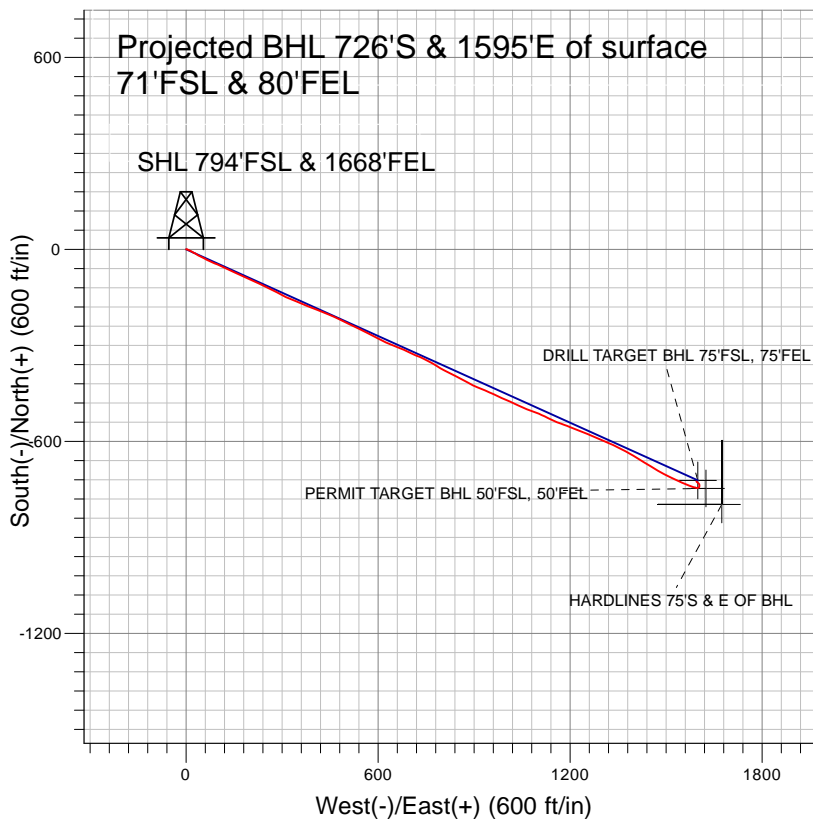


EnCana Oil & Gas Weld County CO



LEGEND

- Ray Nelson 8-8-32, Wellbore #1, Plan #2 (02-26-10) V0
- Wellbore #1

Final Survey Plot

Projected Final Survey -
8583'MD & 8286'TVD @ 1752' VS
1.0 deg Inc 305.4 deg AZ

Project: SEC.32-T2N-R68W
Site: Ray Nelson/Brown Pad Sec.32-T2N-R68W
Well: Ray Nelson 8-8-32
Plan: Wellbore #1



EnCana Oil & Gas Weld County CO

SEC.32-T2N-R68W

Ray Nelson/Brown Pad Sec.32-T2N-R68W

Ray Nelson 8-8-32

Wellbore #1

Design: Wellbore #1

Standard Survey Report

27 October, 2010

Company:	EnCana Oil & Gas Weld County CO	Local Co-ordinate Reference:	Well Ray Nelson 8-8-32
Project:	SEC.32-T2N-R68W	TVD Reference:	WELL @ 4992.0ft (Original Well Elev)
Site:	Ray Nelson/Brown Pad Sec.32-T2N-R68W	MD Reference:	WELL @ 4992.0ft (Original Well Elev)
Well:	Ray Nelson 8-8-32	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM den0-adp01 Server Data

Project	SEC.32-T2N-R68W, Weld County, Colorado		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Northern Zone		Using geodetic scale factor

Site	Ray Nelson/Brown Pad Sec.32-T2N-R68W		
Site Position:		Northing:	1,275,978.53ft
From:	Lat/Long	Easting:	3,133,246.49ft
Position Uncertainty:	0.0 ft	Slot Radius:	"
		Latitude:	40° 5' 23.892 N
		Longitude:	105° 1' 25.500 W
		Grid Convergence:	0.31 °

Well	Ray Nelson 8-8-32		
Well Position	+N/-S	0.0 ft	Northing:
	+E/-W	0.0 ft	Easting:
Position Uncertainty	0.0 ft	Wellhead Elevation:	ft
		Latitude:	40° 5' 23.595 N
		Longitude:	105° 1' 25.153 W
		Ground Level:	4,979.0ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	12/31/2009	9.13	66.81	53,111

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	114.47
	0.0	0.0	0.0	114.47
	0.0	0.0	0.0	114.30

Survey Program	Date	10/27/2010		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
70.0	8,583.0	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
70.0	0.50	69.40	70.0	0.1	0.3	0.2	0.71	0.71	0.00
132.0	0.60	77.90	132.0	0.3	0.9	0.7	0.21	0.16	13.71
194.0	1.40	91.30	194.0	0.3	1.9	1.6	1.34	1.29	21.61
256.0	2.50	119.70	256.0	-0.4	3.9	3.7	2.31	1.77	45.81
332.0	4.00	116.10	331.8	-2.4	7.7	8.0	1.99	1.97	-4.74
420.0	5.90	114.70	419.5	-5.6	14.5	15.6	2.16	2.16	-1.59
507.0	7.20	120.80	505.9	-10.3	23.3	25.5	1.69	1.49	7.01
594.0	9.00	118.70	592.1	-16.3	33.9	37.7	2.10	2.07	-2.41
682.0	11.30	119.60	678.7	-23.9	47.5	53.1	2.62	2.61	1.02
769.0	12.50	116.80	763.8	-32.3	63.3	71.0	1.53	1.38	-3.22

Company:	EnCana Oil & Gas Weld County CO	Local Co-ordinate Reference:	Well Ray Nelson 8-8-32
Project:	SEC.32-T2N-R68W	TVD Reference:	WELL @ 4992.0ft (Original Well Elev)
Site:	Ray Nelson/Brown Pad Sec.32-T2N-R68W	MD Reference:	WELL @ 4992.0ft (Original Well Elev)
Well:	Ray Nelson 8-8-32	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM den0-adp01 Server Data

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)
780.0	12.70	115.10	774.5	-33.4	65.5	73.4	3.83	1.82	-15.45
888.0	13.80	112.00	879.7	-43.2	88.2	98.1	1.21	1.02	-2.87
975.0	15.30	115.10	963.9	-52.0	108.2	120.0	1.94	1.72	3.56
1,062.0	17.90	115.80	1,047.2	-62.7	130.6	144.8	3.00	2.99	0.80
1,150.0	20.10	114.30	1,130.4	-74.8	156.6	173.5	2.56	2.50	-1.70
1,237.0	21.80	113.50	1,211.7	-87.4	185.0	204.6	1.98	1.95	-0.92
1,324.0	23.40	114.70	1,292.0	-101.1	215.5	238.0	1.91	1.84	1.38
1,411.0	24.30	116.90	1,371.6	-116.4	247.2	273.2	1.45	1.03	2.53
1,499.0	24.50	117.90	1,451.7	-133.1	279.5	309.5	0.52	0.23	1.14
1,586.0	24.10	114.10	1,531.0	-148.8	311.6	345.2	1.85	-0.46	-4.37
1,674.0	24.00	112.10	1,611.4	-162.9	344.6	381.1	0.93	-0.11	-2.27
1,761.0	24.40	112.70	1,690.7	-176.5	377.6	416.7	0.54	0.46	0.69
1,848.0	24.90	111.10	1,769.8	-190.0	411.2	453.0	0.96	0.57	-1.84
1,936.0	24.70	112.90	1,849.7	-203.8	445.5	489.9	0.89	-0.23	2.05
2,023.0	23.60	115.20	1,929.1	-218.3	478.0	525.4	1.66	-1.26	2.64
2,110.0	22.30	115.50	2,009.2	-232.8	508.6	559.4	1.50	-1.49	0.34
2,198.0	22.90	115.60	2,090.4	-247.4	539.1	593.2	0.68	0.68	0.11
2,285.0	22.50	117.70	2,170.7	-262.5	569.1	626.7	1.04	-0.46	2.41
2,372.0	21.20	118.60	2,251.4	-277.7	597.7	659.0	1.54	-1.49	1.03
2,459.0	20.00	113.70	2,332.9	-291.2	625.1	689.6	2.41	-1.38	-5.63
2,546.0	20.10	111.10	2,414.6	-302.6	652.7	719.4	1.03	0.11	-2.99
2,633.0	19.20	113.50	2,496.5	-313.7	679.8	748.6	1.39	-1.03	2.76
2,721.0	18.30	115.70	2,579.9	-325.5	705.5	776.9	1.30	-1.02	2.50
2,808.0	19.70	112.70	2,662.1	-337.0	731.3	805.2	1.96	1.61	-3.45
2,895.0	19.00	118.60	2,744.2	-349.5	757.3	834.0	2.39	-0.80	6.78
2,983.0	19.40	122.30	2,827.3	-364.1	782.2	862.8	1.46	0.45	4.20
3,070.0	18.20	118.20	2,909.7	-378.3	806.4	890.6	2.05	-1.38	-4.71
3,157.0	18.50	115.10	2,992.3	-390.6	830.9	918.0	1.17	0.34	-3.56
3,244.0	19.80	119.10	3,074.5	-403.6	856.2	946.5	2.12	1.49	4.60
3,332.0	19.90	117.90	3,157.2	-417.8	882.5	976.3	0.48	0.11	-1.36
3,419.0	19.50	113.20	3,239.1	-430.5	908.9	1,005.6	1.88	-0.46	-5.40
3,506.0	18.80	112.00	3,321.3	-441.5	935.3	1,034.1	0.92	-0.80	-1.38
3,594.0	18.60	116.10	3,404.7	-453.0	961.0	1,062.3	1.51	-0.23	4.66
3,681.0	18.50	113.10	3,487.2	-464.5	986.2	1,090.0	1.10	-0.11	-3.45
3,768.0	19.20	113.70	3,569.5	-475.6	1,012.0	1,118.1	0.83	0.80	0.69
3,855.0	18.80	115.90	3,651.8	-487.5	1,037.7	1,146.4	0.94	-0.46	2.53
3,943.0	20.30	112.10	3,734.7	-499.4	1,064.6	1,175.8	2.23	1.70	-4.32
4,030.0	20.50	110.10	3,816.2	-510.4	1,092.9	1,206.1	0.83	0.23	-2.30
4,117.0	19.10	116.50	3,898.1	-521.9	1,119.9	1,235.5	2.96	-1.61	7.36
4,205.0	17.90	115.00	3,981.5	-534.1	1,145.1	1,263.4	1.47	-1.36	-1.70
4,292.0	20.00	109.80	4,063.8	-544.8	1,171.2	1,291.6	3.10	2.41	-5.98
4,379.0	22.20	111.50	4,145.0	-555.8	1,200.5	1,322.9	2.62	2.53	1.95
4,467.0	21.50	111.10	4,226.7	-567.7	1,231.0	1,355.6	0.81	-0.80	-0.45
4,553.0	19.20	113.60	4,307.3	-579.1	1,258.7	1,385.5	2.86	-2.67	2.91
4,639.0	18.80	111.50	4,388.6	-589.8	1,284.5	1,413.4	0.92	-0.47	-2.44
4,727.0	19.10	114.00	4,471.9	-600.9	1,310.9	1,442.0	0.98	0.34	2.84
4,814.0	19.40	116.40	4,554.0	-613.1	1,336.8	1,470.7	0.97	0.34	2.76
4,901.0	20.30	116.20	4,635.8	-626.2	1,363.3	1,500.2	1.04	1.03	-0.23
4,988.0	18.40	120.40	4,717.9	-639.8	1,388.7	1,528.9	2.71	-2.18	4.83
5,076.0	15.60	122.30	4,802.1	-653.1	1,410.7	1,554.5	3.24	-3.18	2.16
5,163.0	16.90	121.40	4,885.6	-666.0	1,431.4	1,578.6	1.52	1.49	-1.03
5,250.0	16.30	121.80	4,968.9	-679.0	1,452.5	1,603.3	0.70	-0.69	0.46
5,337.0	16.40	118.70	5,052.4	-691.3	1,473.7	1,627.6	1.01	0.11	-3.56
5,424.0	14.80	119.40	5,136.2	-702.7	1,494.1	1,650.9	1.85	-1.84	0.80

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Well:	Ray Nelson 8-8-32	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM den0-adp01 Server Data

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)	
5,512.0	13.10	114.10	5,221.6	-712.3	1,513.0	1,672.1	2.41	-1.93	-6.02	
5,599.0	11.60	113.40	5,306.6	-719.8	1,530.1	1,690.7	1.73	-1.72	-0.80	
5,686.0	9.10	117.60	5,392.2	-726.4	1,544.2	1,706.3	3.00	-2.87	4.83	
5,773.0	8.40	113.60	5,478.2	-732.2	1,556.1	1,719.5	1.07	-0.80	-4.60	
5,861.0	6.50	110.20	5,565.4	-736.5	1,566.7	1,730.9	2.22	-2.16	-3.86	
5,948.0	5.10	110.20	5,652.0	-739.5	1,574.9	1,739.7	1.61	-1.61	0.00	
6,035.0	4.00	109.50	5,738.7	-741.9	1,581.4	1,746.6	1.27	-1.26	-0.80	
6,123.0	3.00	105.00	5,826.5	-743.5	1,586.5	1,751.9	1.18	-1.14	-5.11	
6,210.0	2.60	102.90	5,913.4	-744.5	1,590.7	1,756.1	0.47	-0.46	-2.41	
6,298.0	2.10	100.80	6,001.4	-745.3	1,594.2	1,759.6	0.58	-0.57	-2.39	
6,385.0	1.90	88.70	6,088.3	-745.5	1,597.2	1,762.5	0.54	-0.23	-13.91	
6,472.0	1.00	84.40	6,175.3	-745.4	1,599.4	1,764.4	1.04	-1.03	-4.94	
6,496.8	1.00	81.56	6,200.0	-745.4	1,599.8	1,764.8	0.20	-0.01	-11.46	
DRILL TARGET BHL 75'FSL, 75'FEL										
6,497.1	1.00	81.52	6,200.4	-745.4	1,599.8	1,764.8	0.20	-0.01	-11.49	
PERMIT TARGET BHL 50'FSL, 50'FEL										
6,560.0	1.00	74.30	6,263.3	-745.1	1,600.9	1,765.7	0.20	0.01	-11.48	
6,647.0	0.80	55.00	6,350.3	-744.6	1,602.1	1,766.6	0.41	-0.23	-22.18	
6,734.0	0.60	32.80	6,437.3	-743.8	1,602.9	1,767.0	0.38	-0.23	-25.52	
6,909.0	0.60	20.10	6,612.2	-742.2	1,603.7	1,767.0	0.08	0.00	-7.26	
7,084.0	0.90	0.00	6,787.2	-740.0	1,604.0	1,766.4	0.23	0.17	-11.49	
7,258.0	0.70	2.30	6,961.2	-737.5	1,604.0	1,765.4	0.12	-0.11	1.32	
7,433.0	0.70	344.10	7,136.2	-735.5	1,603.8	1,764.3	0.13	0.00	-10.40	
7,608.0	0.60	328.80	7,311.2	-733.6	1,603.0	1,762.9	0.11	-0.06	-8.74	
7,782.0	0.40	306.10	7,485.2	-732.5	1,602.1	1,761.6	0.16	-0.11	-13.05	
7,957.0	0.70	315.00	7,660.2	-731.4	1,600.8	1,760.0	0.18	0.17	5.09	
8,131.0	0.70	308.80	7,834.2	-730.0	1,599.2	1,757.9	0.04	0.00	-3.56	
8,306.0	0.80	324.30	8,009.1	-728.3	1,597.7	1,755.8	0.13	0.06	8.86	
8,481.0	0.80	308.10	8,184.1	-726.6	1,596.0	1,753.6	0.13	0.00	-9.26	
8,531.0	1.00	305.40	8,234.1	-726.1	1,595.4	1,752.8	0.41	0.40	-5.40	
8,557.0	1.00	305.40	8,260.1	-725.8	1,595.0	1,752.4	0.00	0.00	0.00	
HARDLINES 75'S & E OF BHL										
8,583.0	1.00	305.40	8,286.1	-725.6	1,594.6	1,751.9	0.00	0.00	0.00	
Projection to TD										

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Well:	Ray Nelson 8-8-32	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM den0-adp01 Server Data

Wellbore 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
PERMIT TARGET BH - actual wellpath misses target center by 24.6ft at 6497.1ft MD (6200.4 TVD, -745.4 N, 1599.8 E) - Point	0.00	0.00	6,200.0	-747.1	1,624.4	1,275,210.34	3,134,901.97	40° 5' 16.212 N	105° 1' 4.253 W
DRILL TARGET BHL - actual wellpath misses target center by 23.3ft at 6496.8ft MD (6200.1 TVD, -745.4 N, 1599.8 E) - Point	0.00	0.00	6,200.0	-722.1	1,599.4	1,275,235.20	3,134,876.84	40° 5' 16.459 N	105° 1' 4.574 W
HARDLINES 75'S & E - actual wellpath misses target center by 106.7ft at 8557.0ft MD (8260.1 TVD, -725.8 N, 1595.0 E) - Polygon	0.00	0.00	8,262.0	-797.1	1,674.4	1,275,160.61	3,134,952.24	40° 5' 15.718 N	105° 1' 3.610 W
Point 1			8,262.0	0.0	0.0	1,275,160.61	3,134,952.24		
Point 2			8,262.0	0.0	-200.0	1,275,159.54	3,134,752.25		
Point 3			8,262.0	0.0	0.0	1,275,160.61	3,134,952.24		
Point 4			8,262.0	200.0	0.0	1,275,360.60	3,134,951.16		

Design Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
8,583.0	8,286.1	-725.6	1,594.6	Projection to TD

Checked By: _____ Approved By: _____ Date: _____