

Well Name: Dowdy 8-4-10

Surface Location: Dowdy 8-4-10 Pad Sec.10-T2N-R65W
North American Datum 1983 US State Plane 1983 Colorado Northern Zone
Ground Elevation: 4861.0
Northing 1299627.01 Easting 3240047.91 Latitude 40.152680 Longitude -104.641220 Slot
Original Well Elev WELL @ 4874.0ft (Original Well Elev)

+N/-S +E/-W
0.0 0.0

Northing
1299627.01

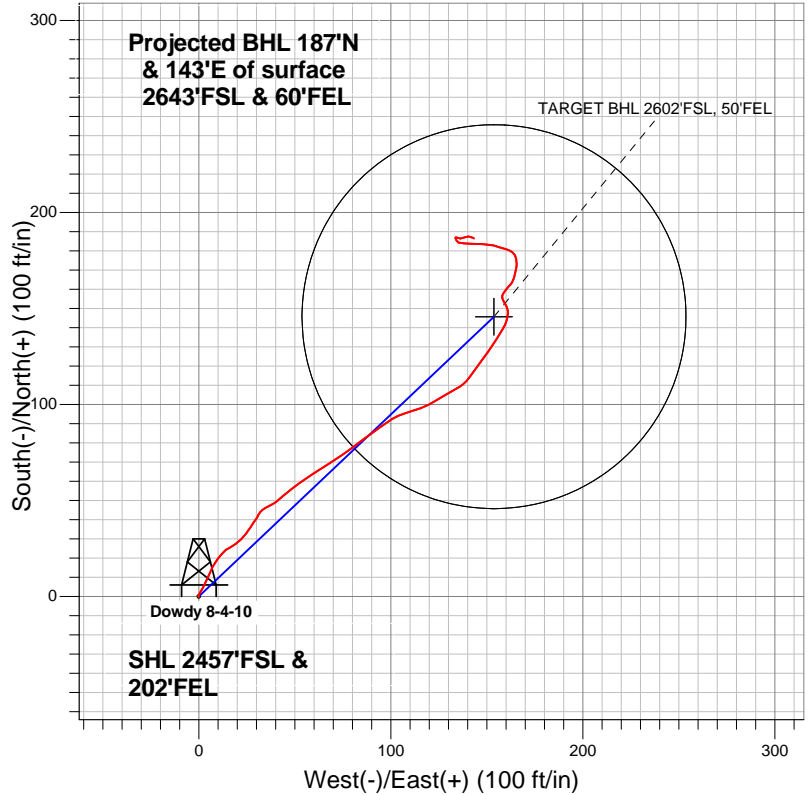
Easting
3240047.91

Latitude
40.152680

Longitude
-104.641220

Slot

EnCana Oil & Gas Weld County CO



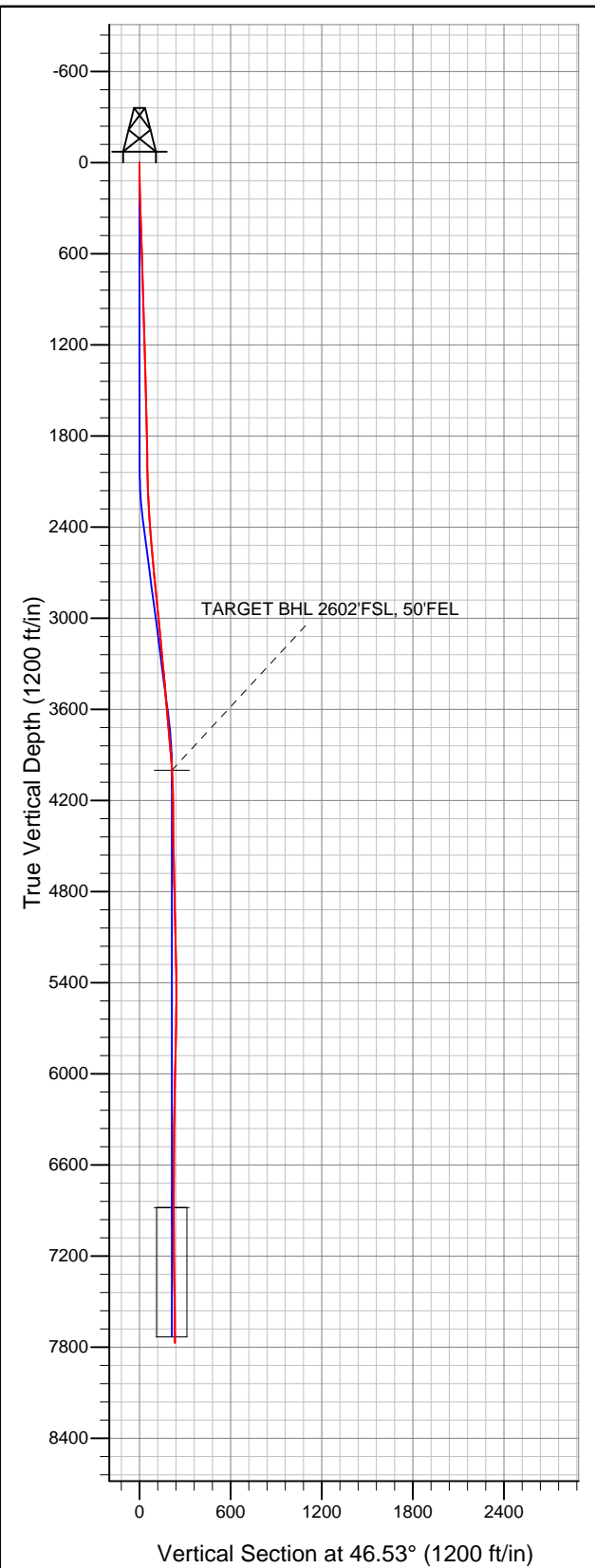
LEGEND

- + Dowdy 8-4-10, Wellbore #1, Plan #1 (10-15-12) R V0
- + Wellbore #1
- o Survey #1

Final Survey Plot

**Projected Final Survey -
7780'MD & 7771'TVD @ 232'VS
0.90 deg Inc 114.30 deg AZ**

Project: SEC.10-T2N-R65W
Site: Dowdy 8-4-10 Pad Sec.10-T2N-R65W
Well: Dowdy 8-4-10
Plan: Wellbore #1





Directional

EnCana Oil & Gas Weld County CO

SEC.10-T2N-R65W

Dowdy 8-4-10 Pad Sec.10-T2N-R65W

Dowdy 8-4-10

Wellbore #1

Survey: Survey #1

Standard Survey Report

22 October, 2012

Company:	EnCana Oil & Gas Weld County CO	Local Co-ordinate Reference:	Well Dowdy 8-4-10
Project:	SEC.10-T2N-R65W	TVD Reference:	WELL @ 4874.0ft (Original Well Elev)
Site:	Dowdy 8-4-10 Pad Sec.10-T2N-R65W	MD Reference:	WELL @ 4874.0ft (Original Well Elev)
Well:	Dowdy 8-4-10	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	Landmark

Project	SEC.10-T2N-R65W, Weld County, Colorado		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		Using Well Reference Point
Map Zone:	Colorado Northern Zone		Using geodetic scale factor

Site		Dowdy 8-4-10 Pad Sec.10-T2N-R65W			
Site Position:		Northing:	1,299,627.04 ft	Latitude:	40.152680
From:	Lat/Long	Easting:	3,240,047.91 ft	Longitude:	-104.641220
Position Uncertainty:	0.0 ft	Slot Radius:	"	Grid Convergence:	0.55 °

Well	Dowdy 8-4-10					
Well Position	+N/-S	0.0 ft	Northing:	1,299,627.01 ft	Latitude:	40.152680
	+E/-W	0.0 ft	Easting:	3,240,047.91 ft	Longitude:	-104.641220
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,861.0 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	10/15/2012	8.60	66.83	52,874

Design	Wellbore #1				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)	
	0.0	0.0	0.0	46.53	

Survey Program	Date	10/22/2012			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
45.0	7,780.0	Survey #1 (Wellbore #1)	MWD	MWD - Standard	

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	
45.0	0.40	274.10	45.0	0.0	-0.2	-0.1	0.89	0.89	0.00	
135.0	1.20	34.30	135.0	0.8	0.1	0.6	1.60	0.89	133.56	
225.0	1.70	25.00	225.0	2.8	1.2	2.8	0.61	0.56	-10.33	
315.0	1.70	29.90	314.9	5.2	2.4	5.3	0.16	0.00	5.44	
406.0	1.80	24.60	405.9	7.6	3.7	7.9	0.21	0.11	-5.82	
498.0	2.00	25.90	497.8	10.4	5.0	10.7	0.22	0.22	1.41	
589.0	2.10	19.00	588.8	13.4	6.2	13.7	0.29	0.11	-7.58	
680.0	2.20	32.80	679.7	16.4	7.7	16.9	0.58	0.11	15.16	
771.0	2.20	39.70	770.6	19.3	9.7	20.3	0.29	0.00	7.58	
862.0	2.00	36.10	861.6	21.9	11.8	23.6	0.26	-0.22	-3.96	
875.0	1.90	35.30	874.6	22.2	12.1	24.1	0.80	-0.77	-6.15	
975.0	1.50	57.70	974.5	24.3	14.1	27.0	0.77	-0.40	22.40	

Company:	EnCana Oil & Gas Weld County CO	Local Co-ordinate Reference:	Well Dowdy 8-4-10
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Site:	Dowdy 8-4-10 Pad Sec.10-T2N-R65W	MD Reference:	WELL @ 4874.0ft (Original Well Elev)
Well:	Dowdy 8-4-10	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	Landmark

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)	
1,060.0	1.50	55.90	1,059.5	25.5	16.0	29.1	0.06	0.00	-2.12	
1,146.0	1.60	63.50	1,145.5	26.7	18.0	31.4	0.27	0.12	8.84	
1,232.0	1.20	55.90	1,231.4	27.7	19.8	33.4	0.51	-0.47	-8.84	
1,317.0	1.40	44.50	1,316.4	29.0	21.3	35.4	0.38	0.24	-13.41	
1,403.0	1.70	39.40	1,402.4	30.7	22.8	37.7	0.38	0.35	-5.93	
1,488.0	1.50	36.40	1,487.4	32.6	24.3	40.0	0.26	-0.24	-3.53	
1,574.0	1.50	40.60	1,573.3	34.3	25.7	42.3	0.13	0.00	4.88	
1,660.0	1.60	31.50	1,659.3	36.2	27.0	44.5	0.31	0.12	-10.58	
1,745.0	1.60	34.80	1,744.3	38.2	28.3	46.8	0.11	0.00	3.88	
1,831.0	1.20	33.10	1,830.2	39.9	29.5	48.9	0.47	-0.47	-1.98	
1,916.0	1.30	34.60	1,915.2	41.5	30.5	50.7	0.12	0.12	1.76	
2,002.0	1.30	20.80	2,001.2	43.2	31.4	52.5	0.36	0.00	-16.05	
2,088.0	1.30	53.30	2,087.2	44.7	32.6	54.4	0.85	0.00	37.79	
2,173.0	1.90	56.10	2,172.1	46.0	34.5	56.7	0.71	0.71	3.29	
2,259.0	2.90	65.40	2,258.1	47.7	37.7	60.2	1.24	1.16	10.81	
2,344.0	3.40	47.70	2,342.9	50.3	41.5	64.7	1.28	0.59	-20.82	
2,430.0	4.40	52.20	2,428.7	54.1	46.0	70.6	1.22	1.16	5.23	
2,516.0	4.90	51.50	2,514.5	58.4	51.5	77.5	0.59	0.58	-0.81	
2,601.0	5.70	58.20	2,599.1	62.9	57.9	85.3	1.19	0.94	7.88	
2,687.0	5.10	57.50	2,684.7	67.2	64.8	93.2	0.70	-0.70	-0.81	
2,772.0	6.00	55.60	2,769.3	71.7	71.6	101.3	1.08	1.06	-2.24	
2,858.0	5.50	53.30	2,854.9	76.7	78.6	109.8	0.64	-0.58	-2.67	
2,944.0	6.50	54.30	2,940.4	82.0	85.9	118.7	1.17	1.16	1.16	
3,029.0	6.20	54.30	3,024.9	87.5	93.5	128.1	0.35	-0.35	0.00	
3,115.0	5.30	56.80	3,110.5	92.4	100.6	136.6	1.09	-1.05	2.91	
3,200.0	5.40	75.40	3,195.1	95.5	107.8	143.9	2.03	0.12	21.88	
3,286.0	5.70	68.90	3,280.7	98.1	115.7	151.4	0.81	0.35	-7.56	
3,372.0	5.80	58.40	3,366.3	101.9	123.3	159.6	1.23	0.12	-12.21	
3,457.0	4.80	60.80	3,450.9	105.9	130.1	167.3	1.20	-1.18	2.82	
3,543.0	4.30	58.20	3,536.6	109.4	136.0	173.9	0.63	-0.58	-3.02	
3,628.0	5.50	36.40	3,621.3	114.3	141.1	181.1	2.58	1.41	-25.65	
3,714.0	5.50	35.30	3,706.9	121.0	145.9	189.2	0.12	0.00	-1.28	
3,800.0	5.30	36.40	3,792.5	127.6	150.7	197.1	0.26	-0.23	1.28	
3,885.0	4.70	32.00	3,877.2	133.7	154.9	204.3	0.84	-0.71	-5.18	
3,971.0	4.70	29.90	3,962.9	139.7	158.5	211.1	0.20	0.00	-2.44	
4,008.3	3.99	23.09	4,000.1	142.2	159.8	213.8	2.36	-1.91	-18.28	
TARGET BHL 2602'FSL, 50'FEL										
4,056.0	3.20	10.20	4,047.7	145.1	160.6	216.4	2.36	-1.65	-27.00	
4,142.0	1.80	355.60	4,133.6	148.8	161.0	219.2	1.78	-1.63	-16.98	
4,228.0	1.40	330.70	4,219.6	151.0	160.3	220.3	0.92	-0.47	-28.95	
4,313.0	1.80	326.40	4,304.6	153.1	159.1	220.8	0.49	0.47	-5.06	
4,399.0	1.40	346.70	4,390.5	155.2	158.1	221.5	0.80	-0.47	23.60	
4,484.0	0.70	18.60	4,475.5	156.7	158.0	222.5	1.04	-0.82	37.53	
4,656.0	1.80	36.60	4,647.5	159.9	160.0	226.1	0.67	0.64	10.47	
4,827.0	0.70	52.80	4,818.4	162.7	162.4	229.8	0.67	-0.64	9.47	
4,998.0	2.00	20.10	4,989.4	166.1	164.3	233.5	0.85	0.76	-19.12	
5,169.0	1.80	2.70	5,160.3	171.6	165.4	238.1	0.36	-0.12	-10.18	
5,340.0	0.80	348.90	5,331.3	175.4	165.3	240.7	0.61	-0.58	-8.07	
5,512.0	1.00	337.90	5,503.2	178.0	164.5	241.9	0.15	0.12	-6.40	
5,683.0	2.70	290.60	5,674.1	180.8	160.2	240.6	1.26	0.99	-27.66	
5,854.0	2.00	282.00	5,845.0	182.8	153.5	237.2	0.46	-0.41	-5.03	
6,025.0	1.80	271.60	6,015.9	183.5	147.9	233.6	0.23	-0.12	-6.08	
6,196.0	1.80	273.20	6,186.8	183.8	142.5	229.9	0.03	0.00	0.94	
6,368.0	1.30	269.30	6,358.8	183.9	137.9	226.6	0.30	-0.29	-2.27	

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Design:	Wellbore #1	Database:	Landmark

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)
6,539.0	0.60	302.50	6,529.7	184.3	135.2	224.9	0.50	-0.41	19.42
6,710.0	0.40	338.70	6,700.7	185.4	134.2	224.9	0.21	-0.12	21.17
6,881.0	0.50	336.80	6,871.7	186.6	133.7	225.4	0.06	0.06	-1.11
6,889.3	0.45	339.96	6,880.0	186.7	133.7	225.5	0.64	-0.56	38.20
TARGET CIRCLE 2602'FSL & 50'FEL									
7,052.0	0.70	109.20	7,042.7	187.0	134.4	226.2	0.64	0.15	79.42
7,224.0	0.60	99.50	7,214.7	186.5	136.3	227.2	0.09	-0.06	-5.64
7,395.0	0.90	58.20	7,385.7	187.0	138.3	229.0	0.35	0.18	-24.15
7,566.0	0.70	99.90	7,556.7	187.6	140.5	231.0	0.35	-0.12	24.39
7,738.0	0.90	114.30	7,728.7	186.8	142.7	232.1	0.16	0.12	8.37
7,780.0	0.90	114.30	7,770.7	186.5	143.3	232.4	0.00	0.00	0.00

Wellbore 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									
TARGET BHL 2602'F:	0.00	0.00	4,000.0	145.7	153.7	1,299,774.23	3,240,200.23	40.153080	-104.640670
- survey misses target center by 7.0ft at 4008.2ft MD (4000.0 TVD, 142.2 N, 159.8 E)									
- Point									
TARGET CIRCLE 2602'F:	0.00	0.00	6,880.0	145.7	153.7	1,299,774.23	3,240,200.23	40.153080	-104.640670
- survey misses target center by 45.6ft at 6888.9ft MD (6879.6 TVD, 186.7 N, 133.7 E)									
- Circle (radius 100.0)									

Checked By: _____	Approved By: _____	Date: _____
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