

# EnCana Corporation

## Planning Report - Geographic

<b>Database:</b>	EDM	<b>Local Co-ordinate Reference:</b>	Well Costigan 14-20
<b>Company:</b>	DJ/Paradox/WTX	<b>TVD Reference:</b>	WELL @ 5101.0ft (Original Well Elev)
<b>Project:</b>	Wattenberg	<b>MD Reference:</b>	WELL @ 5101.0ft (Original Well Elev)
<b>Site:</b>	New Drills	<b>North Reference:</b>	True
<b>Well:</b>	Costigan 14-20	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Costigan 14-20		

<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:	1,278,589.08ft	Latitude:	40° 5' 49.848 N
From:	Lat/Long	Easting:	3,130,247.44ft	Longitude:	105° 2' 3.912 W
Position Uncertainty:	ft	Slot Radius:	in	Grid Convergence:	0.30 °

Well	Costigan 14-20					
Well Position	+N-S	-23,179.0 ft	Northing:	1,255,411.74 ft	Latitude:	40° 2' 0.780 N
	+E-W	240.6 ft	Easting:	3,130,609.95 ft	Longitude:	105° 2' 0.816 W
Position Uncertainty		ft	Wellhead Elevation:	ft	Ground Level:	5,088.0 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	9.13	66.77	53,080

<b>Design</b>	Costigan 14-20				
<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	200.09	

<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	
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,472.7	9.45	200.09	1,470.5	-36.5	-13.4	2.00	2.00	0.00	200.09	
6,855.7	9.45	200.09	6,780.5	-866.9	-317.1	0.00	0.00	0.00	0.00	
7,328.4	0.00	0.00	7,251.0	-903.4	-330.4	2.00	-2.00	0.00	180.00	
8,528.4	0.00	0.00	8,451.0	-903.4	-330.4	0.00	0.00	0.00	0.00	Costigan 14-20

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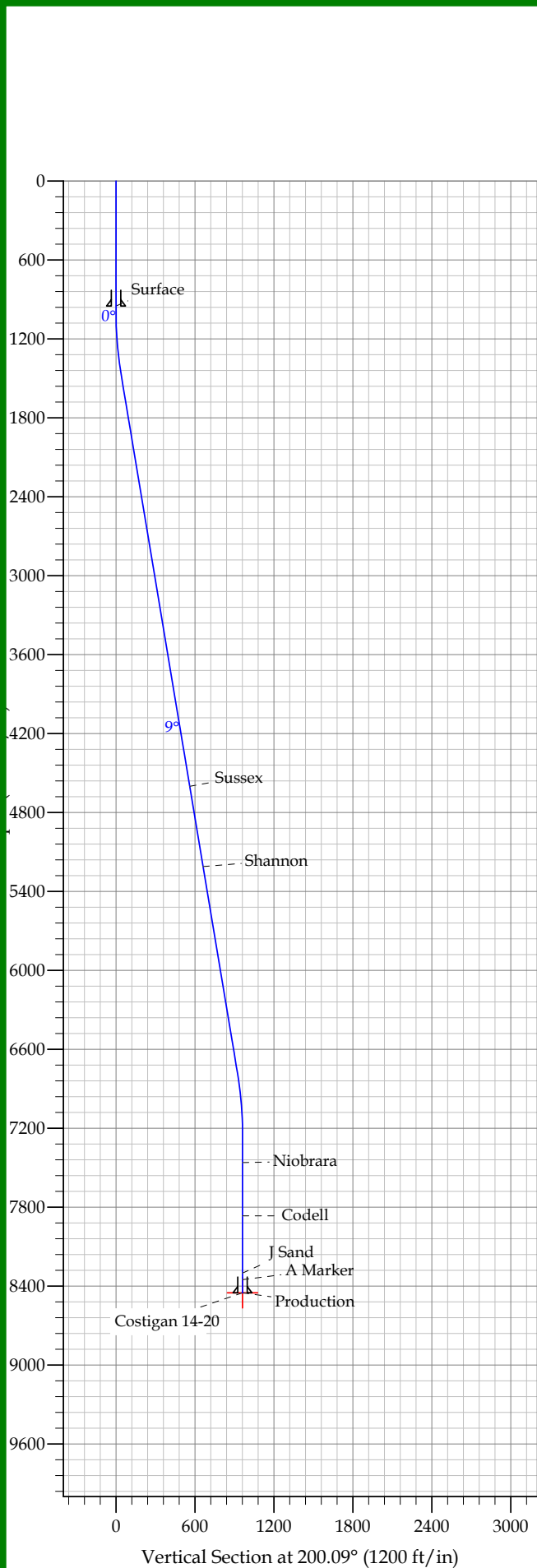
<b>Database:</b>	EDM	<b>Local Co-ordinate Reference:</b>	Well Costigan 14-20
<b>Company:</b>	DJ/Paradox/WTX	<b>TVD Reference:</b>	WELL @ 5101.0ft (Original Well Elev)
<b>Project:</b>	Wattenberg	<b>MD Reference:</b>	WELL @ 5101.0ft (Original Well Elev)
<b>Site:</b>	New Drills	<b>North Reference:</b>	True
<b>Well:</b>	Costigan 14-20	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Costigan 14-20		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (ft)	Map Easting (ft)	Latitude	Longitude
0.0	0.00	0.00	0.0	0.0	0.0	1,255,411.74	3,130,609.95	40° 2' 0.780 N	105° 2' 0.816 W
950.0	0.00	0.00	950.0	0.0	0.0	1,255,411.74	3,130,609.95	40° 2' 0.780 N	105° 2' 0.816 W
Surface									
1,000.0	0.00	0.00	1,000.0	0.0	0.0	1,255,411.74	3,130,609.95	40° 2' 0.780 N	105° 2' 0.816 W
1,472.7	9.45	200.09	1,470.5	-36.5	-13.4	1,255,375.14	3,130,596.78	40° 2' 0.419 N	105° 2' 0.988 W
4,646.2	9.45	200.09	4,601.0	-526.1	-192.4	1,254,884.69	3,130,420.31	40° 1' 55.581 N	105° 2' 3.290 W
Sussex									
5,264.6	9.45	200.09	5,211.0	-621.4	-227.3	1,254,789.12	3,130,385.92	40° 1' 54.638 N	105° 2' 3.738 W
Shannon									
6,855.7	9.45	200.09	6,780.5	-866.9	-317.1	1,254,543.23	3,130,297.45	40° 1' 52.213 N	105° 2' 4.892 W
7,328.4	0.00	0.00	7,251.0	-903.4	-330.4	1,254,506.63	3,130,284.28	40° 1' 51.852 N	105° 2' 5.064 W
7,538.4	0.00	0.00	7,461.0	-903.4	-330.4	1,254,506.63	3,130,284.28	40° 1' 51.852 N	105° 2' 5.064 W
Niobrara									
7,943.4	0.00	0.00	7,866.0	-903.4	-330.4	1,254,506.63	3,130,284.28	40° 1' 51.852 N	105° 2' 5.064 W
Codell									
8,378.4	0.00	0.00	8,301.0	-903.4	-330.4	1,254,506.63	3,130,284.28	40° 1' 51.852 N	105° 2' 5.064 W
J Sand									
8,428.4	0.00	0.00	8,351.0	-903.4	-330.4	1,254,506.63	3,130,284.28	40° 1' 51.852 N	105° 2' 5.064 W
A Marker									
8,528.4	0.00	0.00	8,451.0	-903.4	-330.4	1,254,506.63	3,130,284.28	40° 1' 51.852 N	105° 2' 5.064 W
Production - Costigan 14-20									

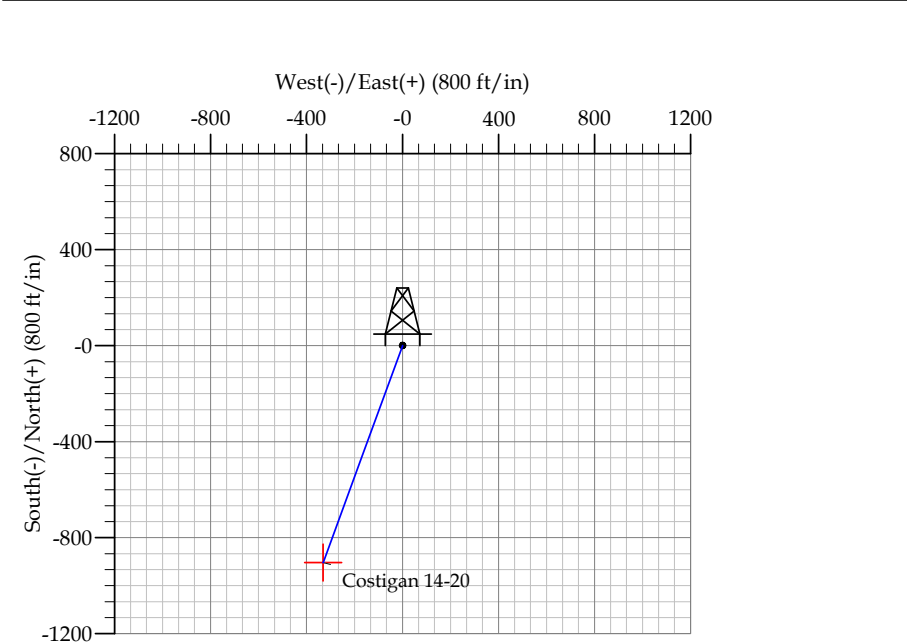
Design Targets										
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude	
- hit/miss target										
- Shape										
Costigan 14-20	0.00	0.00	8,451.0	-903.4	-330.4	1,254,506.63	3,130,284.28	40° 1' 51.852 N	105° 2' 5.064 W	
- plan hits target										
- Point										

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)	
950.0	950.0	Surface	8.625	12.250	
8,528.4	8,451.0	Production	4.500	7.785	

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
4,646.2	4,601.0	Sussex		0.00		
5,264.6	5,211.0	Shannon		0.00		
7,538.4	7,461.0	Niobrara		0.00		
7,943.4	7,866.0	Codell		0.00		
8,378.4	8,301.0	J Sand		0.00		
8,428.4	8,351.0	A Marker		0.00		



REFERENCE INFORMATION											
Co-ordinate (N/E) Reference: Well Costigan 14-20, True North											
Vertical (TVD) Reference: WELL @ 5101.0ft (Original Well Elev)											
Section (VS) Reference: Slot - (0.0N, 0.0E)											
Measured Depth Reference: WELL @ 5101.0ft (Original Well Elev)											
Calculation Method:											
WELL DETAILS: Costigan 14-20											
+N/-S		+E/-W		Northing		Ground Level: 5088.0 Easting		Latitude		Longitude Slot	
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	1000.0	0.00	0.00	1000.0	0.0	0.0	0.00	0.00	0.0		
3	1472.7	9.45	200.09	1470.5	-36.5	-13.4	2.00	200.09	38.9		
4	6855.7	9.45	200.09	6780.5	-866.9	-317.1	0.00	0.00	923.0		
5	7328.4	0.00	0.00	7251.0	-903.4	-330.4	2.00	180.00	961.9		
6	8528.4	0.00	0.00	8451.0	-903.4	-330.4	0.00	0.00	961.9	Costigan 14-20	



FORMATION TOP DETAILS		
TVDPath	MDPath	Formation
4601.0	4646.2	Sussex
5211.0	5264.6	Shannon
7461.0	7538.4	Niobrara
7866.0	7943.4	Codell
8301.0	8378.4	J Sand
8351.0	8428.4	A Marker

CASING DETAILS			
TVD	MD	Name	Size
950.0	950.0	Surface	8.625
8451.0	8528.4	Production	4.500