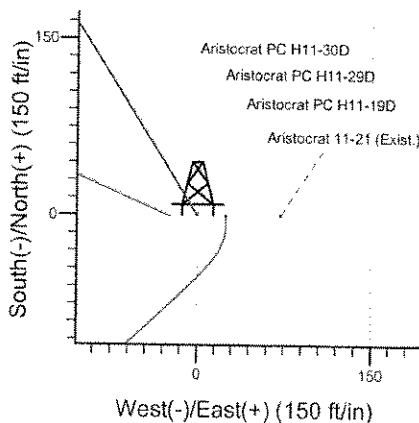
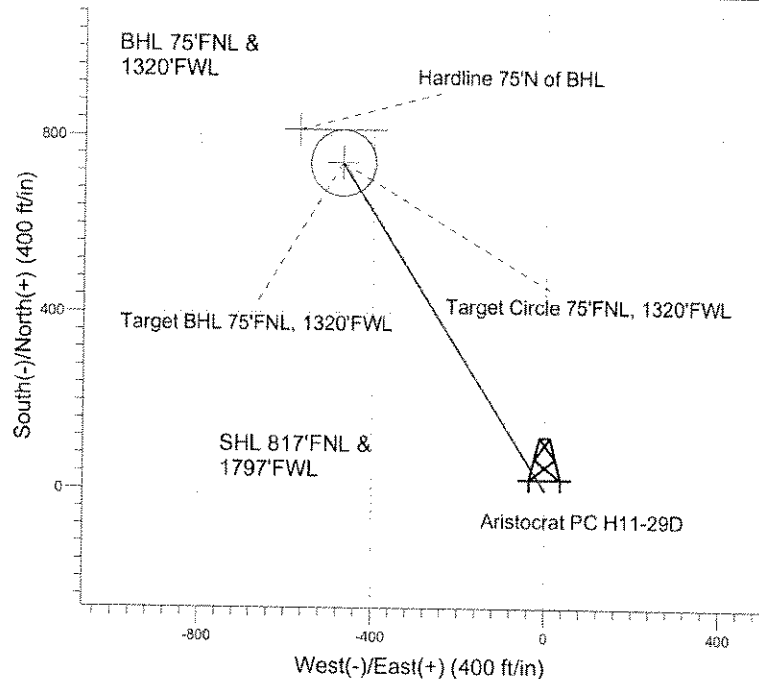
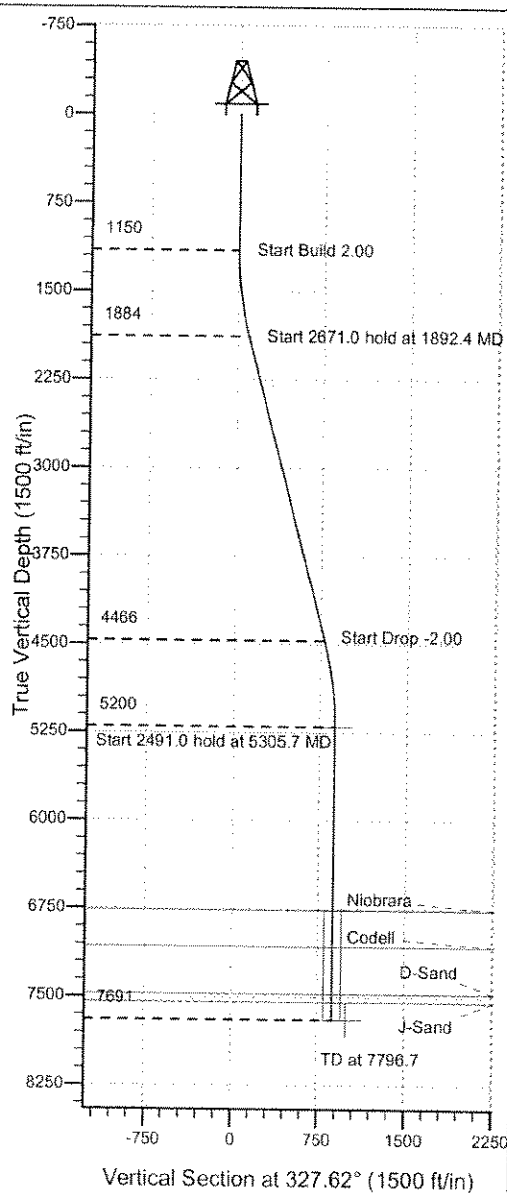


ENSIGN**Directional**Well Name: **Aristocrat PC H11-29D**Surface Location: Aristocrat PC H11-30 Pad Sec. 11-T3N-R65W
North American Datum 1983 US State Plane 1983 Colorado Northern Zone
Ground Elevation: 4768.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1333229.95	3241905.51	40° 14' 41.532 N	104° 38' 0.240 W	
Original Well Elev WELL @ 4781.0ft (Original Well Elev)						

NOBLE ENERGY INC WELD COUNTY COAristocrat PC H11-29D
Noble Aristocrat PC H11-29D Plan #1 (06-18-10)
10:38, June 28 2010

Azimuths to True North
Magnetic North: 8.94°
Magnetic Field
Strength: 53237.2nT
Dip Angle: 67.00°
Date: 12/31/2009
Model: IGRF200510

WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
Target BHL 75'FNL, 1320'FWL	5200.0	739.6	-469.0	40° 14' 48.840 N	104° 38' 6.268 W	Point
Target Circle 75'FNL, 1320'FWL	6761.0	739.6	-469.0	40° 14' 48.840 N	104° 38' 6.268 W	Circle (Radius: 75.0)
Hardline 75'N of BHL	7691.0	814.6	-569.0	40° 14' 49.582 N	104° 38' 7.578 W	Polygon

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	1150.0	0.00	0.00	1150.0	0.0	0.0	0.00	0.00	0.0	
3	1892.4	14.85	327.62	1884.1	80.8	-51.2	2.00	327.62	95.6	
4	4563.4	14.85	327.62	4465.9	658.8	-417.8	0.00	0.00	780.1	
5	5305.7	0.00	0.00	5200.0	739.6	-469.0	2.00	180.00	875.7	Target BHL 75'FNL, 1320'FWL
6	7796.7	0.00	0.00	7691.0	739.6	-469.0	0.00	0.00	875.7	



Directional

**NOBLE ENERGY INC WELD
COUNTY CO**

SEC.11-T3N-R65W

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

Aristocrat PC H11-29D

Wellbore #1

Plan: Noble Aristocrat PC H11-29D Plan #1 (06-18-10)

Standard Planning Report

28 June, 2010

ENSIGN

Directional

Ensign Directional Planning Report

Database: Landmark
Company: NOBLE ENERGY INC WELD COUNTY CO
Project: SEC.11-T3N-R65W
Site: Aristocrat PC H11-30 Pad Sec. 11-T3N-R65W
Well: Aristocrat PC H11-29D
Wellbore: Wellbore #1
Design: Noble Aristocrat PC H11-29D Plan #1 (06-18-1)

Local Co-ordinate Reference: Well Aristocrat PC H11-29D
TVD Reference: WELL @ 4781.0ft (Original Well Elev)
MD Reference: WELL @ 4781.0ft (Original Well Elev)
North Reference: True
Survey Calculation Method: Minimum Curvature

Project	SEC.11-T3N-R65W, 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	Aristocrat PC H11-30 Pad Sec. 11-T3N-R65W				
Site Position:		Northing:	1,333,229.71 ft	Latitude:	40° 14' 41.532 N
From:	Lat/Long	Easting:	3,241,880.39 ft	Longitude:	104° 38' 0.564 W
Position Uncertainty:	0.0 ft	Slot Radius:	"	Grid Convergence:	0.56 °

Well	Aristocrat PC H11-29D					
Well Position	+N/-S	0.0 ft	Northing:	1,333,229.95 ft	Latitude:	40° 14' 41.532 N
	+E/-W	25.1 ft	Easting:	3,241,905.51 ft	Longitude:	104° 38' 0.240 W
Position Uncertainty	0.0 ft		Wellhead Elevation:	ft	Ground Level:	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	Noble Aristocrat PC H11-29D Plan #1 (06-18-10)			
Audit Notes:				
Version:	Phase:	PROTOTYPE	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W	Direction
	(ft)	(ft)	(ft)	(°)
	0.0	0.0	0.0	327.62

Plan Sections

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,150.0	0.00	0.00	1,150.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,892.4	14.85	327.62	1,884.1	80.8	-51.2	2.00	2.00	0.00	327.62	
4,563.4	14.85	327.62	4,465.9	658.8	-417.8	0.00	0.00	0.00	0.00	
5,305.7	0.00	0.00	5,200.0	739.6	-469.0	2.00	-2.00	0.00	180.00	Target BHL 75°FNL
7,796.7	0.00	0.00	7,691.0	739.6	-469.0	0.00	0.00	0.00	0.00	



Directional

Ensign Directional Planning Report

Database: Landmark
Company: NOBLE ENERGY INC WELD COUNTY CO
Project: SEC. 11-T3N-R65W
Site: Aristocrat PC H11-30 Pad Sec. 11-T3N-R65W
Well: Aristocrat PC H11-29D
Wellbore: Wellbore #1
Design: Noble Aristocrat PC H11-29D Plan #1 (06-18-1)

Local Co-ordinate Reference: Well Aristocrat PC H11-29D
TVD Reference: WELL @ 4781.0ft (Original Well Elev)
MD Reference: WELL @ 4781.0ft (Original Well Elev)
North Reference: True
Survey Calculation Method: Minimum Curvature

Planned 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
40.0	0.00	0.00	40.0	0.0	0.0	0.0	0.00	0.00	0.00
80.0	0.00	0.00	80.0	0.0	0.0	0.0	0.00	0.00	0.00
120.0	0.00	0.00	120.0	0.0	0.0	0.0	0.00	0.00	0.00
160.0	0.00	0.00	160.0	0.0	0.0	0.0	0.00	0.00	0.00
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	0.00
240.0	0.00	0.00	240.0	0.0	0.0	0.0	0.00	0.00	0.00
280.0	0.00	0.00	280.0	0.0	0.0	0.0	0.00	0.00	0.00
320.0	0.00	0.00	320.0	0.0	0.0	0.0	0.00	0.00	0.00
360.0	0.00	0.00	360.0	0.0	0.0	0.0	0.00	0.00	0.00
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	0.00
440.0	0.00	0.00	440.0	0.0	0.0	0.0	0.00	0.00	0.00
480.0	0.00	0.00	480.0	0.0	0.0	0.0	0.00	0.00	0.00
520.0	0.00	0.00	520.0	0.0	0.0	0.0	0.00	0.00	0.00
560.0	0.00	0.00	560.0	0.0	0.0	0.0	0.00	0.00	0.00
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	0.00
640.0	0.00	0.00	640.0	0.0	0.0	0.0	0.00	0.00	0.00
680.0	0.00	0.00	680.0	0.0	0.0	0.0	0.00	0.00	0.00
720.0	0.00	0.00	720.0	0.0	0.0	0.0	0.00	0.00	0.00
760.0	0.00	0.00	760.0	0.0	0.0	0.0	0.00	0.00	0.00
800.0	0.00	0.00	800.0	0.0	0.0	0.0	0.00	0.00	0.00
840.0	0.00	0.00	840.0	0.0	0.0	0.0	0.00	0.00	0.00
880.0	0.00	0.00	880.0	0.0	0.0	0.0	0.00	0.00	0.00
920.0	0.00	0.00	920.0	0.0	0.0	0.0	0.00	0.00	0.00
960.0	0.00	0.00	960.0	0.0	0.0	0.0	0.00	0.00	0.00
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.0	0.00	0.00	0.00
1,040.0	0.00	0.00	1,040.0	0.0	0.0	0.0	0.00	0.00	0.00
1,080.0	0.00	0.00	1,080.0	0.0	0.0	0.0	0.00	0.00	0.00
1,120.0	0.00	0.00	1,120.0	0.0	0.0	0.0	0.00	0.00	0.00
1,150.0	0.00	0.00	1,150.0	0.0	0.0	0.0	0.00	0.00	0.00
1,160.0	0.20	327.62	1,160.0	0.0	0.0	0.0	2.00	2.00	0.00
1,200.0	1.00	327.62	1,200.0	0.4	-0.2	0.4	2.00	2.00	0.00
1,240.0	1.80	327.62	1,240.0	1.2	-0.8	1.4	2.00	2.00	0.00
1,280.0	2.60	327.62	1,280.0	2.5	-1.6	2.9	2.00	2.00	0.00
1,320.0	3.40	327.62	1,319.9	4.3	-2.7	5.0	2.00	2.00	0.00
1,360.0	4.20	327.62	1,359.8	6.5	-4.1	7.7	2.00	2.00	0.00
1,400.0	5.00	327.62	1,399.7	9.2	-5.8	10.9	2.00	2.00	0.00
1,440.0	5.80	327.62	1,439.5	12.4	-7.9	14.7	2.00	2.00	0.00
1,480.0	6.60	327.62	1,479.3	16.0	-10.2	19.0	2.00	2.00	0.00
1,520.0	7.40	327.62	1,519.0	20.2	-12.8	23.9	2.00	2.00	0.00
1,560.0	8.20	327.62	1,558.6	24.7	-15.7	29.3	2.00	2.00	0.00
1,600.0	9.00	327.62	1,598.2	29.8	-18.9	35.3	2.00	2.00	0.00
1,640.0	9.80	327.62	1,637.6	35.3	-22.4	41.8	2.00	2.00	0.00
1,680.0	10.60	327.62	1,677.0	41.3	-26.2	48.9	2.00	2.00	0.00
1,720.0	11.40	327.62	1,716.2	47.7	-30.3	56.5	2.00	2.00	0.00
1,760.0	12.20	327.62	1,755.4	54.6	-34.6	64.7	2.00	2.00	0.00
1,800.0	13.00	327.62	1,794.4	62.0	-39.3	73.4	2.00	2.00	0.00
1,840.0	13.80	327.62	1,833.3	69.8	-44.3	82.7	2.00	2.00	0.00
1,880.0	14.60	327.62	1,872.1	78.1	-49.5	92.5	2.00	2.00	0.00
1,892.4	14.85	327.62	1,884.1	80.8	-51.2	95.6	2.00	2.00	0.00
1,920.0	14.85	327.62	1,910.8	86.8	-55.0	102.7	0.00	0.00	0.00
1,960.0	14.85	327.62	1,949.5	95.4	-60.5	113.0	0.00	0.00	0.00
2,000.0	14.85	327.62	1,988.1	104.1	-66.0	123.2	0.00	0.00	0.00
2,040.0	14.85	327.62	2,026.8	112.7	-71.5	133.5	0.00	0.00	0.00

ENSIGN Directional

Ensign Directional Planning Report

Database: Landmark
Company: NOBLE ENERGY INC WELD COUNTY CO
Project: SEC.11-T3N-R65W
Site: Aristocrat PC H11-30 Pad Sec. 11-T3N-R65W
Well: Aristocrat PC H11-29D
Wellbore: Wellbore #1
Design: Noble Aristocrat PC H11-29D Plan #1 (06-18-1)

Local Co-ordinate Reference: Well Aristocrat PC H11-29D
TVD Reference: WELL @ 4781.0ft (Original Well Elev)
MD Reference: WELL @ 4781.0ft (Original Well Elev)
North Reference: True
Survey Calculation Method: Minimum Curvature

Planned 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)
2,080.0	14.85	327.62	2,065.5	121.4	-77.0	143.7	0.00	0.00	0.00
2,120.0	14.85	327.62	2,104.1	130.0	-82.5	154.0	0.00	0.00	0.00
2,160.0	14.85	327.62	2,142.8	138.7	-87.9	164.2	0.00	0.00	0.00
2,200.0	14.85	327.62	2,181.4	147.3	-93.4	174.5	0.00	0.00	0.00
2,240.0	14.85	327.62	2,220.1	156.0	-98.9	184.7	0.00	0.00	0.00
2,280.0	14.85	327.62	2,258.8	164.7	-104.4	195.0	0.00	0.00	0.00
2,320.0	14.85	327.62	2,297.4	173.3	-109.9	205.2	0.00	0.00	0.00
2,360.0	14.85	327.62	2,336.1	182.0	-115.4	215.5	0.00	0.00	0.00
2,400.0	14.85	327.62	2,374.8	190.6	-120.9	225.7	0.00	0.00	0.00
2,440.0	14.85	327.62	2,413.4	199.3	-126.4	236.0	0.00	0.00	0.00
2,480.0	14.85	327.62	2,452.1	207.9	-131.9	246.2	0.00	0.00	0.00
2,520.0	14.85	327.62	2,490.8	216.6	-137.4	256.5	0.00	0.00	0.00
2,560.0	14.85	327.62	2,529.4	225.3	-142.8	266.7	0.00	0.00	0.00
2,600.0	14.85	327.62	2,568.1	233.9	-148.3	277.0	0.00	0.00	0.00
2,640.0	14.85	327.62	2,606.8	242.6	-153.8	287.2	0.00	0.00	0.00
2,680.0	14.85	327.62	2,645.4	251.2	-159.3	297.5	0.00	0.00	0.00
2,720.0	14.85	327.62	2,684.1	259.9	-164.8	307.7	0.00	0.00	0.00
2,760.0	14.85	327.62	2,722.8	268.5	-170.3	318.0	0.00	0.00	0.00
2,800.0	14.85	327.62	2,761.4	277.2	-175.8	328.2	0.00	0.00	0.00
2,840.0	14.85	327.62	2,800.1	285.8	-181.3	338.5	0.00	0.00	0.00
2,880.0	14.85	327.62	2,838.7	294.5	-186.8	348.7	0.00	0.00	0.00
2,920.0	14.85	327.62	2,877.4	303.2	-192.2	359.0	0.00	0.00	0.00
2,960.0	14.85	327.62	2,916.1	311.8	-197.7	369.2	0.00	0.00	0.00
3,000.0	14.85	327.62	2,954.7	320.5	-203.2	379.5	0.00	0.00	0.00
3,040.0	14.85	327.62	2,993.4	329.1	-208.7	389.7	0.00	0.00	0.00
3,080.0	14.85	327.62	3,032.1	337.8	-214.2	400.0	0.00	0.00	0.00
3,120.0	14.85	327.62	3,070.7	346.4	-219.7	410.2	0.00	0.00	0.00
3,160.0	14.85	327.62	3,109.4	355.1	-225.2	420.5	0.00	0.00	0.00
3,200.0	14.85	327.62	3,148.1	363.7	-230.7	430.7	0.00	0.00	0.00
3,240.0	14.85	327.62	3,186.7	372.4	-236.2	441.0	0.00	0.00	0.00
3,280.0	14.85	327.62	3,225.4	381.1	-241.6	451.2	0.00	0.00	0.00
3,320.0	14.85	327.62	3,264.1	389.7	-247.1	461.5	0.00	0.00	0.00
3,360.0	14.85	327.62	3,302.7	398.4	-252.6	471.7	0.00	0.00	0.00
3,400.0	14.85	327.62	3,341.4	407.0	-258.1	482.0	0.00	0.00	0.00
3,440.0	14.85	327.62	3,380.0	415.7	-263.6	492.2	0.00	0.00	0.00
3,480.0	14.85	327.62	3,418.7	424.3	-269.1	502.5	0.00	0.00	0.00
3,520.0	14.85	327.62	3,457.4	433.0	-274.6	512.7	0.00	0.00	0.00
3,560.0	14.85	327.62	3,496.0	441.6	-280.1	523.0	0.00	0.00	0.00
3,600.0	14.85	327.62	3,534.7	450.3	-285.6	533.2	0.00	0.00	0.00
3,640.0	14.85	327.62	3,573.4	459.0	-291.0	543.5	0.00	0.00	0.00
3,680.0	14.85	327.62	3,612.0	467.6	-296.5	553.7	0.00	0.00	0.00
3,720.0	14.85	327.62	3,650.7	476.3	-302.0	564.0	0.00	0.00	0.00
3,760.0	14.85	327.62	3,689.4	484.9	-307.5	574.2	0.00	0.00	0.00
3,800.0	14.85	327.62	3,728.0	493.6	-313.0	584.5	0.00	0.00	0.00
3,840.0	14.85	327.62	3,766.7	502.2	-318.5	594.7	0.00	0.00	0.00
3,880.0	14.85	327.62	3,805.4	510.9	-324.0	605.0	0.00	0.00	0.00
3,920.0	14.85	327.62	3,844.0	519.6	-329.5	615.2	0.00	0.00	0.00
3,960.0	14.85	327.62	3,882.7	528.2	-335.0	625.5	0.00	0.00	0.00
4,000.0	14.85	327.62	3,921.4	536.9	-340.4	635.7	0.00	0.00	0.00
4,040.0	14.85	327.62	3,960.0	545.5	-345.9	646.0	0.00	0.00	0.00
4,080.0	14.85	327.62	3,998.7	554.2	-351.4	656.2	0.00	0.00	0.00
4,120.0	14.85	327.62	4,037.3	562.8	-356.9	666.5	0.00	0.00	0.00
4,160.0	14.85	327.62	4,076.0	571.5	-362.4	676.7	0.00	0.00	0.00
4,200.0	14.85	327.62	4,114.7	580.1	-367.9	687.0	0.00	0.00	0.00

ENSIGN Directional

Ensign Directional Planning Report

Database: Landmark
Company: NOBLE ENERGY INC WELD COUNTY CO
Project: SEC.11-T3N-R65W
Site: Aristocrat PC H11-30 Pad Sec. 11-T3N-R65W
Well: Aristocrat PC H11-29D
Wellbore: Wellbore #1
Design: Noble Aristocrat PC H11-29D Plan #1 (06-18-1)

Local Co-ordinate Reference: Well Aristocrat PC H11-29D
TVD Reference: WELL @ 4781.0ft (Original Well Elev)
MD Reference: WELL @ 4781.0ft (Original Well Elev)
North Reference: True
Survey Calculation Method: Minimum Curvature

Planned 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)
4,240.0	14.85	327.62	4,153.3	588.8	-373.4	697.2	0.00	0.00	0.00
4,280.0	14.85	327.62	4,192.0	597.5	-378.9	707.5	0.00	0.00	0.00
4,320.0	14.85	327.62	4,230.7	606.1	-384.4	717.7	0.00	0.00	0.00
4,360.0	14.85	327.62	4,269.3	614.8	-389.8	728.0	0.00	0.00	0.00
4,400.0	14.85	327.62	4,308.0	623.4	-395.3	738.2	0.00	0.00	0.00
4,440.0	14.85	327.62	4,346.7	632.1	-400.8	748.5	0.00	0.00	0.00
4,480.0	14.85	327.62	4,385.3	640.7	-406.3	758.7	0.00	0.00	0.00
4,520.0	14.85	327.62	4,424.0	649.4	-411.8	769.0	0.00	0.00	0.00
4,560.0	14.85	327.62	4,462.7	658.0	-417.3	779.2	0.00	0.00	0.00
4,563.4	14.85	327.62	4,465.9	658.8	-417.8	780.1	0.00	0.00	0.00
4,600.0	14.11	327.62	4,501.4	666.5	-422.7	789.2	2.00	-2.00	0.00
4,640.0	13.31	327.62	4,540.2	674.5	-427.7	798.7	2.00	-2.00	0.00
4,680.0	12.51	327.62	4,579.2	682.1	-432.5	807.6	2.00	-2.00	0.00
4,720.0	11.71	327.62	4,618.3	689.2	-437.0	816.0	2.00	-2.00	0.00
4,760.0	10.91	327.62	4,657.6	695.8	-441.2	823.9	2.00	-2.00	0.00
4,800.0	10.11	327.62	4,696.9	701.9	-445.1	831.2	2.00	-2.00	0.00
4,840.0	9.31	327.62	4,736.3	707.6	-448.7	837.9	2.00	-2.00	0.00
4,880.0	8.51	327.62	4,775.8	712.9	-452.1	844.1	2.00	-2.00	0.00
4,920.0	7.71	327.62	4,815.4	717.7	-455.1	849.8	2.00	-2.00	0.00
4,960.0	6.91	327.62	4,855.1	722.0	-457.8	854.9	2.00	-2.00	0.00
5,000.0	6.11	327.62	4,894.8	725.8	-460.2	859.4	2.00	-2.00	0.00
5,040.0	5.31	327.62	4,934.6	729.1	-462.4	863.4	2.00	-2.00	0.00
5,080.0	4.51	327.62	4,974.5	732.0	-464.2	866.8	2.00	-2.00	0.00
5,120.0	3.71	327.62	5,014.4	734.5	-465.8	869.7	2.00	-2.00	0.00
5,160.0	2.91	327.62	5,054.3	736.4	-467.0	872.0	2.00	-2.00	0.00
5,200.0	2.11	327.62	5,094.3	737.9	-467.9	873.8	2.00	-2.00	0.00
5,240.0	1.31	327.62	5,134.3	738.9	-468.6	875.0	2.00	-2.00	0.00
5,280.0	0.51	327.62	5,174.3	739.5	-468.9	875.6	2.00	-2.00	0.00
5,305.7	0.00	0.00	5,200.0	739.6	-469.0	875.7	2.00	-2.00	0.00
Target BHL 75'FNL, 1320'FWL									
5,320.0	0.00	0.00	5,214.3	739.6	-469.0	875.7	0.00	0.00	0.00
5,360.0	0.00	0.00	5,254.3	739.6	-469.0	875.7	0.00	0.00	0.00
5,400.0	0.00	0.00	5,294.3	739.6	-469.0	875.7	0.00	0.00	0.00
5,440.0	0.00	0.00	5,334.3	739.6	-469.0	875.7	0.00	0.00	0.00
5,480.0	0.00	0.00	5,374.3	739.6	-469.0	875.7	0.00	0.00	0.00
5,520.0	0.00	0.00	5,414.3	739.6	-469.0	875.7	0.00	0.00	0.00
5,560.0	0.00	0.00	5,454.3	739.6	-469.0	875.7	0.00	0.00	0.00
5,600.0	0.00	0.00	5,494.3	739.6	-469.0	875.7	0.00	0.00	0.00
5,640.0	0.00	0.00	5,534.3	739.6	-469.0	875.7	0.00	0.00	0.00
5,680.0	0.00	0.00	5,574.3	739.6	-469.0	875.7	0.00	0.00	0.00
5,720.0	0.00	0.00	5,614.3	739.6	-469.0	875.7	0.00	0.00	0.00
5,760.0	0.00	0.00	5,654.3	739.6	-469.0	875.7	0.00	0.00	0.00
5,800.0	0.00	0.00	5,694.3	739.6	-469.0	875.7	0.00	0.00	0.00
5,840.0	0.00	0.00	5,734.3	739.6	-469.0	875.7	0.00	0.00	0.00
5,880.0	0.00	0.00	5,774.3	739.6	-469.0	875.7	0.00	0.00	0.00
5,920.0	0.00	0.00	5,814.3	739.6	-469.0	875.7	0.00	0.00	0.00
5,960.0	0.00	0.00	5,854.3	739.6	-469.0	875.7	0.00	0.00	0.00
6,000.0	0.00	0.00	5,894.3	739.6	-469.0	875.7	0.00	0.00	0.00
6,040.0	0.00	0.00	5,934.3	739.6	-469.0	875.7	0.00	0.00	0.00
6,080.0	0.00	0.00	5,974.3	739.6	-469.0	875.7	0.00	0.00	0.00
6,120.0	0.00	0.00	6,014.3	739.6	-469.0	875.7	0.00	0.00	0.00
6,160.0	0.00	0.00	6,054.3	739.6	-469.0	875.7	0.00	0.00	0.00
6,200.0	0.00	0.00	6,094.3	739.6	-469.0	875.7	0.00	0.00	0.00

ENSIGN Directional

Ensign Directional Planning Report

Database: Landmark
Company: NOBLE ENERGY INC WELD COUNTY CO
Project: SEC.11-T3N-R65W
Site: Aristocrat PC H11-30 Pad Sec. 11-T3N-R65W
Well: Aristocrat PC H11-29D
Wellbore: Wellbore #1
Design: Noble Aristocrat PC H11-29D Plan #1 (06-18-1)

Local Co-ordinate Reference: Well Aristocrat PC H11-29D
TVD Reference: WELL @ 4781.0ft (Original Well Elev)
MD Reference: WELL @ 4781.0ft (Original Well Elev)
North Reference: True
Survey Calculation Method: Minimum Curvature

Planned 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)
6,240.0	0.00	0.00	6,134.3	739.6	-469.0	875.7	0.00	0.00	0.00
6,280.0	0.00	0.00	6,174.3	739.6	-469.0	875.7	0.00	0.00	0.00
6,320.0	0.00	0.00	6,214.3	739.6	-469.0	875.7	0.00	0.00	0.00
6,360.0	0.00	0.00	6,254.3	739.6	-469.0	875.7	0.00	0.00	0.00
6,400.0	0.00	0.00	6,294.3	739.6	-469.0	875.7	0.00	0.00	0.00
6,440.0	0.00	0.00	6,334.3	739.6	-469.0	875.7	0.00	0.00	0.00
6,480.0	0.00	0.00	6,374.3	739.6	-469.0	875.7	0.00	0.00	0.00
6,520.0	0.00	0.00	6,414.3	739.6	-469.0	875.7	0.00	0.00	0.00
6,560.0	0.00	0.00	6,454.3	739.6	-469.0	875.7	0.00	0.00	0.00
6,600.0	0.00	0.00	6,494.3	739.6	-469.0	875.7	0.00	0.00	0.00
6,640.0	0.00	0.00	6,534.3	739.6	-469.0	875.7	0.00	0.00	0.00
6,680.0	0.00	0.00	6,574.3	739.6	-469.0	875.7	0.00	0.00	0.00
6,720.0	0.00	0.00	6,614.3	739.6	-469.0	875.7	0.00	0.00	0.00
6,760.0	0.00	0.00	6,654.3	739.6	-469.0	875.7	0.00	0.00	0.00
6,800.0	0.00	0.00	6,694.3	739.6	-469.0	875.7	0.00	0.00	0.00
6,840.0	0.00	0.00	6,734.3	739.6	-469.0	875.7	0.00	0.00	0.00
6,866.7	0.00	0.00	6,761.0	739.6	-469.0	875.7	0.00	0.00	0.00
Niobrara - Target Circle 75'FNL, 1320'FWL									
6,880.0	0.00	0.00	6,774.3	739.6	-469.0	875.7	0.00	0.00	0.00
6,920.0	0.00	0.00	6,814.3	739.6	-469.0	875.7	0.00	0.00	0.00
6,960.0	0.00	0.00	6,854.3	739.6	-469.0	875.7	0.00	0.00	0.00
7,000.0	0.00	0.00	6,894.3	739.6	-469.0	875.7	0.00	0.00	0.00
7,040.0	0.00	0.00	6,934.3	739.6	-469.0	875.7	0.00	0.00	0.00
7,080.0	0.00	0.00	6,974.3	739.6	-469.0	875.7	0.00	0.00	0.00
7,120.0	0.00	0.00	7,014.3	739.6	-469.0	875.7	0.00	0.00	0.00
7,160.0	0.00	0.00	7,054.3	739.6	-469.0	875.7	0.00	0.00	0.00
7,176.7	0.00	0.00	7,071.0	739.6	-469.0	875.7	0.00	0.00	0.00
Codell									
7,200.0	0.00	0.00	7,094.3	739.6	-469.0	875.7	0.00	0.00	0.00
7,240.0	0.00	0.00	7,134.3	739.6	-469.0	875.7	0.00	0.00	0.00
7,280.0	0.00	0.00	7,174.3	739.6	-469.0	875.7	0.00	0.00	0.00
7,320.0	0.00	0.00	7,214.3	739.6	-469.0	875.7	0.00	0.00	0.00
7,360.0	0.00	0.00	7,254.3	739.6	-469.0	875.7	0.00	0.00	0.00
7,400.0	0.00	0.00	7,294.3	739.6	-469.0	875.7	0.00	0.00	0.00
7,440.0	0.00	0.00	7,334.3	739.6	-469.0	875.7	0.00	0.00	0.00
7,480.0	0.00	0.00	7,374.3	739.6	-469.0	875.7	0.00	0.00	0.00
7,520.0	0.00	0.00	7,414.3	739.6	-469.0	875.7	0.00	0.00	0.00
7,560.0	0.00	0.00	7,454.3	739.6	-469.0	875.7	0.00	0.00	0.00
7,576.7	0.00	0.00	7,471.0	739.6	-469.0	875.7	0.00	0.00	0.00
D-Sand									
7,600.0	0.00	0.00	7,494.3	739.6	-469.0	875.7	0.00	0.00	0.00
7,640.0	0.00	0.00	7,534.3	739.6	-469.0	875.7	0.00	0.00	0.00
7,646.7	0.00	0.00	7,541.0	739.6	-469.0	875.7	0.00	0.00	0.00
J-Sand									
7,680.0	0.00	0.00	7,574.3	739.6	-469.0	875.7	0.00	0.00	0.00
7,720.0	0.00	0.00	7,614.3	739.6	-469.0	875.7	0.00	0.00	0.00
7,760.0	0.00	0.00	7,654.3	739.6	-469.0	875.7	0.00	0.00	0.00
7,796.7	0.00	0.00	7,691.0	739.6	-469.0	875.7	0.00	0.00	0.00
Hardline 75'N of BHL									



Directional

Ensign Directional Planning Report

Database: Landmark
Company: NOBLE ENERGY INC WELD COUNTY CO
Project: SEC.11-T3N-R65W
Site: Aristocrat PC H11-30 Pad Sec. 11-T3N-R65W
Well: Aristocrat PC H11-29D
Wellbore: Wellbore #1
Design: Noble Aristocrat PC H11-29D Plan #1 (06-18-1)

Local Co-ordinate Reference: Well Aristocrat PC H11-29D
TVD Reference: WELL @ 4781.0ft (Original Well Elev)
MD Reference: WELL @ 4781.0ft (Original Well Elev)
North Reference: True
Survey Calculation Method: Minimum Curvature

Targets

Target Name

- hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
Hardline 75°N of BHL	0.00	0.00	7,691.0	814.6	-569.0	1,334,038.91	3,241,328.60	40° 14' 49.582 N	104° 38' 7.578 W
- plan misses by 125.0ft at 7796.7ft MD (7691.0 TVD, 739.6 N, -469.0 E)									
- Polygon									
Point 1			7,691.0	0.0	0.0	1,334,038.91	3,241,328.60		
Point 2			7,691.0	0.0	200.0	1,334,040.87	3,241,528.58		
Target BHL 75°FNL, 1	0.00	0.00	5,200.0	739.6	-469.0	1,333,964.85	3,241,429.35	40° 14' 48.840 N	104° 38' 6.288 W
- plan hits target									
- Point									
Target Circle 75°FNL,	0.00	0.00	6,761.0	739.6	-469.0	1,333,964.90	3,241,429.32	40° 14' 48.840 N	104° 38' 6.288 W
- plan misses by 0.1ft at 6866.7ft MD (6761.0 TVD, 739.6 N, -469.0 E)									
- Circle (radius 75.0)									

Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
6,866.7	6,761.0	Niobrara		0.00	
7,176.7	7,071.0	Codell		0.00	
7,576.7	7,471.0	D-Sand		0.00	
7,646.7	7,541.0	J-Sand		0.00	