

# **DJ/Paradox/WTX**

**Wattenberg**

**New Drills**

**Bury Crandell 8-0-23**

**Wellbore #1**

**Plan: Design #1**

## **Standard Planning Report**

**02 November, 2009**

# EnCana Corporation

## Planning Report

<b>Database:</b>	EDM	<b>Local Co-ordinate Reference:</b>	Well Bury Crandell 8-0-23
<b>Company:</b>	DJ/Paradox/WTX	<b>TVD Reference:</b>	RKB @ 5127.0ft (TBD)
<b>Project:</b>	Wattenberg	<b>MD Reference:</b>	RKB @ 5127.0ft (TBD)
<b>Site:</b>	New Drills	<b>North Reference:</b>	True
<b>Well:</b>	Bury Crandell 8-0-23	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Design #1		

<b>Project</b>	Wattenberg,		
<b>Map System:</b>	US State Plane 1983	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	North American Datum 1983		
<b>Map Zone:</b>	Colorado Northern Zone		

Site	New Drills				
Site Position:		Northing:	1,252,450.66ft	Latitude:	40° 1' 32.016 N
From:	Lat/Long	Easting:	3,120,627.66ft	Longitude:	105° 4' 9.336 W
Position Uncertainty:	ft	Slot Radius:	in	Grid Convergence:	0.28 °

Well	Bury Crandell 8-0-23					
Well Position	+N-S	5,727.4 ft	Northing:	1,258,354.51 ft	Latitude:	40° 2' 28.788 N
	+E-W	29,256.7 ft	Easting:	3,149,849.22 ft	Longitude:	104° 57' 53.244 W
Position Uncertainty		ft	Wellhead Elevation:	ft	Ground Level:	5,112.0ft

<b>Wellbore</b>	Wellbore #1				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF200510	11/02/2009	9.12	66.79	53,108

<b>Design</b>	Design #1				
<b>Audit Notes:</b>					
<b>Version:</b>	<b>Phase:</b>	PROTOTYPE		<b>Tie On Depth:</b>	0.0
<b>Vertical Section:</b>	<b>Depth From (TVD) (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Direction (°)</b>	
	0.0	0.0	0.0	43.77	

<b>Plan Sections</b>										
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	
850.0	0.00	0.00	850.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,509.6	13.19	43.77	1,503.8	54.6	52.3	2.00	2.00	0.00	43.77	
6,947.5	13.19	43.77	6,798.2	950.8	910.8	0.00	0.00	0.00	0.00	
7,607.1	0.00	0.00	7,452.0	1,005.4	963.1	2.00	-2.00	0.00	180.00	
8,607.1	0.00	0.00	8,452.0	1,005.4	963.1	0.00	0.00	0.00	0.00	BC 8-0-23 PBHL

# EnCana Corporation

## Planning Report

<b>Database:</b>	EDM	<b>Local Co-ordinate Reference:</b>	Well Bury Crandell 8-0-23
<b>Company:</b>	DJ/Paradox/WTX	<b>TVD Reference:</b>	RKB @ 5127.0ft (TBD)
<b>Project:</b>	Wattenberg	<b>MD Reference:</b>	RKB @ 5127.0ft (TBD)
<b>Site:</b>	New Drills	<b>North Reference:</b>	True
<b>Well:</b>	Bury Crandell 8-0-23	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Design #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)	Turn Rate (°/100ft)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	0.00
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	0.00
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	0.00
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	0.00
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	0.00
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	0.00
700.0	0.00	0.00	700.0	0.0	0.0	0.0	0.00	0.00	0.00
800.0	0.00	0.00	800.0	0.0	0.0	0.0	0.00	0.00	0.00
<b>8-1/8" Surface</b>									
850.0	0.00	0.00	850.0	0.0	0.0	0.0	0.00	0.00	0.00
900.0	1.00	43.77	900.0	0.3	0.3	0.4	2.00	2.00	0.00
1,000.0	3.00	43.77	999.9	2.8	2.7	3.9	2.00	2.00	0.00
1,100.0	5.00	43.77	1,099.7	7.9	7.5	10.9	2.00	2.00	0.00
1,200.0	7.00	43.77	1,199.1	15.4	14.8	21.4	2.00	2.00	0.00
1,300.0	9.00	43.77	1,298.2	25.5	24.4	35.3	2.00	2.00	0.00
1,400.0	11.00	43.77	1,396.6	38.0	36.4	52.6	2.00	2.00	0.00
1,509.6	13.19	43.77	1,503.8	54.6	52.3	75.6	2.00	2.00	0.00
1,600.0	13.19	43.77	1,591.8	69.5	66.6	96.2	0.00	0.00	0.00
1,700.0	13.19	43.77	1,689.2	86.0	82.4	119.1	0.00	0.00	0.00
1,800.0	13.19	43.77	1,786.5	102.5	98.1	141.9	0.00	0.00	0.00
1,900.0	13.19	43.77	1,883.9	118.9	113.9	164.7	0.00	0.00	0.00
2,000.0	13.19	43.77	1,981.2	135.4	129.7	187.5	0.00	0.00	0.00
2,100.0	13.19	43.77	2,078.6	151.9	145.5	210.3	0.00	0.00	0.00
2,200.0	13.19	43.77	2,176.0	168.4	161.3	233.2	0.00	0.00	0.00
2,300.0	13.19	43.77	2,273.3	184.9	177.1	256.0	0.00	0.00	0.00
2,400.0	13.19	43.77	2,370.7	201.3	192.9	278.8	0.00	0.00	0.00
2,500.0	13.19	43.77	2,468.0	217.8	208.7	301.6	0.00	0.00	0.00
2,600.0	13.19	43.77	2,565.4	234.3	224.4	324.5	0.00	0.00	0.00
2,700.0	13.19	43.77	2,662.8	250.8	240.2	347.3	0.00	0.00	0.00
2,800.0	13.19	43.77	2,760.1	267.3	256.0	370.1	0.00	0.00	0.00
2,900.0	13.19	43.77	2,857.5	283.7	271.8	392.9	0.00	0.00	0.00
3,000.0	13.19	43.77	2,954.9	300.2	287.6	415.7	0.00	0.00	0.00
3,100.0	13.19	43.77	3,052.2	316.7	303.4	438.6	0.00	0.00	0.00
3,200.0	13.19	43.77	3,149.6	333.2	319.2	461.4	0.00	0.00	0.00
3,300.0	13.19	43.77	3,246.9	349.7	335.0	484.2	0.00	0.00	0.00
3,400.0	13.19	43.77	3,344.3	366.2	350.7	507.0	0.00	0.00	0.00
3,500.0	13.19	43.77	3,441.7	382.6	366.5	529.9	0.00	0.00	0.00
3,600.0	13.19	43.77	3,539.0	399.1	382.3	552.7	0.00	0.00	0.00
3,700.0	13.19	43.77	3,636.4	415.6	398.1	575.5	0.00	0.00	0.00
3,800.0	13.19	43.77	3,733.7	432.1	413.9	598.3	0.00	0.00	0.00
3,900.0	13.19	43.77	3,831.1	448.6	429.7	621.2	0.00	0.00	0.00
4,000.0	13.19	43.77	3,928.5	465.0	445.5	644.0	0.00	0.00	0.00
4,100.0	13.19	43.77	4,025.8	481.5	461.3	666.8	0.00	0.00	0.00
4,200.0	13.19	43.77	4,123.2	498.0	477.0	689.6	0.00	0.00	0.00
4,300.0	13.19	43.77	4,220.5	514.5	492.8	712.4	0.00	0.00	0.00
4,400.0	13.19	43.77	4,317.9	531.0	508.6	735.3	0.00	0.00	0.00
4,500.0	13.19	43.77	4,415.3	547.4	524.4	758.1	0.00	0.00	0.00
4,600.0	13.19	43.77	4,512.6	563.9	540.2	780.9	0.00	0.00	0.00
4,700.0	13.19	43.77	4,610.0	580.4	556.0	803.7	0.00	0.00	0.00
4,800.0	13.19	43.77	4,707.3	596.9	571.8	826.6	0.00	0.00	0.00
4,809.9	13.19	43.77	4,717.0	598.5	573.3	828.8	0.00	0.00	0.00
<b>Sussex</b>									
4,900.0	13.19	43.77	4,804.7	613.4	587.6	849.4	0.00	0.00	0.00

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<b>Project:</b>	Wattenberg	<b>MD Reference:</b>	RKB @ 5127.0ft (TBD)
<b>Site:</b>	New Drills	<b>North Reference:</b>	True
<b>Well:</b>	Bury Crandell 8-0-23	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Design #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)	Turn Rate (°/100ft)
5,000.0	13.19	43.77	4,902.1	629.9	603.3	872.2	0.00	0.00	0.00
5,100.0	13.19	43.77	4,999.4	646.3	619.1	895.0	0.00	0.00	0.00
5,200.0	13.19	43.77	5,096.8	662.8	634.9	917.9	0.00	0.00	0.00
5,300.0	13.19	43.77	5,194.2	679.3	650.7	940.7	0.00	0.00	0.00
5,385.1	13.19	43.77	5,277.0	693.3	664.1	960.1	0.00	0.00	0.00
<b>Shannon</b>									
5,400.0	13.19	43.77	5,291.5	695.8	666.5	963.5	0.00	0.00	0.00
5,500.0	13.19	43.77	5,388.9	712.3	682.3	986.3	0.00	0.00	0.00
5,600.0	13.19	43.77	5,486.2	728.7	698.1	1,009.1	0.00	0.00	0.00
5,700.0	13.19	43.77	5,583.6	745.2	713.9	1,032.0	0.00	0.00	0.00
5,800.0	13.19	43.77	5,681.0	761.7	729.6	1,054.8	0.00	0.00	0.00
5,900.0	13.19	43.77	5,778.3	778.2	745.4	1,077.6	0.00	0.00	0.00
6,000.0	13.19	43.77	5,875.7	794.7	761.2	1,100.4	0.00	0.00	0.00
6,100.0	13.19	43.77	5,973.0	811.1	777.0	1,123.3	0.00	0.00	0.00
6,200.0	13.19	43.77	6,070.4	827.6	792.8	1,146.1	0.00	0.00	0.00
6,300.0	13.19	43.77	6,167.8	844.1	808.6	1,168.9	0.00	0.00	0.00
6,400.0	13.19	43.77	6,265.1	860.6	824.4	1,191.7	0.00	0.00	0.00
6,500.0	13.19	43.77	6,362.5	877.1	840.2	1,214.5	0.00	0.00	0.00
6,600.0	13.19	43.77	6,459.8	893.6	855.9	1,237.4	0.00	0.00	0.00
6,700.0	13.19	43.77	6,557.2	910.0	871.7	1,260.2	0.00	0.00	0.00
6,800.0	13.19	43.77	6,654.6	926.5	887.5	1,283.0	0.00	0.00	0.00
6,900.0	13.19	43.77	6,751.9	943.0	903.3	1,305.8	0.00	0.00	0.00
6,947.5	13.19	43.77	6,798.2	950.8	910.8	1,316.7	0.00	0.00	0.00
7,000.0	12.14	43.77	6,849.4	959.1	918.8	1,328.2	2.00	-2.00	0.00
7,100.0	10.14	43.77	6,947.5	973.1	932.1	1,347.5	2.00	-2.00	0.00
7,200.0	8.14	43.77	7,046.2	984.6	943.1	1,363.4	2.00	-2.00	0.00
7,300.0	6.14	43.77	7,145.4	993.6	951.7	1,375.8	2.00	-2.00	0.00
7,400.0	4.14	43.77	7,245.0	1,000.0	957.9	1,384.8	2.00	-2.00	0.00
7,500.0	2.14	43.77	7,344.9	1,004.0	961.7	1,390.3	2.00	-2.00	0.00
7,607.1	0.00	0.00	7,452.0	1,005.4	963.1	1,392.3	2.00	-2.00	0.00
7,632.1	0.00	0.00	7,477.0	1,005.4	963.1	1,392.3	0.00	0.00	0.00
<b>Niobrara</b>									
7,700.0	0.00	0.00	7,544.9	1,005.4	963.1	1,392.3	0.00	0.00	0.00
7,800.0	0.00	0.00	7,644.9	1,005.4	963.1	1,392.3	0.00	0.00	0.00
7,900.0	0.00	0.00	7,744.9	1,005.4	963.1	1,392.3	0.00	0.00	0.00
8,000.0	0.00	0.00	7,844.9	1,005.4	963.1	1,392.3	0.00	0.00	0.00
8,022.1	0.00	0.00	7,867.0	1,005.4	963.1	1,392.3	0.00	0.00	0.00
<b>Codell</b>									
8,100.0	0.00	0.00	7,944.9	1,005.4	963.1	1,392.3	0.00	0.00	0.00
8,200.0	0.00	0.00	8,044.9	1,005.4	963.1	1,392.3	0.00	0.00	0.00
8,300.0	0.00	0.00	8,144.9	1,005.4	963.1	1,392.3	0.00	0.00	0.00
8,400.0	0.00	0.00	8,244.9	1,005.4	963.1	1,392.3	0.00	0.00	0.00
8,457.1	0.00	0.00	8,302.0	1,005.4	963.1	1,392.3	0.00	0.00	0.00
<b>J Sand</b>									
8,500.0	0.00	0.00	8,344.9	1,005.4	963.1	1,392.3	0.00	0.00	0.00
8,512.1	0.00	0.00	8,357.0	1,005.4	963.1	1,392.3	0.00	0.00	0.00
<b>A Marker</b>									
8,607.1	0.00	0.00	8,452.0	1,005.4	963.1	1,392.3	0.00	0.00	0.00
<b>4-1/2" Production</b>									

# EnCana Corporation

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<b>Database:</b>	EDM	<b>Local Co-ordinate Reference:</b>	Well Bury Crandell 8-0-23
<b>Company:</b>	DJ/Paradox/WTX	<b>TVD Reference:</b>	RKB @ 5127.0ft (TBD)
<b>Project:</b>	Wattenberg	<b>MD Reference:</b>	RKB @ 5127.0ft (TBD)
<b>Site:</b>	New Drills	<b>North Reference:</b>	True
<b>Well:</b>	Bury Crandell 8-0-23	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Design #1		

### Design Targets

#### Target Name

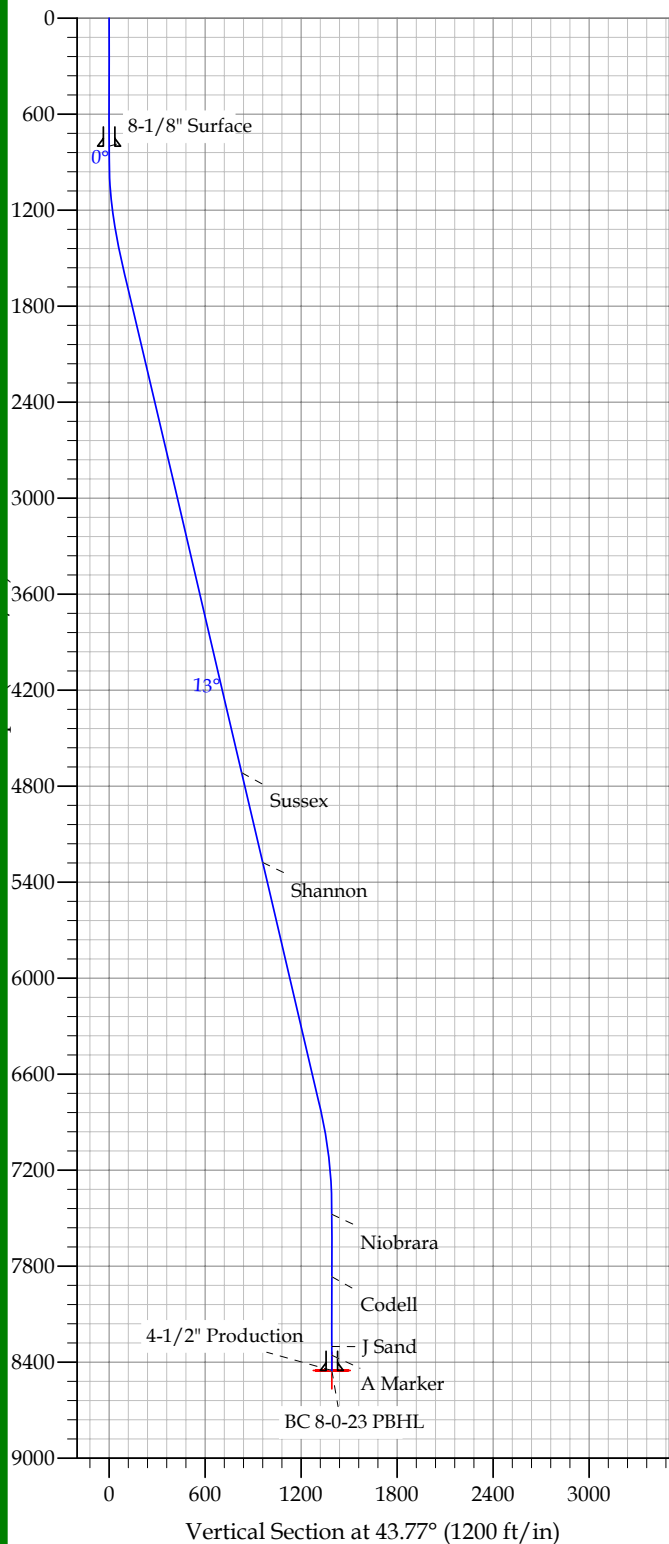
- hit/miss target	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
- Shape									
BC 8-0-23 PBHL	0.00	0.00	8,452.0	1,005.4	963.1	1,259,365.74	3,150,806.24	40° 2' 38.724 N	104° 57' 40.860 W
- plan hits target									
- Circle (radius 100.0)									

### Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)
800.0	800.0	8-1/8" Surface	8.625	12.250
8,607.1	8,452.0	4-1/2" Production	4.500	7.875

### Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
4,809.9	4,717.0	Sussex		0.00	
5,385.1	5,277.0	Shannon		0.00	
7,632.1	7,477.0	Niobrara		0.00	
8,022.1	7,867.0	Codell		0.00	
8,457.1	8,302.0	J Sand		0.00	
8,512.1	8,357.0	A Marker		0.00	



# REFERENCE INFORMATION

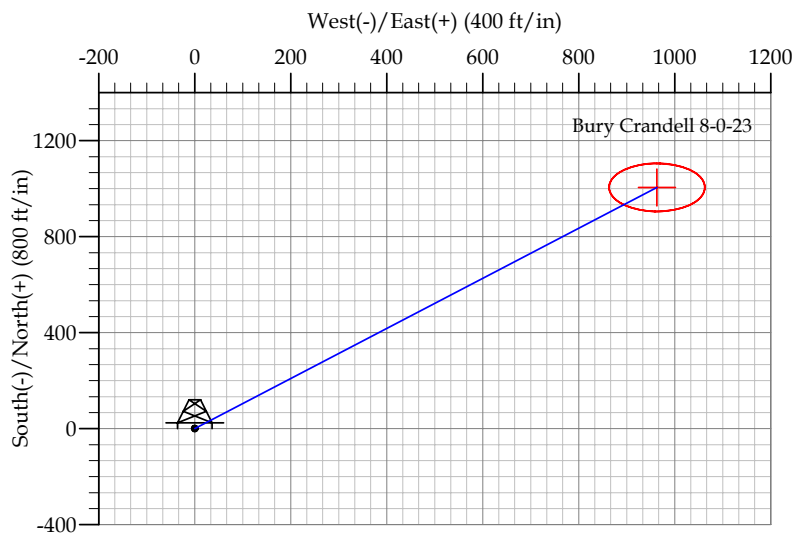
Co-ordinate (NE) Reference: Well Bury Crandell 8-0-23, True North  
 Vertical (TVD) Reference: RKB @ 5127.0ft (TBD)  
 Section (VS) Reference: Slot - (0.0N, 0.0E)  
 Measured Depth Reference: RKB @ 5127.0ft (TBD)  
 Calculation Method:

## WELL DETAILS: Bury Crandell 8-0-23

+N/-S	+E/-W	Northing	Ground Level:	5112.0	Latitude	Longitude	Slot
0.0	0.0	1258354.51	Easting	3149849.22	40° 2' 28.788 N	4° 57' 53.244 W	

## SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	850.0	0.00	0.00	850.0	0.0	0.0	0.00	0.00	0.0	
3	1509.6	13.19	43.77	1503.8	54.6	52.3	2.00	43.77	75.6	
4	6947.5	13.19	43.77	6798.2	950.8	910.8	0.00	0.00	1316.7	
5	7607.1	0.00	0.00	7452.0	1005.4	963.1	2.00	180.00	1392.3	
6	8607.1	0.00	0.00	8452.0	1005.4	963.1	0.00	0.00	1392.3	BC 8-0-23 PBHL



## FORMATION TOP DETAILS

TVDPath	MDPath	Formation
4717.0	4809.9	Sussex
5277.0	5385.1	Shannon
7477.0	7632.1	Niobrara
7867.0	8022.1	Codell
8302.0	8457.1	J Sand
8357.0	8512.1	A Marker

## CASING DETAILS

TVD	MD	Name	Size
800.0	800.0	8-1/8\" Surface	8.625
8452.0	8607.1	4-1/2\" Production	4.500