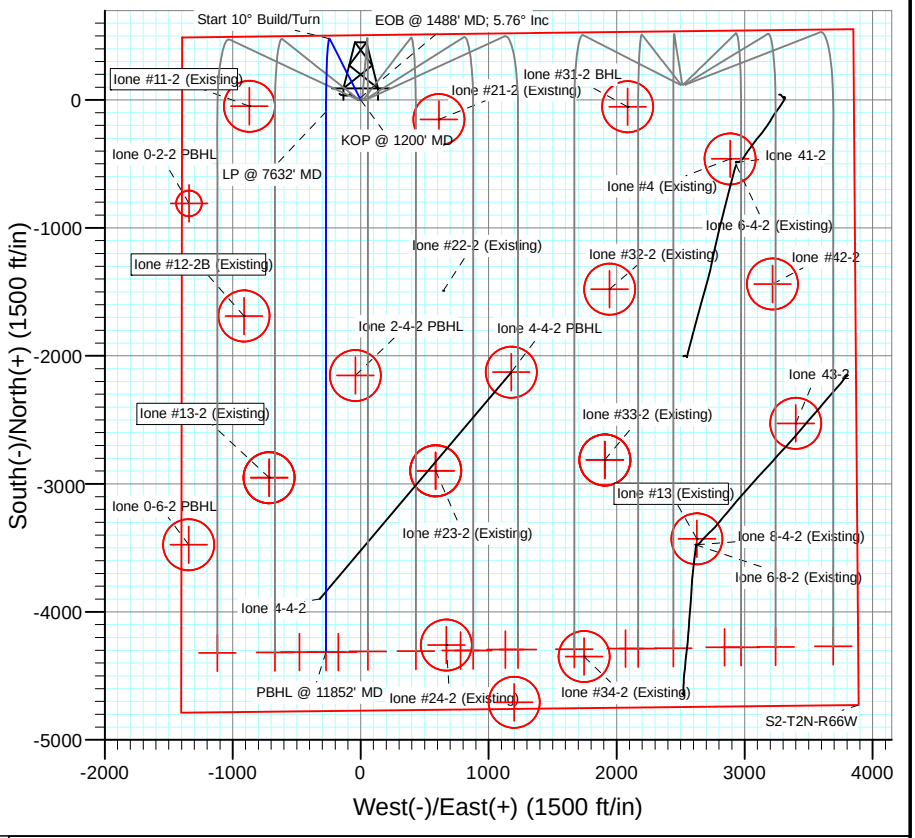
encana natural gas

Project: DJ Wattenberg
Site: NWNE S2-T2N-R66W (Ione)
Well: Ione 2C-2H
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	1200.0	0.00	0.00	1200.0	0.0	0.0	0.00	0.00	0.0	
3	1488.0	5.76	333.07	1487.5	12.9	-6.6	2.00	333.07	-12.9	
4	6681.1	5.76	333.07	6654.4	477.6	-242.6	0.00	0.00	-477.6	
5	7632.5	90.00	180.00	7278.0	-93.1	-271.1	10.00	-152.95	93.1	
6	11852.5	90.00	180.00	7278.0	-4313.1	-271.1	0.00	0.00	4313.1	Ione 2C-2H PBHL (460' FSL, 1,125' FWL)



DESIGN TARGET DETAILS

Name	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
Ione 2C-2H PBHL (460' FSL, 1,125' FWL)	-4313.1	-271.1	1302483.42	3209686.52	40.161270	-104.749770
Ione 2C-2H PBHL (460' FSL, 1,125' FWL) NEW	-4313.1	-175.1	1302484.23	3209782.52	40.161270	-104.749426

FORMATION TOP DETAILS

TVDPath	MDPath	Formation
4569.0	4585.1	Sussex
4826.0	4843.4	Sussex Marker
5172.0	5191.2	Shannon
6498.0	6523.9	Teepee Buttes
7154.0	7248.2	Sharon Springs
7226.0	7386.3	Niobrara
7268.0	7525.2	B Chalk

T M Azimuths to True North
Magnetic North: 8.64°

Magnetic Field
Strength: 52916.1snT
Dip Angle: 66.84°
Date: 8/8/2012
Model: IGRF200510

Plan #1
Ione 2C-2H
125XXX; SC
KB=13' @ 5059.0ft (Original Well Elev)
Ground Elevation @ 5046.0
North American Datum 1983
Well Ione 2C-2H, True North

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	**Local Co-ordinate Reference:**	Well Ione 2C-2H
Company:	EnCana Oil & Gas (USA) Inc	**TVD Reference:**	KB=13' @ 5059.0ft (Original Well Elev)
Project:	DJ Wattenberg	**MD Reference:**	KB=13' @ 5059.0ft (Original Well Elev)
Site:	NWNE S2-T2N-R66W (Ione)	**North Reference:**	True
Well:	Ione 2C-2H	**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	NWNE S2-T2N-R66W (Ione)				
Site Position:		**Northing:**	1,306,798.50 ft	**Latitude:**	40.173110
From:	Lat/Long	**Easting:**	3,209,901.52 ft	**Longitude:**	-104.748870
Position Uncertainty:	0.0 ft	**Slot Radius:**	13.200 in	**Grid Convergence:**	0.49 °

Well	Ione 2C-2H				
Well Position	**+N/-S** 0.0 ft	**Northing:**	1,306,798.64 ft	**Latitude:**	40.173110
	+E/-W 0.0 ft	**Easting:**	3,209,921.08 ft	**Longitude:**	-104.748800
Position Uncertainty	0.0 ft	**Wellhead Elevation:**	ft	**Ground Level:**	5,046.0 ft

Wellbore	HZ			
Magnetics	**Model Name**	**Sample Date**	**Declination (°)**	**Dip Angle (°)**	**Field Strength (nT)**
	IGRF200510	8/8/2012	8.64	66.84	52,916

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	
1,200.0	0.00	0.00	1,200.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,488.0	5.76	333.07	1,487.5	12.9	-6.6	2.00	2.00	0.00	333.07	
6,681.1	5.76	333.07	6,654.4	477.6	-242.6	0.00	0.00	0.00	0.00	
7,632.5	90.00	180.00	7,278.0	-93.1	-271.1	10.00	8.85	-16.09	-152.95	
11,852.5	90.00	180.00	7,278.0	-4,313.1	-271.1	0.00	0.00	0.00	0.00	Ione 2C-2H PBHL (46

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Project:	DJ Wattenberg	**MD Reference:**	KB=13' @ 5059.0ft (Original Well Elev)
Site:	NWNE S2-T2N-R66W (Ione)	**North Reference:**	True
Well:	Ione 2C-2H	**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	
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	
700.0	0.00	0.00	700.0	0.0	0.0	0.0	0.00	0.00	
800.0	0.00	0.00	800.0	0.0	0.0	0.0	0.00	0.00	
900.0	0.00	0.00	900.0	0.0	0.0	0.0	0.00	0.00	
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.0	0.00	0.00	
1,100.0	0.00	0.00	1,100.0	0.0	0.0	0.0	0.00	0.00	
1,200.0	0.00	0.00	1,200.0	0.0	0.0	0.0	0.00	0.00	KOP @ 1200' MD
1,300.0	2.00	333.07	1,300.0	1.6	-0.8	-1.6	2.00	2.00	
1,400.0	4.00	333.07	1,399.8	6.2	-3.2	-6.2	2.00	2.00	
1,488.0	5.76	333.07	1,487.5	12.9	-6.6	-12.9	2.00	2.00	EOB @ 1488' MD; 5.76° Inc
1,500.0	5.76	333.07	1,499.5	14.0	-7.1	-14.0	0.00	0.00	
1,600.0	5.76	333.07	1,598.9	22.9	-11.6	-22.9	0.00	0.00	
1,700.0	5.76	333.07	1,698.4	31.9	-16.2	-31.9	0.00	0.00	
1,800.0	5.76	333.07	1,797.9	40.8	-20.7	-40.8	0.00	0.00	
1,900.0	5.76	333.07	1,897.4	49.8	-25.3	-49.8	0.00	0.00	
2,000.0	5.76	333.07	1,996.9	58.7	-29.8	-58.7	0.00	0.00	
2,100.0	5.76	333.07	2,096.4	67.7	-34.4	-67.7	0.00	0.00	
2,200.0	5.76	333.07	2,195.9	76.6	-38.9	-76.6	0.00	0.00	
2,300.0	5.76	333.07	2,295.4	85.6	-43.5	-85.6	0.00	0.00	
2,400.0	5.76	333.07	2,394.9	94.5	-48.0	-94.5	0.00	0.00	
2,500.0	5.76	333.07	2,494.4	103.4	-52.6	-103.4	0.00	0.00	
2,600.0	5.76	333.07	2,593.9	112.4	-57.1	-112.4	0.00	0.00	
2,700.0	5.76	333.07	2,693.4	121.3	-61.6	-121.3	0.00	0.00	
2,800.0	5.76	333.07	2,792.9	130.3	-66.2	-130.3	0.00	0.00	
2,900.0	5.76	333.07	2,892.4	139.2	-70.7	-139.2	0.00	0.00	
3,000.0	5.76	333.07	2,991.9	148.2	-75.3	-148.2	0.00	0.00	
3,100.0	5.76	333.07	3,091.4	157.1	-79.8	-157.1	0.00	0.00	
3,200.0	5.76	333.07	3,190.9	166.1	-84.4	-166.1	0.00	0.00	
3,300.0	5.76	333.07	3,290.4	175.0	-88.9	-175.0	0.00	0.00	
3,400.0	5.76	333.07	3,389.9	184.0	-93.5	-184.0	0.00	0.00	
3,500.0	5.76	333.07	3,489.4	192.9	-98.0	-192.9	0.00	0.00	
3,600.0	5.76	333.07	3,588.9	201.9	-102.6	-201.9	0.00	0.00	
3,700.0	5.76	333.07	3,688.3	210.8	-107.1	-210.8	0.00	0.00	
3,800.0	5.76	333.07	3,787.8	219.8	-111.6	-219.8	0.00	0.00	
3,900.0	5.76	333.07	3,887.3	228.7	-116.2	-228.7	0.00	0.00	
4,000.0	5.76	333.07	3,986.8	237.7	-120.7	-237.7	0.00	0.00	
4,100.0	5.76	333.07	4,086.3	246.6	-125.3	-246.6	0.00	0.00	
4,200.0	5.76	333.07	4,185.8	255.6	-129.8	-255.6	0.00	0.00	
4,300.0	5.76	333.07	4,285.3	264.5	-134.4	-264.5	0.00	0.00	
4,400.0	5.76	333.07	4,384.8	273.5	-138.9	-273.5	0.00	0.00	
4,500.0	5.76	333.07	4,484.3	282.4	-143.5	-282.4	0.00	0.00	
4,585.1	5.76	333.07	4,569.0	290.0	-147.3	-290.0	0.00	0.00	Sussex
4,600.0	5.76	333.07	4,583.8	291.4	-148.0	-291.4	0.00	0.00	
4,700.0	5.76	333.07	4,683.3	300.3	-152.6	-300.3	0.00	0.00	
4,800.0	5.76	333.07	4,782.8	309.3	-157.1	-309.3	0.00	0.00	
4,843.4	5.76	333.07	4,826.0	313.1	-159.1	-313.1	0.00	0.00	Sussex Marker

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Well:	Ione 2C-2H	**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
4,900.0	5.76	333.07	4,882.3	318.2	-161.7	-318.2	0.00	0.00	
5,000.0	5.76	333.07	4,981.8	327.2	-166.2	-327.2	0.00	0.00	
5,100.0	5.76	333.07	5,081.3	336.1	-170.7	-336.1	0.00	0.00	
5,191.2	5.76	333.07	5,172.0	344.3	-174.9	-344.3	0.00	0.00	Shannon
5,200.0	5.76	333.07	5,180.8	345.0	-175.3	-345.0	0.00	0.00	
5,300.0	5.76	333.07	5,280.3	354.0	-179.8	-354.0	0.00	0.00	
5,400.0	5.76	333.07	5,379.8	362.9	-184.4	-362.9	0.00	0.00	
5,500.0	5.76	333.07	5,479.3	371.9	-188.9	-371.9	0.00	0.00	
5,600.0	5.76	333.07	5,578.8	380.8	-193.5	-380.8	0.00	0.00	
5,700.0	5.76	333.07	5,678.2	389.8	-198.0	-389.8	0.00	0.00	
5,800.0	5.76	333.07	5,777.7	398.7	-202.6	-398.7	0.00	0.00	
5,900.0	5.76	333.07	5,877.2	407.7	-207.1	-407.7	0.00	0.00	
6,000.0	5.76	333.07	5,976.7	416.6	-211.7	-416.6	0.00	0.00	
6,100.0	5.76	333.07	6,076.2	425.6	-216.2	-425.6	0.00	0.00	
6,200.0	5.76	333.07	6,175.7	434.5	-220.7	-434.5	0.00	0.00	
6,300.0	5.76	333.07	6,275.2	443.5	-225.3	-443.5	0.00	0.00	
6,400.0	5.76	333.07	6,374.7	452.4	-229.8	-452.4	0.00	0.00	
6,500.0	5.76	333.07	6,474.2	461.4	-234.4	-461.4	0.00	0.00	
6,523.9	5.76	333.07	6,498.0	463.5	-235.5	-463.5	0.00	0.00	Teepee Buttes
6,600.0	5.76	333.07	6,573.7	470.3	-238.9	-470.3	0.00	0.00	
6,681.1	5.76	333.07	6,654.4	477.6	-242.6	-477.6	0.00	0.00	Start 10° Build/Turn
6,700.0	4.17	321.18	6,673.2	479.0	-243.5	-479.0	10.00	-8.43	
6,800.0	7.24	201.08	6,772.9	475.9	-248.0	-475.9	10.00	3.07	
6,900.0	16.95	188.62	6,870.6	455.6	-252.5	-455.6	10.00	9.71	
7,000.0	26.87	185.17	6,963.3	418.5	-256.7	-418.5	10.00	9.92	
7,100.0	36.83	183.50	7,048.1	366.0	-260.6	-366.0	10.00	9.96	
7,200.0	46.81	182.46	7,122.6	299.5	-264.0	-299.5	10.00	9.98	
7,248.2	51.62	182.07	7,154.0	263.1	-265.4	-263.1	10.00	9.98	Sharon Springs
7,300.0	56.79	181.71	7,184.3	221.0	-266.8	-221.0	10.00	9.98	
7,386.3	65.42	181.20	7,226.0	145.5	-268.7	-145.5	10.00	9.99	Niobrara
7,400.0	66.78	181.12	7,231.5	133.1	-269.0	-133.1	10.00	9.99	
7,500.0	76.77	180.62	7,262.8	38.2	-270.4	-38.2	10.00	9.99	
7,525.2	79.29	180.50	7,268.0	13.6	-270.7	-13.6	10.00	9.99	B Chalk
7,600.0	86.76	180.15	7,277.1	-60.6	-271.1	60.6	10.00	9.99	
7,632.5	90.00	180.00	7,278.0	-93.1	-271.1	93.1	10.00	9.99	LP @ 7632' MD
7,700.0	90.00	180.00	7,278.0	-160.6	-271.1	160.6	0.00	0.00	
7,800.0	90.00	180.00	7,278.0	-260.6	-271.1	260.6	0.00	0.00	
7,900.0	90.00	180.00	7,278.0	-360.6	-271.1	360.6	0.00	0.00	
8,000.0	90.00	180.00	7,278.0	-460.6	-271.1	460.6	0.00	0.00	
8,100.0	90.00	180.00	7,278.0	-560.6	-271.1	560.6	0.00	0.00	
8,200.0	90.00	180.00	7,278.0	-660.6	-271.1	660.6	0.00	0.00	
8,300.0	90.00	180.00	7,278.0	-760.6	-271.1	760.6	0.00	0.00	
8,400.0	90.00	180.00	7,278.0	-860.6	-271.1	860.6	0.00	0.00	
8,500.0	90.00	180.00	7,278.0	-960.6	-271.1	960.6	0.00	0.00	
8,600.0	90.00	180.00	7,278.0	-1,060.6	-271.1	1,060.6	0.00	0.00	
8,700.0	90.00	180.00	7,278.0	-1,160.6	-271.1	1,160.6	0.00	0.00	
8,800.0	90.00	180.00	7,278.0	-1,260.6	-271.1	1,260.6	0.00	0.00	
8,900.0	90.00	180.00	7,278.0	-1,360.6	-271.1	1,360.6	0.00	0.00	
9,000.0	90.00	180.00	7,278.0	-1,460.6	-271.1	1,460.6	0.00	0.00	
9,100.0	90.00	180.00	7,278.0	-1,560.6	-271.1	1,560.6	0.00	0.00	
9,200.0	90.00	180.00	7,278.0	-1,660.6	-271.1	1,660.6	0.00	0.00	
9,300.0	90.00	180.00	7,278.0	-1,760.6	-271.1	1,760.6	0.00	0.00	

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Well:	Ione 2C-2H	**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	90.00	180.00	7,278.0	-1,860.6	-271.1	1,860.6	0.00	0.00	
9,500.0	90.00	180.00	7,278.0	-1,960.6	-271.1	1,960.6	0.00	0.00	
9,600.0	90.00	180.00	7,278.0	-2,060.6	-271.1	2,060.6	0.00	0.00	
9,700.0	90.00	180.00	7,278.0	-2,160.6	-271.1	2,160.6	0.00	0.00	
9,800.0	90.00	180.00	7,278.0	-2,260.6	-271.1	2,260.6	0.00	0.00	
9,900.0	90.00	180.00	7,278.0	-2,360.6	-271.1	2,360.6	0.00	0.00	
10,000.0	90.00	180.00	7,278.0	-2,460.6	-271.1	2,460.6	0.00	0.00	
10,100.0	90.00	180.00	7,278.0	-2,560.6	-271.1	2,560.6	0.00	0.00	
10,200.0	90.00	180.00	7,278.0	-2,660.6	-271.1	2,660.6	0.00	0.00	
10,300.0	90.00	180.00	7,278.0	-2,760.6	-271.1	2,760.6	0.00	0.00	
10,400.0	90.00	180.00	7,278.0	-2,860.6	-271.1	2,860.6	0.00	0.00	
10,500.0	90.00	180.00	7,278.0	-2,960.6	-271.1	2,960.6	0.00	0.00	
10,600.0	90.00	180.00	7,278.0	-3,060.6	-271.1	3,060.6	0.00	0.00	
10,700.0	90.00	180.00	7,278.0	-3,160.6	-271.1	3,160.6	0.00	0.00	
10,800.0	90.00	180.00	7,278.0	-3,260.6	-271.1	3,260.6	0.00	0.00	
10,900.0	90.00	180.00	7,278.0	-3,360.6	-271.1	3,360.6	0.00	0.00	
11,000.0	90.00	180.00	7,278.0	-3,460.6	-271.1	3,460.6	0.00	0.00	
11,100.0	90.00	180.00	7,278.0	-3,560.6	-271.1	3,560.6	0.00	0.00	
11,200.0	90.00	180.00	7,278.0	-3,660.6	-271.1	3,660.6	0.00	0.00	
11,300.0	90.00	180.00	7,278.0	-3,760.6	-271.1	3,760.6	0.00	0.00	
11,400.0	90.00	180.00	7,278.0	-3,860.6	-271.1	3,860.6	0.00	0.00	
11,500.0	90.00	180.00	7,278.0	-3,960.6	-271.1	3,960.6	0.00	0.00	
11,600.0	90.00	180.00	7,278.0	-4,060.6	-271.1	4,060.6	0.00	0.00	
11,700.0	90.00	180.00	7,278.0	-4,160.6	-271.1	4,160.6	0.00	0.00	
11,800.0	90.00	180.00	7,278.0	-4,260.6	-271.1	4,260.6	0.00	0.00	
11,852.5	90.00	180.00	7,278.0	-4,313.1	-271.1	4,313.1	0.00	0.00	PBHL @ 11852' MD - Ione 2C-2H PBHL (460' F

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
Ione 2C-2H PBHL (460'	0.00	0.00	7,278.0	-4,313.1	-175.1	1,302,484.23	3,209,782.52	40.161270	-104.749426
- plan misses target center by 96.0ft at 11852.5ft MD (7278.0 TVD, -4313.1 N, -271.1 E)									
- Point									
Ione 2C-2H PBHL (460'	0.00	0.00	7,278.0	-4,313.1	-271.1	1,302,483.42	3,209,686.52	40.161270	-104.749770
- plan hits target center									
- Point									

Database:	USA EDM 5000 Multi Users DB	**Local Co-ordinate Reference:**	Well Ione 2C-2H
Company:	EnCana Oil & Gas (USA) Inc	**TVD Reference:**	KB=13' @ 5059.0ft (Original Well Elev)
Project:	DJ Wattenberg	**MD Reference:**	KB=13' @ 5059.0ft (Original Well Elev)
Site:	NWNE S2-T2N-R66W (Ione)	**North Reference:**	True
Well:	Ione 2C-2H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	HZ		
Design:	Plan #1		

Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
4,585.1	4,569.0	Sussex			
4,843.4	4,826.0	Sussex Marker			
5,191.2	5,172.0	Shannon			
6,523.9	6,498.0	Teepee Buttes			
7,248.2	7,154.0	Sharon Springs			
7,386.3	7,226.0	Niobrara			
7,525.2	7,268.0	B Chalk			

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates +N/-S (ft)	Local Coordinates +E/-W (ft)	Comment
1,200.0	1,200.0	0.0	0.0	KOP @ 1200' MD
1,488.0	1,487.5	12.9	-6.6	EOB @ 1488' MD; 5.76° Inc
6,681.1	6,654.4	477.6	-242.6	Start 10° Build/Turn
7,632.5	7,278.0	-93.1	-271.1	LP @ 7632' MD
11,852.5	7,278.0	-4,313.1	-271.1	PBHL @ 11852' MD

EnCana Oil & Gas (USA) Inc

DJ Wattenberg
NWNE S2-T2N-R66W (Ione)
Ione 2C-2H
HZ
Plan #1

Anticollision Report

15 August, 2012

Company:	EnCana Oil & Gas (USA) Inc	**Local Co-ordinate Reference:**	Well Ione 2C-2H
Project:	DJ Wattenberg	**TVD Reference:**	KB=13' @ 5059.0ft (Original Well Elev)
Reference Site:	NWNE S2-T2N-R66W (Ione)	**MD Reference:**	KB=13' @ 5059.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Ione 2C-2H	**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** 8/15/2012

From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.0	11,852.5	Plan #1 (HZ)	MWD	Geolink MWD

Company:	EnCana Oil & Gas (USA) Inc	**Local Co-ordinate Reference:**	Well Ione 2C-2H
Project:	DJ Wattenberg	**TVD Reference:**	KB=13' @ 5059.0ft (Original Well Elev)
Reference Site:	NWNE S2-T2N-R66W (Ione)	**MD Reference:**	KB=13' @ 5059.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Ione 2C-2H	**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
NWNE S2-T2N-R66W (Ione)						
Ione #11-2 (Existing) - DD - Plan #1						Out of range
Ione #12-2B (Existing) - DD - Plan #1						Out of range
Ione #13 (Existing) - HZ - Plan #1						Out of range
Ione #13-2 (Existing) - DD - Plan #1	10,491.1	7,256.0	444.6	377.0	6.571	CC
Ione #13-2 (Existing) - DD - Plan #1	10,500.0	7,256.0	444.7	376.9	6.557	ES, SF
Ione #21-2 (Existing) - DD - Plan #1						Out of range
Ione #22-2 (Existing) - DD - Plan #1						Out of range
Ione #23-2 (Existing) - DD - Plan #1						Out of range
Ione #24-2 (Existing) - DD - Plan #1						Out of range
Ione #3 (Existing) - DD - DD	0.0	0.0	19.7			
Ione #3 (Existing) - DD - DD	1,537.7	1,535.0	20.3	16.3	5.039	ES
Ione #3 (Existing) - DD - DD	1,600.0	1,597.0	21.1	16.9	5.015	SF
Ione #3 (Existing) - DD - Plan #1	1,425.7	1,423.5	17.4	12.5	3.532	CC, ES, SF
Ione #31-2 (Existing) - DD - Plan #1						Out of range
Ione #32-2 (Existing) - DD - Plan #1						Out of range
Ione #33-2 (Existing) - DD - Plan #1						Out of range
Ione #34-2 (Existing) - DD - Plan #1						Out of range
Ione #4 (Existing) - DD - Plan #1						Out of range
Ione #42-2 - DD - Plan #1						Out of range
Ione 1A-2H - HZ - Plan #1						Out of range
Ione 1B-2H - HZ - Plan #1						Out of range
Ione 1C-2H - HZ - Plan #1						Out of range
Ione 1D-2H - HZ - Plan #1						Out of range
Ione 1E-2H - HZ - Plan #1						Out of range
Ione 1F-2H - HZ - Plan #1						Out of range
Ione 2A-2H - HZ - Plan #1	200.0	200.0	19.6	18.9	29.967	CC, ES
Ione 2A-2H - HZ - Plan #1	400.0	398.5	26.0	24.7	19.278	SF
Ione 2B-2H - HZ - Plan #1	400.0	400.0	11.2	9.8	8.274	CC, ES
Ione 2B-2H - HZ - Plan #1	11,852.5	12,132.8	478.4	345.8	3.608	SF
Ione 2D-2H - HZ - Plan #1	800.0	800.0	11.2	8.4	4.069	CC
Ione 2D-2H - HZ - Plan #1	900.0	899.9	11.5	8.4	3.698	ES
Ione 2D-2H - HZ - Plan #1	11,852.5	12,083.5	405.1	276.5	3.150	SF
Ione 2E-2H - HZ - Plan #1	600.0	600.0	19.6	17.5	9.547	CC, ES
Ione 2E-2H - HZ - Plan #1	700.0	699.5	20.7	18.3	8.614	SF
Ione 2F-2H - HZ - Plan #1	400.0	400.0	30.7	29.4	22.755	CC, ES
Ione 2F-2H - HZ - Plan #1	600.0	597.9	36.8	34.7	17.884	SF
Ione 2G-2H - HZ - Plan #1	200.0	200.0	39.1	38.5	59.934	CC, ES
Ione 2G-2H - HZ - Plan #1	600.0	592.6	65.1	63.0	30.847	SF
Ione 41-2 - DD - DD						Out of range
Ione 43-2 - Wellbore #1 - Wellbore #1						Out of range
Ione 4-4-2 - Wellbore #1 - Plan #1						Out of range
Ione 6-4-2 (Existing) - Existing - Existing						Out of range
Ione 6-8-2 (Existing) - Existing - Existing						Out of range
Ione 8-4-2 (Existing) - Existing - Existing						Out of range

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	**Local Co-ordinate Reference:**	Well Ione 2C-2H
Project:	DJ Wattenberg	**TVD Reference:**	KB=13' @ 5059.0ft (Original Well Elev)
Reference Site:	NWNE S2-T2N-R66W (Ione)	**MD Reference:**	KB=13' @ 5059.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Ione 2C-2H	**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 NWNE S2-T2N-R66W (Ione) - Ione #13-2 (Existing) - DD - 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	7,278.0	7,256.0	7,256.0	52.0	12.6	90.00	-2,951.8	-715.7	484.0	419.6	64.42	7.513	
10,400.0	7,278.0	7,256.0	7,256.0	53.7	12.6	90.00	-2,951.8	-715.7	453.9	387.8	66.12	6.865	
10,491.1	7,278.0	7,256.0	7,256.0	55.2	12.6	90.00	-2,951.8	-715.7	444.6	377.0	67.67	6.571	CC
10,500.0	7,278.0	7,256.0	7,256.0	55.4	12.6	90.00	-2,951.8	-715.7	444.7	376.9	67.82	6.557	ES, SF
10,600.0	7,278.0	7,256.0	7,256.0	57.1	12.6	90.00	-2,951.8	-715.7	457.8	388.2	69.52	6.584	
10,700.0	7,278.0	7,256.0	7,256.0	58.8	12.6	90.00	-2,951.8	-715.7	491.2	420.0	71.23	6.896	

Company:	EnCana Oil & Gas (USA) Inc	**Local Co-ordinate Reference:**	Well Ione 2C-2H
Project:	DJ Wattenberg	**TVD Reference:**	KB=13' @ 5059.0ft (Original Well Elev)
Reference Site:	NWNE S2-T2N-R66W (Ione)	**MD Reference:**	KB=13' @ 5059.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Ione 2C-2H	**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 NWNE S2-T2N-R66W (Ione) - Ione #3 (Existing) - DD - DD

Offset Site Error: 0.0 ft

Survey Program: 100-Gyro

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	-89.95	0.0	-19.6	19.7				
100.0	100.0	97.7	97.7	0.2	0.1	-89.48	0.2	-20.3	20.3	20.1	0.22	90.459	
200.0	200.0	197.9	197.8	0.3	0.2	-88.00	0.7	-21.4	21.4	20.9	0.49	44.107	
300.0	300.0	298.0	297.9	0.5	0.2	-86.08	1.5	-21.9	21.9	21.2	0.75	29.335	
400.0	400.0	397.9	397.9	0.7	0.3	-85.65	1.7	-22.3	22.4	21.4	1.01	22.169	
500.0	500.0	497.9	497.8	0.8	0.4	-85.42	1.8	-23.0	23.0	21.8	1.27	18.129	
600.0	600.0	597.9	597.9	1.0	0.5	-83.47	2.7	-23.5	23.7	22.2	1.53	15.458	
700.0	700.0	697.8	697.8	1.2	0.6	-81.88	3.4	-24.2	24.4	22.6	1.79	13.601	
800.0	800.0	797.8	797.8	1.4	0.7	-80.58	4.1	-24.9	25.3	23.2	2.06	12.293	
900.0	900.0	897.8	897.8	1.5	0.8	-79.03	5.0	-25.7	26.1	23.8	2.32	11.276	
1,000.0	1,000.0	997.8	997.8	1.7	0.9	-77.60	5.8	-26.3	26.9	24.3	2.58	10.433	
1,100.0	1,100.0	1,097.9	1,097.8	1.9	0.9	-76.09	6.6	-26.8	27.6	24.8	2.84	9.724	
1,200.0	1,200.0	1,198.3	1,198.2	2.1	1.0	-75.72	6.8	-26.8	27.6	24.5	3.10	8.898	
1,300.0	1,300.0	1,298.0	1,298.0	2.2	1.1	-50.96	7.0	-26.3	26.1	22.8	3.37	7.759	
1,400.0	1,399.8	1,397.8	1,397.7	2.4	1.2	-59.18	7.8	-26.5	23.3	19.7	3.63	6.426	
1,500.0	1,499.5	1,497.5	1,497.4	2.6	1.3	-79.06	8.3	-26.9	20.6	16.7	3.92	5.257	
1,537.7	1,537.0	1,535.0	1,534.9	2.7	1.3	-88.98	8.5	-27.1	20.3	16.3	4.03	5.039	ES
1,600.0	1,598.9	1,597.0	1,597.0	2.8	1.4	-104.93	8.8	-27.3	21.1	16.9	4.20	5.015	SF
1,700.0	1,698.4	1,696.6	1,696.5	3.0	1.5	-125.70	9.5	-27.7	25.2	20.7	4.47	5.631	
1,800.0	1,797.9	1,796.2	1,796.1	3.2	1.6	-139.43	10.1	-28.1	31.6	26.9	4.73	6.682	
1,900.0	1,897.4	1,895.6	1,895.5	3.5	1.6	-147.83	10.6	-28.8	39.4	34.4	4.98	7.899	
2,000.0	1,996.9	1,995.3	1,995.2	3.7	1.7	-153.23	11.0	-29.6	47.7	42.5	5.24	9.110	
2,100.0	2,096.4	2,094.9	2,094.8	3.9	1.8	-157.06	11.6	-30.4	56.2	50.7	5.50	10.223	
2,200.0	2,195.9	2,194.6	2,194.5	4.1	1.9	-159.65	12.3	-31.4	64.8	59.0	5.76	11.245	
2,300.0	2,295.4	2,293.9	2,293.8	4.4	2.0	-161.48	12.8	-32.6	73.5	67.5	6.02	12.215	
2,400.0	2,394.9	2,393.5	2,393.4	4.6	2.1	-162.85	13.2	-33.9	82.5	76.3	6.28	13.138	
2,500.0	2,494.4	2,492.9	2,492.7	4.8	2.2	-163.87	13.4	-35.3	91.7	85.1	6.55	14.004	
2,600.0	2,593.9	2,592.8	2,592.7	5.1	2.3	-164.75	13.7	-36.6	100.8	94.0	6.81	14.802	
2,700.0	2,693.4	2,692.6	2,692.4	5.3	2.3	-165.47	14.3	-38.0	109.6	102.5	7.07	15.500	
2,800.0	2,792.9	2,792.4	2,792.2	5.5	2.4	-165.99	15.0	-39.6	118.3	111.0	7.34	16.131	
2,900.0	2,892.4	2,892.0	2,891.8	5.8	2.5	-166.38	15.7	-41.4	127.0	119.4	7.60	16.708	
3,000.0	2,991.9	2,991.6	2,991.4	6.0	2.6	-166.62	16.4	-43.4	135.6	127.8	7.86	17.246	
3,100.0	3,091.4	3,091.2	3,091.0	6.2	2.7	-166.89	17.1	-45.2	144.3	136.1	8.13	17.749	
3,200.0	3,190.9	3,191.3	3,191.1	6.5	2.8	-167.24	18.0	-46.9	152.8	144.4	8.39	18.204	
3,300.0	3,290.4	3,290.4	3,290.2	6.7	2.9	-167.56	19.0	-48.4	161.3	152.6	8.66	18.630	
3,400.0	3,389.9	3,390.9	3,390.6	7.0	3.0	-167.86	19.9	-50.0	169.7	160.8	8.92	19.028	
3,500.0	3,489.4	3,491.1	3,490.8	7.2	3.1	-168.27	21.5	-51.3	177.8	168.6	9.18	19.360	
3,600.0	3,588.9	3,592.1	3,591.8	7.5	3.1	-168.54	23.3	-53.1	185.3	175.9	9.45	19.620	
3,700.0	3,688.3	3,693.0	3,692.6	7.7	3.2	-168.65	25.8	-55.5	192.2	182.5	9.71	19.793	
3,800.0	3,787.8	3,791.7	3,791.2	7.9	3.3	-168.70	28.2	-57.9	199.1	189.1	9.98	19.953	
3,900.0	3,887.3	3,890.7	3,890.2	8.2	3.4	-168.72	30.1	-60.4	206.4	196.1	10.24	20.153	
4,000.0	3,986.8	3,990.1	3,989.5	8.4	3.5	-168.80	31.8	-62.6	214.0	203.5	10.51	20.366	
4,100.0	4,086.3	4,089.1	4,088.5	8.7	3.6	-168.81	33.3	-65.0	221.8	211.0	10.77	20.589	
4,200.0	4,185.8	4,188.4	4,187.8	8.9	3.7	-168.86	34.5	-67.2	229.8	218.8	11.04	20.823	
4,300.0	4,285.3	4,288.5	4,287.8	9.2	3.8	-168.91	35.8	-69.3	237.9	226.6	11.30	21.046	
4,400.0	4,384.8	4,388.2	4,387.6	9.4	3.9	-168.96	37.1	-71.5	245.8	234.2	11.57	21.250	
4,500.0	4,484.3	4,487.3	4,486.6	9.6	3.9	-169.04	38.5	-73.5	253.8	242.0	11.83	21.454	
4,600.0	4,583.8	4,587.2	4,586.5	9.9	4.0	-169.16	39.8	-75.3	262.0	249.9	12.09	21.658	
4,700.0	4,683.3	4,686.3	4,685.5	10.1	4.1	-169.37	41.1	-76.6	270.1	257.8	12.36	21.861	
4,800.0	4,782.8	4,785.9	4,785.2	10.4	4.2	-169.66	42.5	-77.5	278.4	265.8	12.62	22.070	
4,900.0	4,882.3	4,885.6	4,884.8	10.6	4.3	-169.98	43.9	-78.1	286.8	273.9	12.88	22.271	
5,000.0	4,981.8	4,984.5	4,983.7	10.9	4.4	-170.32	45.3	-78.5	295.2	282.0	13.13	22.474	

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 Ione 2C-2H
Project:	DJ Wattenberg	**TVD Reference:**	KB=13' @ 5059.0ft (Original Well Elev)
Reference Site:	NWNE S2-T2N-R66W (Ione)	**MD Reference:**	KB=13' @ 5059.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Ione 2C-2H	**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 NWNE S2-T2N-R66W (Ione) - Ione #3 (Existing) - DD - DD

Offset Site Error: 0.0 ft

Survey Program: 100-Gyro

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	5,081.3	5,084.2	5,083.4	11.1	4.5	-170.63	46.6	-78.9	303.8	290.4	13.39	22.681	
5,200.0	5,180.8	5,182.9	5,182.1	11.4	4.6	-170.94	47.8	-79.2	312.4	298.8	13.65	22.888	
5,300.0	5,280.3	5,281.4	5,280.7	11.6	4.6	-171.25	48.7	-79.3	321.5	307.6	13.91	23.112	
5,400.0	5,379.8	5,379.0	5,378.2	11.8	4.7	-171.53	49.1	-79.4	330.9	316.8	14.17	23.359	
5,500.0	5,479.3	5,478.4	5,477.6	12.1	4.8	-171.77	49.2	-79.4	340.8	326.4	14.43	23.623	
5,600.0	5,578.8	5,577.1	5,576.3	12.3	4.9	-171.98	49.2	-79.6	350.7	336.0	14.69	23.880	
5,700.0	5,678.2	5,675.5	5,674.7	12.6	5.0	-172.18	48.9	-79.6	360.9	346.0	14.95	24.149	
5,800.0	5,777.7	5,773.5	5,772.7	12.8	5.1	-172.38	48.3	-79.5	371.5	356.3	15.20	24.432	
5,900.0	5,877.2	5,871.9	5,871.1	13.1	5.2	-172.56	47.3	-79.2	382.4	366.9	15.46	24.728	
6,000.0	5,976.7	5,970.3	5,969.5	13.3	5.2	-172.65	46.0	-79.5	393.5	377.8	15.72	25.025	
6,100.0	6,076.2	6,068.6	6,067.7	13.6	5.3	-172.59	44.1	-80.6	404.9	388.9	15.99	25.325	
6,200.0	6,175.7	6,169.4	6,168.5	13.8	5.4	-172.36	41.6	-82.9	416.4	400.1	16.26	25.610	
6,300.0	6,275.2	6,273.2	6,272.2	14.0	5.5	-171.98	39.5	-86.6	427.1	410.6	16.54	25.832	
6,400.0	6,374.7	6,375.1	6,374.0	14.3	5.6	-171.60	38.2	-90.7	437.0	420.2	16.81	25.993	
6,500.0	6,474.2	6,473.1	6,471.9	14.5	5.7	-171.20	37.0	-95.1	446.7	429.6	17.08	26.147	
6,600.0	6,573.7	6,571.9	6,570.6	14.8	5.8	-170.86	35.5	-99.0	456.8	439.5	17.36	26.318	
6,700.0	6,673.2	6,673.1	6,671.7	15.0	5.9	-158.66	34.1	-103.0	466.5	448.9	17.63	26.461	
6,800.0	6,772.9	6,776.7	6,775.2	15.1	6.0	-38.96	33.2	-107.4	464.5	446.7	17.78	26.122	
6,900.0	6,870.6	6,876.8	6,875.3	15.0	6.1	-28.23	33.1	-111.6	445.3	427.6	17.75	25.091	
7,000.0	6,963.3	6,971.7	6,970.0	14.8	6.1	-28.20	33.5	-115.7	410.1	392.6	17.59	23.322	
7,100.0	7,048.1	7,057.1	7,055.3	14.6	6.2	-32.44	34.0	-119.9	360.6	343.2	17.42	20.699	
7,200.0	7,122.6	7,131.6	7,129.7	14.3	6.3	-41.76	34.7	-123.3	300.0	282.4	17.54	17.098	
7,300.0	7,184.3	7,193.9	7,192.0	14.0	6.3	-57.93	35.3	-126.6	233.0	214.7	18.27	12.754	
7,400.0	7,231.5	7,240.5	7,238.5	13.9	6.4	-78.39	35.6	-129.4	170.5	151.4	19.12	8.919	
7,500.0	7,262.8	7,271.7	7,269.6	13.9	6.4	-93.44	35.7	-131.3	139.4	120.0	19.42	7.181	
7,503.2	7,263.5	7,272.4	7,270.3	13.9	6.4	-93.73	35.7	-131.3	139.4	120.0	19.42	7.176	
7,600.0	7,277.1	7,286.1	7,284.0	14.1	6.4	-95.94	35.7	-132.2	169.2	149.5	19.66	8.605	
7,700.0	7,278.0	7,287.1	7,285.0	14.6	6.4	-93.71	35.7	-132.3	240.6	220.4	20.15	11.943	
7,800.0	7,278.0	7,287.1	7,285.0	15.2	6.4	-93.71	35.7	-132.3	327.3	306.5	20.81	15.727	
7,900.0	7,278.0	7,287.1	7,285.0	16.0	6.4	-93.72	35.7	-132.3	420.0	398.3	21.65	19.398	

Company:	EnCana Oil & Gas (USA) Inc	**Local Co-ordinate Reference:**	Well Ione 2C-2H
Project:	DJ Wattenberg	**TVD Reference:**	KB=13' @ 5059.0ft (Original Well Elev)
Reference Site:	NWNE S2-T2N-R66W (Ione)	**MD Reference:**	KB=13' @ 5059.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Ione 2C-2H	**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 NWNE S2-T2N-R66W (Ione) - Ione #3 (Existing) - DD - 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	-89.95	0.0	-19.6	19.7				
100.0	100.0	98.0	98.0	0.2	0.1	-89.95	0.0	-19.6	19.6	19.3	0.30	65.811	
200.0	200.0	198.0	198.0	0.3	0.3	-89.95	0.0	-19.6	19.6	18.9	0.65	30.291	
300.0	300.0	298.0	298.0	0.5	0.5	-89.95	0.0	-19.6	19.6	18.6	0.99	19.663	
400.0	400.0	398.0	398.0	0.7	0.7	-89.95	0.0	-19.6	19.6	18.2	1.34	14.555	
500.0	500.0	498.0	498.0	0.8	0.8	-89.95	0.0	-19.6	19.6	17.9	1.69	11.554	
600.0	600.0	598.0	598.0	1.0	1.0	-89.95	0.0	-19.6	19.6	17.5	2.04	9.579	
700.0	700.0	698.0	698.0	1.2	1.2	-89.95	0.0	-19.6	19.6	17.2	2.39	8.181	
800.0	800.0	798.0	798.0	1.4	1.4	-89.95	0.0	-19.6	19.6	16.8	2.74	7.139	
900.0	900.0	898.0	898.0	1.5	1.5	-89.95	0.0	-19.6	19.6	16.5	3.09	6.332	
1,000.0	1,000.0	998.0	998.0	1.7	1.7	-89.95	0.0	-19.6	19.6	16.1	3.44	5.689	
1,100.0	1,100.0	1,098.0	1,098.0	1.9	1.9	-89.95	0.0	-19.6	19.6	15.8	3.79	5.165	
1,200.0	1,200.0	1,198.0	1,198.0	2.1	2.1	-89.95	0.0	-19.6	19.6	15.4	4.14	4.729	
1,300.0	1,300.0	1,298.0	1,298.0	2.2	2.2	-67.77	0.0	-19.6	18.8	14.3	4.49	4.198	
1,400.0	1,399.8	1,397.8	1,397.8	2.4	2.4	-83.81	0.0	-19.6	17.5	12.7	4.84	3.622	
1,425.7	1,425.5	1,423.5	1,423.5	2.5	2.5	-90.00	0.0	-19.6	17.4	12.5	4.94	3.532	CC, ES, SF
1,500.0	1,499.5	1,497.5	1,497.5	2.6	2.6	-111.20	0.0	-19.6	18.7	13.5	5.20	3.597	
1,600.0	1,598.9	1,596.9	1,596.9	2.8	2.8	-133.85	0.0	-19.6	24.2	18.7	5.55	4.366	
1,700.0	1,698.4	1,696.4	1,696.4	3.0	2.9	-146.89	0.0	-19.6	32.0	26.1	5.89	5.435	
1,800.0	1,797.9	1,795.9	1,795.9	3.2	3.1	-154.60	0.0	-19.6	40.8	34.6	6.24	6.544	
1,900.0	1,897.4	1,895.4	1,895.4	3.5	3.3	-159.53	0.0	-19.6	50.1	43.5	6.58	7.608	
2,000.0	1,996.9	1,994.9	1,994.9	3.7	3.5	-162.91	0.0	-19.6	59.6	52.7	6.93	8.601	
2,100.0	2,096.4	2,094.4	2,094.4	3.9	3.6	-165.35	0.0	-19.6	69.2	62.0	7.27	9.520	
2,200.0	2,195.9	2,193.9	2,193.9	4.1	3.8	-167.19	0.0	-19.6	79.0	71.4	7.62	10.367	
2,300.0	2,295.4	2,293.4	2,293.4	4.4	4.0	-168.62	0.0	-19.6	88.8	80.8	7.97	11.148	
2,400.0	2,394.9	2,392.9	2,392.9	4.6	4.2	-169.77	0.0	-19.6	98.7	90.4	8.31	11.869	
2,500.0	2,494.4	2,492.4	2,492.4	4.8	4.3	-170.71	0.0	-19.6	108.6	99.9	8.66	12.536	
2,600.0	2,593.9	2,591.9	2,591.9	5.1	4.5	-171.50	0.0	-19.6	118.5	109.5	9.01	13.154	
2,700.0	2,693.4	2,691.4	2,691.4	5.3	4.7	-172.16	0.0	-19.6	128.4	119.1	9.36	13.727	
2,800.0	2,792.9	2,790.9	2,790.9	5.5	4.8	-172.73	0.0	-19.6	138.4	128.7	9.70	14.262	
2,900.0	2,892.4	2,890.4	2,890.4	5.8	5.0	-173.22	0.0	-19.6	148.3	138.3	10.05	14.760	
3,000.0	2,991.9	2,989.9	2,989.9	6.0	5.2	-173.65	0.0	-19.6	158.3	147.9	10.40	15.226	
3,100.0	3,091.4	3,089.4	3,089.4	6.2	5.4	-174.02	0.0	-19.6	168.3	157.5	10.74	15.662	
3,200.0	3,190.9	3,188.9	3,188.9	6.5	5.5	-174.36	0.0	-19.6	178.3	167.2	11.09	16.072	
3,300.0	3,290.4	3,288.4	3,288.4	6.7	5.7	-174.66	0.0	-19.6	188.3	176.8	11.44	16.457	
3,400.0	3,389.9	3,387.9	3,387.9	7.0	5.9	-174.93	0.0	-19.6	198.3	186.5	11.79	16.820	
3,500.0	3,489.4	3,487.4	3,487.4	7.2	6.1	-175.17	0.0	-19.6	208.3	196.1	12.13	17.162	
3,600.0	3,588.9	3,586.9	3,586.9	7.5	6.2	-175.40	0.0	-19.6	218.3	205.8	12.48	17.485	
3,700.0	3,688.3	3,686.3	3,686.3	7.7	6.4	-175.60	0.0	-19.6	228.3	215.4	12.83	17.792	
3,800.0	3,787.8	3,785.8	3,785.8	7.9	6.6	-175.78	0.0	-19.6	238.3	225.1	13.18	18.082	
3,900.0	3,887.3	3,885.3	3,885.3	8.2	6.8	-175.95	0.0	-19.6	248.3	234.8	13.53	18.357	
4,000.0	3,986.8	3,984.8	3,984.8	8.4	6.9	-176.11	0.0	-19.6	258.3	244.4	13.87	18.619	
4,100.0	4,086.3	4,084.3	4,084.3	8.7	7.1	-176.26	0.0	-19.6	268.3	254.1	14.22	18.868	
4,200.0	4,185.8	4,183.8	4,183.8	8.9	7.3	-176.39	0.0	-19.6	278.3	263.8	14.57	19.105	
4,300.0	4,285.3	4,283.3	4,283.3	9.2	7.4	-176.52	0.0	-19.6	288.3	273.4	14.92	19.332	
4,400.0	4,384.8	4,382.8	4,382.8	9.4	7.6	-176.63	0.0	-19.6	298.4	283.1	15.26	19.548	
4,500.0	4,484.3	4,482.3	4,482.3	9.6	7.8	-176.74	0.0	-19.6	308.4	292.8	15.61	19.754	
4,600.0	4,583.8	4,581.8	4,581.8	9.9	8.0	-176.85	0.0	-19.6	318.4	302.4	15.96	19.952	
4,700.0	4,683.3	4,681.3	4,681.3	10.1	8.1	-176.94	0.0	-19.6	328.4	312.1	16.31	20.141	
4,800.0	4,782.8	4,780.8	4,780.8	10.4	8.3	-177.03	0.0	-19.6	338.4	321.8	16.65	20.322	
4,900.0	4,882.3	4,880.3	4,880.3	10.6	8.5	-177.12	0.0	-19.6	348.5	331.5	17.00	20.496	
5,000.0	4,981.8	4,979.8	4,979.8	10.9	8.7	-177.20	0.0	-19.6	358.5	341.1	17.35	20.663	

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 Ione 2C-2H
Project:	DJ Wattenberg	**TVD Reference:**	KB=13' @ 5059.0ft (Original Well Elev)
Reference Site:	NWNE S2-T2N-R66W (Ione)	**MD Reference:**	KB=13' @ 5059.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Ione 2C-2H	**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 NWNE S2-T2N-R66W (Ione) - Ione #3 (Existing) - DD - 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
5,100.0	5,081.3	5,079.3	5,079.3	11.1	8.8	-177.27	0.0	-19.6	368.5	350.8	17.70	20.824	
5,200.0	5,180.8	5,178.8	5,178.8	11.4	9.0	-177.35	0.0	-19.6	378.5	360.5	18.04	20.978	
5,300.0	5,280.3	5,278.3	5,278.3	11.6	9.2	-177.42	0.0	-19.6	388.6	370.2	18.39	21.126	
5,400.0	5,379.8	5,377.8	5,377.8	11.8	9.4	-177.48	0.0	-19.6	398.6	379.9	18.74	21.269	
5,500.0	5,479.3	5,477.3	5,477.3	12.1	9.5	-177.54	0.0	-19.6	408.6	389.5	19.09	21.407	
5,600.0	5,578.8	5,576.8	5,576.8	12.3	9.7	-177.60	0.0	-19.6	418.7	399.2	19.44	21.540	
5,700.0	5,678.2	5,676.2	5,676.2	12.6	9.9	-177.66	0.0	-19.6	428.7	408.9	19.78	21.668	
5,800.0	5,777.7	5,775.7	5,775.7	12.8	10.1	-177.71	0.0	-19.6	438.7	418.6	20.13	21.792	
5,900.0	5,877.2	5,875.2	5,875.2	13.1	10.2	-177.76	0.0	-19.6	448.7	428.3	20.48	21.912	
6,000.0	5,976.7	5,974.7	5,974.7	13.3	10.4	-177.81	0.0	-19.6	458.8	437.9	20.83	22.028	
6,100.0	6,076.2	6,074.2	6,074.2	13.6	10.6	-177.86	0.0	-19.6	468.8	447.6	21.17	22.140	
6,200.0	6,175.7	6,173.7	6,173.7	13.8	10.7	-177.90	0.0	-19.6	478.8	457.3	21.52	22.248	
6,300.0	6,275.2	6,273.2	6,273.2	14.0	10.9	-177.95	0.0	-19.6	488.9	467.0	21.87	22.353	
6,400.0	6,374.7	6,372.7	6,372.7	14.3	11.1	-177.99	0.0	-19.6	498.9	476.7	22.22	22.454	
7,000.0	6,963.3	6,961.3	6,961.3	14.8	12.1	-37.83	0.0	-19.6	481.1	458.0	23.06	20.865	
7,100.0	7,048.1	7,046.1	7,046.1	14.6	12.3	-43.14	0.0	-19.6	438.2	415.4	22.84	19.186	
7,200.0	7,122.6	7,120.6	7,120.6	14.3	12.4	-52.45	0.0	-19.6	386.6	363.4	23.18	16.673	
7,300.0	7,184.3	7,182.3	7,182.3	14.0	12.5	-65.26	0.0	-19.6	331.7	307.4	24.21	13.697	
7,400.0	7,231.5	7,229.5	7,229.5	13.9	12.6	-78.66	0.0	-19.6	282.7	257.5	25.23	11.203	
7,500.0	7,262.8	7,260.8	7,260.8	13.9	12.6	-88.15	0.0	-19.6	253.7	228.0	25.69	9.875	
7,537.0	7,270.1	7,268.1	7,268.1	14.0	12.7	-90.00	0.0	-19.6	251.2	225.4	25.82	9.729	
7,600.0	7,277.1	7,275.1	7,275.1	14.1	12.7	-90.79	0.0	-19.6	258.7	232.7	25.99	9.953	
7,700.0	7,278.0	7,276.0	7,276.0	14.6	12.7	-90.00	0.0	-19.6	298.5	272.0	26.46	11.280	
7,800.0	7,278.0	7,276.0	7,276.0	15.2	12.7	-90.00	0.0	-19.6	362.2	335.1	27.13	13.352	
7,900.0	7,278.0	7,276.0	7,276.0	16.0	12.7	-90.00	0.0	-19.6	439.7	411.7	27.97	15.720	

Company:	EnCana Oil & Gas (USA) Inc	**Local Co-ordinate Reference:**	Well Ione 2C-2H
Project:	DJ Wattenberg	**TVD Reference:**	KB=13' @ 5059.0ft (Original Well Elev)
Reference Site:	NWNE S2-T2N-R66W (Ione)	**MD Reference:**	KB=13' @ 5059.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Ione 2C-2H	**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 NWNE S2-T2N-R66W (Ione) - Ione 2A-2H - 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	-90.01	0.0	-19.6	19.6				
100.0	100.0	100.0	100.0	0.2	0.2	-90.01	0.0	-19.6	19.6	19.3	0.30	64.412	
200.0	200.0	200.0	200.0	0.3	0.3	-90.01	0.0	-19.6	19.6	18.9	0.65	29.967	CC, ES
300.0	300.0	299.3	299.3	0.5	0.5	-88.03	0.7	-21.1	21.1	20.1	1.00	21.128	
400.0	400.0	398.5	398.3	0.7	0.7	-83.55	2.9	-25.8	26.0	24.7	1.35	19.278	SF
500.0	500.0	497.1	496.6	0.8	0.9	-78.96	6.5	-33.5	34.3	32.6	1.70	20.190	
600.0	600.0	595.0	593.8	1.0	1.2	-75.35	11.6	-44.2	46.1	44.0	2.05	22.431	
700.0	700.0	692.0	689.6	1.2	1.5	-72.76	17.9	-57.7	61.3	58.9	2.42	25.339	
800.0	800.0	790.2	786.3	1.4	1.8	-71.02	25.2	-73.3	78.7	75.9	2.79	28.150	
900.0	900.0	888.7	883.2	1.5	2.1	-69.90	32.5	-88.9	96.1	92.9	3.17	30.266	
1,000.0	1,000.0	987.1	980.2	1.7	2.5	-69.12	39.8	-104.4	113.5	110.0	3.56	31.908	
1,100.0	1,100.0	1,085.6	1,077.1	1.9	2.8	-68.55	47.2	-120.0	131.0	127.1	3.94	33.216	
1,200.0	1,200.0	1,184.1	1,174.1	2.1	3.2	-68.11	54.5	-135.6	148.5	144.1	4.33	34.280	
1,300.0	1,300.0	1,282.7	1,271.2	2.2	3.5	-41.03	61.8	-151.3	164.6	160.2	4.47	36.867	
1,400.0	1,399.8	1,381.8	1,368.7	2.4	3.9	-41.64	69.2	-167.0	178.2	173.4	4.82	36.974	
1,500.0	1,499.5	1,481.1	1,466.5	2.6	4.2	-42.90	76.6	-182.7	189.3	184.1	5.19	36.510	
1,600.0	1,598.9	1,580.4	1,564.3	2.8	4.6	-44.40	84.0	-198.4	199.6	194.0	5.56	35.875	
1,700.0	1,698.4	1,679.7	1,662.1	3.0	4.9	-45.76	91.4	-214.2	209.9	204.0	5.95	35.289	
1,800.0	1,797.9	1,779.1	1,759.9	3.2	5.3	-46.99	98.7	-229.9	220.4	214.0	6.34	34.745	
1,900.0	1,897.4	1,878.4	1,857.7	3.5	5.6	-48.11	106.1	-245.7	230.9	224.2	6.74	34.239	
2,000.0	1,996.9	1,977.8	1,955.5	3.7	6.0	-49.14	113.5	-261.4	241.5	234.4	7.15	33.770	
2,100.0	2,096.4	2,077.1	2,053.3	3.9	6.3	-50.07	120.9	-277.1	252.2	244.7	7.57	33.333	
2,200.0	2,195.9	2,176.5	2,151.1	4.1	6.7	-50.93	128.3	-292.9	263.0	255.0	7.99	32.926	
2,300.0	2,295.4	2,275.8	2,249.0	4.4	7.0	-51.72	135.7	-308.6	273.8	265.4	8.41	32.547	
2,400.0	2,394.9	2,375.2	2,346.8	4.6	7.4	-52.45	143.1	-324.4	284.7	275.8	8.84	32.194	
2,500.0	2,494.4	2,474.5	2,444.6	4.8	7.7	-53.13	150.5	-340.1	295.6	286.3	9.28	31.864	
2,600.0	2,593.9	2,573.9	2,542.4	5.1	8.1	-53.76	157.9	-355.8	306.5	296.8	9.71	31.557	
2,700.0	2,693.4	2,673.2	2,640.2	5.3	8.4	-54.35	165.2	-371.6	317.5	307.4	10.15	31.269	
2,800.0	2,792.9	2,772.5	2,738.0	5.5	8.8	-54.89	172.6	-387.3	328.5	317.9	10.60	30.999	
2,900.0	2,892.4	2,871.9	2,835.8	5.8	9.1	-55.41	180.0	-403.1	339.5	328.5	11.04	30.747	
3,000.0	2,991.9	2,971.2	2,933.6	6.0	9.5	-55.89	187.4	-418.8	350.6	339.1	11.49	30.510	
3,100.0	3,091.4	3,070.6	3,031.5	6.2	9.8	-56.34	194.8	-434.5	361.7	349.8	11.94	30.287	
3,200.0	3,190.9	3,169.9	3,129.3	6.5	10.2	-56.76	202.2	-450.3	372.8	360.4	12.39	30.077	
3,300.0	3,290.4	3,269.3	3,227.1	6.7	10.5	-57.16	209.6	-466.0	383.9	371.1	12.85	29.880	
3,400.0	3,389.9	3,368.6	3,324.9	7.0	10.9	-57.53	217.0	-481.7	395.1	381.8	13.30	29.694	
3,500.0	3,489.4	3,468.0	3,422.7	7.2	11.2	-57.89	224.4	-497.5	406.2	392.5	13.76	29.518	
3,600.0	3,588.9	3,567.3	3,520.5	7.5	11.6	-58.23	231.7	-513.2	417.4	403.2	14.22	29.352	
3,700.0	3,688.3	3,666.6	3,618.3	7.7	11.9	-58.54	239.1	-529.0	428.6	413.9	14.68	29.194	
3,800.0	3,787.8	3,766.0	3,716.1	7.9	12.3	-58.85	246.5	-544.7	439.8	424.6	15.14	29.045	
3,900.0	3,887.3	3,865.3	3,813.9	8.2	12.6	-59.13	253.9	-560.4	451.0	435.4	15.60	28.904	
4,000.0	3,986.8	3,964.7	3,911.8	8.4	13.0	-59.41	261.3	-576.2	462.2	446.1	16.07	28.769	
4,100.0	4,086.3	4,064.0	4,009.6	8.7	13.3	-59.67	268.7	-591.9	473.4	456.9	16.53	28.641	
4,200.0	4,185.8	4,163.4	4,107.4	8.9	13.7	-59.92	276.1	-607.7	484.7	467.7	16.99	28.520	
4,300.0	4,285.3	4,262.7	4,205.2	9.2	14.1	-60.16	283.5	-623.4	495.9	478.4	17.46	28.404	

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	**Local Co-ordinate Reference:**	Well Ione 2C-2H
Project:	DJ Wattenberg	**TVD Reference:**	KB=13' @ 5059.0ft (Original Well Elev)
Reference Site:	NWNE S2-T2N-R66W (Ione)	**MD Reference:**	KB=13' @ 5059.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Ione 2C-2H	**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 NWNE S2-T2N-R66W (Ione) - Ione 2B-2H - 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	-89.96	0.0	-11.2	11.2				
100.0	100.0	100.0	100.0	0.2	0.2	-89.96	0.0	-11.2	11.2	10.9	0.30	36.807	
200.0	200.0	200.0	200.0	0.3	0.3	-89.96	0.0	-11.2	11.2	10.5	0.65	17.124	
300.0	300.0	300.0	300.0	0.5	0.5	-89.96	0.0	-11.2	11.2	10.2	1.00	11.157	
400.0	400.0	400.0	400.0	0.7	0.7	-89.96	0.0	-11.2	11.2	9.8	1.35	8.274	CC, ES
500.0	500.0	499.7	499.6	0.8	0.9	-85.07	1.1	-12.5	12.6	10.9	1.70	7.409	
600.0	600.0	599.1	598.9	1.0	1.0	-75.51	4.3	-16.6	17.2	15.1	2.05	8.393	
700.0	700.0	698.0	697.5	1.2	1.2	-67.64	9.6	-23.3	25.4	23.0	2.40	10.581	
800.0	800.0	796.9	795.7	1.4	1.5	-62.68	16.7	-32.3	36.7	33.9	2.75	13.327	
900.0	900.0	896.2	894.3	1.5	1.7	-59.99	24.1	-41.7	48.5	45.4	3.11	15.587	
1,000.0	1,000.0	995.5	992.8	1.7	2.0	-58.36	31.4	-51.0	60.3	56.9	3.47	17.385	
1,100.0	1,100.0	1,094.7	1,091.4	1.9	2.2	-57.26	38.8	-60.3	72.2	68.4	3.83	18.842	
1,200.0	1,200.0	1,194.0	1,190.0	2.1	2.5	-56.48	46.1	-69.7	84.2	80.0	4.20	20.044	
1,300.0	1,300.0	1,293.5	1,288.7	2.2	2.8	-29.37	53.5	-79.0	94.6	90.1	4.48	21.089	
1,400.0	1,399.8	1,393.2	1,387.7	2.4	3.0	-30.19	60.9	-88.4	102.0	97.1	4.84	21.086	
1,500.0	1,499.5	1,493.0	1,486.8	2.6	3.3	-31.89	68.3	-97.8	106.5	101.3	5.19	20.494	
1,600.0	1,598.9	1,592.9	1,586.0	2.8	3.6	-33.88	75.7	-107.1	109.9	104.3	5.56	19.752	
1,700.0	1,698.4	1,692.8	1,685.1	3.0	3.8	-35.75	83.1	-116.5	113.5	107.5	5.94	19.098	
1,800.0	1,797.9	1,792.6	1,784.3	3.2	4.1	-37.50	90.5	-125.9	117.1	110.8	6.33	18.518	
1,900.0	1,897.4	1,892.5	1,883.4	3.5	4.4	-39.14	97.9	-135.3	120.9	114.2	6.72	17.999	
2,000.0	1,996.9	1,992.4	1,982.6	3.7	4.6	-40.68	105.3	-144.7	124.8	117.7	7.12	17.533	
2,100.0	2,096.4	2,092.2	2,081.7	3.9	4.9	-42.13	112.7	-154.1	128.7	121.2	7.52	17.111	
2,200.0	2,195.9	2,192.1	2,180.9	4.1	5.2	-43.49	120.1	-163.4	132.8	124.8	7.94	16.728	
2,300.0	2,295.4	2,292.0	2,280.0	4.4	5.4	-44.77	127.6	-172.8	136.9	128.5	8.36	16.379	
2,400.0	2,394.9	2,391.9	2,379.2	4.6	5.7	-45.97	135.0	-182.2	141.1	132.3	8.78	16.061	
2,500.0	2,494.4	2,491.7	2,478.3	4.8	6.0	-47.11	142.4	-191.6	145.3	136.1	9.21	15.769	
2,600.0	2,593.9	2,591.6	2,577.5	5.1	6.2	-48.18	149.8	-201.0	149.6	139.9	9.65	15.501	
2,700.0	2,693.4	2,691.5	2,676.6	5.3	6.5	-49.19	157.2	-210.4	153.9	143.8	10.09	15.254	
2,800.0	2,792.9	2,791.3	2,775.8	5.5	6.8	-50.15	164.6	-219.8	158.3	147.7	10.53	15.026	
2,900.0	2,892.4	2,891.2	2,874.9	5.8	7.1	-51.05	172.0	-229.1	162.7	151.7	10.98	14.815	
3,000.0	2,991.9	2,991.1	2,974.1	6.0	7.3	-51.91	179.4	-238.5	167.1	155.7	11.43	14.620	
3,100.0	3,091.4	3,091.0	3,073.3	6.2	7.6	-52.72	186.8	-247.9	171.6	159.8	11.89	14.439	
3,200.0	3,190.9	3,190.8	3,172.4	6.5	7.9	-53.49	194.2	-257.3	176.2	163.8	12.34	14.271	
3,300.0	3,290.4	3,290.7	3,271.6	6.7	8.1	-54.22	201.6	-266.7	180.7	167.9	12.80	14.114	
3,400.0	3,389.9	3,390.6	3,370.7	7.0	8.4	-54.91	209.0	-276.1	185.3	172.0	13.27	13.967	
3,500.0	3,489.4	3,490.4	3,469.9	7.2	8.7	-55.57	216.4	-285.5	189.9	176.2	13.73	13.831	
3,600.0	3,588.9	3,590.3	3,569.0	7.5	9.0	-56.20	223.8	-294.8	194.5	180.3	14.20	13.702	
3,700.0	3,688.3	3,690.2	3,668.2	7.7	9.2	-56.81	231.2	-304.2	199.2	184.5	14.67	13.582	
3,800.0	3,787.8	3,790.0	3,767.3	7.9	9.5	-57.38	238.6	-313.6	203.9	188.7	15.14	13.470	
3,900.0	3,887.3	3,889.9	3,866.5	8.2	9.8	-57.93	246.0	-323.0	208.6	193.0	15.61	13.364	
4,000.0	3,986.8	3,989.8	3,965.6	8.4	10.1	-58.45	253.4	-332.4	213.3	197.2	16.08	13.264	
4,100.0	4,086.3	4,089.7	4,064.8	8.7	10.3	-58.95	260.8	-341.8	218.0	201.5	16.55	13.170	
4,200.0	4,185.8	4,189.5	4,163.9	8.9	10.6	-59.43	268.2	-351.1	222.8	205.7	17.03	13.081	
4,300.0	4,285.3	4,289.4	4,263.1	9.2	10.9	-59.89	275.6	-360.5	227.5	210.0	17.50	12.997	
4,400.0	4,384.8	4,389.3	4,362.2	9.4	11.1	-60.33	283.0	-369.9	232.3	214.3	17.98	12.918	
4,500.0	4,484.3	4,489.1	4,461.4	9.6	11.4	-60.75	290.4	-379.3	237.1	218.6	18.46	12.842	
4,600.0	4,583.8	4,589.0	4,560.5	9.9	11.7	-61.16	297.8	-388.7	241.9	222.9	18.94	12.771	
4,700.0	4,683.3	4,688.9	4,659.7	10.1	12.0	-61.55	305.3	-398.1	246.7	227.3	19.42	12.703	
4,800.0	4,782.8	4,788.7	4,758.8	10.4	12.2	-61.92	312.7	-407.5	251.5	231.6	19.90	12.639	
4,900.0	4,882.3	4,888.6	4,858.0	10.6	12.5	-62.28	320.1	-416.8	256.3	236.0	20.38	12.578	
5,000.0	4,981.8	4,988.5	4,957.1	10.9	12.8	-62.63	327.5	-426.2	261.2	240.3	20.86	12.520	
5,100.0	5,081.3	5,088.4	5,056.3	11.1	13.0	-62.97	334.9	-435.6	266.0	244.7	21.34	12.464	

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 Ione 2C-2H
Project:	DJ Wattenberg	**TVD Reference:**	KB=13' @ 5059.0ft (Original Well Elev)
Reference Site:	NWNE S2-T2N-R66W (Ione)	**MD Reference:**	KB=13' @ 5059.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Ione 2C-2H	**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 NWNE S2-T2N-R66W (Ione) - Ione 2B-2H - 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	5,180.8	5,188.2	5,155.5	11.4	13.3	-63.29	342.3	-445.0	270.9	249.1	21.83	12.411	
5,300.0	5,280.3	5,288.1	5,254.6	11.6	13.6	-63.60	349.7	-454.4	275.8	253.5	22.31	12.360	
5,400.0	5,379.8	5,388.0	5,353.8	11.8	13.9	-63.90	357.1	-463.8	280.6	257.9	22.79	12.312	
5,500.0	5,479.3	5,487.8	5,452.9	12.1	14.1	-64.19	364.5	-473.1	285.5	262.3	23.28	12.266	
5,600.0	5,578.8	5,587.7	5,552.1	12.3	14.4	-64.47	371.9	-482.5	290.4	266.7	23.76	12.222	
5,700.0	5,678.2	5,687.6	5,651.2	12.6	14.7	-64.74	379.3	-491.9	295.3	271.1	24.25	12.179	
5,800.0	5,777.7	5,787.5	5,750.4	12.8	14.9	-65.01	386.7	-501.3	300.2	275.5	24.73	12.139	
5,900.0	5,877.2	5,887.3	5,849.5	13.1	15.2	-65.26	394.1	-510.7	305.1	279.9	25.22	12.100	
6,000.0	5,976.7	5,987.2	5,948.7	13.3	15.5	-65.51	401.5	-520.1	310.1	284.3	25.70	12.062	
6,100.0	6,076.2	6,087.1	6,047.8	13.6	15.8	-65.75	408.9	-529.5	315.0	288.8	26.19	12.026	
6,200.0	6,175.7	6,186.9	6,147.0	13.8	16.0	-65.98	416.3	-538.8	319.9	293.2	26.68	11.992	
6,300.0	6,275.2	6,286.8	6,246.1	14.0	16.3	-66.20	423.7	-548.2	324.8	297.7	27.16	11.958	
6,400.0	6,374.7	6,386.7	6,345.3	14.3	16.6	-66.42	431.1	-557.6	329.8	302.1	27.65	11.926	
6,500.0	6,474.2	6,486.5	6,444.4	14.5	16.9	-66.63	438.5	-567.0	334.7	306.6	28.14	11.896	
6,600.0	6,573.7	6,586.4	6,543.6	14.8	17.1	-66.83	445.9	-576.4	339.7	311.0	28.63	11.866	
6,700.0	6,673.2	6,686.3	6,642.7	15.0	17.4	-55.23	453.3	-585.8	344.6	315.5	29.11	11.837	
6,800.0	6,772.9	6,785.5	6,741.2	15.1	17.7	65.98	460.7	-595.1	348.8	319.6	29.21	11.942	
6,900.0	6,870.6	6,881.4	6,836.4	15.0	17.9	82.05	467.8	-604.1	353.5	324.7	28.78	12.282	
7,000.0	6,963.3	6,971.0	6,925.4	14.8	18.2	90.63	474.5	-612.5	362.1	334.1	28.03	12.920	
7,100.0	7,048.1	7,070.3	7,024.1	14.6	18.3	98.37	473.7	-621.9	377.7	350.7	27.06	13.959	
7,200.0	7,122.6	7,182.3	7,133.5	14.3	18.4	105.20	452.4	-632.2	398.8	372.8	26.06	15.306	
7,300.0	7,184.3	7,311.5	7,251.5	14.0	18.3	111.33	401.9	-643.4	423.1	398.0	25.07	16.876	
7,400.0	7,231.5	7,463.0	7,371.5	13.9	18.0	116.70	310.9	-654.7	447.2	423.0	24.20	18.478	
7,500.0	7,262.8	7,640.6	7,476.2	13.9	17.8	120.88	168.6	-664.6	466.9	443.2	23.68	19.716	
7,600.0	7,277.1	7,841.0	7,536.1	14.1	17.9	123.14	-21.5	-670.3	477.5	453.6	23.86	20.016	
7,700.0	7,278.0	7,980.3	7,541.0	14.6	18.4	123.35	-160.6	-670.8	478.4	453.7	24.75	19.331	
7,800.0	7,278.0	8,080.3	7,541.0	15.2	18.9	123.35	-260.6	-670.8	478.4	452.5	25.91	18.464	
7,900.0	7,278.0	8,180.3	7,541.0	16.0	19.5	123.35	-360.6	-670.8	478.4	451.1	27.34	17.500	
8,000.0	7,278.0	8,280.3	7,541.0	17.0	20.3	123.35	-460.6	-670.8	478.4	449.4	29.00	16.501	
8,100.0	7,278.0	8,380.3	7,541.0	18.0	21.2	123.35	-560.6	-670.8	478.4	447.6	30.84	15.512	
8,200.0	7,278.0	8,480.3	7,541.0	19.2	22.2	123.35	-660.6	-670.8	478.4	445.6	32.85	14.565	
8,300.0	7,278.0	8,580.3	7,541.0	20.5	23.3	123.35	-760.6	-670.8	478.4	443.5	34.99	13.674	
8,400.0	7,278.0	8,680.3	7,541.0	21.8	24.5	123.35	-860.6	-670.8	478.4	441.2	37.24	12.849	
8,500.0	7,278.0	8,780.3	7,541.0	23.2	25.7	123.35	-960.6	-670.8	478.4	438.9	39.58	12.089	
8,600.0	7,278.0	8,880.3	7,541.0	24.6	27.0	123.35	-1,060.6	-670.8	478.4	436.5	41.99	11.394	
8,700.0	7,278.0	8,980.3	7,541.0	26.0	28.4	123.35	-1,160.6	-670.8	478.4	434.0	44.47	10.760	
8,800.0	7,278.0	9,080.3	7,541.0	27.6	29.8	123.35	-1,260.6	-670.8	478.4	431.4	47.00	10.180	
8,900.0	7,278.0	9,180.3	7,541.0	29.1	31.2	123.35	-1,360.6	-670.8	478.4	428.9	49.57	9.651	
9,000.0	7,278.0	9,280.3	7,541.0	30.6	32.6	123.35	-1,460.6	-670.8	478.4	426.3	52.19	9.168	
9,100.0	7,278.0	9,380.3	7,541.0	32.2	34.1	123.35	-1,560.6	-670.8	478.4	423.6	54.83	8.725	
9,200.0	7,278.0	9,480.3	7,541.0	33.8	35.6	123.35	-1,660.6	-670.8	478.4	420.9	57.51	8.319	
9,300.0	7,278.0	9,580.3	7,541.0	35.4	37.2	123.35	-1,760.6	-670.8	478.4	418.2	60.21	7.946	
9,400.0	7,278.0	9,680.3	7,541.0	37.0	38.7	123.35	-1,860.6	-670.8	478.4	415.5	62.93	7.603	
9,500.0	7,278.0	9,780.3	7,541.0	38.7	40.3	123.35	-1,960.6	-670.8	478.4	412.8	65.67	7.286	
9,600.0	7,278.0	9,880.3	7,541.0	40.3	41.9	123.35	-2,060.6	-670.8	478.4	410.0	68.43	6.992	
9,700.0	7,278.0	9,980.3	7,541.0	41.9	43.5	123.35	-2,160.6	-670.8	478.4	407.2	71.20	6.720	
9,800.0	7,278.0	10,080.3	7,541.0	43.6	45.1	123.35	-2,260.6	-670.8	478.4	404.5	73.98	6.467	
9,900.0	7,278.0	10,180.3	7,541.0	45.3	46.7	123.35	-2,360.6	-670.8	478.4	401.7	76.78	6.232	
10,000.0	7,278.0	10,280.3	7,541.0	46.9	48.3	123.35	-2,460.6	-670.8	478.4	398.9	79.58	6.012	
10,100.0	7,278.0	10,380.3	7,541.0	48.6	49.9	123.35	-2,560.6	-670.8	478.4	396.0	82.40	5.807	
10,200.0	7,278.0	10,480.3	7,541.0	50.3	51.6	123.35	-2,660.6	-670.8	478.4	393.2	85.22	5.614	
10,300.0	7,278.0	10,580.3	7,541.0	52.0	53.2	123.35	-2,760.6	-670.8	478.4	390.4	88.05	5.434	

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 Ione 2C-2H
Project:	DJ Wattenberg	**TVD Reference:**	KB=13' @ 5059.0ft (Original Well Elev)
Reference Site:	NWNE S2-T2N-R66W (Ione)	**MD Reference:**	KB=13' @ 5059.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Ione 2C-2H	**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 NWNE S2-T2N-R66W (Ione) - Ione 2B-2H - 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
10,400.0	7,278.0	10,680.3	7,541.0	53.7	54.9	123.35	-2,860.6	-670.8	478.4	387.6	90.89	5.264	
10,500.0	7,278.0	10,780.3	7,541.0	55.4	56.5	123.35	-2,960.6	-670.8	478.4	384.7	93.73	5.104	
10,600.0	7,278.0	10,880.3	7,541.0	57.1	58.2	123.35	-3,060.6	-670.8	478.4	381.9	96.58	4.954	
10,700.0	7,278.0	10,980.3	7,541.0	58.8	59.9	123.35	-3,160.6	-670.8	478.4	379.0	99.44	4.812	
10,800.0	7,278.0	11,080.3	7,541.0	60.5	61.6	123.35	-3,260.6	-670.8	478.4	376.1	102.30	4.677	
10,900.0	7,278.0	11,180.3	7,541.0	62.2	63.2	123.35	-3,360.6	-670.8	478.4	373.3	105.16	4.550	
11,000.0	7,278.0	11,280.3	7,541.0	63.9	64.9	123.35	-3,460.6	-670.8	478.4	370.4	108.03	4.429	
11,100.0	7,278.0	11,380.3	7,541.0	65.6	66.6	123.35	-3,560.6	-670.8	478.4	367.5	110.90	4.314	
11,200.0	7,278.0	11,480.3	7,541.0	67.3	68.3	123.35	-3,660.6	-670.8	478.4	364.7	113.77	4.205	
11,300.0	7,278.0	11,580.3	7,541.0	69.1	70.0	123.35	-3,760.6	-670.8	478.4	361.8	116.65	4.101	
11,400.0	7,278.0	11,680.3	7,541.0	70.8	71.7	123.35	-3,860.6	-670.8	478.4	358.9	119.53	4.003	
11,500.0	7,278.0	11,780.3	7,541.0	72.5	73.4	123.35	-3,960.6	-670.8	478.4	356.0	122.42	3.908	
11,600.0	7,278.0	11,880.3	7,541.0	74.2	75.1	123.35	-4,060.6	-670.8	478.4	353.1	125.30	3.818	
11,700.0	7,278.0	11,980.3	7,541.0	75.9	76.8	123.35	-4,160.6	-670.8	478.4	350.3	128.19	3.732	
11,800.0	7,278.0	12,080.3	7,541.0	77.7	78.5	123.35	-4,260.6	-670.8	478.4	347.4	131.08	3.650	
11,852.5	7,278.0	12,132.8	7,541.0	78.6	79.4	123.35	-4,313.1	-670.8	478.4	345.8	132.60	3.608	SF

Company:	EnCana Oil & Gas (USA) Inc	**Local Co-ordinate Reference:**	Well Ione 2C-2H
Project:	DJ Wattenberg	**TVD Reference:**	KB=13' @ 5059.0ft (Original Well Elev)
Reference Site:	NWNE S2-T2N-R66W (Ione)	**MD Reference:**	KB=13' @ 5059.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Ione 2C-2H	**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 NWNE S2-T2N-R66W (Ione) - Ione 2D-2H - 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	90.09	0.0	11.2	11.2				
100.0	100.0	100.0	100.0	0.2	0.2	90.09	0.0	11.2	11.2	10.9	0.30	36.807	
200.0	200.0	200.0	200.0	0.3	0.3	90.09	0.0	11.2	11.2	10.5	0.65	17.124	
300.0	300.0	300.0	300.0	0.5	0.5	90.09	0.0	11.2	11.2	10.2	1.00	11.157	
400.0	400.0	400.0	400.0	0.7	0.7	90.09	0.0	11.2	11.2	9.8	1.35	8.274	
500.0	500.0	500.0	500.0	0.8	0.8	90.09	0.0	11.2	11.2	9.5	1.70	6.575	
600.0	600.0	600.0	600.0	1.0	1.0	90.09	0.0	11.2	11.2	9.1	2.05	5.455	
700.0	700.0	700.0	700.0	1.2	1.2	90.09	0.0	11.2	11.2	8.8	2.40	4.661	
800.0	800.0	800.0	800.0	1.4	1.4	90.09	0.0	11.2	11.2	8.4	2.75	4.069	CC
900.0	900.0	899.9	899.9	1.5	1.5	81.36	1.7	11.3	11.5	8.4	3.10	3.698	ES
1,000.0	1,000.0	999.6	999.5	1.7	1.7	59.56	6.9	11.8	13.7	10.2	3.45	3.952	
1,100.0	1,100.0	1,099.2	1,098.7	1.9	1.9	40.13	14.7	12.4	19.3	15.5	3.81	5.063	
1,200.0	1,200.0	1,198.9	1,198.1	2.1	2.1	29.94	22.7	13.1	26.3	22.1	4.17	6.302	
1,300.0	1,300.0	1,298.7	1,297.5	2.2	2.3	53.34	30.7	13.8	32.7	28.2	4.50	7.265	
1,400.0	1,399.8	1,398.5	1,397.1	2.4	2.5	55.17	38.8	14.4	37.1	32.2	4.86	7.631	
1,500.0	1,499.5	1,498.4	1,496.7	2.6	2.7	60.80	46.8	15.1	39.7	34.5	5.24	7.578	
1,600.0	1,598.9	1,598.3	1,596.2	2.8	3.0	67.41	54.8	15.8	42.1	36.5	5.64	7.467	
1,700.0	1,698.4	1,698.2	1,695.7	3.0	3.2	73.22	62.8	16.5	45.1	39.0	6.06	7.433	
1,800.0	1,797.9	1,798.0	1,795.3	3.2	3.4	78.29	70.8	17.1	48.4	41.9	6.49	7.452	
1,900.0	1,897.4	1,897.9	1,894.8	3.5	3.6	82.68	78.8	17.8	52.0	45.1	6.93	7.507	
2,000.0	1,996.9	1,997.7	1,994.3	3.7	3.8	86.47	86.8	18.5	56.0	48.6	7.38	7.585	
2,100.0	2,096.4	2,097.6	2,093.9	3.9	4.0	89.75	94.9	19.2	60.1	52.3	7.83	7.678	
2,200.0	2,195.9	2,197.4	2,193.4	4.1	4.2	92.61	102.9	19.8	64.4	56.1	8.28	7.780	
2,300.0	2,295.4	2,297.3	2,292.9	4.4	4.5	95.10	110.9	20.5	68.8	60.1	8.73	7.886	
2,400.0	2,394.9	2,397.2	2,392.5	4.6	4.7	97.28	118.9	21.2	73.4	64.2	9.18	7.994	
2,500.0	2,494.4	2,497.0	2,492.0	4.8	4.9	99.21	126.9	21.9	78.1	68.4	9.64	8.101	
2,600.0	2,593.9	2,596.9	2,591.5	5.1	5.1	100.92	134.9	22.5	82.8	72.7	10.09	8.206	
2,700.0	2,693.4	2,696.7	2,691.1	5.3	5.3	102.44	142.9	23.2	87.6	77.0	10.54	8.309	
2,800.0	2,792.9	2,796.6	2,790.6	5.5	5.6	103.81	151.0	23.9	92.4	81.4	10.99	8.408	
2,900.0	2,892.4	2,896.5	2,890.2	5.8	5.8	105.03	159.0	24.6	97.3	85.9	11.45	8.504	
3,000.0	2,991.9	2,996.3	2,989.7	6.0	6.0	106.14	167.0	25.2	102.3	90.4	11.90	8.597	
3,100.0	3,091.4	3,096.2	3,089.2	6.2	6.2	107.15	175.0	25.9	107.3	94.9	12.35	8.685	
3,200.0	3,190.9	3,196.0	3,188.8	6.5	6.4	108.07	183.0	26.6	112.3	99.5	12.80	8.770	
3,300.0	3,290.4	3,295.9	3,288.3	6.7	6.7	108.91	191.0	27.3	117.3	104.0	13.25	8.851	
3,400.0	3,389.9	3,395.8	3,387.8	7.0	6.9	109.68	199.0	27.9	122.3	108.6	13.70	8.929	
3,500.0	3,489.4	3,495.6	3,487.4	7.2	7.1	110.39	207.1	28.6	127.4	113.3	14.15	9.004	
3,600.0	3,588.9	3,595.5	3,586.9	7.5	7.3	111.04	215.1	29.3	132.5	117.9	14.60	9.075	
3,700.0	3,688.3	3,695.3	3,686.4	7.7	7.6	111.65	223.1	29.9	137.6	122.6	15.05	9.143	
3,800.0	3,787.8	3,795.2	3,786.0	7.9	7.8	112.21	231.1	30.6	142.7	127.2	15.50	9.208	
3,900.0	3,887.3	3,895.1	3,885.5	8.2	8.0	112.73	239.1	31.3	147.9	131.9	15.95	9.271	
4,000.0	3,986.8	3,994.9	3,985.0	8.4	8.2	113.22	247.1	32.0	153.0	136.6	16.40	9.330	
4,100.0	4,086.3	4,094.8	4,084.6	8.7	8.4	113.68	255.1	32.6	158.2	141.3	16.85	9.388	
4,200.0	4,185.8	4,194.6	4,184.1	8.9	8.7	114.11	263.2	33.3	163.3	146.0	17.30	9.443	
4,300.0	4,285.3	4,294.5	4,283.6	9.2	8.9	114.51	271.2	34.0	168.5	150.8	17.75	9.495	
4,400.0	4,384.8	4,394.4	4,383.2	9.4	9.1	114.88	279.2	34.7	173.7	155.5	18.20	9.546	
4,500.0	4,484.3	4,494.2	4,482.7	9.6	9.3	115.24	287.2	35.3	178.9	160.2	18.64	9.595	
4,600.0	4,583.8	4,594.1	4,582.2	9.9	9.6	115.58	295.2	36.0	184.1	165.0	19.09	9.641	
4,700.0	4,683.3	4,693.9	4,681.8	10.1	9.8	115.89	303.2	36.7	189.3	169.7	19.54	9.686	
4,800.0	4,782.8	4,793.8	4,781.3	10.4	10.0	116.19	311.2	37.4	194.5	174.5	19.99	9.730	
4,900.0	4,882.3	4,893.6	4,880.8	10.6	10.2	116.48	319.3	38.0	199.7	179.3	20.44	9.771	
5,000.0	4,981.8	4,993.5	4,980.4	10.9	10.4	116.75	327.3	38.7	204.9	184.0	20.89	9.811	
5,100.0	5,081.3	5,093.4	5,079.9	11.1	10.7	117.00	335.3	39.4	210.1	188.8	21.33	9.850	

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 Ione 2C-2H
Project:	DJ Wattenberg	**TVD Reference:**	KB=13' @ 5059.0ft (Original Well Elev)
Reference Site:	NWNE S2-T2N-R66W (Ione)	**MD Reference:**	KB=13' @ 5059.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Ione 2C-2H	**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 NWNE S2-T2N-R66W (Ione) - Ione 2D-2H - HZ - Plan #1

Survey Program: 0-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	5,180.8	5,193.2	5,179.5	11.4	10.9	117.25	343.3	40.1	215.4	193.6	21.78	9.887	
5,300.0	5,280.3	5,293.1	5,279.0	11.6	11.1	117.48	351.3	40.7	220.6	198.4	22.23	9.923	
5,400.0	5,379.8	5,392.9	5,378.5	11.8	11.3	117.70	359.3	41.4	225.8	203.1	22.68	9.958	
5,500.0	5,479.3	5,492.8	5,478.1	12.1	11.6	117.91	367.3	42.1	231.1	207.9	23.13	9.991	
5,600.0	5,578.8	5,592.7	5,577.6	12.3	11.8	118.12	375.4	42.8	236.3	212.7	23.57	10.024	
5,700.0	5,678.2	5,692.5	5,677.1	12.6	12.0	118.31	383.4	43.4	241.5	217.5	24.02	10.055	
5,800.0	5,777.7	5,792.4	5,776.7	12.8	12.2	118.50	391.4	44.1	246.8	222.3	24.47	10.085	
5,900.0	5,877.2	5,892.2	5,876.2	13.1	12.5	118.67	399.4	44.8	252.0	227.1	24.92	10.114	
6,000.0	5,976.7	5,992.1	5,975.7	13.3	12.7	118.84	407.4	45.5	257.3	231.9	25.37	10.143	
6,100.0	6,076.2	6,092.0	6,075.3	13.6	12.9	119.01	415.4	46.1	262.5	236.7	25.81	10.170	
6,200.0	6,175.7	6,191.8	6,174.8	13.8	13.1	119.16	423.4	46.8	267.8	241.5	26.26	10.197	
6,300.0	6,275.2	6,291.7	6,274.3	14.0	13.3	119.32	431.4	47.5	273.0	246.3	26.71	10.223	
6,400.0	6,374.7	6,391.5	6,373.9	14.3	13.6	119.46	439.5	48.2	278.3	251.1	27.16	10.248	
6,500.0	6,474.2	6,491.4	6,473.4	14.5	13.8	119.60	447.5	48.8	283.6	255.9	27.60	10.272	
6,600.0	6,573.7	6,591.3	6,572.9	14.8	14.0	119.74	455.5	49.5	288.8	260.8	28.05	10.296	
6,700.0	6,673.2	6,691.1	6,672.5	15.0	14.2	131.75	463.5	50.2	294.1	265.6	28.49	10.321	
6,800.0	6,772.9	6,790.2	6,771.3	15.1	14.5	-110.04	471.5	50.8	298.9	270.1	28.85	10.359	
6,900.0	6,870.6	6,885.9	6,866.7	15.0	14.7	-102.30	479.1	51.5	304.9	275.8	29.09	10.480	
7,000.0	6,963.3	6,982.8	6,963.4	14.8	14.8	-105.26	483.2	52.1	315.6	286.6	29.00	10.883	
7,100.0	7,048.1	7,089.7	7,069.2	14.6	14.8	-109.87	469.7	52.9	330.8	302.5	28.37	11.660	
7,200.0	7,122.6	7,207.4	7,180.7	14.3	14.6	-114.58	432.4	53.6	349.2	321.9	27.29	12.794	
7,300.0	7,184.3	7,338.3	7,292.7	14.0	14.2	-118.90	365.2	54.4	368.4	342.5	25.94	14.203	
7,400.0	7,231.5	7,484.0	7,395.8	13.9	13.7	-122.49	262.9	55.1	385.8	361.2	24.64	15.662	
7,500.0	7,262.8	7,643.8	7,475.4	13.9	13.5	-125.00	124.9	55.6	398.8	374.9	23.85	16.723	
7,600.0	7,277.1	7,813.7	7,514.8	14.1	13.7	-126.13	-39.7	55.9	404.8	380.8	24.02	16.853	
7,700.0	7,278.0	7,934.7	7,517.0	14.6	14.2	-126.16	-160.6	55.9	405.0	380.1	24.91	16.260	
7,800.0	7,278.0	8,034.7	7,517.0	15.2	14.9	-126.16	-260.6	55.9	405.0	379.0	26.01	15.570	
7,900.0	7,278.0	8,134.7	7,517.0	16.0	15.7	-126.16	-360.6	55.9	405.0	377.7	27.37	14.798	
8,000.0	7,278.0	8,234.7	7,517.0	17.0	16.7	-126.16	-460.6	55.9	405.0	376.1	28.94	13.995	
8,100.0	7,278.0	8,334.7	7,517.0	18.0	17.8	-126.16	-560.6	55.9	405.0	374.3	30.70	13.194	
8,200.0	7,278.0	8,434.7	7,517.0	19.2	19.0	-126.16	-660.6	55.9	405.0	372.4	32.61	12.422	
8,300.0	7,278.0	8,534.7	7,517.0	20.5	20.2	-126.16	-760.6	55.9	405.0	370.4	34.64	11.692	
8,400.0	7,278.0	8,634.7	7,517.0	21.8	21.6	-126.16	-860.6	55.9	405.0	368.2	36.79	11.010	
8,500.0	7,278.0	8,734.7	7,517.0	23.2	23.0	-126.16	-960.6	55.9	405.0	366.0	39.02	10.380	
8,600.0	7,278.0	8,834.7	7,517.0	24.6	24.4	-126.16	-1,060.6	55.9	405.0	363.7	41.33	9.800	
8,700.0	7,278.0	8,934.7	7,517.0	26.0	25.9	-126.16	-1,160.6	55.9	405.0	361.3	43.70	9.269	
8,800.0	7,278.0	9,034.7	7,517.0	27.6	27.4	-126.16	-1,260.6	55.9	405.0	358.9	46.12	8.781	
8,900.0	7,278.0	9,134.7	7,517.0	29.1	28.9	-126.16	-1,360.6	55.9	405.0	356.4	48.59	8.335	
9,000.0	7,278.0	9,234.7	7,517.0	30.6	30.5	-126.16	-1,460.6	55.9	405.0	353.9	51.10	7.926	
9,100.0	7,278.0	9,334.7	7,517.0	32.2	32.1	-126.16	-1,560.6	55.9	405.0	351.4	53.64	7.550	
9,200.0	7,278.0	9,434.7	7,517.0	33.8	33.7	-126.16	-1,660.6	55.9	405.0	348.8	56.21	7.205	
9,300.0	7,278.0	9,534.7	7,517.0	35.4	35.3	-126.16	-1,760.6	55.9	405.0	346.2	58.81	6.887	
9,400.0	7,278.0	9,634.7	7,517.0	37.0	36.9	-126.16	-1,860.6	55.9	405.0	343.6	61.43	6.594	
9,500.0	7,278.0	9,734.7	7,517.0	38.7	38.6	-126.16	-1,960.6	55.9	405.0	341.0	64.06	6.322	
9,600.0	7,278.0	9,834.7	7,517.0	40.3	40.2	-126.16	-2,060.6	55.9	405.0	338.3	66.72	6.071	
9,700.0	7,278.0	9,934.7	7,517.0	41.9	41.9	-126.16	-2,160.6	55.9	405.0	335.6	69.38	5.838	
9,800.0	7,278.0	10,034.7	7,517.0	43.6	43.5	-126.16	-2,260.6	55.9	405.0	333.0	72.07	5.620	
9,900.0	7,278.0	10,134.7	7,517.0	45.3	45.2	-126.16	-2,360.6	55.9	405.0	330.3	74.76	5.418	
10,000.0	7,278.0	10,234.7	7,517.0	46.9	46.9	-126.16	-2,460.6	55.9	405.0	327.6	77.46	5.229	
10,100.0	7,278.0	10,334.7	7,517.0	48.6	48.6	-126.16	-2,560.6	55.9	405.0	324.9	80.18	5.052	
10,200.0	7,278.0	10,434.7	7,517.0	50.3	50.2	-126.16	-2,660.6	55.9	405.0	322.1	82.90	4.886	
10,300.0	7,278.0	10,534.7	7,517.0	52.0	51.9	-126.16	-2,760.6	55.9	405.0	319.4	85.63	4.730	

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

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	**Local Co-ordinate Reference:**	Well Ione 2C-2H
Project:	DJ Wattenberg	**TVD Reference:**	KB=13' @ 5059.0ft (Original Well Elev)
Reference Site:	NWNE S2-T2N-R66W (Ione)	**MD Reference:**	KB=13' @ 5059.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Ione 2C-2H	**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 NWNE S2-T2N-R66W (Ione) - Ione 2D-2H - 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
10,400.0	7,278.0	10,634.7	7,517.0	53.7	53.6	-126.16	-2,860.6	55.9	405.0	316.7	88.36	4.584	
10,500.0	7,278.0	10,734.7	7,517.0	55.4	55.3	-126.16	-2,960.6	55.9	405.0	313.9	91.11	4.446	
10,600.0	7,278.0	10,834.7	7,517.0	57.1	57.0	-126.16	-3,060.6	55.9	405.0	311.2	93.86	4.315	
10,700.0	7,278.0	10,934.7	7,517.0	58.8	58.7	-126.16	-3,160.6	55.9	405.0	308.4	96.61	4.192	
10,800.0	7,278.0	11,034.7	7,517.0	60.5	60.4	-126.16	-3,260.6	55.9	405.0	305.7	99.37	4.076	
10,900.0	7,278.0	11,134.7	7,517.0	62.2	62.2	-126.16	-3,360.6	55.9	405.0	302.9	102.13	3.966	
11,000.0	7,278.0	11,234.7	7,517.0	63.9	63.9	-126.16	-3,460.6	55.9	405.0	300.1	104.90	3.861	
11,100.0	7,278.0	11,334.7	7,517.0	65.6	65.6	-126.16	-3,560.6	55.9	405.0	297.4	107.67	3.762	
11,200.0	7,278.0	11,434.7	7,517.0	67.3	67.3	-126.16	-3,660.6	55.9	405.0	294.6	110.45	3.667	
11,300.0	7,278.0	11,534.7	7,517.0	69.1	69.0	-126.16	-3,760.6	55.9	405.0	291.8	113.23	3.577	
11,400.0	7,278.0	11,634.7	7,517.0	70.8	70.7	-126.16	-3,860.6	55.9	405.0	289.0	116.01	3.491	
11,500.0	7,278.0	11,734.7	7,517.0	72.5	72.5	-126.16	-3,960.6	55.9	405.0	286.2	118.79	3.410	
11,600.0	7,278.0	11,834.7	7,517.0	74.2	74.2	-126.16	-4,060.6	55.9	405.0	283.5	121.58	3.331	
11,700.0	7,278.0	11,934.7	7,517.0	75.9	75.9	-126.16	-4,160.6	55.9	405.0	280.7	124.37	3.257	
11,800.0	7,278.0	12,034.7	7,517.0	77.7	77.6	-126.16	-4,260.6	55.9	405.0	277.9	127.16	3.185	
11,828.1	7,278.0	12,062.8	7,517.0	78.2	78.1	-126.16	-4,288.7	55.9	405.0	277.1	127.95	3.166	
11,852.5	7,278.0	12,083.5	7,517.0	78.6	78.5	-126.16	-4,309.4	55.9	405.1	276.5	128.58	3.150	SF

Company:	EnCana Oil & Gas (USA) Inc	**Local Co-ordinate Reference:**	Well Ione 2C-2H
Project:	DJ Wattenberg	**TVD Reference:**	KB=13' @ 5059.0ft (Original Well Elev)
Reference Site:	NWNE S2-T2N-R66W (Ione)	**MD Reference:**	KB=13' @ 5059.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Ione 2C-2H	**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 NWNE S2-T2N-R66W (Ione) - Ione 2E-2H - 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	90.02	0.0	19.6	19.6				
100.0	100.0	100.0	100.0	0.2	0.2	90.02	0.0	19.6	19.6	19.3	0.30	64.412	
200.0	200.0	200.0	200.0	0.3	0.3	90.02	0.0	19.6	19.6	18.9	0.65	29.967	
300.0	300.0	300.0	300.0	0.5	0.5	90.02	0.0	19.6	19.6	18.6	1.00	19.525	
400.0	400.0	400.0	400.0	0.7	0.7	90.02	0.0	19.6	19.6	18.2	1.35	14.480	
500.0	500.0	500.0	500.0	0.8	0.8	90.02	0.0	19.6	19.6	17.9	1.70	11.507	
600.0	600.0	600.0	600.0	1.0	1.0	90.02	0.0	19.6	19.6	17.5	2.05	9.547	CC, ES
700.0	700.0	699.5	699.5	1.2	1.2	86.21	1.4	20.6	20.7	18.3	2.40	8.614	SF
800.0	800.0	798.9	798.7	1.4	1.4	77.04	5.5	23.8	24.4	21.7	2.76	8.861	
900.0	900.0	897.7	897.2	1.5	1.6	67.06	12.3	29.0	31.6	28.5	3.12	10.117	
1,000.0	1,000.0	997.2	996.1	1.7	1.8	59.91	20.4	35.2	40.9	37.4	3.49	11.716	
1,100.0	1,100.0	1,096.6	1,095.0	1.9	2.0	55.44	28.5	41.4	50.6	46.7	3.86	13.116	
1,200.0	1,200.0	1,196.1	1,194.0	2.1	2.3	52.42	36.7	47.7	60.5	56.2	4.22	14.322	
1,300.0	1,300.0	1,295.6	1,293.0	2.2	2.5	78.40	44.8	53.9	70.1	65.6	4.50	15.578	
1,400.0	1,399.8	1,395.2	1,392.0	2.4	2.7	80.12	53.0	60.2	79.1	74.2	4.86	16.266	
1,500.0	1,499.5	1,494.7	1,490.9	2.6	3.0	83.72	61.1	66.4	87.7	82.5	5.25	16.717	
1,600.0	1,598.9	1,594.1	1,589.8	2.8	3.2	87.59	69.3	72.6	96.6	91.0	5.65	17.095	
1,700.0	1,698.4	1,693.5	1,688.7	3.0	3.4	90.80	77.4	78.9	105.9	99.8	6.07	17.450	
1,800.0	1,797.9	1,792.9	1,787.6	3.2	3.7	93.49	85.5	85.1	115.4	108.9	6.49	17.776	
1,900.0	1,897.4	1,892.3	1,886.5	3.5	3.9	95.76	93.7	91.3	125.1	118.2	6.92	18.076	
2,000.0	1,996.9	1,991.7	1,985.3	3.7	4.2	97.71	101.8	97.6	135.0	127.6	7.36	18.351	
2,100.0	2,096.4	2,091.1	2,084.2	3.9	4.4	99.39	110.0	103.8	145.0	137.2	7.80	18.602	
2,200.0	2,195.9	2,190.5	2,183.1	4.1	4.7	100.85	118.1	110.1	155.2	146.9	8.24	18.832	
2,300.0	2,295.4	2,290.0	2,282.0	4.4	4.9	102.13	126.2	116.3	165.4	156.7	8.69	19.044	
2,400.0	2,394.9	2,389.4	2,380.9	4.6	5.1	103.26	134.4	122.5	175.7	166.6	9.13	19.238	
2,500.0	2,494.4	2,488.8	2,479.8	4.8	5.4	104.26	142.5	128.8	186.1	176.5	9.58	19.418	
2,600.0	2,593.9	2,588.2	2,578.6	5.1	5.6	105.16	150.6	135.0	196.5	186.4	10.03	19.584	
2,700.0	2,693.4	2,687.6	2,677.5	5.3	5.9	105.97	158.8	141.2	206.9	196.4	10.48	19.738	
2,800.0	2,792.9	2,787.0	2,776.4	5.5	6.1	106.70	166.9	147.5	217.4	206.5	10.94	19.881	
2,900.0	2,892.4	2,886.4	2,875.3	5.8	6.4	107.37	175.1	153.7	227.9	216.5	11.39	20.014	
3,000.0	2,991.9	2,985.8	2,974.2	6.0	6.6	107.97	183.2	159.9	238.5	226.6	11.84	20.138	
3,100.0	3,091.4	3,085.2	3,073.0	6.2	6.9	108.53	191.3	166.2	249.0	236.8	12.30	20.254	
3,200.0	3,190.9	3,184.7	3,171.9	6.5	7.1	109.04	199.5	172.4	259.6	246.9	12.75	20.363	
3,300.0	3,290.4	3,284.1	3,270.8	6.7	7.4	109.50	207.6	178.7	270.3	257.0	13.21	20.465	
3,400.0	3,389.9	3,383.5	3,369.7	7.0	7.6	109.94	215.7	184.9	280.9	267.2	13.66	20.561	
3,500.0	3,489.4	3,482.9	3,468.6	7.2	7.9	110.34	223.9	191.1	291.5	277.4	14.12	20.651	
3,600.0	3,588.9	3,582.3	3,567.5	7.5	8.1	110.71	232.0	197.4	302.2	287.6	14.57	20.737	
3,700.0	3,688.3	3,681.7	3,666.3	7.7	8.4	111.06	240.2	203.6	312.9	297.8	15.03	20.817	
3,800.0	3,787.8	3,781.1	3,765.2	7.9	8.6	111.39	248.3	209.8	323.5	308.0	15.48	20.893	
3,900.0	3,887.3	3,880.5	3,864.1	8.2	8.9	111.69	256.4	216.1	334.2	318.3	15.94	20.966	
4,000.0	3,986.8	3,980.0	3,963.0	8.4	9.1	111.98	264.6	222.3	344.9	328.5	16.40	21.034	
4,100.0	4,086.3	4,079.4	4,061.9	8.7	9.4	112.24	272.7	228.5	355.6	338.8	16.85	21.099	
4,200.0	4,185.8	4,178.8	4,160.7	8.9	9.6	112.50	280.8	234.8	366.3	349.0	17.31	21.161	
4,300.0	4,285.3	4,278.2	4,259.6	9.2	9.9	112.73	289.0	241.0	377.1	359.3	17.77	21.220	
4,400.0	4,384.8	4,377.6	4,358.5	9.4	10.1	112.96	297.1	247.2	387.8	369.6	18.23	21.276	
4,500.0	4,484.3	4,477.0	4,457.4	9.6	10.4	113.17	305.3	253.5	398.5	379.8	18.68	21.330	
4,600.0	4,583.8	4,576.4	4,556.3	9.9	10.6	113.37	313.4	259.7	409.3	390.1	19.14	21.381	
4,700.0	4,683.3	4,675.8	4,655.2	10.1	10.8	113.57	321.5	266.0	420.0	400.4	19.60	21.430	
4,800.0	4,782.8	4,775.2	4,754.0	10.4	11.1	113.75	329.7	272.2	430.7	410.7	20.06	21.477	
4,900.0	4,882.3	4,874.7	4,852.9	10.6	11.3	113.92	337.8	278.4	441.5	421.0	20.51	21.522	
5,000.0	4,981.8	4,974.1	4,951.8	10.9	11.6	114.09	345.9	284.7	452.2	431.3	20.97	21.565	
5,100.0	5,081.3	5,073.5	5,050.7	11.1	11.8	114.24	354.1	290.9	463.0	441.6	21.43	21.607	

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

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	**Local Co-ordinate Reference:**	Well Ione 2C-2H
Project:	DJ Wattenberg	**TVD Reference:**	KB=13' @ 5059.0ft (Original Well Elev)
Reference Site:	NWNE S2-T2N-R66W (Ione)	**MD Reference:**	KB=13' @ 5059.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Ione 2C-2H	**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 NWNE S2-T2N-R66W (Ione) - Ione 2E-2H - 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	5,180.8	5,172.9	5,149.6	11.4	12.1	114.39	362.2	297.1	473.8	451.9	21.89	21.646	
5,300.0	5,280.3	5,272.3	5,248.4	11.6	12.3	114.54	370.4	303.4	484.5	462.2	22.34	21.685	
5,400.0	5,379.8	5,371.7	5,347.3	11.8	12.6	114.67	378.5	309.6	495.3	472.5	22.80	21.721	

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	**Local Co-ordinate Reference:**	Well Ione 2C-2H
Project:	DJ Wattenberg	**TVD Reference:**	KB=13' @ 5059.0ft (Original Well Elev)
Reference Site:	NWNE S2-T2N-R66W (Ione)	**MD Reference:**	KB=13' @ 5059.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Ione 2C-2H	**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 NWNE S2-T2N-R66W (Ione) - Ione 2F-2H - 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	90.03	0.0	30.7	30.7				
100.0	100.0	100.0	100.0	0.2	0.2	90.03	0.0	30.7	30.7	30.4	0.30	101.218	
200.0	200.0	200.0	200.0	0.3	0.3	90.03	0.0	30.7	30.7	30.1	0.65	47.091	
300.0	300.0	300.0	300.0	0.5	0.5	90.03	0.0	30.7	30.7	29.7	1.00	30.683	
400.0	400.0	400.0	400.0	0.7	0.7	90.03	0.0	30.7	30.7	29.4	1.35	22.755	CC, ES
500.0	500.0	499.1	499.0	0.8	0.9	88.40	0.9	32.2	32.2	30.5	1.70	18.950	
600.0	600.0	597.9	597.7	1.0	1.0	84.32	3.6	36.5	36.8	34.7	2.06	17.884	SF
700.0	700.0	696.2	695.7	1.2	1.2	79.41	8.2	43.7	44.6	42.2	2.42	18.431	
800.0	800.0	793.9	792.7	1.4	1.5	74.93	14.4	53.6	56.0	53.2	2.80	20.006	
900.0	900.0	892.5	890.2	1.5	1.8	71.45	22.0	65.5	69.8	66.6	3.18	21.964	
1,000.0	1,000.0	991.4	988.1	1.7	2.0	69.11	29.6	77.6	83.9	80.3	3.56	23.566	
1,100.0	1,100.0	1,090.4	1,086.1	1.9	2.3	67.45	37.2	89.7	98.1	94.1	3.94	24.882	
1,200.0	1,200.0	1,189.3	1,184.0	2.1	2.6	66.20	44.9	101.7	112.3	108.0	4.32	25.982	
1,300.0	1,300.0	1,288.3	1,281.9	2.2	2.9	92.67	52.5	113.8	126.7	122.2	4.49	28.240	
1,400.0	1,399.8	1,387.2	1,379.8	2.4	3.2	93.68	60.1	125.8	141.2	136.4	4.85	29.146	
1,500.0	1,499.5	1,485.9	1,477.4	2.6	3.5	95.74	67.7	137.9	156.2	150.9	5.22	29.886	
1,600.0	1,598.9	1,584.5	1,575.0	2.8	3.8	98.11	75.3	149.9	171.5	165.9	5.62	30.501	
1,700.0	1,698.4	1,683.1	1,672.5	3.0	4.1	100.09	82.9	161.9	187.0	181.0	6.03	31.019	
1,800.0	1,797.9	1,781.7	1,770.1	3.2	4.4	101.77	90.5	173.9	202.8	196.3	6.45	31.459	
1,900.0	1,897.4	1,880.2	1,867.7	3.5	4.7	103.20	98.1	185.9	218.7	211.8	6.87	31.837	
2,000.0	1,996.9	1,978.8	1,965.2	3.7	5.0	104.44	105.7	197.9	234.7	227.4	7.30	32.165	
2,100.0	2,096.4	2,077.4	2,062.8	3.9	5.3	105.52	113.3	209.9	250.8	243.1	7.73	32.450	
2,200.0	2,195.9	2,176.0	2,160.3	4.1	5.6	106.47	120.9	221.9	267.0	258.8	8.16	32.702	
2,300.0	2,295.4	2,274.6	2,257.9	4.4	5.9	107.32	128.5	234.0	283.2	274.6	8.60	32.925	
2,400.0	2,394.9	2,373.2	2,355.5	4.6	6.2	108.07	136.1	246.0	299.5	290.5	9.04	33.124	
2,500.0	2,494.4	2,471.8	2,453.0	4.8	6.5	108.74	143.7	258.0	315.9	306.4	9.48	33.303	
2,600.0	2,593.9	2,570.4	2,550.6	5.1	6.8	109.35	151.3	270.0	332.2	322.3	9.93	33.464	
2,700.0	2,693.4	2,669.0	2,648.2	5.3	7.1	109.90	158.9	282.0	348.7	338.3	10.37	33.611	
2,800.0	2,792.9	2,767.6	2,745.7	5.5	7.4	110.40	166.5	294.0	365.1	354.3	10.82	33.744	
2,900.0	2,892.4	2,866.2	2,843.3	5.8	7.7	110.85	174.1	306.0	381.6	370.3	11.27	33.867	
3,000.0	2,991.9	2,964.7	2,940.8	6.0	8.0	111.27	181.7	318.1	398.1	386.3	11.71	33.979	
3,100.0	3,091.4	3,063.3	3,038.4	6.2	8.3	111.66	189.3	330.1	414.6	402.4	12.16	34.083	
3,200.0	3,190.9	3,161.9	3,136.0	6.5	8.6	112.02	196.8	342.1	431.1	418.5	12.61	34.179	
3,300.0	3,290.4	3,260.5	3,233.5	6.7	8.9	112.35	204.4	354.1	447.6	434.6	13.06	34.268	
3,400.0	3,389.9	3,359.1	3,331.1	7.0	9.2	112.65	212.0	366.1	464.2	450.7	13.51	34.351	
3,500.0	3,489.4	3,457.7	3,428.6	7.2	9.5	112.94	219.6	378.1	480.7	466.8	13.96	34.428	
3,600.0	3,588.9	3,556.3	3,526.2	7.5	9.8	113.21	227.2	390.1	497.3	482.9	14.41	34.501	

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	**Local Co-ordinate Reference:**	Well Ione 2C-2H
Project:	DJ Wattenberg	**TVD Reference:**	KB=13' @ 5059.0ft (Original Well Elev)
Reference Site:	NWNE S2-T2N-R66W (Ione)	**MD Reference:**	KB=13' @ 5059.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Ione 2C-2H	**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 NWNE S2-T2N-R66W (Ione) - Ione 2G-2H - HZ - Plan #1

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

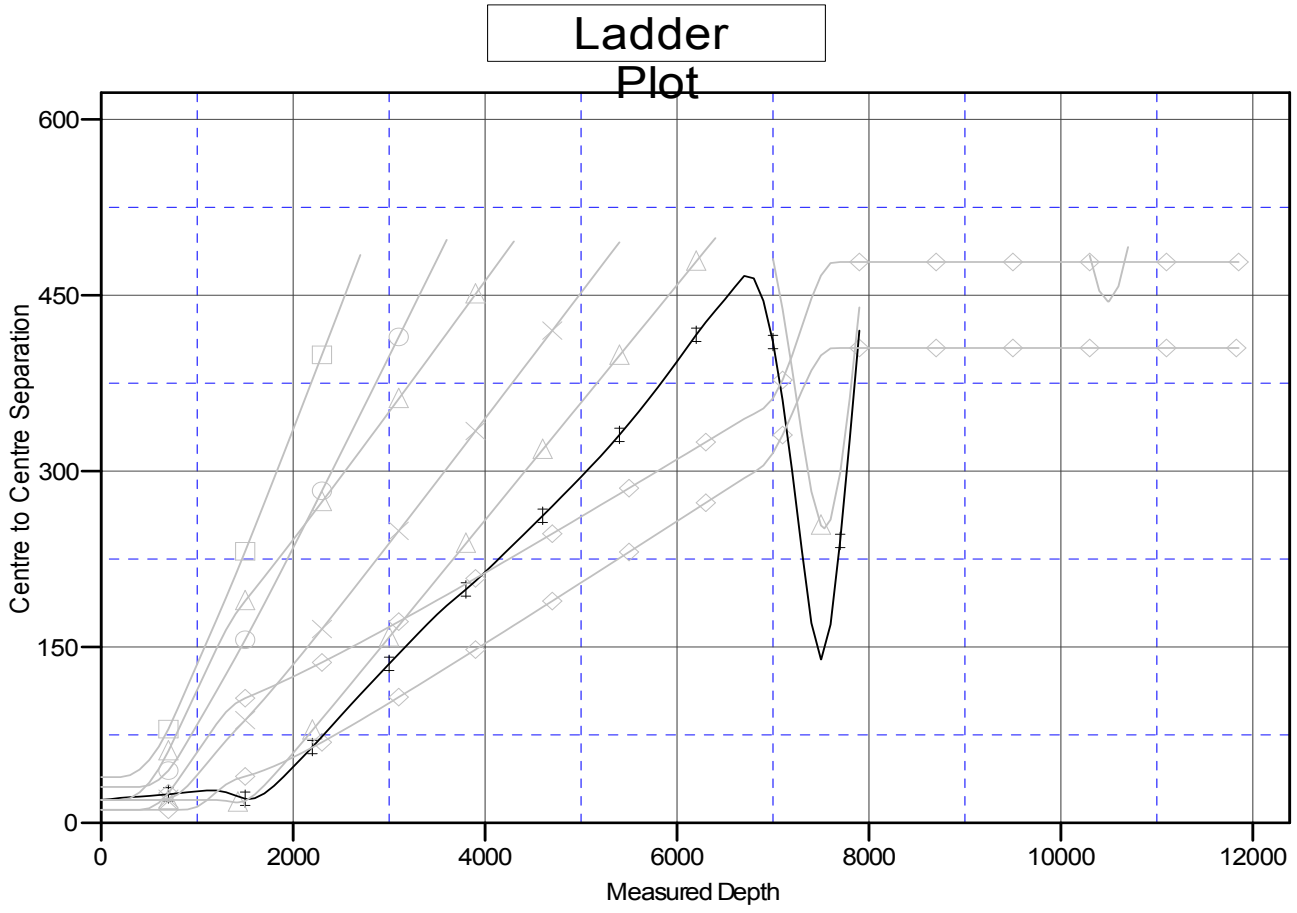
Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	90.04	0.0	39.1	39.1				
100.0	100.0	100.0	100.0	0.2	0.2	90.04	0.0	39.1	39.1	38.8	0.30	128.823	
200.0	200.0	200.0	200.0	0.3	0.3	90.04	0.0	39.1	39.1	38.5	0.65	59.934	CC, ES
300.0	300.0	298.7	298.7	0.5	0.5	89.04	0.7	40.7	40.7	39.7	1.00	40.622	
400.0	400.0	397.2	397.1	0.7	0.7	86.46	2.8	45.3	45.5	44.1	1.36	33.454	
500.0	500.0	495.3	494.7	0.8	0.9	83.21	6.3	52.9	53.6	51.8	1.73	30.994	
600.0	600.0	592.6	591.4	1.0	1.2	80.04	11.2	63.5	65.1	63.0	2.11	30.847	SF
700.0	700.0	689.1	686.7	1.2	1.5	77.32	17.3	77.0	80.0	77.5	2.50	31.972	
800.0	800.0	785.7	781.7	1.4	1.8	75.14	24.7	93.1	98.1	95.1	2.90	33.792	
900.0	900.0	883.9	878.2	1.5	2.2	73.57	32.4	110.0	116.7	113.4	3.30	35.325	
1,000.0	1,000.0	982.1	974.6	1.7	2.5	72.43	40.2	126.9	135.5	131.8	3.71	36.546	
1,100.0	1,100.0	1,080.3	1,071.0	1.9	2.9	71.57	47.9	143.7	154.2	150.1	4.11	37.539	
1,200.0	1,200.0	1,178.5	1,167.4	2.1	3.2	70.90	55.6	160.6	173.0	168.5	4.51	38.362	
1,300.0	1,300.0	1,276.7	1,263.8	2.2	3.6	97.43	63.3	177.5	192.1	187.6	4.46	43.062	
1,400.0	1,399.8	1,374.7	1,360.1	2.4	4.0	97.97	71.1	194.3	211.6	206.8	4.82	43.938	
1,500.0	1,499.5	1,472.5	1,456.1	2.6	4.3	99.26	78.8	211.1	231.7	226.5	5.19	44.649	
1,600.0	1,598.9	1,570.1	1,552.0	2.8	4.7	100.95	86.4	227.9	252.2	246.6	5.58	45.181	
1,700.0	1,698.4	1,667.7	1,647.8	3.0	5.1	102.38	94.1	244.6	272.9	266.9	5.99	45.590	
1,800.0	1,797.9	1,765.4	1,743.7	3.2	5.4	103.61	101.8	261.4	293.7	287.3	6.40	45.909	
1,900.0	1,897.4	1,863.0	1,839.6	3.5	5.8	104.68	109.5	278.2	314.7	307.8	6.82	46.160	
2,000.0	1,996.9	1,960.6	1,935.4	3.7	6.2	105.61	117.2	295.0	335.7	328.4	7.24	46.360	
2,100.0	2,096.4	2,058.2	2,031.3	3.9	6.5	106.44	124.9	311.7	356.8	349.1	7.67	46.521	
2,200.0	2,195.9	2,155.9	2,127.2	4.1	6.9	107.17	132.5	328.5	378.0	369.9	8.10	46.652	
2,300.0	2,295.4	2,253.5	2,223.0	4.4	7.3	107.83	140.2	345.3	399.2	390.6	8.54	46.760	
2,400.0	2,394.9	2,351.1	2,318.9	4.6	7.6	108.42	147.9	362.0	420.4	411.5	8.97	46.849	
2,500.0	2,494.4	2,448.7	2,414.8	4.8	8.0	108.95	155.6	378.8	441.7	432.3	9.41	46.923	
2,600.0	2,593.9	2,546.4	2,510.6	5.1	8.4	109.43	163.3	395.6	463.1	453.2	9.86	46.986	
2,700.0	2,693.4	2,644.0	2,606.5	5.3	8.7	109.87	171.0	412.4	484.5	474.2	10.30	47.040	

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 Ione 2C-2H
Project:	DJ Wattenberg	**TVD Reference:**	KB=13' @ 5059.0ft (Original Well Elev)
Reference Site:	NWNE S2-T2N-R66W (Ione)	**MD Reference:**	KB=13' @ 5059.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Ione 2C-2H	**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=13' @ 5059.0ft (Original Well Elev
Offset Depths are relative to Offset Datum
Central Meridian is -105.500000 °

Coordinates are relative to: Ione 2C-2H
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 0.49°



LEGEND

- Ione #13-2 (Existing), DD, Plan #1 V0
- Ione #3 (Existing), DD, DD V0
- Ione #3 (Existing), DD, Plan #1 V0
- Ione 2A-2H, HZ, Plan #1 V0
- Ione 2B-2H, HZ, Plan #1 V0
- Ione 2D-2H, HZ, Plan #1 V0
- Ione 2E-2H, HZ, Plan #1 V0
- Ione 2F-2H, HZ, Plan #1 V0
- Ione 2G-2H, HZ, Plan #1 V0