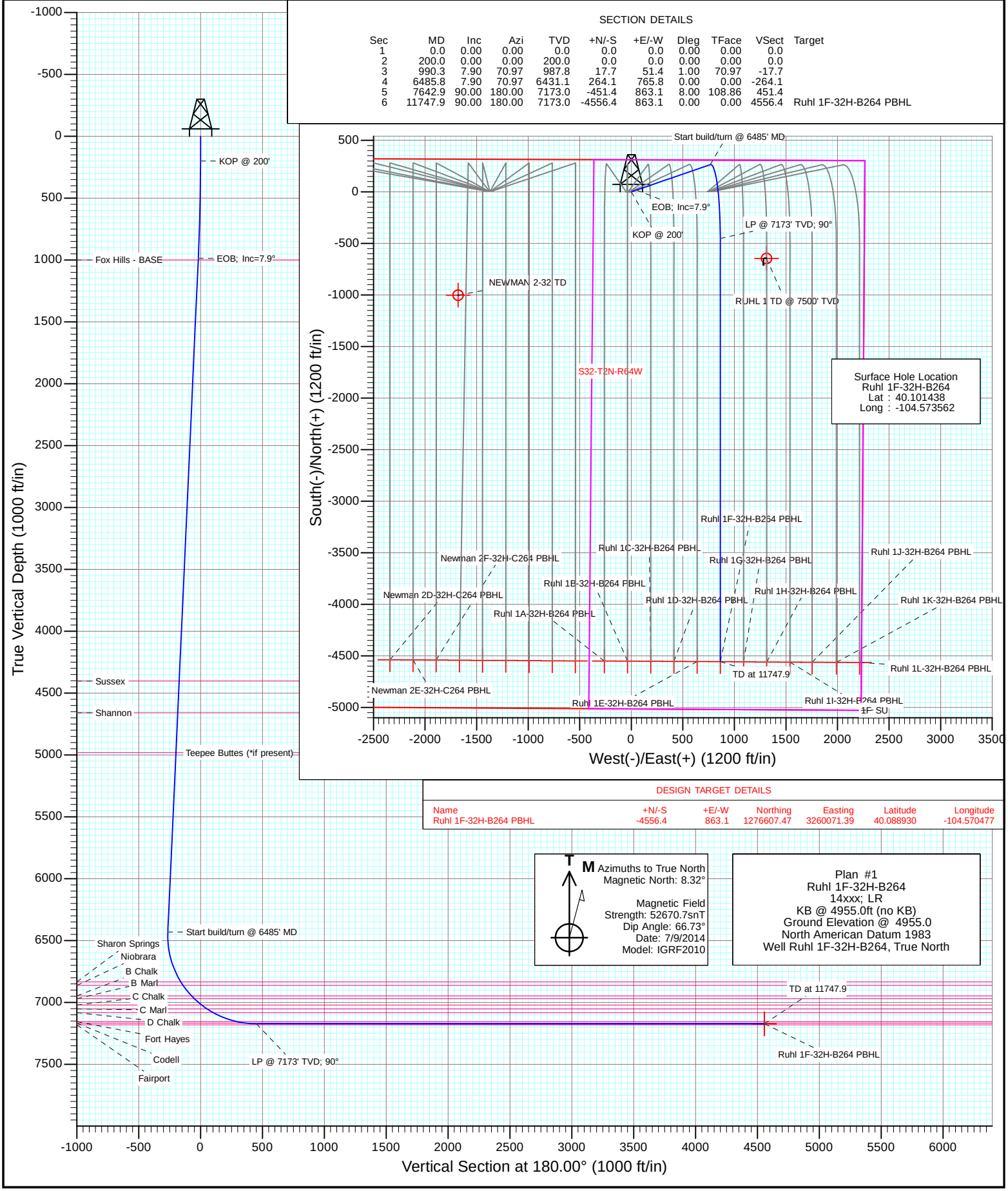
CATHEDRAL

Project: DJ Wattenberg
Site: S32-T2N-R64W (Newman/Ruhl)
Well: Ruhl 1F-32H-B264
Wellbore: Hz
Design: Plan #1

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	200.0	0.00	0.00	200.0	0.0	0.0	0.00	0.00	0.0	
3	990.3	7.90	70.97	987.8	17.7	51.4	1.00	70.97	-17.7	
4	6485.8	7.90	70.97	6431.1	264.1	765.8	0.00	0.00	-264.1	
5	7642.9	90.00	180.00	7173.0	-451.4	863.1	8.00	108.86	451.4	
6	11747.9	90.00	180.00	7173.0	-4556.4	863.1	0.00	0.00	4556.4	Ruhl 1F-32H-B264 PBHL



DESIGN TARGET DETAILS

Name	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
Ruhl 1F-32H-B264 PBHL	-4556.4	863.1	1276607.47	3260071.39	40.088930	-104.570477

T M Azimuths to True North
Magnetic North: 8.32°

Magnetic Field
Strength: 52670.7snT
Dip Angle: 66.73°
Date: 7/9/2014
Model: IGRF2010

Plan #1
Ruhl 1F-32H-B264
14xxx; LR
KB @ 4955.0ft (no KB)
Ground Elevation @ 4955.0
North American Datum 1983
Well Ruhl 1F-32H-B264, True North

Planning Report

Database:	USA EDM 5000 Multi Users DB	**Local Co-ordinate Reference:**	Well Ruhl 1F-32H-B264
Company:	EnCana Oil & Gas (USA) Inc	**TVD Reference:**	KB @ 4955.0ft (no KB)
Project:	DJ Wattenberg	**MD Reference:**	KB @ 4955.0ft (no KB)
Site:	S32-T2N-R64W (Newman)	**North Reference:**	True
Well:	Ruhl 1F-32H-B264	**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 S32-T2N-R64W (Newman)

Site Position:		**Northing:**	1,281,150.66 ft	**Latitude:**	40.101468
From:	Lat/Long	**Easting:**	3,257,734.55 ft	**Longitude:**	-104.578660
Position Uncertainty:	0.0 ft	**Slot Radius:**	13.200 in	**Grid Convergence:**	0.60 °

Well Ruhl 1F-32H-B264

Well Position	**+N/-S**	0.0 ft	**Northing:**	1,281,154.58 ft	**Latitude:**	40.101438
	+E/-W	0.0 ft	**Easting:**	3,259,160.68 ft	**Longitude:**	-104.573562
Position Uncertainty		0.0 ft	**Wellhead Elevation:**	0.0 ft	**Ground Level:**	4,955.0 ft

Wellbore Hz

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	7/9/2014	8.32	66.73	52,671

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	180.00

Plan Sections

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
200.0	0.00	0.00	200.0	0.0	0.0	0.00	0.00	0.00	0.00	
990.3	7.90	70.97	987.8	17.7	51.4	1.00	1.00	0.00	70.97	
6,485.8	7.90	70.97	6,431.1	264.1	765.8	0.00	0.00	0.00	0.00	
7,642.9	90.00	180.00	7,173.0	-451.4	863.1	8.00	7.09	9.42	108.86	
11,747.9	90.00	180.00	7,173.0	-4,556.4	863.1	0.00	0.00	0.00	0.00	Ruhl 1F-32H-B264 PE

Database:	USA EDM 5000 Multi Users DB	**Local Co-ordinate Reference:**	Well Ruhl 1F-32H-B264
Company:	EnCana Oil & Gas (USA) Inc	**TVD Reference:**	KB @ 4955.0ft (no KB)
Project:	DJ Wattenberg	**MD Reference:**	KB @ 4955.0ft (no KB)
Site:	S32-T2N-R64W (Newman)	**North Reference:**	True
Well:	Ruhl 1F-32H-B264	**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	KOP @ 200'
300.0	1.00	70.97	300.0	0.3	0.8	-0.3	1.00	1.00	
400.0	2.00	70.97	400.0	1.1	3.3	-1.1	1.00	1.00	
500.0	3.00	70.97	499.9	2.6	7.4	-2.6	1.00	1.00	
600.0	4.00	70.97	599.7	4.6	13.2	-4.6	1.00	1.00	
700.0	5.00	70.97	699.4	7.1	20.6	-7.1	1.00	1.00	
800.0	6.00	70.97	798.9	10.2	29.7	-10.2	1.00	1.00	
900.0	7.00	70.97	898.3	13.9	40.4	-13.9	1.00	1.00	
990.3	7.90	70.97	987.8	17.7	51.4	-17.7	1.00	1.00	EOB; Inc=7.9°
1,000.0	7.90	70.97	997.4	18.2	52.7	-18.2	0.00	0.00	
1,002.6	7.90	70.97	1,000.0	18.3	53.0	-18.3	0.00	0.00	Fox Hills - BASE
1,100.0	7.90	70.97	1,096.5	22.7	65.7	-22.7	0.00	0.00	
1,200.0	7.90	70.97	1,195.5	27.1	78.7	-27.1	0.00	0.00	
1,300.0	7.90	70.97	1,294.6	31.6	91.7	-31.6	0.00	0.00	
1,400.0	7.90	70.97	1,393.6	36.1	104.7	-36.1	0.00	0.00	
1,500.0	7.90	70.97	1,492.7	40.6	117.7	-40.6	0.00	0.00	
1,600.0	7.90	70.97	1,591.7	45.1	130.7	-45.1	0.00	0.00	
1,700.0	7.90	70.97	1,690.8	49.6	143.7	-49.6	0.00	0.00	
1,800.0	7.90	70.97	1,789.8	54.0	156.7	-54.0	0.00	0.00	
1,900.0	7.90	70.97	1,888.9	58.5	169.7	-58.5	0.00	0.00	
2,000.0	7.90	70.97	1,987.9	63.0	182.7	-63.0	0.00	0.00	
2,100.0	7.90	70.97	2,087.0	67.5	195.7	-67.5	0.00	0.00	
2,200.0	7.90	70.97	2,186.0	72.0	208.7	-72.0	0.00	0.00	
2,300.0	7.90	70.97	2,285.1	76.5	221.7	-76.5	0.00	0.00	
2,400.0	7.90	70.97	2,384.1	80.9	234.7	-80.9	0.00	0.00	
2,500.0	7.90	70.97	2,483.2	85.4	247.7	-85.4	0.00	0.00	
2,600.0	7.90	70.97	2,582.2	89.9	260.7	-89.9	0.00	0.00	
2,700.0	7.90	70.97	2,681.3	94.4	273.7	-94.4	0.00	0.00	
2,800.0	7.90	70.97	2,780.3	98.9	286.7	-98.9	0.00	0.00	
2,900.0	7.90	70.97	2,879.4	103.4	299.7	-103.4	0.00	0.00	
3,000.0	7.90	70.97	2,978.4	107.8	312.7	-107.8	0.00	0.00	
3,100.0	7.90	70.97	3,077.5	112.3	325.7	-112.3	0.00	0.00	
3,200.0	7.90	70.97	3,176.5	116.8	338.7	-116.8	0.00	0.00	
3,300.0	7.90	70.97	3,275.6	121.3	351.7	-121.3	0.00	0.00	
3,400.0	7.90	70.97	3,374.6	125.8	364.7	-125.8	0.00	0.00	
3,500.0	7.90	70.97	3,473.7	130.3	377.7	-130.3	0.00	0.00	
3,600.0	7.90	70.97	3,572.7	134.7	390.7	-134.7	0.00	0.00	
3,700.0	7.90	70.97	3,671.8	139.2	403.7	-139.2	0.00	0.00	
3,800.0	7.90	70.97	3,770.8	143.7	416.7	-143.7	0.00	0.00	
3,900.0	7.90	70.97	3,869.9	148.2	429.7	-148.2	0.00	0.00	
4,000.0	7.90	70.97	3,968.9	152.7	442.7	-152.7	0.00	0.00	
4,100.0	7.90	70.97	4,068.0	157.2	455.7	-157.2	0.00	0.00	
4,200.0	7.90	70.97	4,167.0	161.6	468.7	-161.6	0.00	0.00	
4,300.0	7.90	70.97	4,266.1	166.1	481.7	-166.1	0.00	0.00	
4,400.0	7.90	70.97	4,365.1	170.6	494.7	-170.6	0.00	0.00	
4,438.3	7.90	70.97	4,403.0	172.3	499.6	-172.3	0.00	0.00	Sussex
4,500.0	7.90	70.97	4,464.2	175.1	507.7	-175.1	0.00	0.00	
4,600.0	7.90	70.97	4,563.2	179.6	520.7	-179.6	0.00	0.00	
4,696.7	7.90	70.97	4,659.0	183.9	533.2	-183.9	0.00	0.00	Shannon
4,700.0	7.90	70.97	4,662.3	184.0	533.7	-184.0	0.00	0.00	

Database:	USA EDM 5000 Multi Users DB	**Local Co-ordinate Reference:**	Well Ruhl 1F-32H-B264
Company:	EnCana Oil & Gas (USA) Inc	**TVD Reference:**	KB @ 4955.0ft (no KB)
Project:	DJ Wattenberg	**MD Reference:**	KB @ 4955.0ft (no KB)
Site:	S32-T2N-R64W (Newman)	**North Reference:**	True
Well:	Ruhl 1F-32H-B264	**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
4,800.0	7.90	70.97	4,761.3	188.5	546.7	-188.5	0.00	0.00	
4,900.0	7.90	70.97	4,860.4	193.0	559.7	-193.0	0.00	0.00	
5,000.0	7.90	70.97	4,959.4	197.5	572.7	-197.5	0.00	0.00	
5,021.8	7.90	70.97	4,981.0	198.5	575.5	-198.5	0.00	0.00	Teepee Buttes (*if present)
5,100.0	7.90	70.97	5,058.5	202.0	585.7	-202.0	0.00	0.00	
5,200.0	7.90	70.97	5,157.5	206.5	598.6	-206.5	0.00	0.00	
5,300.0	7.90	70.97	5,256.6	210.9	611.6	-210.9	0.00	0.00	
5,400.0	7.90	70.97	5,355.6	215.4	624.6	-215.4	0.00	0.00	
5,500.0	7.90	70.97	5,454.7	219.9	637.6	-219.9	0.00	0.00	
5,600.0	7.90	70.97	5,553.7	224.4	650.6	-224.4	0.00	0.00	
5,700.0	7.90	70.97	5,652.8	228.9	663.6	-228.9	0.00	0.00	
5,800.0	7.90	70.97	5,751.8	233.4	676.6	-233.4	0.00	0.00	
5,900.0	7.90	70.97	5,850.9	237.8	689.6	-237.8	0.00	0.00	
6,000.0	7.90	70.97	5,949.9	242.3	702.6	-242.3	0.00	0.00	
6,100.0	7.90	70.97	6,049.0	246.8	715.6	-246.8	0.00	0.00	
6,200.0	7.90	70.97	6,148.0	251.3	728.6	-251.3	0.00	0.00	
6,300.0	7.90	70.97	6,247.1	255.8	741.6	-255.8	0.00	0.00	
6,400.0	7.90	70.97	6,346.1	260.3	754.6	-260.3	0.00	0.00	
6,485.8	7.90	70.97	6,431.1	264.1	765.8	-264.1	0.00	0.00	Start build/turn @ 6485' MD
6,500.0	7.61	79.14	6,445.2	264.6	767.6	-264.6	8.00	-2.05	
6,600.0	9.94	131.51	6,544.1	260.1	780.6	-260.1	8.00	2.33	
6,700.0	16.34	153.41	6,641.5	241.8	793.4	-241.8	8.00	6.40	
6,800.0	23.71	162.62	6,735.4	210.0	805.7	-210.0	8.00	7.38	
6,900.0	31.38	167.58	6,824.0	165.3	817.4	-165.3	8.00	7.67	
6,911.7	32.29	168.02	6,834.0	159.2	818.7	-159.2	8.00	7.75	Sharon Springs
6,946.6	35.00	169.20	6,863.0	140.3	822.5	-140.3	8.00	7.78	Niobrara
7,000.0	39.18	170.73	6,905.6	108.6	828.1	-108.6	8.00	7.81	
7,055.1	43.50	172.05	6,947.0	72.6	833.5	-72.6	8.00	7.84	B Chalk
7,087.5	46.05	172.73	6,970.0	50.0	836.5	-50.0	8.00	7.86	B Marl
7,100.0	47.03	172.98	6,978.6	41.0	837.6	-41.0	8.00	7.87	
7,165.5	52.19	174.16	7,021.0	-8.6	843.2	8.6	8.00	7.88	C Chalk
7,200.0	54.92	174.71	7,041.5	-36.2	845.9	36.2	8.00	7.89	
7,220.4	56.53	175.02	7,053.0	-53.0	847.4	53.0	8.00	7.90	C Marl
7,278.4	61.11	175.85	7,083.0	-102.4	851.3	102.4	8.00	7.91	D Chalk
7,300.0	62.82	176.14	7,093.2	-121.4	852.7	121.4	8.00	7.91	
7,400.0	70.74	177.37	7,132.6	-213.1	857.8	213.1	8.00	7.92	
7,481.3	77.18	178.29	7,155.0	-291.1	860.8	291.1	8.00	7.93	Fort Hayes
7,500.0	78.67	178.49	7,158.9	-309.4	861.3	309.4	8.00	7.93	
7,557.8	83.25	179.11	7,168.0	-366.5	862.5	366.5	8.00	7.93	Codell
7,600.0	86.60	179.55	7,171.7	-408.5	863.0	408.5	8.00	7.93	
7,642.9	90.00	180.00	7,173.0	-451.4	863.1	451.4	8.00	7.93	LP @ 7173' TVD; 90°
7,700.0	90.00	180.00	7,173.0	-508.5	863.1	508.5	0.00	0.00	
7,800.0	90.00	180.00	7,173.0	-608.5	863.1	608.5	0.00	0.00	
7,900.0	90.00	180.00	7,173.0	-708.5	863.1	708.5	0.00	0.00	
8,000.0	90.00	180.00	7,173.0	-808.5	863.1	808.5	0.00	0.00	
8,100.0	90.00	180.00	7,173.0	-908.5	863.1	908.5	0.00	0.00	
8,200.0	90.00	180.00	7,173.0	-1,008.5	863.1	1,008.5	0.00	0.00	
8,300.0	90.00	180.00	7,173.0	-1,108.5	863.1	1,108.5	0.00	0.00	
8,400.0	90.00	180.00	7,173.0	-1,208.5	863.1	1,208.5	0.00	0.00	
8,500.0	90.00	180.00	7,173.0	-1,308.5	863.1	1,308.5	0.00	0.00	
8,600.0	90.00	180.00	7,173.0	-1,408.5	863.1	1,408.5	0.00	0.00	
8,700.0	90.00	180.00	7,173.0	-1,508.5	863.1	1,508.5	0.00	0.00	

Database:	USA EDM 5000 Multi Users DB	**Local Co-ordinate Reference:**	Well Ruhl 1F-32H-B264
Company:	EnCana Oil & Gas (USA) Inc	**TVD Reference:**	KB @ 4955.0ft (no KB)
Project:	DJ Wattenberg	**MD Reference:**	KB @ 4955.0ft (no KB)
Site:	S32-T2N-R64W (Newman)	**North Reference:**	True
Well:	Ruhl 1F-32H-B264	**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
8,800.0	90.00	180.00	7,173.0	-1,608.5	863.1	1,608.5	0.00	0.00	
8,900.0	90.00	180.00	7,173.0	-1,708.5	863.1	1,708.5	0.00	0.00	
9,000.0	90.00	180.00	7,173.0	-1,808.5	863.1	1,808.5	0.00	0.00	
9,100.0	90.00	180.00	7,173.0	-1,908.5	863.1	1,908.5	0.00	0.00	
9,200.0	90.00	180.00	7,173.0	-2,008.5	863.1	2,008.5	0.00	0.00	
9,300.0	90.00	180.00	7,173.0	-2,108.5	863.1	2,108.5	0.00	0.00	
9,400.0	90.00	180.00	7,173.0	-2,208.5	863.1	2,208.5	0.00	0.00	
9,500.0	90.00	180.00	7,173.0	-2,308.5	863.1	2,308.5	0.00	0.00	
9,600.0	90.00	180.00	7,173.0	-2,408.5	863.1	2,408.5	0.00	0.00	
9,700.0	90.00	180.00	7,173.0	-2,508.5	863.1	2,508.5	0.00	0.00	
9,800.0	90.00	180.00	7,173.0	-2,608.5	863.1	2,608.5	0.00	0.00	
9,900.0	90.00	180.00	7,173.0	-2,708.5	863.1	2,708.5	0.00	0.00	
10,000.0	90.00	180.00	7,173.0	-2,808.5	863.1	2,808.5	0.00	0.00	
10,100.0	90.00	180.00	7,173.0	-2,908.5	863.1	2,908.5	0.00	0.00	
10,200.0	90.00	180.00	7,173.0	-3,008.5	863.1	3,008.5	0.00	0.00	
10,300.0	90.00	180.00	7,173.0	-3,108.5	863.1	3,108.5	0.00	0.00	
10,400.0	90.00	180.00	7,173.0	-3,208.5	863.1	3,208.5	0.00	0.00	
10,500.0	90.00	180.00	7,173.0	-3,308.5	863.1	3,308.5	0.00	0.00	
10,600.0	90.00	180.00	7,173.0	-3,408.5	863.1	3,408.5	0.00	0.00	
10,700.0	90.00	180.00	7,173.0	-3,508.5	863.1	3,508.5	0.00	0.00	
10,800.0	90.00	180.00	7,173.0	-3,608.5	863.1	3,608.5	0.00	0.00	
10,900.0	90.00	180.00	7,173.0	-3,708.5	863.1	3,708.5	0.00	0.00	
11,000.0	90.00	180.00	7,173.0	-3,808.5	863.1	3,808.5	0.00	0.00	
11,100.0	90.00	180.00	7,173.0	-3,908.5	863.1	3,908.5	0.00	0.00	
11,200.0	90.00	180.00	7,173.0	-4,008.5	863.1	4,008.5	0.00	0.00	
11,300.0	90.00	180.00	7,173.0	-4,108.5	863.1	4,108.5	0.00	0.00	
11,400.0	90.00	180.00	7,173.0	-4,208.5	863.1	4,208.5	0.00	0.00	
11,500.0	90.00	180.00	7,173.0	-4,308.5	863.1	4,308.5	0.00	0.00	
11,600.0	90.00	180.00	7,173.0	-4,408.5	863.1	4,408.5	0.00	0.00	
11,700.0	90.00	180.00	7,173.0	-4,508.5	863.1	4,508.5	0.00	0.00	
11,747.9	90.00	180.00	7,173.0	-4,556.4	863.1	4,556.4	0.00	0.00	TD at 11747.9

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
Ruhl 1F-32H-B264 PBH - plan hits target center - Point	0.00	0.00	7,173.0	-4,556.4	863.1	1,276,607.47	3,260,071.39	40.088930	-104.570477

Database:	USA EDM 5000 Multi Users DB	**Local Co-ordinate Reference:**	Well Ruhl 1F-32H-B264
Company:	EnCana Oil & Gas (USA) Inc	**TVD Reference:**	KB @ 4955.0ft (no KB)
Project:	DJ Wattenberg	**MD Reference:**	KB @ 4955.0ft (no KB)
Site:	S32-T2N-R64W (Newman)	**North Reference:**	True
Well:	Ruhl 1F-32H-B264	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Hz		
Design:	Plan #1		

Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
1,002.6	1,000.0	Fox Hills - BASE			
4,438.3	4,403.0	Sussex			
4,696.7	4,659.0	Shannon			
5,021.8	4,981.0	Teepee Buttes (*if present)			
6,911.7	6,834.0	Sharon Springs			
6,946.6	6,863.0	Niobrara			
7,055.1	6,947.0	B Chalk			
7,087.5	6,970.0	B Marl			
7,165.5	7,021.0	C Chalk			
7,220.4	7,053.0	C Marl			
7,278.4	7,083.0	D Chalk			
7,481.3	7,155.0	Fort Hayes			
7,557.8	7,168.0	Codell			

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates +N/-S (ft)	Local Coordinates +E/-W (ft)	Comment
200.0	200.0	0.0	0.0	KOP @ 200'
990.3	987.8	17.7	51.4	EOB; Inc=7.9°
6,485.8	6,431.1	264.1	765.8	Start build/turn @ 6485' MD
7,642.9	7,173.0	-451.4	863.1	LP @ 7173' TVD; 90°
11,747.9	7,173.0	-4,556.4	863.1	TD at 11747.9

EnCana Oil & Gas (USA) Inc

DJ Wattenberg
S32-T2N-R64W (Newman)
Ruhl 1F-32H-B264
Hz
Plan #1

Anticollision Report

09 July, 2014

Company:	EnCana Oil & Gas (USA) Inc	**Local Co-ordinate Reference:**	Well Ruhl 1F-32H-B264
Project:	DJ Wattenberg	**TVD Reference:**	KB @ 4955.0ft (no KB)
Reference Site:	S32-T2N-R64W (Newman)	**MD Reference:**	KB @ 4955.0ft (no KB)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Ruhl 1F-32H-B264	**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 1,000.0ft	**Error Surface:**	Elliptical Conic
Warning Levels Evaluated at:	2.00 **Sigma**		

Survey Tool Program **Date** 7/9/2014

From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.0	11,747.9	Plan #1 (Hz)	Geolink MWD	Geolink MWD

Company:	EnCana Oil & Gas (USA) Inc	**Local Co-ordinate Reference:**	Well Ruhl 1F-32H-B264
Project:	DJ Wattenberg	**TVD Reference:**	KB @ 4955.0ft (no KB)
Reference Site:	S32-T2N-R64W (Newman)	**MD Reference:**	KB @ 4955.0ft (no KB)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Ruhl 1F-32H-B264	**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
S32-T2N-R64W (Newman)						
LAND USX Y31-01 (EXISTING) - EXISTING - NOBLE W						Out of range
NEWMAN 2-32 (EXISTING) - EXISTING - ENCANA WE						Out of range
Newman 2A-32H-C264 - HZ - Plan #1						Out of range
Newman 2B-32H-C264 - HZ - Plan #1						Out of range
Newman 2C-32H-C264 - HZ - Plan #1						Out of range
Newman 2D-32H-C264 - HZ - Plan #1						Out of range
Newman 2E-32H-C264 - HZ - Plan #1						Out of range
Newman 2F-32H-C264 - HZ - Plan #1						Out of range
Newman 2G-32H-C264 - HZ - Plan #1						Out of range
Newman 2H-32H-C264 - HZ - Plan #1						Out of range
Newman 2I-32H-C264 - HZ - Plan #1						Out of range
Newman 2J-32H-C264 - HZ - Plan #1						Out of range
Newman 2K-32H-C264 - HZ - Plan #1						Out of range
Newman 2L-32H-C264 - HZ - Plan #1						Out of range
RUHL 1 (EXISTING) - EXISTING - ENCANA WELL	7,834.1	7,209.8	447.0	416.4	14.631	CC, ES
RUHL 1 (EXISTING) - EXISTING - ENCANA WELL	7,900.0	7,210.6	451.8	420.4	14.393	SF
Ruhl 1A-32H-B264 - Hz - Plan #1	200.0	200.0	50.1	49.4	71.726	CC, ES
Ruhl 1A-32H-B264 - Hz - Plan #1	800.0	796.0	96.9	94.1	33.866	SF
Ruhl 1B-32H-B264 - Hz - Plan #1	200.0	200.0	40.0	39.3	57.302	CC, ES
Ruhl 1B-32H-B264 - Hz - Plan #1	11,747.9	11,480.8	925.0	764.4	5.760	SF
Ruhl 1C-32H-B264 - Hz - Plan #1	200.0	200.0	29.9	29.2	42.877	CC, ES
Ruhl 1C-32H-B264 - Hz - Plan #1	11,747.9	11,696.8	674.9	509.9	4.091	SF
Ruhl 1D-32H-B264 - Hz - Plan #1	200.0	200.0	19.9	19.2	28.453	CC, ES
Ruhl 1D-32H-B264 - Hz - Plan #1	11,747.9	11,579.4	467.8	308.9	2.945	SF
Ruhl 1E-32H-B264 - Hz - Plan #1	200.0	200.0	10.1	9.4	14.425	CC, ES
Ruhl 1E-32H-B264 - Hz - Plan #1	11,747.9	11,512.8	309.8	187.7	2.538	SF
Ruhl 1G-32H-B264 - Hz - Plan #1	7,541.4	7,383.0	258.7	231.8	9.622	CC
Ruhl 1G-32H-B264 - Hz - Plan #1	11,747.9	11,575.6	258.8	114.1	1.789	ES, SF
Ruhl 1H-32H-B264 - Hz - Plan #1	6,875.2	6,767.4	491.6	466.5	19.605	CC
Ruhl 1H-32H-B264 - Hz - Plan #1	11,747.9	11,507.0	497.8	347.7	3.317	ES, SF
Ruhl 1I-32H-B264 - Hz - Plan #1	7,141.8	7,076.3	674.7	649.8	27.104	CC
Ruhl 1I-32H-B264 - Hz - Plan #1	11,747.9	11,739.2	675.1	510.0	4.090	ES, SF
Ruhl 1J-32H-B264 - Hz - Plan #1	1,184.8	1,084.6	753.5	749.4	186.338	CC
Ruhl 1J-32H-B264 - Hz - Plan #1	11,747.9	11,638.8	899.2	735.7	5.500	ES, SF
Ruhl 1K-32H-B264 - Hz - Plan #1	1,119.9	1,018.5	770.4	766.6	202.865	CC, ES
Ruhl 1K-32H-B264 - Hz - Plan #1	4,900.0	4,742.5	996.7	978.5	54.873	SF
Ruhl 1L-32H-B264 - Hz - Plan #1	1,072.2	968.3	787.3	783.7	217.695	CC
Ruhl 1L-32H-B264 - Hz - Plan #1	1,100.0	992.8	787.4	783.7	212.047	ES
Ruhl 1L-32H-B264 - Hz - Plan #1	3,700.0	3,515.9	998.0	984.5	73.830	SF

Company:	EnCana Oil & Gas (USA) Inc	**Local Co-ordinate Reference:**	Well Ruhl 1F-32H-B264
Project:	DJ Wattenberg	**TVD Reference:**	KB @ 4955.0ft (no KB)
Reference Site:	S32-T2N-R64W (Newman)	**MD Reference:**	KB @ 4955.0ft (no KB)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Ruhl 1F-32H-B264	**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 S32-T2N-R64W (Newman) - RUHL 1 (EXISTING) - EXISTING - ENCANA WELL

Offset Site Error: 0.0 ft

Survey Program: 100-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
6,800.0	6,735.4	6,762.9	6,762.0	18.9	11.8	-13.39	-642.0	1,292.7	981.4	953.0	28.36	34.609	
6,900.0	6,824.0	6,847.4	6,846.4	19.0	12.0	-20.89	-641.7	1,295.9	938.3	911.2	27.11	34.617	
7,000.0	6,905.6	6,924.9	6,923.8	19.2	12.1	-28.04	-641.5	1,299.4	886.1	860.5	25.60	34.613	
7,100.0	6,978.6	6,993.4	6,992.2	19.3	12.2	-36.06	-641.4	1,303.0	826.4	802.3	24.15	34.223	
7,200.0	7,041.5	7,061.7	7,060.4	19.6	12.4	-46.06	-641.6	1,306.4	760.9	737.6	23.32	32.624	
7,300.0	7,093.2	7,118.5	7,117.2	19.9	12.5	-57.69	-641.8	1,308.4	691.9	668.2	23.71	29.186	
7,400.0	7,132.6	7,161.6	7,160.2	20.3	12.5	-69.68	-642.1	1,309.4	623.0	597.8	25.14	24.779	
7,500.0	7,158.9	7,191.1	7,189.8	20.9	12.6	-80.11	-642.4	1,309.9	558.7	532.0	26.72	20.910	
7,600.0	7,171.7	7,205.8	7,204.5	21.6	12.6	-87.26	-642.5	1,310.1	504.7	476.8	27.89	18.094	
7,700.0	7,173.0	7,208.3	7,206.9	22.3	12.6	-89.22	-642.5	1,310.1	466.6	437.7	28.93	16.132	
7,800.0	7,173.0	7,209.5	7,208.1	23.2	12.6	-89.37	-642.6	1,310.1	448.3	418.2	30.11	14.886	
7,834.1	7,173.0	7,209.8	7,208.5	23.5	12.6	-89.42	-642.6	1,310.1	447.0	416.4	30.55	14.631	CC, ES
7,900.0	7,173.0	7,210.6	7,209.3	24.2	12.6	-89.52	-642.6	1,310.1	451.8	420.4	31.39	14.393	SF
8,000.0	7,173.0	7,211.8	7,210.4	25.2	12.6	-89.67	-642.6	1,310.1	476.8	444.0	32.74	14.562	
8,100.0	7,173.0	7,212.9	7,211.6	26.4	12.6	-89.82	-642.6	1,310.1	520.1	485.9	34.15	15.230	
8,200.0	7,173.0	7,214.1	7,212.8	27.6	12.6	-89.97	-642.6	1,310.1	577.6	542.0	35.60	16.224	
8,300.0	7,173.0	7,215.3	7,214.0	28.8	12.6	-90.12	-642.6	1,310.1	645.6	608.5	37.10	17.403	
8,400.0	7,173.0	7,216.5	7,215.1	30.1	12.6	-90.27	-642.6	1,310.2	721.1	682.5	38.63	18.669	
8,500.0	7,173.0	7,217.7	7,216.3	31.5	12.6	-90.43	-642.7	1,310.2	802.0	761.8	40.18	19.959	
8,600.0	7,173.0	7,218.9	7,217.5	32.9	12.6	-90.58	-642.7	1,310.2	886.8	845.0	41.76	21.236	
8,700.0	7,173.0	7,220.1	7,218.7	34.3	12.6	-90.73	-642.7	1,310.2	974.4	931.1	43.35	22.476	

Company:	EnCana Oil & Gas (USA) Inc	**Local Co-ordinate Reference:**	Well Ruhl 1F-32H-B264
Project:	DJ Wattenberg	**TVD Reference:**	KB @ 4955.0ft (no KB)
Reference Site:	S32-T2N-R64W (Newman)	**MD Reference:**	KB @ 4955.0ft (no KB)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Ruhl 1F-32H-B264	**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 S32-T2N-R64W (Newman) - Ruhl 1A-32H-B264 - 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	-89.58	0.4	-50.1	50.1				
100.0	100.0	100.0	100.0	0.2	0.2	-89.58	0.4	-50.1	50.1	49.7	0.35	143.452	
200.0	200.0	200.0	200.0	0.3	0.3	-89.58	0.4	-50.1	50.1	49.4	0.70	71.726	CC, ES
300.0	300.0	298.9	298.9	0.5	0.5	-159.33	1.8	-51.1	51.9	50.9	1.05	49.547	
400.0	400.0	398.1	398.0	0.7	0.7	-156.33	5.7	-53.8	57.3	55.9	1.40	40.850	
500.0	499.9	497.8	497.5	0.9	0.9	-154.12	10.2	-56.9	64.9	63.1	1.76	36.775	
600.0	599.7	597.4	596.9	1.1	1.1	-152.98	14.7	-60.0	74.0	71.9	2.13	34.797	
700.0	699.4	696.8	696.2	1.3	1.3	-152.63	19.1	-63.2	84.7	82.2	2.49	33.977	
800.0	798.9	796.0	795.3	1.5	1.5	-152.82	23.6	-66.3	96.9	94.1	2.86	33.866	SF
900.0	898.3	895.1	894.2	1.8	1.7	-153.36	28.0	-69.3	110.7	107.5	3.23	34.225	
1,000.0	997.4	993.9	992.8	2.1	1.9	-154.13	32.5	-72.4	126.0	122.4	3.61	34.915	
1,100.0	1,096.5	1,092.6	1,091.4	2.3	2.1	-154.89	36.9	-75.5	142.0	138.0	3.99	35.609	
1,200.0	1,195.5	1,191.3	1,189.9	2.6	2.3	-155.51	41.3	-78.6	158.0	153.7	4.37	36.186	
1,300.0	1,294.6	1,290.0	1,288.5	2.9	2.5	-156.01	45.7	-81.7	174.1	169.3	4.75	36.672	
1,400.0	1,393.6	1,388.7	1,387.0	3.2	2.7	-156.42	50.2	-84.8	190.1	185.0	5.13	37.088	
1,500.0	1,492.7	1,487.4	1,485.6	3.5	2.9	-156.78	54.6	-87.9	206.2	200.7	5.51	37.448	
1,600.0	1,591.7	1,586.1	1,584.1	3.8	3.1	-157.08	59.0	-90.9	222.2	216.3	5.88	37.763	
1,700.0	1,690.8	1,684.8	1,682.7	4.1	3.2	-157.34	63.4	-94.0	238.3	232.0	6.26	38.040	
1,800.0	1,789.8	1,783.5	1,781.2	4.4	3.4	-157.56	67.9	-97.1	254.3	247.7	6.64	38.286	
1,900.0	1,888.9	1,882.1	1,879.8	4.7	3.6	-157.76	72.3	-100.2	270.4	263.4	7.02	38.507	
2,000.0	1,987.9	1,980.8	1,978.3	5.0	3.8	-157.94	76.7	-103.3	286.5	279.1	7.40	38.705	
2,100.0	2,087.0	2,079.5	2,076.9	5.2	4.0	-158.10	81.1	-106.4	302.5	294.8	7.78	38.884	
2,200.0	2,186.0	2,178.2	2,175.4	5.5	4.2	-158.24	85.6	-109.5	318.6	310.4	8.16	39.047	
2,300.0	2,285.1	2,276.9	2,274.0	5.8	4.4	-158.37	90.0	-112.5	334.7	326.1	8.54	39.195	
2,400.0	2,384.1	2,375.6	2,372.5	6.1	4.6	-158.49	94.4	-115.6	350.8	341.8	8.92	39.331	
2,500.0	2,483.2	2,474.3	2,471.1	6.4	4.8	-158.60	98.8	-118.7	366.8	357.5	9.30	39.457	
2,600.0	2,582.2	2,573.0	2,569.6	6.7	5.0	-158.69	103.3	-121.8	382.9	373.2	9.68	39.572	
2,700.0	2,681.3	2,671.7	2,668.2	7.0	5.2	-158.78	107.7	-124.9	399.0	388.9	10.06	39.679	
2,800.0	2,780.3	2,770.4	2,766.7	7.3	5.4	-158.87	112.1	-128.0	415.1	404.6	10.43	39.779	
2,900.0	2,879.4	2,869.1	2,865.3	7.6	5.6	-158.94	116.5	-131.0	431.2	420.3	10.81	39.871	
3,000.0	2,978.4	2,967.8	2,963.8	7.9	5.8	-159.01	121.0	-134.1	447.2	436.0	11.19	39.957	
3,100.0	3,077.5	3,066.5	3,062.4	8.2	6.0	-159.08	125.4	-137.2	463.3	451.7	11.57	40.038	
3,200.0	3,176.5	3,165.2	3,160.9	8.5	6.2	-159.14	129.8	-140.3	479.4	467.5	11.95	40.114	
3,300.0	3,275.6	3,263.9	3,259.5	8.8	6.4	-159.20	134.2	-143.4	495.5	483.2	12.33	40.185	
3,400.0	3,374.6	3,362.6	3,358.0	9.1	6.6	-159.26	138.7	-146.5	511.6	498.9	12.71	40.251	
3,500.0	3,473.7	3,461.3	3,456.6	9.4	6.8	-159.31	143.1	-149.6	527.7	514.6	13.09	40.314	
3,600.0	3,572.7	3,560.0	3,555.1	9.7	7.0	-159.35	147.5	-152.6	543.7	530.3	13.47	40.374	
3,700.0	3,671.8	3,658.7	3,653.7	10.0	7.2	-159.40	151.9	-155.7	559.8	546.0	13.85	40.430	
3,800.0	3,770.8	3,757.4	3,752.2	10.3	7.4	-159.44	156.4	-158.8	575.9	561.7	14.23	40.484	
3,900.0	3,869.9	3,856.1	3,850.8	10.6	7.6	-159.48	160.8	-161.9	592.0	577.4	14.60	40.534	
4,000.0	3,968.9	3,954.8	3,949.3	10.9	7.8	-159.52	165.2	-165.0	608.1	593.1	14.98	40.582	
4,100.0	4,068.0	4,053.5	4,047.9	11.2	8.0	-159.56	169.6	-168.1	624.2	608.8	15.36	40.628	
4,200.0	4,167.0	4,152.2	4,146.4	11.5	8.2	-159.59	174.1	-171.1	640.3	624.5	15.74	40.671	
4,300.0	4,266.1	4,250.9	4,245.0	11.8	8.4	-159.62	178.5	-174.2	656.3	640.2	16.12	40.713	
4,400.0	4,365.1	4,349.6	4,343.5	12.1	8.5	-159.66	182.9	-177.3	672.4	655.9	16.50	40.752	
4,500.0	4,464.2	4,448.3	4,442.1	12.4	8.7	-159.69	187.3	-180.4	688.5	671.6	16.88	40.790	
4,600.0	4,563.2	4,547.0	4,540.6	12.7	8.9	-159.71	191.8	-183.5	704.6	687.4	17.26	40.826	
4,700.0	4,662.3	4,645.7	4,639.2	13.0	9.1	-159.74	196.2	-186.6	720.7	703.1	17.64	40.861	
4,800.0	4,761.3	4,744.4	4,737.7	13.3	9.3	-159.77	200.6	-189.7	736.8	718.8	18.02	40.894	
4,900.0	4,860.4	4,843.1	4,836.3	13.6	9.5	-159.79	205.0	-192.7	752.9	734.5	18.40	40.926	
5,000.0	4,959.4	4,941.8	4,934.8	13.9	9.7	-159.82	209.5	-195.8	769.0	750.2	18.77	40.957	
5,100.0	5,058.5	5,040.4	5,033.4	14.2	9.9	-159.84	213.9	-198.9	785.0	765.9	19.15	40.986	

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 Ruhl 1F-32H-B264
Project:	DJ Wattenberg	**TVD Reference:**	KB @ 4955.0ft (no KB)
Reference Site:	S32-T2N-R64W (Newman)	**MD Reference:**	KB @ 4955.0ft (no KB)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Ruhl 1F-32H-B264	**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 S32-T2N-R64W (Newman) - Ruhl 1A-32H-B264 - 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	5,157.5	5,139.1	5,131.9	14.5	10.1	-159.86	218.3	-202.0	801.1	781.6	19.53	41.014	
5,300.0	5,256.6	5,237.8	5,230.5	14.8	10.3	-159.88	222.8	-205.1	817.2	797.3	19.91	41.041	
5,400.0	5,355.6	5,336.5	5,329.0	15.1	10.5	-159.90	227.2	-208.2	833.3	813.0	20.29	41.068	
5,500.0	5,454.7	5,435.2	5,427.6	15.4	10.7	-159.92	231.6	-211.2	849.4	828.7	20.67	41.093	
5,600.0	5,553.7	5,533.9	5,526.1	15.7	10.9	-159.94	236.0	-214.3	865.5	844.4	21.05	41.117	
5,700.0	5,652.8	5,632.6	5,624.7	16.0	11.1	-159.96	240.5	-217.4	881.6	860.2	21.43	41.141	
5,800.0	5,751.8	5,731.3	5,723.2	16.3	11.3	-159.97	244.9	-220.5	897.7	875.9	21.81	41.163	
5,900.0	5,850.9	5,830.0	5,821.8	16.5	11.5	-159.99	249.3	-223.6	913.8	891.6	22.19	41.185	
6,000.0	5,949.9	5,928.7	5,920.3	16.8	11.7	-160.01	253.7	-226.7	929.8	907.3	22.57	41.206	
6,100.0	6,049.0	6,027.4	6,018.9	17.1	11.9	-160.02	258.2	-229.8	945.9	923.0	22.94	41.227	
6,200.0	6,148.0	6,126.1	6,117.4	17.4	12.1	-160.04	262.6	-232.8	962.0	938.7	23.32	41.247	
6,300.0	6,247.1	6,224.8	6,216.0	17.7	12.3	-160.05	267.0	-235.9	978.1	954.4	23.70	41.266	
6,400.0	6,346.1	6,323.8	6,314.8	18.0	12.5	-160.08	271.2	-239.0	994.2	970.1	24.07	41.297	

Company:	EnCana Oil & Gas (USA) Inc	**Local Co-ordinate Reference:**	Well Ruhl 1F-32H-B264
Project:	DJ Wattenberg	**TVD Reference:**	KB @ 4955.0ft (no KB)
Reference Site:	S32-T2N-R64W (Newman)	**MD Reference:**	KB @ 4955.0ft (no KB)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Ruhl 1F-32H-B264	**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 S32-T2N-R64W (Newman) - Ruhl 1B-32H-B264 - 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	-89.49	0.4	-40.0	40.0				
100.0	100.0	100.0	100.0	0.2	0.2	-89.49	0.4	-40.0	40.0	39.7	0.35	114.603	
200.0	200.0	200.0	200.0	0.3	0.3	-89.49	0.4	-40.0	40.0	39.3	0.70	57.302	CC, ES
300.0	300.0	300.0	300.0	0.5	0.5	-160.87	0.4	-40.0	40.8	39.8	1.05	38.987	
400.0	400.0	400.0	400.0	0.7	0.7	-162.00	0.4	-40.0	43.3	41.9	1.40	31.016	
500.0	499.9	499.9	499.9	0.9	0.9	-163.61	0.4	-40.0	47.5	45.7	1.75	27.199	
600.0	599.7	599.7	599.7	1.1	1.0	-165.45	0.4	-40.0	53.4	51.3	2.09	25.479	
700.0	699.4	699.4	699.4	1.3	1.2	-167.28	0.4	-40.0	61.0	58.5	2.44	24.971	
800.0	798.9	798.9	798.9	1.5	1.4	-168.98	0.4	-40.0	70.4	67.6	2.79	25.229	
900.0	898.3	898.3	898.3	1.8	1.6	-170.48	0.4	-40.0	81.5	78.4	3.13	26.003	
1,000.0	997.4	997.4	997.4	2.1	1.7	-171.78	0.4	-40.0	94.4	90.9	3.48	27.136	
1,100.0	1,096.5	1,097.2	1,097.2	2.3	1.9	-171.96	2.0	-40.0	107.7	103.9	3.83	28.116	
1,200.0	1,195.5	1,196.8	1,196.6	2.6	2.1	-170.66	6.7	-39.9	120.4	116.2	4.19	28.739	
1,300.0	1,294.6	1,295.9	1,295.7	2.9	2.3	-169.41	11.9	-39.9	133.1	128.5	4.55	29.228	
1,400.0	1,393.6	1,395.1	1,394.7	3.2	2.5	-168.37	17.1	-39.8	145.8	140.9	4.92	29.632	
1,500.0	1,492.7	1,494.2	1,493.7	3.5	2.6	-167.50	22.3	-39.8	158.5	153.3	5.29	29.970	
1,600.0	1,591.7	1,593.4	1,592.7	3.8	2.8	-166.76	27.5	-39.7	171.3	165.7	5.66	30.255	
1,700.0	1,690.8	1,692.5	1,691.7	4.1	3.0	-166.13	32.6	-39.7	184.2	178.1	6.04	30.498	
1,800.0	1,789.8	1,791.7	1,790.8	4.4	3.2	-165.57	37.8	-39.6	197.0	190.6	6.42	30.706	
1,900.0	1,888.9	1,890.9	1,889.8	4.7	3.4	-165.09	43.0	-39.6	209.8	203.1	6.79	30.887	
2,000.0	1,987.9	1,990.0	1,988.8	5.0	3.6	-164.66	48.2	-39.5	222.7	215.5	7.17	31.045	
2,100.0	2,087.0	2,089.2	2,087.8	5.2	3.8	-164.27	53.4	-39.5	235.6	228.0	7.55	31.183	
2,200.0	2,186.0	2,188.3	2,186.8	5.5	4.0	-163.93	58.6	-39.4	248.5	240.5	7.94	31.306	
2,300.0	2,285.1	2,287.5	2,285.9	5.8	4.2	-163.62	63.7	-39.4	261.4	253.0	8.32	31.415	
2,400.0	2,384.1	2,386.6	2,384.9	6.1	4.3	-163.34	68.9	-39.3	274.3	265.6	8.70	31.512	
2,500.0	2,483.2	2,485.8	2,483.9	6.4	4.5	-163.09	74.1	-39.3	287.2	278.1	9.09	31.600	
2,600.0	2,582.2	2,585.0	2,582.9	6.7	4.7	-162.85	79.3	-39.2	300.1	290.6	9.47	31.679	
2,700.0	2,681.3	2,684.1	2,681.9	7.0	4.9	-162.64	84.5	-39.2	313.0	303.1	9.86	31.751	
2,800.0	2,780.3	2,783.3	2,781.0	7.3	5.1	-162.44	89.6	-39.1	325.9	315.7	10.24	31.816	
2,900.0	2,879.4	2,882.4	2,880.0	7.6	5.3	-162.26	94.8	-39.1	338.8	328.2	10.63	31.876	
3,000.0	2,978.4	2,981.6	2,979.0	7.9	5.5	-162.09	100.0	-39.0	351.8	340.8	11.02	31.931	
3,100.0	3,077.5	3,080.7	3,078.0	8.2	5.7	-161.93	105.2	-39.0	364.7	353.3	11.40	31.981	
3,200.0	3,176.5	3,179.9	3,177.0	8.5	5.9	-161.79	110.4	-38.9	377.6	365.8	11.79	32.027	
3,300.0	3,275.6	3,279.0	3,276.1	8.8	6.1	-161.65	115.6	-38.9	390.6	378.4	12.18	32.070	
3,400.0	3,374.6	3,378.2	3,375.1	9.1	6.3	-161.52	120.7	-38.8	403.5	390.9	12.57	32.110	
3,500.0	3,473.7	3,477.4	3,474.1	9.4	6.5	-161.40	125.9	-38.7	416.4	403.5	12.95	32.147	
3,600.0	3,572.7	3,576.5	3,573.1	9.7	6.7	-161.29	131.1	-38.7	429.4	416.0	13.34	32.182	
3,700.0	3,671.8	3,675.7	3,672.1	10.0	6.9	-161.19	136.3	-38.6	442.3	428.6	13.73	32.214	
3,800.0	3,770.8	3,774.8	3,771.2	10.3	7.0	-161.09	141.5	-38.6	455.3	441.1	14.12	32.244	
3,900.0	3,869.9	3,874.0	3,870.2	10.6	7.2	-160.99	146.7	-38.5	468.2	453.7	14.51	32.272	
4,000.0	3,968.9	3,973.1	3,969.2	10.9	7.4	-160.90	151.8	-38.5	481.2	466.3	14.90	32.299	
4,100.0	4,068.0	4,072.3	4,068.2	11.2	7.6	-160.82	157.0	-38.4	494.1	478.8	15.29	32.324	
4,200.0	4,167.0	4,171.4	4,167.2	11.5	7.8	-160.74	162.2	-38.4	507.0	491.4	15.68	32.347	
4,300.0	4,266.1	4,270.6	4,266.3	11.8	8.0	-160.66	167.4	-38.3	520.0	503.9	16.06	32.369	
4,400.0	4,365.1	4,369.8	4,365.3	12.1	8.2	-160.59	172.6	-38.3	532.9	516.5	16.45	32.390	
4,500.0	4,464.2	4,468.9	4,464.3	12.4	8.4	-160.52	177.8	-38.2	545.9	529.1	16.84	32.410	
4,600.0	4,563.2	4,568.1	4,563.3	12.7	8.6	-160.45	182.9	-38.2	558.8	541.6	17.23	32.429	
4,700.0	4,662.3	4,667.2	4,662.3	13.0	8.8	-160.39	188.1	-38.1	571.8	554.2	17.62	32.447	
4,800.0	4,761.3	4,766.4	4,761.4	13.3	9.0	-160.33	193.3	-38.1	584.7	566.7	18.01	32.464	
4,900.0	4,860.4	4,865.5	4,860.4	13.6	9.2	-160.27	198.5	-38.0	597.7	579.3	18.40	32.480	
5,000.0	4,959.4	4,964.7	4,959.4	13.9	9.4	-160.22	203.7	-38.0	610.7	591.9	18.79	32.496	
5,100.0	5,058.5	5,063.8	5,058.4	14.2	9.6	-160.17	208.8	-37.9	623.6	604.4	19.18	32.510	

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 Ruhl 1F-32H-B264
Project:	DJ Wattenberg	**TVD Reference:**	KB @ 4955.0ft (no KB)
Reference Site:	S32-T2N-R64W (Newman)	**MD Reference:**	KB @ 4955.0ft (no KB)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Ruhl 1F-32H-B264	**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 S32-T2N-R64W (Newman) - Ruhl 1B-32H-B264 - 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	5,157.5	5,163.0	5,157.4	14.5	9.8	-160.12	214.0	-37.9	636.6	617.0	19.57	32.524	
5,300.0	5,256.6	5,262.2	5,256.5	14.8	10.0	-160.07	219.2	-37.8	649.5	629.6	19.96	32.538	
5,400.0	5,355.6	5,361.3	5,355.5	15.1	10.2	-160.02	224.4	-37.8	662.5	642.1	20.35	32.551	
5,500.0	5,454.7	5,460.5	5,454.5	15.4	10.4	-159.98	229.6	-37.7	675.4	654.7	20.74	32.563	
5,600.0	5,553.7	5,559.6	5,553.5	15.7	10.5	-159.93	234.8	-37.7	688.4	667.2	21.13	32.575	
5,700.0	5,652.8	5,658.8	5,652.6	16.0	10.7	-159.89	239.9	-37.6	701.3	679.8	21.52	32.586	
5,800.0	5,751.8	5,757.9	5,751.6	16.3	10.9	-159.85	245.1	-37.6	714.3	692.4	21.91	32.597	
5,900.0	5,850.9	5,857.1	5,850.6	16.5	11.1	-159.81	250.3	-37.5	727.3	704.9	22.30	32.607	
6,000.0	5,949.9	5,956.2	5,949.6	16.8	11.3	-159.77	255.5	-37.5	740.2	717.5	22.69	32.617	
6,100.0	6,049.0	6,055.4	6,048.6	17.1	11.5	-159.74	260.7	-37.4	753.2	730.1	23.08	32.627	
6,200.0	6,148.0	6,154.6	6,147.7	17.4	11.7	-159.70	265.9	-37.3	766.1	742.6	23.47	32.636	
6,300.0	6,247.1	6,254.6	6,247.5	17.7	11.9	-159.76	269.9	-37.3	779.1	755.2	23.84	32.676	
6,400.0	6,346.1	6,354.2	6,346.8	18.0	12.0	-160.64	262.5	-37.2	791.9	767.8	24.04	32.938	
6,500.0	6,445.2	6,448.9	6,439.4	18.3	12.0	-170.61	242.7	-37.2	805.1	781.1	24.08	33.441	
6,600.0	6,544.1	6,539.1	6,524.4	18.6	12.0	134.56	212.7	-37.2	819.4	795.4	23.94	34.228	
6,700.0	6,641.5	6,626.5	6,602.5	18.8	11.9	110.38	173.6	-37.1	834.2	810.4	23.82	35.015	
6,800.0	6,735.4	6,711.6	6,673.5	18.9	11.9	99.10	126.7	-37.1	849.2	825.4	23.80	35.674	
6,900.0	6,824.0	6,794.8	6,736.9	19.0	11.9	92.33	73.1	-37.0	863.8	839.8	23.92	36.106	
7,000.0	6,905.6	6,876.3	6,792.8	19.2	12.0	87.63	13.7	-37.0	877.5	853.3	24.21	36.241	
7,100.0	6,978.6	6,956.6	6,840.8	19.3	12.2	84.16	-50.6	-37.0	890.1	865.5	24.68	36.072	
7,200.0	7,041.5	7,035.9	6,880.8	19.6	12.5	81.53	-119.0	-37.0	901.2	875.8	25.32	35.590	
7,300.0	7,093.2	7,114.3	6,912.8	19.9	13.0	79.55	-190.6	-36.9	910.4	884.2	26.14	34.829	
7,400.0	7,132.6	7,192.1	6,936.6	20.3	13.5	78.12	-264.6	-36.9	917.4	890.3	27.12	33.825	
7,500.0	7,158.9	7,269.6	6,952.1	20.9	14.2	77.20	-340.4	-36.9	922.2	894.0	28.28	32.612	
7,600.0	7,171.7	7,350.0	6,959.5	21.6	15.0	76.74	-420.5	-36.9	924.7	895.0	29.62	31.215	
7,700.0	7,173.0	7,438.0	6,960.0	22.3	16.0	76.69	-508.5	-36.9	924.9	893.5	31.47	29.391	
7,800.0	7,173.0	7,538.0	6,960.0	23.2	17.2	76.69	-608.5	-36.9	924.9	891.1	33.81	27.357	
7,900.0	7,173.0	7,638.0	6,960.0	24.2	18.5	76.69	-708.5	-36.9	924.9	888.6	36.32	25.466	
8,000.0	7,173.0	7,738.0	6,960.0	25.2	19.8	76.69	-808.5	-36.9	924.9	886.0	38.97	23.735	
8,100.0	7,173.0	7,838.0	6,960.0	26.4	21.3	76.69	-908.5	-36.9	924.9	883.2	41.73	22.165	
8,200.0	7,173.0	7,938.0	6,960.0	27.6	22.7	76.69	-1,008.5	-36.9	924.9	880.4	44.58	20.747	
8,300.0	7,173.0	8,038.0	6,960.0	28.8	24.2	76.69	-1,108.5	-36.9	924.9	877.4	47.51	19.469	
8,400.0	7,173.0	8,138.0	6,960.0	30.1	25.8	76.69	-1,208.5	-36.9	924.9	874.4	50.49	18.318	
8,500.0	7,173.0	8,238.0	6,960.0	31.5	27.3	76.69	-1,308.5	-36.9	924.9	871.4	53.53	17.278	
8,600.0	7,173.0	8,338.0	6,960.0	32.9	28.9	76.69	-1,408.5	-36.9	924.9	868.3	56.61	16.337	
8,700.0	7,173.0	8,438.0	6,960.0	34.3	30.5	76.69	-1,508.5	-36.9	924.9	865.2	59.73	15.485	
8,800.0	7,173.0	8,538.0	6,960.0	35.7	32.2	76.69	-1,608.5	-36.9	924.9	862.1	62.88	14.709	
8,900.0	7,173.0	8,638.0	6,960.0	37.2	33.8	76.69	-1,708.5	-36.9	924.9	858.9	66.06	14.002	
9,000.0	7,173.0	8,738.0	6,960.0	38.7	35.4	76.69	-1,808.5	-36.9	924.9	855.7	69.25	13.356	
9,100.0	7,173.0	8,838.0	6,960.0	40.2	37.1	76.69	-1,908.5	-36.9	924.9	852.5	72.47	12.763	
9,200.0	7,173.0	8,938.0	6,960.0	41.8	38.8	76.69	-2,008.5	-36.9	924.9	849.2	75.71	12.217	
9,300.0	7,173.0	9,038.0	6,960.0	43.3	40.4	76.69	-2,108.5	-36.9	924.9	846.0	78.96	11.714	
9,400.0	7,173.0	9,138.0	6,960.0	44.9	42.1	76.69	-2,208.5	-36.9	924.9	842.7	82.22	11.249	
9,500.0	7,173.0	9,238.0	6,960.0	46.5	43.8	76.69	-2,308.5	-36.9	924.9	839.4	85.50	10.818	
9,600.0	7,173.0	9,338.0	6,960.0	48.1	45.5	76.69	-2,408.5	-36.9	924.9	836.2	88.78	10.418	
9,700.0	7,173.0	9,438.0	6,960.0	49.7	47.2	76.69	-2,508.5	-36.9	924.9	832.9	92.08	10.045	
9,800.0	7,173.0	9,538.0	6,960.0	51.3	48.9	76.69	-2,608.5	-36.9	924.9	829.6	95.38	9.697	
9,900.0	7,173.0	9,638.0	6,960.0	52.9	50.6	76.69	-2,708.5	-36.9	924.9	826.2	98.69	9.372	
10,000.0	7,173.0	9,738.0	6,960.0	54.6	52.3	76.69	-2,808.5	-36.9	924.9	822.9	102.01	9.067	
10,100.0	7,173.0	9,838.0	6,960.0	56.2	54.0	76.69	-2,908.5	-36.9	924.9	819.6	105.34	8.781	
10,200.0	7,173.0	9,938.0	6,960.0	57.8	55.7	76.69	-3,008.5	-36.9	924.9	816.3	108.67	8.512	
10,300.0	7,173.0	10,038.0	6,960.0	59.5	57.4	76.69	-3,108.5	-36.9	924.9	812.9	112.00	8.258	

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 Ruhl 1F-32H-B264
Project:	DJ Wattenberg	**TVD Reference:**	KB @ 4955.0ft (no KB)
Reference Site:	S32-T2N-R64W (Newman)	**MD Reference:**	KB @ 4955.0ft (no KB)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Ruhl 1F-32H-B264	**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 S32-T2N-R64W (Newman) - Ruhl 1B-32H-B264 - 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	7,173.0	10,138.0	6,960.0	61.2	59.1	76.69	-3,208.5	-36.9	924.9	809.6	115.34	8.019	
10,500.0	7,173.0	10,238.0	6,960.0	62.8	60.8	76.69	-3,308.5	-36.9	924.9	806.3	118.68	7.793	
10,600.0	7,173.0	10,338.0	6,960.0	64.5	62.6	76.69	-3,408.5	-36.9	924.9	802.9	122.03	7.579	
10,700.0	7,173.0	10,438.0	6,960.0	66.2	64.3	76.69	-3,508.5	-36.9	924.9	799.6	125.38	7.377	
10,800.0	7,173.0	10,538.0	6,960.0	67.8	66.0	76.69	-3,608.5	-36.9	924.9	796.2	128.74	7.185	
10,900.0	7,173.0	10,638.0	6,960.0	69.5	67.7	76.69	-3,708.5	-36.9	924.9	792.8	132.10	7.002	
11,000.0	7,173.0	10,738.0	6,960.0	71.2	69.5	76.69	-3,808.5	-36.9	924.9	789.5	135.46	6.828	
11,100.0	7,173.0	10,838.0	6,960.0	72.9	71.2	76.69	-3,908.5	-36.9	924.9	786.1	138.82	6.663	
11,200.0	7,173.0	10,938.0	6,960.0	74.6	72.9	76.69	-4,008.5	-36.9	924.9	782.8	142.19	6.505	
11,300.0	7,173.0	11,038.0	6,960.0	76.3	74.7	76.69	-4,108.5	-36.9	924.9	779.4	145.56	6.355	
11,400.0	7,173.0	11,138.0	6,960.0	78.0	76.4	76.69	-4,208.5	-36.9	924.9	776.0	148.93	6.211	
11,500.0	7,173.0	11,238.0	6,960.0	79.7	78.1	76.69	-4,308.5	-36.9	924.9	772.6	152.30	6.073	
11,600.0	7,173.0	11,338.0	6,960.0	81.4	79.9	76.69	-4,408.5	-36.9	924.9	769.3	155.67	5.942	
11,700.0	7,173.0	11,438.0	6,960.0	83.1	81.6	76.69	-4,508.5	-36.9	924.9	765.9	159.05	5.815	
11,724.5	7,173.0	11,462.5	6,960.0	83.5	82.0	76.69	-4,533.0	-36.9	924.9	765.1	159.87	5.785	
11,747.9	7,173.0	11,480.8	6,960.0	83.9	82.3	76.69	-4,551.3	-36.9	925.0	764.4	160.58	5.760	SF

Company:	EnCana Oil & Gas (USA) Inc	**Local Co-ordinate Reference:**	Well Ruhl 1F-32H-B264
Project:	DJ Wattenberg	**TVD Reference:**	KB @ 4955.0ft (no KB)
Reference Site:	S32-T2N-R64W (Newman)	**MD Reference:**	KB @ 4955.0ft (no KB)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Ruhl 1F-32H-B264	**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 S32-T2N-R64W (Newman) - Ruhl 1C-32H-B264 - 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	-89.33	0.3	-29.9	29.9				
100.0	100.0	100.0	100.0	0.2	0.2	-89.33	0.3	-29.9	29.9	29.6	0.35	85.754	
200.0	200.0	200.0	200.0	0.3	0.3	-89.33	0.3	-29.9	29.9	29.2	0.70	42.877	CC, ES
300.0	300.0	300.0	300.0	0.5	0.5	-160.85	0.3	-29.9	30.8	29.7	1.05	29.371	
400.0	400.0	400.0	400.0	0.7	0.7	-162.32	0.3	-29.9	33.2	31.8	1.40	23.806	
500.0	499.9	499.9	499.9	0.9	0.9	-164.34	0.3	-29.9	37.4	35.7	1.75	21.440	
600.0	599.7	599.7	599.7	1.1	1.0	-166.51	0.3	-29.9	43.3	41.2	2.09	20.693	
700.0	699.4	700.0	700.0	1.3	1.2	-167.84	1.1	-29.4	50.4	48.0	2.44	20.629	
800.0	798.9	800.3	800.3	1.5	1.4	-167.91	3.2	-27.9	58.0	55.2	2.79	20.755	
900.0	898.3	900.7	900.6	1.8	1.6	-167.17	6.8	-25.3	66.1	63.0	3.15	20.987	
1,000.0	997.4	1,000.6	1,000.3	2.1	1.8	-166.11	11.4	-22.0	75.0	71.5	3.51	21.369	
1,100.0	1,096.5	1,100.1	1,099.6	2.3	2.0	-165.37	16.1	-18.6	84.6	80.7	3.88	21.810	
1,200.0	1,195.5	1,199.6	1,199.0	2.6	2.1	-164.78	20.8	-15.2	94.2	89.9	4.25	22.163	
1,300.0	1,294.6	1,299.2	1,298.4	2.9	2.3	-164.30	25.5	-11.8	103.8	99.2	4.62	22.450	
1,400.0	1,393.6	1,398.7	1,397.7	3.2	2.5	-163.90	30.2	-8.4	113.4	108.4	5.00	22.687	
1,500.0	1,492.7	1,498.3	1,497.1	3.5	2.7	-163.56	34.9	-5.1	123.0	117.6	5.37	22.885	
1,600.0	1,591.7	1,597.8	1,596.5	3.8	2.9	-163.27	39.6	-1.7	132.6	126.8	5.75	23.053	
1,700.0	1,690.8	1,697.3	1,695.8	4.1	3.1	-163.02	44.3	1.7	142.2	136.0	6.13	23.197	
1,800.0	1,789.8	1,796.9	1,795.2	4.4	3.3	-162.80	49.0	5.1	151.8	145.3	6.51	23.322	
1,900.0	1,888.9	1,896.4	1,894.6	4.7	3.5	-162.61	53.7	8.5	161.4	154.5	6.89	23.430	
2,000.0	1,987.9	1,995.9	1,993.9	5.0	3.7	-162.44	58.4	11.9	171.0	163.7	7.27	23.525	
2,100.0	2,087.0	2,095.5	2,093.3	5.2	3.9	-162.29	63.1	15.3	180.6	173.0	7.65	23.610	
2,200.0	2,186.0	2,195.0	2,192.7	5.5	4.1	-162.15	67.8	18.6	190.2	182.2	8.03	23.685	
2,300.0	2,285.1	2,294.5	2,292.0	5.8	4.3	-162.03	72.5	22.0	199.8	191.4	8.41	23.752	
2,400.0	2,384.1	2,394.1	2,391.4	6.1	4.5	-161.91	77.2	25.4	209.4	200.6	8.80	23.813	
2,500.0	2,483.2	2,493.6	2,490.8	6.4	4.7	-161.81	81.9	28.8	219.1	209.9	9.18	23.867	
2,600.0	2,582.2	2,593.1	2,590.1	6.7	4.9	-161.72	86.6	32.2	228.7	219.1	9.56	23.917	
2,700.0	2,681.3	2,692.7	2,689.5	7.0	5.1	-161.63	91.3	35.6	238.3	228.3	9.94	23.962	
2,800.0	2,780.3	2,792.2	2,788.9	7.3	5.3	-161.55	96.0	39.0	247.9	237.6	10.33	24.004	
2,900.0	2,879.4	2,891.8	2,888.2	7.6	5.5	-161.48	100.7	42.3	257.5	246.8	10.71	24.042	
3,000.0	2,978.4	2,991.3	2,987.6	7.9	5.7	-161.41	105.4	45.7	267.1	256.0	11.09	24.077	
3,100.0	3,077.5	3,090.8	3,087.0	8.2	5.9	-161.35	110.1	49.1	276.7	265.3	11.48	24.110	
3,200.0	3,176.5	3,190.4	3,186.4	8.5	6.1	-161.29	114.8	52.5	286.4	274.5	11.86	24.140	
3,300.0	3,275.6	3,289.9	3,285.7	8.8	6.3	-161.23	119.5	55.9	296.0	283.7	12.25	24.168	
3,400.0	3,374.6	3,389.4	3,385.1	9.1	6.5	-161.18	124.2	59.3	305.6	293.0	12.63	24.194	
3,500.0	3,473.7	3,489.0	3,484.5	9.4	6.7	-161.13	128.9	62.6	315.2	302.2	13.02	24.218	
3,600.0	3,572.7	3,588.5	3,583.8	9.7	6.9	-161.08	133.6	66.0	324.8	311.4	13.40	24.241	
3,700.0	3,671.8	3,688.0	3,683.2	10.0	7.1	-161.04	138.3	69.4	334.4	320.7	13.78	24.262	
3,800.0	3,770.8	3,787.6	3,782.6	10.3	7.3	-161.00	143.1	72.8	344.1	329.9	14.17	24.282	
3,900.0	3,869.9	3,887.1	3,881.9	10.6	7.5	-160.96	147.8	76.2	353.7	339.1	14.55	24.301	
4,000.0	3,968.9	3,986.7	3,981.3	10.9	7.7	-160.92	152.5	79.6	363.3	348.4	14.94	24.319	
4,100.0	4,068.0	4,086.2	4,080.7	11.2	7.9	-160.89	157.2	83.0	372.9	357.6	15.32	24.336	
4,200.0	4,167.0	4,185.7	4,180.0	11.5	8.1	-160.86	161.9	86.3	382.5	366.8	15.71	24.351	
4,300.0	4,266.1	4,285.3	4,279.4	11.8	8.3	-160.83	166.6	89.7	392.2	376.1	16.09	24.366	
4,400.0	4,365.1	4,384.8	4,378.8	12.1	8.5	-160.80	171.3	93.1	401.8	385.3	16.48	24.381	
4,500.0	4,464.2	4,484.3	4,478.1	12.4	8.7	-160.77	176.0	96.5	411.4	394.5	16.86	24.394	
4,600.0	4,563.2	4,583.9	4,577.5	12.7	8.9	-160.74	180.7	99.9	421.0	403.8	17.25	24.407	
4,700.0	4,662.3	4,683.4	4,676.9	13.0	9.1	-160.71	185.4	103.3	430.6	413.0	17.64	24.419	
4,800.0	4,761.3	4,782.9	4,776.2	13.3	9.3	-160.69	190.1	106.7	440.3	422.2	18.02	24.431	
4,900.0	4,860.4	4,882.5	4,875.6	13.6	9.5	-160.67	194.8	110.0	449.9	431.5	18.41	24.442	
5,000.0	4,959.4	4,982.0	4,975.0	13.9	9.7	-160.64	199.5	113.4	459.5	440.7	18.79	24.453	
5,100.0	5,058.5	5,081.6	5,074.3	14.2	9.9	-160.62	204.2	116.8	469.1	449.9	19.18	24.463	

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 Ruhl 1F-32H-B264
Project:	DJ Wattenberg	**TVD Reference:**	KB @ 4955.0ft (no KB)
Reference Site:	S32-T2N-R64W (Newman)	**MD Reference:**	KB @ 4955.0ft (no KB)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Ruhl 1F-32H-B264	**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 S32-T2N-R64W (Newman) - Ruhl 1C-32H-B264 - 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	5,157.5	5,181.1	5,173.7	14.5	10.1	-160.60	208.9	120.2	478.7	459.2	19.56	24.473	
5,300.0	5,256.6	5,280.6	5,273.1	14.8	10.3	-160.58	213.6	123.6	488.4	468.4	19.95	24.482	
5,400.0	5,355.6	5,380.2	5,372.4	15.1	10.5	-160.56	218.3	127.0	498.0	477.6	20.33	24.491	
5,500.0	5,454.7	5,479.7	5,471.8	15.4	10.7	-160.54	223.0	130.3	507.6	486.9	20.72	24.499	
5,600.0	5,553.7	5,579.2	5,571.2	15.7	10.9	-160.52	227.7	133.7	517.2	496.1	21.10	24.508	
5,700.0	5,652.8	5,678.8	5,670.5	16.0	11.1	-160.51	232.4	137.1	526.8	505.3	21.49	24.516	
5,800.0	5,751.8	5,778.3	5,769.9	16.3	11.3	-160.49	237.1	140.5	536.5	514.6	21.88	24.523	
5,900.0	5,850.9	5,877.8	5,869.3	16.5	11.5	-160.47	241.8	143.9	546.1	523.8	22.26	24.530	
6,000.0	5,949.9	5,977.4	5,968.6	16.8	11.7	-160.46	246.5	147.3	555.7	533.0	22.65	24.538	
6,100.0	6,049.0	6,076.9	6,068.0	17.1	11.9	-160.44	251.2	150.7	565.3	542.3	23.03	24.544	
6,200.0	6,148.0	6,176.4	6,167.4	17.4	12.1	-160.43	255.9	154.0	574.9	551.5	23.42	24.551	
6,300.0	6,247.1	6,276.0	6,266.7	17.7	12.3	-160.42	260.6	157.4	584.6	560.8	23.80	24.557	
6,400.0	6,346.1	6,375.5	6,366.1	18.0	12.5	-160.40	265.3	160.8	594.2	570.0	24.19	24.563	
6,500.0	6,445.2	6,475.3	6,465.8	18.3	12.7	-168.70	268.8	164.2	603.8	579.3	24.53	24.614	
6,600.0	6,544.1	6,575.1	6,565.1	18.6	12.8	138.33	260.6	167.6	613.4	588.8	24.61	24.929	
6,700.0	6,641.5	6,674.4	6,661.9	18.8	12.8	115.88	238.9	170.9	622.8	598.3	24.56	25.359	
6,800.0	6,735.4	6,773.3	6,754.3	18.9	12.8	106.17	204.2	174.0	632.0	607.5	24.47	25.829	
6,900.0	6,824.0	6,871.8	6,840.8	19.0	12.8	100.80	157.3	177.0	640.6	616.2	24.41	26.243	
7,000.0	6,905.6	6,970.0	6,919.8	19.2	12.8	97.35	99.2	179.7	648.6	624.1	24.48	26.497	
7,100.0	6,978.6	7,067.8	6,989.9	19.3	12.9	94.92	31.1	182.1	655.7	631.0	24.75	26.493	
7,200.0	7,041.5	7,165.4	7,049.9	19.6	13.1	93.16	-45.8	184.1	661.9	636.6	25.29	26.175	
7,300.0	7,093.2	7,262.8	7,098.8	19.9	13.5	91.87	-129.9	185.8	667.0	640.8	26.14	25.520	
7,400.0	7,132.6	7,360.0	7,135.9	20.3	14.0	90.95	-219.7	187.0	670.8	643.5	27.30	24.571	
7,500.0	7,158.9	7,457.1	7,160.4	20.9	14.8	90.35	-313.5	187.9	673.4	644.7	28.77	23.408	
7,600.0	7,171.7	7,554.1	7,172.0	21.6	15.7	90.04	-409.7	188.3	674.7	644.2	30.50	22.123	
7,700.0	7,173.0	7,652.9	7,173.0	22.3	16.7	90.00	-508.5	188.3	674.8	642.3	32.58	20.711	
7,800.0	7,173.0	7,752.9	7,173.0	23.2	17.9	90.00	-608.5	188.3	674.8	639.9	34.96	19.303	
7,900.0	7,173.0	7,852.9	7,173.0	24.2	19.1	90.00	-708.5	188.3	674.8	637.3	37.52	17.989	
8,000.0	7,173.0	7,952.9	7,173.0	25.2	20.5	90.00	-808.5	188.3	674.8	634.6	40.21	16.781	
8,100.0	7,173.0	8,052.9	7,173.0	26.4	21.8	90.00	-908.5	188.3	674.8	631.8	43.03	15.683	
8,200.0	7,173.0	8,152.9	7,173.0	27.6	23.3	90.00	-1,008.5	188.3	674.8	628.9	45.94	14.689	
8,300.0	7,173.0	8,252.9	7,173.0	28.8	24.8	90.00	-1,108.5	188.3	674.8	625.9	48.93	13.792	
8,400.0	7,173.0	8,352.9	7,173.0	30.1	26.3	90.00	-1,208.5	188.3	674.8	622.9	51.99	12.981	
8,500.0	7,173.0	8,452.9	7,173.0	31.5	27.8	90.00	-1,308.5	188.3	674.8	619.8	55.09	12.249	
8,600.0	7,173.0	8,552.9	7,173.0	32.9	29.4	90.00	-1,408.5	188.3	674.8	616.6	58.25	11.586	
8,700.0	7,173.0	8,652.9	7,173.0	34.3	30.9	90.00	-1,508.5	188.3	674.8	613.4	61.44	10.984	
8,800.0	7,173.0	8,752.9	7,173.0	35.7	32.6	90.00	-1,608.5	188.3	674.8	610.2	64.67	10.436	
8,900.0	7,173.0	8,852.9	7,173.0	37.2	34.2	90.00	-1,708.5	188.3	674.8	606.9	67.92	9.936	
9,000.0	7,173.0	8,952.9	7,173.0	38.7	35.8	90.00	-1,808.5	188.3	674.8	603.6	71.20	9.478	
9,100.0	7,173.0	9,052.9	7,173.0	40.2	37.4	90.00	-1,908.5	188.3	674.8	600.4	74.50	9.059	
9,200.0	7,173.0	9,152.9	7,173.0	41.8	39.1	90.00	-2,008.5	188.3	674.8	597.0	77.81	8.673	
9,300.0	7,173.0	9,252.9	7,173.0	43.3	40.7	90.00	-2,108.5	188.3	674.8	593.7	81.15	8.316	
9,400.0	7,173.0	9,352.9	7,173.0	44.9	42.4	90.00	-2,208.5	188.3	674.8	590.4	84.49	7.987	
9,500.0	7,173.0	9,452.9	7,173.0	46.5	44.1	90.00	-2,308.5	188.3	674.8	587.0	87.85	7.681	
9,600.0	7,173.0	9,552.9	7,173.0	48.1	45.8	90.00	-2,408.5	188.3	674.8	583.6	91.23	7.398	
9,700.0	7,173.0	9,652.9	7,173.0	49.7	47.5	90.00	-2,508.5	188.3	674.8	580.2	94.61	7.133	
9,800.0	7,173.0	9,752.9	7,173.0	51.3	49.1	90.00	-2,608.5	188.3	674.8	576.9	98.00	6.886	
9,900.0	7,173.0	9,852.9	7,173.0	52.9	50.8	90.00	-2,708.5	188.3	674.8	573.5	101.39	6.656	
10,000.0	7,173.0	9,952.9	7,173.0	54.6	52.5	90.00	-2,808.5	188.3	674.8	570.0	104.80	6.439	
10,100.0	7,173.0	10,052.9	7,173.0	56.2	54.2	90.00	-2,908.5	188.3	674.8	566.6	108.21	6.236	
10,200.0	7,173.0	10,152.9	7,173.0	57.8	55.9	90.00	-3,008.5	188.3	674.8	563.2	111.63	6.045	
10,300.0	7,173.0	10,252.9	7,173.0	59.5	57.6	90.00	-3,108.5	188.3	674.8	559.8	115.05	5.866	

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 Ruhl 1F-32H-B264
Project:	DJ Wattenberg	**TVD Reference:**	KB @ 4955.0ft (no KB)
Reference Site:	S32-T2N-R64W (Newman)	**MD Reference:**	KB @ 4955.0ft (no KB)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Ruhl 1F-32H-B264	**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 S32-T2N-R64W (Newman) - Ruhl 1C-32H-B264 - 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	7,173.0	10,352.9	7,173.0	61.2	59.4	90.00	-3,208.5	188.3	674.8	556.4	118.48	5.696	
10,500.0	7,173.0	10,452.9	7,173.0	62.8	61.1	90.00	-3,308.5	188.3	674.8	552.9	121.91	5.536	
10,600.0	7,173.0	10,552.9	7,173.0	64.5	62.8	90.00	-3,408.5	188.3	674.8	549.5	125.35	5.384	
10,700.0	7,173.0	10,652.9	7,173.0	66.2	64.5	90.00	-3,508.5	188.3	674.8	546.1	128.79	5.240	
10,800.0	7,173.0	10,752.9	7,173.0	67.8	66.2	90.00	-3,608.5	188.3	674.8	542.6	132.23	5.103	
10,900.0	7,173.0	10,852.9	7,173.0	69.5	67.9	90.00	-3,708.5	188.3	674.8	539.2	135.68	4.974	
11,000.0	7,173.0	10,952.9	7,173.0	71.2	69.7	90.00	-3,808.5	188.3	674.8	535.7	139.13	4.850	
11,100.0	7,173.0	11,052.9	7,173.0	72.9	71.4	90.00	-3,908.5	188.3	674.8	532.3	142.59	4.733	
11,200.0	7,173.0	11,152.9	7,173.0	74.6	73.1	90.00	-4,008.5	188.3	674.9	528.8	146.04	4.621	
11,300.0	7,173.0	11,252.9	7,173.0	76.3	74.8	90.00	-4,108.5	188.3	674.9	525.3	149.50	4.514	
11,400.0	7,173.0	11,352.9	7,173.0	78.0	76.6	90.00	-4,208.5	188.3	674.9	521.9	152.96	4.412	
11,500.0	7,173.0	11,452.9	7,173.0	79.7	78.3	90.00	-4,308.5	188.3	674.9	518.4	156.42	4.314	
11,600.0	7,173.0	11,552.9	7,173.0	81.4	80.0	90.00	-4,408.5	188.3	674.9	515.0	159.89	4.221	
11,700.0	7,173.0	11,652.9	7,173.0	83.1	81.8	90.00	-4,508.5	188.3	674.9	511.5	163.35	4.131	
11,724.9	7,173.0	11,677.8	7,173.0	83.5	82.2	90.00	-4,533.4	188.3	674.9	510.6	164.22	4.109	
11,747.9	7,173.0	11,696.8	7,173.0	83.9	82.5	90.00	-4,552.4	188.3	674.9	509.9	164.95	4.091	SF

Company:	EnCana Oil & Gas (USA) Inc	**Local Co-ordinate Reference:**	Well Ruhl 1F-32H-B264
Project:	DJ Wattenberg	**TVD Reference:**	KB @ 4955.0ft (no KB)
Reference Site:	S32-T2N-R64W (Newman)	**MD Reference:**	KB @ 4955.0ft (no KB)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Ruhl 1F-32H-B264	**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 S32-T2N-R64W (Newman) - Ruhl 1D-32H-B264 - 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	-89.02	0.3	-19.9	19.9	19.9	0.00	N/A	
100.0	100.0	100.0	100.0	0.2	0.2	-89.02	0.3	-19.9	19.9	19.5	0.35	56.907	
200.0	200.0	200.0	200.0	0.3	0.3	-89.02	0.3	-19.9	19.9	19.2	0.70	28.453	CC, ES
300.0	300.0	300.0	300.0	0.5	0.5	-160.82	0.3	-19.9	20.7	19.6	1.05	19.754	
400.0	400.0	400.0	400.0	0.7	0.7	-162.94	0.3	-19.9	23.2	21.8	1.40	16.597	
500.0	499.9	500.3	500.3	0.9	0.9	-164.67	0.8	-19.1	26.6	24.9	1.75	15.246	
600.0	599.7	600.6	600.6	1.1	1.1	-165.15	2.3	-17.0	30.3	28.2	2.10	14.431	
700.0	699.4	701.0	700.9	1.3	1.2	-164.77	4.9	-13.4	34.1	31.6	2.45	13.907	
800.0	798.9	801.5	801.2	1.5	1.4	-163.79	8.4	-8.3	38.1	35.3	2.81	13.557	
900.0	898.3	901.8	901.2	1.8	1.6	-162.47	12.8	-1.9	42.4	39.2	3.18	13.341	
1,000.0	997.4	1,001.6	1,000.7	2.1	1.8	-161.77	17.5	4.8	48.0	44.5	3.55	13.528	
1,100.0	1,096.5	1,101.4	1,100.1	2.3	2.1	-161.47	22.2	11.5	54.3	50.4	3.92	13.836	
1,200.0	1,195.5	1,201.2	1,199.6	2.6	2.3	-161.24	26.9	18.3	60.6	56.3	4.30	14.083	
1,300.0	1,294.6	1,301.0	1,299.1	2.9	2.5	-161.05	31.5	25.0	66.9	62.2	4.68	14.286	
1,400.0	1,393.6	1,400.8	1,398.5	3.2	2.7	-160.89	36.2	31.7	73.2	68.1	5.06	14.455	
1,500.0	1,492.7	1,500.7	1,498.0	3.5	2.9	-160.75	40.9	38.4	79.5	74.0	5.44	14.597	
1,600.0	1,591.7	1,600.5	1,597.5	3.8	3.1	-160.64	45.6	45.1	85.7	79.9	5.83	14.718	
1,700.0	1,690.8	1,700.3	1,696.9	4.1	3.4	-160.54	50.3	51.9	92.0	85.8	6.21	14.823	
1,800.0	1,789.8	1,800.1	1,796.4	4.4	3.6	-160.46	54.9	58.6	98.3	91.7	6.59	14.914	
1,900.0	1,888.9	1,899.9	1,895.9	4.7	3.8	-160.38	59.6	65.3	104.6	97.6	6.98	14.994	
2,000.0	1,987.9	1,999.7	1,995.3	5.0	4.0	-160.31	64.3	72.0	110.9	103.6	7.36	15.065	
2,100.0	2,087.0	2,099.5	2,094.8	5.2	4.3	-160.25	69.0	78.8	117.2	109.5	7.75	15.129	
2,200.0	2,186.0	2,199.3	2,194.3	5.5	4.5	-160.20	73.6	85.5	123.5	115.4	8.13	15.185	
2,300.0	2,285.1	2,299.1	2,293.7	5.8	4.7	-160.15	78.3	92.2	129.8	121.3	8.52	15.236	
2,400.0	2,384.1	2,398.9	2,393.2	6.1	4.9	-160.11	83.0	98.9	136.1	127.2	8.90	15.283	
2,500.0	2,483.2	2,498.7	2,492.6	6.4	5.2	-160.07	87.7	105.6	142.4	133.1	9.29	15.325	
2,600.0	2,582.2	2,598.5	2,592.1	6.7	5.4	-160.03	92.4	112.4	148.7	139.0	9.68	15.363	
2,700.0	2,681.3	2,698.3	2,691.6	7.0	5.6	-160.00	97.0	119.1	155.0	144.9	10.06	15.398	
2,800.0	2,780.3	2,798.1	2,791.0	7.3	5.8	-159.97	101.7	125.8	161.3	150.8	10.45	15.431	
2,900.0	2,879.4	2,897.9	2,890.5	7.6	6.0	-159.94	106.4	132.5	167.6	156.7	10.84	15.461	
3,000.0	2,978.4	2,997.7	2,990.0	7.9	6.3	-159.91	111.1	139.2	173.9	162.6	11.22	15.488	
3,100.0	3,077.5	3,097.5	3,089.4	8.2	6.5	-159.89	115.7	146.0	180.1	168.5	11.61	15.514	
3,200.0	3,176.5	3,197.3	3,188.9	8.5	6.7	-159.86	120.4	152.7	186.4	174.4	12.00	15.538	
3,300.0	3,275.6	3,297.1	3,288.4	8.8	6.9	-159.84	125.1	159.4	192.7	180.3	12.39	15.560	
3,400.0	3,374.6	3,396.9	3,387.8	9.1	7.2	-159.82	129.8	166.1	199.0	186.3	12.77	15.581	
3,500.0	3,473.7	3,496.7	3,487.3	9.4	7.4	-159.80	134.5	172.8	205.3	192.2	13.16	15.601	
3,600.0	3,572.7	3,596.5	3,586.8	9.7	7.6	-159.78	139.1	179.6	211.6	198.1	13.55	15.619	
3,700.0	3,671.8	3,696.3	3,686.2	10.0	7.8	-159.77	143.8	186.3	217.9	204.0	13.94	15.637	
3,800.0	3,770.8	3,796.1	3,785.7	10.3	8.1	-159.75	148.5	193.0	224.2	209.9	14.32	15.653	
3,900.0	3,869.9	3,895.9	3,885.2	10.6	8.3	-159.74	153.2	199.7	230.5	215.8	14.71	15.668	
4,000.0	3,968.9	3,995.7	3,984.6	10.9	8.5	-159.72	157.8	206.5	236.8	221.7	15.10	15.683	
4,100.0	4,068.0	4,095.5	4,084.1	11.2	8.7	-159.71	162.5	213.2	243.1	227.6	15.49	15.696	
4,200.0	4,167.0	4,195.3	4,183.6	11.5	9.0	-159.70	167.2	219.9	249.4	233.5	15.87	15.710	
4,300.0	4,266.1	4,295.1	4,283.0	11.8	9.2	-159.68	171.9	226.6	255.7	239.4	16.26	15.722	
4,400.0	4,365.1	4,394.9	4,382.5	12.1	9.4	-159.67	176.5	233.3	262.0	245.3	16.65	15.734	
4,500.0	4,464.2	4,494.7	4,482.0	12.4	9.6	-159.66	181.2	240.1	268.3	251.2	17.04	15.745	
4,600.0	4,563.2	4,594.5	4,581.4	12.7	9.9	-159.65	185.9	246.8	274.6	257.1	17.43	15.756	
4,700.0	4,662.3	4,694.3	4,680.9	13.0	10.1	-159.64	190.6	253.5	280.8	263.0	17.81	15.766	
4,800.0	4,761.3	4,794.1	4,780.3	13.3	10.3	-159.63	195.3	260.2	287.1	268.9	18.20	15.776	
4,900.0	4,860.4	4,893.9	4,879.8	13.6	10.5	-159.62	199.9	266.9	293.4	274.8	18.59	15.785	
5,000.0	4,959.4	4,993.7	4,979.3	13.9	10.8	-159.61	204.6	273.7	299.7	280.8	18.98	15.794	
5,100.0	5,058.5	5,093.5	5,078.7	14.2	11.0	-159.60	209.3	280.4	306.0	286.7	19.37	15.802	

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 Ruhl 1F-32H-B264
Project:	DJ Wattenberg	**TVD Reference:**	KB @ 4955.0ft (no KB)
Reference Site:	S32-T2N-R64W (Newman)	**MD Reference:**	KB @ 4955.0ft (no KB)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Ruhl 1F-32H-B264	**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 S32-T2N-R64W (Newman) - Ruhl 1D-32H-B264 - Hz - Plan #1

Survey Program: 0-Geolink MWD

Offset Site Error: 0.0 ft

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	5,157.5	5,193.3	5,178.2	14.5	11.2	-159.60	214.0	287.1	312.3	292.6	19.75	15.811	
5,300.0	5,256.6	5,293.1	5,277.7	14.8	11.4	-159.59	218.6	293.8	318.6	298.5	20.14	15.818	
5,400.0	5,355.6	5,392.9	5,377.1	15.1	11.7	-159.58	223.3	300.5	324.9	304.4	20.53	15.826	
5,500.0	5,454.7	5,492.7	5,476.6	15.4	11.9	-159.57	228.0	307.3	331.2	310.3	20.92	15.833	
5,600.0	5,553.7	5,592.5	5,576.1	15.7	12.1	-159.57	232.7	314.0	337.5	316.2	21.31	15.840	
5,700.0	5,652.8	5,692.3	5,675.5	16.0	12.3	-159.56	237.4	320.7	343.8	322.1	21.69	15.847	
5,800.0	5,751.8	5,792.1	5,775.0	16.3	12.6	-159.55	242.0	327.4	350.1	328.0	22.08	15.853	
5,900.0	5,850.9	5,891.9	5,874.5	16.5	12.8	-159.55	246.7	334.2	356.4	333.9	22.47	15.860	
6,000.0	5,949.9	5,991.7	5,973.9	16.8	13.0	-159.54	251.4	340.9	362.7	339.8	22.86	15.866	
6,100.0	6,049.0	6,091.5	6,073.4	17.1	13.2	-159.54	256.1	347.6	369.0	345.7	23.25	15.871	
6,200.0	6,148.0	6,191.3	6,172.9	17.4	13.5	-159.53	260.7	354.3	375.3	351.6	23.64	15.877	
6,300.0	6,247.1	6,291.1	6,272.3	17.7	13.7	-159.52	265.4	361.0	381.6	357.5	24.02	15.882	
6,400.0	6,346.1	6,391.7	6,372.6	18.0	13.9	-160.11	266.1	367.8	387.8	363.5	24.29	15.967	
6,500.0	6,445.2	6,489.8	6,469.6	18.3	14.0	-170.73	253.7	374.4	394.2	370.0	24.20	16.289	
6,600.0	6,544.1	6,584.3	6,560.6	18.6	14.0	133.93	229.2	380.5	401.6	377.7	23.94	16.779	
6,700.0	6,641.5	6,676.4	6,645.5	18.8	14.0	109.30	194.0	386.3	410.0	386.2	23.77	17.248	
6,800.0	6,735.4	6,766.5	6,723.4	18.9	14.1	97.64	149.3	391.5	418.8	395.0	23.77	17.617	
6,900.0	6,824.0	6,854.6	6,793.7	19.0	14.1	90.56	96.4	396.3	427.7	403.8	23.97	17.842	
7,000.0	6,905.6	6,941.3	6,856.0	19.2	14.2	85.62	36.4	400.5	436.5	412.1	24.38	17.905	
7,100.0	6,978.6	7,026.6	6,909.8	19.3	14.4	81.96	-29.6	404.1	444.6	419.7	24.93	17.832	
7,200.0	7,041.5	7,110.9	6,954.9	19.6	14.7	79.19	-100.7	407.2	451.8	426.2	25.63	17.630	
7,300.0	7,093.2	7,194.3	6,991.0	19.9	15.1	77.11	-175.8	409.6	457.9	431.5	26.43	17.325	
7,400.0	7,132.6	7,277.0	7,018.0	20.3	15.6	75.62	-253.9	411.4	462.7	435.3	27.34	16.926	
7,500.0	7,158.9	7,359.3	7,035.8	20.9	16.2	74.65	-334.3	412.6	465.9	437.6	28.33	16.445	
7,600.0	7,171.7	7,441.4	7,044.2	21.6	16.9	74.18	-415.8	413.2	467.6	438.1	29.44	15.884	
7,700.0	7,173.0	7,534.1	7,045.0	22.3	17.8	74.12	-508.5	413.3	467.8	436.6	31.19	14.996	
7,800.0	7,173.0	7,634.1	7,045.0	23.2	18.9	74.12	-608.5	413.3	467.8	434.2	33.51	13.961	
7,900.0	7,173.0	7,734.1	7,045.0	24.2	20.1	74.12	-708.5	413.3	467.8	431.8	35.99	12.997	
8,000.0	7,173.0	7,834.1	7,045.0	25.2	21.3	74.12	-808.5	413.3	467.8	429.1	38.61	12.116	
8,100.0	7,173.0	7,934.1	7,045.0	26.4	22.7	74.12	-908.5	413.3	467.8	426.4	41.34	11.316	
8,200.0	7,173.0	8,034.1	7,045.0	27.6	24.1	74.12	-1,008.5	413.3	467.8	423.6	44.15	10.594	
8,300.0	7,173.0	8,134.1	7,045.0	28.8	25.5	74.12	-1,108.5	413.3	467.8	420.7	47.05	9.943	
8,400.0	7,173.0	8,234.1	7,045.0	30.1	27.0	74.12	-1,208.5	413.3	467.8	417.8	50.00	9.355	
8,500.0	7,173.0	8,334.1	7,045.0	31.5	28.5	74.12	-1,308.5	413.3	467.8	414.8	53.00	8.825	
8,600.0	7,173.0	8,434.1	7,045.0	32.9	30.0	74.12	-1,408.5	413.3	467.8	411.7	56.05	8.346	
8,700.0	7,173.0	8,534.1	7,045.0	34.3	31.5	74.12	-1,508.5	413.3	467.8	408.6	59.13	7.911	
8,800.0	7,173.0	8,634.1	7,045.0	35.7	33.1	74.12	-1,608.5	413.3	467.8	405.5	62.24	7.515	
8,900.0	7,173.0	8,734.1	7,045.0	37.2	34.7	74.12	-1,708.5	413.3	467.8	402.4	65.38	7.154	
9,000.0	7,173.0	8,834.1	7,045.0	38.7	36.3	74.12	-1,808.5	413.3	467.8	399.2	68.54	6.825	
9,100.0	7,173.0	8,934.1	7,045.0	40.2	37.9	74.12	-1,908.5	413.3	467.8	396.0	71.72	6.522	
9,200.0	7,173.0	9,034.1	7,045.0	41.8	39.6	74.12	-2,008.5	413.3	467.8	392.8	74.92	6.244	
9,300.0	7,173.0	9,134.1	7,045.0	43.3	41.2	74.12	-2,108.5	413.3	467.8	389.6	78.13	5.987	
9,400.0	7,173.0	9,234.1	7,045.0	44.9	42.8	74.12	-2,208.5	413.2	467.8	386.4	81.36	5.749	
9,500.0	7,173.0	9,334.1	7,045.0	46.5	44.5	74.12	-2,308.5	413.2	467.8	383.2	84.59	5.529	
9,600.0	7,173.0	9,434.1	7,045.0	48.1	46.2	74.12	-2,408.5	413.2	467.8	379.9	87.84	5.325	
9,700.0	7,173.0	9,534.1	7,045.0	49.7	47.8	74.12	-2,508.5	413.2	467.8	376.7	91.10	5.135	
9,800.0	7,173.0	9,634.1	7,045.0	51.3	49.5	74.12	-2,608.5	413.2	467.8	373.4	94.37	4.957	
9,900.0	7,173.0	9,734.1	7,045.0	52.9	51.2	74.12	-2,708.5	413.2	467.8	370.1	97.64	4.791	
10,000.0	7,173.0	9,834.1	7,045.0	54.6	52.9	74.12	-2,808.5	413.2	467.8	366.8	100.92	4.635	
10,100.0	7,173.0	9,934.1	7,045.0	56.2	54.6	74.12	-2,908.5	413.2	467.8	363.5	104.20	4.489	
10,200.0	7,173.0	10,034.1	7,045.0	57.8	56.3	74.12	-3,008.5	413.2	467.8	360.3	107.50	4.351	
10,300.0	7,173.0	10,134.1	7,045.0	59.5	58.0	74.12	-3,108.5	413.2	467.8	357.0	110.79	4.222	

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 Ruhl 1F-32H-B264
Project:	DJ Wattenberg	**TVD Reference:**	KB @ 4955.0ft (no KB)
Reference Site:	S32-T2N-R64W (Newman)	**MD Reference:**	KB @ 4955.0ft (no KB)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Ruhl 1F-32H-B264	**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 S32-T2N-R64W (Newman) - Ruhl 1D-32H-B264 - 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	7,173.0	10,234.1	7,045.0	61.2	59.7	74.12	-3,208.5	413.2	467.8	353.7	114.09	4.100	
10,500.0	7,173.0	10,334.1	7,045.0	62.8	61.4	74.12	-3,308.5	413.2	467.8	350.4	117.40	3.984	
10,600.0	7,173.0	10,434.1	7,045.0	64.5	63.1	74.12	-3,408.5	413.2	467.8	347.0	120.71	3.875	
10,700.0	7,173.0	10,534.1	7,045.0	66.2	64.8	74.12	-3,508.5	413.2	467.8	343.7	124.02	3.772	
10,800.0	7,173.0	10,634.1	7,045.0	67.8	66.5	74.12	-3,608.5	413.2	467.8	340.4	127.34	3.673	
10,900.0	7,173.0	10,734.1	7,045.0	69.5	68.2	74.12	-3,708.5	413.2	467.8	337.1	130.66	3.580	
11,000.0	7,173.0	10,834.1	7,045.0	71.2	69.9	74.12	-3,808.5	413.2	467.8	333.8	133.98	3.491	
11,100.0	7,173.0	10,934.1	7,045.0	72.9	71.6	74.12	-3,908.5	413.2	467.8	330.4	137.30	3.407	
11,200.0	7,173.0	11,034.1	7,045.0	74.6	73.4	74.12	-4,008.5	413.2	467.8	327.1	140.63	3.326	
11,300.0	7,173.0	11,134.1	7,045.0	76.3	75.1	74.12	-4,108.5	413.2	467.8	323.8	143.96	3.249	
11,400.0	7,173.0	11,234.1	7,045.0	78.0	76.8	74.12	-4,208.5	413.2	467.8	320.5	147.29	3.176	
11,500.0	7,173.0	11,334.1	7,045.0	79.7	78.5	74.12	-4,308.5	413.2	467.8	317.1	150.63	3.105	
11,600.0	7,173.0	11,434.1	7,045.0	81.4	80.2	74.12	-4,408.5	413.2	467.8	313.8	153.96	3.038	
11,700.0	7,173.0	11,534.1	7,045.0	83.1	82.0	74.12	-4,508.5	413.2	467.8	310.5	157.30	2.974	
11,725.5	7,173.0	11,559.5	7,045.0	83.5	82.4	74.12	-4,534.0	413.2	467.8	309.6	158.15	2.958	
11,747.9	7,173.0	11,579.4	7,045.0	83.9	82.8	74.12	-4,553.8	413.2	467.8	308.9	158.85	2.945	SF

Company:	EnCana Oil & Gas (USA) Inc	**Local Co-ordinate Reference:**	Well Ruhl 1F-32H-B264
Project:	DJ Wattenberg	**TVD Reference:**	KB @ 4955.0ft (no KB)
Reference Site:	S32-T2N-R64W (Newman)	**MD Reference:**	KB @ 4955.0ft (no KB)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Ruhl 1F-32H-B264	**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 S32-T2N-R64W (Newman) - Ruhl 1E-32H-B264 - 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	-90.05	0.0	-10.1	10.1	10.1	0.00	N/A	
100.0	100.0	100.0	100.0	0.2	0.2	-90.05	0.0	-10.1	10.1	9.7	0.35	28.850	
200.0	200.0	200.0	200.0	0.3	0.3	-90.05	0.0	-10.1	10.1	9.4	0.70	14.425	CC, ES
300.0	300.0	300.0	300.0	0.5	0.5	-162.51	0.0	-10.1	10.9	9.9	1.05	10.408	
400.0	400.0	400.1	400.1	0.7	0.7	-165.54	0.1	-9.9	13.2	11.8	1.40	9.464	
500.0	499.9	500.3	500.3	0.9	0.9	-167.29	0.8	-8.3	15.8	14.1	1.75	9.054	
600.0	599.7	600.5	600.4	1.1	1.1	-167.99	2.3	-5.1	18.5	16.4	2.10	8.804	
700.0	699.4	700.8	700.6	1.3	1.2	-168.04	4.5	-0.3	21.1	18.7	2.45	8.638	
800.0	798.9	801.2	800.7	1.5	1.4	-167.66	7.5	6.0	23.9	21.1	2.80	8.521	
900.0	898.3	901.5	900.7	1.8	1.7	-166.98	11.2	14.0	26.6	23.5	3.16	8.434	
1,000.0	997.4	1,001.9	1,000.5	2.1	1.9	-166.09	15.6	23.5	29.5	25.9	3.52	8.361	
1,100.0	1,096.5	1,101.9	1,099.9	2.3	2.1	-165.16	20.4	33.8	32.2	28.3	3.89	8.267	
1,200.0	1,195.5	1,201.9	1,199.2	2.6	2.4	-164.38	25.1	44.0	34.9	30.7	4.27	8.184	
1,300.0	1,294.6	1,301.8	1,298.5	2.9	2.6	-163.72	29.9	54.3	37.7	33.0	4.65	8.109	
1,400.0	1,393.6	1,401.8	1,397.8	3.2	2.9	-163.14	34.6	64.5	40.4	35.4	5.03	8.043	
1,500.0	1,492.7	1,501.7	1,497.1	3.5	3.1	-162.64	39.4	74.7	43.2	37.8	5.41	7.983	
1,600.0	1,591.7	1,601.7	1,596.5	3.8	3.4	-162.20	44.2	85.0	46.0	40.2	5.80	7.929	
1,700.0	1,690.8	1,701.7	1,695.8	4.1	3.7	-161.81	48.9	95.2	48.7	42.5	6.18	7.879	
1,800.0	1,789.8	1,801.6	1,795.1	4.4	3.9	-161.46	53.7	105.5	51.5	44.9	6.57	7.834	
1,900.0	1,888.9	1,901.6	1,894.4	4.7	4.2	-161.15	58.4	115.7	54.3	47.3	6.96	7.793	
2,000.0	1,987.9	2,001.6	1,993.7	5.0	4.4	-160.87	63.2	126.0	57.0	49.7	7.35	7.754	
2,100.0	2,087.0	2,101.5	2,093.1	5.2	4.7	-160.61	68.0	136.2	59.8	52.0	7.75	7.719	
2,200.0	2,186.0	2,201.5	2,192.4	5.5	5.0	-160.38	72.7	146.5	62.6	54.4	8.14	7.687	
2,300.0	2,285.1	2,301.4	2,291.7	5.8	5.2	-160.16	77.5	156.7	65.3	56.8	8.53	7.657	
2,400.0	2,384.1	2,401.4	2,391.0	6.1	5.5	-159.96	82.2	166.9	68.1	59.2	8.93	7.629	
2,500.0	2,483.2	2,501.4	2,490.4	6.4	5.7	-159.78	87.0	177.2	70.9	61.6	9.32	7.603	
2,600.0	2,582.2	2,601.3	2,589.7	6.7	6.0	-159.62	91.8	187.4	73.7	63.9	9.72	7.579	
2,700.0	2,681.3	2,701.3	2,689.0	7.0	6.3	-159.46	96.5	197.7	76.4	66.3	10.11	7.556	
2,800.0	2,780.3	2,801.2	2,788.3	7.3	6.5	-159.32	101.3	207.9	79.2	68.7	10.51	7.535	
2,900.0	2,879.4	2,901.2	2,887.6	7.6	6.8	-159.18	106.1	218.2	82.0	71.1	10.91	7.515	
3,000.0	2,978.4	3,001.2	2,987.0	7.9	7.0	-159.05	110.8	228.4	84.8	73.4	11.31	7.496	
3,100.0	3,077.5	3,101.1	3,086.3	8.2	7.3	-158.94	115.6	238.7	87.5	75.8	11.70	7.478	
3,200.0	3,176.5	3,201.1	3,185.6	8.5	7.6	-158.83	120.3	248.9	90.3	78.2	12.10	7.462	
3,300.0	3,275.6	3,301.1	3,284.9	8.8	7.8	-158.72	125.1	259.1	93.1	80.6	12.50	7.446	
3,400.0	3,374.6	3,401.0	3,384.2	9.1	8.1	-158.62	129.9	269.4	95.9	83.0	12.90	7.431	
3,500.0	3,473.7	3,501.0	3,483.6	9.4	8.4	-158.53	134.6	279.6	98.6	85.3	13.30	7.417	
3,600.0	3,572.7	3,600.9	3,582.9	9.7	8.6	-158.44	139.4	289.9	101.4	87.7	13.70	7.403	
3,700.0	3,671.8	3,700.9	3,682.2	10.0	8.9	-158.36	144.1	300.1	104.2	90.1	14.10	7.391	
3,800.0	3,770.8	3,800.9	3,781.5	10.3	9.1	-158.28	148.9	310.4	107.0	92.5	14.50	7.378	
3,900.0	3,869.9	3,900.8	3,880.8	10.6	9.4	-158.21	153.7	320.6	109.7	94.8	14.90	7.367	
4,000.0	3,968.9	4,000.8	3,980.2	10.9	9.7	-158.14	158.4	330.9	112.5	97.2	15.30	7.356	
4,100.0	4,068.0	4,100.7	4,079.5	11.2	9.9	-158.07	163.2	341.1	115.3	99.6	15.70	7.345	
4,200.0	4,167.0	4,200.7	4,178.8	11.5	10.2	-158.00	167.9	351.3	118.1	102.0	16.10	7.335	
4,300.0	4,266.1	4,300.7	4,278.1	11.8	10.5	-157.94	172.7	361.6	120.9	104.4	16.50	7.326	
4,400.0	4,365.1	4,400.6	4,377.5	12.1	10.7	-157.88	177.5	371.8	123.6	106.7	16.90	7.316	
4,500.0	4,464.2	4,500.6	4,476.8	12.4	11.0	-157.83	182.2	382.1	126.4	109.1	17.30	7.307	
4,600.0	4,563.2	4,600.5	4,576.1	12.7	11.2	-157.78	187.0	392.3	129.2	111.5	17.70	7.299	
4,700.0	4,662.3	4,700.5	4,675.4	13.0	11.5	-157.72	191.7	402.6	132.0	113.9	18.10	7.291	
4,800.0	4,761.3	4,800.5	4,774.7	13.3	11.8	-157.67	196.5	412.8	134.8	116.3	18.50	7.283	
4,900.0	4,860.4	4,900.4	4,874.1	13.6	12.0	-157.63	201.3	423.1	137.5	118.6	18.90	7.275	
5,000.0	4,959.4	5,000.4	4,973.4	13.9	12.3	-157.58	206.0	433.3	140.3	121.0	19.31	7.268	
5,100.0	5,058.5	5,100.4	5,072.7	14.2	12.6	-157.54	210.8	443.5	143.1	123.4	19.71	7.261	

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 Ruhl 1F-32H-B264
Project:	DJ Wattenberg	**TVD Reference:**	KB @ 4955.0ft (no KB)
Reference Site:	S32-T2N-R64W (Newman)	**MD Reference:**	KB @ 4955.0ft (no KB)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Ruhl 1F-32H-B264	**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 S32-T2N-R64W (Newman) - Ruhl 1E-32H-B264 - 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	5,157.5	5,200.3	5,172.0	14.5	12.8	-157.50	215.5	453.8	145.9	125.8	20.11	7.254	
5,300.0	5,256.6	5,300.3	5,271.3	14.8	13.1	-157.46	220.3	464.0	148.7	128.1	20.51	7.248	
5,400.0	5,355.6	5,400.2	5,370.7	15.1	13.4	-157.42	225.1	474.3	151.4	130.5	20.91	7.242	
5,500.0	5,454.7	5,500.2	5,470.0	15.4	13.6	-157.38	229.8	484.5	154.2	132.9	21.31	7.236	
5,600.0	5,553.7	5,600.2	5,569.3	15.7	13.9	-157.34	234.6	494.8	157.0	135.3	21.71	7.230	
5,700.0	5,652.8	5,700.1	5,668.6	16.0	14.1	-157.31	239.3	505.0	159.8	137.7	22.12	7.224	
5,800.0	5,751.8	5,800.1	5,767.9	16.3	14.4	-157.27	244.1	515.2	162.6	140.0	22.52	7.219	
5,900.0	5,850.9	5,900.0	5,867.3	16.5	14.7	-157.24	248.9	525.5	165.3	142.4	22.92	7.214	
6,000.0	5,949.9	6,000.0	5,966.6	16.8	14.9	-157.21	253.6	535.7	168.1	144.8	23.32	7.208	
6,100.0	6,049.0	6,100.0	6,065.9	17.1	15.2	-157.18	258.4	546.0	170.9	147.2	23.72	7.203	
6,200.0	6,148.0	6,199.9	6,165.2	17.4	15.5	-157.15	263.1	556.2	173.7	149.5	24.13	7.199	
6,300.0	6,247.1	6,300.7	6,265.4	17.7	15.7	-157.73	266.1	566.6	176.3	151.9	24.40	7.228	
6,400.0	6,346.1	6,400.2	6,363.9	18.0	15.9	-162.21	256.7	576.7	178.8	154.9	23.94	7.469	
6,500.0	6,445.2	6,494.3	6,454.9	18.3	16.0	-178.31	235.3	586.1	184.1	160.9	23.19	7.939	
6,600.0	6,544.1	6,583.6	6,538.1	18.6	16.1	121.04	204.0	594.7	194.3	171.3	23.04	8.432	
6,700.0	6,641.5	6,670.1	6,614.3	18.8	16.1	92.13	164.1	602.5	207.9	184.2	23.66	8.785	
6,800.0	6,735.4	6,754.0	6,683.2	18.9	16.2	77.21	116.8	609.7	223.3	198.7	24.59	9.080	
6,900.0	6,824.0	6,835.9	6,744.7	19.0	16.3	67.73	63.1	616.0	239.3	213.9	25.45	9.404	
7,000.0	6,905.6	6,916.1	6,798.6	19.2	16.4	61.10	4.0	621.6	255.0	229.0	25.96	9.824	
7,100.0	6,978.6	7,000.0	6,847.6	19.3	16.7	56.14	-63.8	626.6	269.6	243.3	26.23	10.278	
7,200.0	7,041.5	7,072.6	6,883.4	19.6	16.9	52.71	-126.9	630.3	282.3	256.3	26.05	10.835	
7,300.0	7,093.2	7,150.0	6,914.3	19.9	17.3	50.11	-197.7	633.5	293.0	267.3	25.70	11.401	
7,400.0	7,132.6	7,225.5	6,937.1	20.3	17.7	48.31	-269.6	635.8	301.2	275.9	25.22	11.941	
7,500.0	7,158.9	7,300.0	6,951.9	20.9	18.2	47.17	-342.5	637.4	306.7	282.0	24.75	12.390	
7,600.0	7,171.7	7,376.6	6,959.3	21.6	18.9	46.62	-418.7	638.1	309.5	285.0	24.46	12.655	
7,700.0	7,173.0	7,466.4	6,960.0	22.3	19.6	46.56	-508.5	638.2	309.8	284.4	25.35	12.218	
7,800.0	7,173.0	7,566.4	6,960.0	23.2	20.6	46.56	-608.5	638.2	309.8	282.7	27.13	11.417	
7,900.0	7,173.0	7,666.4	6,960.0	24.2	21.7	46.56	-708.5	638.2	309.8	280.8	29.03	10.672	
8,000.0	7,173.0	7,766.4	6,960.0	25.2	22.9	46.56	-808.5	638.2	309.8	278.8	31.02	9.987	
8,100.0	7,173.0	7,866.4	6,960.0	26.4	24.1	46.56	-908.5	638.2	309.8	276.7	33.09	9.362	
8,200.0	7,173.0	7,966.4	6,960.0	27.6	25.4	46.56	-1,008.5	638.2	309.8	274.6	35.23	8.795	
8,300.0	7,173.0	8,066.4	6,960.0	28.8	26.8	46.56	-1,108.5	638.2	309.8	272.4	37.41	8.280	
8,400.0	7,173.0	8,166.4	6,960.0	30.1	28.2	46.56	-1,208.5	638.2	309.8	270.1	39.65	7.814	
8,500.0	7,173.0	8,266.4	6,960.0	31.5	29.6	46.56	-1,308.5	638.2	309.8	267.9	41.92	7.391	
8,600.0	7,173.0	8,366.4	6,960.0	32.9	31.1	46.56	-1,408.5	638.2	309.8	265.6	44.22	7.006	
8,700.0	7,173.0	8,466.4	6,960.0	34.3	32.6	46.56	-1,508.5	638.2	309.8	263.2	46.55	6.655	
8,800.0	7,173.0	8,566.4	6,960.0	35.7	34.1	46.56	-1,608.5	638.2	309.8	260.9	48.90	6.335	
8,900.0	7,173.0	8,666.4	6,960.0	37.2	35.7	46.56	-1,708.5	638.2	309.8	258.5	51.28	6.042	
9,000.0	7,173.0	8,766.4	6,960.0	38.7	37.2	46.56	-1,808.5	638.2	309.8	256.1	53.67	5.773	
9,100.0	7,173.0	8,866.4	6,960.0	40.2	38.8	46.56	-1,908.5	638.2	309.8	253.7	56.07	5.525	
9,200.0	7,173.0	8,966.4	6,960.0	41.8	40.4	46.56	-2,008.5	638.2	309.8	251.3	58.49	5.297	
9,300.0	7,173.0	9,066.4	6,960.0	43.3	42.0	46.56	-2,108.5	638.2	309.8	248.9	60.92	5.085	
9,400.0	7,173.0	9,166.4	6,960.0	44.9	43.6	46.56	-2,208.5	638.2	309.8	246.4	63.36	4.889	
9,500.0	7,173.0	9,266.4	6,960.0	46.5	45.3	46.56	-2,308.5	638.2	309.8	244.0	65.81	4.707	
9,600.0	7,173.0	9,366.4	6,960.0	48.1	46.9	46.56	-2,408.5	638.2	309.8	241.5	68.27	4.538	
9,700.0	7,173.0	9,466.4	6,960.0	49.7	48.5	46.56	-2,508.5	638.2	309.8	239.1	70.73	4.380	
9,800.0	7,173.0	9,566.4	6,960.0	51.3	50.2	46.56	-2,608.5	638.2	309.8	236.6	73.21	4.232	
9,900.0	7,173.0	9,666.4	6,960.0	52.9	51.8	46.56	-2,708.5	638.2	309.8	234.1	75.68	4.093	
10,000.0	7,173.0	9,766.4	6,960.0	54.6	53.5	46.56	-2,808.5	638.2	309.8	231.6	78.17	3.963	
10,100.0	7,173.0	9,866.4	6,960.0	56.2	55.2	46.56	-2,908.5	638.2	309.8	229.1	80.65	3.841	
10,200.0	7,173.0	9,966.4	6,960.0	57.8	56.9	46.56	-3,008.5	638.2	309.8	226.6	83.15	3.726	
10,300.0	7,173.0	10,066.4	6,960.0	59.5	58.5	46.56	-3,108.5	638.2	309.8	224.1	85.64	3.617	

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 Ruhl 1F-32H-B264
Project:	DJ Wattenberg	**TVD Reference:**	KB @ 4955.0ft (no KB)
Reference Site:	S32-T2N-R64W (Newman)	**MD Reference:**	KB @ 4955.0ft (no KB)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Ruhl 1F-32H-B264	**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 S32-T2N-R64W (Newman) - Ruhl 1E-32H-B264 - 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	7,173.0	10,166.4	6,960.0	61.2	60.2	46.56	-3,208.5	638.2	309.8	221.6	88.14	3.515	
10,500.0	7,173.0	10,266.4	6,960.0	62.8	61.9	46.56	-3,308.5	638.2	309.8	219.1	90.65	3.418	
10,600.0	7,173.0	10,366.4	6,960.0	64.5	63.6	46.56	-3,408.5	638.2	309.8	216.6	93.15	3.326	
10,700.0	7,173.0	10,466.4	6,960.0	66.2	65.3	46.56	-3,508.5	638.2	309.8	214.1	95.66	3.238	
10,800.0	7,173.0	10,566.4	6,960.0	67.8	67.0	46.56	-3,608.5	638.2	309.8	211.6	98.18	3.155	
10,900.0	7,173.0	10,666.4	6,960.0	69.5	68.7	46.56	-3,708.5	638.2	309.8	209.1	100.69	3.077	
11,000.0	7,173.0	10,766.4	6,960.0	71.2	70.4	46.56	-3,808.5	638.2	309.8	206.6	103.21	3.002	
11,100.0	7,173.0	10,866.4	6,960.0	72.9	72.1	46.56	-3,908.5	638.2	309.8	204.1	105.73	2.930	
11,200.0	7,173.0	10,966.4	6,960.0	74.6	73.8	46.56	-4,008.5	638.2	309.8	201.5	108.25	2.862	
11,300.0	7,173.0	11,066.4	6,960.0	76.3	75.5	46.56	-4,108.5	638.2	309.8	199.0	110.77	2.797	
11,400.0	7,173.0	11,166.4	6,960.0	78.0	77.2	46.56	-4,208.5	638.2	309.8	196.5	113.30	2.734	
11,500.0	7,173.0	11,266.4	6,960.0	79.7	78.9	46.56	-4,308.5	638.2	309.8	194.0	115.82	2.675	
11,600.0	7,173.0	11,366.4	6,960.0	81.4	80.7	46.56	-4,408.5	638.2	309.8	191.4	118.35	2.618	
11,700.0	7,173.0	11,466.4	6,960.0	83.1	82.4	46.56	-4,508.5	638.2	309.8	188.9	120.88	2.563	
11,725.9	7,173.0	11,492.2	6,960.0	83.5	82.8	46.56	-4,534.4	638.2	309.8	188.3	121.54	2.549	
11,747.9	7,173.0	11,512.8	6,960.0	83.9	83.2	46.56	-4,554.9	638.2	309.8	187.7	122.08	2.538	SF

Company:	EnCana Oil & Gas (USA) Inc	**Local Co-ordinate Reference:**	Well Ruhl 1F-32H-B264
Project:	DJ Wattenberg	**TVD Reference:**	KB @ 4955.0ft (no KB)
Reference Site:	S32-T2N-R64W (Newman)	**MD Reference:**	KB @ 4955.0ft (no KB)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Ruhl 1F-32H-B264	**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 S32-T2N-R64W (Newman) - Ruhl 1G-32H-B264 - 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	89.69	4.0	742.1	742.2				
100.0	100.0	100.0	100.0	0.2	0.2	89.69	4.0	742.1	742.2	741.8	0.35	2,126.115	
200.0	200.0	200.0	200.0	0.3	0.3	89.69	4.0	742.1	742.2	741.5	0.70	1,063.058	
300.0	300.0	300.0	300.0	0.5	0.5	18.74	4.0	742.1	741.3	740.3	1.05	707.918	
400.0	400.0	400.0	400.0	0.7	0.7	18.82	4.0	742.1	738.8	737.5	1.40	529.107	
500.0	499.9	495.4	495.4	0.9	0.9	18.92	4.1	742.3	734.9	733.1	1.74	422.749	
600.0	599.7	586.5	586.5	1.1	1.0	19.01	5.1	743.4	730.3	728.2	2.07	352.141	
700.0	699.4	677.6	677.5	1.3	1.2	19.06	7.0	745.6	725.3	722.9	2.41	300.670	
800.0	798.9	768.7	768.5	1.5	1.4	19.08	9.8	748.9	719.8	717.1	2.75	261.303	
900.0	898.3	860.1	859.7	1.8	1.5	19.07	13.6	753.3	713.9	710.8	3.10	230.133	
1,000.0	997.4	959.8	959.2	2.1	1.7	19.06	18.2	758.7	707.0	703.5	3.47	203.721	
1,100.0	1,096.5	1,059.5	1,058.7	2.3	1.9	19.05	22.8	764.0	699.4	695.5	3.84	181.956	
1,200.0	1,195.5	1,159.2	1,158.1	2.6	2.1	19.04	27.4	769.4	691.7	687.5	4.22	163.975	
1,300.0	1,294.6	1,258.9	1,257.6	2.9	2.3	19.03	32.0	774.8	684.1	679.5	4.59	148.886	
1,400.0	1,393.6	1,358.6	1,357.0	3.2	2.5	19.01	36.6	780.2	676.5	671.5	4.97	136.054	
1,500.0	1,492.7	1,458.4	1,456.5	3.5	2.8	19.00	41.2	785.6	668.9	663.5	5.35	125.014	
1,600.0	1,591.7	1,558.1	1,555.9	3.8	3.0	18.99	45.8	791.0	661.2	655.5	5.73	115.419	
1,700.0	1,690.8	1,657.8	1,655.4	4.1	3.2	18.98	50.4	796.3	653.6	647.5	6.11	107.006	
1,800.0	1,789.8	1,757.5	1,754.9	4.4	3.4	18.97	55.1	801.7	646.0	639.5	6.49	99.570	
1,900.0	1,888.9	1,857.2	1,854.3	4.7	3.6	18.95	59.7	807.1	638.3	631.5	6.87	92.951	
2,000.0	1,987.9	1,956.9	1,953.8	5.0	3.8	18.94	64.3	812.5	630.7	623.5	7.25	87.024	
2,100.0	2,087.0	2,056.6	2,053.2	5.2	4.0	18.93	68.9	817.9	623.1	615.5	7.63	81.685	
2,200.0	2,186.0	2,156.3	2,152.7	5.5	4.2	18.91	73.5	823.2	615.5	607.4	8.01	76.852	
2,300.0	2,285.1	2,256.0	2,252.1	5.8	4.4	18.90	78.1	828.6	607.8	599.4	8.39	72.456	
2,400.0	2,384.1	2,355.7	2,351.6	6.1	4.6	18.89	82.7	834.0	600.2	591.4	8.77	68.441	
2,500.0	2,483.2	2,455.4	2,451.1	6.4	4.9	18.87	87.3	839.4	592.6	583.4	9.15	64.759	
2,600.0	2,582.2	2,555.1	2,550.5	6.7	5.1	18.86	91.9	844.8	584.9	575.4	9.53	61.372	
2,700.0	2,681.3	2,654.9	2,650.0	7.0	5.3	18.84	96.6	850.1	577.3	567.4	9.91	58.244	
2,800.0	2,780.3	2,754.6	2,749.4	7.3	5.5	18.83	101.2	855.5	569.7	559.4	10.29	55.348	
2,900.0	2,879.4	2,854.3	2,848.9	7.6	5.7	18.81	105.8	860.9	562.1	551.4	10.67	52.658	
3,000.0	2,978.4	2,954.0	2,948.3	7.9	5.9	18.79	110.4	866.3	554.4	543.4	11.05	50.154	
3,100.0	3,077.5	3,053.7	3,047.8	8.2	6.1	18.78	115.0	871.7	546.8	535.4	11.44	47.817	
3,200.0	3,176.5	3,153.4	3,147.2	8.5	6.3	18.76	119.6	877.1	539.2	527.4	11.82	45.630	
3,300.0	3,275.6	3,253.1	3,246.7	8.8	6.6	18.74	124.2	882.4	531.6	519.4	12.20	43.581	
3,400.0	3,374.6	3,352.8	3,346.2	9.1	6.8	18.72	128.8	887.8	523.9	511.3	12.58	41.655	
3,500.0	3,473.7	3,452.5	3,445.6	9.4	7.0	18.70	133.4	893.2	516.3	503.3	12.96	39.843	
3,600.0	3,572.7	3,552.2	3,545.1	9.7	7.2	18.68	138.0	898.6	508.7	495.3	13.34	38.135	
3,700.0	3,671.8	3,651.9	3,644.5	10.0	7.4	18.66	142.7	904.0	501.0	487.3	13.72	36.521	
3,800.0	3,770.8	3,751.6	3,744.0	10.3	7.6	18.64	147.3	909.3	493.4	479.3	14.10	34.995	
3,900.0	3,869.9	3,851.4	3,843.4	10.6	7.8	18.62	151.9	914.7	485.8	471.3	14.48	33.549	
4,000.0	3,968.9	3,951.1	3,942.9	10.9	8.0	18.60	156.5	920.1	478.2	463.3	14.86	32.178	
4,100.0	4,068.0	4,050.8	4,042.4	11.2	8.3	18.57	161.1	925.5	470.5	455.3	15.24	30.875	
4,200.0	4,167.0	4,150.5	4,141.8	11.5	8.5	18.55	165.7	930.9	462.9	447.3	15.62	29.636	
4,300.0	4,266.1	4,250.2	4,241.3	11.8	8.7	18.53	170.3	936.2	455.3	439.3	16.00	28.456	
4,400.0	4,365.1	4,349.9	4,340.7	12.1	8.9	18.50	174.9	941.6	447.7	431.3	16.38	27.331	
4,500.0	4,464.2	4,449.6	4,440.2	12.4	9.1	18.47	179.5	947.0	440.0	423.3	16.76	26.257	
4,600.0	4,563.2	4,549.3	4,539.6	12.7	9.3	18.45	184.2	952.4	432.4	415.3	17.14	25.231	
4,700.0	4,662.3	4,649.0	4,639.1	13.0	9.5	18.42	188.8	957.8	424.8	407.3	17.52	24.249	
4,800.0	4,761.3	4,748.7	4,738.6	13.3	9.8	18.39	193.4	963.2	417.2	399.3	17.90	23.310	
4,900.0	4,860.4	4,848.4	4,838.0	13.6	10.0	18.36	198.0	968.5	409.5	391.3	18.27	22.409	
5,000.0	4,959.4	4,948.2	4,937.5	13.9	10.2	18.33	202.6	973.9	401.9	383.2	18.65	21.546	
5,100.0	5,058.5	5,047.9	5,036.9	14.2	10.4	18.30	207.2	979.3	394.3	375.2	19.03	20.717	

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 Ruhl 1F-32H-B264
Project:	DJ Wattenberg	**TVD Reference:**	KB @ 4955.0ft (no KB)
Reference Site:	S32-T2N-R64W (Newman)	**MD Reference:**	KB @ 4955.0ft (no KB)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Ruhl 1F-32H-B264	**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 S32-T2N-R64W (Newman) - Ruhl 1G-32H-B264 - 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	5,157.5	5,147.6	5,136.4	14.5	10.6	18.26	211.8	984.7	386.6	367.2	19.41	19.921	
5,300.0	5,256.6	5,247.3	5,235.8	14.8	10.8	18.23	216.4	990.1	379.0	359.2	19.79	19.155	
5,400.0	5,355.6	5,347.0	5,335.3	15.1	11.0	18.19	221.0	995.4	371.4	351.2	20.16	18.418	
5,500.0	5,454.7	5,446.7	5,434.7	15.4	11.2	18.15	225.6	1,000.8	363.8	343.2	20.54	17.709	
5,600.0	5,553.7	5,546.4	5,534.2	15.7	11.5	18.11	230.3	1,006.2	356.1	335.2	20.92	17.026	
5,700.0	5,652.8	5,646.1	5,633.7	16.0	11.7	18.07	234.9	1,011.6	348.5	327.2	21.29	16.367	
5,800.0	5,751.8	5,745.8	5,733.1	16.3	11.9	18.02	239.5	1,017.0	340.9	319.2	21.67	15.731	
5,900.0	5,850.9	5,845.5	5,832.6	16.5	12.1	17.98	244.1	1,022.4	333.3	311.2	22.05	15.117	
6,000.0	5,949.9	5,945.2	5,932.0	16.8	12.3	17.93	248.7	1,027.7	325.6	303.2	22.42	14.524	
6,100.0	6,049.0	6,044.9	6,031.5	17.1	12.5	17.88	253.3	1,033.1	318.0	295.2	22.80	13.951	
6,200.0	6,148.0	6,144.7	6,130.9	17.4	12.7	17.83	257.9	1,038.5	310.4	287.2	23.17	13.396	
6,300.0	6,247.1	6,244.4	6,230.4	17.7	13.0	17.77	262.5	1,043.9	302.8	279.2	23.54	12.860	
6,400.0	6,346.1	6,344.4	6,330.2	18.0	13.2	17.87	266.4	1,049.3	295.1	271.2	23.92	12.336	
6,500.0	6,445.2	6,443.6	6,428.9	18.3	13.3	11.90	259.5	1,054.6	287.5	263.0	24.47	11.747	
6,600.0	6,544.1	6,540.2	6,523.3	18.6	13.3	-37.29	239.7	1,059.7	280.6	255.7	24.93	11.259	
6,700.0	6,641.5	6,634.9	6,612.4	18.8	13.3	-55.97	208.1	1,064.5	274.8	249.6	25.19	10.910	
6,800.0	6,735.4	6,727.9	6,695.0	18.9	13.3	-61.98	166.0	1,069.0	270.0	244.7	25.24	10.696	
6,900.0	6,824.0	6,819.3	6,770.3	19.0	13.4	-63.83	114.4	1,073.1	266.2	241.1	25.11	10.601	
7,000.0	6,905.6	6,909.5	6,837.6	19.2	13.4	-64.02	54.5	1,076.7	263.4	238.6	24.85	10.601	
7,100.0	6,978.6	7,000.0	6,897.0	19.3	13.6	-63.46	-13.6	1,080.0	261.4	236.9	24.57	10.642	
7,200.0	7,041.5	7,086.6	6,945.5	19.6	13.9	-62.71	-85.3	1,082.6	260.1	235.7	24.40	10.662	
7,300.0	7,093.2	7,174.0	6,985.2	19.9	14.3	-61.89	-163.1	1,084.7	259.3	234.8	24.51	10.579	
7,400.0	7,132.6	7,260.8	7,015.0	20.3	14.8	-61.18	-244.5	1,086.3	258.9	233.8	25.08	10.323	
7,500.0	7,158.9	7,350.0	7,035.1	20.9	15.5	-60.64	-331.3	1,087.4	258.7	232.5	26.23	9.863	
7,541.4	7,165.9	7,383.0	7,039.8	21.1	15.8	-60.52	-363.9	1,087.7	258.7	231.8	26.88	9.622	CC
7,600.0	7,171.7	7,433.5	7,044.1	21.6	16.3	-60.39	-414.2	1,087.9	258.7	230.7	27.95	9.254	
7,700.0	7,173.0	7,527.7	7,045.0	22.3	17.2	-60.35	-508.5	1,088.0	258.7	228.8	29.96	8.635	
7,800.0	7,173.0	7,627.7	7,045.0	23.2	18.4	-60.35	-608.5	1,088.0	258.7	226.7	32.00	8.084	
7,900.0	7,173.0	7,727.7	7,045.0	24.2	19.6	-60.35	-708.5	1,088.0	258.7	224.5	34.19	7.566	
8,000.0	7,173.0	7,827.7	7,045.0	25.2	20.9	-60.35	-808.5	1,088.0	258.7	222.2	36.51	7.087	
8,100.0	7,173.0	7,927.7	7,045.0	26.4	22.3	-60.35	-908.5	1,088.0	258.7	219.8	38.93	6.647	
8,200.0	7,173.0	8,027.7	7,045.0	27.6	23.7	-60.35	-1,008.5	1,088.0	258.7	217.3	41.43	6.245	
8,300.0	7,173.0	8,127.7	7,045.0	28.8	25.1	-60.35	-1,108.5	1,088.0	258.7	214.7	44.00	5.880	
8,400.0	7,173.0	8,227.7	7,045.0	30.1	26.6	-60.35	-1,208.5	1,088.0	258.7	212.1	46.63	5.549	
8,500.0	7,173.0	8,327.7	7,045.0	31.5	28.1	-60.35	-1,308.5	1,088.0	258.7	209.4	49.31	5.247	
8,600.0	7,173.0	8,427.7	7,045.0	32.9	29.7	-60.35	-1,408.5	1,088.0	258.7	206.7	52.03	4.973	
8,700.0	7,173.0	8,527.7	7,045.0	34.3	31.3	-60.35	-1,508.5	1,088.0	258.7	204.0	54.79	4.723	
8,800.0	7,173.0	8,627.7	7,045.0	35.7	32.8	-60.35	-1,608.5	1,088.0	258.7	201.2	57.57	4.494	
8,900.0	7,173.0	8,727.7	7,045.0	37.2	34.5	-60.35	-1,708.5	1,088.0	258.7	198.4	60.39	4.285	
9,000.0	7,173.0	8,827.7	7,045.0	38.7	36.1	-60.35	-1,808.5	1,088.0	258.7	195.5	63.22	4.093	
9,100.0	7,173.0	8,927.7	7,045.0	40.2	37.7	-60.35	-1,908.5	1,088.0	258.7	192.7	66.07	3.916	
9,200.0	7,173.0	9,027.7	7,045.0	41.8	39.3	-60.35	-2,008.5	1,088.0	258.8	189.8	68.95	3.753	
9,300.0	7,173.0	9,127.7	7,045.0	43.3	41.0	-60.35	-2,108.5	1,088.0	258.8	186.9	71.83	3.602	
9,400.0	7,173.0	9,227.7	7,045.0	44.9	42.7	-60.35	-2,208.5	1,088.0	258.8	184.0	74.73	3.462	
9,500.0	7,173.0	9,327.7	7,045.0	46.5	44.3	-60.35	-2,308.5	1,088.0	258.8	181.1	77.65	3.333	
9,600.0	7,173.0	9,427.7	7,045.0	48.1	46.0	-60.35	-2,408.5	1,088.0	258.8	178.2	80.57	3.212	
9,700.0	7,173.0	9,527.7	7,045.0	49.7	47.7	-60.35	-2,508.5	1,088.0	258.8	175.3	83.50	3.099	
9,800.0	7,173.0	9,627.7	7,045.0	51.3	49.4	-60.35	-2,608.5	1,088.0	258.8	172.3	86.44	2.994	
9,900.0	7,173.0	9,727.7	7,045.0	52.9	51.0	-60.35	-2,708.5	1,088.0	258.8	169.4	89.39	2.895	
10,000.0	7,173.0	9,827.7	7,045.0	54.6	52.7	-60.35	-2,808.5	1,088.0	258.8	166.4	92.35	2.802	
10,100.0	7,173.0	9,927.7	7,045.0	56.2	54.4	-60.35	-2,908.5	1,088.0	258.8	163.5	95.31	2.715	
10,200.0	7,173.0	10,027.7	7,045.0	57.8	56.1	-60.35	-3,008.5	1,088.1	258.8	160.5	98.27	2.633	

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 Ruhl 1F-32H-B264
Project:	DJ Wattenberg	**TVD Reference:**	KB @ 4955.0ft (no KB)
Reference Site:	S32-T2N-R64W (Newman)	**MD Reference:**	KB @ 4955.0ft (no KB)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Ruhl 1F-32H-B264	**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 S32-T2N-R64W (Newman) - Ruhl 1G-32H-B264 - 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	7,173.0	10,127.7	7,045.0	59.5	57.8	-60.35	-3,108.5	1,088.1	258.8	157.5	101.25	2.556	
10,400.0	7,173.0	10,227.7	7,045.0	61.2	59.5	-60.36	-3,208.5	1,088.1	258.8	154.6	104.22	2.483	
10,500.0	7,173.0	10,327.7	7,045.0	62.8	61.3	-60.36	-3,308.5	1,088.1	258.8	151.6	107.21	2.414	
10,600.0	7,173.0	10,427.7	7,045.0	64.5	63.0	-60.36	-3,408.5	1,088.1	258.8	148.6	110.19	2.349	
10,700.0	7,173.0	10,527.7	7,045.0	66.2	64.7	-60.36	-3,508.5	1,088.1	258.8	145.6	113.18	2.286	
10,800.0	7,173.0	10,627.7	7,045.0	67.8	66.4	-60.36	-3,608.5	1,088.1	258.8	142.6	116.18	2.228	
10,900.0	7,173.0	10,727.7	7,045.0	69.5	68.1	-60.36	-3,708.5	1,088.1	258.8	139.6	119.17	2.172	
11,000.0	7,173.0	10,827.7	7,045.0	71.2	69.8	-60.36	-3,808.5	1,088.1	258.8	136.6	122.17	2.118	
11,100.0	7,173.0	10,927.7	7,045.0	72.9	71.6	-60.36	-3,908.5	1,088.1	258.8	133.6	125.17	2.068	
11,200.0	7,173.0	11,027.7	7,045.0	74.6	73.3	-60.36	-4,008.5	1,088.1	258.8	130.6	128.18	2.019	
11,300.0	7,173.0	11,127.7	7,045.0	76.3	75.0	-60.36	-4,108.5	1,088.1	258.8	127.6	131.18	1.973	
11,400.0	7,173.0	11,227.7	7,045.0	78.0	76.7	-60.36	-4,208.5	1,088.1	258.8	124.6	134.19	1.929	
11,500.0	7,173.0	11,327.7	7,045.0	79.7	78.5	-60.36	-4,308.5	1,088.1	258.8	121.6	137.20	1.886	
11,600.0	7,173.0	11,427.7	7,045.0	81.4	80.2	-60.36	-4,408.5	1,088.1	258.8	118.6	140.22	1.846	
11,700.0	7,173.0	11,527.7	7,045.0	83.1	81.9	-60.36	-4,508.5	1,088.1	258.8	115.6	143.23	1.807	
11,747.9	7,173.0	11,575.6	7,045.0	83.9	82.7	-60.36	-4,556.4	1,088.1	258.8	114.1	144.68	1.789	ES, SF

Company:	EnCana Oil & Gas (USA) Inc	**Local Co-ordinate Reference:**	Well Ruhl 1F-32H-B264
Project:	DJ Wattenberg	**TVD Reference:**	KB @ 4955.0ft (no KB)
Reference Site:	S32-T2N-R64W (Newman)	**MD Reference:**	KB @ 4955.0ft (no KB)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Ruhl 1F-32H-B264	**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 S32-T2N-R64W (Newman) - Ruhl 1H-32H-B264 - 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	89.72	3.6	752.2	752.2				
100.0	100.0	100.0	100.0	0.2	0.2	89.72	3.6	752.2	752.2	751.9	0.35	2,154.959	
200.0	200.0	200.0	200.0	0.3	0.3	89.72	3.6	752.2	752.2	751.5	0.70	1,077.480	
300.0	300.0	300.0	300.0	0.5	0.5	18.78	3.6	752.2	751.4	750.3	1.05	717.532	
400.0	400.0	400.0	400.0	0.7	0.7	18.85	3.6	752.2	748.9	747.5	1.40	536.317	
500.0	499.9	489.6	489.6	0.9	0.9	18.93	4.0	752.8	745.5	743.8	1.73	431.362	
600.0	599.7	579.2	579.2	1.1	1.0	19.00	4.9	754.7	741.8	739.7	2.06	359.815	
700.0	699.4	668.9	668.8	1.3	1.2	19.07	6.6	757.8	737.8	735.4	2.40	307.756	
800.0	798.9	758.7	758.4	1.5	1.3	19.12	8.9	762.1	733.6	730.8	2.74	268.054	
900.0	898.3	848.4	848.0	1.8	1.5	19.16	11.9	767.7	729.1	726.0	3.08	236.683	
1,000.0	997.4	938.3	937.5	2.1	1.7	19.19	15.5	774.5	724.3	720.9	3.43	211.211	
1,100.0	1,096.5	1,033.7	1,032.5	2.3	1.9	19.18	20.0	782.9	720.0	716.2	3.79	189.741	
1,200.0	1,195.5	1,133.6	1,131.9	2.6	2.2	19.16	24.7	791.8	715.9	711.7	4.17	171.654	
1,300.0	1,294.6	1,233.5	1,231.3	2.9	2.4	19.15	29.4	800.7	711.8	707.2	4.55	156.505	
1,400.0	1,393.6	1,333.5	1,330.7	3.2	2.6	19.13	34.1	809.6	707.7	702.7	4.93	143.644	
1,500.0	1,492.7	1,433.4	1,430.1	3.5	2.9	19.11	38.9	818.4	703.5	698.2	5.31	132.598	
1,600.0	1,591.7	1,533.3	1,529.5	3.8	3.1	19.09	43.6	827.3	699.4	693.7	5.69	123.011	
1,700.0	1,690.8	1,633.2	1,628.9	4.1	3.3	19.07	48.3	836.2	695.3	689.2	6.07	114.615	
1,800.0	1,789.8	1,733.1	1,728.3	4.4	3.6	19.05	53.1	845.1	691.2	684.7	6.45	107.204	
1,900.0	1,888.9	1,833.0	1,827.7	4.7	3.8	19.03	57.8	854.0	687.0	680.2	6.83	100.615	
2,000.0	1,987.9	1,933.0	1,927.1	5.0	4.1	19.01	62.5	862.9	682.9	675.7	7.21	94.720	
2,100.0	2,087.0	2,032.9	2,026.5	5.2	4.3	18.99	67.3	871.8	678.8	671.2	7.59	89.415	
2,200.0	2,186.0	2,132.8	2,125.9	5.5	4.6	18.97	72.0	880.7	674.6	666.7	7.97	84.617	
2,300.0	2,285.1	2,232.7	2,225.3	5.8	4.8	18.94	76.7	889.5	670.5	662.2	8.35	80.256	
2,400.0	2,384.1	2,332.6	2,324.7	6.1	5.0	18.92	81.5	898.4	666.4	657.7	8.74	76.276	
2,500.0	2,483.2	2,432.5	2,424.1	6.4	5.3	18.90	86.2	907.3	662.3	653.2	9.12	72.628	
2,600.0	2,582.2	2,532.4	2,523.5	6.7	5.5	18.88	90.9	916.2	658.1	648.6	9.50	69.274	
2,700.0	2,681.3	2,632.4	2,623.0	7.0	5.8	18.86	95.6	925.1	654.0	644.1	9.88	66.180	
2,800.0	2,780.3	2,732.3	2,722.4	7.3	6.0	18.83	100.4	934.0	649.9	639.6	10.26	63.315	
2,900.0	2,879.4	2,832.2	2,821.8	7.6	6.3	18.81	105.1	942.9	645.8	635.1	10.65	60.657	
3,000.0	2,978.4	2,932.1	2,921.2	7.9	6.5	18.79	109.8	951.8	641.6	630.6	11.03	58.182	
3,100.0	3,077.5	3,032.0	3,020.6	8.2	6.8	18.76	114.6	960.7	637.5	626.1	11.41	55.874	
3,200.0	3,176.5	3,131.9	3,120.0	8.5	7.0	18.74	119.3	969.5	633.4	621.6	11.79	53.716	
3,300.0	3,275.6	3,231.8	3,219.4	8.8	7.3	18.72	124.0	978.4	629.3	617.1	12.17	51.693	
3,400.0	3,374.6	3,331.8	3,318.8	9.1	7.5	18.69	128.8	987.3	625.2	612.6	12.55	49.793	
3,500.0	3,473.7	3,431.7	3,418.2	9.4	7.8	18.67	133.5	996.2	621.0	608.1	12.94	48.006	
3,600.0	3,572.7	3,531.6	3,517.6	9.7	8.0	18.64	138.2	1,005.1	616.9	603.6	13.32	46.322	
3,700.0	3,671.8	3,631.5	3,617.0	10.0	8.2	18.62	143.0	1,014.0	612.8	599.1	13.70	44.732	
3,800.0	3,770.8	3,731.4	3,716.4	10.3	8.5	18.59	147.7	1,022.9	608.7	594.6	14.08	43.228	
3,900.0	3,869.9	3,831.3	3,815.8	10.6	8.7	18.57	152.4	1,031.8	604.5	590.1	14.46	41.804	
4,000.0	3,968.9	3,931.2	3,915.2	10.9	9.0	18.54	157.1	1,040.7	600.4	585.6	14.84	40.454	
4,100.0	4,068.0	4,031.2	4,014.6	11.2	9.2	18.51	161.9	1,049.5	596.3	581.1	15.22	39.171	
4,200.0	4,167.0	4,131.1	4,114.0	11.5	9.5	18.48	166.6	1,058.4	592.2	576.6	15.60	37.952	
4,300.0	4,266.1	4,231.0	4,213.4	11.8	9.7	18.46	171.3	1,067.3	588.0	572.1	15.98	36.791	
4,400.0	4,365.1	4,330.9	4,312.9	12.1	10.0	18.43	176.1	1,076.2	583.9	567.5	16.36	35.684	
4,500.0	4,464.2	4,430.8	4,412.3	12.4	10.2	18.40	180.8	1,085.1	579.8	563.0	16.74	34.627	
4,600.0	4,563.2	4,530.7	4,511.7	12.7	10.5	18.37	185.5	1,094.0	575.7	558.5	17.12	33.618	
4,700.0	4,662.3	4,630.6	4,611.1	13.0	10.7	18.34	190.3	1,102.9	571.5	554.0	17.50	32.654	
4,800.0	4,761.3	4,730.6	4,710.5	13.3	11.0	18.31	195.0	1,111.8	567.4	549.5	17.88	31.730	
4,900.0	4,860.4	4,830.5	4,809.9	13.6	11.2	18.28	199.7	1,120.6	563.3	545.0	18.26	30.845	
5,000.0	4,959.4	4,930.4	4,909.3	13.9	11.5	18.25	204.5	1,129.5	559.2	540.5	18.64	29.997	
5,100.0	5,058.5	5,030.3	5,008.7	14.2	11.7	18.22	209.2	1,138.4	555.1	536.0	19.02	29.182	

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 Ruhl 1F-32H-B264
Project:	DJ Wattenberg	**TVD Reference:**	KB @ 4955.0ft (no KB)
Reference Site:	S32-T2N-R64W (Newman)	**MD Reference:**	KB @ 4955.0ft (no KB)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Ruhl 1F-32H-B264	**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 S32-T2N-R64W (Newman) - Ruhl 1H-32H-B264 - 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	5,157.5	5,130.2	5,108.1	14.5	12.0	18.19	213.9	1,147.3	550.9	531.5	19.40	28.400	
5,300.0	5,256.6	5,230.1	5,207.5	14.8	12.2	18.16	218.6	1,156.2	546.8	527.0	19.78	27.648	
5,400.0	5,355.6	5,330.0	5,306.9	15.1	12.5	18.13	223.4	1,165.1	542.7	522.5	20.16	26.925	
5,500.0	5,454.7	5,430.0	5,406.3	15.4	12.7	18.09	228.1	1,174.0	538.6	518.0	20.53	26.228	
5,600.0	5,553.7	5,529.9	5,505.7	15.7	12.9	18.06	232.8	1,182.9	534.4	513.5	20.91	25.557	
5,700.0	5,652.8	5,629.8	5,605.1	16.0	13.2	18.03	237.6	1,191.8	530.3	509.0	21.29	24.910	
5,800.0	5,751.8	5,729.7	5,704.5	16.3	13.4	17.99	242.3	1,200.6	526.2	504.5	21.67	24.286	
5,900.0	5,850.9	5,829.6	5,803.9	16.5	13.7	17.96	247.0	1,209.5	522.1	500.0	22.04	23.683	
6,000.0	5,949.9	5,929.5	5,903.3	16.8	13.9	17.92	251.8	1,218.4	518.0	495.5	22.42	23.101	
6,100.0	6,049.0	6,029.4	6,002.8	17.1	14.2	17.89	256.5	1,227.3	513.8	491.0	22.80	22.539	
6,200.0	6,148.0	6,129.4	6,102.2	17.4	14.4	17.85	261.2	1,236.2	509.7	486.6	23.17	21.995	
6,300.0	6,247.1	6,229.3	6,201.6	17.7	14.7	17.81	266.0	1,245.1	505.6	482.1	23.55	21.469	
6,400.0	6,346.1	6,330.0	6,301.8	18.0	14.9	18.41	265.1	1,254.1	501.4	477.4	23.96	20.924	
6,500.0	6,445.2	6,427.6	6,397.9	18.3	15.0	12.39	251.0	1,262.6	497.4	472.9	24.51	20.299	
6,600.0	6,544.1	6,521.5	6,487.7	18.6	15.1	-37.16	225.2	1,270.7	494.5	469.6	24.93	19.838	
6,700.0	6,641.5	6,612.7	6,571.1	18.8	15.1	-56.29	188.9	1,278.1	492.7	467.5	25.15	19.588	
6,800.0	6,735.4	6,700.0	6,645.9	18.9	15.2	-62.88	144.6	1,284.8	491.8	466.6	25.17	19.536	
6,875.2	6,802.6	6,767.4	6,699.7	19.0	15.2	-64.88	104.3	1,289.6	491.6	466.5	25.08	19.605 CC	
6,900.0	6,824.0	6,788.9	6,716.0	19.0	15.2	-65.27	90.4	1,291.1	491.6	466.6	25.03	19.640	
7,000.0	6,905.6	6,874.4	6,776.7	19.2	15.4	-66.06	30.5	1,296.5	492.1	467.3	24.78	19.860	
7,100.0	6,978.6	6,958.5	6,829.0	19.3	15.6	-66.11	-35.2	1,301.2	493.0	468.5	24.58	20.059	
7,200.0	7,041.5	7,041.6	6,872.7	19.6	15.8	-65.85	-105.6	1,305.1	494.2	469.6	24.52	20.152	
7,300.0	7,093.2	7,123.7	6,907.7	19.9	16.2	-65.48	-179.8	1,308.2	495.3	470.5	24.79	19.983	
7,400.0	7,132.6	7,205.2	6,933.9	20.3	16.7	-65.12	-256.9	1,310.6	496.3	470.8	25.51	19.459	
7,500.0	7,158.9	7,286.2	6,951.1	20.9	17.3	-64.84	-336.1	1,312.1	497.1	470.4	26.78	18.564	
7,600.0	7,171.7	7,367.0	6,959.3	21.6	18.0	-64.69	-416.3	1,312.9	497.6	469.0	28.59	17.403	
7,700.0	7,173.0	7,459.1	6,960.0	22.3	18.8	-64.66	-508.5	1,312.9	497.7	467.0	30.66	16.230	
7,800.0	7,173.0	7,559.1	6,960.0	23.2	19.9	-64.66	-608.5	1,312.9	497.7	464.9	32.79	15.177	
7,900.0	7,173.0	7,659.1	6,960.0	24.2	21.0	-64.66	-708.5	1,312.9	497.7	462.6	35.08	14.188	
8,000.0	7,173.0	7,759.1	6,960.0	25.2	22.2	-64.66	-808.5	1,312.9	497.7	460.2	37.49	13.274	
8,100.0	7,173.0	7,859.1	6,960.0	26.4	23.5	-64.66	-908.5	1,312.9	497.7	457.7	40.01	12.438	
8,200.0	7,173.0	7,959.1	6,960.0	27.6	24.8	-64.66	-1,008.5	1,312.9	497.7	455.1	42.62	11.676	
8,300.0	7,173.0	8,059.1	6,960.0	28.8	26.2	-64.66	-1,108.5	1,312.9	497.7	452.4	45.30	10.985	
8,400.0	7,173.0	8,159.1	6,960.0	30.1	27.7	-64.66	-1,208.5	1,312.9	497.7	449.6	48.05	10.358	
8,500.0	7,173.0	8,259.1	6,960.0	31.5	29.1	-64.66	-1,308.5	1,313.0	497.7	446.8	50.84	9.790	
8,600.0	7,173.0	8,359.1	6,960.0	32.9	30.6	-64.66	-1,408.5	1,313.0	497.7	444.0	53.67	9.273	
8,700.0	7,173.0	8,459.1	6,960.0	34.3	32.1	-64.66	-1,508.5	1,313.0	497.7	441.1	56.54	8.802	
8,800.0	7,173.0	8,559.1	6,960.0	35.7	33.7	-64.66	-1,608.5	1,313.0	497.7	438.2	59.45	8.372	
8,900.0	7,173.0	8,659.1	6,960.0	37.2	35.3	-64.66	-1,708.5	1,313.0	497.7	435.3	62.38	7.979	
9,000.0	7,173.0	8,759.1	6,960.0	38.7	36.8	-64.66	-1,808.5	1,313.0	497.7	432.4	65.33	7.619	
9,100.0	7,173.0	8,859.1	6,960.0	40.2	38.4	-64.66	-1,908.5	1,313.0	497.7	429.4	68.30	7.287	
9,200.0	7,173.0	8,959.1	6,960.0	41.8	40.0	-64.66	-2,008.5	1,313.0	497.7	426.4	71.29	6.982	
9,300.0	7,173.0	9,059.1	6,960.0	43.3	41.7	-64.66	-2,108.5	1,313.0	497.7	423.4	74.29	6.699	
9,400.0	7,173.0	9,159.1	6,960.0	44.9	43.3	-64.66	-2,208.5	1,313.0	497.7	420.4	77.31	6.438	
9,500.0	7,173.0	9,259.1	6,960.0	46.5	44.9	-64.66	-2,308.5	1,313.0	497.7	417.4	80.34	6.195	
9,600.0	7,173.0	9,359.1	6,960.0	48.1	46.6	-64.66	-2,408.5	1,313.0	497.7	414.3	83.38	5.969	
9,700.0	7,173.0	9,459.1	6,960.0	49.7	48.2	-64.66	-2,508.5	1,313.0	497.7	411.3	86.43	5.758	
9,800.0	7,173.0	9,559.1	6,960.0	51.3	49.9	-64.66	-2,608.5	1,313.0	497.7	408.2	89.49	5.562	
9,900.0	7,173.0	9,659.1	6,960.0	52.9	51.6	-64.66	-2,708.5	1,313.0	497.7	405.2	92.56	5.377	
10,000.0	7,173.0	9,759.1	6,960.0	54.6	53.3	-64.66	-2,808.5	1,313.0	497.7	402.1	95.63	5.204	
10,100.0	7,173.0	9,859.1	6,960.0	56.2	54.9	-64.66	-2,908.5	1,313.0	497.7	399.0	98.72	5.042	
10,200.0	7,173.0	9,959.1	6,960.0	57.8	56.6	-64.66	-3,008.5	1,313.0	497.7	395.9	101.80	4.889	

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 Ruhl 1F-32H-B264
Project:	DJ Wattenberg	**TVD Reference:**	KB @ 4955.0ft (no KB)
Reference Site:	S32-T2N-R64W (Newman)	**MD Reference:**	KB @ 4955.0ft (no KB)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Ruhl 1F-32H-B264	**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 S32-T2N-R64W (Newman) - Ruhl 1H-32H-B264 - 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	7,173.0	10,059.1	6,960.0	59.5	58.3	-64.66	-3,108.5	1,313.0	497.7	392.8	104.89	4.745	
10,400.0	7,173.0	10,159.1	6,960.0	61.2	60.0	-64.66	-3,208.5	1,313.0	497.7	389.7	107.99	4.609	
10,500.0	7,173.0	10,259.1	6,960.0	62.8	61.7	-64.66	-3,308.5	1,313.0	497.7	386.6	111.09	4.480	
10,600.0	7,173.0	10,359.1	6,960.0	64.5	63.4	-64.66	-3,408.5	1,313.0	497.7	383.5	114.20	4.359	
10,700.0	7,173.0	10,459.1	6,960.0	66.2	65.1	-64.66	-3,508.5	1,313.0	497.7	380.4	117.31	4.243	
10,800.0	7,173.0	10,559.1	6,960.0	67.8	66.8	-64.66	-3,608.5	1,313.0	497.7	377.3	120.42	4.133	
10,900.0	7,173.0	10,659.1	6,960.0	69.5	68.5	-64.66	-3,708.5	1,313.0	497.8	374.2	123.53	4.029	
11,000.0	7,173.0	10,759.1	6,960.0	71.2	70.2	-64.66	-3,808.5	1,313.0	497.8	371.1	126.65	3.930	
11,100.0	7,173.0	10,859.1	6,960.0	72.9	71.9	-64.66	-3,908.5	1,313.0	497.8	368.0	129.77	3.836	
11,200.0	7,173.0	10,959.1	6,960.0	74.6	73.6	-64.66	-4,008.5	1,313.0	497.8	364.9	132.90	3.745	
11,300.0	7,173.0	11,059.1	6,960.0	76.3	75.4	-64.66	-4,108.5	1,313.0	497.8	361.7	136.02	3.659	
11,400.0	7,173.0	11,159.1	6,960.0	78.0	77.1	-64.66	-4,208.5	1,313.0	497.8	358.6	139.15	3.577	
11,500.0	7,173.0	11,259.1	6,960.0	79.7	78.8	-64.66	-4,308.5	1,313.0	497.8	355.5	142.28	3.498	
11,600.0	7,173.0	11,359.1	6,960.0	81.4	80.5	-64.67	-4,408.5	1,313.0	497.8	352.4	145.42	3.423	
11,700.0	7,173.0	11,459.1	6,960.0	83.1	82.2	-64.67	-4,508.5	1,313.0	497.8	349.2	148.55	3.351	
11,747.9	7,173.0	11,507.0	6,960.0	83.9	83.1	-64.67	-4,556.4	1,313.0	497.8	347.7	150.05	3.317	ES, SF

Company:	EnCana Oil & Gas (USA) Inc	**Local Co-ordinate Reference:**	Well Ruhl 1F-32H-B264
Project:	DJ Wattenberg	**TVD Reference:**	KB @ 4955.0ft (no KB)
Reference Site:	S32-T2N-R64W (Newman)	**MD Reference:**	KB @ 4955.0ft (no KB)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Ruhl 1F-32H-B264	**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 S32-T2N-R64W (Newman) - Ruhl 1I-32H-B264 - 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	89.73	3.6	762.3	762.3				
100.0	100.0	100.0	100.0	0.2	0.2	89.73	3.6	762.3	762.3	761.9	0.35	2,183.809	
200.0	200.0	200.0	200.0	0.3	0.3	89.73	3.6	762.3	762.3	761.6	0.70	1,091.904	
300.0	300.0	300.0	300.0	0.5	0.5	18.78	3.6	762.3	761.5	760.4	1.05	727.149	
400.0	400.0	394.4	394.4	0.7	0.7	18.84	3.7	762.4	759.2	757.8	1.39	547.425	
500.0	499.9	483.4	483.4	0.9	0.8	18.91	4.2	763.7	756.5	754.8	1.72	440.448	
600.0	599.7	572.4	572.3	1.1	1.0	18.98	5.2	766.3	753.6	751.6	2.05	367.652	
700.0	699.4	661.4	661.3	1.3	1.2	19.05	6.6	770.2	750.5	748.2	2.38	314.784	
800.0	798.9	750.5	750.2	1.5	1.3	19.12	8.6	775.4	747.3	744.6	2.72	274.548	
900.0	898.3	839.6	839.0	1.8	1.5	19.20	11.1	781.8	743.8	740.8	3.06	242.823	
1,000.0	997.4	928.7	927.8	2.1	1.7	19.27	14.0	789.6	740.2	736.8	3.41	217.100	
1,100.0	1,096.5	1,018.0	1,016.5	2.3	1.9	19.32	17.5	798.6	737.3	733.5	3.76	196.005	
1,200.0	1,195.5	1,110.2	1,108.0	2.6	2.2	19.33	21.5	809.3	735.8	731.7	4.12	178.499	
1,300.0	1,294.6	1,210.2	1,207.1	2.9	2.4	19.32	26.1	821.2	734.7	730.2	4.50	163.308	
1,400.0	1,393.6	1,310.2	1,306.3	3.2	2.7	19.32	30.6	833.1	733.6	728.8	4.88	150.426	
1,500.0	1,492.7	1,410.2	1,405.5	3.5	3.0	19.31	35.2	845.0	732.6	727.3	5.26	139.371	
1,600.0	1,591.7	1,510.2	1,504.7	3.8	3.2	19.31	39.7	857.0	731.5	725.8	5.64	129.786	
1,700.0	1,690.8	1,610.2	1,603.9	4.1	3.5	19.31	44.2	868.9	730.4	724.4	6.02	121.398	
1,800.0	1,789.8	1,710.2	1,703.0	4.4	3.8	19.30	48.8	880.8	729.3	722.9	6.40	113.999	
1,900.0	1,888.9	1,810.1	1,802.2	4.7	4.1	19.30	53.3	892.7	728.2	721.4	6.78	107.425	
2,000.0	1,987.9	1,910.1	1,901.4	5.0	4.3	19.30	57.9	904.6	727.1	720.0	7.16	101.546	
2,100.0	2,087.0	2,010.1	2,000.6	5.2	4.6	19.29	62.4	916.5	726.0	718.5	7.54	96.259	
2,200.0	2,186.0	2,110.1	2,099.7	5.5	4.9	19.29	66.9	928.5	724.9	717.0	7.92	91.479	
2,300.0	2,285.1	2,210.1	2,198.9	5.8	5.2	19.28	71.5	940.4	723.9	715.5	8.31	87.136	
2,400.0	2,384.1	2,310.1	2,298.1	6.1	5.5	19.28	76.0	952.3	722.8	714.1	8.69	83.174	
2,500.0	2,483.2	2,410.1	2,397.3	6.4	5.7	19.28	80.5	964.2	721.7	712.6	9.07	79.545	
2,600.0	2,582.2	2,510.1	2,496.4	6.7	6.0	19.27	85.1	976.1	720.6	711.1	9.46	76.209	
2,700.0	2,681.3	2,610.1	2,595.6	7.0	6.3	19.27	89.6	988.1	719.5	709.7	9.84	73.132	
2,800.0	2,780.3	2,710.1	2,694.8	7.3	6.6	19.26	94.2	1,000.0	718.4	708.2	10.22	70.284	
2,900.0	2,879.4	2,810.1	2,794.0	7.6	6.9	19.26	98.7	1,011.9	717.3	706.7	10.60	67.642	
3,000.0	2,978.4	2,910.1	2,893.2	7.9	7.1	19.26	103.2	1,023.8	716.2	705.3	10.99	65.184	
3,100.0	3,077.5	3,010.1	2,992.3	8.2	7.4	19.25	107.8	1,035.7	715.2	703.8	11.37	62.891	
3,200.0	3,176.5	3,110.1	3,091.5	8.5	7.7	19.25	112.3	1,047.6	714.1	702.3	11.75	60.747	
3,300.0	3,275.6	3,210.1	3,190.7	8.8	8.0	19.24	116.9	1,059.6	713.0	700.8	12.14	58.739	
3,400.0	3,374.6	3,310.1	3,289.9	9.1	8.3	19.24	121.4	1,071.5	711.9	699.4	12.52	56.853	
3,500.0	3,473.7	3,410.0	3,389.0	9.4	8.6	19.24	125.9	1,083.4	710.8	697.9	12.91	55.079	
3,600.0	3,572.7	3,510.0	3,488.2	9.7	8.8	19.23	130.5	1,095.3	709.7	696.4	13.29	53.408	
3,700.0	3,671.8	3,610.0	3,587.4	10.0	9.1	19.23	135.0	1,107.2	708.6	695.0	13.67	51.830	
3,800.0	3,770.8	3,710.0	3,686.6	10.3	9.4	19.22	139.6	1,119.2	707.5	693.5	14.06	50.338	
3,900.0	3,869.9	3,810.0	3,785.8	10.6	9.7	19.22	144.1	1,131.1	706.4	692.0	14.44	48.926	
4,000.0	3,968.9	3,910.0	3,884.9	10.9	10.0	19.22	148.6	1,143.0	705.4	690.5	14.82	47.586	
4,100.0	4,068.0	4,010.0	3,984.1	11.2	10.2	19.21	153.2	1,154.9	704.3	689.1	15.21	46.314	
4,200.0	4,167.0	4,110.0	4,083.3	11.5	10.5	19.21	157.7	1,166.8	703.2	687.6	15.59	45.105	
4,300.0	4,266.1	4,210.0	4,182.5	11.8	10.8	19.20	162.3	1,178.8	702.1	686.1	15.97	43.954	
4,400.0	4,365.1	4,310.0	4,281.6	12.1	11.1	19.20	166.8	1,190.7	701.0	684.6	16.36	42.856	
4,500.0	4,464.2	4,410.0	4,380.8	12.4	11.4	19.20	171.3	1,202.6	699.9	683.2	16.74	41.809	
4,600.0	4,563.2	4,510.0	4,480.0	12.7	11.7	19.19	175.9	1,214.5	698.8	681.7	17.12	40.809	
4,700.0	4,662.3	4,610.0	4,579.2	13.0	11.9	19.19	180.4	1,226.4	697.7	680.2	17.51	39.853	
4,800.0	4,761.3	4,710.0	4,678.4	13.3	12.2	19.18	185.0	1,238.3	696.7	678.8	17.89	38.938	
4,900.0	4,860.4	4,810.0	4,777.5	13.6	12.5	19.18	189.5	1,250.3	695.6	677.3	18.27	38.061	
5,000.0	4,959.4	4,910.0	4,876.7	13.9	12.8	19.17	194.0	1,262.2	694.5	675.8	18.66	37.220	
5,100.0	5,058.5	5,010.0	4,975.9	14.2	13.1	19.17	198.6	1,274.1	693.4	674.3	19.04	36.414	

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 Ruhl 1F-32H-B264
Project:	DJ Wattenberg	**TVD Reference:**	KB @ 4955.0ft (no KB)
Reference Site:	S32-T2N-R64W (Newman)	**MD Reference:**	KB @ 4955.0ft (no KB)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Ruhl 1F-32H-B264	**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 S32-T2N-R64W (Newman) - Ruhl 1I-32H-B264 - 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	5,157.5	5,109.9	5,075.1	14.5	13.4	19.17	203.1	1,286.0	692.3	672.9	19.43	35.639	
5,300.0	5,256.6	5,209.9	5,174.2	14.8	13.6	19.16	207.7	1,297.9	691.2	671.4	19.81	34.894	
5,400.0	5,355.6	5,309.9	5,273.4	15.1	13.9	19.16	212.2	1,309.9	690.1	669.9	20.19	34.177	
5,500.0	5,454.7	5,409.9	5,372.6	15.4	14.2	19.15	216.7	1,321.8	689.0	668.5	20.58	33.487	
5,600.0	5,553.7	5,509.9	5,471.8	15.7	14.5	19.15	221.3	1,333.7	687.9	667.0	20.96	32.823	
5,700.0	5,652.8	5,609.9	5,570.9	16.0	14.8	19.15	225.8	1,345.6	686.9	665.5	21.34	32.182	
5,800.0	5,751.8	5,709.9	5,670.1	16.3	15.1	19.14	230.3	1,357.5	685.8	664.0	21.73	31.564	
5,900.0	5,850.9	5,809.9	5,769.3	16.5	15.3	19.14	234.9	1,369.4	684.7	662.6	22.11	30.967	
6,000.0	5,949.9	5,909.9	5,868.5	16.8	15.6	19.13	239.4	1,381.4	683.6	661.1	22.49	30.391	
6,100.0	6,049.0	6,009.9	5,967.7	17.1	15.9	19.13	244.0	1,393.3	682.5	659.6	22.88	29.834	
6,200.0	6,148.0	6,109.9	6,066.8	17.4	16.2	19.12	248.5	1,405.2	681.4	658.2	23.26	29.296	
6,300.0	6,247.1	6,209.9	6,166.0	17.7	16.5	19.12	253.0	1,417.1	680.3	656.7	23.64	28.775	
6,400.0	6,346.1	6,309.9	6,265.2	18.0	16.8	19.11	257.6	1,429.0	679.2	655.2	24.03	28.270	
6,500.0	6,445.2	6,409.9	6,364.4	18.3	17.1	10.99	262.1	1,441.0	678.2	653.8	24.40	27.789	
6,600.0	6,544.1	6,509.7	6,463.4	18.6	17.3	-41.64	265.8	1,452.9	677.1	652.5	24.57	27.562	
6,700.0	6,641.5	6,610.6	6,563.3	18.8	17.5	-64.03	258.5	1,464.9	676.2	651.7	24.55	27.541	
6,800.0	6,735.4	6,713.2	6,662.7	18.9	17.7	-73.71	236.7	1,476.8	675.5	651.1	24.47	27.604	
6,900.0	6,824.0	6,817.5	6,759.5	19.0	17.8	-79.09	200.1	1,488.4	675.1	650.7	24.41	27.657	
7,000.0	6,905.6	6,923.4	6,851.5	19.2	17.9	-82.57	148.8	1,499.5	674.8	650.4	24.46	27.594	
7,100.0	6,978.6	7,030.9	6,936.0	19.3	18.1	-85.03	83.4	1,509.7	674.7	650.0	24.70	27.315	
7,141.8	7,006.2	7,076.3	6,968.7	19.4	18.1	-85.85	52.1	1,513.6	674.7	649.8	24.89	27.104	CC
7,200.0	7,041.5	7,139.9	7,010.9	19.6	18.3	-86.84	4.9	1,518.7	674.7	649.5	25.21	26.764	
7,300.0	7,093.2	7,250.1	7,073.7	19.9	18.6	-88.17	-85.3	1,526.2	674.8	648.7	26.05	25.899	
7,400.0	7,132.6	7,361.4	7,122.4	20.3	19.1	-89.11	-185.0	1,532.1	674.9	647.6	27.24	24.776	
7,500.0	7,158.9	7,473.5	7,155.4	20.9	19.7	-89.70	-292.0	1,536.0	675.0	646.2	28.75	23.479	
7,600.0	7,171.7	7,586.0	7,171.5	21.6	20.5	-89.98	-403.2	1,538.0	675.0	644.5	30.54	22.105	
7,700.0	7,173.0	7,691.3	7,173.0	22.3	21.3	-90.00	-508.5	1,538.2	675.0	642.4	32.64	20.681	
7,800.0	7,173.0	7,791.3	7,173.0	23.2	22.2	-90.00	-608.5	1,538.2	675.0	640.0	35.02	19.274	
7,900.0	7,173.0	7,891.3	7,173.0	24.2	23.3	-90.00	-708.5	1,538.2	675.0	637.4	37.58	17.963	
8,000.0	7,173.0	7,991.3	7,173.0	25.2	24.4	-90.00	-808.5	1,538.2	675.0	634.7	40.28	16.758	
8,100.0	7,173.0	8,091.3	7,173.0	26.4	25.5	-90.00	-908.5	1,538.2	675.0	631.9	43.10	15.663	
8,200.0	7,173.0	8,191.3	7,173.0	27.6	26.8	-90.00	-1,008.5	1,538.2	675.0	629.0	46.01	14.671	
8,300.0	7,173.0	8,291.3	7,173.0	28.8	28.1	-90.00	-1,108.5	1,538.2	675.0	626.0	49.00	13.776	
8,400.0	7,173.0	8,391.3	7,173.0	30.1	29.4	-90.00	-1,208.5	1,538.2	675.0	623.0	52.06	12.967	
8,500.0	7,173.0	8,491.3	7,173.0	31.5	30.8	-90.00	-1,308.5	1,538.2	675.0	619.9	55.16	12.237	
8,600.0	7,173.0	8,591.3	7,173.0	32.9	32.2	-90.00	-1,408.5	1,538.2	675.0	616.7	58.32	11.575	
8,700.0	7,173.0	8,691.3	7,173.0	34.3	33.7	-90.00	-1,508.5	1,538.2	675.0	613.5	61.51	10.974	
8,800.0	7,173.0	8,791.3	7,173.0	35.7	35.2	-90.00	-1,608.5	1,538.2	675.0	610.3	64.74	10.427	
8,900.0	7,173.0	8,891.3	7,173.0	37.2	36.7	-90.00	-1,708.5	1,538.2	675.0	607.1	67.99	9.928	
9,000.0	7,173.0	8,991.3	7,173.0	38.7	38.2	-90.00	-1,808.5	1,538.2	675.0	603.8	71.27	9.472	
9,100.0	7,173.0	9,091.3	7,173.0	40.2	39.7	-90.00	-1,908.5	1,538.2	675.0	600.5	74.57	9.053	
9,200.0	7,173.0	9,191.3	7,173.0	41.8	41.3	-90.00	-2,008.5	1,538.2	675.1	597.2	77.88	8.667	
9,300.0	7,173.0	9,291.3	7,173.0	43.3	42.9	-90.00	-2,108.5	1,538.2	675.1	593.8	81.22	8.312	
9,400.0	7,173.0	9,391.3	7,173.0	44.9	44.5	-90.00	-2,208.5	1,538.2	675.1	590.5	84.56	7.983	
9,500.0	7,173.0	9,491.3	7,173.0	46.5	46.1	-90.00	-2,308.5	1,538.2	675.1	587.1	87.92	7.678	
9,600.0	7,173.0	9,591.3	7,173.0	48.1	47.7	-90.00	-2,408.5	1,538.2	675.1	583.8	91.29	7.394	
9,700.0	7,173.0	9,691.3	7,173.0	49.7	49.3	-90.00	-2,508.5	1,538.2	675.1	580.4	94.68	7.130	
9,800.0	7,173.0	9,791.3	7,173.0	51.3	50.9	-90.00	-2,608.5	1,538.2	675.1	577.0	98.07	6.884	
9,900.0	7,173.0	9,891.3	7,173.0	52.9	52.6	-90.00	-2,708.5	1,538.2	675.1	573.6	101.46	6.653	
10,000.0	7,173.0	9,991.3	7,173.0	54.6	54.2	-90.00	-2,808.5	1,538.2	675.1	570.2	104.87	6.437	
10,100.0	7,173.0	10,091.3	7,173.0	56.2	55.9	-90.00	-2,908.5	1,538.2	675.1	566.8	108.28	6.235	
10,200.0	7,173.0	10,191.3	7,173.0	57.8	57.5	-90.00	-3,008.5	1,538.2	675.1	563.4	111.70	6.044	

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 Ruhl 1F-32H-B264
Project:	DJ Wattenberg	**TVD Reference:**	KB @ 4955.0ft (no KB)
Reference Site:	S32-T2N-R64W (Newman)	**MD Reference:**	KB @ 4955.0ft (no KB)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Ruhl 1F-32H-B264	**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 S32-T2N-R64W (Newman) - Ruhl 1I-32H-B264 - 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	7,173.0	10,291.3	7,173.0	59.5	59.2	-90.00	-3,108.5	1,538.2	675.1	560.0	115.12	5.864	
10,400.0	7,173.0	10,391.3	7,173.0	61.2	60.9	-90.00	-3,208.5	1,538.2	675.1	556.5	118.55	5.695	
10,500.0	7,173.0	10,491.3	7,173.0	62.8	62.5	-90.00	-3,308.5	1,538.2	675.1	553.1	121.98	5.534	
10,600.0	7,173.0	10,591.3	7,173.0	64.5	64.2	-90.00	-3,408.5	1,538.2	675.1	549.7	125.42	5.383	
10,700.0	7,173.0	10,691.3	7,173.0	66.2	65.9	-90.00	-3,508.5	1,538.2	675.1	546.2	128.86	5.239	
10,800.0	7,173.0	10,791.3	7,173.0	67.8	67.6	-90.00	-3,608.5	1,538.2	675.1	542.8	132.30	5.103	
10,900.0	7,173.0	10,891.3	7,173.0	69.5	69.3	-90.00	-3,708.5	1,538.3	675.1	539.4	135.75	4.973	
11,000.0	7,173.0	10,991.3	7,173.0	71.2	71.0	-90.00	-3,808.5	1,538.3	675.1	535.9	139.20	4.850	
11,100.0	7,173.0	11,091.3	7,173.0	72.9	72.6	-90.00	-3,908.5	1,538.3	675.1	532.5	142.65	4.733	
11,200.0	7,173.0	11,191.3	7,173.0	74.6	74.3	-90.00	-4,008.5	1,538.3	675.1	529.0	146.11	4.621	
11,300.0	7,173.0	11,291.3	7,173.0	76.3	76.0	-90.00	-4,108.5	1,538.3	675.1	525.5	149.57	4.514	
11,400.0	7,173.0	11,391.3	7,173.0	78.0	77.7	-90.00	-4,208.5	1,538.3	675.1	522.1	153.03	4.412	
11,500.0	7,173.0	11,491.3	7,173.0	79.7	79.5	-90.00	-4,308.5	1,538.3	675.1	518.6	156.49	4.314	
11,600.0	7,173.0	11,591.3	7,173.0	81.4	81.2	-90.00	-4,408.5	1,538.3	675.1	515.2	159.96	4.221	
11,700.0	7,173.0	11,691.3	7,173.0	83.1	82.9	-90.00	-4,508.5	1,538.3	675.1	511.7	163.42	4.131	
11,747.9	7,173.0	11,739.2	7,173.0	83.9	83.7	-90.00	-4,556.4	1,538.3	675.1	510.0	165.08	4.090	ES, SF

Company:	EnCana Oil & Gas (USA) Inc	**Local Co-ordinate Reference:**	Well Ruhl 1F-32H-B264
Project:	DJ Wattenberg	**TVD Reference:**	KB @ 4955.0ft (no KB)
Reference Site:	S32-T2N-R64W (Newman)	**MD Reference:**	KB @ 4955.0ft (no KB)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Ruhl 1F-32H-B264	**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 S32-T2N-R64W (Newman) - Ruhl 1J-32H-B264 - 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	89.73	3.6	772.4	772.4				
100.0	100.0	100.0	100.0	0.2	0.2	89.73	3.6	772.4	772.4	772.0	0.35	2,212.659	
200.0	200.0	200.0	200.0	0.3	0.3	89.73	3.6	772.4	772.4	771.7	0.70	1,106.329	
300.0	300.0	300.0	300.0	0.5	0.5	18.78	3.6	772.4	771.5	770.5	1.05	736.765	
400.0	400.0	388.6	388.6	0.7	0.7	18.83	3.8	773.0	769.8	768.4	1.38	559.212	
500.0	499.9	477.1	477.1	0.9	0.8	18.88	4.4	775.0	767.9	766.2	1.71	449.894	
600.0	599.7	565.8	565.7	1.1	1.0	18.95	5.4	778.3	765.8	763.8	2.04	375.664	
700.0	699.4	654.4	654.2	1.3	1.2	19.02	6.8	782.8	763.6	761.2	2.37	321.852	
800.0	798.9	743.1	742.6	1.5	1.3	19.10	8.6	788.8	761.2	758.5	2.71	280.964	
900.0	898.3	831.8	831.0	1.8	1.5	19.20	10.8	796.0	758.6	755.5	3.05	248.773	
1,000.0	997.4	920.5	919.3	2.1	1.7	19.30	13.3	804.5	755.9	752.5	3.39	222.708	
1,100.0	1,096.5	1,009.3	1,007.5	2.3	2.0	19.38	16.3	814.3	753.9	750.2	3.74	201.358	
1,184.8	1,180.4	1,084.6	1,082.1	2.6	2.2	19.42	19.1	823.7	753.5	749.4	4.04	186.338	CC
1,200.0	1,195.5	1,100.0	1,097.4	2.6	2.2	19.42	19.7	825.7	753.5	749.4	4.10	183.743	
1,300.0	1,294.6	1,187.0	1,183.4	2.9	2.5	19.44	23.4	838.0	754.5	750.1	4.45	169.433	
1,400.0	1,393.6	1,282.0	1,277.2	3.2	2.8	19.43	27.8	852.5	756.8	752.0	4.82	156.941	
1,500.0	1,492.7	1,382.0	1,375.9	3.5	3.1	19.42	32.4	867.9	759.3	754.1	5.20	145.959	
1,600.0	1,591.7	1,481.9	1,474.6	3.8	3.4	19.40	37.0	883.3	761.7	756.1	5.58	136.449	
1,700.0	1,690.8	1,581.9	1,573.2	4.1	3.7	19.39	41.7	898.7	764.1	758.2	5.96	128.139	
1,800.0	1,789.8	1,681.9	1,671.9	4.4	4.0	19.38	46.3	914.1	766.6	760.2	6.34	120.816	
1,900.0	1,888.9	1,781.9	1,770.6	4.7	4.3	19.36	50.9	929.5	769.0	762.3	6.73	114.316	
2,000.0	1,987.9	1,881.8	1,869.2	5.0	4.7	19.35	55.6	944.9	771.4	764.3	7.11	108.510	
2,100.0	2,087.0	1,981.8	1,967.9	5.2	5.0	19.34	60.2	960.3	773.9	766.4	7.49	103.293	
2,200.0	2,186.0	2,081.8	2,066.6	5.5	5.3	19.32	64.9	975.7	776.3	768.4	7.87	98.580	
2,300.0	2,285.1	2,181.7	2,165.3	5.8	5.6	19.31	69.5	991.1	778.7	770.5	8.26	94.302	
2,400.0	2,384.1	2,281.7	2,263.9	6.1	6.0	19.30	74.1	1,006.5	781.2	772.5	8.64	90.402	
2,500.0	2,483.2	2,381.7	2,362.6	6.4	6.3	19.29	78.8	1,021.9	783.6	774.6	9.02	86.832	
2,600.0	2,582.2	2,481.6	2,461.3	6.7	6.6	19.27	83.4	1,037.3	786.0	776.6	9.41	83.552	
2,700.0	2,681.3	2,581.6	2,559.9	7.0	7.0	19.26	88.0	1,052.7	788.5	778.7	9.79	80.529	
2,800.0	2,780.3	2,681.6	2,658.6	7.3	7.3	19.25	92.7	1,068.2	790.9	780.7	10.17	77.733	
2,900.0	2,879.4	2,781.6	2,757.3	7.6	7.6	19.24	97.3	1,083.6	793.4	782.8	10.56	75.140	
3,000.0	2,978.4	2,881.5	2,855.9	7.9	7.9	19.22	101.9	1,099.0	795.8	784.8	10.94	72.728	
3,100.0	3,077.5	2,981.5	2,954.6	8.2	8.3	19.21	106.6	1,114.4	798.2	786.9	11.33	70.480	
3,200.0	3,176.5	3,081.5	3,053.3	8.5	8.6	19.20	111.2	1,129.8	800.7	789.0	11.71	68.379	
3,300.0	3,275.6	3,181.4	3,151.9	8.8	8.9	19.19	115.9	1,145.2	803.1	791.0	12.09	66.411	
3,400.0	3,374.6	3,281.4	3,250.6	9.1	9.3	19.17	120.5	1,160.6	805.5	793.1	12.48	64.564	
3,500.0	3,473.7	3,381.4	3,349.3	9.4	9.6	19.16	125.1	1,176.0	808.0	795.1	12.86	62.828	
3,600.0	3,572.7	3,481.3	3,447.9	9.7	9.9	19.15	129.8	1,191.4	810.4	797.2	13.24	61.192	
3,700.0	3,671.8	3,581.3	3,546.6	10.0	10.3	19.14	134.4	1,206.8	812.8	799.2	13.63	59.649	
3,800.0	3,770.8	3,681.3	3,645.3	10.3	10.6	19.13	139.0	1,222.2	815.3	801.3	14.01	58.190	
3,900.0	3,869.9	3,781.3	3,743.9	10.6	10.9	19.11	143.7	1,237.6	817.7	803.3	14.39	56.809	
4,000.0	3,968.9	3,881.2	3,842.6	10.9	11.3	19.10	148.3	1,253.0	820.1	805.4	14.78	55.500	
4,100.0	4,068.0	3,981.2	3,941.3	11.2	11.6	19.09	152.9	1,268.4	822.6	807.4	15.16	54.257	
4,200.0	4,167.0	4,081.2	4,039.9	11.5	11.9	19.08	157.6	1,283.8	825.0	809.5	15.54	53.075	
4,300.0	4,266.1	4,181.1	4,138.6	11.8	12.3	19.07	162.2	1,299.2	827.5	811.5	15.93	51.951	
4,400.0	4,365.1	4,281.1	4,237.3	12.1	12.6	19.06	166.9	1,314.6	829.9	813.6	16.31	50.879	
4,500.0	4,464.2	4,381.1	4,335.9	12.4	12.9	19.05	171.5	1,330.0	832.3	815.6	16.69	49.857	
4,600.0	4,563.2	4,481.0	4,434.6	12.7	13.3	19.03	176.1	1,345.4	834.8	817.7	17.08	48.881	
4,700.0	4,662.3	4,581.0	4,533.3	13.0	13.6	19.02	180.8	1,360.8	837.2	819.7	17.46	47.948	
4,800.0	4,761.3	4,681.0	4,631.9	13.3	13.9	19.01	185.4	1,376.3	839.6	821.8	17.84	47.055	
4,900.0	4,860.4	4,781.0	4,730.6	13.6	14.2	19.00	190.0	1,391.7	842.1	823.8	18.23	46.200	
5,000.0	4,959.4	4,880.9	4,829.3	13.9	14.6	18.99	194.7	1,407.1	844.5	825.9	18.61	45.380	

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 Ruhl 1F-32H-B264
Project:	DJ Wattenberg	**TVD Reference:**	KB @ 4955.0ft (no KB)
Reference Site:	S32-T2N-R64W (Newman)	**MD Reference:**	KB @ 4955.0ft (no KB)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Ruhl 1F-32H-B264	**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 S32-T2N-R64W (Newman) - Ruhl 1J-32H-B264 - 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	5,058.5	4,980.9	4,927.9	14.2	14.9	18.98	199.3	1,422.5	846.9	827.9	18.99	44.593	
5,200.0	5,157.5	5,080.9	5,026.6	14.5	15.2	18.97	203.9	1,437.9	849.4	830.0	19.38	43.838	
5,300.0	5,256.6	5,180.8	5,125.3	14.8	15.6	18.96	208.6	1,453.3	851.8	832.1	19.76	43.112	
5,400.0	5,355.6	5,280.8	5,223.9	15.1	15.9	18.95	213.2	1,468.7	854.2	834.1	20.14	42.413	
5,500.0	5,454.7	5,380.8	5,322.6	15.4	16.2	18.94	217.9	1,484.1	856.7	836.2	20.52	41.741	
5,600.0	5,553.7	5,480.7	5,421.3	15.7	16.6	18.93	222.5	1,499.5	859.1	838.2	20.91	41.094	
5,700.0	5,652.8	5,580.7	5,519.9	16.0	16.9	18.91	227.1	1,514.9	861.6	840.3	21.29	40.469	
5,800.0	5,751.8	5,680.7	5,618.6	16.3	17.2	18.90	231.8	1,530.3	864.0	842.3	21.67	39.867	
5,900.0	5,850.9	5,780.7	5,717.3	16.5	17.6	18.89	236.4	1,545.7	866.4	844.4	22.05	39.286	
6,000.0	5,949.9	5,880.6	5,815.9	16.8	17.9	18.88	241.0	1,561.1	868.9	846.4	22.44	38.725	
6,100.0	6,049.0	5,980.6	5,914.6	17.1	18.2	18.87	245.7	1,576.5	871.3	848.5	22.82	38.183	
6,200.0	6,148.0	6,080.6	6,013.3	17.4	18.6	18.86	250.3	1,591.9	873.7	850.5	23.20	37.659	
6,300.0	6,247.1	6,180.5	6,111.9	17.7	18.9	18.85	254.9	1,607.3	876.2	852.6	23.58	37.152	
6,400.0	6,346.1	6,280.5	6,210.6	18.0	19.2	18.84	259.6	1,622.7	878.6	854.6	23.97	36.661	
6,500.0	6,445.2	6,380.5	6,309.3	18.3	19.6	10.76	264.2	1,638.1	881.0	856.7	24.35	36.184	
6,600.0	6,544.1	6,480.5	6,408.0	18.6	19.9	-40.99	261.2	1,653.5	883.5	858.9	24.60	35.917	
6,700.0	6,641.5	6,580.7	6,505.5	18.8	20.1	-62.26	244.3	1,668.8	885.9	861.2	24.68	35.890	
6,800.0	6,735.4	6,681.1	6,599.9	18.9	20.3	-70.84	213.7	1,683.5	888.2	863.5	24.65	36.032	
6,900.0	6,824.0	6,781.7	6,689.3	19.0	20.4	-75.16	169.9	1,697.5	890.4	865.8	24.57	36.238	
7,000.0	6,905.6	6,882.5	6,771.9	19.2	20.6	-77.67	113.8	1,710.4	892.4	867.9	24.54	36.369	
7,100.0	6,978.6	6,983.5	6,846.1	19.3	20.8	-79.24	46.4	1,722.0	894.2	869.6	24.66	36.263	
7,200.0	7,041.5	7,084.7	6,910.3	19.6	21.1	-80.27	-31.1	1,732.0	895.8	870.7	25.04	35.768	
7,300.0	7,093.2	7,185.9	6,963.1	19.9	21.4	-80.96	-117.0	1,740.2	897.1	871.3	25.78	34.800	
7,400.0	7,132.6	7,287.3	7,003.5	20.3	21.8	-81.41	-209.7	1,746.5	898.0	871.1	26.91	33.372	
7,500.0	7,158.9	7,388.8	7,030.5	20.9	22.4	-81.68	-307.3	1,750.8	898.7	870.2	28.44	31.596	
7,600.0	7,171.7	7,490.3	7,043.7	21.6	23.0	-81.80	-407.8	1,752.8	899.0	868.7	30.34	29.636	
7,700.0	7,173.0	7,591.0	7,045.0	22.3	23.7	-81.81	-508.5	1,753.0	899.0	866.6	32.49	27.674	
7,800.0	7,173.0	7,691.0	7,045.0	23.2	24.6	-81.81	-608.5	1,753.0	899.0	864.2	34.84	25.807	
7,900.0	7,173.0	7,791.0	7,045.0	24.2	25.5	-81.81	-708.5	1,753.0	899.0	861.7	37.36	24.063	
8,000.0	7,173.0	7,891.0	7,045.0	25.2	26.5	-81.81	-808.5	1,753.0	899.1	859.0	40.03	22.460	
8,100.0	7,173.0	7,991.0	7,045.0	26.4	27.6	-81.81	-908.5	1,753.0	899.1	856.2	42.81	21.001	
8,200.0	7,173.0	8,091.0	7,045.0	27.6	28.7	-81.81	-1,008.5	1,753.0	899.1	853.4	45.69	19.678	
8,300.0	7,173.0	8,191.0	7,045.0	28.8	29.9	-81.81	-1,108.5	1,753.0	899.1	850.4	48.64	18.483	
8,400.0	7,173.0	8,291.0	7,045.0	30.1	31.2	-81.81	-1,208.5	1,753.1	899.1	847.4	51.66	17.403	
8,500.0	7,173.0	8,391.0	7,045.0	31.5	32.5	-81.81	-1,308.5	1,753.1	899.1	844.3	54.74	16.426	
8,600.0	7,173.0	8,491.0	7,045.0	32.9	33.8	-81.82	-1,408.5	1,753.1	899.1	841.2	57.85	15.540	
8,700.0	7,173.0	8,591.0	7,045.0	34.3	35.2	-81.82	-1,508.5	1,753.1	899.1	838.1	61.01	14.736	
8,800.0	7,173.0	8,691.0	7,045.0	35.7	36.6	-81.82	-1,608.5	1,753.1	899.1	834.9	64.20	14.004	
8,900.0	7,173.0	8,791.0	7,045.0	37.2	38.1	-81.82	-1,708.5	1,753.1	899.1	831.7	67.42	13.336	
9,000.0	7,173.0	8,891.0	7,045.0	38.7	39.6	-81.82	-1,808.5	1,753.1	899.1	828.4	70.66	12.724	
9,100.0	7,173.0	8,991.0	7,045.0	40.2	41.0	-81.82	-1,908.5	1,753.1	899.1	825.2	73.92	12.163	
9,200.0	7,173.0	9,091.0	7,045.0	41.8	42.6	-81.82	-2,008.5	1,753.1	899.1	821.9	77.20	11.646	
9,300.0	7,173.0	9,191.0	7,045.0	43.3	44.1	-81.82	-2,108.5	1,753.1	899.1	818.6	80.50	11.169	
9,400.0	7,173.0	9,291.0	7,045.0	44.9	45.6	-81.82	-2,208.5	1,753.1	899.1	815.3	83.81	10.728	
9,500.0	7,173.0	9,391.0	7,045.0	46.5	47.2	-81.82	-2,308.5	1,753.1	899.1	812.0	87.14	10.318	
9,600.0	7,173.0	9,491.0	7,045.0	48.1	48.8	-81.82	-2,408.5	1,753.1	899.1	808.6	90.47	9.938	
9,700.0	7,173.0	9,591.0	7,045.0	49.7	50.4	-81.82	-2,508.5	1,753.1	899.1	805.3	93.82	9.584	
9,800.0	7,173.0	9,691.0	7,045.0	51.3	51.9	-81.82	-2,608.5	1,753.1	899.1	801.9	97.17	9.253	
9,900.0	7,173.0	9,791.0	7,045.0	52.9	53.6	-81.82	-2,708.5	1,753.1	899.1	798.6	100.53	8.944	
10,000.0	7,173.0	9,891.0	7,045.0	54.6	55.2	-81.82	-2,808.5	1,753.1	899.1	795.2	103.90	8.654	
10,100.0	7,173.0	9,991.0	7,045.0	56.2	56.8	-81.82	-2,908.5	1,753.1	899.1	791.8	107.28	8.381	
10,200.0	7,173.0	10,091.0	7,045.0	57.8	58.4	-81.82	-3,008.5	1,753.1	899.1	788.5	110.66	8.125	

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 Ruhl 1F-32H-B264
Project:	DJ Wattenberg	**TVD Reference:**	KB @ 4955.0ft (no KB)
Reference Site:	S32-T2N-R64W (Newman)	**MD Reference:**	KB @ 4955.0ft (no KB)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Ruhl 1F-32H-B264	**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 S32-T2N-R64W (Newman) - Ruhl 1J-32H-B264 - 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	7,173.0	10,191.0	7,045.0	59.5	60.1	-81.82	-3,108.5	1,753.1	899.1	785.1	114.05	7.884	
10,400.0	7,173.0	10,291.0	7,045.0	61.2	61.7	-81.82	-3,208.5	1,753.1	899.1	781.7	117.44	7.656	
10,500.0	7,173.0	10,391.0	7,045.0	62.8	63.4	-81.82	-3,308.5	1,753.1	899.1	778.3	120.84	7.441	
10,600.0	7,173.0	10,491.0	7,045.0	64.5	65.0	-81.82	-3,408.5	1,753.1	899.1	774.9	124.24	7.237	
10,700.0	7,173.0	10,591.0	7,045.0	66.2	66.7	-81.82	-3,508.5	1,753.1	899.1	771.5	127.64	7.044	
10,800.0	7,173.0	10,691.0	7,045.0	67.8	68.3	-81.82	-3,608.5	1,753.1	899.1	768.1	131.05	6.861	
10,900.0	7,173.0	10,791.0	7,045.0	69.5	70.0	-81.82	-3,708.5	1,753.1	899.1	764.7	134.46	6.687	
11,000.0	7,173.0	10,891.0	7,045.0	71.2	71.7	-81.82	-3,808.5	1,753.1	899.1	761.3	137.88	6.521	
11,100.0	7,173.0	10,991.0	7,045.0	72.9	73.4	-81.82	-3,908.5	1,753.1	899.1	757.9	141.30	6.364	
11,200.0	7,173.0	11,091.0	7,045.0	74.6	75.0	-81.82	-4,008.5	1,753.1	899.1	754.4	144.72	6.213	
11,300.0	7,173.0	11,191.0	7,045.0	76.3	76.7	-81.82	-4,108.5	1,753.1	899.2	751.0	148.14	6.070	
11,400.0	7,173.0	11,291.0	7,045.0	78.0	78.4	-81.82	-4,208.5	1,753.1	899.2	747.6	151.56	5.933	
11,500.0	7,173.0	11,391.0	7,045.0	79.7	80.1	-81.82	-4,308.5	1,753.1	899.2	744.2	154.99	5.801	
11,600.0	7,173.0	11,491.0	7,045.0	81.4	81.8	-81.82	-4,408.5	1,753.2	899.2	740.7	158.42	5.676	
11,700.0	7,173.0	11,591.0	7,045.0	83.1	83.5	-81.82	-4,508.5	1,753.2	899.2	737.3	161.85	5.556	
11,747.9	7,173.0	11,638.8	7,045.0	83.9	84.3	-81.82	-4,556.3	1,753.2	899.2	735.7	163.49	5.500	ES, SF

Company:	EnCana Oil & Gas (USA) Inc	**Local Co-ordinate Reference:**	Well Ruhl 1F-32H-B264
Project:	DJ Wattenberg	**TVD Reference:**	KB @ 4955.0ft (no KB)
Reference Site:	S32-T2N-R64W (Newman)	**MD Reference:**	KB @ 4955.0ft (no KB)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Ruhl 1F-32H-B264	**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 S32-T2N-R64W (Newman) - Ruhl 1K-32H-B264 - 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	89.73	3.7	782.1	782.2				
100.0	100.0	100.0	100.0	0.2	0.2	89.73	3.7	782.1	782.2	781.8	0.35	2,240.707	
200.0	200.0	200.0	200.0	0.3	0.3	89.73	3.7	782.1	782.2	781.5	0.70	1,120.354	
300.0	300.0	294.1	294.1	0.5	0.5	18.78	3.7	782.3	781.5	780.5	1.04	753.644	
400.0	400.0	382.4	382.4	0.7	0.7	18.81	4.0	783.6	780.5	779.2	1.37	571.419	
500.0	499.9	470.7	470.7	0.9	0.8	18.86	4.7	786.3	779.4	777.7	1.70	459.601	
600.0	599.7	559.1	558.9	1.1	1.0	18.92	5.6	790.2	778.1	776.1	2.03	383.852	
700.0	699.4	647.4	647.1	1.3	1.2	19.00	6.9	795.5	776.7	774.3	2.36	329.039	
800.0	798.9	735.7	735.2	1.5	1.4	19.09	8.5	802.1	775.1	772.4	2.70	287.452	
900.0	898.3	824.1	823.2	1.8	1.6	19.19	10.5	810.1	773.4	770.3	3.04	254.753	
1,000.0	997.4	912.5	911.0	2.1	1.8	19.31	12.7	819.3	771.5	768.1	3.38	228.306	
1,100.0	1,096.5	1,000.0	997.9	2.3	2.0	19.42	15.3	829.8	770.4	766.7	3.73	206.765	
1,119.9	1,116.1	1,018.5	1,016.2	2.4	2.0	19.43	15.9	832.1	770.4	766.6	3.80	202.865	CC, ES
1,200.0	1,195.5	1,089.4	1,086.4	2.6	2.2	19.50	18.2	841.8	770.9	766.8	4.08	188.977	
1,300.0	1,294.6	1,177.9	1,173.8	2.9	2.5	19.55	21.4	855.0	772.8	768.4	4.43	174.341	
1,400.0	1,393.6	1,266.2	1,260.9	3.2	2.8	19.58	25.0	869.5	776.3	771.5	4.79	162.112	
1,500.0	1,492.7	1,354.5	1,347.6	3.5	3.1	19.58	28.8	885.2	781.2	776.1	5.15	151.813	
1,600.0	1,591.7	1,449.1	1,440.4	3.8	3.5	19.56	33.2	903.3	787.4	781.9	5.52	142.736	
1,700.0	1,690.8	1,548.9	1,538.3	4.1	3.8	19.54	37.9	922.6	793.8	787.9	5.90	134.585	
1,800.0	1,789.8	1,648.7	1,636.1	4.4	4.2	19.52	42.6	941.8	800.1	793.8	6.28	127.412	
1,900.0	1,888.9	1,748.5	1,733.9	4.7	4.6	19.50	47.3	961.0	806.4	799.8	6.66	121.052	
2,000.0	1,987.9	1,848.3	1,831.7	5.0	5.0	19.48	52.0	980.2	812.8	805.7	7.04	115.376	
2,100.0	2,087.0	1,948.1	1,929.5	5.2	5.3	19.46	56.7	999.5	819.1	811.7	7.43	110.280	
2,200.0	2,186.0	2,047.9	2,027.3	5.5	5.7	19.44	61.4	1,018.7	825.5	817.6	7.81	105.682	
2,300.0	2,285.1	2,147.7	2,125.2	5.8	6.1	19.42	66.0	1,037.9	831.8	823.6	8.19	101.511	
2,400.0	2,384.1	2,247.5	2,223.0	6.1	6.5	19.40	70.7	1,057.1	838.1	829.6	8.58	97.712	
2,500.0	2,483.2	2,347.3	2,320.8	6.4	6.9	19.38	75.4	1,076.4	844.5	835.5	8.96	94.236	
2,600.0	2,582.2	2,447.1	2,418.6	6.7	7.3	19.36	80.1	1,095.6	850.8	841.5	9.35	91.046	
2,700.0	2,681.3	2,546.9	2,516.4	7.0	7.7	19.34	84.8	1,114.8	857.2	847.4	9.73	88.106	
2,800.0	2,780.3	2,646.7	2,614.2	7.3	8.0	19.32	89.5	1,134.0	863.5	853.4	10.11	85.390	
2,900.0	2,879.4	2,746.5	2,712.1	7.6	8.4	19.30	94.2	1,153.2	869.9	859.4	10.50	82.872	
3,000.0	2,978.4	2,846.3	2,809.9	7.9	8.8	19.29	98.9	1,172.5	876.2	865.3	10.88	80.532	
3,100.0	3,077.5	2,946.1	2,907.7	8.2	9.2	19.27	103.6	1,191.7	882.5	871.3	11.26	78.351	
3,200.0	3,176.5	3,045.9	3,005.5	8.5	9.6	19.25	108.2	1,210.9	888.9	877.2	11.65	76.314	
3,300.0	3,275.6	3,145.7	3,103.3	8.8	10.0	19.23	112.9	1,230.1	895.2	883.2	12.03	74.407	
3,400.0	3,374.6	3,245.5	3,201.1	9.1	10.4	19.22	117.6	1,249.4	901.6	889.1	12.42	72.619	
3,500.0	3,473.7	3,345.3	3,299.0	9.4	10.8	19.20	122.3	1,268.6	907.9	895.1	12.80	70.937	
3,600.0	3,572.7	3,445.1	3,396.8	9.7	11.2	19.18	127.0	1,287.8	914.2	901.1	13.18	69.354	
3,700.0	3,671.8	3,544.9	3,494.6	10.0	11.5	19.17	131.7	1,307.0	920.6	907.0	13.57	67.861	
3,800.0	3,770.8	3,644.7	3,592.4	10.3	11.9	19.15	136.4	1,326.2	926.9	913.0	13.95	66.450	
3,900.0	3,869.9	3,744.5	3,690.2	10.6	12.3	19.14	141.1	1,345.5	933.3	918.9	14.33	65.115	
4,000.0	3,968.9	3,844.3	3,788.0	10.9	12.7	19.12	145.8	1,364.7	939.6	924.9	14.72	63.849	
4,100.0	4,068.0	3,944.1	3,885.9	11.2	13.1	19.10	150.4	1,383.9	946.0	930.9	15.10	62.648	
4,200.0	4,167.0	4,043.9	3,983.7	11.5	13.5	19.09	155.1	1,403.1	952.3	936.8	15.48	61.507	
4,300.0	4,266.1	4,143.7	4,081.5	11.8	13.9	19.07	159.8	1,422.4	958.7	942.8	15.87	60.421	
4,400.0	4,365.1	4,243.5	4,179.3	12.1	14.3	19.06	164.5	1,441.6	965.0	948.7	16.25	59.387	
4,500.0	4,464.2	4,343.3	4,277.1	12.4	14.7	19.05	169.2	1,460.8	971.3	954.7	16.63	58.401	
4,600.0	4,563.2	4,443.1	4,375.0	12.7	15.1	19.03	173.9	1,480.0	977.7	960.7	17.02	57.459	
4,700.0	4,662.3	4,542.9	4,472.8	13.0	15.5	19.02	178.6	1,499.2	984.0	966.6	17.40	56.559	
4,800.0	4,761.3	4,642.7	4,570.6	13.3	15.8	19.00	183.3	1,518.5	990.4	972.6	17.78	55.697	
4,900.0	4,860.4	4,742.5	4,668.4	13.6	16.2	18.99	188.0	1,537.7	996.7	978.5	18.16	54.873	SF

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 Ruhl 1F-32H-B264
Project:	DJ Wattenberg	**TVD Reference:**	KB @ 4955.0ft (no KB)
Reference Site:	S32-T2N-R64W (Newman)	**MD Reference:**	KB @ 4955.0ft (no KB)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Ruhl 1F-32H-B264	**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 S32-T2N-R64W (Newman) - Ruhl 1L-32H-B264 - 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	89.76	3.3	792.2	792.2				
100.0	100.0	100.0	100.0	0.2	0.2	89.76	3.3	792.2	792.2	791.9	0.35	2,269.552	
200.0	200.0	200.0	200.0	0.3	0.3	89.76	3.3	792.2	792.2	791.5	0.70	1,134.776	
300.0	300.0	288.1	288.1	0.5	0.5	18.80	3.4	792.9	792.2	791.1	1.03	771.767	
400.0	400.0	376.1	376.1	0.7	0.7	18.82	3.8	794.9	791.9	790.6	1.36	584.410	
500.0	499.9	464.2	464.1	0.9	0.8	18.87	4.5	798.2	791.6	789.9	1.68	469.864	
600.0	599.7	552.3	552.0	1.1	1.0	18.93	5.5	802.8	791.1	789.0	2.02	392.457	
700.0	699.4	640.3	639.9	1.3	1.2	19.00	6.7	808.8	790.4	788.1	2.35	336.544	
800.0	798.9	728.4	727.7	1.5	1.4	19.10	8.2	816.1	789.6	786.9	2.68	294.182	
900.0	898.3	816.5	815.4	1.8	1.6	19.21	10.0	824.7	788.7	785.7	3.02	260.912	
1,000.0	997.4	900.0	898.3	2.1	1.8	19.33	11.9	834.1	787.6	784.3	3.36	234.620	
1,072.2	1,068.9	968.3	966.0	2.3	2.0	19.42	13.6	842.6	787.3	783.7	3.62	217.695 CC	
1,100.0	1,096.5	992.8	990.3	2.3	2.0	19.46	14.3	845.9	787.4	783.7	3.71	212.047 ES	
1,200.0	1,195.5	1,080.9	1,077.5	2.6	2.3	19.56	16.9	858.4	788.7	784.6	4.06	194.092	
1,300.0	1,294.6	1,169.0	1,164.4	2.9	2.6	19.63	19.7	872.3	791.5	787.0	4.42	179.246	
1,400.0	1,393.6	1,257.0	1,251.0	3.2	2.9	19.69	22.8	887.5	795.7	791.0	4.77	166.844	
1,500.0	1,492.7	1,344.9	1,337.3	3.5	3.2	19.72	26.2	903.9	801.5	796.4	5.12	156.400	
1,600.0	1,591.7	1,432.6	1,423.1	3.8	3.6	19.74	29.8	921.6	808.8	803.3	5.48	147.547	
1,700.0	1,690.8	1,524.0	1,512.3	4.1	3.9	19.73	33.9	941.3	817.5	811.7	5.85	139.819	
1,800.0	1,789.8	1,623.6	1,609.4	4.4	4.3	19.72	38.4	963.1	826.5	820.3	6.23	132.709	
1,900.0	1,888.9	1,723.2	1,706.4	4.7	4.8	19.71	42.8	984.9	835.5	828.9	6.61	126.409	
2,000.0	1,987.9	1,822.8	1,803.5	5.0	5.2	19.70	47.3	1,006.7	844.6	837.6	6.99	120.789	
2,100.0	2,087.0	1,922.4	1,900.6	5.2	5.6	19.69	51.8	1,028.5	853.6	846.2	7.37	115.745	
2,200.0	2,186.0	2,022.0	1,997.7	5.5	6.0	19.68	56.3	1,050.4	862.6	854.9	7.76	111.195	
2,300.0	2,285.1	2,121.6	2,094.7	5.8	6.4	19.67	60.7	1,072.2	871.7	863.5	8.14	107.069	
2,400.0	2,384.1	2,221.2	2,191.8	6.1	6.9	19.66	65.2	1,094.0	880.7	872.2	8.52	103.312	
2,500.0	2,483.2	2,320.8	2,288.9	6.4	7.3	19.65	69.7	1,115.8	889.7	880.8	8.91	99.876	
2,600.0	2,582.2	2,420.4	2,385.9	6.7	7.7	19.64	74.2	1,137.6	898.7	889.4	9.29	96.722	
2,700.0	2,681.3	2,519.9	2,483.0	7.0	8.1	19.63	78.6	1,159.4	907.8	898.1	9.68	93.818	
2,800.0	2,780.3	2,619.5	2,580.1	7.3	8.6	19.62	83.1	1,181.2	916.8	906.7	10.06	91.134	
2,900.0	2,879.4	2,719.1	2,677.2	7.6	9.0	19.61	87.6	1,203.0	925.8	915.4	10.44	88.647	
3,000.0	2,978.4	2,818.7	2,774.2	7.9	9.4	19.60	92.1	1,224.8	934.8	924.0	10.83	86.336	
3,100.0	3,077.5	2,918.3	2,871.3	8.2	9.9	19.59	96.5	1,246.6	943.9	932.7	11.21	84.182	
3,200.0	3,176.5	3,017.9	2,968.4	8.5	10.3	19.58	101.0	1,268.4	952.9	941.3	11.60	82.172	
3,300.0	3,275.6	3,117.5	3,065.4	8.8	10.7	19.57	105.5	1,290.2	961.9	949.9	11.98	80.290	
3,400.0	3,374.6	3,217.1	3,162.5	9.1	11.2	19.57	110.0	1,312.0	970.9	958.6	12.36	78.524	
3,500.0	3,473.7	3,316.7	3,259.6	9.4	11.6	19.56	114.4	1,333.8	980.0	967.2	12.75	76.865	
3,600.0	3,572.7	3,416.3	3,356.7	9.7	12.0	19.55	118.9	1,355.7	989.0	975.9	13.13	75.303	
3,700.0	3,671.8	3,515.9	3,453.7	10.0	12.5	19.54	123.4	1,377.5	998.0	984.5	13.52	73.830 SF	

Company:	EnCana Oil & Gas (USA) Inc	**Local Co-ordinate Reference:**	Well Ruhl 1F-32H-B264
Project:	DJ Wattenberg	**TVD Reference:**	KB @ 4955.0ft (no KB)
Reference Site:	S32-T2N-R64W (Newman)	**MD Reference:**	KB @ 4955.0ft (no KB)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Ruhl 1F-32H-B264	**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 KB @ 4955.0ft (no KB)
Offset Depths are relative to Offset Datum
Central Meridian is -105.500000 °

Coordinates are relative to: Ruhl 1F-32H-B264
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 0.60°