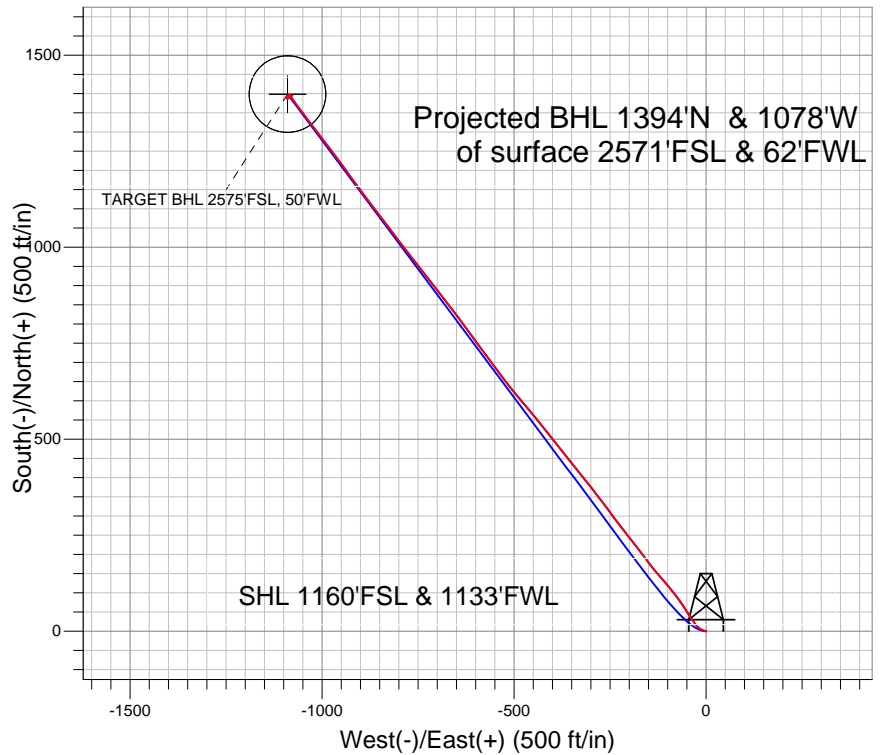
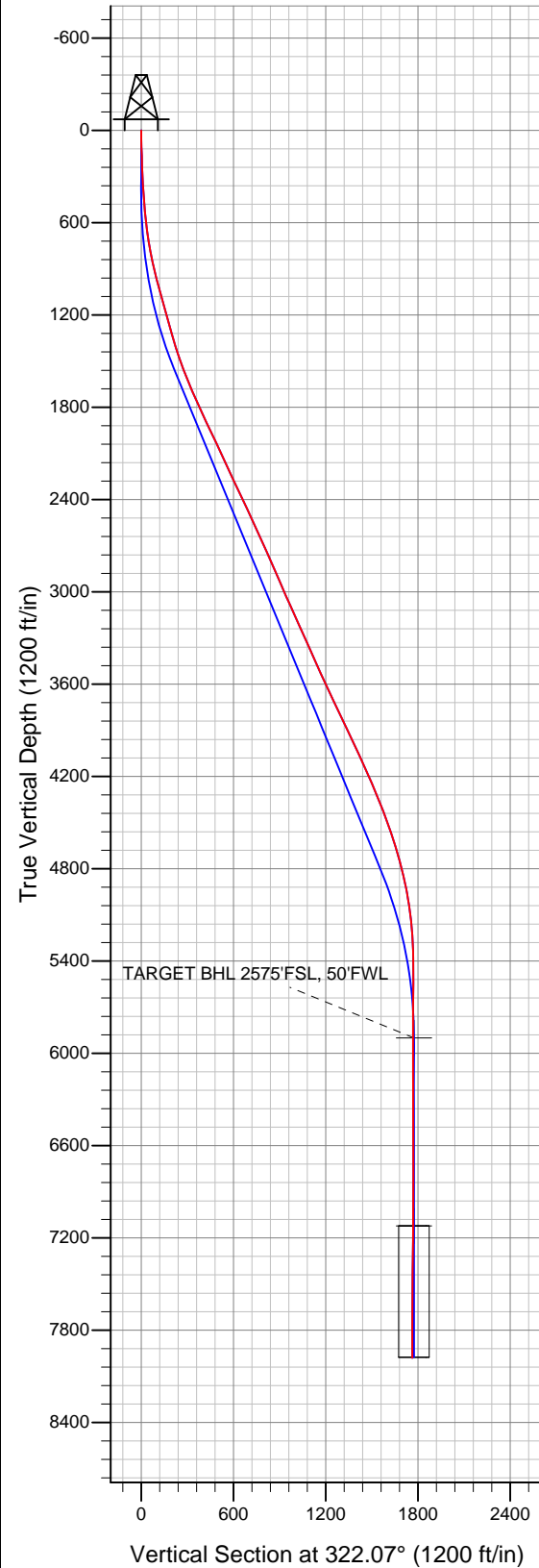


Well Name: **North Rinn 0-4-9**
 Surface Location: North Rinn 2-4-9 Pad Sec.9-T2N-R68W
 North American Datum 1983 , US State Plane 1983 , Colorado Northern Zone
 Ground Elevation: 4866.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1297559.04	3135990.33	40.149170	-105.013520	

 Original Well Elev WELL @ 4879.0ft (Original Well Elev)

EnCana Oil & Gas Weld County CO



LEGEND

- North Rinn 0-4-9, Wellbore #1, Plan #1(7-18-13)R V0
- Wellbore #1
- Survey #1

Final Survey Plot

Projected Final Survey -
 8319'MD & 7979'TVD @
 1763' VS 1.07 deg Inc
 51.93 deg AZ

Project: SEC.9-T2N-R68W
 Site: North Rinn 2-4-9 Pad Sec.9-T2N-R68W
 Well: North Rinn 0-4-9
 Plan: Wellbore #1



EnCana Oil & Gas Weld County CO

SEC.9-T2N-R68W

North Rinn 2-4-9 Pad Sec.9-T2N-R68W

North Rinn 0-4-9

Wellbore #1

Survey: Survey #1

Standard Survey Report

24 July, 2013



Company:	EnCana Oil & Gas Weld County CO	Local Co-ordinate Reference:	Well North Rinn 0-4-9
Project:	SEC.9-T2N-R68W	TVD Reference:	WELL @ 4879.0ft (Original Well Elev)
Site:	North Rinn 2-4-9 Pad Sec.9-T2N-R68W	MD Reference:	WELL @ 4879.0ft (Original Well Elev)
Well:	North Rinn 0-4-9	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	Landmark

Project	SEC.9-T2N-R68W, 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	North Rinn 2-4-9 Pad Sec.9-T2N-R68W		
Site Position:		Northing:	1,297,580.91 ft
From:	Lat/Long	Easting:	3,135,990.21 ft
Position Uncertainty:	0.0 ft	Slot Radius:	"
		Latitude:	40.149230
		Longitude:	-105.013520
		Grid Convergence:	0.31 °

Well	North Rinn 0-4-9		
Well Position	+N/-S	0.0 ft	Northing:
	+E/-W	0.0 ft	Easting:
Position Uncertainty	0.0 ft	Wellhead Elevation:	ft
		Latitude:	40.149170
		Longitude:	-105.013520
		Ground Level:	4,866.0 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	7/18/2013	8.69	66.74	52,752

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	322.07	

Survey Program	Date 7/24/2013				
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
107.0	8,319.0	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	
107.0	1.70	286.50	107.0	0.5	-1.5	1.3	1.59	1.59	0.00	
167.0	2.40	285.60	166.9	1.0	-3.6	3.0	1.17	1.17	-1.50	
227.0	2.50	286.60	226.9	1.8	-6.0	5.1	0.18	0.17	1.67	
287.0	2.80	291.60	286.8	2.7	-8.7	7.4	0.63	0.50	8.33	
348.0	3.30	295.40	347.7	4.0	-11.6	10.3	0.88	0.82	6.23	
408.0	4.00	301.70	407.6	5.8	-15.0	13.8	1.34	1.17	10.50	
468.0	4.70	309.00	467.4	8.5	-18.7	18.1	1.49	1.17	12.17	
529.0	5.60	317.60	528.2	12.2	-22.6	23.5	1.94	1.48	14.10	
589.0	6.40	320.40	587.9	17.0	-26.7	29.8	1.42	1.33	4.67	
650.0	7.40	323.90	648.4	22.8	-31.2	37.1	1.78	1.64	5.74	
711.0	8.60	326.20	708.8	29.7	-36.1	45.6	2.04	1.97	3.77	
752.0	9.80	326.90	749.3	35.2	-39.7	52.1	2.94	2.93	1.71	

Company:	EnCana Oil & Gas Weld County CO	Local Co-ordinate Reference:	Well North Rinn 0-4-9
Project:	SEC.9-T2N-R68W	TVD Reference:	WELL @ 4879.0ft (Original Well Elev)
Site:	North Rinn 2-4-9 Pad Sec.9-T2N-R68W	MD Reference:	WELL @ 4879.0ft (Original Well Elev)
Well:	North Rinn 0-4-9	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)
827.0	11.70	326.40	823.0	46.9	-47.4	66.1	2.54	2.53	-0.67
956.0	14.10	327.10	948.7	71.0	-63.1	94.8	1.86	1.86	0.54
1,085.0	15.70	321.80	1,073.4	97.9	-82.5	127.9	1.63	1.24	-4.11
1,213.0	15.80	319.00	1,196.6	124.6	-104.6	162.6	0.60	0.08	-2.19
1,342.0	15.90	319.10	1,320.7	151.3	-127.7	197.8	0.08	0.08	0.08
1,470.0	18.00	323.40	1,443.1	180.4	-151.0	235.1	1.91	1.64	3.36
1,599.0	20.90	322.00	1,564.7	214.5	-177.0	278.0	2.28	2.25	-1.09
1,728.0	23.20	322.00	1,684.3	252.7	-206.8	326.5	1.78	1.78	0.00
1,856.0	24.90	322.50	1,801.2	293.9	-238.8	378.6	1.34	1.33	0.39
1,985.0	25.50	324.10	1,917.9	338.0	-271.6	433.5	0.70	0.47	1.24
2,113.0	24.50	321.40	2,033.9	381.0	-304.3	487.6	1.19	-0.78	-2.11
2,242.0	25.10	321.30	2,151.0	423.3	-338.1	541.7	0.47	0.47	-0.08
2,371.0	24.80	320.60	2,268.0	465.6	-372.4	596.1	0.33	-0.23	-0.54
2,499.0	25.50	322.10	2,383.8	508.0	-406.3	650.5	0.74	0.55	1.17
2,628.0	25.90	321.10	2,500.1	551.9	-441.1	706.4	0.46	0.31	-0.78
2,756.0	24.00	319.30	2,616.1	593.4	-475.6	760.4	1.60	-1.48	-1.41
2,885.0	24.40	321.40	2,733.8	634.1	-509.4	813.2	0.74	0.31	1.63
3,014.0	23.30	323.90	2,851.8	675.5	-541.0	865.4	1.16	-0.85	1.94
3,142.0	23.20	322.80	2,969.4	716.1	-571.2	915.9	0.35	-0.08	-0.86
3,271.0	24.80	324.60	3,087.2	758.4	-602.2	968.3	1.36	1.24	1.40
3,399.0	24.30	323.50	3,203.7	801.4	-633.4	1,021.5	0.53	-0.39	-0.86
3,528.0	23.40	321.30	3,321.7	842.7	-665.2	1,073.6	0.98	-0.70	-1.71
3,657.0	24.90	323.00	3,439.4	884.4	-697.6	1,126.4	1.28	1.16	1.32
3,785.0	24.20	321.80	3,555.8	926.6	-730.0	1,179.6	0.67	-0.55	-0.94
3,914.0	25.10	321.60	3,673.0	968.8	-763.4	1,233.4	0.70	0.70	-0.16
4,042.0	26.10	322.80	3,788.5	1,012.5	-797.3	1,288.7	0.88	0.78	0.94
4,171.0	25.40	323.40	3,904.7	1,057.3	-830.9	1,344.7	0.58	-0.54	0.47
4,300.0	24.80	322.30	4,021.5	1,100.9	-864.0	1,399.4	0.59	-0.47	-0.85
4,428.0	23.70	323.00	4,138.2	1,142.7	-895.9	1,452.0	0.89	-0.86	0.55
4,557.0	23.40	324.10	4,256.4	1,184.2	-926.5	1,503.5	0.41	-0.23	0.85
4,685.0	22.50	323.70	4,374.3	1,224.5	-955.9	1,553.4	0.71	-0.70	-0.31
4,814.0	19.50	322.80	4,494.7	1,261.5	-983.5	1,599.6	2.34	-2.33	-0.70
4,943.0	17.10	321.60	4,617.2	1,293.6	-1,008.3	1,640.1	1.88	-1.86	-0.93
5,071.0	16.40	323.00	4,739.8	1,322.7	-1,030.9	1,677.0	0.63	-0.55	1.09
5,200.0	12.70	324.40	4,864.6	1,348.8	-1,050.1	1,709.4	2.88	-2.87	1.09
5,328.0	9.60	323.90	4,990.2	1,368.9	-1,064.6	1,734.1	2.42	-2.42	-0.39
5,457.0	6.40	323.90	5,117.9	1,383.4	-1,075.2	1,752.1	2.48	-2.48	0.00
5,586.0	3.70	321.10	5,246.4	1,392.4	-1,082.0	1,763.4	2.10	-2.09	-2.17
5,714.0	1.10	283.60	5,374.3	1,396.0	-1,085.8	1,768.5	2.27	-2.03	-29.30
5,886.0	0.40	126.70	5,546.3	1,396.0	-1,086.9	1,769.2	0.86	-0.41	-91.22
6,057.0	1.00	87.30	5,717.2	1,395.7	-1,085.0	1,767.8	0.43	0.35	-23.04
6,229.0	0.30	30.70	5,889.2	1,396.2	-1,083.2	1,767.1	0.51	-0.41	-32.91
6,239.8	0.29	26.97	5,900.0	1,396.2	-1,083.2	1,767.1	0.22	-0.14	-34.58
TARGET BHL 2575'FSL, 50'FWL									
6,400.0	0.30	311.90	6,060.2	1,396.8	-1,083.3	1,767.7	0.22	0.01	-46.86
6,571.0	0.30	247.40	6,231.2	1,397.0	-1,084.1	1,768.3	0.19	0.00	-37.72
6,743.0	0.50	238.10	6,403.2	1,396.4	-1,085.1	1,768.5	0.12	0.12	-5.41
6,914.0	0.70	252.40	6,574.2	1,395.7	-1,086.8	1,768.9	0.15	0.12	8.36
7,086.0	0.90	233.70	6,746.2	1,394.6	-1,088.9	1,769.3	0.19	0.12	-10.87
7,275.0	0.80	225.10	6,935.2	1,392.8	-1,091.0	1,769.2	0.09	-0.05	-4.55
7,429.0	1.00	204.50	7,089.2	1,390.8	-1,092.3	1,768.4	0.24	0.13	-13.38
7,460.7	0.88	202.52	7,120.9	1,390.3	-1,092.5	1,768.2	0.38	-0.37	-6.23
TARGET CIRCLE 2575'FSL, 50'FWL									
7,600.0	0.40	180.30	7,260.1	1,388.8	-1,092.9	1,767.3	0.38	-0.35	-15.96

Company:	EnCana Oil & Gas Weld County CO	Local Co-ordinate Reference:	Well North Rinn 0-4-9
Project:	SEC.9-T2N-R68W	TVD Reference:	WELL @ 4879.0ft (Original Well Elev)
Site:	North Rinn 2-4-9 Pad Sec.9-T2N-R68W	MD Reference:	WELL @ 4879.0ft (Original Well Elev)
Well:	North Rinn 0-4-9	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)	
7,772.0	1.30	96.10	7,432.1	1,388.0	-1,091.0	1,765.4	0.77	0.52	-48.95	
7,943.0	1.70	68.80	7,603.1	1,388.7	-1,086.7	1,763.4	0.47	0.23	-15.96	
8,115.0	1.80	47.00	7,775.0	1,391.5	-1,082.4	1,762.9	0.39	0.06	-12.67	
8,275.0	1.20	61.60	7,934.9	1,394.0	-1,079.0	1,762.8	0.44	-0.38	9.13	
8,319.0	1.07	51.93	7,978.9	1,394.5	-1,078.3	1,762.7	0.53	-0.30	-21.98	

Checked By: _____	Approved By: _____	Date: _____
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