

EnCana Corporation

Planning Report - Geographic

Database:	EDM	Local Co-ordinate Reference:	Well Liberty 12-21
Company:	DJ/Paradox/WTX	TVD Reference:	WELL @ 5041.0ft (Original Well Elev)
Project:	Wattenberg	MD Reference:	WELL @ 5041.0ft (Original Well Elev)
Site:	New Drills	North Reference:	True
Well:	Liberty 12-21	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Liberty 12-21		

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

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

Well	Liberty 12-21					
Well Position	+N-S	43,534.3 ft	Northing:	1,322,161.13 ft	Latitude:	40° 13' 0.084 N
	+E-W	6,960.3 ft	Easting:	3,136,966.84 ft	Longitude:	105° 0' 34.344 W
Position Uncertainty		ft	Wellhead Elevation:	ft	Ground Level:	5,028.0 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	12/31/2009	9.14	66.92	53,180

Design	Liberty 12-21				
Audit Notes:					
Version:	Phase:	PROTOTYPE	Tie On Depth:	0.0	
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W	Direction	
	(ft)	(ft)	(ft)	(°)	
	0.0	0.0	0.0	229.07	

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	
750.0	0.00	0.00	750.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,856.0	22.12	229.07	1,828.7	-138.1	-159.3	2.00	2.00	0.00	229.07	
6,037.3	22.12	229.07	5,702.3	-1,169.6	-1,348.8	0.00	0.00	0.00	0.00	
7,143.3	0.00	0.00	6,781.0	-1,307.7	-1,508.1	2.00	-2.00	0.00	180.00	
8,193.3	0.00	0.00	7,831.0	-1,307.7	-1,508.1	0.00	0.00	0.00	0.00	Liberty 12-21

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Wellbore:	Wellbore #1		
Design:	Liberty 12-21		

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	1,322,161.13	3,136,966.84	40° 13' 0.084 N	105° 0' 34.344 W	
700.0	0.00	0.00	700.0	0.0	0.0	1,322,161.13	3,136,966.84	40° 13' 0.084 N	105° 0' 34.344 W	
Surface										
750.0	0.00	0.00	750.0	0.0	0.0	1,322,161.13	3,136,966.84	40° 13' 0.084 N	105° 0' 34.344 W	
1,856.0	22.12	229.07	1,828.7	-138.1	-159.3	1,322,022.12	3,136,808.31	40° 12' 58.719 N	105° 0' 36.398 W	
4,152.3	22.12	229.07	3,956.0	-704.6	-812.6	1,321,452.06	3,136,158.20	40° 12' 53.121 N	105° 0' 44.818 W	
Sussex										
4,692.0	22.12	229.07	4,456.0	-837.7	-966.1	1,321,318.07	3,136,005.40	40° 12' 51.805 N	105° 0' 46.798 W	
Shannon										
6,037.3	22.12	229.07	5,702.3	-1,169.6	-1,348.8	1,320,984.09	3,135,624.53	40° 12' 48.525 N	105° 0' 51.731 W	
7,143.3	0.00	0.00	6,781.0	-1,307.7	-1,508.1	1,320,845.08	3,135,465.99	40° 12' 47.160 N	105° 0' 53.784 W	
7,313.3	0.00	0.00	6,951.0	-1,307.7	-1,508.1	1,320,845.08	3,135,465.99	40° 12' 47.160 N	105° 0' 53.784 W	
Niobrara										
7,593.3	0.00	0.00	7,231.0	-1,307.7	-1,508.1	1,320,845.08	3,135,465.99	40° 12' 47.160 N	105° 0' 53.784 W	
Codell										
8,043.3	0.00	0.00	7,681.0	-1,307.7	-1,508.1	1,320,845.08	3,135,465.99	40° 12' 47.160 N	105° 0' 53.784 W	
J Sand										
8,113.3	0.00	0.00	7,751.0	-1,307.7	-1,508.1	1,320,845.08	3,135,465.99	40° 12' 47.160 N	105° 0' 53.784 W	
A Marker										
8,193.3	0.00	0.00	7,831.0	-1,307.7	-1,508.1	1,320,845.08	3,135,465.99	40° 12' 47.160 N	105° 0' 53.784 W	
Production - Liberty 12-21										

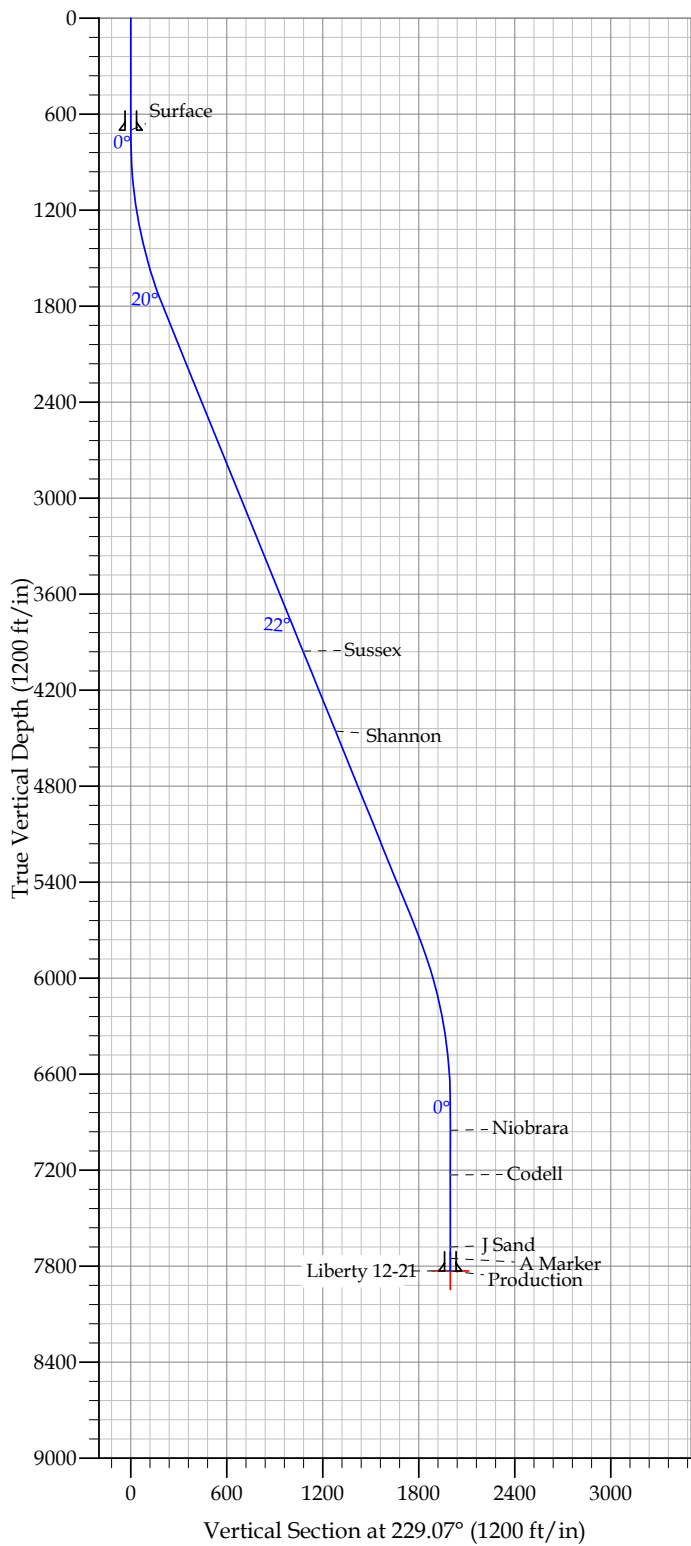
Design Targets										
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude	
- hit/miss target										
- Shape										
Liberty 12-21	0.00	0.00	7,831.0	-1,307.7	-1,508.1	1,320,845.08	3,135,465.99	40° 12' 47.160 N	105° 0' 53.784 W	
- plan hits target										
- Point										

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)	
700.0	700.0	Surface	8.625	12.250	
8,193.3	7,831.0	Production	4.500	7.785	

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
4,152.3	3,956.0	Sussex		0.00		
4,692.0	4,456.0	Shannon		0.00		
7,313.3	6,951.0	Niobrara		0.00		
7,593.3	7,231.0	Codell		0.00		
8,043.3	7,681.0	J Sand		0.00		
8,113.3	7,751.0	A Marker		0.00		

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Project:	Wattenberg	MD Reference:	WELL @ 5041.0ft (Original Well Elev)
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Wellbore:	Wellbore #1		
Design:	Liberty 12-21		



REFERENCE INFORMATION

Co-ordinate (N/E) Reference: Well Liberty 12-21, True North

Vertical (TVD) Reference: WELL @ 5041.0ft (Original Well Elev)

Section (VS) Reference: Slot - (0.0N, 0.0E)

Measured Depth Reference: WELL @ 5041.0ft (Original Well Elev)

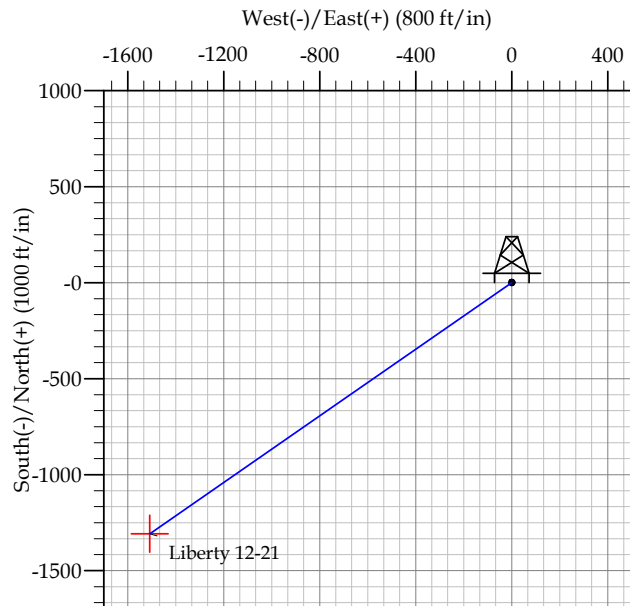
Calculation Method:

WELL DETAILS: Liberty 12-21

+N/-S	+E/-W	Northing	Ground Level: Easting	5028.0 Latitude	Longitude	Slot
0.0	0.0	1322161.13	3136966.84	40° 13' 0.084 N105° 0' 34.344 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	750.0	0.00	0.00	750.0	0.0	0.0	0.00	0.00	0.0	
3	1856.0	22.12	229.07	1828.7	-138.1	-159.3	2.00	229.07	210.8	
4	6037.3	22.12	229.07	5702.3	-1169.6	-1348.8	0.00	0.00	1785.3	
5	7143.3	0.00	0.00	6781.0	-1307.7	-1508.1	2.00	180.00	1996.1	
6	8193.3	0.00	0.00	7831.0	-1307.7	-1508.1	0.00	0.00	1996.1	Liberty 12-21



FORMATION TOP DETAILS

TVDPath	MDPath	Formation
3956.0	4152.3	Sussex
4456.0	4692.0	Shannon
6951.0	7313.3	Niobrara
7231.0	7593.3	Codell
7681.0	8043.3	J Sand
7751.0	8113.3	A Marker

CASING DETAILS

TVD	MD	Name	Size
700.0	700.0	Surface	8.625
7831.0	8193.3	Production	4.500