

# **DJ/Paradox/WTX**

**Wattenberg**

**New Drills**

**Echeverria 4-2-2**

**Wellbore #1**

**Plan: Design #1**

## **Standard Planning Report**

**17 May, 2010**

# EnCana Corporation

## Planning Report

<b>Database:</b>	EDM	<b>Local Co-ordinate Reference:</b>	Well Echeverria 4-2-2
<b>Company:</b>	DJ/Paradox/WTX	<b>TVD Reference:</b>	WELL @ 4870.0ft (Original Well Elev)
<b>Project:</b>	Wattenberg	<b>MD Reference:</b>	WELL @ 4870.0ft (Original Well Elev)
<b>Site:</b>	New Drills	<b>North Reference:</b>	True
<b>Well:</b>	Echeverria 4-2-2	<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:	1,252,450.66 ft	Latitude:	40° 1' 32.016 N	
From:	Lat/Long	Easting:	3,120,627.66 ft	Longitude:	105° 4' 9.336 W	
Position Uncertainty:		ft	Slot Radius:	in	Grid Convergence:	0.28 °

Well	Echeverria 4-2-2					
Well Position	+N/-S	53,272.3 ft	Northing:	1,306,143.94 ft	Latitude:	40° 10' 19.164 N
	+E/-W	58,552.6 ft	Easting:	3,178,794.26 ft	Longitude:	104° 51' 36.648 W
Position Uncertainty		ft	Wellhead Elevation:	ft	Ground Level:	4,855.0 ft

<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	12/31/2009	9.05	66.91	53,174

<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)</b>	<b>+N/-S</b>	<b>+E/-W</b>	<b>Direction</b>
	(ft)	(ft)	(ft)	(°)
	0.0	0.0	0.0	126.77

<b>Plan Sections</b>										
<b>Measured Depth</b>	<b>Inclination</b>	<b>Azimuth</b>	<b>Vertical Depth</b>	<b>+N/-S</b>	<b>+E/-W</b>	<b>Dogleg Rate</b>	<b>Build Rate</b>	<b>Turn Rate</b>	<b>TFO</b>	<b>Target</b>
(ft)	(°)	(°)	(ft)	(ft)	(ft)	(°/100ft)	(°/100ft)	(°/100ft)	(°)	
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
800.0	0.00	0.00	800.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,186.8	7.74	126.77	1,185.6	-15.6	20.9	2.00	2.00	0.00	126.77	
6,631.1	7.74	126.77	6,580.4	-454.3	607.9	0.00	0.00	0.00	0.00	
7,017.9	0.00	0.00	6,966.0	-469.9	628.8	2.00	-2.00	0.00	180.00	
8,017.9	0.00	0.00	7,966.0	-469.9	628.8	0.00	0.00	0.00	0.00	Echeverria 4-2-2 PBH

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## Planning Report

<b>Database:</b>	EDM	<b>Local Co-ordinate Reference:</b>	Well Echeverria 4-2-2
<b>Company:</b>	DJ/Paradox/WTX	<b>TVD Reference:</b>	WELL @ 4870.0ft (Original Well Elev)
<b>Project:</b>	Wattenberg	<b>MD Reference:</b>	WELL @ 4870.0ft (Original Well Elev)
<b>Site:</b>	New Drills	<b>North Reference:</b>	True
<b>Well:</b>	Echeverria 4-2-2	<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
750.0	0.00	0.00	750.0	0.0	0.0	0.0	0.00	0.00	0.00
Surface									
800.0	0.00	0.00	800.0	0.0	0.0	0.0	0.00	0.00	0.00
900.0	2.00	126.77	900.0	-1.0	1.4	1.7	2.00	2.00	0.00
1,000.0	4.00	126.77	999.8	-4.2	5.6	7.0	2.00	2.00	0.00
1,100.0	6.00	126.77	1,099.5	-9.4	12.6	15.7	2.00	2.00	0.00
1,186.8	7.74	126.77	1,185.6	-15.6	20.9	26.1	2.00	2.00	0.00
1,200.0	7.74	126.77	1,198.7	-16.7	22.3	27.8	0.00	0.00	0.00
1,300.0	7.74	126.77	1,297.8	-24.7	33.1	41.3	0.00	0.00	0.00
1,400.0	7.74	126.77	1,396.9	-32.8	43.9	54.8	0.00	0.00	0.00
1,500.0	7.74	126.77	1,496.0	-40.8	54.7	68.2	0.00	0.00	0.00
1,600.0	7.74	126.77	1,595.1	-48.9	65.4	81.7	0.00	0.00	0.00
1,700.0	7.74	126.77	1,694.2	-57.0	76.2	95.2	0.00	0.00	0.00
1,800.0	7.74	126.77	1,793.2	-65.0	87.0	108.6	0.00	0.00	0.00
1,900.0	7.74	126.77	1,892.3	-73.1	97.8	122.1	0.00	0.00	0.00
2,000.0	7.74	126.77	1,991.4	-81.1	108.6	135.5	0.00	0.00	0.00
2,100.0	7.74	126.77	2,090.5	-89.2	119.3	149.0	0.00	0.00	0.00
2,200.0	7.74	126.77	2,189.6	-97.3	130.1	162.5	0.00	0.00	0.00
2,300.0	7.74	126.77	2,288.7	-105.3	140.9	175.9	0.00	0.00	0.00
2,400.0	7.74	126.77	2,387.8	-113.4	151.7	189.4	0.00	0.00	0.00
2,500.0	7.74	126.77	2,486.9	-121.4	162.5	202.8	0.00	0.00	0.00
2,600.0	7.74	126.77	2,586.0	-129.5	173.3	216.3	0.00	0.00	0.00
2,700.0	7.74	126.77	2,685.1	-137.5	184.0	229.8	0.00	0.00	0.00
2,800.0	7.74	126.77	2,784.1	-145.6	194.8	243.2	0.00	0.00	0.00
2,900.0	7.74	126.77	2,883.2	-153.7	205.6	256.7	0.00	0.00	0.00
3,000.0	7.74	126.77	2,982.3	-161.7	216.4	270.1	0.00	0.00	0.00
3,100.0	7.74	126.77	3,081.4	-169.8	227.2	283.6	0.00	0.00	0.00
3,200.0	7.74	126.77	3,180.5	-177.8	237.9	297.1	0.00	0.00	0.00
3,300.0	7.74	126.77	3,279.6	-185.9	248.7	310.5	0.00	0.00	0.00
3,400.0	7.74	126.77	3,378.7	-193.9	259.5	324.0	0.00	0.00	0.00
3,500.0	7.74	126.77	3,477.8	-202.0	270.3	337.4	0.00	0.00	0.00
3,600.0	7.74	126.77	3,576.9	-210.1	281.1	350.9	0.00	0.00	0.00
3,700.0	7.74	126.77	3,676.0	-218.1	291.9	364.4	0.00	0.00	0.00
3,800.0	7.74	126.77	3,775.0	-226.2	302.6	377.8	0.00	0.00	0.00
3,900.0	7.74	126.77	3,874.1	-234.2	313.4	391.3	0.00	0.00	0.00
4,000.0	7.74	126.77	3,973.2	-242.3	324.2	404.7	0.00	0.00	0.00
4,100.0	7.74	126.77	4,072.3	-250.3	335.0	418.2	0.00	0.00	0.00
4,200.0	7.74	126.77	4,171.4	-258.4	345.8	431.7	0.00	0.00	0.00
4,300.0	7.74	126.77	4,270.5	-266.5	356.5	445.1	0.00	0.00	0.00
4,400.0	7.74	126.77	4,369.6	-274.5	367.3	458.6	0.00	0.00	0.00
4,418.6	7.74	126.77	4,388.0	-276.0	369.3	461.1	0.00	0.00	0.00
Sussex									
4,500.0	7.74	126.77	4,468.7	-282.6	378.1	472.0	0.00	0.00	0.00
4,600.0	7.74	126.77	4,567.8	-290.6	388.9	485.5	0.00	0.00	0.00
4,700.0	7.74	126.77	4,666.9	-298.7	399.7	499.0	0.00	0.00	0.00
4,800.0	7.74	126.77	4,765.9	-306.8	410.5	512.4	0.00	0.00	0.00

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## Planning Report

<b>Database:</b>	EDM	<b>Local Co-ordinate Reference:</b>	Well Echeverria 4-2-2
<b>Company:</b>	DJ/Paradox/WTX	<b>TVD Reference:</b>	WELL @ 4870.0ft (Original Well Elev)
<b>Project:</b>	Wattenberg	<b>MD Reference:</b>	WELL @ 4870.0ft (Original Well Elev)
<b>Site:</b>	New Drills	<b>North Reference:</b>	True
<b>Well:</b>	Echeverria 4-2-2	<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)
4,859.6	7.74	126.77	4,825.0	-311.6	416.9	520.4	0.00	0.00	0.00
<b>Shannon</b>									
4,900.0	7.74	126.77	4,865.0	-314.8	421.2	525.9	0.00	0.00	0.00
5,000.0	7.74	126.77	4,964.1	-322.9	432.0	539.3	0.00	0.00	0.00
5,100.0	7.74	126.77	5,063.2	-330.9	442.8	552.8	0.00	0.00	0.00
5,200.0	7.74	126.77	5,162.3	-339.0	453.6	566.3	0.00	0.00	0.00
5,300.0	7.74	126.77	5,261.4	-347.0	464.4	579.7	0.00	0.00	0.00
5,400.0	7.74	126.77	5,360.5	-355.1	475.1	593.2	0.00	0.00	0.00
5,500.0	7.74	126.77	5,459.6	-363.2	485.9	606.6	0.00	0.00	0.00
5,600.0	7.74	126.77	5,558.7	-371.2	496.7	620.1	0.00	0.00	0.00
5,700.0	7.74	126.77	5,657.8	-379.3	507.5	633.6	0.00	0.00	0.00
5,800.0	7.74	126.77	5,756.8	-387.3	518.3	647.0	0.00	0.00	0.00
5,900.0	7.74	126.77	5,855.9	-395.4	529.1	660.5	0.00	0.00	0.00
6,000.0	7.74	126.77	5,955.0	-403.4	539.8	673.9	0.00	0.00	0.00
6,100.0	7.74	126.77	6,054.1	-411.5	550.6	687.4	0.00	0.00	0.00
6,200.0	7.74	126.77	6,153.2	-419.6	561.4	700.9	0.00	0.00	0.00
6,300.0	7.74	126.77	6,252.3	-427.6	572.2	714.3	0.00	0.00	0.00
6,400.0	7.74	126.77	6,351.4	-435.7	583.0	727.8	0.00	0.00	0.00
6,500.0	7.74	126.77	6,450.5	-443.7	593.7	741.2	0.00	0.00	0.00
6,600.0	7.74	126.77	6,549.6	-451.8	604.5	754.7	0.00	0.00	0.00
6,631.1	7.74	126.77	6,580.4	-454.3	607.9	758.9	0.00	0.00	0.00
6,700.0	6.36	126.77	6,648.8	-459.4	614.7	767.3	2.00	-2.00	0.00
6,800.0	4.36	126.77	6,748.3	-464.9	622.1	776.7	2.00	-2.00	0.00
6,900.0	2.36	126.77	6,848.1	-468.5	626.8	782.5	2.00	-2.00	0.00
7,000.0	0.36	126.77	6,948.1	-469.9	628.7	784.9	2.00	-2.00	0.00
7,017.9	0.00	0.00	6,966.0	-469.9	628.8	785.0	2.00	-2.00	0.00
7,100.0	0.00	0.00	7,048.1	-469.9	628.8	785.0	0.00	0.00	0.00
7,171.9	0.00	0.00	7,120.0	-469.9	628.8	785.0	0.00	0.00	0.00
<b>Niobrara</b>									
7,200.0	0.00	0.00	7,148.1	-469.9	628.8	785.0	0.00	0.00	0.00
7,300.0	0.00	0.00	7,248.1	-469.9	628.8	785.0	0.00	0.00	0.00
7,400.0	0.00	0.00	7,348.1	-469.9	628.8	785.0	0.00	0.00	0.00
7,426.9	0.00	0.00	7,375.0	-469.9	628.8	785.0	0.00	0.00	0.00
<b>Codell</b>									
7,500.0	0.00	0.00	7,448.1	-469.9	628.8	785.0	0.00	0.00	0.00
7,600.0	0.00	0.00	7,548.1	-469.9	628.8	785.0	0.00	0.00	0.00
7,700.0	0.00	0.00	7,648.1	-469.9	628.8	785.0	0.00	0.00	0.00
7,800.0	0.00	0.00	7,748.1	-469.9	628.8	785.0	0.00	0.00	0.00
7,867.9	0.00	0.00	7,816.0	-469.9	628.8	785.0	0.00	0.00	0.00
<b>J Sand</b>									
7,900.0	0.00	0.00	7,848.1	-469.9	628.8	785.0	0.00	0.00	0.00
8,000.0	0.00	0.00	7,948.1	-469.9	628.8	785.0	0.00	0.00	0.00
8,017.9	0.00	0.00	7,966.0	-469.9	628.8	785.0	0.00	0.00	0.00
<b>Production</b>									

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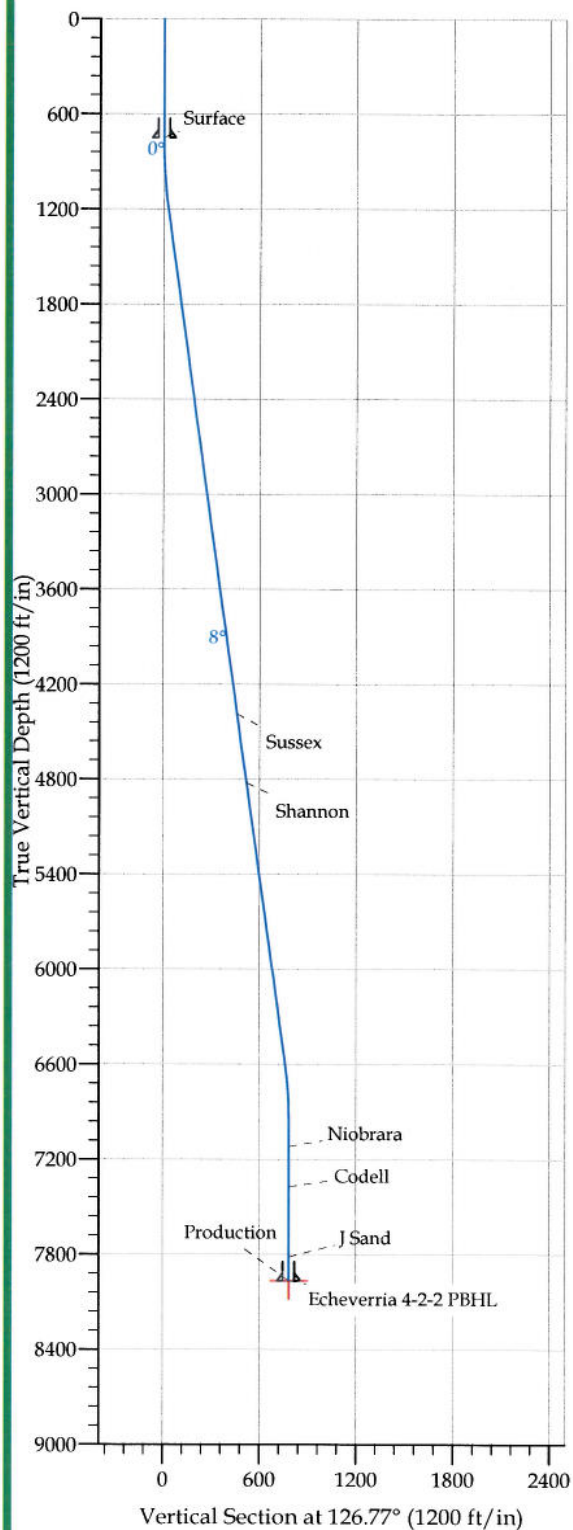
## Planning Report

<b>Database:</b>	EDM	<b>Local Co-ordinate Reference:</b>	Well Echeverria 4-2-2
<b>Company:</b>	DJ/Paradox/WTX	<b>TVD Reference:</b>	WELL @ 4870.0ft (Original Well Elev)
<b>Project:</b>	Wattenberg	<b>MD Reference:</b>	WELL @ 4870.0ft (Original Well Elev)
<b>Site:</b>	New Drills	<b>North Reference:</b>	True
<b>Well:</b>	Echeverria 4-2-2	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Design #1		

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
- hit/miss target									
- Shape									
Echeverria 4-2-2 PBHL	0.00	0.00	7,966.0	-469.9	628.8	1,305,678.58	3,179,426.40	40° 10' 14.520 N	104° 51' 28.548 W
- plan hits target									
- Circle (radius 100.0)									

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)	
750.0	750.0	Surface	8.625	12.250	
8,017.9	7,966.0	Production	4.500	7.875	

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
4,418.6	4,388.0	Sussex		0.00		
4,859.6	4,825.0	Shannon		0.00		
7,171.9	7,120.0	Niobrara		0.00		
7,426.9	7,375.0	Codell		0.00		
7,867.9	7,816.0	J Sand		0.00		



#### REFERENCE INFORMATION

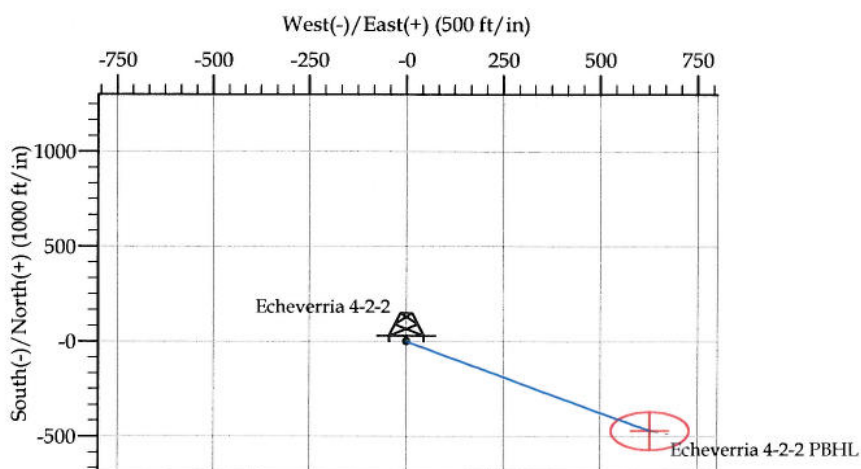
Co-ordinate (N/E) Reference: Well Echeverria 4-2-2, True North  
 Vertical (TVD) Reference: WELL @ 4870.0ft (Original Well Elev)  
 Section (VS) Reference: Slot - (0.0N, 0.0E)  
 Measured Depth Reference: WELL @ 4870.0ft (Original Well Elev)  
 Calculation Method:

#### WELL DETAILS: Echeverria 4-2-2

+N/-S	+E/-W	Northing	Ground Level: Easting	4855.0 Latitude	Longitude	Slot
0.0	0.0	1306143.94	3178794.26	40° 10' 19.164 N 104° 51' 36.648 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	800.0	0.00	0.00	800.0	0.0	0.0	0.00	0.00	0.0	
3	1186.8	7.74	126.77	1185.6	-15.6	20.9	2.00	126.77	26.1	
4	6631.1	7.74	126.77	6580.4	-454.3	607.9	0.00	0.00	758.9	
5	7017.9	0.00	0.00	6966.0	-469.9	628.8	2.00	180.00	785.0	
6	8017.9	0.00	0.00	7966.0	-469.9	628.8	0.00	0.00	785.0	Echeverria 4-2-2 PBHL



#### FORMATION TOP DETAILS

TVDPath	MDPath	Formation
4388.0	4418.6	Sussex
4825.0	4859.6	Shannon
7120.0	7171.9	Niobrara
7375.0	7426.9	Codell
7816.0	7867.9	J Sand

#### CASING DETAILS

TVD	MD	Name	Size
750.0	750.0	Surface	8.625
7966.0	8017.9	Production	4.500