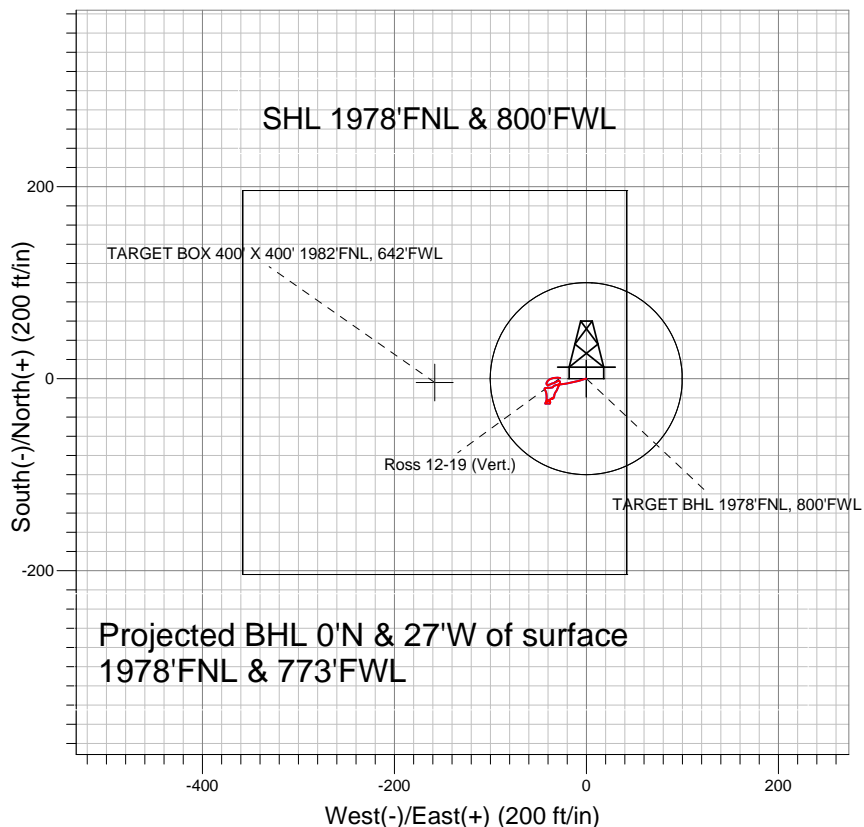


EnCana Oil & Gas Weld County CO



LEGEND

- Ross 12-19 (Vert.), Wellbore #1, Plan #1 (1-6-12) V0
- Wellbore #1
- Survey #1

Final Survey Plot

Projected Final Survey -
 8102'MD & 8100'TVD @ 23'VS
 0.4 deg Inc 111.0 deg AZ

Project: SEC.19-T2N-R68W
 Site: Ross 11-19 Pad Sec.19-T2N-R68W
 Well: Ross 12-19 (Vert.)
 Plan: Wellbore #1



Directional

EnCana Oil & Gas Weld County CO

SEC.19-T2N-R68W

Ross 11-19 Pad Sec.19-T2N-R68W

Ross 12-19 (Vert.)

Wellbore #1

Survey: Survey #1

Standard Survey Report

16 January, 2012

Company:	EnCana Oil & Gas Weld County CO	Local Co-ordinate Reference:	Well Ross 12-19 (Vert.)
Project:	SEC.19-T2N-R68W	TVD Reference:	WELL @ 5001.0ft (Original Well Elev)
Site:	Ross 11-19 Pad Sec.19-T2N-R68W	MD Reference:	WELL @ 5001.0ft (Original Well Elev)
Well:	Ross 12-19 (Vert.)	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	Landmark

Project	SEC.19-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	Ross 11-19 Pad Sec.19-T2N-R68W				
Site Position:		Northing:	1,288,988.53ft	Latitude:	40.125800
From:	Lat/Long	Easting:	3,125,131.35ft	Longitude:	-105.052520
Position Uncertainty:	0.0 ft	Slot Radius:	"	Grid Convergence:	0.29 °

Well	Ross 12-19 (Vert.)					
Well Position	+N/-S	0.0 ft	Northing:	1,288,948.45 ft	Latitude:	40.125690
	+E/-W	0.0 ft	Easting:	3,125,131.55 ft	Longitude:	-105.052520
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,988.0 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	1/6/2012	8.92	66.76	52,895

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	268.55	

Survey Program	Date	1/16/2012			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
41.0	8,102.0	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	
41.0	0.40	271.90	41.0	0.0	-0.1	0.1	0.98	0.98	0.00	
132.0	0.90	247.80	132.0	-0.3	-1.1	1.1	0.61	0.55	-26.48	
224.0	1.40	252.20	224.0	-0.9	-2.9	2.9	0.55	0.54	4.78	
316.0	1.80	255.60	315.9	-1.6	-5.3	5.4	0.45	0.43	3.70	
408.0	2.40	254.30	407.9	-2.5	-8.6	8.6	0.65	0.65	-1.41	
499.0	2.30	256.60	498.8	-3.4	-12.2	12.3	0.15	-0.11	2.53	
591.0	2.40	257.70	590.7	-4.2	-15.9	16.0	0.12	0.11	1.20	
683.0	2.80	262.40	682.6	-4.9	-20.0	20.1	0.49	0.43	5.11	
774.0	2.80	261.00	773.5	-5.6	-24.4	24.5	0.08	0.00	-1.54	
830.0	2.80	261.00	829.5	-6.0	-27.1	27.2	0.00	0.00	0.00	
907.0	2.70	259.90	906.4	-6.6	-30.7	30.9	0.15	-0.13	-1.43	
994.0	1.00	228.50	993.3	-7.5	-33.3	33.5	2.21	-1.95	-36.09	

Company:	EnCana Oil & Gas Weld County CO	Local Co-ordinate Reference:	Well Ross 12-19 (Vert.)
Project:	SEC.19-T2N-R68W	TVD Reference:	WELL @ 5001.0ft (Original Well Elev)
Site:	Ross 11-19 Pad Sec.19-T2N-R68W	MD Reference:	WELL @ 5001.0ft (Original Well Elev)
Well:	Ross 12-19 (Vert.)	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)	
1,081.0	0.90	236.70	1,080.3	-8.4	-34.5	34.7	0.19	-0.11	9.43	
1,168.0	0.30	173.10	1,167.3	-9.0	-35.0	35.2	0.93	-0.69	-73.10	
1,256.0	0.50	267.30	1,255.3	-9.2	-35.4	35.6	0.68	0.23	107.05	
1,343.0	1.10	264.20	1,342.3	-9.3	-36.6	36.8	0.69	0.69	-3.56	
1,430.0	1.20	262.20	1,429.3	-9.5	-38.3	38.5	0.12	0.11	-2.30	
1,518.0	1.50	268.50	1,517.2	-9.7	-40.4	40.6	0.38	0.34	7.16	
1,605.0	1.50	261.90	1,604.2	-9.9	-42.6	42.9	0.20	0.00	-7.59	
1,692.0	1.50	154.50	1,691.2	-11.1	-43.3	43.5	2.78	0.00	-123.45	
1,780.0	1.40	156.70	1,779.2	-13.1	-42.3	42.7	0.13	-0.11	2.50	
1,867.0	1.20	166.10	1,866.2	-14.9	-41.7	42.1	0.34	-0.23	10.80	
1,954.0	1.10	176.30	1,953.1	-16.7	-41.4	41.8	0.26	-0.11	11.72	
2,041.0	1.10	176.30	2,040.1	-18.3	-41.3	41.8	0.00	0.00	0.00	
2,129.0	1.10	177.00	2,128.1	-20.0	-41.2	41.7	0.02	0.00	0.80	
2,216.0	1.20	187.20	2,215.1	-21.7	-41.3	41.8	0.26	0.11	11.72	
2,303.0	1.10	201.70	2,302.1	-23.4	-41.7	42.3	0.35	-0.11	16.67	
2,391.0	1.40	207.90	2,390.0	-25.2	-42.5	43.2	0.37	0.34	7.05	
2,478.0	0.50	88.40	2,477.0	-26.1	-42.6	43.3	1.96	-1.03	-137.36	
2,565.0	1.30	79.90	2,564.0	-25.9	-41.3	41.9	0.93	0.92	-9.77	
2,653.0	1.00	94.70	2,652.0	-25.8	-39.6	40.2	0.48	-0.34	16.82	
2,740.0	0.40	141.10	2,739.0	-26.1	-38.6	39.3	0.90	-0.69	53.33	
2,827.0	0.90	37.60	2,826.0	-25.8	-38.0	38.6	1.23	0.57	-118.97	
2,914.0	0.80	2.60	2,913.0	-24.6	-37.6	38.2	0.60	-0.11	-40.23	
3,002.0	0.80	323.30	3,001.0	-23.5	-37.9	38.5	0.61	0.00	-44.66	
3,089.0	0.90	297.90	3,088.0	-22.7	-38.9	39.4	0.44	0.11	-29.20	
3,176.0	0.30	261.00	3,175.0	-22.4	-39.7	40.2	0.79	-0.69	-42.41	
3,264.0	0.70	227.60	3,263.0	-22.8	-40.3	40.9	0.54	0.45	-37.95	
3,351.0	0.80	223.40	3,350.0	-23.6	-41.1	41.7	0.13	0.11	-4.83	
3,438.0	0.50	61.10	3,437.0	-23.9	-41.2	41.8	1.48	-0.34	-186.55	
3,526.0	1.10	75.50	3,524.9	-23.5	-40.1	40.6	0.71	0.68	16.36	
3,613.0	0.80	61.30	3,611.9	-23.0	-38.7	39.3	0.44	-0.34	-16.32	
3,700.0	0.70	41.60	3,698.9	-22.3	-37.8	38.4	0.32	-0.11	-22.64	
3,787.0	0.50	5.40	3,785.9	-21.5	-37.4	38.0	0.48	-0.23	-41.61	
3,875.0	1.10	80.10	3,873.9	-21.0	-36.6	37.1	1.23	0.68	84.89	
3,962.0	1.00	69.90	3,960.9	-20.6	-35.0	35.5	0.24	-0.11	-11.72	
4,049.0	0.40	79.10	4,047.9	-20.3	-34.0	34.5	0.70	-0.69	10.57	
4,137.0	0.40	253.60	4,135.9	-20.3	-34.0	34.5	0.91	0.00	198.30	
4,224.0	0.90	256.40	4,222.9	-20.6	-35.0	35.5	0.58	0.57	3.22	
4,311.0	0.80	69.00	4,309.9	-20.5	-35.1	35.6	1.95	-0.11	198.39	
4,399.0	1.00	36.70	4,397.9	-19.7	-34.0	34.5	0.61	0.23	-36.70	
4,486.0	1.00	14.20	4,484.9	-18.3	-33.4	33.8	0.45	0.00	-25.86	
4,573.0	0.90	0.30	4,571.8	-16.9	-33.2	33.6	0.29	-0.11	-15.98	
4,660.0	1.00	26.00	4,658.8	-15.5	-32.9	33.3	0.50	0.11	29.54	
4,748.0	1.30	32.50	4,746.8	-14.0	-32.0	32.3	0.37	0.34	7.39	
4,835.0	1.30	32.30	4,833.8	-12.3	-30.9	31.2	0.01	0.00	-0.23	
4,922.0	1.10	19.30	4,920.8	-10.7	-30.1	30.4	0.39	-0.23	-14.94	
5,010.0	1.10	19.50	5,008.8	-9.1	-29.6	29.8	0.00	0.00	0.23	
5,097.0	0.90	31.80	5,095.7	-7.8	-28.9	29.1	0.34	-0.23	14.14	
5,184.0	0.90	21.80	5,182.7	-6.5	-28.3	28.5	0.18	0.00	-11.49	
5,272.0	0.70	20.30	5,270.7	-5.4	-27.9	28.0	0.23	-0.23	-1.70	
5,359.0	0.50	21.30	5,357.7	-4.5	-27.6	27.7	0.23	-0.23	1.15	
5,446.0	0.40	4.50	5,444.7	-3.9	-27.4	27.5	0.19	-0.11	-19.31	
5,533.0	0.50	344.70	5,531.7	-3.2	-27.5	27.5	0.21	0.11	-22.76	
5,621.0	0.50	293.20	5,619.7	-2.7	-27.9	28.0	0.49	0.00	-58.52	
5,708.0	0.40	276.60	5,706.7	-2.5	-28.6	28.6	0.19	-0.11	-19.08	

Company:	EnCana Oil & Gas Weld County CO	Local Co-ordinate Reference:	Well Ross 12-19 (Vert.)
Project:	SEC.19-T2N-R68W	TVD Reference:	WELL @ 5001.0ft (Original Well Elev)
Site:	Ross 11-19 Pad Sec.19-T2N-R68W	MD Reference:	WELL @ 5001.0ft (Original Well Elev)
Well:	Ross 12-19 (Vert.)	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)	
5,795.0	0.80	278.50	5,793.7	-2.4	-29.5	29.5	0.46	0.46	2.18	
5,883.0	1.20	223.00	5,881.7	-3.0	-30.7	30.8	1.13	0.45	-63.07	
5,970.0	1.00	250.40	5,968.7	-3.9	-32.0	32.1	0.64	-0.23	31.49	
6,057.0	0.80	252.40	6,055.7	-4.3	-33.3	33.4	0.23	-0.23	2.30	
6,145.0	0.80	252.40	6,143.7	-4.7	-34.5	34.6	0.00	0.00	0.00	
6,232.0	0.80	255.90	6,230.7	-5.0	-35.7	35.8	0.06	0.00	4.02	
6,319.0	0.70	230.90	6,317.6	-5.5	-36.7	36.8	0.39	-0.11	-28.74	
6,406.0	0.90	254.10	6,404.6	-6.0	-37.8	37.9	0.43	0.23	26.67	
6,494.0	0.70	240.10	6,492.6	-6.5	-38.9	39.0	0.32	-0.23	-15.91	
6,581.0	0.50	261.90	6,579.6	-6.8	-39.7	39.9	0.34	-0.23	25.06	
6,668.0	0.40	301.60	6,666.6	-6.7	-40.4	40.5	0.37	-0.11	45.63	
6,756.0	0.40	311.40	6,754.6	-6.3	-40.8	41.0	0.08	0.00	11.14	
6,843.0	0.40	330.40	6,841.6	-5.9	-41.2	41.4	0.15	0.00	21.84	
6,930.0	0.70	356.50	6,928.6	-5.1	-41.4	41.5	0.44	0.34	30.00	
7,018.0	1.00	30.40	7,016.6	-3.9	-41.1	41.1	0.65	0.34	38.52	
7,105.0	1.30	29.80	7,103.6	-2.4	-40.2	40.2	0.35	0.34	-0.69	
7,192.0	1.20	62.20	7,190.6	-1.1	-38.9	38.9	0.81	-0.11	37.24	
7,255.0	1.27	68.79	7,253.6	-0.5	-37.6	37.6	0.25	0.11	10.46	
TARGET BOX 400' X 400' 1982'FNL, 642'FWL										
7,258.2	1.27	69.11	7,256.8	-0.5	-37.6	37.6	0.25	0.12	9.83	
TARGET CIRCLE 1978'FNL, 800'FWL										
7,279.0	1.30	71.10	7,277.5	-0.4	-37.1	37.1	0.25	0.13	9.60	
7,367.0	1.00	68.90	7,365.5	0.2	-35.5	35.5	0.34	-0.34	-2.50	
7,454.0	0.80	72.90	7,452.5	0.7	-34.2	34.2	0.24	-0.23	4.60	
7,541.0	0.70	81.50	7,539.5	1.0	-33.1	33.1	0.17	-0.11	9.89	
7,629.0	0.60	89.40	7,627.5	1.0	-32.1	32.1	0.15	-0.11	8.98	
7,716.0	0.80	102.80	7,714.5	0.9	-31.0	31.0	0.30	0.23	15.40	
7,803.0	0.80	92.00	7,801.5	0.8	-29.8	29.8	0.17	0.00	-12.41	
7,891.0	0.50	89.20	7,889.5	0.7	-28.8	28.8	0.34	-0.34	-3.18	
7,978.0	0.50	91.50	7,976.5	0.7	-28.1	28.1	0.02	0.00	2.64	
8,052.0	0.40	111.00	8,050.5	0.6	-27.5	27.5	0.25	-0.14	26.35	
8,102.0	0.40	111.00	8,100.5	0.5	-27.2	27.2	0.00	0.00	0.00	
TARGET BHL 1978'FNL, 800'FWL										

Checked By: _____ Approved By: _____ Date: _____