

Well Name: **Boyd 3-19**

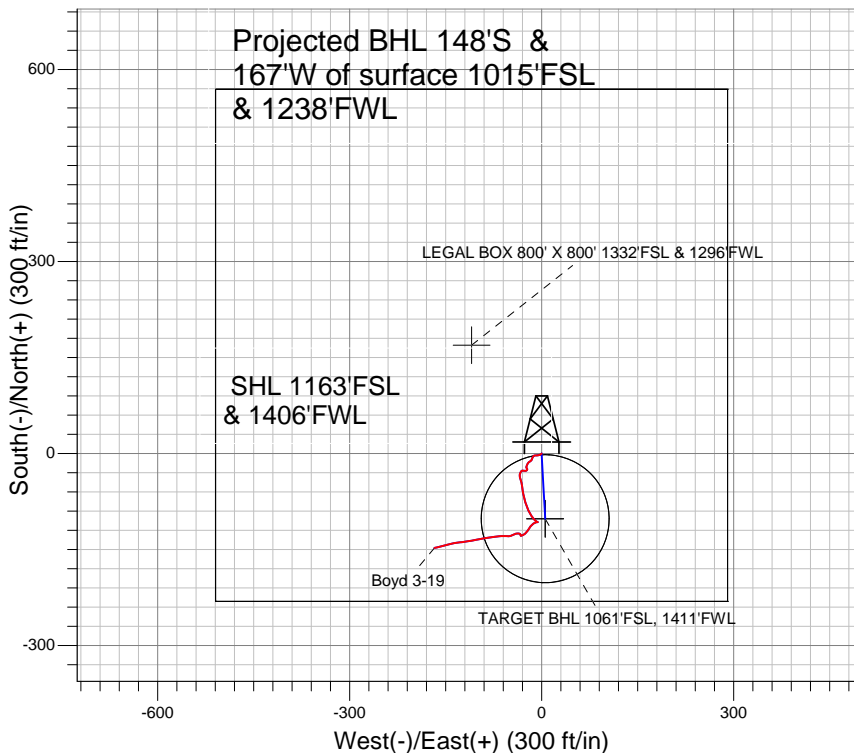
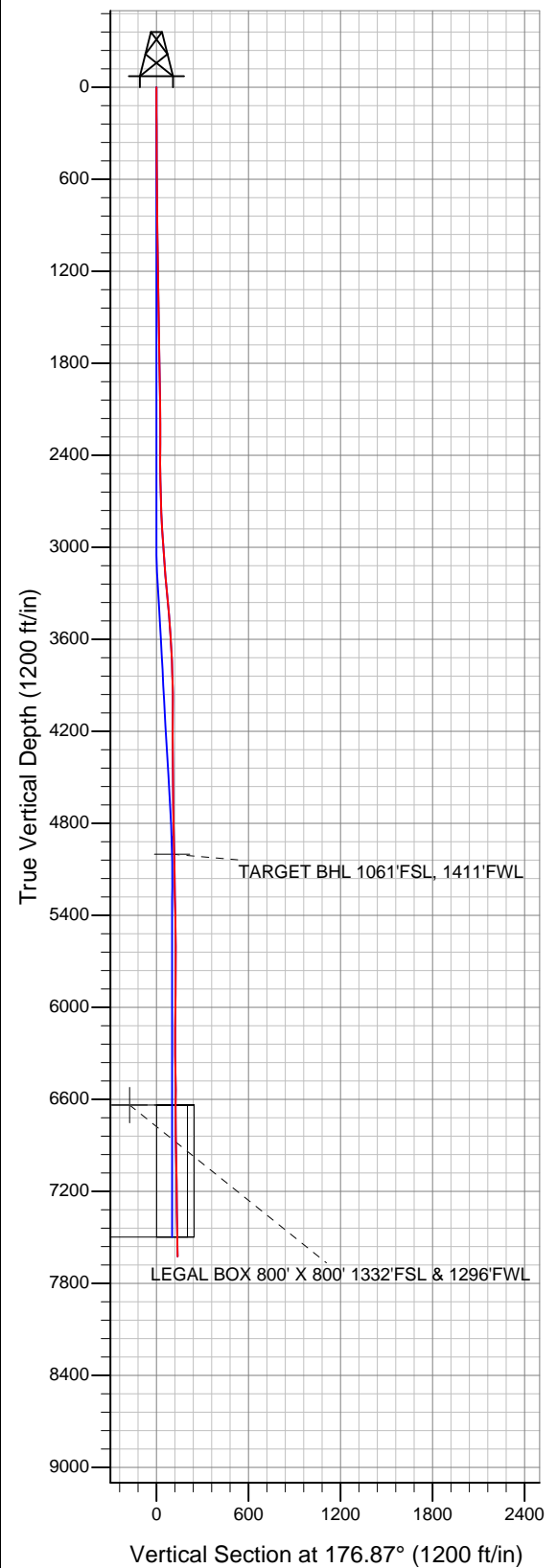
Surface Location: Boyd 3-19 Pad Sec.19-T3N-R68W
North American Datum 1983 , US State Plane 1983 , Colorado Northern Zone

Ground Elevation: 5019.0

+N/-S+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.01318523	803125647.05	40.206870	-105.050140	

Original Well Elev WELL @ 5032.0ft (Original Well Elev)

EnCana Oil & Gas Weld County CO



LEGEND

- ✕ Boyd 3-19, Wellbore #1, Plan #1 (1-08-13) V0
- Wellbore #1
- Survey #1

Final Survey Plot

Projected Final Survey -
7637'MD & 7625'TVD @
138' VS 4.82 deg Inc
257.88 deg AZ

Project: SEC.19-T3N-R68W
Site: Boyd 3-19 Pad Sec.19-T3N-R68W
Well: Boyd 3-19
Plan: Wellbore #1



EnCana Oil & Gas Weld County CO

SEC.19-T3N-R68W

Boyd 3-19 Pad Sec.19-T3N-R68W

Boyd 3-19

Wellbore #1

Survey: Survey #1

Standard Survey Report

06 May, 2013



Company:	EnCana Oil & Gas Weld County CO	Local Co-ordinate Reference:	Well Boyd 3-19
Project:	SEC.19-T3N-R68W	TVD Reference:	WELL @ 5032.0ft (Original Well Elev)
Site:	Boyd 3-19 Pad Sec.19-T3N-R68W	MD Reference:	WELL @ 5032.0ft (Original Well Elev)
Well:	Boyd 3-19	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	Landmark

Project	SEC.19-T3N-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	Boyd 3-19 Pad Sec.19-T3N-R68W				
Site Position:		Northing:	1,318,523.80ft	Latitude:	40.206870
From:	Lat/Long	Easting:	3,125,647.05ft	Longitude:	-105.050140
Position Uncertainty:	0.0 ft	Slot Radius:	"	Grid Convergence:	0.29 °

Well	Boyd 3-19					
Well Position	+N/-S	0.0 ft	Northing:	1,318,523.80 ft	Latitude:	40.206870
	+E/-W	0.0 ft	Easting:	3,125,647.05 ft	Longitude:	-105.050140
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	5,019.0 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	4/18/2013	8.75	66.78	52,804

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	176.87	

Survey Program	Date	5/6/2013			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
75.0	7,637.0	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	
75.0	0.60	225.90	75.0	-0.3	-0.3	0.3	0.80	0.80	0.00	
166.0	0.70	237.00	166.0	-0.9	-1.1	0.8	0.18	0.11	12.20	
256.0	0.90	222.20	256.0	-1.7	-2.0	1.6	0.32	0.22	-16.44	
346.0	1.20	253.30	346.0	-2.5	-3.4	2.3	0.70	0.33	34.56	
437.0	1.10	268.10	437.0	-2.8	-5.2	2.5	0.34	-0.11	16.26	
527.0	1.50	258.80	526.9	-3.1	-7.2	2.7	0.50	0.44	-10.33	
584.0	1.50	273.70	583.9	-3.2	-8.7	2.7	0.68	0.00	26.14	
654.0	1.10	267.90	653.9	-3.1	-10.3	2.6	0.60	-0.57	-8.29	
783.0	1.50	225.50	782.9	-4.4	-12.7	3.7	0.78	0.31	-32.87	
912.0	1.40	193.90	911.8	-7.1	-14.3	6.3	0.62	-0.08	-24.50	
1,040.0	1.50	212.30	1,039.8	-10.0	-15.6	9.2	0.37	0.08	14.38	
1,169.0	0.90	242.80	1,168.8	-11.9	-17.4	10.9	0.66	-0.47	23.64	

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Site:	Boyd 3-19 Pad Sec.19-T3N-R68W	MD Reference:	WELL @ 5032.0ft (Original Well Elev)
Well:	Boyd 3-19	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)
1,297.0	0.70	213.80	1,296.7	-13.0	-18.7	12.0	0.35	-0.16	-22.66
1,426.0	1.10	242.40	1,425.7	-14.3	-20.2	13.1	0.46	0.31	22.17
1,555.0	1.80	202.50	1,554.7	-16.7	-22.1	15.5	0.92	0.54	-30.93
1,683.0	1.70	202.00	1,682.6	-20.3	-23.6	19.0	0.08	-0.08	-0.39
1,812.0	1.10	128.50	1,811.6	-22.9	-23.3	21.5	1.35	-0.47	-56.98
1,940.0	0.80	174.60	1,939.6	-24.5	-22.3	23.3	0.62	-0.23	36.02
2,069.0	0.90	219.70	2,068.6	-26.2	-22.9	24.9	0.51	0.08	34.96
2,198.0	1.30	256.80	2,197.5	-27.3	-24.9	25.9	0.62	0.31	28.76
2,326.0	1.00	295.10	2,325.5	-27.2	-27.3	25.6	0.63	-0.23	29.92
2,455.0	1.30	269.10	2,454.5	-26.7	-29.8	25.0	0.46	0.23	-20.16
2,583.0	1.80	209.70	2,582.5	-28.5	-32.3	26.7	1.25	0.39	-46.41
2,712.0	1.60	199.90	2,711.4	-31.9	-33.9	30.0	0.27	-0.16	-7.60
2,798.0	2.80	176.80	2,797.3	-35.2	-34.2	33.2	1.71	1.40	-26.86
2,883.0	4.00	162.40	2,882.2	-40.1	-33.2	38.2	1.72	1.41	-16.94
2,969.0	4.30	167.00	2,968.0	-46.1	-31.5	44.3	0.52	0.35	5.35
3,055.0	3.80	171.90	3,053.7	-52.0	-30.4	50.3	0.71	-0.58	5.70
3,141.0	4.00	170.50	3,139.5	-57.8	-29.5	56.1	0.26	0.23	-1.63
3,226.0	4.60	170.90	3,224.3	-64.1	-28.5	62.4	0.71	0.71	0.47
3,312.0	5.50	166.60	3,310.0	-71.5	-27.0	69.9	1.13	1.05	-5.00
3,398.0	5.50	159.40	3,395.6	-79.4	-24.6	77.9	0.80	0.00	-8.37
3,484.0	5.50	158.70	3,481.2	-87.1	-21.6	85.8	0.08	0.00	-0.81
3,569.0	4.10	149.10	3,565.9	-93.5	-18.6	92.3	1.89	-1.65	-11.29
3,655.0	3.30	145.40	3,651.7	-98.1	-15.6	97.1	0.97	-0.93	-4.30
3,741.0	3.00	136.40	3,737.6	-101.8	-12.7	101.0	0.67	-0.35	-10.47
3,826.0	2.60	133.40	3,822.5	-104.7	-9.7	104.1	0.50	-0.47	-3.53
3,912.0	1.80	126.40	3,908.4	-106.9	-7.2	106.3	0.98	-0.93	-8.14
3,998.0	0.40	48.70	3,994.4	-107.5	-5.9	107.0	2.05	-1.63	-90.35
4,084.0	0.60	274.00	4,080.4	-107.3	-6.1	106.8	1.08	0.23	-156.63
4,255.0	0.50	267.20	4,251.4	-107.2	-7.8	106.7	0.07	-0.06	-3.98
4,427.0	1.20	249.60	4,423.4	-107.9	-10.2	107.2	0.43	0.41	-10.23
4,598.0	1.10	215.90	4,594.3	-109.9	-12.8	109.0	0.39	-0.06	-19.71
4,727.0	1.50	239.60	4,723.3	-111.7	-15.0	110.7	0.51	0.31	18.37
4,941.0	1.60	207.80	4,937.2	-115.8	-18.8	114.6	0.40	0.05	-14.86
5,003.2	1.42	208.87	4,999.4	-117.2	-19.6	116.0	0.30	-0.29	1.72
TARGET BHL 1061'FSL, 1411'FWL									
5,112.0	1.10	211.60	5,108.2	-119.3	-20.8	118.0	0.30	-0.29	2.51
5,284.0	1.40	215.00	5,280.1	-122.4	-22.9	121.0	0.18	0.17	1.98
5,455.0	2.40	238.40	5,451.0	-126.0	-27.1	124.3	0.73	0.58	13.68
5,627.0	0.90	240.50	5,623.0	-128.6	-31.4	126.6	0.87	-0.87	1.22
5,798.0	1.00	345.90	5,794.0	-127.8	-32.9	125.8	0.88	0.06	61.64
5,970.0	0.40	324.10	5,965.9	-125.8	-33.6	123.8	0.38	-0.35	-12.67
6,141.0	1.10	277.40	6,136.9	-125.1	-35.6	123.0	0.51	0.41	-27.31
6,313.0	2.00	258.20	6,308.9	-125.5	-40.2	123.1	0.60	0.52	-11.16
6,484.0	2.40	239.60	6,479.7	-128.0	-46.2	125.2	0.48	0.23	-10.88
6,638.2	3.70	273.91	6,633.8	-129.2	-53.9	126.1	1.42	0.84	22.24
TARGET CIRCLE 1061'FSL & 1411'FWL									
6,642.3	3.74	274.45	6,637.8	-129.2	-54.2	126.1	1.42	1.12	13.43
LEGAL BOX 800' X 800' 1332'FSL & 1296'FWL									
6,656.0	3.90	276.20	6,651.5	-129.1	-55.1	125.9	1.42	1.13	12.74
6,827.0	9.10	262.10	6,821.3	-130.4	-74.3	126.1	3.16	3.04	-8.25
6,999.0	10.60	259.50	6,990.8	-135.1	-103.3	129.3	0.91	0.87	-1.51
7,170.0	6.20	263.70	7,159.9	-139.0	-128.0	131.8	2.60	-2.57	2.46
7,341.0	4.80	255.40	7,330.1	-141.8	-144.1	133.7	0.94	-0.82	-4.85
7,513.0	4.50	255.50	7,501.6	-145.3	-157.6	136.5	0.17	-0.17	0.06

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7,591.0	4.70	257.00	7,579.3	-146.8	-163.7	137.6	0.30	0.26	1.92
7,637.0	4.82	257.88	7,625.2	-147.6	-167.4	138.3	0.31	0.26	1.91

Checked By: _____ Approved By: _____ Date: _____