

EnCana Corporation

Planning Report - Geographic

Database:	EDM	Local Co-ordinate Reference:	Well Liberty 4-2-21
Company:	DJ/Paradox/WTX	TVD Reference:	WELL @ 5040.0ft (Original Well Elev)
Project:	Wattenberg	MD Reference:	WELL @ 5040.0ft (Original Well Elev)
Site:	New Drills	North Reference:	True
Well:	Liberty 4-2-21	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Liberty 4-2-21		

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:	1,278,589.08ft	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	Liberty 4-2-21					
Well Position	+N-S	43,512.5 ft	Northing:	1,322,139.27 ft	Latitude:	40° 12' 59.868 N
	+E-W	6,960.3 ft	Easting:	3,136,966.96 ft	Longitude:	105° 0' 34.344 W
Position Uncertainty		ft	Wellhead Elevation:	ft	Ground Level:	5,027.0 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 4-2-21				
Audit Notes:					
Version:	Phase:	PROTOTYPE		Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)	
	0.0	0.0	0.0	145.67	

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	
1,134.8	7.70	145.67	1,133.7	-21.3	14.6	2.00	2.00	0.00	145.67	
6,480.6	7.70	145.67	6,431.3	-612.5	418.3	0.00	0.00	0.00	0.00	
6,865.5	0.00	0.00	6,815.0	-633.8	432.9	2.00	-2.00	0.00	180.00	
7,915.5	0.00	0.00	7,865.0	-633.8	432.9	0.00	0.00	0.00	0.00	Liberty 4-2-21

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Wellbore:	Wellbore #1		
Design:	Liberty 4-2-21		

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	1,322,139.27	3,136,966.96	40° 12' 59.868 N	105° 0' 34.344 W	
700.0	0.00	0.00	700.0	0.0	0.0	1,322,139.27	3,136,966.96	40° 12' 59.868 N	105° 0' 34.344 W	
Surface										
750.0	0.00	0.00	750.0	0.0	0.0	1,322,139.27	3,136,966.96	40° 12' 59.868 N	105° 0' 34.344 W	
1,134.8	7.70	145.67	1,133.7	-21.3	14.6	1,322,118.04	3,136,981.63	40° 12' 59.657 N	105° 0' 34.156 W	
4,017.1	7.70	145.67	3,990.0	-340.1	232.2	1,321,800.48	3,137,201.09	40° 12' 56.507 N	105° 0' 31.350 W	
Sussex										
4,521.7	7.70	145.67	4,490.0	-395.9	270.4	1,321,744.90	3,137,239.50	40° 12' 55.956 N	105° 0' 30.859 W	
Shannon										
6,480.6	7.70	145.67	6,431.3	-612.5	418.3	1,321,529.06	3,137,388.66	40° 12' 53.815 N	105° 0' 28.952 W	
6,865.5	0.00	0.00	6,815.0	-633.8	432.9	1,321,507.83	3,137,403.33	40° 12' 53.604 N	105° 0' 28.764 W	
7,035.5	0.00	0.00	6,985.0	-633.8	432.9	1,321,507.83	3,137,403.33	40° 12' 53.604 N	105° 0' 28.764 W	
Niobrara										
7,315.5	0.00	0.00	7,265.0	-633.8	432.9	1,321,507.83	3,137,403.33	40° 12' 53.604 N	105° 0' 28.764 W	
Codell										
7,765.5	0.00	0.00	7,715.0	-633.8	432.9	1,321,507.83	3,137,403.33	40° 12' 53.604 N	105° 0' 28.764 W	
J Sand										
7,835.5	0.00	0.00	7,785.0	-633.8	432.9	1,321,507.83	3,137,403.33	40° 12' 53.604 N	105° 0' 28.764 W	
A Marker										
7,915.5	0.00	0.00	7,865.0	-633.8	432.9	1,321,507.83	3,137,403.33	40° 12' 53.604 N	105° 0' 28.764 W	
Production - Liberty 4-2-21										

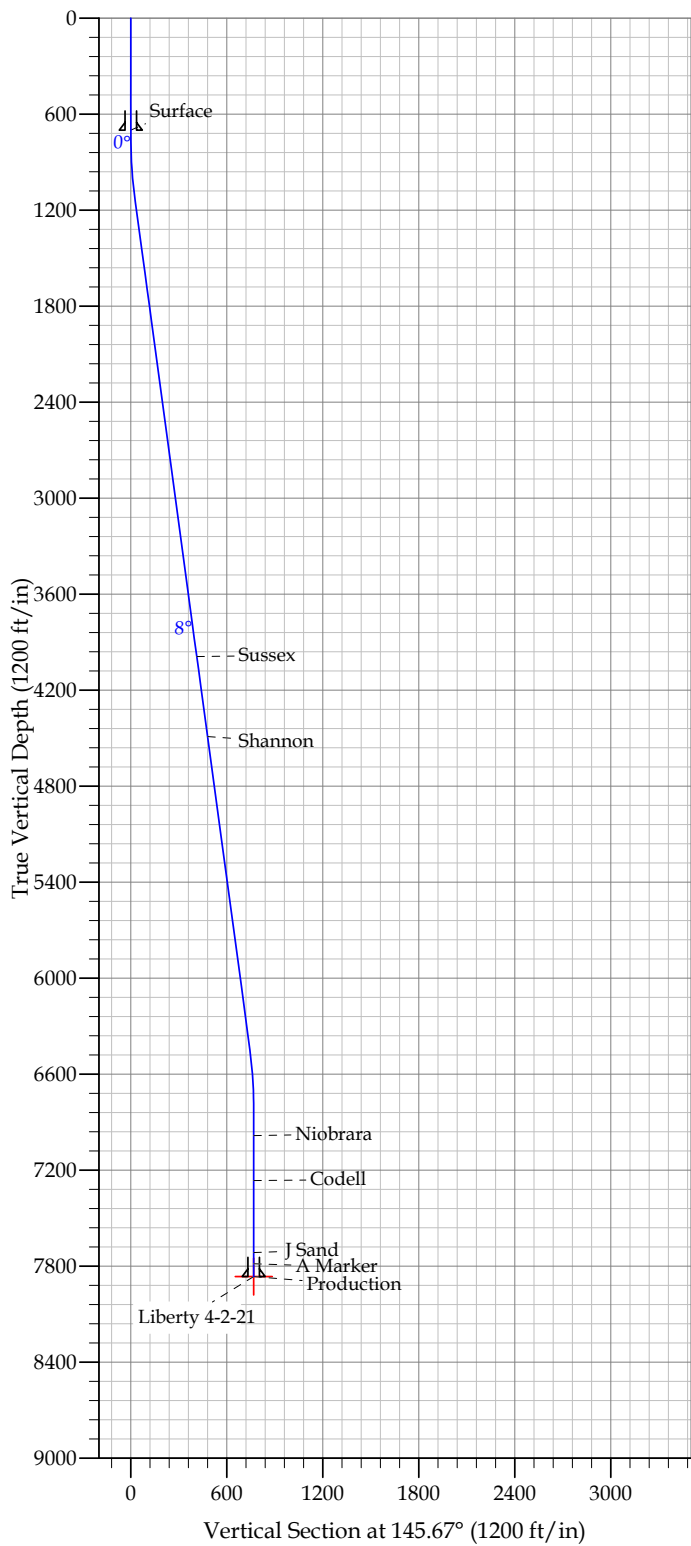
Design Targets										
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude	
- hit/miss target										
- Shape										
Liberty 4-2-21	0.00	0.00	7,865.0	-633.8	432.9	1,321,507.83	3,137,403.33	40° 12' 53.604 N	105° 0' 28.764 W	
- plan 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	
7,915.5	7,865.0	Production	4.500	7.785	

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
4,017.1	3,990.0	Sussex		0.00		
4,521.7	4,490.0	Shannon		0.00		
7,035.5	6,985.0	Niobrara		0.00		
7,315.5	7,265.0	Codell		0.00		
7,765.5	7,715.0	J Sand		0.00		
7,835.5	7,785.0	A Marker		0.00		

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Project:	Wattenberg	MD Reference:	WELL @ 5040.0ft (Original Well Elev)
Site:	New Drills	North Reference:	True
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Wellbore:	Wellbore #1		
Design:	Liberty 4-2-21		



REFERENCE INFORMATION

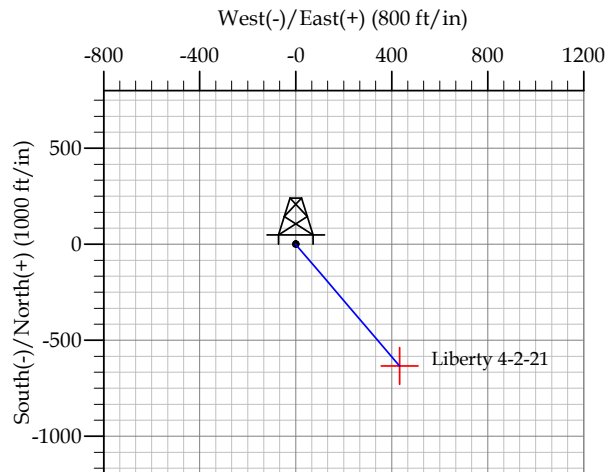
Co-ordinate (N/E) Reference: Well Liberty 4-2-21, True North
Vertical (TVD) Reference: WELL @ 5040.0ft (Original Well Elev)
Section (VS) Reference: Slot - (0.0N, 0.0E)
Measured Depth Reference: WELL @ 5040.0ft (Original Well Elev)
Calculation Method:

WELL DETAILS: Liberty 4-2-21

+N/-S	+E/-W	Northing	Ground Level:	5027.0		
			Easting	Latitude	Longitude	Slot
0.0	0.0	1322139.27	3136966.96	40° 12' 59.868 N	105° 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	1134.8	7.70	145.67	1133.7	-21.3	14.6	2.00	145.67	25.8	
4	6480.6	7.70	145.67	6431.3	-612.5	418.3	0.00	0.00	741.7	
5	6865.5	0.00	0.00	6815.0	-633.8	432.9	2.00	180.00	767.6	
6	7915.5	0.00	0.00	7865.0	-633.8	432.9	0.00	0.00	767.6	Liberty 4-2-21



FORMATION TOP DETAILS

TVDPPath	MDPath	Formation
3990.0	4017.1	Sussex
4490.0	4521.7	Shannon
6985.0	7035.5	Niobrara
7265.0	7315.5	Codell
7715.0	7765.5	J Sand
7785.0	7835.5	A Marker

CASING DETAILS

TVD	MD	Name	Size
700.0	700.0	Surface	8.625
7865.0	7915.5	Production	4.500