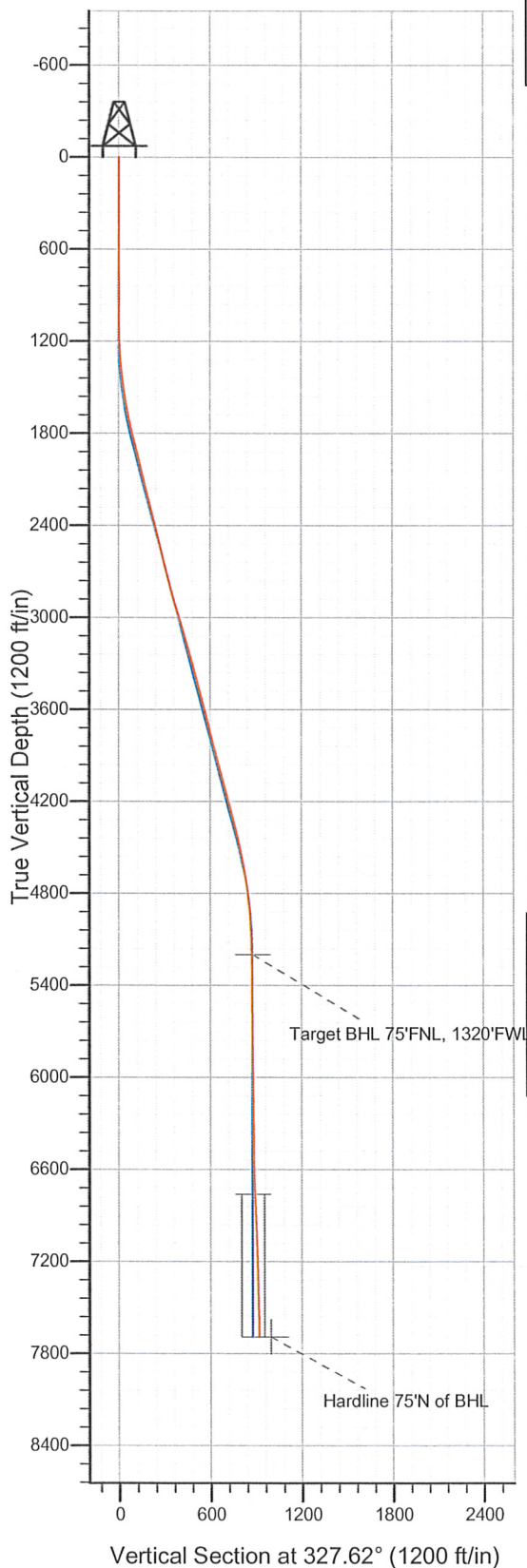
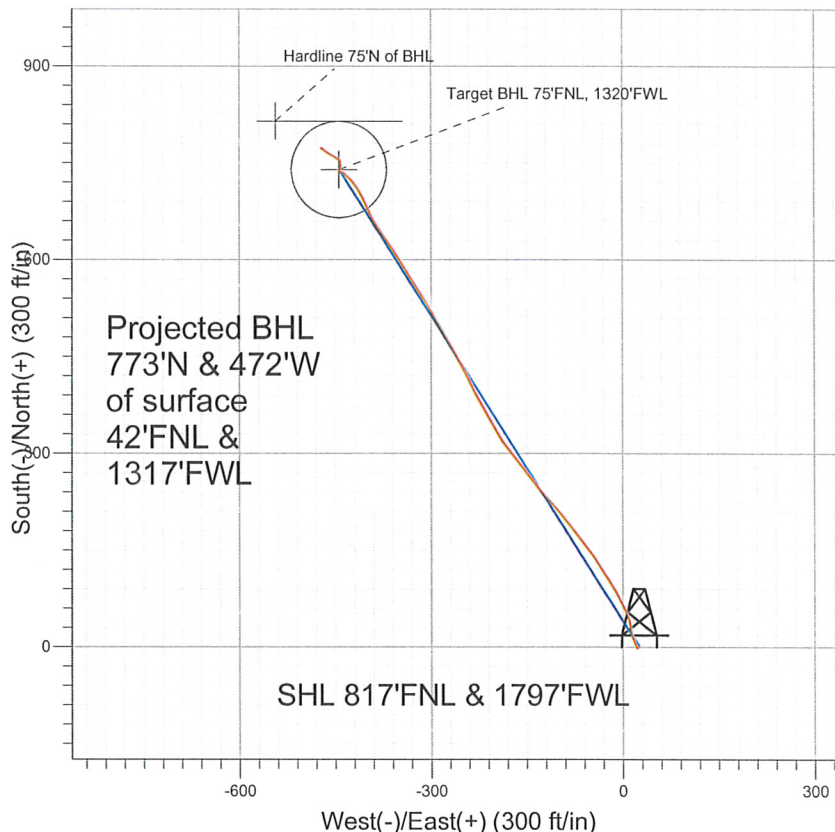






Slot



**NOBLE ENERGY INC WELD COUNTY CO**



## LEGEND

-  Aristocrat PC H11-29D, Wellbore #1, Noble Aristocrat PC H11-29D Plan #1 (06-18-10) V0
-  Wellbore #1
-  Survey #1

## Final Survey Plot

Projected Final Survey -  
7788'MD & 7682'TVD @ 919' VS  
1.2 deg Inc 308.4 deg AZ

Project: SEC.11-T3N-R65W  
Site: Aristocrat PC H11-30D Pad Sec. 11-T3N-R65W  
Well: Aristocrat PC H11-29D  
Plan: Wellbore #1



**Directional**

**NOBLE ENERGY INC WELD  
COUNTY CO**

**SEC.11-T3N-R65W**

**Aristocrat PC H11-30D Pad Sec. 11-T3N-R65W**

**Aristocrat PC H11-29D**

**Wellbore #1**

**Survey: Survey #1**

**Standard Survey Report**

**14 March, 2011**



**Company:** NOBLE ENERGY INC WELD COUNTY CO  
**Project:** SEC.11-T3N-R65W  
**Site:** Aristocrat PC H11-30D Pad Sec. 11-T3N-R65W  
**Well:** Aristocrat PC H11-29D  
**Wellbore:** Wellbore #1  
**Design:** Wellbore #1

**Local Co-ordinate Reference:** Site Aristocrat PC H11-30D Pad Sec. 11-T3N-R65W  
**TVD Reference:** WELL @ 4781.0ft (Original Well Elev)  
**MD Reference:** WELL @ 4781.0ft (Original Well Elev)  
**North Reference:** True  
**Survey Calculation Method:** Minimum Curvature  
**Database:** Landmark

<b>Project</b>	SEC.11-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 PC H11-30D Pad Sec. 11-T3N-R65W

<b>Site Position:</b>	<b>Northing:</b>	1,333,229.71 ft	<b>Latitude:</b>	40° 14' 41.532 N
<b>From:</b> Lat/Long	<b>Easting:</b>	3,241,880.39 ft	<b>Longitude:</b>	104° 38' 0.564 W
<b>Position Uncertainty:</b> 0.0 ft	<b>Slot Radius:</b>	"	<b>Grid Convergence:</b>	0.56 °

**Well** Aristocrat PC H11-29D

<b>Well Position</b>	<b>+N/-S</b>	0.0 ft	<b>Northing:</b>	1,333,229.95 ft	<b>Latitude:</b>	40° 14' 41.532 N
	<b>+E/-W</b>	25.1 ft	<b>Easting:</b>	3,241,905.51 ft	<b>Longitude:</b>	104° 38' 0.240 W
<b>Position Uncertainty</b>	0.0 ft		<b>Wellhead Elevation:</b>	ft	<b>Ground Level:</b>	4,768.0 ft

**Wellbore** Wellbore #1

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	12/31/2009	8.94	67.01	53,237

**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	25.1	327.62

**Survey Program** Date 3/14/2011

From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
781.0	7,788.0	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	25.1	0.0	0.00	0.00	0.00
781.0	0.30	257.60	781.0	-0.5	23.1	0.7	0.04	0.04	0.00
875.0	0.30	219.80	875.0	-0.7	22.7	0.7	0.21	0.00	-40.21
968.0	0.50	225.30	968.0	-1.2	22.3	0.5	0.22	0.22	5.91
1,061.0	0.10	159.90	1,061.0	-1.5	22.0	0.4	0.50	-0.43	-70.32
1,155.0	2.10	333.20	1,155.0	-0.1	21.3	2.0	2.34	2.13	184.36
1,250.0	2.80	336.60	1,249.9	3.6	19.6	6.0	0.75	0.74	3.58
1,344.0	5.00	336.50	1,343.7	9.5	17.0	12.4	2.34	2.34	-0.11
1,437.0	7.20	347.50	1,436.1	18.9	14.1	21.8	2.67	2.37	11.83
1,530.0	9.30	351.70	1,528.2	32.0	11.8	34.2	2.35	2.26	4.52
1,624.0	10.50	341.20	1,620.8	47.6	7.9	49.4	2.30	1.28	-11.17
1,718.0	12.30	332.90	1,712.9	64.7	0.6	67.7	2.59	1.91	-8.83



**Company:** NOBLE ENERGY INC WELD COUNTY CO  
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**Site:** Aristocrat PC H11-30D Pad Sec. 11-T3N-R65W  
**Well:** Aristocrat PC H11-29D  
**Wellbore:** Wellbore #1  
**Design:** Wellbore #1

**Local Co-ordinate Reference:** Site Aristocrat PC H11-30D Pad Sec. 11-T3N-R65W  
**TVD Reference:** WELL @ 4781.0ft (Original Well Elev)  
**MD Reference:** WELL @ 4781.0ft (Original Well Elev)  
**North Reference:** True  
**Survey Calculation Method:** Minimum Curvature  
**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)
1,813.0	14.40	330.90	1,805.3	84.0	-9.7	89.6	2.26	2.21	-2.11
1,907.0	14.10	327.00	1,896.5	103.8	-21.7	112.7	1.07	-0.32	-4.15
2,001.0	13.60	328.50	1,987.7	122.8	-33.7	135.2	0.65	-0.53	1.60
2,094.0	13.10	325.10	2,078.2	140.8	-45.4	156.7	1.00	-0.54	-3.66
2,187.0	12.90	321.10	2,168.8	157.5	-58.0	177.5	0.99	-0.22	-4.30
2,281.0	15.00	322.80	2,260.1	175.4	-71.9	200.1	2.28	2.23	1.81
2,375.0	14.20	322.50	2,351.0	194.2	-86.3	223.7	0.85	-0.85	-0.32
2,469.0	14.10	318.70	2,442.2	212.0	-100.9	246.5	0.99	-0.11	-4.04
2,562.0	14.70	317.00	2,532.2	229.1	-116.4	269.3	0.79	0.65	-1.83
2,655.0	14.20	320.50	2,622.3	246.5	-131.7	292.2	1.08	-0.54	3.76
2,749.0	14.30	324.20	2,713.4	264.9	-145.8	315.2	0.97	0.11	3.94
2,843.0	14.50	323.00	2,804.5	283.7	-159.7	338.5	0.38	0.21	-1.28
2,937.0	16.10	318.90	2,895.1	302.9	-175.3	363.2	2.05	1.70	-4.36
3,031.0	17.40	328.50	2,985.2	324.7	-191.2	390.1	3.25	1.38	10.21
3,124.0	16.70	331.60	3,074.1	348.3	-204.9	417.3	1.23	-0.75	3.33
3,217.0	17.10	329.70	3,163.1	371.9	-218.1	444.3	0.73	0.43	-2.04
3,310.0	15.30	332.80	3,252.4	394.6	-230.6	470.2	2.15	-1.94	3.33
3,405.0	14.80	334.10	3,344.1	416.7	-241.7	494.8	0.64	-0.53	1.37
3,499.0	15.20	332.20	3,434.9	438.4	-252.7	519.0	0.67	0.43	-2.02
3,592.0	15.00	329.40	3,524.7	459.5	-264.5	543.2	0.81	-0.22	-3.01
3,685.0	14.00	329.30	3,614.7	479.5	-276.3	566.4	1.08	-1.08	-0.11
3,778.0	13.50	330.60	3,705.1	498.7	-287.4	588.5	0.63	-0.54	1.40
3,872.0	15.20	328.50	3,796.1	518.7	-299.2	611.8	1.89	1.81	-2.23
3,966.0	15.00	329.40	3,886.9	539.7	-311.9	636.3	0.33	-0.21	0.96
4,059.0	15.50	326.80	3,976.6	560.5	-324.8	660.7	0.91	0.54	-2.80
4,152.0	14.70	329.20	4,066.4	581.0	-337.6	684.9	1.09	-0.86	2.58
4,245.0	14.40	327.20	4,156.4	600.9	-349.9	708.3	0.63	-0.32	-2.15
4,338.0	15.10	324.90	4,246.3	620.5	-363.2	732.0	0.98	0.75	-2.47
4,431.0	14.60	325.30	4,336.2	640.0	-376.8	755.8	0.55	-0.54	0.43
4,526.0	13.60	329.90	4,428.4	659.5	-389.2	778.9	1.58	-1.05	4.84
4,619.0	11.60	335.90	4,519.1	677.5	-398.5	799.1	2.57	-2.15	6.45
4,713.0	10.40	334.50	4,611.4	693.8	-406.0	816.9	1.31	-1.28	-1.49
4,807.0	8.50	328.00	4,704.1	707.4	-413.4	832.2	2.32	-2.02	-6.91
4,901.0	7.70	322.60	4,797.2	718.3	-420.9	845.5	1.17	-0.85	-5.74
4,994.0	5.60	314.20	4,889.6	726.4	-427.9	856.1	2.48	-2.26	-9.03
5,089.0	4.00	316.80	4,984.2	732.0	-433.5	863.8	1.70	-1.68	2.74
5,183.0	2.10	297.30	5,078.1	735.2	-437.3	868.6	2.27	-2.02	-20.74
5,276.0	2.10	271.20	5,171.0	736.0	-440.5	871.0	1.02	0.00	-28.06
5,305.1	1.83	278.35	5,200.1	736.1	-441.5	871.6	1.25	-0.92	24.61
<b>Target BHL 75'FNL, 1320'FWL</b>									
5,369.0	1.40	302.60	5,264.0	736.7	-443.2	872.9	1.25	-0.67	37.93
5,462.0	0.50	63.30	5,357.0	737.5	-443.8	873.9	1.84	-0.97	129.79
5,555.0	0.50	64.00	5,450.0	737.8	-443.0	873.8	0.01	0.00	0.75
5,650.0	0.60	17.70	5,545.0	738.5	-442.5	874.1	0.47	0.11	-48.74
5,743.0	0.80	15.00	5,638.0	739.6	-442.2	874.9	0.22	0.22	-2.90
5,838.0	1.00	17.30	5,733.0	741.0	-441.8	875.9	0.21	0.21	2.42
5,931.0	1.20	15.90	5,825.9	742.7	-441.3	877.0	0.22	0.22	-1.51
6,025.0	1.30	9.50	5,919.9	744.7	-440.8	878.5	0.18	0.11	-6.81
6,118.0	0.90	318.10	6,012.9	746.3	-441.1	880.0	1.10	-0.43	-55.27
6,212.0	0.70	323.60	6,106.9	747.3	-442.0	881.3	0.23	-0.21	5.85
6,306.0	0.70	349.80	6,200.9	748.3	-442.4	882.4	0.34	0.00	27.87
6,398.0	0.90	1.90	6,292.9	749.6	-442.5	883.5	0.28	0.22	13.15
6,492.0	0.90	34.10	6,386.9	751.0	-442.1	884.4	0.53	0.00	34.26

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**Survey Calculation Method:** Minimum Curvature  
**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)
6,587.0	1.10	357.00	6,481.9	752.5	-441.7	885.5	0.70	0.21	-39.05
6,680.0	0.80	298.00	6,574.8	753.7	-442.3	886.8	1.04	-0.32	-63.44
6,773.0	1.30	312.10	6,667.8	754.7	-443.7	888.4	0.60	0.54	15.16
6,865.9	1.90	308.40	6,760.7	756.4	-445.6	890.9	0.65	0.65	-3.98
<b>Target Circle 75°FNL, 1320°FWL</b>									
6,866.0	1.90	308.40	6,760.8	756.4	-445.7	890.9	0.65	0.65	-2.72
6,960.0	3.10	297.30	6,854.7	758.5	-449.1	894.6	1.37	1.28	-11.81
7,053.0	2.90	296.50	6,947.6	760.7	-453.5	898.7	0.22	-0.22	-0.86
7,148.0	2.50	298.90	7,042.5	762.8	-457.4	902.6	0.44	-0.42	2.53
7,242.0	2.00	302.50	7,136.4	764.7	-460.6	905.9	0.55	-0.53	3.83
7,335.0	1.50	301.50	7,229.4	766.2	-463.0	908.5	0.54	-0.54	-1.08
7,428.0	1.60	309.10	7,322.3	767.6	-465.1	910.8	0.25	0.11	8.17
7,521.0	1.50	311.90	7,415.3	769.2	-467.0	913.2	0.13	-0.11	3.01
7,617.0	1.20	308.40	7,511.3	770.7	-468.7	915.3	0.32	-0.31	-3.65
7,664.0	1.20	308.40	7,558.2	771.3	-469.5	916.3	0.00	0.00	0.00
7,788.0	1.20	308.40	7,682.2	772.9	-471.5	918.7	0.00	0.00	0.00

Hardline 75°N of BHL

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