

013-06537



Project: DJ Basin (NAD83)
 Site: Sec 1-T1N-R69W
 Well: Wheeler 31-1
 Wellbore: DD
 Design: Final Survey

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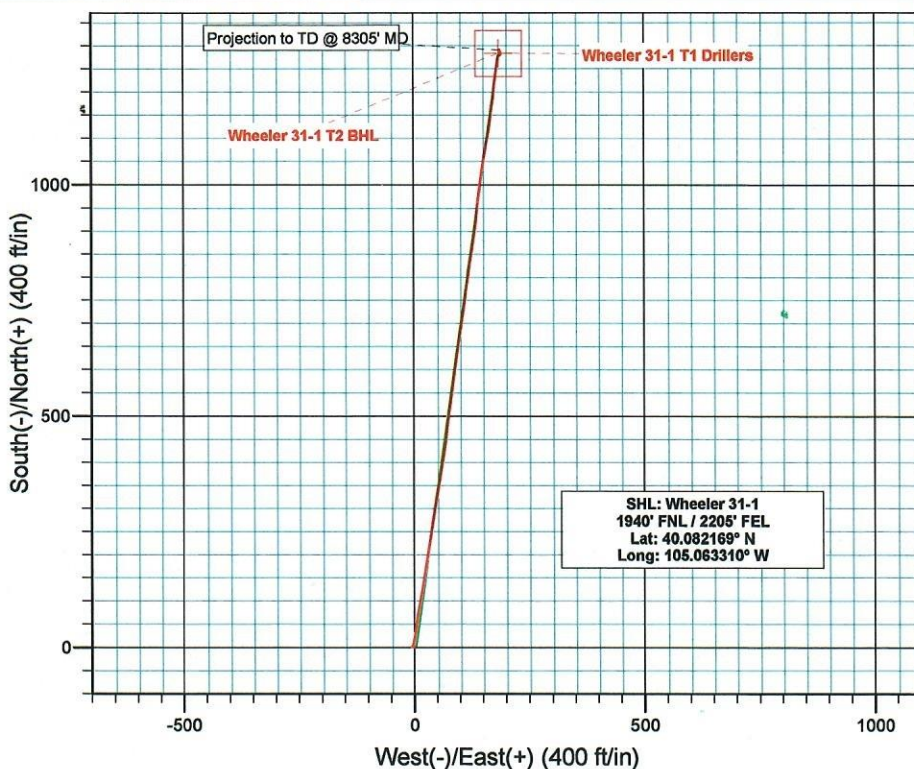
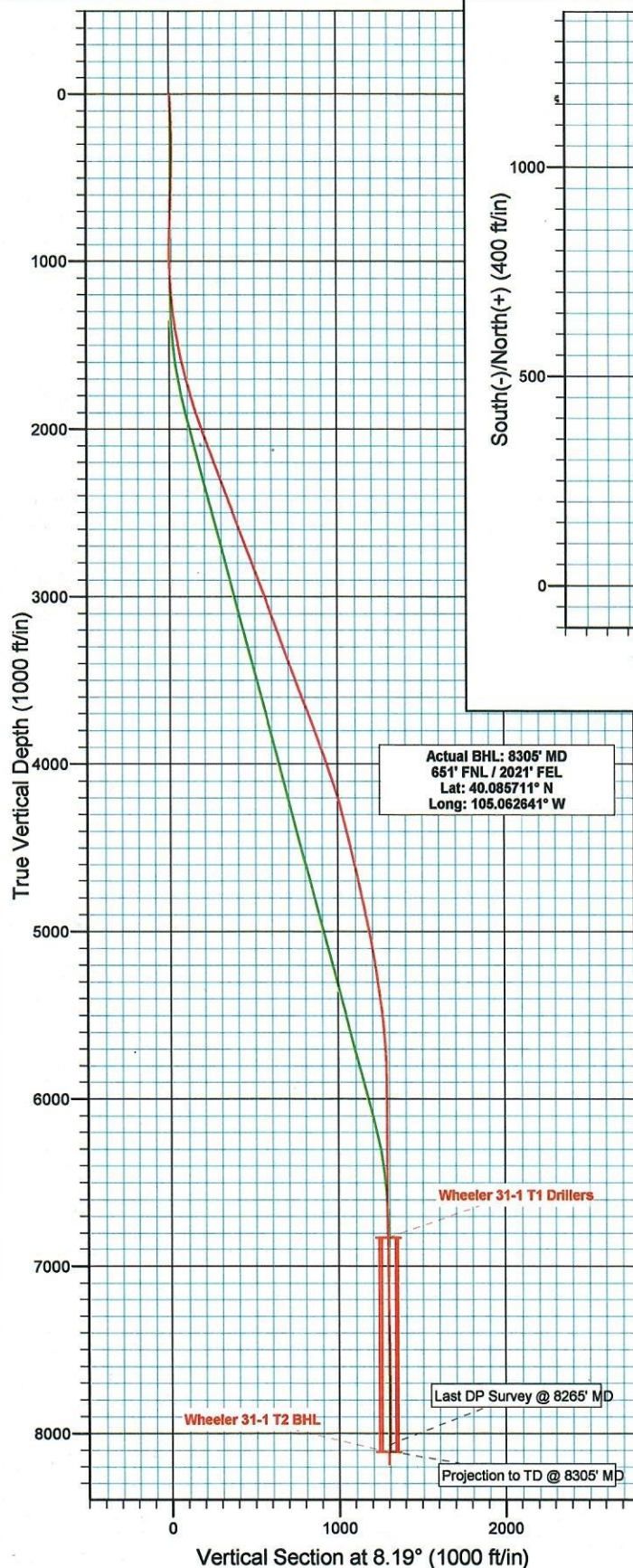
COGCC



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Directional Plus

A Division of Cathedral Energy Services Ltd.



Azimuths to True North
 Magnetic North: 9.54°

Magnetic Field
 Strength: 53394.7nT
 Dip Angle: 66.89°
 Date: 3/2/2007
 Model: IGRF200510

DESIGN DETAILS: DD

Job# 75093; LR
 WELL @ 4924.0ft (Cade 22)

Target
 Wheeler 31-1 T2 BHL

Azimuth	Origin Type	N/S	E/W	From TVD
8.19	Slot	0.0	0.0	0.0



Project: DJ Basin (NAD83)
Site: Sec 1-T1N-R69W
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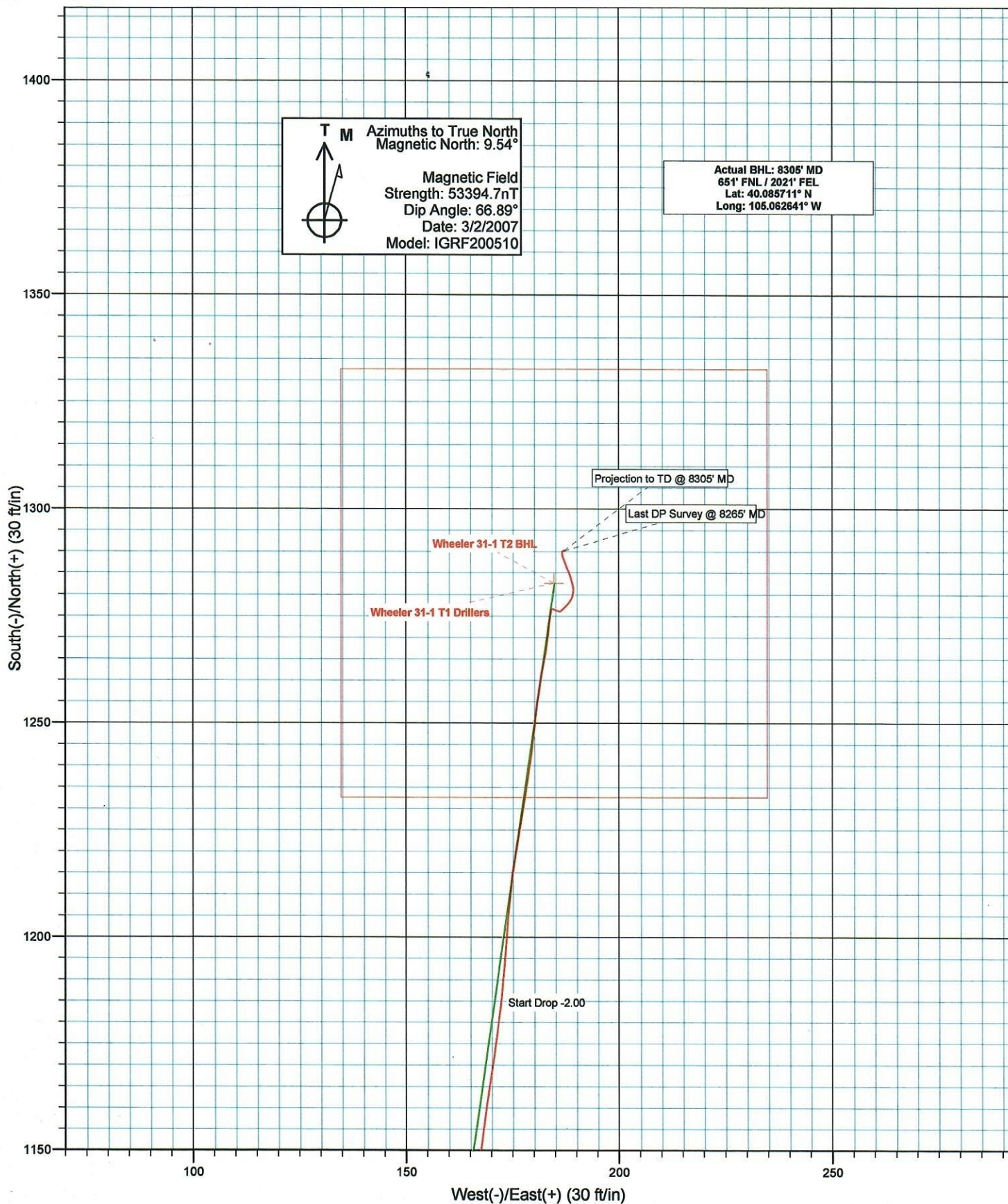
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Directional Plus Survey Report

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Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Wheeler 31-1
Project:	DJ Basin (NAD83)	TVD Reference:	WELL @ 4924.0ft (Cade 22)
Site:	Sec 1-T1N-R69W	MD Reference:	WELL @ 4924.0ft (Cade 22)
Well:	Wheeler 31-1	North Reference:	True
Wellbore:	DD	Survey Calculation Method:	Minimum Curvature
Design:	DD	Database:	EDM 2003.14 Multi User US

Project	DJ Basin (NAD83)		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Northern Zone		

Site	Sec 1-T1N-R69W				
Site Position:		Northing:	1,273,079.86 ft	Latitude:	40.082169
From:	Lat/Long	Easting:	3,122,192.37 ft	Longitude:	-105.063310
Position Uncertainty:	0.0 ft	Slot Radius:	"	Grid Convergence:	0.28 °

Well	Wheeler 31-1					
Well Position	+N/-S	0.0 ft	Northing:	1,273,079.85 ft	Latitude:	40.082169
	+E/-W	0.0 ft	Easting:	3,122,192.37 ft	Longitude:	-105.063310
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,908.0 ft

Wellbore	DD				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	3/2/2007	9.54	66.89	53,395

Design	DD				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)	
	0.0	0.0	0.0	8.19	

Survey Program	Date	3/21/2007		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
936.0	8,305.0	Survey #1 (DD)	MWD	Geolink MWD

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	
936.0	0.70	276.00	936.0	0.6	-5.7	-0.2	0.07	0.07	0.00	
999.0	0.10	99.50	999.0	0.6	-6.0	-0.2	1.27	-0.95	-280.16	
1,062.0	1.60	34.60	1,062.0	1.3	-5.5	0.6	2.48	2.38	-103.02	
1,126.0	3.20	19.80	1,125.9	3.8	-4.3	3.1	2.66	2.50	-23.12	
1,189.0	4.70	15.30	1,188.8	7.9	-3.1	7.4	2.43	2.38	-7.14	
1,251.0	6.10	9.60	1,250.5	13.6	-1.9	13.2	2.42	2.26	-9.19	
1,313.0	7.50	9.20	1,312.0	20.8	-0.7	20.5	2.26	2.26	-0.65	
1,377.0	8.50	7.80	1,375.4	29.7	0.7	29.4	1.59	1.56	-2.19	
1,470.0	10.10	7.70	1,467.2	44.5	2.7	44.5	1.72	1.72	-0.11	
1,564.0	11.90	10.20	1,559.5	62.3	5.5	62.4	1.98	1.91	2.66	
1,657.0	13.70	11.20	1,650.1	82.5	9.3	83.0	1.95	1.94	1.08	
1,753.0	15.80	9.80	1,743.0	106.5	13.8	107.4	2.22	2.19	-1.46	

Directional Plus Survey Report

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Company: EnCana Oil & Gas (USA) Inc
Project: DJ Basin (NAD83)
Site: Sec 1-T1N-R69W
Well: Wheeler 31-1
Wellbore: DD
Design: DD

Local Co-ordinate Reference:
TVD Reference:
MD Reference:
North Reference:
Survey Calculation Method:
Database:

Well Wheeler 31-1
WELL @ 4924.0ft (Cade 22)
WELL @ 4924.0ft (Cade 22)
True
Minimum Curvature
EDM 2003.14 Multi User US

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)
1,847.0	16.90	8.30	1,833.2	132.7	17.9	133.9	1.25	1.17	-1.60
1,941.0	18.20	8.90	1,922.8	160.7	22.2	162.2	1.40	1.38	0.64
2,035.0	19.30	11.00	2,011.8	190.4	27.4	192.4	1.37	1.17	2.23
2,066.0	19.80	9.00	2,041.0	200.7	29.2	202.8	2.69	1.61	-6.45
2,128.0	20.30	8.20	2,099.3	221.7	32.4	224.0	0.92	0.81	-1.29
2,191.0	21.00	8.10	2,158.2	243.7	35.5	246.2	1.11	1.11	-0.16
2,287.0	20.50	10.20	2,248.0	277.2	40.9	280.2	0.93	-0.52	2.19
2,381.0	20.50	9.00	2,336.0	309.7	46.4	313.1	0.45	0.00	-1.28
2,476.0	20.50	9.00	2,425.0	342.6	51.6	346.4	0.00	0.00	0.00
2,571.0	20.90	9.50	2,513.9	375.7	57.0	380.0	0.46	0.42	0.53
2,667.0	20.40	8.20	2,603.7	409.1	62.2	413.8	0.71	-0.52	-1.35
2,761.0	20.70	7.80	2,691.7	441.8	66.8	446.8	0.35	0.32	-0.43
2,856.0	20.40	6.40	2,780.7	474.9	70.9	480.2	0.61	-0.32	-1.47
2,949.0	20.30	7.40	2,867.9	507.0	74.8	512.5	0.39	-0.11	1.08
3,044.0	20.60	7.80	2,956.9	539.9	79.2	545.7	0.35	0.32	0.42
3,138.0	20.70	9.10	3,044.9	572.7	84.1	578.8	0.50	0.11	1.38
3,232.0	20.20	7.80	3,132.9	605.2	88.9	611.7	0.72	-0.53	-1.38
3,327.0	20.30	7.60	3,222.1	637.8	93.3	644.6	0.13	0.11	-0.21
3,422.0	20.00	9.70	3,311.3	670.1	98.2	677.3	0.82	-0.32	2.21
3,516.0	20.70	9.30	3,399.4	702.4	103.6	710.0	0.76	0.74	-0.43
3,608.0	20.80	8.50	3,485.4	734.6	108.7	742.6	0.33	0.11	-0.87
3,702.0	20.60	7.90	3,573.4	767.5	113.4	775.8	0.31	-0.21	-0.64
3,797.0	20.30	7.30	3,662.4	800.4	117.8	809.0	0.39	-0.32	-0.63
3,891.0	20.70	8.60	3,750.4	833.0	122.4	841.9	0.64	0.43	1.38
3,985.0	21.00	8.50	3,838.3	866.0	127.3	875.3	0.32	0.32	-0.11
4,047.0	19.20	6.80	3,896.5	887.1	130.2	896.6	3.05	-2.90	-2.74
4,141.0	19.30	7.40	3,985.2	917.9	134.0	927.6	0.24	0.11	0.64
4,203.0	18.60	6.10	4,043.9	937.9	136.4	947.8	1.32	-1.13	-2.10
4,327.0	17.60	6.50	4,161.7	976.2	140.6	986.3	0.81	-0.81	0.32
4,422.0	15.90	6.60	4,252.7	1,003.4	143.7	1,013.6	1.79	-1.79	0.11
4,485.0	15.00	9.90	4,313.4	1,020.0	146.1	1,030.4	2.00	-1.43	5.24
4,549.0	14.50	10.60	4,375.3	1,036.0	149.0	1,046.7	0.83	-0.78	1.09
4,612.0	13.50	8.70	4,436.4	1,051.0	151.6	1,061.9	1.75	-1.59	-3.02
4,675.0	13.10	10.90	4,497.7	1,065.3	154.1	1,076.4	1.02	-0.63	3.49
4,738.0	12.50	10.90	4,559.2	1,079.0	156.7	1,090.3	0.95	-0.95	0.00
4,802.0	13.00	9.90	4,621.6	1,092.9	159.2	1,104.5	0.85	0.78	-1.56
4,863.0	13.50	8.50	4,681.0	1,106.7	161.5	1,118.4	0.97	0.82	-2.30
4,926.0	13.00	8.60	4,742.3	1,121.0	163.6	1,132.9	0.79	-0.79	0.16
4,989.0	12.10	7.40	4,803.8	1,134.6	165.5	1,146.6	1.49	-1.43	-1.90
5,051.0	11.60	6.50	4,864.5	1,147.2	167.1	1,159.3	0.86	-0.81	-1.45
5,113.0	11.80	8.40	4,925.2	1,159.7	168.7	1,171.9	0.70	0.32	3.06
5,177.0	11.30	8.70	4,987.9	1,172.3	170.6	1,184.7	0.79	-0.78	0.47
5,240.0	10.50	6.70	5,049.8	1,184.1	172.2	1,196.6	1.40	-1.27	-3.17
5,304.0	9.50	3.70	5,112.8	1,195.2	173.2	1,207.7	1.76	-1.56	-4.69
5,367.0	9.10	4.30	5,175.0	1,205.4	173.9	1,217.8	0.65	-0.63	0.95
5,430.0	9.10	8.50	5,237.2	1,215.2	175.1	1,227.8	1.05	0.00	6.67
5,492.0	8.80	9.70	5,298.4	1,224.8	176.6	1,237.4	0.57	-0.48	1.94
5,554.0	8.30	8.70	5,359.7	1,233.9	178.1	1,246.7	0.84	-0.81	-1.61
5,615.0	7.60	7.90	5,420.1	1,242.2	179.3	1,255.1	1.16	-1.15	-1.31
5,676.0	6.90	5.80	5,480.6	1,249.9	180.2	1,262.8	1.23	-1.15	-3.44
5,739.0	5.90	8.70	5,543.3	1,256.8	181.1	1,269.8	1.67	-1.59	4.60
5,830.0	4.00	10.00	5,633.9	1,264.6	182.3	1,277.7	2.09	-2.09	1.43
5,893.0	3.80	9.70	5,696.8	1,268.8	183.1	1,281.9	0.32	-0.32	-0.48
5,956.0	2.70	3.90	5,759.7	1,272.3	183.5	1,285.5	1.82	-1.75	-9.21

Directional Plus Survey Report



Company: EnCana Oil & Gas (USA) Inc
Project: DJ Basin (NAD83)
Site: Sec 1-T1N-R69W
Well: Wheeler 31-1
Wellbore: DD
Design: DD

Local Co-ordinate Reference:
TVD Reference: WELL @ 4924.0ft (Cade 22)
MD Reference: WELL @ 4924.0ft (Cade 22)
North Reference: True
Survey Calculation Method: Minimum Curvature
Database: EDM 2003.14 Multi User US

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)
6,048.0	0.70	21.80	5,851.6	1,275.0	183.9	1,288.2	2.22	-2.17	19.46
6,111.0	1.00	357.10	5,914.6	1,275.9	184.0	1,289.1	0.74	0.48	-39.21
6,173.0	0.30	40.90	5,976.6	1,276.6	184.1	1,289.8	1.31	-1.13	70.65
6,266.0	0.40	117.30	6,069.6	1,276.6	184.5	1,289.9	0.47	0.11	82.15
6,359.0	0.40	112.10	6,162.6	1,276.4	185.1	1,289.7	0.04	0.00	-5.59
6,454.0	0.20	99.50	6,257.6	1,276.2	185.6	1,289.6	0.22	-0.21	-13.26
6,547.0	0.20	99.50	6,350.6	1,276.1	185.9	1,289.6	0.00	0.00	0.00
6,643.0	0.20	87.00	6,446.6	1,276.1	186.2	1,289.6	0.05	0.00	-13.02
6,737.0	0.40	39.40	6,540.6	1,276.4	186.6	1,290.0	0.32	0.21	-50.64
6,829.0	0.60	49.60	6,632.6	1,276.9	187.2	1,290.6	0.24	0.22	11.09
6,923.0	0.60	39.80	6,726.6	1,277.6	187.9	1,291.4	0.11	0.00	-10.43
7,017.0	0.70	37.00	6,820.6	1,278.5	188.5	1,292.3	0.11	0.11	-2.98
7,110.0	0.50	10.00	6,913.6	1,279.3	188.9	1,293.2	0.37	-0.22	-29.03
7,202.0	0.50	32.00	7,005.6	1,280.1	189.2	1,294.0	0.21	0.00	23.91
7,295.0	0.90	348.70	7,098.6	1,281.1	189.3	1,295.0	0.68	0.43	-46.56
7,390.0	1.30	347.40	7,193.5	1,282.9	188.9	1,296.7	0.42	0.42	-1.37
7,483.0	1.10	340.00	7,286.5	1,284.8	188.4	1,298.5	0.27	-0.22	-7.96
7,576.0	1.10	332.00	7,379.5	1,286.4	187.6	1,300.0	0.17	0.00	-8.60
7,669.0	0.70	344.50	7,472.5	1,287.7	187.1	1,301.3	0.48	-0.43	13.44
7,762.0	0.30	330.80	7,565.5	1,288.5	186.8	1,302.0	0.45	-0.43	-14.73
7,857.0	0.40	1.30	7,660.5	1,289.1	186.7	1,302.5	0.22	0.11	32.11
7,951.0	0.30	339.70	7,754.5	1,289.6	186.6	1,303.0	0.17	-0.11	-22.98
8,044.0	0.20	52.00	7,847.5	1,289.9	186.7	1,303.4	0.33	-0.11	77.74
8,138.0	0.20	38.80	7,941.5	1,290.2	186.9	1,303.6	0.05	0.00	-14.04
8,234.0	0.20	135.70	8,037.5	1,290.2	187.1	1,303.7	0.31	0.00	100.94
8,265.0	0.10	357.10	8,068.5	1,290.2	187.1	1,303.7	0.91	-0.32	-447.10
Last DP Survey @ 8265' MD									
8,305.0	0.10	357.10	8,108.5	1,290.2	187.1	1,303.7	0.00	0.00	0.00
Projection to TD @ 8305' MD									

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									
Wheeler 31-1 T2 BHL	0.00	0.00	8,114.0	1,282.6	184.7	1,274,363.37	3,122,370.72	40.085690	-105.062650
- survey misses by 9.7ft at 8305.0ft MD (8108.5 TVD, 1290.2 N, 187.1 E)									
- Rectangle (sides W100.0 H100.0 D0.0)									
Wheeler 31-1 T1 Drillers	0.00	0.00	6,829.0	1,282.6	184.7	1,274,363.37	3,122,370.72	40.085690	-105.062650
- survey misses by 5.6ft at 7025.4ft MD (6829.0 TVD, 1278.6 N, 188.6 E)									
- Point									

Survey Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
8,265.0	8,068.5	1,290.2	187.1	Last DP Survey @ 8265' MD
8,305.0	8,108.5	1,290.2	187.1	Projection to TD @ 8305' MD

Checked By: _____ Approved By: _____ Date: _____

Directional Plus
Survey Report - Geographic



Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Wheeler 31-1
Project:	DJ Basin (NAD83)	TVD Reference:	WELL @ 4924.0ft (Cade 22)
Site:	Sec 1-T1N-R69W	MD Reference:	WELL @ 4924.0ft (Cade 22)
Well:	Wheeler 31-1	North Reference:	True
Wellbore:	DD	Survey Calculation Method:	Minimum Curvature
Design:	DD	Database:	EDM 2003.14 Multi User US

Project	DJ Basin (NAD83)		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Northern Zone		

Site		Sec 1-T1N-R69W			
Site Position:		Northing:	1,273,079.86 ft	Latitude:	40.082169
From:	Lat/Long	Easting:	3,122,192.37 ft	Longitude:	-105.063310
Position Uncertainty:	0.0 ft	Slot Radius:	"	Grid Convergence:	0.28 °

Well	Wheeler 31-1					
Well Position	+N/-S	0.0 ft	Northing:	1,273,079.85 ft	Latitude:	40.082169
	+E/-W	0.0 ft	Easting:	3,122,192.37 ft	Longitude:	-105.063310
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,908.0 ft

Wellbore	DD				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	3/2/2007	9.54	66.89	53,395

Design	DD			
Audit Notes:				
Version:	1.0	Phase:	ACTUAL	Tie On Depth:
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.0	0.0	0.0	8.19

Survey Program		Date	3/21/2007		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
936.0	8,305.0	Survey #1 (DD)	MWD	Geolink MWD	

Directional Plus Survey Report - Geographic

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COGCC

Company: EnCana Oil & Gas (USA) Inc
Project: DJ Basin (NAD83)
Site: Sec 1-T1N-R69W
Well: Wheeler 31-1
Wellbore: DD
Design: DD

Local Co-ordinate Reference: Well Wheeler 31-1
TVD Reference: WELL @ 4924.0ft (Cade 22)
MD Reference: WELL @ 4924.0ft (Cade 22)
North Reference: True
Survey Calculation Method: Minimum Curvature
Database: EDM 2003.14 Multi User US

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	1,273,079.85	3,122,192.37	40.082169	-105.063310
936.0	0.70	276.00	936.0	0.6	-5.7	1,273,080.42	3,122,186.68	40.082171	-105.063330
999.0	0.10	99.50	999.0	0.6	-6.0	1,273,080.45	3,122,186.36	40.082171	-105.063331
1,062.0	1.60	34.60	1,062.0	1.3	-5.5	1,273,081.17	3,122,186.91	40.082173	-105.063330
1,126.0	3.20	19.80	1,125.9	3.8	-4.3	1,273,083.59	3,122,188.01	40.082179	-105.063326
1,189.0	4.70	15.30	1,188.8	7.9	-3.1	1,273,087.74	3,122,189.26	40.082191	-105.063321
1,251.0	6.10	9.60	1,250.5	13.6	-1.9	1,273,093.44	3,122,190.45	40.082206	-105.063317
1,313.0	7.50	9.20	1,312.0	20.8	-0.7	1,273,100.69	3,122,191.62	40.082226	-105.063312
1,377.0	8.50	7.80	1,375.4	29.7	0.7	1,273,109.51	3,122,192.88	40.082250	-105.063308
1,470.0	10.10	7.70	1,467.2	44.5	2.7	1,273,124.41	3,122,194.83	40.082291	-105.063300
1,564.0	11.90	10.20	1,559.5	62.3	5.5	1,273,142.13	3,122,197.57	40.082340	-105.063290
1,657.0	13.70	11.20	1,650.1	82.5	9.3	1,273,162.39	3,122,201.31	40.082395	-105.063277
1,753.0	15.80	9.80	1,743.0	106.5	13.8	1,273,186.44	3,122,205.62	40.082461	-105.063261
1,847.0	16.90	8.30	1,833.2	132.7	17.9	1,273,212.60	3,122,209.64	40.082533	-105.063246
1,941.0	18.20	8.90	1,922.8	160.7	22.2	1,273,240.64	3,122,213.75	40.082610	-105.063231
2,035.0	19.30	11.00	2,011.8	190.4	27.4	1,273,270.42	3,122,218.84	40.082692	-105.063212
2,066.0	19.80	9.00	2,041.0	200.7	29.2	1,273,280.64	3,122,220.58	40.082720	-105.063206
2,128.0	20.30	8.20	2,099.3	221.7	32.4	1,273,301.67	3,122,223.66	40.082777	-105.063194
2,191.0	21.00	8.10	2,158.2	243.7	35.5	1,273,323.68	3,122,226.70	40.082838	-105.063183
2,287.0	20.50	10.20	2,248.0	277.2	40.9	1,273,357.28	3,122,231.93	40.082930	-105.063164
2,381.0	20.50	9.00	2,336.0	309.7	46.4	1,273,389.77	3,122,237.26	40.083019	-105.063144
2,476.0	20.50	9.00	2,425.0	342.6	51.6	1,273,422.65	3,122,242.31	40.083109	-105.063126
2,571.0	20.90	9.50	2,513.9	375.7	57.0	1,273,455.82	3,122,247.54	40.083200	-105.063106
2,667.0	20.40	8.20	2,603.7	409.1	62.2	1,273,489.30	3,122,252.59	40.083292	-105.063088
2,761.0	20.70	7.80	2,691.7	441.8	66.8	1,273,521.99	3,122,257.02	40.083382	-105.063071
2,856.0	20.40	6.40	2,780.7	474.9	70.9	1,273,555.10	3,122,260.98	40.083473	-105.063056
2,949.0	20.30	7.40	2,867.9	507.0	74.8	1,273,587.23	3,122,264.71	40.083561	-105.063043
3,044.0	20.60	7.80	2,956.9	539.9	79.2	1,273,620.15	3,122,268.94	40.083651	-105.063027
3,138.0	20.70	9.10	3,044.9	572.7	84.1	1,273,652.96	3,122,273.65	40.083741	-105.063009
3,232.0	20.20	7.80	3,132.9	605.2	88.9	1,273,685.47	3,122,278.32	40.083830	-105.062992
3,327.0	20.30	7.60	3,222.1	637.8	93.3	1,273,718.07	3,122,282.56	40.083920	-105.062976
3,422.0	20.00	9.70	3,311.3	670.1	98.2	1,273,750.45	3,122,287.32	40.084009	-105.062959
3,516.0	20.70	9.30	3,399.4	702.4	103.6	1,273,782.71	3,122,292.55	40.084097	-105.062940
3,608.0	20.80	8.50	3,485.4	734.6	108.7	1,273,814.94	3,122,297.44	40.084185	-105.062922
3,702.0	20.60	7.90	3,573.4	767.5	113.4	1,273,847.85	3,122,302.02	40.084276	-105.062905
3,797.0	20.30	7.30	3,662.4	800.4	117.8	1,273,880.77	3,122,306.24	40.084366	-105.062889
3,891.0	20.70	8.60	3,750.4	833.0	122.4	1,273,913.39	3,122,310.64	40.084456	-105.062873
3,985.0	21.00	8.50	3,838.3	866.0	127.3	1,273,946.50	3,122,315.45	40.084546	-105.062855
4,047.0	19.20	6.80	3,896.5	887.1	130.2	1,273,967.63	3,122,318.20	40.084604	-105.062845
4,141.0	19.30	7.40	3,985.2	917.9	134.0	1,273,998.40	3,122,321.88	40.084689	-105.062831
4,203.0	18.60	6.10	4,043.9	937.9	136.4	1,274,018.40	3,122,324.15	40.084744	-105.062823
4,327.0	17.60	6.50	4,161.7	976.2	140.6	1,274,056.71	3,122,328.18	40.084849	-105.062807
4,422.0	15.90	6.60	4,252.7	1,003.4	143.7	1,274,083.93	3,122,331.17	40.084923	-105.062796
4,485.0	15.00	9.90	4,313.4	1,020.0	146.1	1,274,100.54	3,122,333.48	40.084969	-105.062788
4,549.0	14.50	10.60	4,375.3	1,036.0	149.0	1,274,116.59	3,122,336.30	40.085013	-105.062777
4,612.0	13.50	8.70	4,436.4	1,051.0	151.6	1,274,131.63	3,122,338.79	40.085054	-105.062768
4,675.0	13.10	10.90	4,497.7	1,065.3	154.1	1,274,145.92	3,122,341.18	40.085093	-105.062759
4,738.0	12.50	10.90	4,559.2	1,079.0	156.7	1,274,159.64	3,122,343.75	40.085131	-105.062750
4,802.0	13.00	9.90	4,621.6	1,092.9	159.2	1,274,173.54	3,122,346.23	40.085169	-105.062741
4,863.0	13.50	8.50	4,681.0	1,106.7	161.5	1,274,187.35	3,122,348.40	40.085207	-105.062733
4,926.0	13.00	8.60	4,742.3	1,121.0	163.6	1,274,201.64	3,122,350.47	40.085246	-105.062725
4,989.0	12.10	7.40	4,803.8	1,134.6	165.5	1,274,215.21	3,122,352.32	40.085284	-105.062718
5,051.0	11.60	6.50	4,864.5	1,147.2	167.1	1,274,227.85	3,122,353.80	40.085318	-105.062713
5,113.0	11.80	8.40	4,925.2	1,159.7	168.7	1,274,240.32	3,122,355.37	40.085352	-105.062707
5,177.0	11.30	8.70	4,987.9	1,172.3	170.6	1,274,253.01	3,122,357.21	40.085387	-105.062700

Directional Plus Survey Report - Geographic

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MAR 28 2007

COGCC

Company: EnCana Oil & Gas (USA) Inc
Project: DJ Basin (NAD83)
Site: Sec 1-T1N-R69W
Well: Wheeler 31-1
Wellbore: DD
Design: DD

Local Co-ordinate Reference:
TVD Reference:
MD Reference:
North Reference:
Survey Calculation Method:
Database:

Well Wheeler 31-1
WELL @ 4924.0ft (Cade 22)
WELL @ 4924.0ft (Cade 22)
True
Minimum Curvature
EDM 2003.14 Multi User US

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (ft)	Map Easting (ft)	Latitude	Longitude
5,240.0	10.50	6.70	5,049.8	1,184.1	172.2	1,274,264.82	3,122,358.75	40.085420	-105.062695
5,304.0	9.50	3.70	5,112.8	1,195.2	173.2	1,274,275.88	3,122,359.72	40.085450	-105.062691
5,367.0	9.10	4.30	5,175.0	1,205.4	173.9	1,274,286.04	3,122,360.38	40.085478	-105.062688
5,430.0	9.10	8.50	5,237.2	1,215.2	175.1	1,274,295.94	3,122,361.44	40.085505	-105.062684
5,492.0	8.80	9.70	5,298.4	1,224.8	176.6	1,274,305.47	3,122,362.92	40.085531	-105.062679
5,554.0	8.30	8.70	5,359.7	1,233.9	178.1	1,274,314.58	3,122,364.35	40.085556	-105.062674
5,615.0	7.60	7.90	5,420.1	1,242.2	179.3	1,274,322.93	3,122,365.53	40.085579	-105.062669
5,676.0	6.90	5.80	5,480.6	1,249.9	180.2	1,274,330.58	3,122,366.42	40.085600	-105.062666
5,739.0	5.90	8.70	5,543.3	1,256.8	181.1	1,274,337.55	3,122,367.25	40.085619	-105.062663
5,830.0	4.00	10.00	5,633.9	1,264.6	182.3	1,274,345.31	3,122,368.47	40.085640	-105.062658
5,893.0	3.80	9.70	5,696.8	1,268.8	183.1	1,274,349.53	3,122,369.19	40.085652	-105.062656
5,956.0	2.70	3.90	5,759.7	1,272.3	183.5	1,274,353.07	3,122,369.62	40.085662	-105.062654
6,048.0	0.70	21.80	5,851.6	1,275.0	183.9	1,274,355.76	3,122,369.96	40.085669	-105.062653
6,111.0	1.00	357.10	5,914.6	1,275.9	184.0	1,274,356.66	3,122,370.08	40.085672	-105.062652
6,173.0	0.30	40.90	5,976.6	1,276.6	184.1	1,274,357.33	3,122,370.15	40.085673	-105.062652
6,266.0	0.40	117.30	6,069.6	1,276.6	184.5	1,274,357.36	3,122,370.60	40.085674	-105.062651
6,359.0	0.40	112.10	6,162.6	1,276.4	185.1	1,274,357.10	3,122,371.19	40.085673	-105.062648
6,454.0	0.20	99.50	6,257.6	1,276.2	185.6	1,274,356.95	3,122,371.66	40.085672	-105.062647
6,547.0	0.20	99.50	6,350.6	1,276.1	185.9	1,274,356.89	3,122,371.98	40.085672	-105.062646
6,643.0	0.20	87.00	6,446.6	1,276.1	186.2	1,274,356.88	3,122,372.31	40.085672	-105.062644
6,737.0	0.40	39.40	6,540.6	1,276.4	186.6	1,274,357.14	3,122,372.68	40.085673	-105.062643
6,829.0	0.60	49.60	6,632.6	1,276.9	187.2	1,274,357.70	3,122,373.25	40.085674	-105.062641
6,923.0	0.60	39.80	6,726.6	1,277.6	187.9	1,274,358.40	3,122,373.94	40.085676	-105.062639
7,017.0	0.70	37.00	6,820.6	1,278.5	188.5	1,274,359.24	3,122,374.60	40.085679	-105.062636
7,110.0	0.50	10.00	6,913.6	1,279.3	188.9	1,274,360.10	3,122,375.00	40.085681	-105.062635
7,202.0	0.50	32.00	7,005.6	1,280.1	189.2	1,274,360.84	3,122,375.28	40.085683	-105.062634
7,295.0	0.90	348.70	7,098.6	1,281.1	189.3	1,274,361.90	3,122,375.35	40.085686	-105.062633
7,390.0	1.30	347.40	7,193.5	1,282.9	188.9	1,274,363.68	3,122,374.96	40.085691	-105.062635
7,483.0	1.10	340.00	7,286.5	1,284.8	188.4	1,274,365.55	3,122,374.41	40.085696	-105.062637
7,576.0	1.10	332.00	7,379.5	1,286.4	187.6	1,274,367.17	3,122,373.68	40.085700	-105.062639
7,669.0	0.70	344.50	7,472.5	1,287.7	187.1	1,274,368.50	3,122,373.10	40.085704	-105.062641
7,762.0	0.30	330.80	7,565.5	1,288.5	186.8	1,274,369.26	3,122,372.83	40.085706	-105.062642
7,857.0	0.40	1.30	7,660.5	1,289.1	186.7	1,274,369.81	3,122,372.71	40.085708	-105.062643
7,951.0	0.30	339.70	7,754.5	1,289.6	186.6	1,274,370.37	3,122,372.63	40.085709	-105.062643
8,044.0	0.20	52.00	7,847.5	1,289.9	186.7	1,274,370.70	3,122,372.68	40.085710	-105.062643
8,138.0	0.20	38.80	7,941.5	1,290.2	186.9	1,274,370.93	3,122,372.91	40.085711	-105.062642
8,234.0	0.20	135.70	8,037.5	1,290.2	187.1	1,274,370.94	3,122,373.13	40.085711	-105.062641
8,265.0	0.10	357.10	8,068.5	1,290.2	187.1	1,274,370.93	3,122,373.16	40.085711	-105.062641
Last DP Survey @ 8265' MD									
8,305.0	0.10	357.10	8,108.5	1,290.2	187.1	1,274,370.99	3,122,373.16	40.085711	-105.062641
Projection to TD @ 8305' MD									

Directional Plus

Survey Report - Geographic

Company: EnCana Oil & Gas (USA) Inc
Project: DJ Basin (NAD83)
Site: Sec 1-T1N-R69W
Well: Wheeler 31-1
Wellbore: DD
Design: DD

Local Co-ordinate Reference: Well Wheeler 31-1
TVD Reference: WELL @ 4924.0ft (Cade 22)
MD Reference: WELL @ 4924.0ft (Cade 22)
North Reference: True
Survey Calculation Method: Minimum Curvature
Database: EDM 2003.14 Multi User US

Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
Wheeler 31-1 T2 BHL - survey misses by 9.7ft at 8305.0ft MD (8108.5 TVD, 1290.2 N, 187.1 E) - Rectangle (sides W100.0 H100.0 D0.0)	0.00	0.00	8,114.0	1,282.6	184.7	1,274,363.37	3,122,370.72	40.085690	-105.062650
Wheeler 31-1 T1 Drillers - survey misses by 5.6ft at 7025.4ft MD (6829.0 TVD, 1278.6 N, 188.6 E) - Point	0.00	0.00	6,829.0	1,282.6	184.7	1,274,363.37	3,122,370.72	40.085690	-105.062650

Survey Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
8,265.0	8,068.5	1,290.2	187.1	Last DP Survey @ 8265' MD
8,305.0	8,108.5	1,290.2	187.1	Projection to TD @ 8305' MD

Checked By: _____ Approved By: _____ Date: _____

**Directional Plus
Directional Plus Survey Report**



Company: EnCana Oil & Gas (USA) Inc
Field: Wattenberg
Site: SWNE Sec 1
Well: Wheeler 31-1
Wellpath: DD



Survey

MD ft	Incl deg	Azim deg	TVD ft	N/S ft	E/W ft	V.Sec ft	D.Leg (%/100ft)	Tool/Comment
0	0	0	0	0	0	0	0	0 UNDEFINED
936	0.7	276	936	0.6	-5.7	-0.2	0.07	MWD (1)
999	0.1	99.5	999	0.6	-6	-0.2	1.27	MWD (1)
1062	1.6	34.6	1062	1.3	-5.5	0.6	2.48	MWD (1)
1126	3.2	19.8	1125.9	3.8	-4.3	3.1	2.66	MWD (1)
1189	4.7	15.3	1188.8	7.9	-3.1	7.4	2.43	MWD (1)
1251	6.1	9.6	1250.5	13.6	-1.9	13.2	2.42	MWD (1)
1313	7.5	9.2	1312	20.8	-0.7	20.5	2.26	MWD (1)
1377	8.5	7.8	1375.4	29.7	0.7	29.4	1.59	MWD (1)
1470	10.1	7.7	1467.2	44.5	2.7	44.5	1.72	MWD (1)
1564	11.9	10.2	1559.5	62.3	5.5	62.4	1.98	MWD (1)
1657	13.7	11.2	1650.1	82.5	9.3	83	1.95	MWD (1)
1753	15.8	9.8	1743	106.5	13.8	107.4	2.22	MWD (1)
1847	16.9	8.3	1833.2	132.7	17.9	133.9	1.25	MWD (1)
1941	18.2	8.9	1922.8	160.7	22.2	162.2	1.4	MWD (1)
2035	19.3	11	2011.8	190.4	27.4	192.4	1.37	MWD (1)
2066	19.8	9	2041	200.7	29.2	202.8	2.69	MWD (1)
2128	20.3	8.2	2099.3	221.7	32.4	224	0.92	MWD (1)
2191	21	8.1	2158.2	243.7	35.5	246.2	1.11	MWD (1)
2287	20.5	10.2	2248	277.2	40.9	280.2	0.93	MWD (1)
2381	20.5	9	2336	309.7	46.4	313.1	0.45	MWD (1)
2476	20.5	9	2425	342.6	51.6	346.4	0	MWD (1)
2571	20.9	9.5	2513.9	375.7	57	380	0.46	MWD (1)
2667	20.4	8.2	2603.7	409.1	62.2	413.8	0.71	MWD (1)
2761	20.7	7.8	2691.7	441.8	66.8	446.8	0.35	MWD (1)
2856	20.4	6.4	2780.7	474.9	70.9	480.2	0.61	MWD (1)
2949	20.3	7.4	2867.9	507	74.8	512.5	0.39	MWD (1)
3044	20.6	7.8	2956.9	539.9	79.2	545.7	0.35	MWD (1)
3138	20.7	9.1	3044.9	572.7	84.1	578.8	0.5	MWD (1)
3232	20.2	7.8	3132.9	605.2	88.9	611.7	0.72	MWD (1)
3327	20.3	7.6	3222.1	637.8	93.3	644.6	0.13	MWD (1)

3422	20	9.7	3311.3	670.1	98.2	677.3	0.82 MWD (1)
3516	20.7	9.3	3399.4	702.4	103.6	710	0.76 MWD (1)
3608	20.8	8.5	3485.4	734.6	108.7	742.6	0.33 MWD (1)
3702	20.6	7.9	3573.4	767.5	113.4	775.8	0.31 MWD (1)
3797	20.3	7.3	3662.4	800.4	117.8	809	0.39 MWD (1)
3891	20.7	8.6	3750.4	833	122.4	841.9	0.64 MWD (1)
3985	21	8.5	3838.3	866	127.3	875.3	0.32 MWD (1)
4047	19.2	6.8	3896.5	887.1	130.2	896.6	3.05 MWD (1)
4141	19.3	7.4	3985.2	917.9	134	927.6	0.24 MWD (1)
4203	18.6	6.1	4043.9	937.9	136.4	947.8	1.32 MWD (1)
4327	17.6	6.5	4161.7	976.2	140.6	986.3	0.81 MWD (1)
4422	15.9	6.6	4252.7	1003.4	143.7	1013.6	1.79 MWD (1)
4485	15	9.9	4313.4	1020	146.1	1030.4	2 MWD (1)
4549	14.5	10.6	4375.3	1036	149	1046.7	0.83 MWD (1)
4612	13.5	8.7	4436.4	1051	151.6	1061.9	1.75 MWD (1)
4675	13.1	10.9	4497.7	1065.3	154.1	1076.4	1.02 MWD (1)
4738	12.5	10.9	4559.2	1079	156.7	1090.3	0.95 MWD (1)
4802	13	9.9	4621.6	1092.9	159.2	1104.5	0.85 MWD (1)
4863	13.5	8.5	4681	1106.7	161.5	1118.4	0.97 MWD (1)
4926	13	8.6	4742.3	1121	163.6	1132.9	0.79 MWD (1)
4989	12.1	7.4	4803.8	1134.6	165.5	1146.6	1.49 MWD (1)
5051	11.6	6.5	4864.5	1147.2	167.1	1159.3	0.86 MWD (1)
5113	11.8	8.4	4925.2	1159.7	168.7	1171.9	0.7 MWD (1)
5177	11.3	8.7	4987.9	1172.3	170.6	1184.7	0.79 MWD (1)
5240	10.5	6.7	5049.8	1184.1	172.2	1196.6	1.4 MWD (1)
5304	9.5	3.7	5112.8	1195.2	173.2	1207.7	1.76 MWD (1)
5367	9.1	4.3	5175	1205.4	173.9	1217.8	0.65 MWD (1)
5430	9.1	8.5	5237.2	1215.2	175.1	1227.8	1.05 MWD (1)
5492	8.8	9.7	5298.4	1224.8	176.6	1237.4	0.57 MWD (1)
5554	8.3	8.7	5359.7	1233.9	178.1	1246.7	0.84 MWD (1)
5615	7.6	7.9	5420.1	1242.2	179.3	1255.1	1.16 MWD (1)
5676	6.9	5.8	5480.6	1249.9	180.2	1262.8	1.23 MWD (1)
5739	5.9	8.7	5543.3	1256.8	181.1	1269.8	1.67 MWD (1)
5830	4	10	5633.9	1264.6	182.3	1277.7	2.09 MWD (1)
5893	3.8	9.7	5696.8	1268.8	183.1	1281.9	0.32 MWD (1)
5956	2.7	3.9	5759.7	1272.3	183.5	1285.5	1.82 MWD (1)
6048	0.7	21.8	5851.6	1275	183.9	1288.2	2.22 MWD (1)
6111	1	357.1	5914.6	1275.9	184	1289.1	0.74 MWD (1)
6173	0.3	40.9	5976.6	1276.6	184.1	1289.8	1.31 MWD (1)
6266	0.4	117.3	6069.6	1276.6	184.5	1289.9	0.47 MWD (1)
6359	0.4	112.1	6162.6	1276.4	185.1	1289.7	0.04 MWD (1)
6454	0.2	99.5	6257.6	1276.2	185.6	1289.6	0.22 MWD (1)
6547	0.2	99.5	6350.6	1276.1	185.9	1289.6	0 MWD (1)
6643	0.2	87	6446.6	1276.1	186.2	1289.6	0.05 MWD (1)
6737	0.4	39.4	6540.6	1276.4	186.6	1290	0.32 MWD (1)

6829	0.6	49.6	6632.6	1276.9	187.2	1290.6	0.24 MWD (1)
6923	0.6	39.8	6726.6	1277.6	187.9	1291.4	0.11 MWD (1)
7017	0.7	37	6820.6	1278.5	188.5	1292.3	0.11 MWD (1)
7110	0.5	10	6913.6	1279.3	188.9	1293.2	0.37 MWD (1)
7202	0.5	32	7005.6	1280.1	189.2	1294	0.21 MWD (1)
7295	0.9	348.7	7098.6	1281.1	189.3	1295	0.68 MWD (1)
7390	1.3	347.4	7193.5	1282.9	188.9	1296.7	0.42 MWD (1)
7483	1.1	340	7286.5	1284.8	188.4	1298.5	0.27 MWD (1)
7576	1.1	332	7379.5	1286.4	187.6	1300	0.17 MWD (1)
7669	0.7	344.5	7472.5	1287.7	187.1	1301.3	0.48 MWD (1)
7762	0.3	330.8	7565.5	1288.5	186.8	1302	0.45 MWD (1)
7857	0.4	1.3	7660.5	1289.1	186.7	1302.5	0.22 MWD (1)
7951	0.3	339.7	7754.5	1289.6	186.6	1303	0.17 MWD (1)
8044	0.2	52	7847.5	1289.9	186.7	1303.4	0.33 MWD (1)
8138	0.2	38.8	7941.5	1290.2	186.9	1303.6	0.05 MWD (1)
8234	0.2	135.7	8037.5	1290.2	187.1	1303.7	0.31 MWD (1)
8265	0.1	357.1	8068.5	1290.2	187.1	1303.7	0.91 MWD (1)
8305	0.1	357.1	8108.5	1290.2	187.1	1303.7	0 MWD (1)