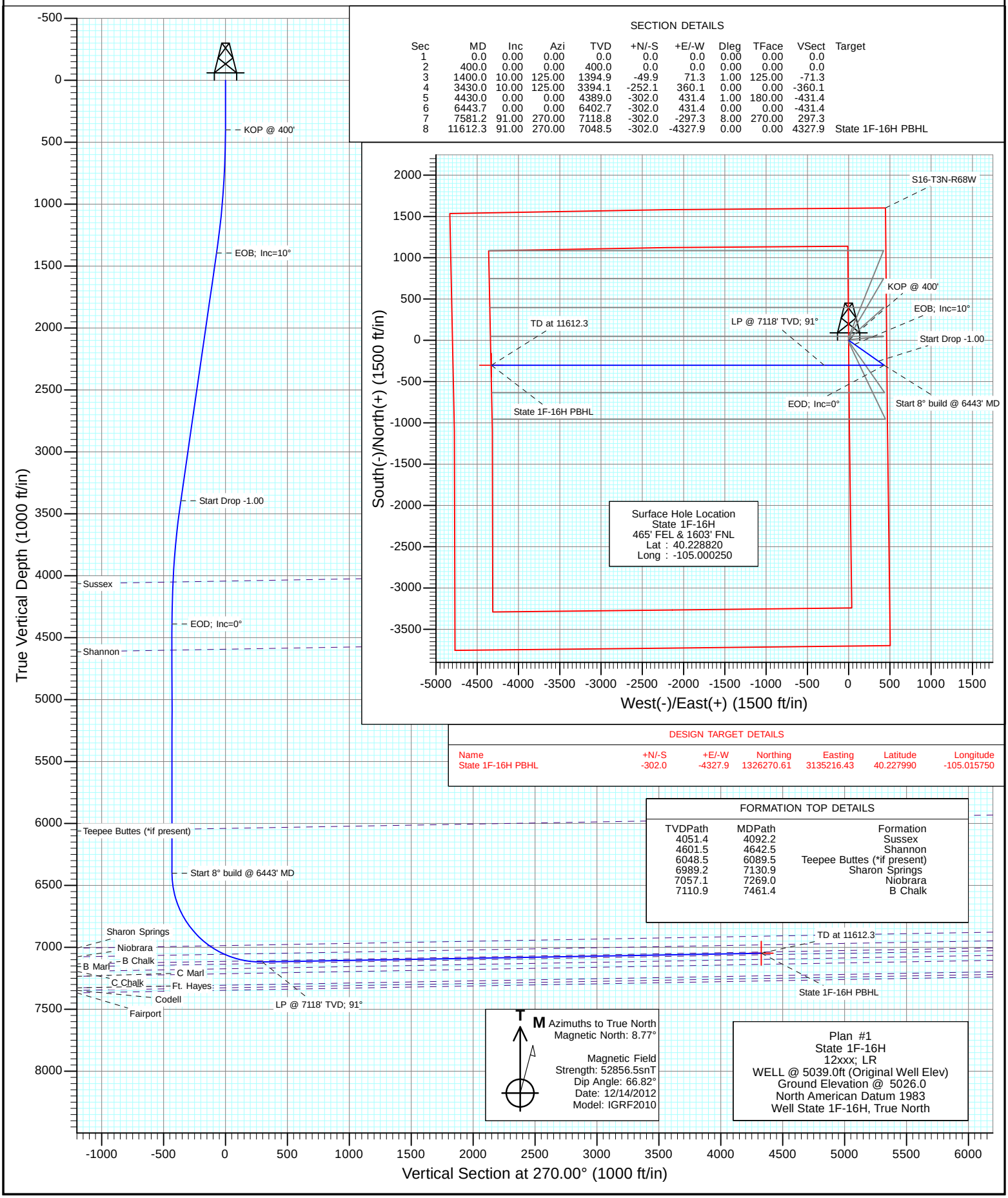
encana

Project: DJ Wattenberg
Site: S16-T3N-R68W (State)
Well: State 1F-16H
Wellbore: Hz
Design: Plan #1

CATHEDRAL

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	400.0	0.00	0.00	400.0	0.0	0.0	0.00	0.00	0.0	
3	1400.0	10.00	125.00	1394.9	-49.9	71.3	1.00	125.00	-71.3	
4	3430.0	10.00	125.00	3394.1	-252.1	360.1	0.00	0.00	-360.1	
5	4430.0	0.00	0.00	4389.0	-302.0	431.4	1.00	180.00	-431.4	
6	6443.7	0.00	0.00	6402.7	-302.0	431.4	0.00	0.00	-431.4	
7	7581.2	91.00	270.00	7118.8	-302.0	-297.3	8.00	270.00	297.3	
8	11612.3	91.00	270.00	7048.5	-302.0	-4327.9	0.00	0.00	4327.9	State 1F-16H PBHL



DESIGN TARGET DETAILS

Name	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
State 1F-16H PBHL	-302.0	-4327.9	1326270.61	3135216.43	40.227990	-105.015750

FORMATION TOP DETAILS

TVDPath	MDPath	Formation
4051.4	4092.2	Sussex
4601.5	4642.5	Shannon
6048.5	6089.5	Teepee Buttes (*if present)
6989.2	7130.9	Sharon Springs
7057.1	7269.0	Niobrara
7110.9	7461.4	B Chalk

T M Azimuths to True North
Magnetic North: 8.77°

Magnetic Field
Strength: 52856.5snT
Dip Angle: 66.82°
Date: 12/14/2012
Model: IGRF2010

Plan #1
State 1F-16H
12xxx; LR
WELL @ 5039.0ft (Original Well Elev)
Ground Elevation @ 5026.0
North American Datum 1983
Well State 1F-16H, True North

Planning Report

Database:	USA EDM 5000 Multi Users DB	**Local Co-ordinate Reference:**	Well State 1F-16H
Company:	EnCana Oil & Gas (USA) Inc	**TVD Reference:**	WELL @ 5039.0ft (Original Well Elev)
Project:	DJ Wattenberg	**MD Reference:**	WELL @ 5039.0ft (Original Well Elev)
Site:	S16-T3N-R68W (State)	**North Reference:**	True
Well:	State 1F-16H	**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 S16-T3N-R68W (State)

Site Position:		**Northing:**	1,326,575.12 ft	**Latitude:**	40.228760
From:	Lat/Long	**Easting:**	3,139,542.66 ft	**Longitude:**	-105.000250
Position Uncertainty:	0.0 ft	**Slot Radius:**	13.200 in	**Grid Convergence:**	0.32 °

Well State 1F-16H

Well Position	**+N/-S**	0.0 ft	**Northing:**	1,326,596.97 ft	**Latitude:**	40.228820
	+E/-W	0.0 ft	**Easting:**	3,139,542.53 ft	**Longitude:**	-105.000250
Position Uncertainty		0.0 ft	**Wellhead Elevation:**	ft	**Ground Level:**	5,026.0 ft

Wellbore Hz

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	12/14/2012	8.77	66.82	52,857

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	270.00

Plan Sections

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
400.0	0.00	0.00	400.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,400.0	10.00	125.00	1,394.9	-49.9	71.3	1.00	1.00	0.00	125.00	
3,430.0	10.00	125.00	3,394.1	-252.1	360.1	0.00	0.00	0.00	0.00	
4,430.0	0.00	0.00	4,389.0	-302.0	431.4	1.00	-1.00	0.00	180.00	
6,443.7	0.00	0.00	6,402.7	-302.0	431.4	0.00	0.00	0.00	0.00	
7,581.2	91.00	270.00	7,118.8	-302.0	-297.3	8.00	8.00	0.00	270.00	
11,612.3	91.00	270.00	7,048.5	-302.0	-4,327.9	0.00	0.00	0.00	0.00	State 1F-16H PBHL

Database:	USA EDM 5000 Multi Users DB	**Local Co-ordinate Reference:**	Well State 1F-16H
Company:	EnCana Oil & Gas (USA) Inc	**TVD Reference:**	WELL @ 5039.0ft (Original Well Elev)
Project:	DJ Wattenberg	**MD Reference:**	WELL @ 5039.0ft (Original Well Elev)
Site:	S16-T3N-R68W (State)	**North Reference:**	True
Well:	State 1F-16H	**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	
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	KOP @ 400'
500.0	1.00	125.00	500.0	-0.5	0.7	-0.7	1.00	1.00	
600.0	2.00	125.00	600.0	-2.0	2.9	-2.9	1.00	1.00	
700.0	3.00	125.00	699.9	-4.5	6.4	-6.4	1.00	1.00	
800.0	4.00	125.00	799.7	-8.0	11.4	-11.4	1.00	1.00	
900.0	5.00	125.00	899.4	-12.5	17.9	-17.9	1.00	1.00	
1,000.0	6.00	125.00	998.9	-18.0	25.7	-25.7	1.00	1.00	
1,100.0	7.00	125.00	1,098.3	-24.5	35.0	-35.0	1.00	1.00	
1,200.0	8.00	125.00	1,197.4	-32.0	45.7	-45.7	1.00	1.00	
1,300.0	9.00	125.00	1,296.3	-40.5	57.8	-57.8	1.00	1.00	
1,400.0	10.00	125.00	1,394.9	-49.9	71.3	-71.3	1.00	1.00	EOB; Inc=10°
1,500.0	10.00	125.00	1,493.4	-59.9	85.5	-85.5	0.00	0.00	
1,600.0	10.00	125.00	1,591.9	-69.8	99.8	-99.8	0.00	0.00	
1,700.0	10.00	125.00	1,690.4	-79.8	114.0	-114.0	0.00	0.00	
1,800.0	10.00	125.00	1,788.9	-89.8	128.2	-128.2	0.00	0.00	
1,900.0	10.00	125.00	1,887.3	-99.7	142.4	-142.4	0.00	0.00	
2,000.0	10.00	125.00	1,985.8	-109.7	156.6	-156.6	0.00	0.00	
2,100.0	10.00	125.00	2,084.3	-119.6	170.9	-170.9	0.00	0.00	
2,200.0	10.00	125.00	2,182.8	-129.6	185.1	-185.1	0.00	0.00	
2,300.0	10.00	125.00	2,281.3	-139.6	199.3	-199.3	0.00	0.00	
2,400.0	10.00	125.00	2,379.7	-149.5	213.5	-213.5	0.00	0.00	
2,500.0	10.00	125.00	2,478.2	-159.5	227.8	-227.8	0.00	0.00	
2,600.0	10.00	125.00	2,576.7	-169.4	242.0	-242.0	0.00	0.00	
2,700.0	10.00	125.00	2,675.2	-179.4	256.2	-256.2	0.00	0.00	
2,800.0	10.00	125.00	2,773.7	-189.4	270.4	-270.4	0.00	0.00	
2,900.0	10.00	125.00	2,872.1	-199.3	284.7	-284.7	0.00	0.00	
3,000.0	10.00	125.00	2,970.6	-209.3	298.9	-298.9	0.00	0.00	
3,100.0	10.00	125.00	3,069.1	-219.2	313.1	-313.1	0.00	0.00	
3,200.0	10.00	125.00	3,167.6	-229.2	327.3	-327.3	0.00	0.00	
3,300.0	10.00	125.00	3,266.1	-239.2	341.6	-341.6	0.00	0.00	
3,400.0	10.00	125.00	3,364.5	-249.1	355.8	-355.8	0.00	0.00	
3,430.0	10.00	125.00	3,394.1	-252.1	360.1	-360.1	0.00	0.00	Start Drop -1.00
3,500.0	9.30	125.00	3,463.1	-258.8	369.7	-369.7	1.00	-1.00	
3,600.0	8.30	125.00	3,561.9	-267.6	382.2	-382.2	1.00	-1.00	
3,700.0	7.30	125.00	3,661.0	-275.4	393.3	-393.3	1.00	-1.00	
3,800.0	6.30	125.00	3,760.3	-282.2	403.0	-403.0	1.00	-1.00	
3,900.0	5.30	125.00	3,859.8	-288.0	411.3	-411.3	1.00	-1.00	
4,000.0	4.30	125.00	3,959.4	-292.8	418.2	-418.2	1.00	-1.00	
4,092.2	3.38	125.00	4,051.4	-296.3	423.2	-423.2	1.00	-1.00	Sussex
4,100.0	3.30	125.00	4,059.2	-296.6	423.6	-423.6	1.00	-1.00	
4,200.0	2.30	125.00	4,159.1	-299.4	427.6	-427.6	1.00	-1.00	
4,300.0	1.30	125.00	4,259.0	-301.2	430.2	-430.2	1.00	-1.00	
4,400.0	0.30	125.00	4,359.0	-302.0	431.3	-431.3	1.00	-1.00	
4,430.0	0.00	0.00	4,389.0	-302.0	431.4	-431.4	1.00	-1.00	EOD; Inc=0°
4,500.0	0.00	0.00	4,459.0	-302.0	431.4	-431.4	0.00	0.00	
4,600.0	0.00	0.00	4,559.0	-302.0	431.4	-431.4	0.00	0.00	
4,642.5	0.00	0.00	4,601.5	-302.0	431.4	-431.4	0.00	0.00	Shannon
4,700.0	0.00	0.00	4,659.0	-302.0	431.4	-431.4	0.00	0.00	

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Project:	DJ Wattenberg	**MD Reference:**	WELL @ 5039.0ft (Original Well Elev)
Site:	S16-T3N-R68W (State)	**North Reference:**	True
Well:	State 1F-16H	**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	0.00	0.00	4,759.0	-302.0	431.4	-431.4	0.00	0.00	
4,900.0	0.00	0.00	4,859.0	-302.0	431.4	-431.4	0.00	0.00	
5,000.0	0.00	0.00	4,959.0	-302.0	431.4	-431.4	0.00	0.00	
5,100.0	0.00	0.00	5,059.0	-302.0	431.4	-431.4	0.00	0.00	
5,200.0	0.00	0.00	5,159.0	-302.0	431.4	-431.4	0.00	0.00	
5,300.0	0.00	0.00	5,259.0	-302.0	431.4	-431.4	0.00	0.00	
5,400.0	0.00	0.00	5,359.0	-302.0	431.4	-431.4	0.00	0.00	
5,500.0	0.00	0.00	5,459.0	-302.0	431.4	-431.4	0.00	0.00	
5,600.0	0.00	0.00	5,559.0	-302.0	431.4	-431.4	0.00	0.00	
5,700.0	0.00	0.00	5,659.0	-302.0	431.4	-431.4	0.00	0.00	
5,800.0	0.00	0.00	5,759.0	-302.0	431.4	-431.4	0.00	0.00	
5,900.0	0.00	0.00	5,859.0	-302.0	431.4	-431.4	0.00	0.00	
6,000.0	0.00	0.00	5,959.0	-302.0	431.4	-431.4	0.00	0.00	
6,089.5	0.00	0.00	6,048.5	-302.0	431.4	-431.4	0.00	0.00	Teepee Buttes (*if present)
6,100.0	0.00	0.00	6,059.0	-302.0	431.4	-431.4	0.00	0.00	
6,200.0	0.00	0.00	6,159.0	-302.0	431.4	-431.4	0.00	0.00	
6,300.0	0.00	0.00	6,259.0	-302.0	431.4	-431.4	0.00	0.00	
6,400.0	0.00	0.00	6,359.0	-302.0	431.4	-431.4	0.00	0.00	
6,443.7	0.00	0.00	6,402.7	-302.0	431.4	-431.4	0.00	0.00	Start 8° build @ 6443' MD
6,500.0	4.50	270.00	6,459.0	-302.0	429.2	-429.2	8.00	8.00	
6,600.0	12.50	270.00	6,557.8	-302.0	414.4	-414.4	8.00	8.00	
6,700.0	20.50	270.00	6,653.6	-302.0	386.0	-386.0	8.00	8.00	
6,800.0	28.50	270.00	6,744.5	-302.0	344.5	-344.5	8.00	8.00	
6,900.0	36.50	270.00	6,828.8	-302.0	290.9	-290.9	8.00	8.00	
7,000.0	44.50	270.00	6,904.7	-302.0	226.0	-226.0	8.00	8.00	
7,100.0	52.50	270.00	6,970.9	-302.0	151.1	-151.1	8.00	8.00	
7,130.9	54.97	270.00	6,989.2	-302.0	126.2	-126.2	8.00	8.00	Sharon Springs
7,200.0	60.50	270.00	7,026.1	-302.0	67.8	-67.8	8.00	8.00	
7,269.0	66.02	270.00	7,057.1	-302.0	6.2	-6.2	8.00	8.00	Niobrara
7,300.0	68.50	270.00	7,069.1	-302.0	-22.4	22.4	8.00	8.00	
7,400.0	76.50	270.00	7,099.1	-302.0	-117.7	117.7	8.00	8.00	
7,461.4	81.42	270.00	7,110.9	-302.0	-178.0	178.0	8.00	8.00	B Chalk
7,500.0	84.50	270.00	7,115.6	-302.0	-216.2	216.2	8.00	8.00	
7,581.2	91.00	270.00	7,118.8	-302.0	-297.3	297.3	8.00	8.00	LP @ 7118' TVD; 91°
7,600.0	91.00	270.00	7,118.5	-302.0	-316.1	316.1	0.00	0.00	
7,700.0	91.00	270.00	7,116.7	-302.0	-416.1	416.1	0.00	0.00	
7,800.0	91.00	270.00	7,115.0	-302.0	-516.1	516.1	0.00	0.00	
7,900.0	91.00	270.00	7,113.2	-302.0	-616.1	616.1	0.00	0.00	
8,000.0	91.00	270.00	7,111.5	-302.0	-716.1	716.1	0.00	0.00	
8,100.0	91.00	270.00	7,109.7	-302.0	-816.1	816.1	0.00	0.00	
8,200.0	91.00	270.00	7,108.0	-302.0	-916.0	916.0	0.00	0.00	
8,300.0	91.00	270.00	7,106.3	-302.0	-1,016.0	1,016.0	0.00	0.00	
8,400.0	91.00	270.00	7,104.5	-302.0	-1,116.0	1,116.0	0.00	0.00	
8,500.0	91.00	270.00	7,102.8	-302.0	-1,216.0	1,216.0	0.00	0.00	
8,600.0	91.00	270.00	7,101.0	-302.0	-1,316.0	1,316.0	0.00	0.00	
8,700.0	91.00	270.00	7,099.3	-302.0	-1,416.0	1,416.0	0.00	0.00	
8,800.0	91.00	270.00	7,097.5	-302.0	-1,516.0	1,516.0	0.00	0.00	
8,900.0	91.00	270.00	7,095.8	-302.0	-1,615.9	1,615.9	0.00	0.00	
9,000.0	91.00	270.00	7,094.0	-302.0	-1,715.9	1,715.9	0.00	0.00	
9,100.0	91.00	270.00	7,092.3	-302.0	-1,815.9	1,815.9	0.00	0.00	
9,200.0	91.00	270.00	7,090.6	-302.0	-1,915.9	1,915.9	0.00	0.00	
9,300.0	91.00	270.00	7,088.8	-302.0	-2,015.9	2,015.9	0.00	0.00	

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Project:	DJ Wattenberg	**MD Reference:**	WELL @ 5039.0ft (Original Well Elev)
Site:	S16-T3N-R68W (State)	**North Reference:**	True
Well:	State 1F-16H	**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
9,400.0	91.00	270.00	7,087.1	-302.0	-2,115.9	2,115.9	0.00	0.00	
9,500.0	91.00	270.00	7,085.3	-302.0	-2,215.8	2,215.8	0.00	0.00	
9,600.0	91.00	270.00	7,083.6	-302.0	-2,315.8	2,315.8	0.00	0.00	
9,700.0	91.00	270.00	7,081.8	-302.0	-2,415.8	2,415.8	0.00	0.00	
9,800.0	91.00	270.00	7,080.1	-302.0	-2,515.8	2,515.8	0.00	0.00	
9,900.0	91.00	270.00	7,078.3	-302.0	-2,615.8	2,615.8	0.00	0.00	
10,000.0	91.00	270.00	7,076.6	-302.0	-2,715.8	2,715.8	0.00	0.00	
10,100.0	91.00	270.00	7,074.8	-302.0	-2,815.8	2,815.8	0.00	0.00	
10,200.0	91.00	270.00	7,073.1	-302.0	-2,915.7	2,915.7	0.00	0.00	
10,300.0	91.00	270.00	7,071.4	-302.0	-3,015.7	3,015.7	0.00	0.00	
10,400.0	91.00	270.00	7,069.6	-302.0	-3,115.7	3,115.7	0.00	0.00	
10,500.0	91.00	270.00	7,067.9	-302.0	-3,215.7	3,215.7	0.00	0.00	
10,600.0	91.00	270.00	7,066.1	-302.0	-3,315.7	3,315.7	0.00	0.00	
10,700.0	91.00	270.00	7,064.4	-302.0	-3,415.7	3,415.7	0.00	0.00	
10,800.0	91.00	270.00	7,062.6	-302.0	-3,515.7	3,515.7	0.00	0.00	
10,900.0	91.00	270.00	7,060.9	-302.0	-3,615.6	3,615.6	0.00	0.00	
11,000.0	91.00	270.00	7,059.1	-302.0	-3,715.6	3,715.6	0.00	0.00	
11,100.0	91.00	270.00	7,057.4	-302.0	-3,815.6	3,815.6	0.00	0.00	
11,200.0	91.00	270.00	7,055.6	-302.0	-3,915.6	3,915.6	0.00	0.00	
11,300.0	91.00	270.00	7,053.9	-302.0	-4,015.6	4,015.6	0.00	0.00	
11,400.0	91.00	270.00	7,052.2	-302.0	-4,115.6	4,115.6	0.00	0.00	
11,500.0	91.00	270.00	7,050.4	-302.0	-4,215.5	4,215.5	0.00	0.00	
11,600.0	91.00	270.00	7,048.7	-302.0	-4,315.5	4,315.5	0.00	0.00	
11,612.3	91.00	270.00	7,048.5	-302.0	-4,327.9	4,327.9	0.00	0.00	TD at 11612.3 - State 1F-16H PBHL

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
State 1F-16H PBHL - plan hits target center - Point	0.00	0.00	7,048.4	-302.0	-4,327.9	1,326,270.61	3,135,216.43	40.227990	-105.015750

Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
4,092.2	4,044.0	Sussex		-1.00	270.00
4,642.5	4,594.0	Shannon		-1.00	270.00
6,089.5	6,041.0	Teepee Buttes (*if present)		-1.00	270.00
7,130.9	6,987.0	Sharon Springs		-1.00	270.00
7,269.0	7,057.0	Niobrara		-1.00	270.00
7,461.4	7,114.0	B Chalk		-1.00	270.00

Database:	USA EDM 5000 Multi Users DB	**Local Co-ordinate Reference:**	Well State 1F-16H
Company:	EnCana Oil & Gas (USA) Inc	**TVD Reference:**	WELL @ 5039.0ft (Original Well Elev)
Project:	DJ Wattenberg	**MD Reference:**	WELL @ 5039.0ft (Original Well Elev)
Site:	S16-T3N-R68W (State)	**North Reference:**	True
Well:	State 1F-16H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Hz		
Design:	Plan #1		

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates +N/-S (ft)	Local Coordinates +E/-W (ft)	Comment
400.0	400.0	0.0	0.0	KOP @ 400'
1,400.0	1,394.9	-49.9	71.3	EOB; Inc=10°
3,430.0	3,394.1	-252.1	360.1	Start Drop -1.00
4,430.0	4,389.0	-302.0	431.4	EOD; Inc=0°
6,443.7	6,402.7	-302.0	431.4	Start 8° build @ 6443' MD
7,581.2	7,118.8	-302.0	-297.3	LP @ 7118' TVD; 91°
11,612.3	7,048.5	-302.0	-4,327.9	TD at 11612.3

EnCana Oil & Gas (USA) Inc

DJ Wattenberg
S16-T3N-R68W (State)
State 1F-16H
Hz
Plan #1

Anticollision Report

14 December, 2012

Company:	EnCana Oil & Gas (USA) Inc	**Local Co-ordinate Reference:**	Well State 1F-16H
Project:	DJ Wattenberg	**TVD Reference:**	WELL @ 5039.0ft (Original Well Elev)
Reference Site:	S16-T3N-R68W (State)	**MD Reference:**	WELL @ 5039.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	State 1F-16H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Hz	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Reference Plan #1

Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	MD Interval 100.0ft	**Error Model:**	Systematic Ellipse
Depth Range:	Unlimited	**Scan Method:**	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 500.0ft	**Error Surface:**	Elliptical Conic
Warning Levels Evaluated at:	2.00 **Sigma**		

Survey Tool Program **Date** 12/14/2012

From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.0	11,612.3	Plan #1 (Hz)	MWD	Geolink MWD

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
S16-T3N-R68W (State)						
State 1B-16H - Hz - Plan #1	200.0	200.0	40.1	39.4	61.388	CC, ES
State 1B-16H - Hz - Plan #1	600.0	596.7	55.0	52.9	26.805	SF
State 1C-16H - Hz - Plan #1	300.0	300.0	29.1	28.1	29.090	CC, ES
State 1C-16H - Hz - Plan #1	600.0	598.4	37.9	35.8	18.462	SF
State 1D-16H - Hz - Plan #1	400.0	400.0	18.2	16.9	13.483	CC, ES
State 1D-16H - Hz - Plan #1	600.0	599.5	22.5	20.5	10.972	SF
State 1E-16H - Hz - Plan #1	400.0	400.0	7.3	5.9	5.393	CC, ES
State 1E-16H - Hz - Plan #1	11,612.3	11,795.0	407.4	213.9	2.106	SF
State 1G-16H - Hz - Plan #1	300.0	300.0	10.9	9.9	10.909	CC, ES
State 1G-16H - Hz - Plan #1	11,612.3	11,847.4	391.9	201.5	2.058	SF
State 1H-16H - Hz - Plan #1	200.0	200.0	21.9	21.2	33.478	CC, ES
State 1H-16H - Hz - Plan #1	900.0	895.8	47.7	44.6	15.042	SF

Company:	EnCana Oil & Gas (USA) Inc	**Local Co-ordinate Reference:**	Well State 1F-16H
Project:	DJ Wattenberg	**TVD Reference:**	WELL @ 5039.0ft (Original Well Elev)
Reference Site:	S16-T3N-R68W (State)	**MD Reference:**	WELL @ 5039.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	State 1F-16H	**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 S16-T3N-R68W (State) - State 1B-16H - Hz - Plan #1

Offset Site Error: 0.0 ft

Survey Program: 0-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	0.00	40.1	0.0	40.1				
100.0	100.0	100.0	100.0	0.2	0.2	0.00	40.1	0.0	40.1	39.8	0.30	131.949	
200.0	200.0	200.0	200.0	0.3	0.3	0.00	40.1	0.0	40.1	39.4	0.65	61.388	CC, ES
300.0	300.0	299.3	299.3	0.5	0.5	0.45	40.9	0.3	40.9	39.9	1.00	40.837	
400.0	400.0	398.6	398.6	0.7	0.7	1.71	43.3	1.3	43.3	42.0	1.35	32.067	
500.0	500.0	497.8	497.6	0.9	0.9	-122.34	47.2	2.9	47.9	46.2	1.70	28.174	
600.0	600.0	596.7	596.4	1.0	1.1	-122.49	52.8	5.1	55.0	52.9	2.05	26.805	SF
700.0	699.9	695.3	694.6	1.2	1.3	-123.35	59.9	8.0	64.6	62.2	2.41	26.839	
800.0	799.7	793.4	792.3	1.4	1.5	-124.57	68.5	11.5	76.9	74.1	2.78	27.709	
900.0	899.4	890.9	889.2	1.6	1.7	-125.87	78.6	15.6	91.7	88.6	3.15	29.096	
1,000.0	998.9	987.8	985.3	1.8	2.0	-127.13	90.2	20.3	109.2	105.7	3.54	30.803	
1,100.0	1,098.3	1,083.9	1,080.4	2.1	2.3	-128.28	103.2	25.5	129.2	125.3	3.95	32.700	
1,200.0	1,197.4	1,179.2	1,174.4	2.3	2.6	-129.28	117.5	31.3	151.9	147.5	4.38	34.696	
1,300.0	1,296.3	1,273.5	1,267.2	2.6	2.9	-130.15	133.0	37.6	177.1	172.3	4.82	36.730	
1,400.0	1,394.9	1,366.8	1,358.8	2.9	3.3	-130.89	149.8	44.4	204.8	199.5	5.28	38.759	
1,500.0	1,493.4	1,459.2	1,449.1	3.3	3.6	-131.59	167.8	51.6	234.5	228.7	5.76	40.681	
1,600.0	1,591.9	1,550.8	1,538.3	3.6	4.0	-131.96	187.0	59.4	265.5	259.2	6.25	42.461	
1,700.0	1,690.4	1,641.6	1,626.4	3.9	4.4	-132.11	207.3	67.6	297.8	291.1	6.75	44.124	
1,800.0	1,788.9	1,733.1	1,714.9	4.3	4.8	-132.10	229.0	76.3	331.3	324.1	7.26	45.668	
1,900.0	1,887.3	1,827.2	1,805.8	4.6	5.3	-132.07	251.6	85.5	365.1	357.4	7.77	46.981	
2,000.0	1,985.8	1,921.3	1,896.7	4.9	5.7	-132.04	274.2	94.6	398.9	390.7	8.29	48.110	
2,100.0	2,084.3	2,015.4	1,987.6	5.3	6.2	-132.02	296.8	103.7	432.7	423.9	8.82	49.090	
2,200.0	2,182.8	2,109.5	2,078.5	5.6	6.6	-132.00	319.4	112.8	466.5	457.2	9.34	49.947	

Company:	EnCana Oil & Gas (USA) Inc	**Local Co-ordinate Reference:**	Well State 1F-16H
Project:	DJ Wattenberg	**TVD Reference:**	WELL @ 5039.0ft (Original Well Elev)
Reference Site:	S16-T3N-R68W (State)	**MD Reference:**	WELL @ 5039.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	State 1F-16H	**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 S16-T3N-R68W (State) - State 1C-16H - Hz - Plan #1

Offset Site Error: 0.0 ft

Survey Program: 0-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	0.00	29.1	0.0	29.1				
100.0	100.0	100.0	100.0	0.2	0.2	0.00	29.1	0.0	29.1	28.8	0.30	95.963	
200.0	200.0	200.0	200.0	0.3	0.3	0.00	29.1	0.0	29.1	28.5	0.65	44.646	
300.0	300.0	300.0	300.0	0.5	0.5	0.00	29.1	0.0	29.1	28.1	1.00	29.090	CC, ES
400.0	400.0	399.6	399.5	0.7	0.7	0.84	29.9	0.4	29.9	28.5	1.35	22.140	
500.0	500.0	499.0	499.0	0.9	0.9	-123.15	32.1	1.8	32.7	31.0	1.70	19.211	
600.0	600.0	598.4	598.2	1.0	1.0	-123.27	35.8	3.9	37.9	35.8	2.05	18.462	SF
700.0	699.9	697.4	697.1	1.2	1.2	-124.11	41.0	7.0	45.6	43.2	2.41	18.912	
800.0	799.7	796.2	795.5	1.4	1.4	-125.24	47.6	10.9	55.8	53.0	2.78	20.073	
900.0	899.4	894.4	893.4	1.6	1.7	-126.41	55.7	15.6	68.5	65.3	3.16	21.666	
1,000.0	998.9	992.2	990.5	1.8	1.9	-127.48	65.1	21.2	83.7	80.1	3.56	23.517	
1,100.0	1,098.3	1,089.3	1,086.8	2.1	2.2	-128.40	75.9	27.5	101.3	97.4	3.97	25.509	
1,200.0	1,197.4	1,185.7	1,182.2	2.3	2.4	-129.18	88.0	34.7	121.5	117.0	4.41	27.562	
1,300.0	1,296.3	1,281.3	1,276.5	2.6	2.7	-129.82	101.4	42.5	144.0	139.2	4.86	29.619	
1,400.0	1,394.9	1,376.0	1,369.7	2.9	3.1	-130.35	115.9	51.1	169.0	163.6	5.34	31.642	
1,500.0	1,493.4	1,470.0	1,461.9	3.3	3.4	-130.79	131.7	60.4	195.8	190.0	5.84	33.538	
1,600.0	1,591.9	1,565.2	1,555.0	3.6	3.8	-130.94	148.7	70.4	223.6	217.2	6.35	35.220	
1,700.0	1,690.4	1,661.3	1,649.0	3.9	4.1	-131.05	165.9	80.6	251.4	244.5	6.87	36.618	
1,800.0	1,788.9	1,757.3	1,742.9	4.3	4.5	-131.13	183.1	90.7	279.3	271.9	7.39	37.793	
1,900.0	1,887.3	1,853.3	1,836.9	4.6	4.9	-131.20	200.3	100.8	307.1	299.2	7.92	38.794	
2,000.0	1,985.8	1,949.4	1,930.8	4.9	5.2	-131.26	217.5	111.0	334.9	326.5	8.45	39.654	
2,100.0	2,084.3	2,045.4	2,024.8	5.3	5.6	-131.31	234.7	121.1	362.8	353.8	8.98	40.400	
2,200.0	2,182.8	2,141.5	2,118.7	5.6	6.0	-131.35	251.9	131.2	390.6	381.1	9.52	41.052	
2,300.0	2,281.3	2,237.5	2,212.7	6.0	6.4	-131.38	269.1	141.4	418.5	408.4	10.05	41.628	
2,400.0	2,379.7	2,333.6	2,306.6	6.3	6.8	-131.41	286.4	151.5	446.3	435.7	10.59	42.138	
2,500.0	2,478.2	2,429.6	2,400.5	6.7	7.1	-131.44	303.6	161.6	474.1	463.0	11.13	42.594	

Company:	EnCana Oil & Gas (USA) Inc	**Local Co-ordinate Reference:**	Well State 1F-16H
Project:	DJ Wattenberg	**TVD Reference:**	WELL @ 5039.0ft (Original Well Elev)
Reference Site:	S16-T3N-R68W (State)	**MD Reference:**	WELL @ 5039.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	State 1F-16H	**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 S16-T3N-R68W (State) - State 1D-16H - Hz - Plan #1

Offset Site Error: 0.0 ft

Survey Program: 0-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	0.00	18.2	0.0	18.2				
100.0	100.0	100.0	100.0	0.2	0.2	0.00	18.2	0.0	18.2	17.9	0.30	59.977	
200.0	200.0	200.0	200.0	0.3	0.3	0.00	18.2	0.0	18.2	17.6	0.65	27.904	
300.0	300.0	300.0	300.0	0.5	0.5	0.00	18.2	0.0	18.2	17.2	1.00	18.181	
400.0	400.0	400.0	400.0	0.7	0.7	0.00	18.2	0.0	18.2	16.9	1.35	13.483	CC, ES
500.0	500.0	499.8	499.8	0.9	0.9	-125.18	18.8	0.7	19.3	17.6	1.70	11.347	
600.0	600.0	599.5	599.4	1.0	1.0	-125.60	20.5	2.6	22.5	20.5	2.05	10.972	SF
700.0	699.9	699.1	698.9	1.2	1.2	-126.09	23.4	5.8	27.9	25.5	2.41	11.568	
800.0	799.7	798.4	798.1	1.4	1.4	-126.51	27.4	10.4	35.4	32.7	2.78	12.733	
900.0	899.4	897.5	896.9	1.6	1.6	-126.83	32.5	16.2	45.1	42.0	3.17	14.233	
1,000.0	998.9	996.2	995.2	1.8	1.8	-127.05	38.8	23.2	56.9	53.4	3.58	15.920	
1,100.0	1,098.3	1,094.6	1,092.9	2.1	2.1	-127.20	46.1	31.5	70.9	66.9	4.00	17.696	
1,200.0	1,197.4	1,192.4	1,189.9	2.3	2.3	-127.29	54.5	41.0	86.9	82.4	4.46	19.491	
1,300.0	1,296.3	1,289.8	1,286.2	2.6	2.6	-127.33	63.9	51.6	105.0	100.1	4.94	21.258	
1,400.0	1,394.9	1,386.5	1,381.6	2.9	2.9	-127.34	74.3	63.4	125.2	119.8	5.45	22.964	
1,500.0	1,493.4	1,482.7	1,476.3	3.3	3.2	-127.23	85.8	76.4	147.0	141.0	5.99	24.533	
1,600.0	1,591.9	1,578.4	1,570.1	3.6	3.6	-126.71	98.2	90.4	169.7	163.2	6.55	25.920	
1,700.0	1,690.4	1,675.2	1,664.8	3.9	3.9	-126.04	111.5	105.5	193.2	186.1	7.12	27.142	
1,800.0	1,788.9	1,772.3	1,759.8	4.3	4.3	-125.50	124.9	120.6	216.8	209.1	7.70	28.160	
1,900.0	1,887.3	1,869.5	1,854.9	4.6	4.7	-125.07	138.3	135.7	240.3	232.0	8.28	29.020	
2,000.0	1,985.8	1,966.7	1,949.9	4.9	5.1	-124.72	151.7	150.9	263.9	255.0	8.87	29.754	
2,100.0	2,084.3	2,063.9	2,045.0	5.3	5.4	-124.42	165.1	166.0	287.5	278.0	9.46	30.387	
2,200.0	2,182.8	2,161.0	2,140.0	5.6	5.8	-124.17	178.5	181.1	311.1	301.0	10.05	30.938	
2,300.0	2,281.3	2,258.2	2,235.1	6.0	6.2	-123.96	191.9	196.3	334.6	324.0	10.65	31.421	
2,400.0	2,379.7	2,355.4	2,330.1	6.3	6.6	-123.77	205.2	211.4	358.2	347.0	11.25	31.848	
2,500.0	2,478.2	2,452.5	2,425.2	6.7	7.0	-123.61	218.6	226.5	381.8	370.0	11.85	32.228	
2,600.0	2,576.7	2,549.7	2,520.2	7.0	7.3	-123.46	232.0	241.7	405.4	393.0	12.45	32.568	
2,700.0	2,675.2	2,646.9	2,615.3	7.3	7.7	-123.33	245.4	256.8	429.0	416.0	13.05	32.873	
2,800.0	2,773.7	2,744.1	2,710.3	7.7	8.1	-123.22	258.8	271.9	452.6	439.0	13.65	33.149	
2,900.0	2,872.1	2,841.2	2,805.4	8.0	8.5	-123.11	272.2	287.1	476.2	462.0	14.26	33.400	
3,000.0	2,970.6	2,938.4	2,900.4	8.4	8.9	-123.02	285.6	302.2	499.8	485.0	14.86	33.629	

Company:	EnCana Oil & Gas (USA) Inc	**Local Co-ordinate Reference:**	Well State 1F-16H
Project:	DJ Wattenberg	**TVD Reference:**	WELL @ 5039.0ft (Original Well Elev)
Reference Site:	S16-T3N-R68W (State)	**MD Reference:**	WELL @ 5039.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	State 1F-16H	**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 S16-T3N-R68W (State) - State 1E-16H - Hz - Plan #1

Offset Site Error: 0.0 ft

Survey Program: 0-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	0.00	7.3	0.0	7.3				
100.0	100.0	100.0	100.0	0.2	0.2	0.00	7.3	0.0	7.3	7.0	0.30	23.991	
200.0	200.0	200.0	200.0	0.3	0.3	0.00	7.3	0.0	7.3	6.6	0.65	11.162	
300.0	300.0	300.0	300.0	0.5	0.5	0.00	7.3	0.0	7.3	6.3	1.00	7.272	
400.0	400.0	400.0	400.0	0.7	0.7	0.00	7.3	0.0	7.3	5.9	1.35	5.393	CC, ES
500.0	500.0	500.0	500.0	0.9	0.8	-130.24	7.3	0.0	7.8	6.1	1.70	4.599	
600.0	600.0	600.0	600.0	1.0	1.0	-142.09	7.3	0.0	9.7	7.7	2.05	4.740	
700.0	699.9	699.9	699.9	1.2	1.2	-153.58	7.3	0.0	13.4	11.0	2.40	5.598	
800.0	799.7	799.7	799.7	1.4	1.4	-161.74	7.3	0.0	19.1	16.3	2.75	6.951	
900.0	899.4	899.4	899.4	1.6	1.5	-167.02	7.3	0.0	26.7	23.6	3.09	8.619	
1,000.0	998.9	998.9	998.9	1.8	1.7	-170.42	7.3	0.0	36.1	32.6	3.44	10.491	
1,100.0	1,098.3	1,098.8	1,098.8	2.1	1.9	-171.92	7.4	0.8	46.7	42.9	3.78	12.345	
1,200.0	1,197.4	1,198.8	1,198.7	2.3	2.1	-171.80	7.6	3.4	57.9	53.8	4.13	14.024	
1,300.0	1,296.3	1,298.8	1,298.7	2.6	2.3	-170.83	8.0	7.8	69.7	65.2	4.48	15.558	
1,400.0	1,394.9	1,398.9	1,398.5	2.9	2.4	-169.40	8.6	13.8	82.1	77.3	4.84	16.971	
1,500.0	1,493.4	1,499.0	1,498.4	3.3	2.6	-167.63	9.4	21.6	94.4	89.2	5.22	18.085	
1,600.0	1,591.9	1,599.3	1,598.3	3.6	2.8	-165.50	10.3	31.2	105.7	100.0	5.62	18.814	
1,700.0	1,690.4	1,698.7	1,697.0	3.9	3.1	-163.43	11.3	41.5	116.6	110.6	6.03	19.341	
1,800.0	1,788.9	1,798.0	1,795.8	4.3	3.3	-161.72	12.3	51.8	127.6	121.2	6.45	19.786	
1,900.0	1,887.3	1,897.3	1,894.6	4.6	3.5	-160.28	13.3	62.2	138.8	131.9	6.88	20.162	
2,000.0	1,985.8	1,996.6	1,993.4	4.9	3.7	-159.06	14.3	72.5	150.0	142.7	7.32	20.482	
2,100.0	2,084.3	2,096.0	2,092.1	5.3	4.0	-158.00	15.3	82.8	161.3	153.5	7.77	20.756	
2,200.0	2,182.8	2,195.3	2,190.9	5.6	4.2	-157.09	16.3	93.2	172.6	164.4	8.22	20.991	
2,300.0	2,281.3	2,294.6	2,289.7	6.0	4.4	-156.29	17.3	103.5	184.0	175.3	8.68	21.194	
2,400.0	2,379.7	2,393.9	2,388.5	6.3	4.7	-155.58	18.2	113.8	195.4	186.2	9.14	21.371	
2,500.0	2,478.2	2,493.2	2,487.3	6.7	4.9	-154.95	19.2	124.2	206.8	197.2	9.61	21.526	
2,600.0	2,576.7	2,592.6	2,586.0	7.0	5.1	-154.38	20.2	134.5	218.2	208.1	10.07	21.662	
2,700.0	2,675.2	2,691.9	2,684.8	7.3	5.4	-153.87	21.2	144.9	229.7	219.1	10.54	21.782	
2,800.0	2,773.7	2,791.2	2,783.6	7.7	5.6	-153.41	22.2	155.2	241.2	230.1	11.02	21.890	
2,900.0	2,872.1	2,890.5	2,882.4	8.0	5.9	-152.99	23.2	165.5	252.6	241.2	11.49	21.985	
3,000.0	2,970.6	2,989.9	2,981.1	8.4	6.1	-152.61	24.2	175.9	264.1	252.2	11.97	22.071	
3,100.0	3,069.1	3,089.2	3,079.9	8.7	6.3	-152.26	25.2	186.2	275.7	263.2	12.45	22.148	
3,200.0	3,167.6	3,188.5	3,178.7	9.1	6.6	-151.94	26.2	196.5	287.2	274.3	12.93	22.218	
3,300.0	3,266.1	3,287.8	3,277.5	9.4	6.8	-151.64	27.2	206.9	298.7	285.3	13.41	22.282	
3,400.0	3,364.5	3,387.1	3,376.3	9.8	7.1	-151.37	28.2	217.2	310.3	296.4	13.89	22.340	
3,500.0	3,463.1	3,486.5	3,475.1	10.1	7.3	-151.11	29.2	227.5	321.4	307.1	14.38	22.360	
3,600.0	3,561.9	3,586.0	3,574.0	10.4	7.6	-150.75	30.2	237.9	331.2	316.3	14.87	22.276	
3,700.0	3,661.0	3,685.6	3,673.1	10.7	7.8	-150.25	31.2	248.2	339.4	324.0	15.36	22.094	
3,800.0	3,760.3	3,785.3	3,772.2	11.0	8.1	-149.63	32.2	258.6	346.2	330.3	15.86	21.825	
3,900.0	3,859.8	3,885.0	3,871.4	11.2	8.3	-148.88	33.2	269.0	351.5	335.1	16.36	21.479	
4,000.0	3,959.4	3,984.8	3,970.6	11.4	8.6	-148.00	34.2	279.4	355.4	338.5	16.87	21.065	
4,100.0	4,059.2	4,084.6	4,069.9	11.6	8.8	-146.98	35.2	289.8	357.9	340.5	17.38	20.591	
4,200.0	4,159.1	4,184.3	4,169.0	11.8	9.1	-145.81	36.2	300.1	359.1	341.2	17.90	20.066	
4,300.0	4,259.0	4,283.9	4,268.1	11.9	9.3	-144.49	37.2	310.5	359.0	340.6	18.41	19.498	
4,400.0	4,359.0	4,383.5	4,367.1	12.0	9.6	-142.99	38.2	320.9	357.7	338.8	18.93	18.896	
4,500.0	4,459.0	4,483.0	4,466.1	12.1	9.8	-16.36	39.2	331.2	355.7	337.2	18.53	19.193	
4,600.0	4,559.0	4,582.4	4,565.0	12.2	10.0	-14.70	40.2	341.6	353.9	335.2	18.70	18.922	
4,700.0	4,659.0	4,681.9	4,663.9	12.4	10.3	-13.04	41.2	351.9	352.3	333.5	18.87	18.670	
4,800.0	4,759.0	4,781.3	4,762.8	12.5	10.5	-11.35	42.2	362.2	351.1	332.1	19.05	18.435	
4,900.0	4,859.0	4,880.8	4,861.7	12.6	10.8	-9.66	43.2	372.6	350.2	331.0	19.22	18.215	
5,000.0	4,959.0	4,980.2	4,960.6	12.7	11.0	-7.96	44.2	382.9	349.6	330.2	19.41	18.010	
5,100.0	5,059.0	5,079.6	5,059.5	12.8	11.3	-6.27	45.1	393.2	349.3	329.7	19.60	17.817	

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 State 1F-16H
Project:	DJ Wattenberg	**TVD Reference:**	WELL @ 5039.0ft (Original Well Elev)
Reference Site:	S16-T3N-R68W (State)	**MD Reference:**	WELL @ 5039.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	State 1F-16H	**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 S16-T3N-R68W (State) - State 1E-16H - Hz - Plan #1

Offset Site Error: 0.0 ft

Survey Program: 0-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
5,149.6	5,108.7	5,129.0	5,108.7	12.9	11.4	-5.50	45.6	397.9	349.2	329.5	19.71	17.721	
5,200.0	5,159.0	5,179.2	5,158.7	13.0	11.5	-4.79	46.0	402.2	349.3	329.5	19.82	17.623	
5,300.0	5,259.0	5,279.1	5,258.3	13.1	11.7	-3.59	46.7	409.5	349.4	329.4	20.06	17.418	
5,400.0	5,359.0	5,379.2	5,358.2	13.2	11.9	-2.67	47.3	415.1	349.7	329.3	20.33	17.202	
5,500.0	5,459.0	5,479.5	5,458.4	13.3	12.1	-2.04	47.6	418.9	349.9	329.3	20.61	16.973	
5,600.0	5,559.0	5,579.8	5,558.7	13.5	12.2	-1.69	47.8	421.0	350.0	329.1	20.92	16.730	
5,700.0	5,659.0	5,680.1	5,659.0	13.6	12.4	-1.62	47.9	421.4	350.1	328.8	21.24	16.477	
5,800.0	5,759.0	5,780.1	5,759.0	13.7	12.5	-1.62	47.9	421.4	350.1	328.5	21.57	16.227	
5,900.0	5,859.0	5,880.1	5,859.0	13.8	12.7	-1.62	47.9	421.4	350.1	328.2	21.90	15.984	
6,000.0	5,959.0	5,980.1	5,959.0	14.0	12.8	-1.62	47.9	421.4	350.1	327.8	22.23	15.748	
6,100.0	6,059.0	6,080.1	6,059.0	14.1	12.9	-1.62	47.9	421.4	350.1	327.5	22.56	15.518	
6,200.0	6,159.0	6,180.1	6,159.0	14.2	13.1	-1.62	47.9	421.4	350.1	327.2	22.89	15.294	
6,300.0	6,259.0	6,280.1	6,259.0	14.4	13.2	-1.62	47.9	421.4	350.1	326.8	23.22	15.077	
6,400.0	6,359.0	6,380.1	6,359.0	14.5	13.4	-1.62	47.9	421.4	350.1	326.5	23.55	14.865	
6,500.0	6,459.0	6,480.1	6,459.0	14.6	13.5	88.74	47.9	421.4	350.0	323.0	27.03	12.949	
6,563.0	6,521.5	6,542.6	6,521.5	14.6	13.6	90.00	47.9	421.4	349.9	322.7	27.16	12.883	
6,600.0	6,557.8	6,578.9	6,557.8	14.6	13.7	91.13	47.9	421.4	350.0	322.7	27.25	12.844	
6,700.0	6,653.6	6,676.8	6,655.7	14.4	13.8	95.33	47.9	420.1	351.6	324.2	27.35	12.856	
6,800.0	6,744.5	6,779.5	6,757.4	14.2	13.8	99.82	47.9	406.4	355.6	328.4	27.14	13.103	
6,900.0	6,828.8	6,887.0	6,860.6	14.0	13.6	104.11	47.9	376.7	361.7	335.1	26.64	13.576	
7,000.0	6,904.7	6,999.9	6,963.0	13.8	13.4	108.12	47.9	329.3	369.5	343.5	25.96	14.230	
7,100.0	6,970.9	7,118.5	7,061.0	13.6	13.2	111.73	47.9	262.8	378.2	352.9	25.30	14.949	
7,200.0	7,026.1	7,243.0	7,150.7	13.6	13.1	114.85	47.9	176.7	387.1	362.1	24.93	15.527	
7,300.0	7,069.1	7,373.1	7,227.0	14.0	13.3	117.39	47.9	71.6	395.2	370.0	25.20	15.681	
7,400.0	7,099.1	7,508.2	7,284.7	14.9	14.2	119.28	47.9	-50.3	401.8	375.4	26.40	15.220	
7,500.0	7,115.6	7,647.0	7,319.2	16.3	15.8	120.45	47.9	-184.6	406.0	377.4	28.65	14.173	
7,600.0	7,118.5	7,782.7	7,327.4	17.9	17.9	120.85	47.8	-319.8	407.5	375.8	31.76	12.833	
7,700.0	7,116.7	7,882.7	7,325.7	19.7	19.7	120.85	47.8	-419.8	407.5	372.8	34.78	11.718	
7,800.0	7,115.0	7,982.7	7,323.9	21.6	21.6	120.85	47.8	-519.8	407.5	369.5	38.03	10.717	
7,900.0	7,113.2	8,082.7	7,322.2	23.6	23.6	120.85	47.8	-619.7	407.5	366.1	41.46	9.830	
8,000.0	7,111.5	8,182.7	7,320.4	25.7	25.7	120.85	47.8	-719.7	407.5	362.5	45.03	9.050	
8,100.0	7,109.7	8,282.7	7,318.7	27.8	27.8	120.85	47.8	-819.7	407.5	358.8	48.71	8.366	
8,200.0	7,108.0	8,382.7	7,316.9	30.0	30.0	120.85	47.8	-919.7	407.5	355.0	52.48	7.765	
8,300.0	7,106.3	8,482.7	7,315.2	32.3	32.3	120.85	47.8	-1,019.7	407.5	351.2	56.32	7.236	
8,400.0	7,104.5	8,582.7	7,313.5	34.5	34.6	120.85	47.8	-1,119.7	407.5	347.3	60.21	6.768	
8,500.0	7,102.8	8,682.7	7,311.7	36.8	36.9	120.85	47.8	-1,219.7	407.5	343.4	64.15	6.353	
8,600.0	7,101.0	8,782.7	7,310.0	39.1	39.2	120.85	47.8	-1,319.6	407.5	339.4	68.12	5.982	
8,700.0	7,099.3	8,882.7	7,308.2	41.5	41.5	120.85	47.8	-1,419.6	407.5	335.4	72.13	5.649	
8,800.0	7,097.5	8,982.7	7,306.5	43.8	43.9	120.85	47.8	-1,519.6	407.5	331.3	76.17	5.350	
8,900.0	7,095.8	9,082.7	7,304.7	46.2	46.3	120.85	47.8	-1,619.6	407.5	327.3	80.22	5.079	
9,000.0	7,094.0	9,182.7	7,303.0	48.6	48.6	120.85	47.8	-1,719.6	407.5	323.2	84.30	4.834	
9,100.0	7,092.3	9,282.7	7,301.2	51.0	51.0	120.85	47.8	-1,819.6	407.5	319.1	88.39	4.610	
9,200.0	7,090.6	9,382.7	7,299.5	53.3	53.4	120.85	47.8	-1,919.5	407.5	315.0	92.50	4.405	
9,300.0	7,088.8	9,482.7	7,297.7	55.7	55.8	120.85	47.8	-2,019.5	407.5	310.9	96.62	4.217	
9,400.0	7,087.1	9,582.7	7,296.0	58.2	58.2	120.85	47.8	-2,119.5	407.5	306.7	100.75	4.044	
9,500.0	7,085.3	9,682.7	7,294.3	60.6	60.6	120.85	47.8	-2,219.5	407.5	302.6	104.89	3.885	
9,600.0	7,083.6	9,782.7	7,292.5	63.0	63.1	120.85	47.8	-2,319.5	407.5	298.4	109.04	3.737	
9,700.0	7,081.8	9,882.7	7,290.8	65.4	65.5	120.86	47.8	-2,419.5	407.5	294.3	113.19	3.600	
9,800.0	7,080.1	9,982.7	7,289.0	67.8	67.9	120.86	47.8	-2,519.5	407.5	290.1	117.36	3.472	
9,900.0	7,078.3	10,082.7	7,287.3	70.2	70.3	120.86	47.8	-2,619.4	407.5	285.9	121.53	3.353	
10,000.0	7,076.6	10,182.7	7,285.5	72.7	72.8	120.86	47.8	-2,719.4	407.5	281.8	125.70	3.241	
10,100.0	7,074.8	10,282.7	7,283.8	75.1	75.2	120.86	47.8	-2,819.4	407.4	277.6	129.88	3.137	

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 State 1F-16H
Project:	DJ Wattenberg	**TVD Reference:**	WELL @ 5039.0ft (Original Well Elev)
Reference Site:	S16-T3N-R68W (State)	**MD Reference:**	WELL @ 5039.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	State 1F-16H	**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 S16-T3N-R68W (State) - State 1E-16H - Hz - Plan #1

Offset Site Error: 0.0 ft

Survey Program: 0-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
10,200.0	7,073.1	10,382.7	7,282.0	77.5	77.6	120.86	47.8	-2,919.4	407.4	273.4	134.07	3.039	
10,300.0	7,071.4	10,482.7	7,280.3	80.0	80.1	120.86	47.8	-3,019.4	407.4	269.2	138.25	2.947	
10,400.0	7,069.6	10,582.7	7,278.6	82.4	82.5	120.86	47.8	-3,119.4	407.4	265.0	142.45	2.860	
10,500.0	7,067.9	10,682.7	7,276.8	84.9	85.0	120.86	47.8	-3,219.4	407.4	260.8	146.64	2.778	
10,600.0	7,066.1	10,782.7	7,275.1	87.3	87.4	120.86	47.8	-3,319.3	407.4	256.6	150.84	2.701	
10,700.0	7,064.4	10,882.7	7,273.3	89.8	89.9	120.86	47.8	-3,419.3	407.4	252.4	155.04	2.628	
10,800.0	7,062.6	10,982.7	7,271.6	92.2	92.3	120.86	47.8	-3,519.3	407.4	248.2	159.25	2.558	
10,900.0	7,060.9	11,082.7	7,269.8	94.7	94.8	120.86	47.8	-3,619.3	407.4	244.0	163.45	2.493	
11,000.0	7,059.1	11,182.7	7,268.1	97.1	97.2	120.86	47.8	-3,719.3	407.4	239.8	167.66	2.430	
11,100.0	7,057.4	11,282.7	7,266.3	99.6	99.7	120.86	47.8	-3,819.3	407.4	235.5	171.87	2.370	
11,200.0	7,055.6	11,382.7	7,264.6	102.0	102.1	120.86	47.8	-3,919.2	407.4	231.3	176.08	2.314	
11,300.0	7,053.9	11,482.7	7,262.8	104.5	104.6	120.86	47.8	-4,019.2	407.4	227.1	180.30	2.260	
11,400.0	7,052.2	11,582.7	7,261.1	106.9	107.0	120.86	47.8	-4,119.2	407.4	222.9	184.52	2.208	
11,500.0	7,050.4	11,682.7	7,259.4	109.4	109.5	120.86	47.7	-4,219.2	407.4	218.7	188.73	2.159	
11,600.0	7,048.7	11,782.7	7,257.6	111.8	111.9	120.86	47.7	-4,319.2	407.4	214.4	192.95	2.111	
11,612.3	7,048.5	11,795.0	7,257.4	112.1	112.2	120.86	47.7	-4,331.5	407.4	213.9	193.47	2.106	SF

Company:	EnCana Oil & Gas (USA) Inc	**Local Co-ordinate Reference:**	Well State 1F-16H
Project:	DJ Wattenberg	**TVD Reference:**	WELL @ 5039.0ft (Original Well Elev)
Reference Site:	S16-T3N-R68W (State)	**MD Reference:**	WELL @ 5039.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	State 1F-16H	**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 S16-T3N-R68W (State) - State 1G-16H - Hz - Plan #1

Offset Site Error: 0.0 ft

Survey Program: 0-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	-180.00	-10.9	0.0	10.9				
100.0	100.0	100.0	100.0	0.2	0.2	-180.00	-10.9	0.0	10.9	10.6	0.30	35.986	
200.0	200.0	200.0	200.0	0.3	0.3	-180.00	-10.9	0.0	10.9	10.3	0.65	16.742	
300.0	300.0	300.0	300.0	0.5	0.5	-180.00	-10.9	0.0	10.9	9.9	1.00	10.909	CC, ES
400.0	400.0	399.8	399.8	0.7	0.7	177.55	-11.6	0.5	11.7	10.3	1.35	8.624	
500.0	500.0	499.6	499.6	0.9	0.9	49.48	-13.8	2.0	13.3	11.6	1.70	7.846	
600.0	600.0	599.4	599.3	1.0	1.0	48.89	-17.3	4.5	15.4	13.4	2.05	7.515	
700.0	699.9	699.1	698.8	1.2	1.2	49.96	-22.3	8.0	17.9	15.5	2.41	7.418	
800.0	799.7	798.8	798.1	1.4	1.4	52.04	-28.7	12.4	20.8	18.0	2.79	7.456	
900.0	899.4	898.4	897.3	1.6	1.7	54.64	-36.5	17.9	24.1	20.9	3.18	7.576	
1,000.0	998.9	997.9	996.2	1.8	1.9	57.46	-45.7	24.4	27.9	24.3	3.60	7.742	
1,100.0	1,098.3	1,097.4	1,094.9	2.1	2.2	60.29	-56.3	31.8	32.2	28.1	4.06	7.928	
1,200.0	1,197.4	1,196.9	1,193.2	2.3	2.5	63.01	-68.3	40.2	37.0	32.4	4.56	8.116	
1,300.0	1,296.3	1,296.2	1,291.2	2.6	2.8	65.56	-81.7	49.6	42.4	37.2	5.11	8.295	
1,400.0	1,394.9	1,395.5	1,388.8	2.9	3.1	67.90	-96.5	59.9	48.3	42.6	5.71	8.459	
1,500.0	1,493.4	1,494.7	1,486.0	3.3	3.5	69.25	-112.6	71.2	55.1	48.8	6.34	8.699	
1,600.0	1,591.9	1,594.3	1,583.5	3.6	3.9	69.63	-129.6	83.1	62.6	55.6	6.96	8.989	
1,700.0	1,690.4	1,694.1	1,681.1	3.9	4.3	69.92	-146.5	95.0	70.0	62.4	7.59	9.221	
1,800.0	1,788.9	1,793.8	1,778.6	4.3	4.6	70.16	-163.5	106.8	77.5	69.2	8.23	9.409	
1,900.0	1,887.3	1,893.5	1,876.2	4.6	5.0	70.36	-180.5	118.7	84.9	76.0	8.88	9.564	
2,000.0	1,985.8	1,993.2	1,973.7	4.9	5.4	70.52	-197.5	130.6	92.4	82.8	9.53	9.694	
2,100.0	2,084.3	2,093.0	2,071.2	5.3	5.8	70.66	-214.5	142.5	99.8	89.7	10.18	9.804	
2,200.0	2,182.8	2,192.7	2,168.8	5.6	6.2	70.78	-231.5	154.4	107.3	96.5	10.84	9.897	
2,300.0	2,281.3	2,292.4	2,266.3	6.0	6.6	70.89	-248.4	166.3	114.7	103.2	11.50	9.979	
2,400.0	2,379.7	2,392.1	2,363.9	6.3	7.0	70.98	-265.4	178.2	122.2	110.0	12.16	10.049	
2,500.0	2,478.2	2,491.8	2,461.4	6.7	7.4	71.06	-282.4	190.1	129.7	116.8	12.82	10.111	
2,600.0	2,576.7	2,591.6	2,559.0	7.0	7.8	71.14	-299.4	202.0	137.1	123.6	13.49	10.166	
2,700.0	2,675.2	2,691.3	2,656.5	7.3	8.2	71.20	-316.4	213.9	144.6	130.4	14.15	10.215	
2,800.0	2,773.7	2,791.0	2,754.0	7.7	8.6	71.26	-333.4	225.8	152.0	137.2	14.82	10.259	
2,900.0	2,872.1	2,890.7	2,851.6	8.0	9.0	71.31	-350.3	237.7	159.5	144.0	15.49	10.298	
3,000.0	2,970.6	2,990.4	2,949.1	8.4	9.4	71.36	-367.3	249.6	167.0	150.8	16.16	10.333	
3,100.0	3,069.1	3,090.2	3,046.7	8.7	9.8	71.41	-384.3	261.4	174.4	157.6	16.83	10.366	
3,200.0	3,167.6	3,189.9	3,144.2	9.1	10.2	71.45	-401.3	273.3	181.9	164.4	17.50	10.395	
3,300.0	3,266.1	3,289.6	3,241.7	9.4	10.6	71.49	-418.3	285.2	189.3	171.2	18.17	10.422	
3,400.0	3,364.5	3,389.3	3,339.3	9.8	11.0	71.52	-435.3	297.1	196.8	178.0	18.84	10.447	
3,500.0	3,463.1	3,489.0	3,436.8	10.1	11.4	71.49	-452.2	309.0	204.4	184.9	19.49	10.487	
3,600.0	3,561.9	3,588.7	3,534.3	10.4	11.8	71.06	-469.2	320.9	212.5	192.5	20.06	10.593	
3,700.0	3,661.0	3,688.3	3,631.7	10.7	12.2	70.25	-486.2	332.8	221.2	200.7	20.56	10.761	
3,800.0	3,760.3	3,787.7	3,728.9	11.0	12.6	69.11	-503.1	344.6	230.6	209.7	20.98	10.994	
3,900.0	3,859.8	3,887.0	3,826.1	11.2	13.0	67.69	-520.0	356.5	240.8	219.5	21.32	11.294	
4,000.0	3,959.4	3,987.2	3,924.1	11.4	13.4	66.03	-537.0	368.4	251.7	230.1	21.59	11.661	
4,100.0	4,059.2	4,089.6	4,024.6	11.6	13.8	64.35	-553.2	379.7	262.6	240.8	21.79	12.050	
4,200.0	4,159.1	4,192.2	4,125.6	11.8	14.1	62.74	-567.9	390.0	273.2	251.2	21.95	12.444	
4,300.0	4,259.0	4,295.1	4,227.2	11.9	14.4	61.17	-581.2	399.3	283.5	261.4	22.07	12.843	
4,400.0	4,359.0	4,398.3	4,329.4	12.0	14.7	59.64	-593.0	407.6	293.4	271.3	22.15	13.248	
4,500.0	4,459.0	4,501.7	4,432.1	12.1	15.0	-176.85	-603.3	414.8	302.9	281.0	21.96	13.791	
4,600.0	4,559.0	4,605.6	4,535.4	12.2	15.2	-178.08	-612.1	421.0	311.2	288.6	22.56	13.796	
4,700.0	4,659.0	4,709.9	4,639.2	12.4	15.5	-179.05	-619.5	426.1	318.1	295.0	23.08	13.784	
4,800.0	4,759.0	4,814.4	4,743.5	12.5	15.7	-179.79	-625.3	430.2	323.6	300.1	23.54	13.749	
4,900.0	4,859.0	4,919.2	4,848.2	12.6	15.8	179.69	-629.5	433.1	327.6	303.7	23.94	13.688	
5,000.0	4,959.0	5,024.1	4,953.0	12.7	15.9	179.37	-632.2	435.0	330.2	305.9	24.28	13.600	
5,100.0	5,059.0	5,129.1	5,058.0	12.8	16.1	179.24	-633.3	435.8	331.3	306.7	24.57	13.481	

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 State 1F-16H
Project:	DJ Wattenberg	**TVD Reference:**	WELL @ 5039.0ft (Original Well Elev)
Reference Site:	S16-T3N-R68W (State)	**MD Reference:**	WELL @ 5039.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	State 1F-16H	**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 S16-T3N-R68W (State) - State 1G-16H - Hz - Plan #1

Offset Site Error: 0.0 ft

Survey Program: 0-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	5,159.0	5,230.1	5,159.0	13.0	16.2	179.23	-633.3	435.8	331.3	306.5	24.84	13.340	
5,300.0	5,259.0	5,330.1	5,259.0	13.1	16.3	179.23	-633.3	435.8	331.3	306.2	25.10	13.201	
5,400.0	5,359.0	5,430.1	5,359.0	13.2	16.4	179.23	-633.3	435.8	331.3	305.9	25.36	13.063	
5,500.0	5,459.0	5,530.1	5,459.0	13.3	16.5	179.23	-633.3	435.8	331.3	305.7	25.63	12.928	
5,600.0	5,559.0	5,630.1	5,559.0	13.5	16.6	179.23	-633.3	435.8	331.3	305.4	25.90	12.794	
5,700.0	5,659.0	5,730.1	5,659.0	13.6	16.7	179.23	-633.3	435.8	331.3	305.1	26.16	12.662	
5,800.0	5,759.0	5,830.1	5,759.0	13.7	16.8	179.23	-633.3	435.8	331.3	304.9	26.44	12.532	
5,900.0	5,859.0	5,930.1	5,859.0	13.8	16.9	179.23	-633.3	435.8	331.3	304.6	26.71	12.404	
6,000.0	5,959.0	6,030.1	5,959.0	14.0	17.0	179.23	-633.3	435.8	331.3	304.3	26.98	12.278	
6,100.0	6,059.0	6,130.1	6,059.0	14.1	17.1	179.23	-633.3	435.8	331.3	304.0	27.26	12.153	
6,200.0	6,159.0	6,230.1	6,159.0	14.2	17.2	179.23	-633.3	435.8	331.3	303.8	27.54	12.031	
6,300.0	6,259.0	6,330.1	6,259.0	14.4	17.3	179.23	-633.3	435.8	331.3	303.5	27.82	11.910	
6,400.0	6,359.0	6,430.1	6,359.0	14.5	17.4	179.23	-633.3	435.8	331.3	303.2	28.10	11.791	
6,431.6	6,390.6	6,461.7	6,390.6	14.5	17.5	-90.84	-633.3	435.8	331.3	304.3	26.98	12.282	
6,500.0	6,459.0	6,530.0	6,459.0	14.6	17.5	-91.15	-633.3	435.8	331.3	304.2	27.10	12.227	
6,600.0	6,557.8	6,628.8	6,557.8	14.6	17.6	-93.61	-633.3	435.8	332.0	305.1	26.83	12.372	
6,700.0	6,653.6	6,727.7	6,656.6	14.4	17.7	-97.97	-633.3	434.4	334.8	308.6	26.19	12.786	
6,800.0	6,744.5	6,832.7	6,760.6	14.2	17.7	-102.61	-633.3	420.1	340.2	314.7	25.42	13.382	
6,900.0	6,828.8	6,942.8	6,866.1	14.0	17.6	-106.98	-633.3	389.0	347.5	322.8	24.70	14.068	
7,000.0	6,904.7	7,058.5	6,970.4	13.8	17.4	-110.97	-633.3	339.4	356.3	332.1	24.15	14.752	
7,100.0	6,970.9	7,180.0	7,069.9	13.6	17.2	-114.48	-633.3	269.9	365.6	341.7	23.88	15.307	
7,200.0	7,026.1	7,307.2	7,160.0	13.6	17.0	-117.42	-633.3	180.2	374.6	350.6	24.03	15.587	
7,300.0	7,069.1	7,439.9	7,235.4	14.0	17.0	-119.72	-633.3	71.4	382.4	357.6	24.76	15.444	
7,400.0	7,099.1	7,576.9	7,290.9	14.9	17.3	-121.30	-633.3	-53.7	388.1	362.0	26.16	14.834	
7,500.0	7,115.6	7,716.9	7,322.0	16.3	18.2	-122.12	-633.3	-190.0	391.2	362.9	28.30	13.824	
7,600.0	7,118.5	7,847.0	7,327.2	17.9	19.8	-122.21	-633.3	-319.8	391.6	360.6	31.01	12.627	
7,700.0	7,116.7	7,947.0	7,325.4	19.7	21.4	-122.21	-633.3	-419.8	391.6	357.6	34.01	11.513	
7,800.0	7,115.0	8,047.0	7,323.7	21.6	23.2	-122.21	-633.3	-519.7	391.6	354.3	37.24	10.516	
7,900.0	7,113.2	8,147.0	7,321.9	23.6	25.1	-122.21	-633.3	-619.7	391.6	351.0	40.64	9.635	
8,000.0	7,111.5	8,247.0	7,320.2	25.7	27.1	-122.21	-633.4	-719.7	391.6	347.4	44.18	8.864	
8,100.0	7,109.7	8,347.0	7,318.5	27.8	29.1	-122.21	-633.4	-819.7	391.6	343.8	47.82	8.188	
8,200.0	7,108.0	8,447.0	7,316.7	30.0	31.3	-122.21	-633.4	-919.7	391.6	340.1	51.55	7.596	
8,300.0	7,106.3	8,547.0	7,315.0	32.3	33.4	-122.21	-633.4	-1,019.7	391.6	336.3	55.35	7.075	
8,400.0	7,104.5	8,647.0	7,313.2	34.5	35.7	-122.21	-633.4	-1,119.6	391.6	332.4	59.20	6.616	
8,500.0	7,102.8	8,747.0	7,311.5	36.8	37.9	-122.21	-633.4	-1,219.6	391.6	328.5	63.09	6.207	
8,600.0	7,101.0	8,847.0	7,309.7	39.1	40.2	-122.21	-633.4	-1,319.6	391.6	324.6	67.02	5.844	
8,700.0	7,099.3	8,947.0	7,308.0	41.5	42.5	-122.21	-633.4	-1,419.6	391.6	320.6	70.97	5.518	
8,800.0	7,097.5	9,047.0	7,306.2	43.8	44.8	-122.21	-633.4	-1,519.6	391.6	316.7	74.96	5.225	
8,900.0	7,095.8	9,147.0	7,304.5	46.2	47.1	-122.21	-633.4	-1,619.6	391.6	312.7	78.96	4.960	
9,000.0	7,094.0	9,247.0	7,302.7	48.6	49.5	-122.21	-633.4	-1,719.6	391.6	308.6	82.99	4.719	
9,100.0	7,092.3	9,347.0	7,301.0	51.0	51.8	-122.21	-633.4	-1,819.5	391.6	304.6	87.03	4.500	
9,200.0	7,090.6	9,447.0	7,299.3	53.3	54.2	-122.21	-633.4	-1,919.5	391.6	300.6	91.08	4.300	
9,300.0	7,088.8	9,547.0	7,297.5	55.7	56.6	-122.21	-633.4	-2,019.5	391.6	296.5	95.15	4.116	
9,400.0	7,087.1	9,647.0	7,295.8	58.2	59.0	-122.21	-633.4	-2,119.5	391.7	292.4	99.22	3.947	
9,500.0	7,085.3	9,747.0	7,294.0	60.6	61.3	-122.20	-633.4	-2,219.5	391.7	288.3	103.31	3.791	
9,600.0	7,083.6	9,847.0	7,292.3	63.0	63.7	-122.20	-633.4	-2,319.5	391.7	284.3	107.40	3.647	
9,700.0	7,081.8	9,947.0	7,290.5	65.4	66.1	-122.20	-633.4	-2,419.4	391.7	280.2	111.50	3.513	
9,800.0	7,080.1	10,047.0	7,288.8	67.8	68.6	-122.20	-633.4	-2,519.4	391.7	276.1	115.61	3.388	
9,900.0	7,078.3	10,147.0	7,287.0	70.2	71.0	-122.20	-633.4	-2,619.4	391.7	271.9	119.73	3.271	
10,000.0	7,076.6	10,247.0	7,285.3	72.7	73.4	-122.20	-633.4	-2,719.4	391.7	267.8	123.84	3.163	
10,100.0	7,074.8	10,347.0	7,283.5	75.1	75.8	-122.20	-633.4	-2,819.4	391.7	263.7	127.97	3.061	
10,200.0	7,073.1	10,447.0	7,281.8	77.5	78.2	-122.20	-633.4	-2,919.4	391.7	259.6	132.10	2.965	

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 State 1F-16H
Project:	DJ Wattenberg	**TVD Reference:**	WELL @ 5039.0ft (Original Well Elev)
Reference Site:	S16-T3N-R68W (State)	**MD Reference:**	WELL @ 5039.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	State 1F-16H	**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 S16-T3N-R68W (State) - State 1G-16H - Hz - Plan #1

Offset Site Error: 0.0 ft

Survey Program: 0-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	7,071.4	10,547.0	7,280.1	80.0	80.7	-122.20	-633.4	-3,019.4	391.7	255.5	136.23	2.875	
10,400.0	7,069.6	10,647.0	7,278.3	82.4	83.1	-122.20	-633.4	-3,119.3	391.7	251.3	140.36	2.791	
10,500.0	7,067.9	10,747.0	7,276.6	84.9	85.5	-122.20	-633.4	-3,219.3	391.7	247.2	144.50	2.711	
10,600.0	7,066.1	10,847.0	7,274.8	87.3	87.9	-122.20	-633.4	-3,319.3	391.7	243.1	148.65	2.635	
10,700.0	7,064.4	10,947.0	7,273.1	89.8	90.4	-122.20	-633.4	-3,419.3	391.7	238.9	152.79	2.564	
10,800.0	7,062.6	11,047.0	7,271.3	92.2	92.8	-122.20	-633.4	-3,519.3	391.7	234.8	156.94	2.496	
10,900.0	7,060.9	11,147.0	7,269.6	94.7	95.3	-122.20	-633.4	-3,619.3	391.7	230.6	161.09	2.432	
11,000.0	7,059.1	11,247.0	7,267.8	97.1	97.7	-122.20	-633.5	-3,719.3	391.7	226.5	165.24	2.371	
11,100.0	7,057.4	11,347.0	7,266.1	99.6	100.1	-122.20	-633.5	-3,819.2	391.7	222.3	169.39	2.313	
11,200.0	7,055.6	11,447.0	7,264.3	102.0	102.6	-122.20	-633.5	-3,919.2	391.7	218.2	173.55	2.257	
11,300.0	7,053.9	11,547.0	7,262.6	104.5	105.0	-122.20	-633.5	-4,019.2	391.7	214.0	177.71	2.204	
11,400.0	7,052.2	11,647.0	7,260.9	106.9	107.5	-122.20	-633.5	-4,119.2	391.7	209.9	181.87	2.154	
11,500.0	7,050.4	11,747.0	7,259.1	109.4	109.9	-122.20	-633.5	-4,219.2	391.7	205.7	186.03	2.106	
11,600.0	7,048.7	11,847.0	7,257.4	111.8	112.4	-122.20	-633.5	-4,319.2	391.7	201.6	190.19	2.060	
11,612.3	7,048.5	11,847.4	7,257.4	112.1	112.4	-122.20	-633.5	-4,319.6	391.9	201.5	190.45	2.058	SF

Company:	EnCana Oil & Gas (USA) Inc	**Local Co-ordinate Reference:**	Well State 1F-16H
Project:	DJ Wattenberg	**TVD Reference:**	WELL @ 5039.0ft (Original Well Elev)
Reference Site:	S16-T3N-R68W (State)	**MD Reference:**	WELL @ 5039.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	State 1F-16H	**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 S16-T3N-R68W (State) - State 1H-16H - Hz - Plan #1

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

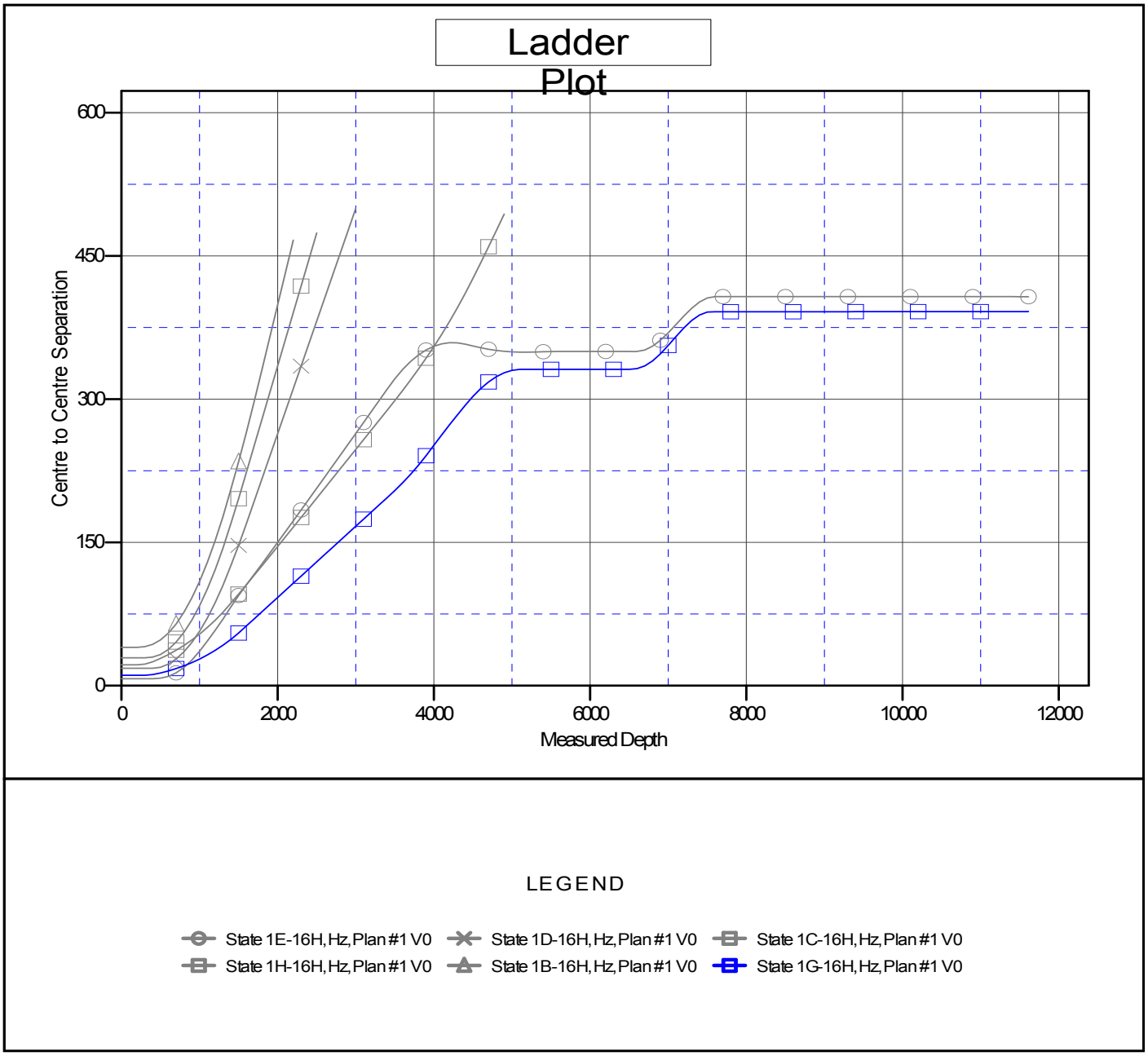
Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	180.00	-21.9	0.0	21.9				
100.0	100.0	100.0	100.0	0.2	0.2	180.00	-21.9	0.0	21.9	21.5	0.30	71.959	
200.0	200.0	200.0	200.0	0.3	0.3	180.00	-21.9	0.0	21.9	21.2	0.65	33.478	CC, ES
300.0	300.0	299.6	299.6	0.5	0.5	179.06	-22.6	0.4	22.6	21.6	1.00	22.594	
400.0	400.0	399.2	399.2	0.7	0.7	176.58	-25.0	1.5	25.0	23.7	1.36	18.472	
500.0	500.0	498.7	498.6	0.9	0.9	49.66	-28.9	3.4	28.5	26.8	1.70	16.782	
600.0	600.0	598.2	597.8	1.0	1.1	49.45	-34.3	6.0	32.5	30.5	2.05	15.852	
700.0	699.9	697.5	696.9	1.2	1.3	50.41	-41.3	9.3	37.1	34.7	2.41	15.361	
800.0	799.7	796.7	795.6	1.4	1.5	52.12	-49.9	13.4	42.1	39.3	2.78	15.126	
900.0	899.4	895.8	894.1	1.6	1.8	54.28	-59.9	18.2	47.7	44.6	3.17	15.042	SF
1,000.0	998.9	994.8	992.3	1.8	2.0	56.68	-71.5	23.7	54.0	50.4	3.59	15.045	
1,100.0	1,098.3	1,093.7	1,090.1	2.1	2.3	59.16	-84.6	29.9	60.9	56.9	4.04	15.090	
1,200.0	1,197.4	1,192.4	1,187.4	2.3	2.6	61.63	-99.2	36.9	68.5	64.0	4.53	15.148	
1,300.0	1,296.3	1,291.0	1,284.4	2.6	3.0	64.01	-115.3	44.6	76.9	71.9	5.06	15.202	
1,400.0	1,394.9	1,389.4	1,380.8	2.9	3.3	66.27	-132.9	53.0	86.1	80.5	5.65	15.241	
1,500.0	1,493.4	1,488.7	1,478.0	3.3	3.7	68.27	-151.5	61.8	95.9	89.6	6.27	15.297	
1,600.0	1,591.9	1,588.2	1,575.3	3.6	4.1	69.91	-170.2	70.7	105.7	98.8	6.90	15.321	
1,700.0	1,690.4	1,687.6	1,672.6	3.9	4.5	71.26	-188.8	79.6	115.7	108.1	7.55	15.327	
1,800.0	1,788.9	1,787.1	1,769.9	4.3	4.9	72.40	-207.5	88.6	125.7	117.5	8.20	15.321	
1,900.0	1,887.3	1,886.6	1,867.2	4.6	5.3	73.37	-226.2	97.5	135.7	126.8	8.86	15.309	
2,000.0	1,985.8	1,986.0	1,964.5	4.9	5.7	74.21	-244.8	106.4	145.8	136.2	9.53	15.293	
2,100.0	2,084.3	2,085.5	2,061.8	5.3	6.1	74.93	-263.5	115.3	155.9	145.7	10.20	15.275	
2,200.0	2,182.8	2,185.0	2,159.1	5.6	6.5	75.57	-282.2	124.2	166.0	155.1	10.88	15.257	
2,300.0	2,281.3	2,284.5	2,256.4	6.0	6.9	76.14	-300.8	133.1	176.1	164.6	11.56	15.238	
2,400.0	2,379.7	2,383.9	2,353.7	6.3	7.3	76.65	-319.5	142.0	186.3	174.0	12.24	15.220	
2,500.0	2,478.2	2,483.4	2,451.0	6.7	7.6	77.10	-338.2	150.9	196.4	183.5	12.92	15.203	
2,600.0	2,576.7	2,582.9	2,548.3	7.0	8.0	77.51	-356.8	159.8	206.6	193.0	13.60	15.186	
2,700.0	2,675.2	2,682.3	2,645.6	7.3	8.4	77.88	-375.5	168.7	216.8	202.5	14.29	15.170	
2,800.0	2,773.7	2,781.8	2,742.9	7.7	8.8	78.21	-394.2	177.6	227.0	212.0	14.98	15.154	
2,900.0	2,872.1	2,881.3	2,840.2	8.0	9.2	78.52	-412.8	186.5	237.2	221.5	15.66	15.140	
3,000.0	2,970.6	2,980.8	2,937.5	8.4	9.6	78.80	-431.5	195.4	247.4	231.0	16.35	15.126	
3,100.0	3,069.1	3,080.2	3,034.8	8.7	10.0	79.06	-450.2	204.3	257.6	240.5	17.04	15.113	
3,200.0	3,167.6	3,179.7	3,132.1	9.1	10.4	79.30	-468.8	213.2	267.8	250.1	17.73	15.101	
3,300.0	3,266.1	3,279.2	3,229.4	9.4	10.8	79.53	-487.5	222.1	278.0	259.6	18.42	15.089	
3,400.0	3,364.5	3,378.6	3,326.7	9.8	11.2	79.73	-506.2	231.0	288.2	269.1	19.12	15.078	
3,500.0	3,463.1	3,478.1	3,423.9	10.1	11.6	79.91	-524.8	239.9	298.5	278.7	19.79	15.082	
3,600.0	3,561.9	3,577.5	3,521.2	10.4	12.0	79.82	-543.5	248.8	309.1	288.7	20.41	15.145	
3,700.0	3,661.0	3,676.9	3,618.4	10.7	12.4	79.43	-562.1	257.7	320.0	299.1	20.97	15.261	
3,800.0	3,760.3	3,776.2	3,715.5	11.0	12.8	78.78	-580.8	266.6	331.3	309.8	21.47	15.430	
3,900.0	3,859.8	3,875.3	3,812.5	11.2	13.2	77.90	-599.4	275.5	343.0	321.1	21.91	15.654	
4,000.0	3,959.4	3,974.3	3,909.3	11.4	13.6	76.81	-617.9	284.3	355.2	332.9	22.29	15.935	
4,100.0	4,059.2	4,073.1	4,005.9	11.6	14.0	75.55	-636.5	293.2	367.9	345.3	22.61	16.276	
4,200.0	4,159.1	4,171.7	4,102.4	11.8	14.4	74.13	-655.0	302.0	381.4	358.5	22.86	16.682	
4,300.0	4,259.0	4,270.0	4,198.5	11.9	14.8	72.59	-673.4	310.8	395.6	372.5	23.06	17.157	
4,400.0	4,359.0	4,368.1	4,294.5	12.0	15.2	70.95	-691.8	319.6	410.6	387.5	23.19	17.706	
4,500.0	4,459.0	4,465.9	4,390.1	12.1	15.6	-165.83	-710.2	328.3	426.6	405.1	21.47	19.869	
4,600.0	4,559.0	4,563.7	4,485.8	12.2	16.0	-167.54	-728.6	337.1	442.9	420.6	22.26	19.894	
4,700.0	4,659.0	4,661.5	4,581.5	12.4	16.4	-169.12	-746.9	345.8	459.6	436.6	23.04	19.947	
4,800.0	4,759.0	4,759.3	4,677.2	12.5	16.8	-170.59	-765.3	354.6	476.6	452.8	23.81	20.022	
4,900.0	4,859.0	4,857.2	4,772.9	12.6	17.2	-171.96	-783.6	363.3	493.9	469.4	24.55	20.116	

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 State 1F-16H
Project:	DJ Wattenberg	**TVD Reference:**	WELL @ 5039.0ft (Original Well Elev)
Reference Site:	S16-T3N-R68W (State)	**MD Reference:**	WELL @ 5039.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	State 1F-16H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Hz	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Reference Depths are relative to WELL @ 5039.0ft (Original Well Elev)
Offset Depths are relative to Offset Datum
Central Meridian is -105.500000 °

Coordinates are relative to: State 1F-16H
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 0.32°



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