951.0ft (Original Well Elev)
Reference Site:	S21-T2N-R68W (Edith Ann-Duckworth)	**MD Reference:**	WELL @ 4951.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Edith Ann-Duckworth 4E-21H-O268	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Hz	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Offset Design S21-T2N-R68W (Edith Ann-Duckworth) - Edith Ann-Duckworth 4D-21H-O268 - Hz - Plan #1

Offset Site Error: 0.0 ft

Survey Program: 0-Geolink MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning
10,400.0	7,344.0	10,616.8	7,566.0	60.8	60.9	-120.14	3,294.8	-189.4	442.1	335.9	106.17	4.164	
10,500.0	7,344.0	10,716.8	7,566.0	62.5	62.6	-120.14	3,394.8	-189.4	442.1	332.9	109.14	4.051	
10,600.0	7,344.0	10,816.8	7,566.0	64.2	64.3	-120.14	3,494.8	-189.4	442.1	330.0	112.12	3.943	
10,700.0	7,344.0	10,916.8	7,566.0	65.9	66.0	-120.14	3,594.8	-189.4	442.1	327.0	115.10	3.841	
10,800.0	7,344.0	11,016.8	7,566.0	67.7	67.8	-120.14	3,694.8	-189.4	442.1	324.0	118.08	3.744	
10,900.0	7,344.0	11,116.8	7,566.0	69.4	69.5	-120.14	3,794.8	-189.4	442.1	321.0	121.07	3.652	
11,000.0	7,344.0	11,216.8	7,566.0	71.1	71.2	-120.14	3,894.8	-189.4	442.1	318.0	124.05	3.564	
11,100.0	7,344.0	11,316.8	7,566.0	72.8	72.9	-120.14	3,994.8	-189.4	442.1	315.0	127.04	3.480	
11,200.0	7,344.0	11,416.8	7,566.0	74.6	74.7	-120.14	4,094.8	-189.4	442.1	312.0	130.04	3.400	
11,300.0	7,344.0	11,516.8	7,566.0	76.3	76.4	-120.14	4,194.8	-189.4	442.1	309.0	133.03	3.323	
11,400.0	7,344.0	11,616.8	7,566.0	78.0	78.1	-120.14	4,294.8	-189.4	442.1	306.0	136.03	3.250	
11,500.0	7,344.0	11,716.8	7,566.0	79.8	79.8	-120.14	4,394.8	-189.4	442.1	303.0	139.03	3.180	
11,600.0	7,344.0	11,816.8	7,566.0	81.5	81.6	-120.14	4,494.8	-189.4	442.1	300.0	142.03	3.112	
11,700.0	7,344.0	11,916.8	7,566.0	83.2	83.3	-120.14	4,594.8	-189.4	442.1	297.0	145.03	3.048	
11,800.0	7,344.0	12,016.8	7,566.0	85.0	85.0	-120.14	4,694.8	-189.4	442.1	294.0	148.04	2.986	
11,900.0	7,344.0	12,116.8	7,566.0	86.7	86.8	-120.14	4,794.8	-189.4	442.1	291.0	151.04	2.927	
12,000.0	7,344.0	12,216.8	7,566.0	88.4	88.5	-120.14	4,894.8	-189.4	442.1	288.0	154.05	2.870	
12,100.0	7,344.0	12,316.8	7,566.0	90.2	90.2	-120.14	4,994.8	-189.4	442.1	285.0	157.06	2.815	
12,200.0	7,344.0	12,416.8	7,566.0	91.9	92.0	-120.14	5,094.8	-189.4	442.1	282.0	160.07	2.762	
12,300.0	7,344.0	12,516.8	7,566.0	93.6	93.7	-120.14	5,194.8	-189.4	442.1	279.0	163.08	2.711	
12,400.0	7,344.0	12,616.8	7,566.0	95.4	95.5	-120.14	5,294.8	-189.4	442.1	276.0	166.09	2.662	
12,500.0	7,344.0	12,716.8	7,566.0	97.1	97.2	-120.14	5,394.8	-189.4	442.1	273.0	169.10	2.614	
12,600.0	7,344.0	12,816.8	7,566.0	98.9	98.9	-120.14	5,494.8	-189.4	442.1	270.0	172.12	2.568	
12,700.0	7,344.0	12,916.8	7,566.0	100.6	100.7	-120.14	5,594.8	-189.4	442.1	266.9	175.13	2.524	
12,800.0	7,344.0	13,017.9	7,566.0	102.3	102.4	-120.15	5,696.0	-189.4	442.0	263.9	178.16	2.481	
12,900.0	7,344.0	13,119.5	7,566.0	104.1	104.2	-120.19	5,797.6	-188.7	441.5	260.3	181.12	2.437	
13,000.0	7,344.0	13,219.5	7,566.0	105.8	105.9	-120.24	5,897.6	-188.0	440.9	256.8	184.06	2.395	
13,100.0	7,344.0	13,319.5	7,566.0	107.6	107.7	-120.28	5,997.6	-187.3	440.2	253.3	186.99	2.354	
13,200.0	7,344.0	13,419.5	7,566.0	109.3	109.4	-120.33	6,097.5	-186.5	439.6	249.7	189.91	2.315	
13,300.0	7,344.0	13,519.5	7,566.0	111.0	111.2	-120.38	6,197.5	-185.8	439.0	246.2	192.84	2.277	
13,400.0	7,344.0	13,619.5	7,566.0	112.8	112.9	-120.42	6,297.5	-185.1	438.4	242.6	195.76	2.239	
13,500.0	7,344.0	13,719.5	7,566.0	114.5	114.6	-120.47	6,397.5	-184.4	437.8	239.1	198.68	2.203	
13,600.0	7,344.0	13,819.5	7,566.0	116.3	116.4	-120.52	6,497.5	-183.7	437.2	235.6	201.60	2.168	
13,700.0	7,344.0	13,919.5	7,566.0	118.0	118.1	-120.57	6,597.5	-183.0	436.5	232.0	204.52	2.135	
13,800.0	7,344.0	14,019.5	7,566.0	119.8	119.9	-120.61	6,697.5	-182.3	435.9	228.5	207.43	2.102	
13,900.0	7,344.0	14,119.5	7,566.0	121.5	121.6	-120.66	6,797.5	-181.6	435.3	225.0	210.34	2.070	
14,000.0	7,344.0	14,219.5	7,566.0	123.2	123.4	-120.71	6,897.5	-180.8	434.7	221.5	213.24	2.039	
14,100.0	7,344.0	14,319.5	7,566.0	125.0	125.1	-120.76	6,997.5	-180.1	434.1	217.9	216.15	2.008	
14,200.0	7,344.0	14,419.5	7,566.0	126.7	126.9	-120.81	7,097.5	-179.4	433.5	214.4	219.05	1.979	
14,300.0	7,344.0	14,519.5	7,566.0	128.5	128.6	-120.85	7,197.5	-178.7	432.9	210.9	221.94	1.950	
14,400.0	7,344.0	14,619.5	7,566.0	130.2	130.3	-120.90	7,297.5	-178.0	432.3	207.4	224.84	1.923	
14,500.0	7,344.0	14,719.5	7,566.0	132.0	132.1	-120.95	7,397.5	-177.3	431.6	203.9	227.73	1.895	
14,600.0	7,344.0	14,819.5	7,566.0	133.7	133.8	-121.00	7,497.5	-176.6	431.0	200.4	230.62	1.869	
14,700.0	7,344.0	14,919.5	7,566.0	135.5	135.6	-121.05	7,597.5	-175.9	430.4	196.9	233.50	1.843	
14,800.0	7,344.0	15,019.5	7,566.0	137.2	137.3	-121.10	7,697.5	-175.1	429.8	193.4	236.38	1.818	
14,900.0	7,344.0	15,119.4	7,566.0	139.0	139.1	-121.15	7,797.5	-174.4	429.2	189.9	239.26	1.794	
15,000.0	7,344.0	15,219.4	7,566.0	140.7	140.8	-121.20	7,897.5	-173.7	428.6	186.5	242.14	1.770	
15,100.0	7,344.0	15,319.4	7,566.0	142.4	142.6	-121.25	7,997.5	-173.0	428.0	183.0	245.01	1.747	
15,200.0	7,344.0	15,419.4	7,566.0	144.2	144.3	-121.30	8,097.4	-172.3	427.4	179.5	247.88	1.724	
15,300.0	7,344.0	15,519.4	7,566.0	145.9	146.1	-121.35	8,197.4	-171.6	426.8	176.0	250.75	1.702	
15,400.0	7,344.0	15,619.4	7,566.0	147.7	147.8	-121.40	8,297.4	-170.9	426.2	172.5	253.61	1.680	
15,500.0	7,344.0	15,719.4	7,566.0	149.4	149.5	-121.45	8,397.4	-170.1	425.5	169.1	256.47	1.659	

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

Company:	EnCana Oil & Gas (USA) Inc	**Local Co-ordinate Reference:**	Well Edith Ann-Duckworth 4E-21H-O268
Project:	DJ Wattenberg	**TVD Reference:**	WELL @ 4951.0ft (Original Well Elev)
Reference Site:	S21-T2N-R68W (Edith Ann-Duckworth)	**MD Reference:**	WELL @ 4951.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Edith Ann-Duckworth 4E-21H-O268	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Hz	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Offset Design S21-T2N-R68W (Edith Ann-Duckworth) - Edith Ann-Duckworth 4D-21H-O268 - Hz - Plan #1

Offset Site Error: 0.0 ft

Survey Program: 0-Geolink MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning
15,600.0	7,344.0	15,819.4	7,566.0	151.2	151.3	-121.50	8,497.4	-169.4	424.9	165.6	259.32	1.639	
15,700.0	7,344.0	15,919.4	7,566.0	152.9	153.0	-121.55	8,597.4	-168.7	424.3	162.2	262.17	1.619	
15,800.0	7,344.0	16,019.4	7,566.0	154.7	154.8	-121.60	8,697.4	-168.0	423.7	158.7	265.02	1.599	
15,900.0	7,344.0	16,119.4	7,566.0	156.4	156.5	-121.65	8,797.4	-167.3	423.1	155.3	267.87	1.580	
16,000.0	7,344.0	16,219.4	7,566.0	158.2	158.3	-121.70	8,897.4	-166.6	422.5	151.8	270.71	1.561	
16,100.0	7,344.0	16,319.4	7,566.0	159.9	160.0	-121.75	8,997.4	-165.9	421.9	148.4	273.55	1.542	
16,200.0	7,344.0	16,419.4	7,566.0	161.7	161.8	-121.80	9,097.4	-165.2	421.3	144.9	276.38	1.524	
16,300.0	7,344.0	16,519.4	7,566.0	163.4	163.5	-121.85	9,197.4	-164.4	420.7	141.5	279.21	1.507	
16,400.0	7,344.0	16,619.4	7,566.0	165.2	165.3	-121.90	9,297.4	-163.7	420.1	138.1	282.04	1.489	Level 3
16,500.0	7,344.0	16,719.4	7,566.0	166.9	167.0	-121.95	9,397.4	-163.0	419.5	134.6	284.86	1.473	Level 3
16,600.0	7,344.0	16,819.4	7,566.0	168.7	168.8	-122.01	9,497.4	-162.3	418.9	131.2	287.68	1.456	Level 3
16,700.0	7,344.0	16,919.4	7,566.0	170.4	170.5	-122.06	9,597.4	-161.6	418.3	127.8	290.49	1.440	Level 3
16,800.0	7,344.0	17,019.4	7,566.0	172.2	172.3	-122.11	9,697.4	-160.9	417.7	124.4	293.31	1.424	Level 3
16,900.0	7,344.0	17,119.4	7,566.0	173.9	174.0	-122.16	9,797.4	-160.2	417.1	121.0	296.11	1.408	Level 3
17,000.0	7,344.0	17,219.4	7,566.0	175.7	175.8	-122.21	9,897.4	-159.5	416.5	117.5	298.92	1.393	Level 3
17,017.3	7,344.0	17,234.1	7,566.0	176.0	176.0	-122.22	9,912.1	-159.3	416.4	117.0	299.37	1.391	Level 3
17,020.9	7,344.0	17,234.1	7,566.0	176.0	176.0	-122.22	9,912.1	-159.3	416.4	117.0	299.42	1.391	Level 3, SF

Company:	EnCana Oil & Gas (USA) Inc	**Local Co-ordinate Reference:**	Well Edith Ann-Duckworth 4E-21H-O268
Project:	DJ Wattenberg	**TVD Reference:**	WELL @ 4951.0ft (Original Well Elev)
Reference Site:	S21-T2N-R68W (Edith Ann-Duckworth)	**MD Reference:**	WELL @ 4951.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Edith Ann-Duckworth 4E-21H-O268	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Hz	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Offset Design S21-T2N-R68W (Edith Ann-Duckworth) - Edith Ann-Duckworth 4F-21H-O268 - Hz - Plan #1

Offset Site Error: 0.0 ft

Survey Program: 0-Geolink MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning
0.0	0.0	1.0	1.0	0.0	0.0	90.04	0.0	11.2	11.2				
100.0	100.0	101.0	101.0	0.1	0.1	90.04	0.0	11.2	11.2	10.9	0.26	42.448	
200.0	200.0	201.0	201.0	0.3	0.3	90.04	0.0	11.2	11.2	10.6	0.61	18.261	
300.0	300.0	301.0	301.0	0.5	0.5	90.04	0.0	11.2	11.2	10.2	0.96	11.633	
366.3	366.3	367.3	367.3	0.6	0.6	90.04	0.0	11.2	11.2	10.0	1.19	9.375	CC
400.0	400.0	401.0	401.0	0.7	0.7	90.04	0.0	11.2	11.2	9.9	1.31	8.535	ES
500.0	500.0	500.8	500.8	0.8	0.8	90.05	0.0	12.1	12.1	10.4	1.66	7.274	
600.0	600.0	600.5	600.5	1.0	1.0	90.06	0.0	14.7	14.7	12.7	2.01	7.307	
700.0	700.0	700.0	699.9	1.2	1.2	90.07	0.0	19.0	19.1	16.7	2.37	8.047	
800.0	800.0	799.6	799.2	1.4	1.4	90.08	0.0	25.1	25.2	22.4	2.74	9.193	
900.0	900.0	899.1	898.5	1.5	1.6	90.08	0.0	32.6	32.7	29.6	3.11	10.492	
1,000.0	1,000.0	998.8	997.9	1.7	1.8	90.09	-0.1	40.2	40.3	36.8	3.49	11.532	
1,100.0	1,100.0	1,098.5	1,097.3	1.9	2.0	90.09	-0.1	47.8	47.9	44.0	3.88	12.359	
1,200.0	1,200.0	1,198.2	1,196.8	2.1	2.2	90.09	-0.1	55.4	55.5	51.3	4.26	13.031	
1,300.0	1,300.0	1,297.9	1,296.2	2.2	2.4	90.10	-0.1	63.0	63.2	58.5	4.65	13.587	
1,400.0	1,400.0	1,397.7	1,395.6	2.4	2.6	90.10	-0.1	70.6	70.8	65.8	5.04	14.054	
1,500.0	1,500.0	1,497.4	1,495.0	2.6	2.9	90.10	-0.1	78.2	78.4	73.0	5.43	14.453	
1,600.0	1,600.0	1,597.1	1,594.4	2.7	3.1	90.10	-0.1	85.8	86.0	80.2	5.82	14.796	
1,700.0	1,700.0	1,696.8	1,693.9	2.9	3.3	90.10	-0.2	93.4	93.7	87.5	6.20	15.095	
1,800.0	1,800.0	1,796.5	1,793.3	3.1	3.5	90.10	-0.2	101.0	101.3	94.7	6.60	15.357	
1,900.0	1,900.0	1,896.2	1,892.7	3.3	3.7	90.10	-0.2	108.6	108.9	101.9	6.99	15.589	
2,000.0	2,000.0	1,995.9	1,992.1	3.4	3.9	90.10	-0.2	116.2	116.5	109.2	7.38	15.796	
2,100.0	2,100.0	2,095.6	2,091.5	3.6	4.1	90.10	-0.2	123.8	124.2	116.4	7.77	15.982	
2,200.0	2,200.0	2,195.3	2,191.0	3.8	4.4	90.10	-0.2	131.4	131.8	123.6	8.16	16.149	
2,300.0	2,300.0	2,295.0	2,290.4	4.0	4.6	90.10	-0.2	139.0	139.4	130.8	8.55	16.301	
2,400.0	2,400.0	2,394.7	2,389.8	4.1	4.8	90.10	-0.3	146.6	147.0	138.1	8.94	16.439	
2,500.0	2,500.0	2,494.5	2,489.2	4.3	5.0	90.10	-0.3	154.2	154.6	145.3	9.34	16.565	
2,600.0	2,600.0	2,594.2	2,588.6	4.5	5.2	90.10	-0.3	161.8	162.3	152.5	9.73	16.681	
2,700.0	2,700.0	2,693.9	2,688.0	4.7	5.5	90.10	-0.3	169.4	169.9	159.8	10.12	16.788	
2,800.0	2,800.0	2,793.6	2,787.5	4.8	5.7	90.10	-0.3	177.0	177.5	167.0	10.51	16.886	
2,900.0	2,900.0	2,893.3	2,886.9	5.0	5.9	90.10	-0.3	184.6	185.1	174.2	10.91	16.978	
3,000.0	3,000.0	2,993.0	2,986.3	5.2	6.1	90.10	-0.3	192.2	192.8	181.5	11.30	17.062	
3,100.0	3,100.0	3,092.7	3,085.7	5.4	6.3	90.10	-0.4	199.8	200.4	188.7	11.69	17.142	
3,200.0	3,200.0	3,192.4	3,185.1	5.5	6.5	90.10	-0.4	207.4	208.0	195.9	12.08	17.215	
3,300.0	3,300.0	3,292.1	3,284.6	5.7	6.8	90.10	-0.4	215.0	215.6	203.2	12.48	17.284	
3,400.0	3,400.0	3,391.8	3,384.0	5.9	7.0	90.10	-0.4	222.6	223.3	210.4	12.87	17.349	
3,500.0	3,500.0	3,491.5	3,483.4	6.1	7.2	90.10	-0.4	230.2	230.9	217.6	13.26	17.410	
3,600.0	3,600.0	3,591.3	3,582.8	6.2	7.4	90.10	-0.4	237.8	238.5	224.9	13.65	17.467	
3,700.0	3,700.0	3,691.0	3,682.2	6.4	7.6	90.10	-0.4	245.4	246.1	232.1	14.05	17.522	
3,800.0	3,800.0	3,790.7	3,781.7	6.6	7.9	90.10	-0.5	253.0	253.8	239.3	14.44	17.573	
3,900.0	3,900.0	3,890.4	3,881.1	6.8	8.1	90.10	-0.5	260.6	261.4	246.5	14.83	17.621	
4,000.0	4,000.0	3,990.1	3,980.5	6.9	8.3	90.10	-0.5	268.2	269.0	253.8	15.23	17.667	
4,100.0	4,100.0	4,089.8	4,079.9	7.1	8.5	90.10	-0.5	275.8	276.6	261.0	15.62	17.710	
4,200.0	4,200.0	4,189.5	4,179.3	7.3	8.7	90.10	-0.5	283.4	284.2	268.2	16.01	17.752	
4,300.0	4,300.0	4,289.2	4,278.7	7.5	8.9	90.10	-0.5	291.0	291.9	275.5	16.41	17.791	
4,400.0	4,400.0	4,388.9	4,378.2	7.6	9.2	90.10	-0.5	298.6	299.5	282.7	16.80	17.828	
4,500.0	4,500.0	4,488.6	4,477.6	7.8	9.4	90.10	-0.6	306.2	307.1	289.9	17.19	17.864	
4,600.0	4,600.0	4,588.4	4,577.1	8.0	9.6	0.03	-0.6	313.8	313.9	297.9	15.95	19.682	
4,700.0	4,700.0	4,688.3	4,676.7	8.2	9.8	0.03	-0.6	321.4	318.9	302.6	16.30	19.567	
4,800.0	4,799.9	4,788.2	4,776.3	8.3	10.0	0.03	-0.6	329.1	322.1	305.5	16.64	19.355	
4,900.0	4,899.7	4,888.2	4,876.0	8.5	10.3	0.03	-0.6	336.7	323.7	306.7	16.99	19.052	
5,000.0	4,999.4	4,988.2	4,975.7	8.7	10.5	0.03	-0.6	344.3	324.0	306.7	17.34	18.690	

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

Company:	EnCana Oil & Gas (USA) Inc	**Local Co-ordinate Reference:**	Well Edith Ann-Duckworth 4E-21H-O268
Project:	DJ Wattenberg	**TVD Reference:**	WELL @ 4951.0ft (Original Well Elev)
Reference Site:	S21-T2N-R68W (Edith Ann-Duckworth)	**MD Reference:**	WELL @ 4951.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Edith Ann-Duckworth 4E-21H-O268	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Hz	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Offset Design S21-T2N-R68W (Edith Ann-Duckworth) - Edith Ann-Duckworth 4F-21H-O268 - Hz - Plan #1

Offset Site Error: 0.0 ft

Survey Program: 0-Geolink MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning
5,100.0	5,099.1	5,088.2	5,075.4	8.9	10.7	0.03	-0.6	351.9	324.3	306.7	17.69	18.339	
5,200.0	5,198.9	5,188.2	5,175.1	9.1	10.9	0.03	-0.7	359.6	324.7	306.6	18.04	18.002	
5,300.0	5,298.6	5,288.2	5,274.8	9.2	11.1	0.03	-0.7	367.2	325.0	306.6	18.38	17.677	
5,400.0	5,398.3	5,388.2	5,374.5	9.4	11.4	0.03	-0.7	374.8	325.3	306.6	18.73	17.364	
5,500.0	5,498.1	5,488.2	5,474.3	9.6	11.6	0.03	-0.7	382.4	325.6	306.5	19.08	17.063	
5,600.0	5,597.8	5,588.2	5,574.0	9.8	11.8	0.03	-0.7	390.0	326.0	306.5	19.43	16.773	
5,700.0	5,697.5	5,688.2	5,673.7	10.0	12.0	0.03	-0.7	397.7	326.3	306.5	19.78	16.493	
5,800.0	5,797.3	5,788.2	5,773.4	10.2	12.2	0.03	-0.7	405.3	326.6	306.5	20.13	16.223	
5,900.0	5,897.0	5,888.2	5,873.1	10.4	12.5	0.03	-0.8	412.9	326.9	306.4	20.48	15.962	
6,000.0	5,996.7	5,988.2	5,972.8	10.6	12.7	0.03	-0.8	420.5	327.2	306.4	20.83	15.709	
6,100.0	6,096.5	6,088.2	6,072.5	10.8	12.9	0.03	-0.8	428.2	327.6	306.4	21.18	15.465	
6,200.0	6,196.2	6,188.2	6,172.2	11.0	13.1	0.04	-0.8	435.8	327.9	306.4	21.53	15.229	
6,300.0	6,295.9	6,288.2	6,271.9	11.2	13.3	0.04	-0.8	443.4	328.2	306.3	21.88	15.001	
6,400.0	6,395.7	6,388.2	6,371.6	11.3	13.5	0.04	-0.8	451.0	328.5	306.3	22.23	14.779	
6,500.0	6,495.4	6,488.2	6,471.3	11.5	13.8	0.04	-0.8	458.7	328.9	306.3	22.58	14.565	
6,600.0	6,595.1	6,588.2	6,571.0	11.7	14.0	0.04	-0.9	466.3	329.2	306.2	22.93	14.357	
6,700.0	6,694.9	6,688.2	6,670.8	11.9	14.2	0.04	-0.9	473.9	329.5	306.2	23.28	14.155	
6,800.0	6,794.6	6,788.2	6,770.5	12.1	14.4	27.95	-0.9	481.5	329.8	306.2	23.63	13.960	
6,900.0	6,893.4	6,887.3	6,869.2	12.3	14.6	73.18	-0.9	489.1	330.4	306.4	23.99	13.774	
7,000.0	6,988.6	6,982.7	6,964.4	12.6	14.9	85.87	-0.9	496.4	333.3	308.8	24.41	13.650	
7,100.0	7,077.2	7,081.9	7,063.1	12.9	15.1	95.22	3.2	503.9	341.6	316.6	24.94	13.698	
7,200.0	7,156.5	7,193.4	7,171.6	13.2	15.3	103.01	27.2	512.2	354.7	329.1	25.51	13.901	
7,300.0	7,224.1	7,317.4	7,284.0	13.8	15.7	109.61	78.0	520.8	370.7	344.7	26.08	14.213	
7,400.0	7,278.1	7,456.0	7,393.6	14.5	16.2	115.08	161.9	529.2	387.5	360.8	26.68	14.525	
7,500.0	7,316.7	7,610.3	7,488.0	15.4	17.0	119.22	283.1	536.4	401.9	374.5	27.44	14.648	
7,600.0	7,338.7	7,778.2	7,550.2	16.4	18.3	121.71	438.3	541.1	411.2	382.6	28.60	14.375	
7,700.0	7,344.0	7,935.9	7,566.0	17.5	19.9	122.31	594.8	542.3	413.5	383.1	30.40	13.603	
7,800.0	7,344.0	8,035.9	7,566.0	18.8	21.0	122.31	694.8	542.3	413.5	380.9	32.55	12.702	
7,900.0	7,344.0	8,135.9	7,566.0	20.1	22.2	122.31	794.8	542.3	413.5	378.6	34.83	11.873	
8,000.0	7,344.0	8,235.9	7,566.0	21.5	23.4	122.31	894.8	542.3	413.5	376.3	37.20	11.116	
8,100.0	7,344.0	8,335.9	7,566.0	22.9	24.8	122.31	994.8	542.3	413.5	373.8	39.65	10.428	
8,200.0	7,344.0	8,435.9	7,566.0	24.4	26.2	122.31	1,094.8	542.3	413.5	371.3	42.17	9.805	
8,300.0	7,344.0	8,535.9	7,566.0	25.9	27.6	122.31	1,194.8	542.3	413.5	368.7	44.75	9.240	
8,400.0	7,344.0	8,635.9	7,566.0	27.5	29.0	122.31	1,294.8	542.3	413.5	366.1	47.37	8.729	
8,500.0	7,344.0	8,735.9	7,566.0	29.0	30.5	122.31	1,394.8	542.3	413.5	363.4	50.03	8.264	
8,600.0	7,344.0	8,835.9	7,566.0	30.6	32.0	122.31	1,494.8	542.3	413.5	360.7	52.73	7.842	
8,700.0	7,344.0	8,935.9	7,566.0	32.2	33.6	122.31	1,594.8	542.3	413.5	358.0	55.45	7.457	
8,800.0	7,344.0	9,035.9	7,566.0	33.9	35.1	122.31	1,694.8	542.3	413.5	355.3	58.20	7.105	
8,900.0	7,344.0	9,135.9	7,566.0	35.5	36.7	122.31	1,794.8	542.3	413.5	352.5	60.96	6.782	
9,000.0	7,344.0	9,235.9	7,566.0	37.1	38.3	122.31	1,894.8	542.3	413.5	349.7	63.75	6.486	
9,100.0	7,344.0	9,335.9	7,566.0	38.8	39.9	122.31	1,994.8	542.3	413.5	346.9	66.55	6.213	
9,200.0	7,344.0	9,435.9	7,566.0	40.4	41.5	122.31	2,094.8	542.3	413.5	344.1	69.37	5.960	
9,300.0	7,344.0	9,535.9	7,566.0	42.1	43.2	122.31	2,194.8	542.3	413.5	341.3	72.20	5.727	
9,400.0	7,344.0	9,635.9	7,566.0	43.8	44.8	122.31	2,294.8	542.3	413.5	338.4	75.04	5.510	
9,500.0	7,344.0	9,735.9	7,566.0	45.5	46.4	122.31	2,394.8	542.3	413.5	335.6	77.89	5.308	
9,600.0	7,344.0	9,835.9	7,566.0	47.2	48.1	122.31	2,494.8	542.3	413.5	332.7	80.75	5.120	
9,700.0	7,344.0	9,935.9	7,566.0	48.8	49.8	122.31	2,594.8	542.3	413.5	329.9	83.62	4.945	
9,800.0	7,344.0	10,035.9	7,566.0	50.5	51.4	122.31	2,694.8	542.3	413.5	327.0	86.49	4.780	
9,900.0	7,344.0	10,135.9	7,566.0	52.2	53.1	122.31	2,794.8	542.3	413.5	324.1	89.37	4.626	
10,000.0	7,344.0	10,235.9	7,566.0	53.9	54.8	122.31	2,894.8	542.3	413.5	321.2	92.26	4.482	
10,100.0	7,344.0	10,335.9	7,566.0	55.7	56.5	122.31	2,994.8	542.3	413.5	318.3	95.15	4.345	
10,200.0	7,344.0	10,435.9	7,566.0	57.4	58.1	122.31	3,094.8	542.3	413.5	315.4	98.05	4.217	

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

Company:	EnCana Oil & Gas (USA) Inc	**Local Co-ordinate Reference:**	Well Edith Ann-Duckworth 4E-21H-O268
Project:	DJ Wattenberg	**TVD Reference:**	WELL @ 4951.0ft (Original Well Elev)
Reference Site:	S21-T2N-R68W (Edith Ann-Duckworth)	**MD Reference:**	WELL @ 4951.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Edith Ann-Duckworth 4E-21H-O268	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Hz	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Offset Design S21-T2N-R68W (Edith Ann-Duckworth) - Edith Ann-Duckworth 4F-21H-O268 - Hz - Plan #1

Offset Site Error: 0.0 ft

Survey Program: 0-Geolink MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning
10,300.0	7,344.0	10,535.9	7,566.0	59.1	59.8	122.31	3,194.8	542.3	413.5	312.5	100.95	4.096	
10,400.0	7,344.0	10,635.9	7,566.0	60.8	61.5	122.31	3,294.8	542.3	413.5	309.6	103.85	3.981	
10,500.0	7,344.0	10,735.9	7,566.0	62.5	63.2	122.31	3,394.8	542.3	413.5	306.7	106.76	3.873	
10,600.0	7,344.0	10,835.9	7,566.0	64.2	64.9	122.31	3,494.8	542.3	413.5	303.8	109.67	3.770	
10,700.0	7,344.0	10,935.9	7,566.0	65.9	66.6	122.31	3,594.8	542.3	413.5	300.9	112.59	3.672	
10,800.0	7,344.0	11,035.9	7,566.0	67.7	68.3	122.31	3,694.8	542.3	413.5	298.0	115.51	3.580	
10,900.0	7,344.0	11,135.9	7,566.0	69.4	70.0	122.31	3,794.8	542.3	413.5	295.0	118.43	3.491	
11,000.0	7,344.0	11,235.9	7,566.0	71.1	71.8	122.31	3,894.8	542.3	413.5	292.1	121.35	3.407	
11,100.0	7,344.0	11,335.9	7,566.0	72.8	73.5	122.31	3,994.8	542.3	413.5	289.2	124.28	3.327	
11,200.0	7,344.0	11,435.9	7,566.0	74.6	75.2	122.31	4,094.8	542.3	413.5	286.3	127.21	3.250	
11,300.0	7,344.0	11,535.9	7,566.0	76.3	76.9	122.31	4,194.8	542.3	413.5	283.3	130.14	3.177	
11,400.0	7,344.0	11,635.9	7,566.0	78.0	78.6	122.31	4,294.8	542.3	413.5	280.4	133.07	3.107	
11,500.0	7,344.0	11,735.9	7,566.0	79.8	80.3	122.31	4,394.8	542.3	413.5	277.5	136.00	3.040	
11,600.0	7,344.0	11,835.9	7,566.0	81.5	82.1	122.31	4,494.8	542.3	413.5	274.5	138.94	2.976	
11,700.0	7,344.0	11,935.9	7,566.0	83.2	83.8	122.31	4,594.8	542.3	413.5	271.6	141.87	2.914	
11,800.0	7,344.0	12,035.9	7,566.0	85.0	85.5	122.31	4,694.8	542.3	413.5	268.7	144.81	2.855	
11,900.0	7,344.0	12,135.9	7,566.0	86.7	87.2	122.31	4,794.8	542.3	413.5	265.7	147.75	2.798	
12,000.0	7,344.0	12,235.9	7,566.0	88.4	88.9	122.31	4,894.8	542.3	413.5	262.8	150.69	2.744	
12,100.0	7,344.0	12,335.9	7,566.0	90.2	90.7	122.31	4,994.8	542.3	413.5	259.8	153.63	2.691	
12,200.0	7,344.0	12,435.9	7,566.0	91.9	92.4	122.31	5,094.8	542.3	413.5	256.9	156.58	2.641	
12,300.0	7,344.0	12,535.9	7,566.0	93.6	94.1	122.31	5,194.8	542.3	413.5	253.9	159.52	2.592	
12,400.0	7,344.0	12,635.9	7,566.0	95.4	95.9	122.31	5,294.8	542.3	413.5	251.0	162.47	2.545	
12,500.0	7,344.0	12,735.9	7,566.0	97.1	97.6	122.31	5,394.8	542.3	413.5	248.1	165.41	2.500	
12,600.0	7,344.0	12,835.9	7,566.0	98.9	99.3	122.31	5,494.8	542.3	413.5	245.1	168.36	2.456	
12,700.0	7,344.0	12,935.9	7,566.0	100.6	101.1	122.31	5,594.8	542.3	413.5	242.2	171.31	2.414	
12,800.0	7,344.0	13,035.9	7,566.0	102.3	102.8	122.31	5,694.8	542.3	413.5	239.2	174.26	2.373	
12,900.0	7,344.0	13,135.9	7,566.0	104.1	104.5	122.31	5,794.8	542.3	413.5	236.3	177.20	2.333	
13,000.0	7,344.0	13,235.9	7,566.0	105.8	106.3	122.31	5,894.8	542.3	413.5	233.3	180.15	2.295	
13,100.0	7,344.0	13,335.9	7,566.0	107.6	108.0	122.31	5,994.8	542.3	413.5	230.4	183.11	2.258	
13,200.0	7,344.0	13,435.9	7,566.0	109.3	109.7	122.31	6,094.8	542.3	413.5	227.4	186.06	2.222	
13,300.0	7,344.0	13,535.9	7,566.0	111.0	111.5	122.31	6,194.8	542.3	413.5	224.5	189.01	2.188	
13,400.0	7,344.0	13,635.9	7,566.0	112.8	113.2	122.31	6,294.8	542.3	413.5	221.5	191.96	2.154	
13,500.0	7,344.0	13,735.9	7,566.0	114.5	114.9	122.31	6,394.8	542.3	413.5	218.6	194.92	2.121	
13,600.0	7,344.0	13,835.9	7,566.0	116.3	116.7	122.31	6,494.8	542.3	413.5	215.6	197.87	2.090	
13,700.0	7,344.0	13,935.9	7,566.0	118.0	118.4	122.31	6,594.8	542.3	413.5	212.6	200.83	2.059	
13,800.0	7,344.0	14,035.9	7,566.0	119.8	120.2	122.31	6,694.8	542.3	413.5	209.7	203.78	2.029	
13,900.0	7,344.0	14,135.9	7,566.0	121.5	121.9	122.31	6,794.8	542.3	413.5	206.7	206.74	2.000	
14,000.0	7,344.0	14,235.9	7,566.0	123.2	123.6	122.31	6,894.8	542.3	413.5	203.8	209.69	1.972	
14,100.0	7,344.0	14,335.9	7,566.0	125.0	125.4	122.31	6,994.8	542.3	413.5	200.8	212.65	1.944	
14,200.0	7,344.0	14,435.9	7,566.0	126.7	127.1	122.31	7,094.8	542.3	413.5	197.9	215.61	1.918	
14,300.0	7,344.0	14,535.9	7,566.0	128.5	128.9	122.31	7,194.8	542.3	413.5	194.9	218.56	1.892	
14,400.0	7,344.0	14,635.9	7,566.0	130.2	130.6	122.31	7,294.8	542.3	413.5	191.9	221.52	1.867	
14,500.0	7,344.0	14,735.9	7,566.0	132.0	132.3	122.31	7,394.8	542.3	413.5	189.0	224.48	1.842	
14,600.0	7,344.0	14,835.9	7,566.0	133.7	134.1	122.31	7,494.8	542.3	413.5	186.0	227.44	1.818	
14,700.0	7,344.0	14,935.9	7,566.0	135.5	135.8	122.31	7,594.8	542.3	413.5	183.1	230.40	1.795	
14,800.0	7,344.0	15,035.9	7,566.0	137.2	137.6	122.31	7,694.8	542.3	413.5	180.1	233.36	1.772	
14,900.0	7,344.0	15,135.9	7,566.0	139.0	139.3	122.31	7,794.8	542.3	413.5	177.2	236.32	1.750	
15,000.0	7,344.0	15,235.9	7,566.0	140.7	141.0	122.31	7,894.8	542.3	413.5	174.2	239.28	1.728	
15,100.0	7,344.0	15,335.9	7,566.0	142.4	142.8	122.31	7,994.8	542.3	413.5	171.2	242.24	1.707	
15,200.0	7,344.0	15,435.9	7,566.0	144.2	144.5	122.31	8,094.8	542.3	413.5	168.3	245.20	1.686	
15,300.0	7,344.0	15,535.9	7,566.0	145.9	146.3	122.31	8,194.8	542.3	413.5	165.3	248.16	1.666	
15,400.0	7,344.0	15,635.9	7,566.0	147.7	148.0	122.31	8,294.8	542.3	413.5	162.4	251.12	1.647	

Company:	EnCana Oil & Gas (USA) Inc	**Local Co-ordinate Reference:**	Well Edith Ann-Duckworth 4E-21H-O268
Project:	DJ Wattenberg	**TVD Reference:**	WELL @ 4951.0ft (Original Well Elev)
Reference Site:	S21-T2N-R68W (Edith Ann-Duckworth)	**MD Reference:**	WELL @ 4951.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Edith Ann-Duckworth 4E-21H-O268	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Hz	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Offset Design S21-T2N-R68W (Edith Ann-Duckworth) - Edith Ann-Duckworth 4F-21H-O268 - Hz - Plan #1

Offset Site Error: 0.0 ft

Survey Program: 0-Geolink MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning
15,500.0	7,344.0	15,735.9	7,566.0	149.4	149.8	122.31	8,394.8	542.3	413.5	159.4	254.08	1.627	
15,600.0	7,344.0	15,835.9	7,566.0	151.2	151.5	122.31	8,494.8	542.3	413.5	156.4	257.04	1.609	
15,700.0	7,344.0	15,935.9	7,566.0	152.9	153.3	122.31	8,594.8	542.3	413.5	153.5	260.00	1.590	
15,800.0	7,344.0	16,035.9	7,566.0	154.7	155.0	122.31	8,694.8	542.3	413.5	150.5	262.96	1.572	
15,900.0	7,344.0	16,135.9	7,566.0	156.4	156.7	122.31	8,794.8	542.3	413.5	147.5	265.93	1.555	
16,000.0	7,344.0	16,235.9	7,566.0	158.2	158.5	122.31	8,894.8	542.3	413.5	144.6	268.89	1.538	
16,100.0	7,344.0	16,335.9	7,566.0	159.9	160.2	122.31	8,994.8	542.3	413.5	141.6	271.85	1.521	
16,200.0	7,344.0	16,435.9	7,566.0	161.7	162.0	122.31	9,094.8	542.3	413.5	138.7	274.81	1.505	
16,300.0	7,344.0	16,535.9	7,566.0	163.4	163.7	122.31	9,194.8	542.3	413.5	135.7	277.78	1.488	Level 3
16,400.0	7,344.0	16,635.9	7,566.0	165.2	165.5	122.31	9,294.8	542.3	413.5	132.7	280.74	1.473	Level 3
16,500.0	7,344.0	16,735.9	7,566.0	166.9	167.2	122.31	9,394.8	542.3	413.5	129.8	283.70	1.457	Level 3
16,600.0	7,344.0	16,835.9	7,566.0	168.7	169.0	122.31	9,494.8	542.3	413.5	126.8	286.67	1.442	Level 3
16,700.0	7,344.0	16,935.9	7,566.0	170.4	170.7	122.31	9,594.8	542.3	413.5	123.8	289.63	1.428	Level 3
16,800.0	7,344.0	17,035.9	7,566.0	172.2	172.5	122.31	9,694.8	542.3	413.5	120.9	292.60	1.413	Level 3
16,900.0	7,344.0	17,135.9	7,566.0	173.9	174.2	122.31	9,794.8	542.3	413.5	117.9	295.56	1.399	Level 3
17,000.0	7,344.0	17,235.9	7,566.0	175.7	176.0	122.31	9,894.8	542.3	413.5	114.9	298.52	1.385	Level 3
17,020.9	7,344.0	17,256.8	7,566.0	176.0	176.3	122.31	9,915.7	542.3	413.5	114.3	299.14	1.382	Level 3, SF

Company:	EnCana Oil & Gas (USA) Inc	**Local Co-ordinate Reference:**	Well Edith Ann-Duckworth 4E-21H-O268
Project:	DJ Wattenberg	**TVD Reference:**	WELL @ 4951.0ft (Original Well Elev)
Reference Site:	S21-T2N-R68W (Edith Ann-Duckworth)	**MD Reference:**	WELL @ 4951.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Edith Ann-Duckworth 4E-21H-O268	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Hz	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Offset Design S21-T2N-R68W (Edith Ann-Duckworth) - Edith Ann-Duckworth 4G-21H-O268 - Hz - Plan #1

Offset Site Error: 0.0 ft

Survey Program: 0-Geolink MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning
0.0	0.0	1.0	1.0	0.0	0.0	90.04	0.0	22.4	22.4				
100.0	100.0	101.0	101.0	0.1	0.1	90.04	0.0	22.4	22.4	22.1	0.26	84.895	
200.0	200.0	201.0	201.0	0.3	0.3	90.04	0.0	22.4	22.4	21.8	0.61	36.522	
266.3	266.3	267.3	267.3	0.4	0.4	90.04	0.0	22.4	22.4	21.5	0.84	26.505	CC
300.0	300.0	301.0	301.0	0.5	0.5	90.04	0.0	22.4	22.4	21.4	0.96	23.265	ES
400.0	400.0	400.6	400.6	0.7	0.7	90.04	0.0	23.3	23.3	21.9	1.31	17.746	
500.0	500.0	500.0	500.0	0.8	0.8	90.04	0.0	25.9	25.9	24.2	1.66	15.564	
600.0	600.0	599.6	599.4	1.0	1.0	90.04	0.0	30.2	30.2	28.2	2.02	14.951	SF
700.0	700.0	698.8	698.5	1.2	1.2	90.03	0.0	36.2	36.3	33.9	2.39	15.186	
800.0	800.0	797.8	797.2	1.4	1.4	90.03	0.0	44.0	44.2	41.4	2.78	15.905	
900.0	900.0	896.5	895.4	1.5	1.6	90.03	0.0	53.4	53.7	50.5	3.18	16.907	
1,000.0	1,000.0	994.8	993.1	1.7	1.9	90.03	0.0	64.5	64.9	61.3	3.59	18.070	
1,100.0	1,100.0	1,093.5	1,091.0	1.9	2.1	90.03	0.0	77.0	77.7	73.6	4.03	19.293	
1,200.0	1,200.0	1,192.6	1,189.3	2.1	2.4	90.02	0.0	89.8	90.6	86.1	4.46	20.289	
1,300.0	1,300.0	1,291.8	1,287.6	2.2	2.7	90.02	0.0	102.6	103.5	98.6	4.91	21.090	
1,400.0	1,400.0	1,391.0	1,386.0	2.4	3.0	90.02	0.0	115.4	116.4	111.1	5.35	21.746	
1,500.0	1,500.0	1,490.1	1,484.3	2.6	3.2	90.02	0.0	128.3	129.3	123.5	5.80	22.293	
1,600.0	1,600.0	1,589.3	1,582.6	2.7	3.5	90.02	-0.1	141.1	142.3	136.0	6.25	22.755	
1,700.0	1,700.0	1,688.4	1,680.9	2.9	3.8	90.02	-0.1	153.9	155.2	148.5	6.70	23.151	
1,800.0	1,800.0	1,787.6	1,779.3	3.1	4.1	90.02	-0.1	166.7	168.1	160.9	7.16	23.493	
1,900.0	1,900.0	1,886.8	1,877.6	3.3	4.3	90.02	-0.1	179.5	181.0	173.4	7.61	23.792	
2,000.0	2,000.0	1,985.9	1,975.9	3.4	4.6	90.02	-0.1	192.3	193.9	185.9	8.06	24.056	
2,100.0	2,100.0	2,085.1	2,074.3	3.6	4.9	90.02	-0.1	205.1	206.9	198.3	8.52	24.289	
2,200.0	2,200.0	2,184.2	2,172.6	3.8	5.2	90.02	-0.1	217.9	219.8	210.8	8.97	24.498	
2,300.0	2,300.0	2,283.4	2,270.9	4.0	5.5	90.02	-0.1	230.8	232.7	223.3	9.43	24.686	
2,400.0	2,400.0	2,382.6	2,369.3	4.1	5.7	90.02	-0.1	243.6	245.6	235.7	9.88	24.855	
2,500.0	2,500.0	2,481.7	2,467.6	4.3	6.0	90.02	-0.1	256.4	258.6	248.2	10.34	25.009	
2,600.0	2,600.0	2,580.9	2,565.9	4.5	6.3	90.02	-0.1	269.2	271.5	260.7	10.79	25.149	
2,700.0	2,700.0	2,680.1	2,664.3	4.7	6.6	90.02	-0.1	282.0	284.4	273.1	11.25	25.277	
2,800.0	2,800.0	2,779.2	2,762.6	4.8	6.9	90.02	-0.1	294.8	297.3	285.6	11.71	25.395	
2,900.0	2,900.0	2,878.4	2,860.9	5.0	7.1	90.02	-0.1	307.6	310.2	298.1	12.16	25.504	
3,000.0	3,000.0	2,977.5	2,959.2	5.2	7.4	90.02	-0.1	320.4	323.2	310.5	12.62	25.604	
3,100.0	3,100.0	3,076.7	3,057.6	5.4	7.7	90.02	-0.1	333.3	336.1	323.0	13.08	25.697	
3,200.0	3,200.0	3,175.9	3,155.9	5.5	8.0	90.02	-0.1	346.1	349.0	335.5	13.54	25.784	
3,300.0	3,300.0	3,275.0	3,254.2	5.7	8.3	90.02	-0.1	358.9	361.9	347.9	13.99	25.865	
3,400.0	3,400.0	3,374.2	3,352.6	5.9	8.6	90.02	-0.1	371.7	374.8	360.4	14.45	25.940	
3,500.0	3,500.0	3,473.4	3,450.9	6.1	8.8	90.02	-0.1	384.5	387.8	372.9	14.91	26.011	
3,600.0	3,600.0	3,572.5	3,549.2	6.2	9.1	90.02	-0.1	397.3	400.7	385.3	15.37	26.077	
3,700.0	3,700.0	3,671.7	3,647.6	6.4	9.4	90.02	-0.1	410.1	413.6	397.8	15.82	26.140	
3,800.0	3,800.0	3,770.8	3,745.9	6.6	9.7	90.02	-0.1	423.0	426.5	410.2	16.28	26.198	
3,900.0	3,900.0	3,870.0	3,844.2	6.8	10.0	90.02	-0.1	435.8	439.4	422.7	16.74	26.254	
4,000.0	4,000.0	3,969.2	3,942.5	6.9	10.3	90.02	-0.1	448.6	452.4	435.2	17.20	26.306	
4,100.0	4,100.0	4,068.3	4,040.9	7.1	10.5	90.02	-0.2	461.4	465.3	447.6	17.65	26.356	
4,200.0	4,200.0	4,167.5	4,139.2	7.3	10.8	90.02	-0.2	474.2	478.2	460.1	18.11	26.403	
4,300.0	4,300.0	4,266.6	4,237.5	7.5	11.1	90.02	-0.2	487.0	491.1	472.6	18.57	26.448	

Company:	EnCana Oil & Gas (USA) Inc	**Local Co-ordinate Reference:**	Well Edith Ann-Duckworth 4E-21H-O268
Project:	DJ Wattenberg	**TVD Reference:**	WELL @ 4951.0ft (Original Well Elev)
Reference Site:	S21-T2N-R68W (Edith Ann-Duckworth)	**MD Reference:**	WELL @ 4951.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Edith Ann-Duckworth 4E-21H-O268	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Hz	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Offset Design S21-T2N-R68W (Edith Ann-Duckworth) - Edith Ann-Duckworth 4H-21H-O268 - Hz - Plan #1

Offset Site Error: 0.0 ft

Survey Program: 0-Geolink MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning
0.0	0.0	1.0	1.0	0.0	0.0	90.05	0.0	30.8	30.8				
100.0	100.0	101.0	101.0	0.1	0.1	90.05	0.0	30.8	30.8	30.5	0.26	116.731	
166.3	166.3	167.3	167.3	0.2	0.2	90.05	0.0	30.8	30.8	30.3	0.50	62.139	CC
200.0	200.0	201.0	201.0	0.3	0.3	90.05	0.0	30.8	30.8	30.2	0.61	50.218	ES
300.0	300.0	300.5	300.4	0.5	0.5	90.05	0.0	31.6	31.6	30.7	0.96	32.909	
400.0	400.0	400.0	400.0	0.7	0.7	90.04	0.0	34.3	34.3	33.0	1.32	26.054	
500.0	500.0	499.1	499.0	0.8	0.8	90.04	0.0	38.6	38.6	36.9	1.68	23.040	
600.0	600.0	598.2	597.9	1.0	1.0	90.04	0.0	44.6	44.7	42.7	2.05	21.819	
700.0	700.0	697.1	696.5	1.2	1.3	90.04	0.0	52.3	52.5	50.1	2.44	21.559	SF
800.0	800.0	795.6	794.6	1.4	1.5	90.04	0.0	61.7	62.0	59.2	2.84	21.848	
900.0	900.0	893.8	892.1	1.5	1.7	90.04	0.0	72.7	73.3	70.0	3.26	22.461	
1,000.0	1,000.0	991.6	989.1	1.7	2.0	90.04	-0.1	85.4	86.2	82.5	3.70	23.264	
1,100.0	1,100.0	1,089.0	1,085.4	1.9	2.3	90.04	-0.1	99.6	100.8	96.6	4.17	24.174	
1,200.0	1,200.0	1,185.8	1,181.0	2.1	2.6	90.03	-0.1	115.4	117.1	112.4	4.66	25.141	
1,300.0	1,300.0	1,284.0	1,277.7	2.2	2.9	90.03	-0.1	132.4	134.4	129.3	5.16	26.066	
1,400.0	1,400.0	1,382.5	1,374.6	2.4	3.3	90.03	-0.1	149.5	151.8	146.1	5.66	26.805	
1,500.0	1,500.0	1,481.0	1,471.6	2.6	3.6	90.03	-0.1	166.6	169.2	163.0	6.17	27.409	
1,600.0	1,600.0	1,579.4	1,568.6	2.7	3.9	90.03	-0.1	183.7	186.5	179.9	6.68	27.910	
1,700.0	1,700.0	1,677.9	1,665.6	2.9	4.3	90.03	-0.1	200.8	203.9	196.7	7.20	28.333	
1,800.0	1,800.0	1,776.4	1,762.6	3.1	4.6	90.03	-0.1	217.9	221.3	213.6	7.71	28.694	
1,900.0	1,900.0	1,874.9	1,859.6	3.3	5.0	90.03	-0.1	235.0	238.6	230.4	8.23	29.006	
2,000.0	2,000.0	1,973.4	1,956.5	3.4	5.3	90.03	-0.1	252.1	256.0	247.3	8.74	29.278	
2,100.0	2,100.0	2,071.8	2,053.5	3.6	5.6	90.03	-0.1	269.2	273.4	264.1	9.26	29.517	
2,200.0	2,200.0	2,170.3	2,150.5	3.8	6.0	90.03	-0.2	286.3	290.7	281.0	9.78	29.729	
2,300.0	2,300.0	2,268.8	2,247.5	4.0	6.3	90.03	-0.2	303.4	308.1	297.8	10.30	29.919	
2,400.0	2,400.0	2,367.3	2,344.5	4.1	6.7	90.03	-0.2	320.5	325.5	314.6	10.82	30.088	
2,500.0	2,500.0	2,465.8	2,441.5	4.3	7.0	90.03	-0.2	337.6	342.8	331.5	11.34	30.242	
2,600.0	2,600.0	2,564.2	2,538.5	4.5	7.4	90.03	-0.2	354.7	360.2	348.3	11.86	30.381	
2,700.0	2,700.0	2,662.7	2,635.4	4.7	7.7	90.03	-0.2	371.8	377.6	365.2	12.38	30.507	
2,800.0	2,800.0	2,761.2	2,732.4	4.8	8.1	90.03	-0.2	388.9	394.9	382.0	12.90	30.623	
2,900.0	2,900.0	2,859.7	2,829.4	5.0	8.4	90.03	-0.2	406.0	412.3	398.9	13.42	30.729	
3,000.0	3,000.0	2,958.2	2,926.4	5.2	8.7	90.03	-0.2	423.1	429.7	415.7	13.94	30.827	
3,100.0	3,100.0	3,056.7	3,023.4	5.4	9.1	90.03	-0.2	440.2	447.0	432.6	14.46	30.918	
3,200.0	3,200.0	3,155.1	3,120.4	5.5	9.4	90.03	-0.2	457.3	464.4	449.4	14.98	31.002	
3,300.0	3,300.0	3,253.6	3,217.3	5.7	9.8	90.03	-0.3	474.4	481.8	466.3	15.50	31.080	
3,400.0	3,400.0	3,352.1	3,314.3	5.9	10.1	90.03	-0.3	491.5	499.1	483.1	16.02	31.153	

Company:	EnCana Oil & Gas (USA) Inc	**Local Co-ordinate Reference:**	Well Edith Ann-Duckworth 4E-21H-O268
Project:	DJ Wattenberg	**TVD Reference:**	WELL @ 4951.0ft (Original Well Elev)
Reference Site:	S21-T2N-R68W (Edith Ann-Duckworth)	**MD Reference:**	WELL @ 4951.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Edith Ann-Duckworth 4E-21H-O268	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Hz	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Offset Design S21-T2N-R68W (Edith Ann-Duckworth) - KENNEDY 31-21 (EXISTING) - ENCANA WELL - NO SURVE

Offset Site Error: 0.0 ft

Survey Program: 8065-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning
10,100.0	7,344.0	7,299.0	7,299.0	55.7	12.7	90.00	3,446.1	332.8	472.5	404.2	68.26	6.921	
10,200.0	7,344.0	7,299.0	7,299.0	57.4	12.7	90.00	3,446.1	332.8	378.1	308.1	69.97	5.403	
10,300.0	7,344.0	7,299.0	7,299.0	59.1	12.7	90.00	3,446.1	332.8	287.6	215.9	71.69	4.012	
10,400.0	7,344.0	7,299.0	7,299.0	60.8	12.7	90.00	3,446.1	332.8	206.0	132.6	73.41	2.807	
10,500.0	7,344.0	7,299.0	7,299.0	62.5	12.7	90.00	3,446.1	332.8	149.0	73.8	75.12	1.983	
10,551.3	7,344.0	7,299.0	7,299.0	63.4	12.7	90.00	3,446.1	332.8	139.9	63.9	76.01	1.840	CC, ES, SF
10,600.0	7,344.0	7,299.0	7,299.0	64.2	12.7	90.00	3,446.1	332.8	148.1	71.3	76.84	1.927	
10,700.0	7,344.0	7,299.0	7,299.0	65.9	12.7	90.00	3,446.1	332.8	204.2	125.6	78.57	2.598	
10,800.0	7,344.0	7,299.0	7,299.0	67.7	12.7	90.00	3,446.1	332.8	285.3	205.1	80.29	3.554	
10,900.0	7,344.0	7,299.0	7,299.0	69.4	12.7	90.00	3,446.1	332.8	375.7	293.7	82.02	4.581	
11,000.0	7,344.0	7,299.0	7,299.0	71.1	12.7	90.00	3,446.1	332.8	470.0	386.3	83.74	5.612	

Company:	EnCana Oil & Gas (USA) Inc	**Local Co-ordinate Reference:**	Well Edith Ann-Duckworth 4E-21H-O268
Project:	DJ Wattenberg	**TVD Reference:**	WELL @ 4951.0ft (Original Well Elev)
Reference Site:	S21-T2N-R68W (Edith Ann-Duckworth)	**MD Reference:**	WELL @ 4951.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Edith Ann-Duckworth 4E-21H-O268	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Hz	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Offset Design S21-T2N-R68W (Edith Ann-Duckworth) - KENNEDY 6-0-21 (EXISTING) - ENCANA WELL - SURVEYS

Offset Site Error: 0.0 ft

Survey Program: 108-Geolink MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning
11,700.0	7,344.0	7,379.4	7,281.2	83.2	19.7	-87.44	4,984.6	-33.2	450.7	351.6	99.10	4.548	
11,800.0	7,344.0	7,382.0	7,283.8	85.0	19.7	-88.09	4,984.7	-33.1	367.6	266.8	100.89	3.644	
11,900.0	7,344.0	7,384.6	7,286.4	86.7	19.7	-88.75	4,984.8	-33.1	295.3	192.6	102.66	2.876	
12,000.0	7,344.0	7,387.3	7,289.1	88.4	19.7	-89.43	4,984.8	-33.1	243.3	138.9	104.43	2.330	
12,090.1	7,344.0	7,389.8	7,291.6	90.0	19.7	-90.06	4,984.9	-33.1	226.0	120.0	106.01	2.132	CC, ES
12,100.0	7,344.0	7,390.1	7,291.8	90.2	19.7	-90.13	4,984.9	-33.1	226.3	120.1	106.18	2.131	SF
12,200.0	7,344.0	7,392.9	7,294.7	91.9	19.7	-90.86	4,985.0	-33.1	251.3	143.4	107.92	2.329	
12,300.0	7,344.0	7,395.8	7,297.6	93.6	19.7	-91.60	4,985.1	-33.1	308.4	198.8	109.65	2.813	
12,400.0	7,344.0	7,398.9	7,300.6	95.4	19.7	-92.36	4,985.2	-33.1	383.5	272.2	111.35	3.444	
12,500.0	7,344.0	7,402.0	7,303.7	97.1	19.7	-93.15	4,985.3	-33.1	468.0	354.9	113.04	4.140	

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

Company:	EnCana Oil & Gas (USA) Inc	**Local Co-ordinate Reference:**	Well Edith Ann-Duckworth 4E-21H-O268
Project:	DJ Wattenberg	**TVD Reference:**	WELL @ 4951.0ft (Original Well Elev)
Reference Site:	S21-T2N-R68W (Edith Ann-Duckworth)	**MD Reference:**	WELL @ 4951.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Edith Ann-Duckworth 4E-21H-O268	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Hz	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Offset Design S21-T2N-R68W (Edith Ann-Duckworth) - KENNEDY 6-4-21 (EXISTING) - ENCANA WELL - SURVEYS

Offset Site Error: 0.0 ft

Survey Program: 71-Geolink MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning
9,200.0	7,344.0	7,411.9	7,276.5	40.4	21.7	-87.36	2,535.4	29.3	470.0	409.0	61.03	7.702	
9,300.0	7,344.0	7,413.3	7,277.8	42.1	21.7	-87.84	2,535.4	29.3	377.9	315.2	62.72	6.025	
9,400.0	7,344.0	7,414.7	7,279.2	43.8	21.7	-88.32	2,535.4	29.2	291.0	226.6	64.41	4.518	
9,500.0	7,344.0	7,416.0	7,280.6	45.5	21.7	-88.79	2,535.5	29.2	215.8	149.7	66.11	3.264	
9,600.0	7,344.0	7,417.4	7,281.9	47.2	21.7	-89.27	2,535.5	29.2	168.7	100.8	67.81	2.487	
9,640.6	7,344.0	7,418.0	7,282.5	47.8	21.7	-89.46	2,535.5	29.2	163.7	95.2	68.50	2.390	CC, ES, SF
9,700.0	7,344.0	7,418.8	7,283.3	48.8	21.7	-89.75	2,535.5	29.2	174.1	104.6	69.51	2.505	
9,800.0	7,344.0	7,420.1	7,284.6	50.5	21.7	-90.22	2,535.5	29.2	228.4	157.2	71.21	3.208	
9,900.0	7,344.0	7,421.5	7,286.0	52.2	21.7	-90.70	2,535.5	29.2	306.7	233.8	72.91	4.206	
10,000.0	7,344.0	7,422.8	7,287.4	53.9	21.7	-91.18	2,535.5	29.2	394.9	320.3	74.60	5.293	
10,100.0	7,344.0	7,424.2	7,288.7	55.7	21.7	-91.65	2,535.6	29.2	487.6	411.3	76.30	6.391	

Company:	EnCana Oil & Gas (USA) Inc	**Local Co-ordinate Reference:**	Well Edith Ann-Duckworth 4E-21H-O268
Project:	DJ Wattenberg	**TVD Reference:**	WELL @ 4951.0ft (Original Well Elev)
Reference Site:	S21-T2N-R68W (Edith Ann-Duckworth)	**MD Reference:**	WELL @ 4951.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Edith Ann-Duckworth 4E-21H-O268	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Hz	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Offset Design S21-T2N-R68W (Edith Ann-Duckworth) - KENNEDY GAS UNIT 1 (EXISTING) - ENCANA WELL - NO S

Offset Site Error: 0.0 ft

Survey Program: 8138-Geolink MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning
10,100.0	7,344.0	7,279.0	7,279.0	55.7	12.7	90.00	3,434.1	350.4	466.6	398.4	68.25	6.837	
10,200.0	7,344.0	7,279.0	7,279.0	57.4	12.7	90.00	3,434.1	350.4	374.0	304.1	69.96	5.346	
10,300.0	7,344.0	7,279.0	7,279.0	59.1	12.7	90.00	3,434.1	350.4	286.4	214.8	71.68	3.996	
10,400.0	7,344.0	7,279.0	7,279.0	60.8	12.7	90.00	3,434.1	350.4	210.2	136.8	73.40	2.864	
10,500.0	7,344.0	7,279.0	7,279.0	62.5	12.7	90.00	3,434.1	350.4	162.3	87.2	75.11	2.161	
10,539.3	7,344.0	7,279.0	7,279.0	63.2	12.7	90.00	3,434.1	350.4	157.5	81.7	75.79	2.078	CC, ES, SF
10,600.0	7,344.0	7,279.0	7,279.0	64.2	12.7	90.00	3,434.1	350.4	168.8	92.0	76.84	2.197	
10,700.0	7,344.0	7,279.0	7,279.0	65.9	12.7	90.00	3,434.1	350.4	225.0	146.5	78.56	2.865	
10,800.0	7,344.0	7,279.0	7,279.0	67.7	12.7	90.00	3,434.1	350.4	304.6	224.3	80.28	3.794	
10,900.0	7,344.0	7,279.0	7,279.0	69.4	12.7	90.00	3,434.1	350.4	393.6	311.6	82.01	4.800	
11,000.0	7,344.0	7,279.0	7,279.0	71.1	12.7	90.00	3,434.1	350.4	486.9	403.2	83.73	5.815	

Company:	EnCana Oil & Gas (USA) Inc	**Local Co-ordinate Reference:**	Well Edith Ann-Duckworth 4E-21H-O268
Project:	DJ Wattenberg	**TVD Reference:**	WELL @ 4951.0ft (Original Well Elev)
Reference Site:	S21-T2N-R68W (Edith Ann-Duckworth)	**MD Reference:**	WELL @ 4951.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Edith Ann-Duckworth 4E-21H-O268	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Hz	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Reference Depths are relative to WELL @ 4951.0ft (Original Well Elev)
Offset Depths are relative to Offset Datum
Central Meridian is -105.500000 °

Coordinates are relative to: Edith Ann-Duckworth 4E-21H-O268
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 0.32°