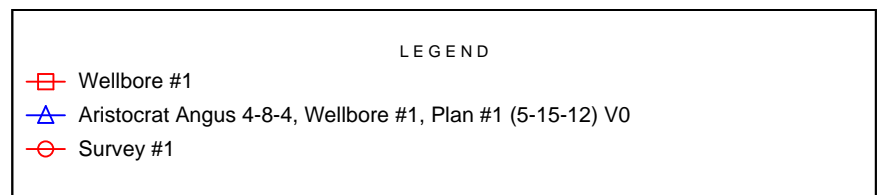
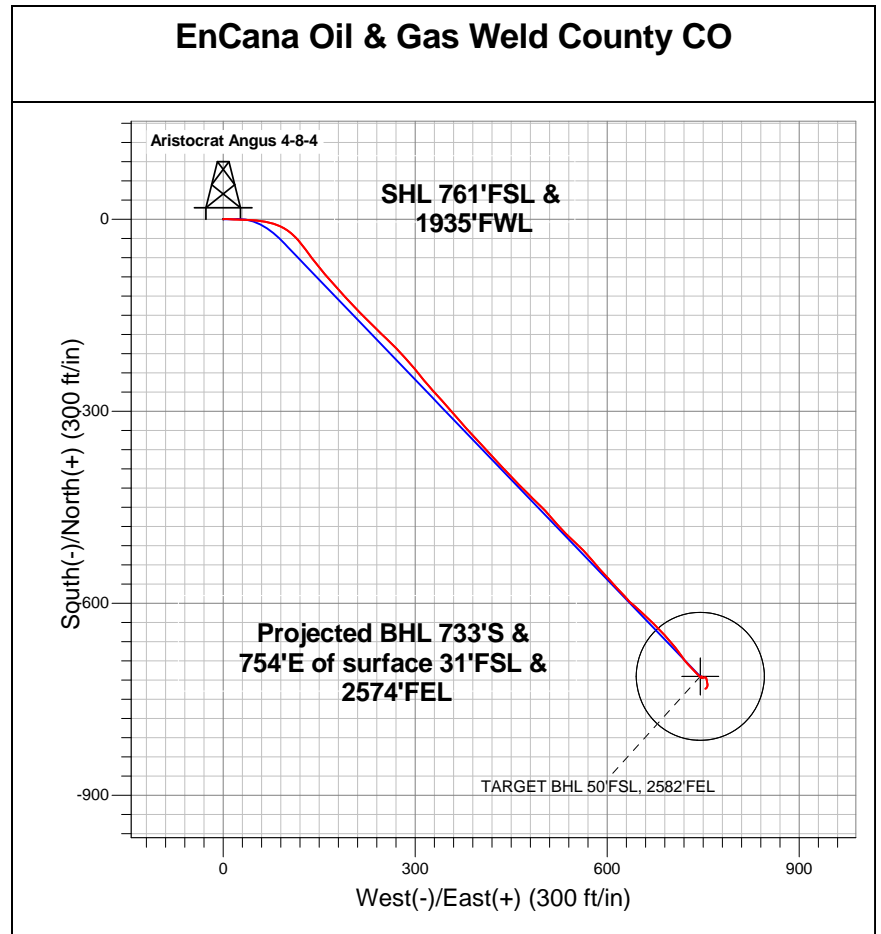
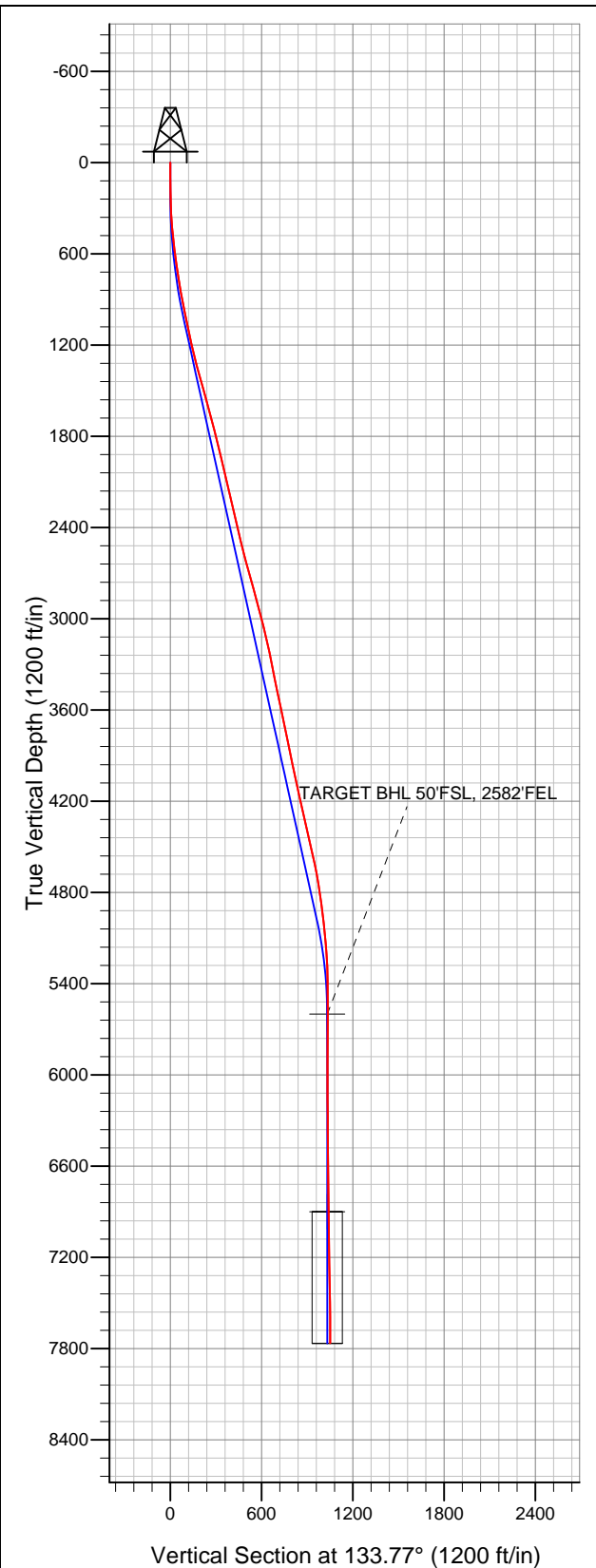


**Well Name: Aristocrat Angus 4-8-4**

Surface Location: Aristocrat Angus 4-6-4 Pad Sec.4-T3N-R65W  
North American Datum 1983 US State Plane 1983Colorado Northern Zone  
Ground Elevation: 4820.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1334711.14	3231459.45	40.249210	-104.670770	
Original Well Elev			WELL @ 4832.0ft (Original Well Elev)			



## Final Survey Plot

Projected Final Survey -  
7880'MD & 7764'TVD @ 1051'VS  
1.80 deg Inc 232.30 deg AZ

Project: SEC.4-T3N-R65W  
Site: Aristocrat Angus 4-6-4 Pad Sec.4-T3N-R65W  
Well: Aristocrat Angus 4-8-4  
Plan: Wellbore #1



# **EnCana Oil & Gas Weld County CO**

**SEC.4-T3N-R65W**

**Aristocrat Angus 4-6-4 Pad Sec.4-T3N-R65W**

**Aristocrat Angus 4-8-4**

**Wellbore #1**

**Survey: Survey #1**

## **Standard Survey Report**

**23 July, 2012**

<b>Company:</b>	EnCana Oil & Gas Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Aristocrat Angus 4-8-4
<b>Project:</b>	SEC.4-T3N-R65W	<b>TVD Reference:</b>	WELL @ 4832.0ft (Original Well Elev)
<b>Site:</b>	Aristocrat Angus 4-6-4 Pad Sec.4-T3N-R65W	<b>MD Reference:</b>	WELL @ 4832.0ft (Original Well Elev)
<b>Well:</b>	Aristocrat Angus 4-8-4	<b>North Reference:</b>	True
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Wellbore #1	<b>Database:</b>	Landmark

<b>Project</b>	SEC.4-T3N-R65W, Weld County, Colorado		
<b>Map System:</b>	US State Plane 1983	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	North American Datum 1983		Using Well Reference Point
<b>Map Zone:</b>	Colorado Northern Zone		Using geodetic scale factor

Site		Aristocrat Angus 4-6-4 Pad Sec.4-T3N-R65W			
Site Position:		Northing:	1,334,725.59ft	Latitude:	40.249250
From:	Lat/Long	Easting:	3,231,445.36ft	Longitude:	-104.670820
Position Uncertainty:	0.0 ft	Slot Radius:	"	Grid Convergence:	0.54 °

Well	Aristocrat Angus 4-8-4					
Well Position	+N/-S	0.0 ft	Northing:	1,334,711.14 ft	Latitude:	40.249210
	+E/-W	0.0 ft	Easting:	3,231,459.45 ft	Longitude:	-104.670770
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,820.0 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	5/15/2012	8.68	66.91	52,966

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	133.77	

Survey Program		Date	7/23/2012		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
94.0	7,880.0	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
94.0	1.00	64.40	94.0	0.4	0.7	0.3	1.06	1.06	0.00
185.0	1.10	87.40	185.0	0.7	2.3	1.2	0.47	0.11	25.27
277.0	2.40	99.00	276.9	0.5	5.1	3.4	1.46	1.41	12.61
368.0	5.00	88.50	367.7	0.3	11.0	7.7	2.94	2.86	-11.54
460.0	7.10	92.70	459.2	0.1	20.6	14.8	2.33	2.28	4.57
551.0	9.40	96.00	549.3	-0.9	33.7	24.9	2.58	2.53	3.63
672.0	10.30	92.30	668.5	-2.4	54.3	40.9	0.91	0.74	-3.06
766.0	10.50	102.40	761.0	-4.6	71.1	54.5	1.95	0.21	10.74
860.0	11.10	114.70	853.3	-10.2	87.6	70.3	2.53	0.64	13.09
953.0	12.00	127.30	944.4	-19.8	103.5	88.4	2.87	0.97	13.55
1,047.0	11.10	139.40	1,036.5	-32.6	117.1	107.1	2.74	-0.96	12.87
1,141.0	11.40	143.30	1,128.7	-46.9	128.6	125.3	0.87	0.32	4.15

<b>Company:</b>	EnCana Oil & Gas Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Aristocrat Angus 4-8-4
<b>Project:</b>	SEC.4-T3N-R65W	<b>TVD Reference:</b>	WELL @ 4832.0ft (Original Well Elev)
<b>Site:</b>	Aristocrat Angus 4-6-4 Pad Sec.4-T3N-R65W	<b>MD Reference:</b>	WELL @ 4832.0ft (Original Well Elev)
<b>Well:</b>	Aristocrat Angus 4-8-4	<b>North Reference:</b>	True
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Wellbore #1	<b>Database:</b>	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)
1,234.0	13.50	143.30	1,219.5	-63.0	140.6	145.1	2.26	2.26	0.00
1,328.0	14.60	140.20	1,310.7	-80.9	154.7	167.7	1.42	1.17	-3.30
1,422.0	15.60	137.90	1,401.5	-99.4	170.8	192.0	1.24	1.06	-2.45
1,515.0	16.00	137.90	1,491.0	-118.1	187.7	217.3	0.43	0.43	0.00
1,609.0	15.40	136.30	1,581.5	-136.8	205.0	242.7	0.79	-0.64	-1.70
1,703.0	14.50	134.50	1,672.3	-154.1	222.1	266.9	1.08	-0.96	-1.91
1,796.0	14.90	135.00	1,762.2	-170.7	238.8	290.5	0.45	0.43	0.54
1,890.0	13.50	133.10	1,853.4	-186.7	255.4	313.6	1.57	-1.49	-2.02
1,984.0	13.30	136.60	1,944.8	-202.1	270.8	335.3	0.89	-0.21	3.72
2,077.0	13.00	138.40	2,035.4	-217.7	285.1	356.5	0.55	-0.32	1.94
2,171.0	13.50	139.60	2,126.9	-233.9	299.2	377.9	0.61	0.53	1.28
2,265.0	14.00	141.20	2,218.2	-251.1	313.5	400.1	0.67	0.53	1.70
2,358.0	12.80	138.00	2,308.6	-267.6	327.4	421.5	1.52	-1.29	-3.44
2,452.0	12.90	137.50	2,400.3	-283.0	341.5	442.4	0.16	0.11	-0.53
2,546.0	13.50	138.60	2,491.8	-299.0	355.8	463.8	0.69	0.64	1.17
2,639.0	14.20	139.80	2,582.1	-315.9	370.4	485.9	0.81	0.75	1.29
2,733.0	15.40	137.20	2,673.0	-333.8	386.3	509.9	1.46	1.28	-2.77
2,827.0	15.80	136.30	2,763.5	-352.2	403.6	535.1	0.50	0.43	-0.96
2,920.0	16.00	138.70	2,853.0	-371.0	420.8	560.5	0.74	0.22	2.58
3,014.0	15.30	135.40	2,943.5	-389.6	438.1	585.8	1.20	-0.74	-3.51
3,108.0	13.20	138.00	3,034.6	-406.4	454.0	608.9	2.33	-2.23	2.77
3,201.0	13.50	133.70	3,125.1	-421.8	468.9	630.4	1.11	0.32	-4.62
3,295.0	11.60	134.90	3,216.8	-436.0	483.5	650.8	2.04	-2.02	1.28
3,389.0	11.30	133.80	3,308.9	-449.1	496.9	669.5	0.39	-0.32	-1.17
3,482.0	11.80	140.10	3,400.1	-462.7	509.6	688.0	1.46	0.54	6.77
3,576.0	11.80	137.70	3,492.1	-477.2	522.2	707.2	0.52	0.00	-2.55
3,670.0	11.90	135.00	3,584.1	-491.1	535.5	726.5	0.60	0.11	-2.87
3,763.0	11.50	133.30	3,675.1	-504.3	549.0	745.3	0.57	-0.43	-1.83
3,857.0	11.70	135.20	3,767.2	-517.5	562.6	764.2	0.46	0.21	2.02
3,951.0	12.10	139.40	3,859.2	-531.7	575.7	783.5	1.01	0.43	4.47
4,044.0	11.90	139.40	3,950.2	-546.4	588.3	802.8	0.22	-0.22	0.00
4,138.0	12.10	137.30	4,042.1	-561.0	601.3	822.3	0.51	0.21	-2.23
4,232.0	11.70	137.00	4,134.1	-575.2	614.5	841.6	0.43	-0.43	-0.32
4,325.0	12.90	137.90	4,225.0	-589.8	627.9	861.4	1.31	1.29	0.97
4,419.0	12.80	131.00	4,316.6	-604.4	642.8	882.2	1.64	-0.11	-7.34
4,513.0	13.10	133.10	4,408.2	-618.5	658.4	903.3	0.59	0.32	2.23
4,606.0	13.00	134.30	4,498.8	-633.0	673.6	924.3	0.31	-0.11	1.29
4,700.0	12.40	137.90	4,590.5	-647.9	687.9	944.9	1.06	-0.64	3.83
4,794.0	10.10	139.10	4,682.7	-661.6	700.1	963.2	2.46	-2.45	1.28
4,887.0	9.20	142.40	4,774.4	-673.7	709.9	978.7	1.14	-0.97	3.55
4,981.0	8.10	146.10	4,867.3	-685.1	718.2	992.6	1.31	-1.17	3.94
5,075.0	6.30	137.50	4,960.6	-694.4	725.4	1,004.2	2.23	-1.91	-9.15
5,168.0	6.00	136.10	5,053.1	-701.7	732.2	1,014.2	0.36	-0.32	-1.51
5,262.0	4.90	134.70	5,146.6	-708.0	738.5	1,023.1	1.18	-1.17	-1.49
5,355.0	3.30	137.30	5,239.4	-712.8	743.1	1,029.7	1.73	-1.72	2.80
5,449.0	1.50	134.30	5,333.3	-715.7	745.8	1,033.6	1.92	-1.91	-3.19
5,543.0	0.40	59.30	5,427.3	-716.3	747.0	1,035.0	1.54	-1.17	-79.79
5,636.0	0.50	105.30	5,520.3	-716.3	747.7	1,035.4	0.39	0.11	49.46
5,715.7	0.40	69.03	5,600.0	-716.3	748.3	1,035.8	0.37	-0.13	-45.51
<b>TARGET BHL 50'FSL, 2582'FEL</b>									
5,730.0	0.40	61.40	5,614.3	-716.2	748.3	1,035.9	0.37	0.02	-53.32
5,824.0	0.70	321.00	5,708.3	-715.6	748.3	1,035.4	0.92	0.32	-106.81
5,917.0	0.60	323.00	5,801.3	-714.8	747.6	1,034.4	0.11	-0.11	2.15
6,011.0	0.30	324.90	5,895.3	-714.2	747.2	1,033.6	0.32	-0.32	2.02

<b>Company:</b>	EnCana Oil & Gas Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Aristocrat Angus 4-8-4
<b>Project:</b>	SEC.4-T3N-R65W	<b>TVD Reference:</b>	WELL @ 4832.0ft (Original Well Elev)
<b>Site:</b>	Aristocrat Angus 4-6-4 Pad Sec.4-T3N-R65W	<b>MD Reference:</b>	WELL @ 4832.0ft (Original Well Elev)
<b>Well:</b>	Aristocrat Angus 4-8-4	<b>North Reference:</b>	True
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Wellbore #1	<b>Database:</b>	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)	
6,105.0	0.40	144.40	5,989.3	-714.3	747.2	1,033.7	0.74	0.11	190.96	
6,198.0	0.30	83.00	6,082.3	-714.5	747.7	1,034.2	0.40	-0.11	-66.02	
6,292.0	0.80	160.20	6,176.3	-715.1	748.1	1,034.9	0.84	0.53	82.13	
6,386.0	0.40	162.50	6,270.3	-716.0	748.5	1,035.8	0.43	-0.43	2.45	
6,480.0	0.40	82.10	6,364.3	-716.3	748.9	1,036.3	0.55	0.00	-85.53	
6,574.0	0.40	80.40	6,458.3	-716.2	749.5	1,036.7	0.01	0.00	-1.81	
6,668.0	0.70	80.70	6,552.2	-716.0	750.4	1,037.2	0.32	0.32	0.32	
6,763.0	1.50	82.10	6,647.2	-715.8	752.2	1,038.4	0.84	0.84	1.47	
6,857.0	0.70	113.80	6,741.2	-715.8	754.0	1,039.7	1.04	-0.85	33.72	
6,951.0	0.90	160.50	6,835.2	-716.8	754.7	1,040.9	0.70	0.21	49.68	
7,015.7	0.83	165.48	6,899.9	-717.7	755.0	1,041.7	0.16	-0.11	7.70	
TARGET CIRCLE 50'FSL & 2582'FEL										
7,046.0	0.80	168.10	6,930.2	-718.1	755.1	1,042.1	0.16	-0.10	8.65	
7,140.0	1.00	169.10	7,024.2	-719.6	755.4	1,043.3	0.21	0.21	1.06	
7,234.0	1.00	173.00	7,118.2	-721.2	755.7	1,044.6	0.07	0.00	4.15	
7,328.0	0.70	166.20	7,212.2	-722.6	755.9	1,045.7	0.34	-0.32	-7.23	
7,423.0	1.00	164.90	7,307.1	-723.9	756.3	1,046.9	0.32	0.32	-1.37	
7,517.0	1.00	169.00	7,401.1	-725.5	756.6	1,048.3	0.08	0.00	4.36	
7,611.0	1.10	172.80	7,495.1	-727.2	756.9	1,049.6	0.13	0.11	4.04	
7,706.0	1.50	202.40	7,590.1	-729.3	756.5	1,050.8	0.81	0.42	31.16	
7,800.0	1.80	210.00	7,684.1	-731.7	755.3	1,051.6	0.39	0.32	8.09	
7,835.0	1.80	232.30	7,719.0	-732.5	754.6	1,051.7	1.99	0.00	63.71	
7,880.0	1.80	232.30	7,764.0	-733.4	753.5	1,051.4	0.00	0.00	0.00	

Checked By: \_\_\_\_\_ Approved By: \_\_\_\_\_ Date: \_\_\_\_\_