

Project: Mustang  
 Site: H Section 02  
 Well: Aristocrat H14-765  
 Wellbore: Aristocrat H14-765  
 Design: Plan #1

# Northern Region - DJ Basin

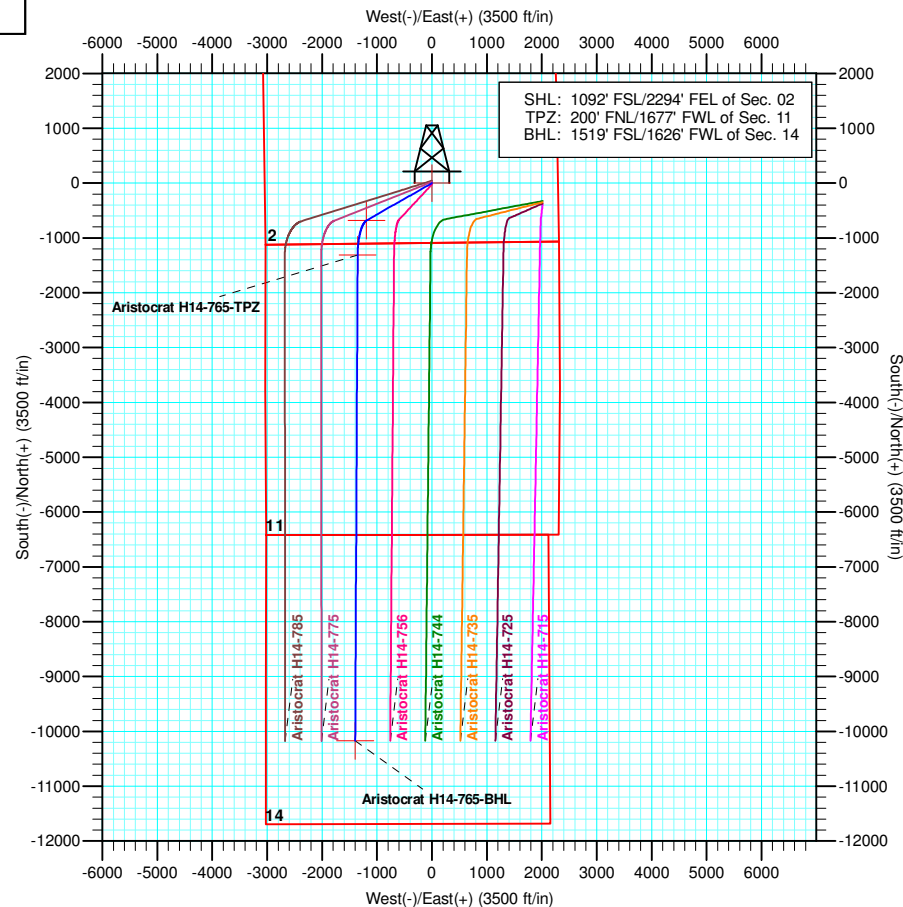
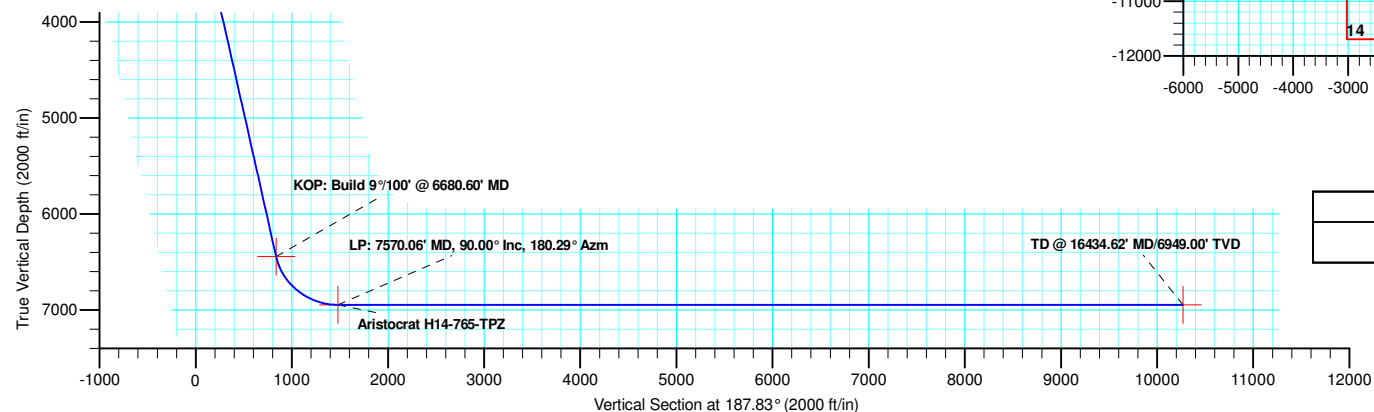
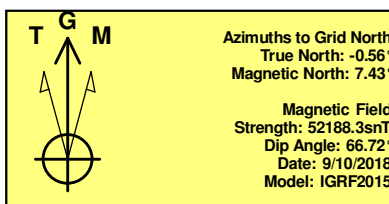
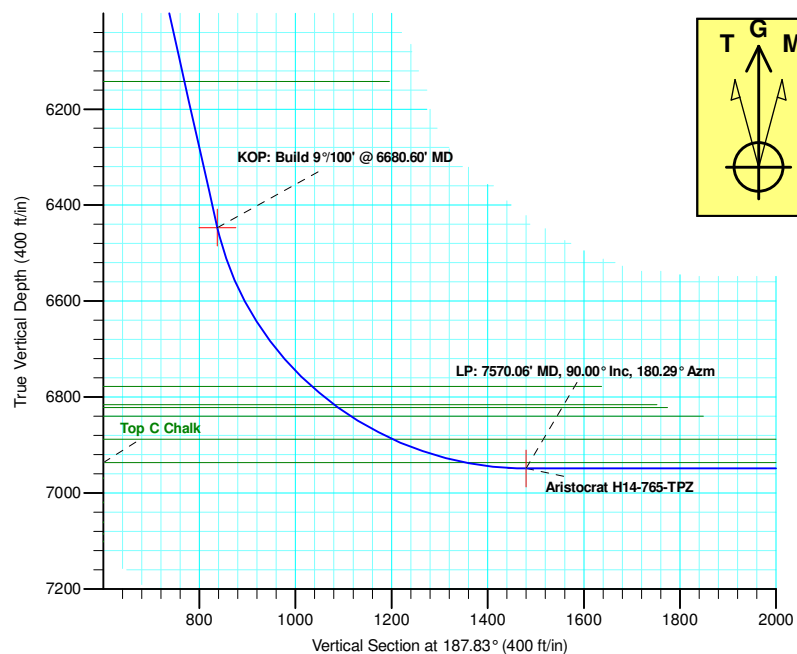
Geodetic System: US State Plane 1983  
 Datum: North American Datum 1983  
 Ellipsoid: GRS 1980  
 Zone: Colorado Northern Zone  
 System Datum: Mean Sea Level

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	Vsect	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	2200.00	0.00	0.00	2200.00	0.00	0.00	0.00	0.00	0.00	
3	3208.18	20.16	240.21	3187.49	-87.24	-152.37	2.00	240.21	107.17	
4	6680.60	20.16	240.21	6447.10	-681.95	-1191.12	0.00	0.00	837.78	
5	7570.06	90.00	180.29	6949.00	-1308.19	-1353.74	9.00	-61.47	1480.33	Aristocrat H14-765-TPZ
6	16434.62	90.00	180.29	6949.00	-10172.64	-1398.16	0.00	0.00	10268.28	Aristocrat H14-765-BHL

WELL DETAILS: Aristocrat H14-765

+N/-S	+E/-W	Northing	Ground Level: Easting	4781.00 Latitude	Longitude	Slot
0.00	0.00	1335153.22	3243140.96	40.2501160	-104.6289067	



Plan: Plan #1 (Aristocrat H14-765/Aristocrat H14-765)

Created By: Keith Noack Date: 11:11, October 01 2018

# **Northern Region - DJ Basin**

**Mustang**

**H Section 02**

**Aristocrat H14-765**

**Aristocrat H14-765**

**Plan: Plan #1**

## **Standard Planning Report**

**01 October, 2018**

# Noble Energy, Inc.

## Planning Report

<b>Database:</b>	EDMP	<b>Local Co-ordinate Reference:</b>	Well Aristocrat H14-765
<b>Company:</b>	Northern Region - DJ Basin	<b>TVD Reference:</b>	Well @ 4811.00ft
<b>Project:</b>	Mustang	<b>MD Reference:</b>	Well @ 4811.00ft
<b>Site:</b>	H Section 02	<b>North Reference:</b>	Grid
<b>Well:</b>	Aristocrat H14-765	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Aristocrat H14-765		
<b>Design:</b>	Plan #1		

<b>Project</b>	Mustang, 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		
<b>Map Zone:</b>	Colorado Northern Zone		

Site		H Section 02				
Site Position:		Northing:	1,335,153.47 usft	Latitude:	40.2501168	
From:	Map	Easting:	3,243,140.81 usft	Longitude:	-104.6289073	
Position Uncertainty:		0.00 ft	Slot Radius:	13.200 in	Grid Convergence:	0.56 °

Well	Aristocrat H14-765					
Well Position	+N/-S	-0.25 ft	Northing:	1,335,153.22 usft	Latitude:	40.2501161
	+E/-W	0.16 ft	Easting:	3,243,140.96 usft	Longitude:	-104.6289067
Position Uncertainty		0.00 ft	Wellhead Elevation:		Ground Level:	4,781.00 ft

<b>Wellbore</b>	Aristocrat H14-765				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2015	9/10/2018	8.00	66.72	52,188.33377953

<b>Design</b>	Plan #1			
<b>Audit Notes:</b>				
<b>Version:</b>	<b>Phase:</b>	PLAN	<b>Tie On Depth:</b>	0.00
<b>Vertical Section:</b>	<b>Depth From (TVD) (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Direction (°)</b>
	0.00	0.00	0.00	187.83

<b>Plan Sections</b>										
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
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,200.00	0.00	0.00	2,200.00	0.00	0.00	0.00	0.00	0.00	0.00	
3,208.18	20.16	240.21	3,187.49	-87.24	-152.37	2.00	2.00	0.00	240.21	
6,680.60	20.16	240.21	6,447.10	-681.95	-1,191.12	0.00	0.00	0.00	0.00	
7,570.06	90.00	180.29	6,949.00	-1,308.19	-1,353.74	9.00	7.85	-6.74	-61.47	Aristocrat H14-765-
16,434.62	90.00	180.29	6,949.00	-10,172.64	-1,398.16	0.00	0.00	0.00	0.00	Aristocrat H14-765-

# Noble Energy, Inc.

## Planning Report

<b>Database:</b>	EDMP	<b>Local Co-ordinate Reference:</b>	Well Aristocrat H14-765
<b>Company:</b>	Northern Region - DJ Basin	<b>TVD Reference:</b>	Well @ 4811.00ft
<b>Project:</b>	Mustang	<b>MD Reference:</b>	Well @ 4811.00ft
<b>Site:</b>	H Section 02	<b>North Reference:</b>	Grid
<b>Well:</b>	Aristocrat H14-765	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Aristocrat H14-765		
<b>Design:</b>	Plan #1		

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)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00
492.00	0.00	0.00	492.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Pierre</b>									
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00
652.00	0.00	0.00	652.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Upper Pierre Aquifer Top</b>									
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	0.00
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00
1,100.00	0.00	0.00	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00
1,200.00	0.00	0.00	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00
1,300.00	0.00	0.00	1,300.00	0.00	0.00	0.00	0.00	0.00	0.00
1,400.00	0.00	0.00	1,400.00	0.00	0.00	0.00	0.00	0.00	0.00
1,500.00	0.00	0.00	1,500.00	0.00	0.00	0.00	0.00	0.00	0.00
1,566.00	0.00	0.00	1,566.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Upper Pierre Aquifer Base</b>									
1,600.00	0.00	0.00	1,600.00	0.00	0.00	0.00	0.00	0.00	0.00
1,700.00	0.00	0.00	1,700.00	0.00	0.00	0.00	0.00	0.00	0.00
1,800.00	0.00	0.00	1,800.00	0.00	0.00	0.00	0.00	0.00	0.00
1,900.00	0.00	0.00	1,900.00	0.00	0.00	0.00	0.00	0.00	0.00
2,000.00	0.00	0.00	2,000.00	0.00	0.00	0.00	0.00	0.00	0.00
2,100.00	0.00	0.00	2,100.00	0.00	0.00	0.00	0.00	0.00	0.00
2,200.00	0.00	0.00	2,200.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Build: 2°/100'</b>									
2,300.00	2.00	240.21	2,299.98	-0.87	-1.51	1.07	2.00	2.00	0.00
2,400.00	4.00	240.21	2,399.84	-3.47	-6.06	4.26	2.00	2.00	0.00
2,500.00	6.00	240.21	2,499.45	-7.80	-13.62	9.58	2.00	2.00	0.00
2,600.00	8.00	240.21	2,598.70	-13.85	-24.20	17.02	2.00	2.00	0.00
2,700.00	10.00	240.21	2,697.47	-21.62	-37.77	26.57	2.00	2.00	0.00
2,800.00	12.00	240.21	2,795.62	-31.10	-54.33	38.21	2.00	2.00	0.00
2,900.00	14.00	240.21	2,893.06	-42.28	-73.85	51.94	2.00	2.00	0.00
3,000.00	16.00	240.21	2,989.64	-55.14	-96.31	67.74	2.00	2.00	0.00
3,100.00	18.00	240.21	3,085.27	-69.67	-121.68	85.59	2.00	2.00	0.00
3,208.18	20.16	240.21	3,187.49	-87.24	-152.37	107.17	2.00	2.00	0.00
<b>Hold: 20.16° Inc, 240.21° Azm</b>									
3,300.00	20.16	240.21	3,273.69	-102.96	-179.84	126.49	0.00	0.00	0.00
3,400.00	20.16	240.21	3,367.56	-120.09	-209.75	147.53	0.00	0.00	0.00
3,500.00	20.16	240.21	3,461.43	-137.22	-239.67	168.57	0.00	0.00	0.00
3,600.00	20.16	240.21	3,555.30	-154.34	-269.58	189.61	0.00	0.00	0.00
3,700.00	20.16	240.21	3,649.18	-171.47	-299.49	210.65	0.00	0.00	0.00
3,800.00	20.16	240.21	3,743.05	-188.60	-329.41	231.69	0.00	0.00	0.00
3,862.80	20.16	240.21	3,802.00	-199.35	-348.20	244.91	0.00	0.00	0.00
<b>Parkman</b>									
3,900.00	20.16	240.21	3,836.92	-205.72	-359.32	252.73	0.00	0.00	0.00
4,000.00	20.16	240.21	3,930.79	-222.85	-389.24	273.77	0.00	0.00	0.00
4,100.00	20.16	240.21	4,024.66	-239.98	-419.15	294.81	0.00	0.00	0.00
4,200.00	20.16	240.21	4,118.53	-257.10	-449.07	315.86	0.00	0.00	0.00

# Noble Energy, Inc.

## Planning Report

<b>Database:</b>	EDMP	<b>Local Co-ordinate Reference:</b>	Well Aristocrat H14-765
<b>Company:</b>	Northern Region - DJ Basin	<b>TVD Reference:</b>	Well @ 4811.00ft
<b>Project:</b>	Mustang	<b>MD Reference:</b>	Well @ 4811.00ft
<b>Site:</b>	H Section 02	<b>North Reference:</b>	Grid
<b>Well:</b>	Aristocrat H14-765	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Aristocrat H14-765		
<b>Design:</b>	Plan #1		

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)
4,297.44	20.16	240.21	4,210.00	-273.79	-478.21	336.36	0.00	0.00	0.00
<b>Sussex</b>									
4,300.00	20.16	240.21	4,212.40	-274.23	-478.98	336.90	0.00	0.00	0.00
4,400.00	20.16	240.21	4,306.27	-291.36	-508.89	357.94	0.00	0.00	0.00
4,500.00	20.16	240.21	4,400.15	-308.48	-538.81	378.98	0.00	0.00	0.00
4,600.00	20.16	240.21	4,494.02	-325.61	-568.72	400.02	0.00	0.00	0.00
4,700.00	20.16	240.21	4,587.89	-342.74	-598.64	421.06	0.00	0.00	0.00
4,800.00	20.16	240.21	4,681.76	-359.86	-628.55	442.10	0.00	0.00	0.00
4,900.00	20.16	240.21	4,775.63	-376.99	-658.47	463.14	0.00	0.00	0.00
5,000.00	20.16	240.21	4,869.50	-394.12	-688.38	484.18	0.00	0.00	0.00
5,064.45	20.16	240.21	4,930.00	-405.16	-707.66	497.74	0.00	0.00	0.00
<b>Shannon</b>									
5,100.00	20.16	240.21	4,963.37	-411.24	-718.29	505.22	0.00	0.00	0.00
5,200.00	20.16	240.21	5,057.25	-428.37	-748.21	526.26	0.00	0.00	0.00
5,300.00	20.16	240.21	5,151.12	-445.50	-778.12	547.30	0.00	0.00	0.00
5,400.00	20.16	240.21	5,244.99	-462.62	-808.04	568.34	0.00	0.00	0.00
5,500.00	20.16	240.21	5,338.86	-479.75	-837.95	589.38	0.00	0.00	0.00
5,600.00	20.16	240.21	5,432.73	-496.88	-867.86	610.42	0.00	0.00	0.00
5,700.00	20.16	240.21	5,526.60	-514.00	-897.78	631.46	0.00	0.00	0.00
5,800.00	20.16	240.21	5,620.47	-531.13	-927.69	652.50	0.00	0.00	0.00
5,900.00	20.16	240.21	5,714.34	-548.26	-957.61	673.54	0.00	0.00	0.00
6,000.00	20.16	240.21	5,808.22	-565.39	-987.52	694.58	0.00	0.00	0.00
6,100.00	20.16	240.21	5,902.09	-582.51	-1,017.44	715.62	0.00	0.00	0.00
6,200.00	20.16	240.21	5,995.96	-599.64	-1,047.35	736.66	0.00	0.00	0.00
6,300.00	20.16	240.21	6,089.83	-616.77	-1,077.26	757.71	0.00	0.00	0.00
6,355.58	20.16	240.21	6,142.00	-626.28	-1,093.89	769.40	0.00	0.00	0.00
<b>Teepee Buttes</b>									
6,400.00	20.16	240.21	6,183.70	-633.89	-1,107.18	778.75	0.00	0.00	0.00
6,500.00	20.16	240.21	6,277.57	-651.02	-1,137.09	799.79	0.00	0.00	0.00
6,600.00	20.16	240.21	6,371.44	-668.15	-1,167.01	820.83	0.00	0.00	0.00
6,680.60	20.16	240.21	6,447.10	-681.95	-1,191.12	837.78	0.00	0.00	0.00
<b>KOP: Build 9°/100' @ 6680.60' MD</b>									
6,700.00	21.05	235.93	6,465.26	-685.56	-1,196.91	842.15	9.00	4.58	-22.03
6,750.00	23.76	226.48	6,511.50	-697.54	-1,211.66	856.02	9.00	5.42	-18.90
6,800.00	26.93	219.00	6,556.69	-713.28	-1,226.10	873.59	9.00	6.34	-14.96
6,850.00	30.42	213.06	6,600.56	-732.70	-1,240.13	894.73	9.00	6.97	-11.90
6,900.00	34.12	208.26	6,642.84	-755.67	-1,253.68	919.34	9.00	7.40	-9.60
6,950.00	37.97	204.31	6,683.27	-782.05	-1,266.66	947.24	9.00	7.71	-7.90
7,000.00	41.94	201.00	6,721.59	-811.69	-1,278.99	978.28	9.00	7.93	-6.62
7,050.00	45.99	198.16	6,757.57	-844.39	-1,290.59	1,012.25	9.00	8.10	-5.67
7,080.08	48.45	196.64	6,778.00	-865.45	-1,297.18	1,034.02	9.00	8.20	-5.06
<b>Sharon Springs</b>									
7,100.00	50.10	195.70	6,791.00	-879.95	-1,301.38	1,048.96	9.00	8.25	-4.75
7,140.42	53.45	193.91	6,816.00	-910.64	-1,309.48	1,080.47	9.00	8.30	-4.42
<b>Top A Chalk</b>									
7,150.00	54.25	193.51	6,821.65	-918.16	-1,311.32	1,088.17	9.00	8.34	-4.18
7,150.59	54.30	193.48	6,822.00	-918.63	-1,311.43	1,088.65	9.00	8.35	-4.14
<b>Top A Marl</b>									
7,182.49	56.97	192.21	6,840.00	-944.30	-1,317.28	1,114.87	9.00	8.37	-4.00
<b>Top B Chalk</b>									
7,200.00	58.45	191.54	6,849.36	-958.79	-1,320.32	1,129.64	9.00	8.40	-3.81
7,250.00	62.66	189.74	6,873.93	-1,001.57	-1,328.35	1,173.11	9.00	8.44	-3.60
7,282.13	65.39	188.66	6,888.00	-1,030.08	-1,332.96	1,201.98	9.00	8.47	-3.37

# Noble Energy, Inc.

## Planning Report

<b>Database:</b>	EDMP	<b>Local Co-ordinate Reference:</b>	Well Aristocrat H14-765
<b>Company:</b>	Northern Region - DJ Basin	<b>TVD Reference:</b>	Well @ 4811.00ft
<b>Project:</b>	Mustang	<b>MD Reference:</b>	Well @ 4811.00ft
<b>Site:</b>	H Section 02	<b>North Reference:</b>	Grid
<b>Well:</b>	Aristocrat H14-765	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Aristocrat H14-765		
<b>Design:</b>	Plan #1		

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)
<b>Top B Marl</b>									
7,300.00	66.90	188.07	6,895.23	-1,046.25	-1,335.34	1,218.33	9.00	8.49	-3.26
7,350.00	71.16	186.51	6,913.12	-1,092.55	-1,341.25	1,265.00	9.00	8.51	-3.13
7,400.00	75.43	185.02	6,927.49	-1,140.19	-1,346.06	1,312.85	9.00	8.54	-2.97
7,443.21	79.13	183.79	6,937.00	-1,182.20	-1,349.29	1,354.91	9.00	8.56	-2.87
<b>Top C Chalk</b>									
7,450.00	79.71	183.59	6,938.25	-1,188.86	-1,349.72	1,361.57	9.00	8.56	-2.82
7,500.00	83.99	182.20	6,945.33	-1,238.28	-1,352.22	1,410.87	9.00	8.57	-2.78
7,550.00	88.28	180.83	6,948.70	-1,288.14	-1,353.54	1,460.44	9.00	8.58	-2.74
7,570.06	90.00	180.29	6,949.00	-1,308.19	-1,353.74	1,480.33	9.00	8.58	-2.73
<b>LP: 7570.06' MD, 90.00° Inc, 180.29° Azm</b>									
7,600.00	90.00	180.29	6,949.00	-1,338.13	-1,353.89	1,510.02	0.00	0.00	0.00
7,700.00	90.00	180.29	6,949.00	-1,438.13	-1,354.39	1,609.16	0.00	0.00	0.00
7,800.00	90.00	180.29	6,949.00	-1,538.13	-1,354.89	1,708.29	0.00	0.00	0.00
7,900.00	90.00	180.29	6,949.00	-1,638.13	-1,355.39	1,807.43	0.00	0.00	0.00
8,000.00	90.00	180.29	6,949.00	-1,738.13	-1,355.89	1,906.56	0.00	0.00	0.00
8,100.00	90.00	180.29	6,949.00	-1,838.13	-1,356.39	2,005.70	0.00	0.00	0.00
8,200.00	90.00	180.29	6,949.00	-1,938.13	-1,356.90	2,104.83	0.00	0.00	0.00
8,300.00	90.00	180.29	6,949.00	-2,038.12	-1,357.40	2,203.97	0.00	0.00	0.00
8,400.00	90.00	180.29	6,949.00	-2,138.12	-1,357.90	2,303.11	0.00	0.00	0.00
8,500.00	90.00	180.29	6,949.00	-2,238.12	-1,358.40	2,402.24	0.00	0.00	0.00
8,600.00	90.00	180.29	6,949.00	-2,338.12	-1,358.90	2,501.38	0.00	0.00	0.00
8,700.00	90.00	180.29	6,949.00	-2,438.12	-1,359.40	2,600.51	0.00	0.00	0.00
8,800.00	90.00	180.29	6,949.00	-2,538.12	-1,359.90	2,699.65	0.00	0.00	0.00
8,900.00	90.00	180.29	6,949.00	-2,638.12	-1,360.40	2,798.78	0.00	0.00	0.00
9,000.00	90.00	180.29	6,949.00	-2,738.12	-1,360.91	2,897.92	0.00	0.00	0.00
9,100.00	90.00	180.29	6,949.00	-2,838.11	-1,361.41	2,997.06	0.00	0.00	0.00
9,200.00	90.00	180.29	6,949.00	-2,938.11	-1,361.91	3,096.19	0.00	0.00	0.00
9,300.00	90.00	180.29	6,949.00	-3,038.11	-1,362.41	3,195.33	0.00	0.00	0.00
9,400.00	90.00	180.29	6,949.00	-3,138.11	-1,362.91	3,294.46	0.00	0.00	0.00
9,500.00	90.00	180.29	6,949.00	-3,238.11	-1,363.41	3,393.60	0.00	0.00	0.00
9,600.00	90.00	180.29	6,949.00	-3,338.11	-1,363.91	3,492.73	0.00	0.00	0.00
9,700.00	90.00	180.29	6,949.00	-3,438.11	-1,364.41	3,591.87	0.00	0.00	0.00
9,800.00	90.00	180.29	6,949.00	-3,538.11	-1,364.91	3,691.00	0.00	0.00	0.00
9,900.00	90.00	180.29	6,949.00	-3,638.10	-1,365.42	3,790.14	0.00	0.00	0.00
10,000.00	90.00	180.29	6,949.00	-3,738.10	-1,365.92	3,889.28	0.00	0.00	0.00
10,100.00	90.00	180.29	6,949.00	-3,838.10	-1,366.42	3,988.41	0.00	0.00	0.00
10,200.00	90.00	180.29	6,949.00	-3,938.10	-1,366.92	4,087.55	0.00	0.00	0.00
10,300.00	90.00	180.29	6,949.00	-4,038.10	-1,367.42	4,186.68	0.00	0.00	0.00
10,400.00	90.00	180.29	6,949.00	-4,138.10	-1,367.92	4,285.82	0.00	0.00	0.00
10,500.00	90.00	180.29	6,949.00	-4,238.10	-1,368.42	4,384.95	0.00	0.00	0.00
10,600.00	90.00	180.29	6,949.00	-4,338.10	-1,368.92	4,484.09	0.00	0.00	0.00
10,700.00	90.00	180.29	6,949.00	-4,438.09	-1,369.42	4,583.23	0.00	0.00	0.00
10,800.00	90.00	180.29	6,949.00	-4,538.09	-1,369.93	4,682.36	0.00	0.00	0.00
10,900.00	90.00	180.29	6,949.00	-4,638.09	-1,370.43	4,781.50	0.00	0.00	0.00
11,000.00	90.00	180.29	6,949.00	-4,738.09	-1,370.93	4,880.63	0.00	0.00	0.00
11,100.00	90.00	180.29	6,949.00	-4,838.09	-1,371.43	4,979.77	0.00	0.00	0.00
11,200.00	90.00	180.29	6,949.00	-4,938.09	-1,371.93	5,078.90	0.00	0.00	0.00
11,300.00	90.00	180.29	6,949.00	-5,038.09	-1,372.43	5,178.04	0.00	0.00	0.00
11,400.00	90.00	180.29	6,949.00	-5,138.09	-1,372.93	5,277.17	0.00	0.00	0.00
11,500.00	90.00	180.29	6,949.00	-5,238.08	-1,373.43	5,376.31	0.00	0.00	0.00
11,600.00	90.00	180.29	6,949.00	-5,338.08	-1,373.94	5,475.45	0.00	0.00	0.00
11,700.00	90.00	180.29	6,949.00	-5,438.08	-1,374.44	5,574.58	0.00	0.00	0.00

# Noble Energy, Inc.

## Planning Report

<b>Database:</b>	EDMP	<b>Local Co-ordinate Reference:</b>	Well Aristocrat H14-765
<b>Company:</b>	Northern Region - DJ Basin	<b>TVD Reference:</b>	Well @ 4811.00ft
<b>Project:</b>	Mustang	<b>MD Reference:</b>	Well @ 4811.00ft
<b>Site:</b>	H Section 02	<b>North Reference:</b>	Grid
<b>Well:</b>	Aristocrat H14-765	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Aristocrat H14-765		
<b>Design:</b>	Plan #1		

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)	
11,800.00	90.00	180.29	6,949.00	-5,538.08	-1,374.94	5,673.72	0.00	0.00	0.00	
11,900.00	90.00	180.29	6,949.00	-5,638.08	-1,375.44	5,772.85	0.00	0.00	0.00	
12,000.00	90.00	180.29	6,949.00	-5,738.08	-1,375.94	5,871.99	0.00	0.00	0.00	
12,100.00	90.00	180.29	6,949.00	-5,838.08	-1,376.44	5,971.12	0.00	0.00	0.00	
12,200.00	90.00	180.29	6,949.00	-5,938.08	-1,376.94	6,070.26	0.00	0.00	0.00	
12,300.00	90.00	180.29	6,949.00	-6,038.07	-1,377.44	6,169.40	0.00	0.00	0.00	
12,400.00	90.00	180.29	6,949.00	-6,138.07	-1,377.94	6,268.53	0.00	0.00	0.00	
12,500.00	90.00	180.29	6,949.00	-6,238.07	-1,378.45	6,367.67	0.00	0.00	0.00	
12,600.00	90.00	180.29	6,949.00	-6,338.07	-1,378.95	6,466.80	0.00	0.00	0.00	
12,700.00	90.00	180.29	6,949.00	-6,438.07	-1,379.45	6,565.94	0.00	0.00	0.00	
12,800.00	90.00	180.29	6,949.00	-6,538.07	-1,379.95	6,665.07	0.00	0.00	0.00	
12,900.00	90.00	180.29	6,949.00	-6,638.07	-1,380.45	6,764.21	0.00	0.00	0.00	
13,000.00	90.00	180.29	6,949.00	-6,738.07	-1,380.95	6,863.34	0.00	0.00	0.00	
13,100.00	90.00	180.29	6,949.00	-6,838.06	-1,381.45	6,962.48	0.00	0.00	0.00	
13,200.00	90.00	180.29	6,949.00	-6,938.06	-1,381.95	7,061.62	0.00	0.00	0.00	
13,300.00	90.00	180.29	6,949.00	-7,038.06	-1,382.46	7,160.75	0.00	0.00	0.00	
13,400.00	90.00	180.29	6,949.00	-7,138.06	-1,382.96	7,259.89	0.00	0.00	0.00	
13,500.00	90.00	180.29	6,949.00	-7,238.06	-1,383.46	7,359.02	0.00	0.00	0.00	
13,600.00	90.00	180.29	6,949.00	-7,338.06	-1,383.96	7,458.16	0.00	0.00	0.00	
13,700.00	90.00	180.29	6,949.00	-7,438.06	-1,384.46	7,557.29	0.00	0.00	0.00	
13,800.00	90.00	180.29	6,949.00	-7,538.06	-1,384.96	7,656.43	0.00	0.00	0.00	
13,900.00	90.00	180.29	6,949.00	-7,638.05	-1,385.46	7,755.57	0.00	0.00	0.00	
14,000.00	90.00	180.29	6,949.00	-7,738.05	-1,385.96	7,854.70	0.00	0.00	0.00	
14,100.00	90.00	180.29	6,949.00	-7,838.05	-1,386.46	7,953.84	0.00	0.00	0.00	
14,200.00	90.00	180.29	6,949.00	-7,938.05	-1,386.97	8,052.97	0.00	0.00	0.00	
14,300.00	90.00	180.29	6,949.00	-8,038.05	-1,387.47	8,152.11	0.00	0.00	0.00	
14,400.00	90.00	180.29	6,949.00	-8,138.05	-1,387.97	8,251.24	0.00	0.00	0.00	
14,500.00	90.00	180.29	6,949.00	-8,238.05	-1,388.47	8,350.38	0.00	0.00	0.00	
14,600.00	90.00	180.29	6,949.00	-8,338.05	-1,388.97	8,449.52	0.00	0.00	0.00	
14,700.00	90.00	180.29	6,949.00	-8,438.04	-1,389.47	8,548.65	0.00	0.00	0.00	
14,800.00	90.00	180.29	6,949.00	-8,538.04	-1,389.97	8,647.79	0.00	0.00	0.00	
14,900.00	90.00	180.29	6,949.00	-8,638.04	-1,390.47	8,746.92	0.00	0.00	0.00	
15,000.00	90.00	180.29	6,949.00	-8,738.04	-1,390.98	8,846.06	0.00	0.00	0.00	
15,100.00	90.00	180.29	6,949.00	-8,838.04	-1,391.48	8,945.19	0.00	0.00	0.00	
15,200.00	90.00	180.29	6,949.00	-8,938.04	-1,391.98	9,044.33	0.00	0.00	0.00	
15,300.00	90.00	180.29	6,949.00	-9,038.04	-1,392.48	9,143.46	0.00	0.00	0.00	
15,400.00	90.00	180.29	6,949.00	-9,138.04	-1,392.98	9,242.60	0.00	0.00	0.00	
15,500.00	90.00	180.29	6,949.00	-9,238.03	-1,393.48	9,341.74	0.00	0.00	0.00	
15,600.00	90.00	180.29	6,949.00	-9,338.03	-1,393.98	9,440.87	0.00	0.00	0.00	
15,700.00	90.00	180.29	6,949.00	-9,438.03	-1,394.48	9,540.01	0.00	0.00	0.00	
15,800.00	90.00	180.29	6,949.00	-9,538.03	-1,394.98	9,639.14	0.00	0.00	0.00	
15,900.00	90.00	180.29	6,949.00	-9,638.03	-1,395.49	9,738.28	0.00	0.00	0.00	
16,000.00	90.00	180.29	6,949.00	-9,738.03	-1,395.99	9,837.41	0.00	0.00	0.00	
16,100.00	90.00	180.29	6,949.00	-9,838.03	-1,396.49	9,936.55	0.00	0.00	0.00	
16,200.00	90.00	180.29	6,949.00	-9,938.03	-1,396.99	10,035.69	0.00	0.00	0.00	
16,300.00	90.00	180.29	6,949.00	-10,038.02	-1,397.49	10,134.82	0.00	0.00	0.00	
16,400.00	90.00	180.29	6,949.00	-10,138.02	-1,397.99	10,233.96	0.00	0.00	0.00	
16,434.62	90.00	180.29	6,949.00	-10,172.64	-1,398.16	10,268.28	0.00	0.00	0.00	
TD @ 16434.62' MD/6949.00' TVD										

# Noble Energy, Inc.

## Planning Report

<b>Database:</b>	EDMP	<b>Local Co-ordinate Reference:</b>	Well Aristocrat H14-765
<b>Company:</b>	Northern Region - DJ Basin	<b>TVD Reference:</b>	Well @ 4811.00ft
<b>Project:</b>	Mustang	<b>MD Reference:</b>	Well @ 4811.00ft
<b>Site:</b>	H Section 02	<b>North Reference:</b>	Grid
<b>Well:</b>	Aristocrat H14-765	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Aristocrat H14-765		
<b>Design:</b>	Plan #1		

Design Targets									
Target Name	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- hit/miss target	(°)	(°)	(ft)	(ft)	(ft)	(usft)	(usft)		
- Shape									
Aristocrat H14-765-SI - plan hits target center - Point	0.00	0.00	0.00	0.00	0.00	1,335,153.22	3,243,140.96	40.2501161	-104.6289067
Aristocrat H14-765-KC - plan hits target center - Point	0.00	0.00	6,447.10	-681.95	-1,191.12	1,334,471.27	3,241,949.85	40.2482762	-104.6331977
Aristocrat H14-765-BI - plan hits target center - Point	0.00	0.00	6,949.00	-10,172.64	-1,398.16	1,324,980.60	3,241,742.80	40.2222301	-104.6342713
Aristocrat H14-765-TF - plan hits target center - Point	0.00	0.00	6,949.00	-1,308.19	-1,353.74	1,333,845.03	3,241,787.23	40.2465615	-104.6338022

Formations						
Measured Depth	Vertical Depth	Name	Lithology	Dip	Dip Direction	
(ft)	(ft)			(°)	(°)	
492.00	492.00	Pierre				
652.00	652.00	Upper Pierre Aquifer Top				
1,566.00	1,566.00	Upper Pierre Aquifer Base				
3,862.80	3,802.00	Parkman				
4,297.44	4,210.00	Sussex				
5,064.45	4,930.00	Shannon				
6,355.58	6,142.00	Teepee Buttes				
7,080.08	6,778.00	Sharon Springs				
7,140.42	6,816.00	Top A Chalk				
7,150.59	6,822.00	Top A Marl				
7,182.49	6,840.00	Top B Chalk				
7,282.13	6,888.00	Top B Marl				
7,443.21	6,937.00	Top C Chalk				

Plan Annotations					
Measured Depth	Vertical Depth	Local Coordinates			
(ft)	(ft)	+N/-S	+E/-W	Comment	
(ft)	(ft)	(ft)	(ft)		
2,200.00	2,200.00	0.00	0.00	Build: 2°/100'	
3,208.18	3,187.49	-87.24	-152.37	Hold: 20.16° Inc, 240.21° Azm	
6,680.60	6,447.10	-681.95	-1,191.12	KOP: Build 9°/100' @ 6680.60' MD	
7,570.06	6,949.00	-1,308.19	-1,353.74	LP: 7570.06' MD, 90.00° Inc, 180.29° Azm	
16,434.62	6,949.00	-10,172.64	-1,398.16	TD @ 16434.62' MD/6949.00' TVD	



# **Northern Region - DJ Basin**

**Mustang**

**H Section 02**

**Aristocrat H14-765**

**Aristocrat H14-765**

**Plan #1**

## **Anticollision Summary Report**

**01 October, 2018**

# Noble Energy, Inc.

## Anticollision Summary Report

<b>Company:</b>	Northern Region - DJ Basin	<b>Local Co-ordinate Reference:</b>	Well Aristocrat H14-765
<b>Project:</b>	Mustang	<b>TVD Reference:</b>	Well @ 4811.00ft
<b>Reference Site:</b>	H Section 02	<b>MD Reference:</b>	Well @ 4811.00ft
<b>Site Error:</b>	0.00 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Aristocrat H14-765	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Aristocrat H14-765	<b>Database:</b>	EDMP
<b>Reference Design:</b>	Plan #1	<b>Offset TVD Reference:</b>	Offset Datum

Reference	Plan #1		
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	Stations	Error Model:	ISCWSA
Depth Range:	Unlimited	Scan Method:	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 10,000.00 ft	Error Surface:	Pedal Curve
Warning Levels Evaluated at:	2.00 Sigma	Casing Method:	Not applied

Survey Tool Program		Date	10/1/2018		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
0.00	16,434.62	Plan #1 (Aristocrat H14-765)	2_MWD+IFR1+MS	A008Mb: IFR dec & multi-station analysis	

Summary						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
H Section 01						
Collins 1-1 - Wellbore #1 - Wellbore #1 - As Drilled	199.49	256.50	7,558.48	7,557.28	6,267.444	CC
Collins 1-1 - Wellbore #1 - Wellbore #1 - As Drilled	2,226.65	2,354.02	7,560.62	7,544.83	478.880	ES
Collins 1-1 - Wellbore #1 - Wellbore #1 - As Drilled	8,600.00	8,600.00	9,999.55	9,941.74	172.982	SF
Houndskeeper 1-13 - Wellbore #1 - Wellbore #1 - As Drilled	2,296.56	2,557.84	5,866.87	5,850.13	350.514	CC
Houndskeeper 1-13 - Wellbore #1 - Wellbore #1 - As Drilled	2,300.00	2,561.31	5,866.87	5,850.11	350.014	ES
Houndskeeper 1-13 - Wellbore #1 - Wellbore #1 - As Drilled	7,300.00	6,961.72	7,509.14	7,458.67	148.793	SF
Houndskeeper H01-17 - Wellbore #1 - Wellbore #1 - As Drilled	0.00	48.41	6,685.14			
Houndskeeper H01-17 - Wellbore #1 - Wellbore #1 - As Drilled	500.00	520.87	6,686.88	6,683.67	2,084.156	ES
Houndskeeper H01-17 - Wellbore #1 - Wellbore #1 - As Drilled	7,300.00	7,000.01	8,502.35	8,451.67	167.755	SF
Houndskeeper H01-22 - Wellbore #1 - Wellbore #1 - As Drilled	2,299.91	2,574.09	6,324.14	6,307.33	376.271	CC
Houndskeeper H01-22 - Wellbore #1 - Wellbore #1 - As Drilled	2,300.00	2,574.18	6,324.14	6,307.33	376.256	ES
Houndskeeper H01-22 - Wellbore #1 - Wellbore #1 - As Drilled	7,450.00	6,913.29	7,999.98	7,949.29	157.837	SF
Houndskeeper H01-27 - Wellbore #1 - Wellbore #1 - As Drilled	991.60	1,035.62	6,304.79	6,298.03	932.082	CC
Houndskeeper H01-27 - Wellbore #1 - Wellbore #1 - As Drilled	1,100.00	1,100.00	6,305.33	6,297.95	854.606	ES
Houndskeeper H01-27 - Wellbore #1 - Wellbore #1 - As Drilled	7,200.00	7,035.67	8,850.40	8,799.42	173.624	SF
Houndskeeper H01-28 - Wellbore #1 - Wellbore #1 - As Drilled	1,673.55	1,717.62	6,300.45	6,288.85	543.067	CC
Houndskeeper H01-28 - Wellbore #1 - Wellbore #1 - As Drilled	1,800.00	1,800.00	6,301.03	6,288.69	510.418	ES
Houndskeeper H01-28 - Wellbore #1 - Wellbore #1 - As Drilled	7,150.00	7,152.67	7,938.71	7,884.86	147.417	SF
Houndskeeper PC H01-21D - Wellbore #1 - Wellbore #1	3,061.23	4,900.01	5,638.11	5,609.22	195.138	CC, ES
Houndskeeper PC H01-21D - Wellbore #1 - Wellbore #1	7,450.00	7,174.78	6,817.73	6,764.34	127.701	SF
HSR-HARTMAN #4-1(PR) - Wellbore #1 - Gyro Surveys	2,271.94	2,383.54	4,505.32	4,489.19	279.204	CC
HSR-HARTMAN #4-1(PR) - Wellbore #1 - Gyro Surveys	2,300.00	2,413.03	4,505.44	4,489.11	275.807	ES
HSR-HARTMAN #4-1(PR) - Wellbore #1 - Gyro Surveys	7,000.00	6,746.28	5,988.80	5,939.94	122.568	SF
HSR-KOSKELA #5-1(PR) - Wellbore #1 - No Surveys	2,200.00	2,207.00	3,652.96	3,626.05	135.731	CC, ES
HSR-KOSKELA #5-1(PR) - Wellbore #1 - No Surveys	7,050.00	6,764.57	5,194.83	5,110.26	61.428	SF
HSR-LAURICE #6-1(PR) - Wellbore #1 - No Surveys	2,200.00	2,207.00	4,752.43	4,725.51	176.583	CC, ES
HSR-LAURICE #6-1(PR) - Wellbore #1 - No Surveys	7,200.00	6,856.36	6,367.67	6,281.82	74.169	SF
LJS R H01-02 - Wellbore #1 - Wellbore #1 - As Drilled	2,208.96	2,270.64	6,286.33	6,270.89	407.179	CC, ES
LJS R H01-02 - Wellbore #1 - Wellbore #1 - As Drilled	7,250.00	7,017.98	7,957.25	7,906.75	157.576	SF
LJS R H01-08 - Wellbore #1 - Wellbore #1 - As Drilled	1,889.83	1,933.86	7,073.91	7,060.79	539.158	CC
LJS R H01-08 - Wellbore #1 - Wellbore #1 - As Drilled	2,100.00	2,100.00	7,074.47	7,060.02	489.473	ES
LJS R H01-08 - Wellbore #1 - Wellbore #1 - As Drilled	9,800.00	9,800.00	9,973.74	9,907.94	151.584	SF
Shelton 22-1(PR) - Wellbore #1 - Wellbore #1	200.00	245.90	3,056.26	3,055.02	2,477.745	CC
Shelton 22-1(PR) - Wellbore #1 - Wellbore #1	214.31	245.34	3,056.27	3,054.99	2,382.789	ES
Shelton 22-1(PR) - Wellbore #1 - Wellbore #1	7,200.00	7,114.18	5,574.07	5,521.75	106.530	SF
Shelton 31-01(PR) - Wellbore #1 - Gyro Surveys	2,982.47	4,115.44	4,172.26	4,147.35	167.527	CC
Shelton 31-01(PR) - Wellbore #1 - Gyro Surveys	3,000.00	4,126.22	4,172.32	4,147.31	166.796	ES

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

# Noble Energy, Inc.

## Anticollision Summary Report

<b>Company:</b>	Northern Region - DJ Basin	<b>Local Co-ordinate Reference:</b>	Well Aristocrat H14-765
<b>Project:</b>	Mustang	<b>TVD Reference:</b>	Well @ 4811.00ft
<b>Reference Site:</b>	H Section 02	<b>MD Reference:</b>	Well @ 4811.00ft
<b>Site Error:</b>	0.00 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Aristocrat H14-765	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Aristocrat H14-765	<b>Database:</b>	EDMP
<b>Reference Design:</b>	Plan #1	<b>Offset TVD Reference:</b>	Offset Datum

Summary						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
H Section 01						
Shelton 31-01(PR) - Wellbore #1 - Gyro Surveys	6,950.00	6,803.29	5,049.80	5,000.00	101.398	SF
Shelton D07-30 - Wellbore #1 - Wellbore #1 - As Drilled	2,219.20	2,300.00	7,223.34	7,207.75	463.423	CC, ES
Shelton D07-30 - Wellbore #1 - Wellbore #1 - As Drilled	12,100.00	6,944.66	9,950.27	9,881.28	144.215	SF
Shelton H #12-29(PR) - Wellbore #1 - No Surveys	2,200.00	2,230.00	3,649.00	3,621.88	134.580	CC, ES
Shelton H #12-29(PR) - Wellbore #1 - No Surveys	7,700.00	6,979.00	4,924.19	4,835.32	55.405	SF
Shelton H 1-12X(PR) - Wellbore #1 - No Surveys	2,200.00	2,223.00	3,046.03	3,018.97	112.595	CC, ES
Shelton H 1-12X(PR) - Wellbore #1 - No Surveys	7,100.00	6,814.00	4,578.90	4,493.65	53.714	SF
Shelton H01-23 - Wellbore #1 - Wellbore #1 - As Drilled	2,234.37	2,359.84	6,076.77	6,060.91	383.090	CC, ES
Shelton H01-23 - Wellbore #1 - Wellbore #1 - As Drilled	10,100.00	6,700.01	8,499.64	8,442.11	147.751	SF
Shelton H01-24 - Wellbore #1 - Wellbore #1 - As Drilled	2,270.46	2,441.49	4,889.16	4,872.91	300.816	CC
Shelton H01-24 - Wellbore #1 - Wellbore #1 - As Drilled	2,300.00	2,460.72	4,889.33	4,872.90	297.720	ES
Shelton H01-24 - Wellbore #1 - Wellbore #1 - As Drilled	7,350.00	6,900.01	6,340.07	6,289.41	125.150	SF
Shelton H13-715 - Shelton H13-715 - Plan #1	2,200.00	2,283.00	7,061.60	7,045.99	452.543	CC, ES
Shelton H13-715 - Shelton H13-715 - Plan #1	16,434.62	14,839.77	8,585.39	8,431.84	55.912	SF
Shelton H13-724 - Shelton H13-724 - Plan #1	2,626.29	3,563.19	6,986.36	6,964.95	326.209	CC, ES
Shelton H13-724 - Shelton H13-724 - Plan #1	16,400.00	14,977.41	7,954.67	7,801.58	51.962	SF
Shelton H13-730 - Shelton H13-730 - Plan #1	2,821.41	4,144.78	6,880.89	6,856.81	285.732	CC, ES
Shelton H13-730 - Shelton H13-730 - Plan #1	16,100.00	15,130.80	7,595.86	7,423.04	43.952	SF
Shelton H13-734 - Shelton H13-734 - Plan #1	3,073.21	4,906.46	6,732.60	6,704.92	243.273	CC
Shelton H13-734 - Shelton H13-734 - Plan #1	3,100.00	4,919.90	6,732.70	6,704.88	242.005	ES
Shelton H13-734 - Shelton H13-734 - Plan #1	16,100.00	15,012.37	7,282.27	7,130.98	48.135	SF
Shelton H13-744 - Shelton H13-744 - Plan #1	2,200.00	2,285.00	4,927.03	4,911.42	315.604	CC, ES
Shelton H13-744 - Shelton H13-744 - Plan #1	16,100.00	14,986.34	6,655.90	6,503.05	43.547	SF
Shelton H13-753 - Shelton H13-753 - Plan #1	2,200.00	2,284.00	4,882.34	4,866.73	312.813	CC, ES
Shelton H13-753 - Shelton H13-753 - Plan #1	15,800.00	14,986.78	5,987.27	5,836.47	39.704	SF
Shelton H13-763 - Shelton H13-763 - Plan #1	2,851.64	3,819.60	4,752.15	4,729.19	206.934	CC
Shelton H13-763 - Shelton H13-763 - Plan #1	2,900.00	3,867.69	4,752.49	4,729.18	203.919	ES
Shelton H13-763 - Shelton H13-763 - Plan #1	15,600.00	15,057.58	5,336.76	5,186.64	35.549	SF
Shelton H13-768 - Shelton H13-768 - Plan #1	2,107.54	2,161.54	2,867.30	2,852.47	193.248	CC
Shelton H13-768 - Shelton H13-768 - Plan #1	2,200.00	2,227.13	2,867.56	2,852.16	186.195	ES
Shelton H13-768 - Shelton H13-768 - Plan #1	15,700.00	15,127.64	5,034.90	4,883.20	33.189	SF
Shelton H13-773 - Shelton H13-773 - Plan #1	2,109.08	2,162.08	2,845.32	2,830.48	191.671	CC
Shelton H13-773 - Shelton H13-773 - Plan #1	2,200.00	2,226.68	2,845.57	2,830.17	184.787	ES
Shelton H13-773 - Shelton H13-773 - Plan #1	15,600.00	14,927.16	4,708.34	4,557.77	31.269	SF
Shelton H13-782 - Shelton H13-782 - Plan #1	2,200.00	2,253.00	2,823.35	2,807.86	182.190	CC, ES
Shelton H13-782 - Shelton H13-782 - Plan #1	15,400.00	14,997.54	4,059.92	3,911.15	27.289	SF
Shelton H3-615 - Wellbore #1 - Plan #1	7,134.49	10,845.49	246.79	183.58	3.904	CC
Shelton H3-615 - Wellbore #1 - Plan #1	7,150.00	10,848.61	247.44	181.95	3.778	ES
Shelton H3-615 - Wellbore #1 - Plan #1	7,200.00	10,858.05	258.17	186.10	3.582	SF
Shelton H3-625 - Wellbore #1 - Plan #1	6,886.38	10,807.14	741.89	669.27	10.215	CC
Shelton H3-625 - Wellbore #1 - Plan #1	6,900.00	10,810.85	742.15	668.96	10.139	ES
Shelton H3-625 - Wellbore #1 - Plan #1	7,000.00	10,836.72	759.78	682.88	9.879	SF
Shelton H3-635 - Wellbore #1 - Plan #1	6,783.74	10,853.30	1,335.30	1,254.10	16.444	CC, ES
Shelton H3-635 - Wellbore #1 - Plan #1	6,900.00	10,885.99	1,350.41	1,267.39	16.266	SF
Shelton H3-645 - Wellbore #1 - Plan #1	6,726.96	10,740.23	1,953.02	1,872.27	24.184	CC, ES
Shelton H3-645 - Wellbore #1 - Plan #1	6,850.00	10,775.83	1,968.33	1,886.03	23.916	SF
Shelton H3-655 - Wellbore #1 - Plan #1	6,695.43	10,737.91	2,586.95	2,506.49	32.150	CC
Shelton H3-655 - Wellbore #1 - Plan #1	6,700.00	10,739.28	2,586.97	2,506.45	32.128	ES
Shelton H3-655 - Wellbore #1 - Plan #1	6,900.00	10,803.38	2,626.55	2,543.73	31.713	SF
Shelton H3-665 - Wellbore #1 - Plan #1	6,634.96	10,808.13	3,225.34	3,146.34	40.823	CC, ES
Shelton H3-665 - Wellbore #1 - Plan #1	6,800.00	10,840.79	3,240.30	3,160.25	40.479	SF
Shelton H3-675 - Wellbore #1 - Plan #1	6,513.18	10,613.81	3,865.49	3,788.76	50.374	CC, ES
Shelton H3-675 - Wellbore #1 - Plan #1	6,850.00	10,713.43	3,901.00	3,821.55	49.103	SF

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

**Noble Energy, Inc.**  
Anticollision Summary Report

<b>Company:</b>	Northern Region - DJ Basin	<b>Local Co-ordinate Reference:</b>	Well Aristocrat H14-765
<b>Project:</b>	Mustang	<b>TVD Reference:</b>	Well @ 4811.00ft
<b>Reference Site:</b>	H Section 02	<b>MD Reference:</b>	Well @ 4811.00ft
<b>Site Error:</b>	0.00 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Aristocrat H14-765	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Aristocrat H14-765	<b>Database:</b>	EDMP
<b>Reference Design:</b>	Plan #1	<b>Offset TVD Reference:</b>	Offset Datum

**Summary**

Site Name Offset Well - Wellbore - Design	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Between Ellipses (ft)	Separation Factor	Warning
H Section 01						
Shelton H3-683 - Wellbore #1 - Plan #1	6,405.30	10,521.28	4,391.16	4,315.82	58.286	CC, ES
Shelton H3-683 - Wellbore #1 - Plan #1	6,900.00	10,666.91	4,453.25	4,373.74	56.010	SF
Shelton State H1-759 - Wellbore #1 - Plan #1	2,468.80	2,912.38	4,919.02	4,900.49	265.370	CC
Shelton State H1-759 - Wellbore #1 - Plan #1	2,500.00	2,943.23	4,919.16	4,900.41	262.413	ES
Shelton State H1-759 - Wellbore #1 - Plan #1	9,300.00	6,850.00	6,014.28	5,957.33	105.625	SF
Shelton State H1-766 - Wellbore #1 - Plan #1	2,814.10	3,701.36	4,802.87	4,780.38	213.629	CC, ES
Shelton State H1-766 - Wellbore #1 - Plan #1	9,000.00	7,050.00	5,479.64	5,422.96	96.686	SF
Shelton State H1-780 - Wellbore #1 - Plan #1	2,108.70	2,167.70	2,881.43	2,866.57	193.857	CC
Shelton State H1-780 - Wellbore #1 - Plan #1	2,200.00	2,234.88	2,881.68	2,866.25	186.816	ES
Shelton State H1-780 - Wellbore #1 - Plan #1	8,600.00	6,550.00	4,690.52	4,637.23	88.013	SF
Shelton State H1-783 - Wellbore #1 - Plan #1	1,904.65	1,953.65	2,859.63	2,846.26	213.966	CC
Shelton State H1-783 - Wellbore #1 - Plan #1	2,000.00	2,038.16	2,859.72	2,845.72	204.231	ES
Shelton State H1-783 - Wellbore #1 - Plan #1	7,700.00	7,017.67	4,142.87	4,090.35	78.892	SF
UPRC #1-12J(PA) - Wellbore #1 - No Surveys	2,200.00	2,223.00	3,088.89	3,077.36	267.775	CC, ES
UPRC #1-12J(PA) - Wellbore #1 - No Surveys	7,150.00	6,844.65	4,653.28	4,615.40	122.839	SF
UPRC #1-13J(SI) - Wellbore #1 - No Surveys	2,200.00	2,221.00	2,769.31	2,742.28	102.433	CC, ES
UPRC #1-13J(SI) - Wellbore #1 - No Surveys	7,300.00	6,916.23	4,166.48	4,079.41	47.853	SF
UPRC 1-09J - Wellbore #1 - Wellbore #1 - As Drilled	2,290.32	2,570.37	6,887.59	6,870.82	410.826	CC
UPRC 1-09J - Wellbore #1 - Wellbore #1 - As Drilled	2,300.00	2,579.63	6,887.60	6,870.77	409.222	ES
UPRC 1-09J - Wellbore #1 - Wellbore #1 - As Drilled	10,100.00	7,000.01	9,474.59	9,416.24	162.377	SF
UPRC 1-10J - Wellbore #1 - Wellbore #1 - As Drilled	417.76	494.79	5,388.18	5,385.36	1,908.282	CC
UPRC 1-10J - Wellbore #1 - Wellbore #1 - As Drilled	2,238.46	2,383.72	5,391.97	5,376.03	338.344	ES
UPRC 1-10J - Wellbore #1 - Wellbore #1 - As Drilled	7,400.00	6,995.60	7,003.52	6,952.49	137.226	SF
UPRC 1-15J - Wellbore #1 - Wellbore #1 - As Drilled	2,241.06	2,360.36	5,303.53	5,287.65	334.132	CC, ES
UPRC 1-15J - Wellbore #1 - Wellbore #1 - As Drilled	11,500.00	11,500.00	8,080.72	8,001.04	101.420	SF
UPRC 1-16J - Wellbore #1 - Wellbore #1 - As Drilled	2,234.08	2,355.06	6,714.47	6,698.65	424.340	CC, ES
UPRC 1-16J - Wellbore #1 - Wellbore #1 - As Drilled	11,400.00	6,968.07	9,401.86	9,336.94	144.804	SF
UPRR 39 PAN AM G #1(PR) - Wellbore #1 - No Surveys	2,200.00	2,229.00	3,354.24	3,327.13	123.749	CC, ES
UPRR 39 PAN AM G #1(PR) - Wellbore #1 - No Surveys	7,250.00	6,902.93	4,833.75	4,747.07	55.762	SF

# Noble Energy, Inc.

## Anticollision Summary Report

<b>Company:</b>	Northern Region - DJ Basin	<b>Local Co-ordinate Reference:</b>	Well Aristocrat H14-765
<b>Project:</b>	Mustang	<b>TVD Reference:</b>	Well @ 4811.00ft
<b>Reference Site:</b>	H Section 02	<b>MD Reference:</b>	Well @ 4811.00ft
<b>Site Error:</b>	0.00 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Aristocrat H14-765	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Aristocrat H14-765	<b>Database:</b>	EDMP
<b>Reference Design:</b>	Plan #1	<b>Offset TVD Reference:</b>	Offset Datum

Summary						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
H Section 02						
ARISTOCRAT ANGUS #34-2(PR) - Wellbore #1 - Wellbore	2,993.12	2,956.02	467.47	431.30	12.926	CC
ARISTOCRAT ANGUS #34-2(PR) - Wellbore #1 - Wellbore	3,100.00	3,058.27	468.50	431.07	12.515	ES
ARISTOCRAT ANGUS #34-2(PR) - Wellbore #1 - Wellbore	3,600.00	3,528.30	509.07	465.70	11.739	SF
ARISTOCRAT ANGUS #43-2(PR) - Wellbore #1 - No Sui	2,200.00	2,201.00	2,059.06	2,032.20	76.656	CC, ES
ARISTOCRAT ANGUS #43-2(PR) - Wellbore #1 - No Sui	6,900.00	6,643.84	3,522.80	3,439.81	42.450	SF
ARISTOCRAT ANGUS #44-2(PR) - Wellbore #1 - No Sui	2,200.00	2,193.00	1,280.60	1,253.80	47.799	CC, ES
ARISTOCRAT ANGUS #44-2(PR) - Wellbore #1 - No Sui	6,800.00	6,549.69	2,594.44	2,512.51	31.667	SF
ARISTOCRAT ANGUS #44-2A(PR) - Wellbore #1 - Wellbore	2,200.00	2,201.00	1,855.76	1,828.90	69.088	CC
ARISTOCRAT ANGUS #44-2A(PR) - Wellbore #1 - Wellbore	2,300.00	2,300.98	1,856.93	1,828.85	66.135	ES
ARISTOCRAT ANGUS #44-2A(PR) - Wellbore #1 - Wellbore	7,200.00	6,850.36	3,105.27	3,018.99	35.990	SF
ARISTOCRAT ANGUS #4-8-2(PR) - Wellbore #1 - No Sui	3,132.73	3,086.34	448.88	411.08	11.875	CC
ARISTOCRAT ANGUS #4-8-2(PR) - Wellbore #1 - No Sui	3,208.18	3,157.49	449.58	410.89	11.619	ES
ARISTOCRAT ANGUS #4-8-2(PR) - Wellbore #1 - No Sui	3,700.00	3,619.18	489.25	444.71	10.984	SF
Aristocrat Angus 5-6-2(PR) - Wellbore #1 - As Drilled	2,315.94	2,339.75	288.36	270.89	16.501	CC, ES
Aristocrat Angus 5-6-2(PR) - Wellbore #1 - As Drilled	2,500.00	2,518.08	295.63	276.60	15.535	SF
Aristocrat Angus 6-4-2(PR) - Wellbore #1 - As Drilled	2,167.10	2,206.37	249.11	232.07	14.613	CC, ES
Aristocrat Angus 6-4-2(PR) - Wellbore #1 - As Drilled	2,300.00	2,322.44	258.05	239.87	14.196	SF
Aristocrat H14-715 - Aristocrat H14-715 - Plan #1	2,200.00	2,238.00	2,051.52	2,036.07	132.845	CC, ES
Aristocrat H14-715 - Aristocrat H14-715 - Plan #1	16,434.62	16,285.95	3,190.13	3,020.18	18.771	SF
Aristocrat H14-725 - Aristocrat H14-725 - Plan #1	2,716.32	3,033.91	2,020.18	2,000.42	102.258	CC, ES
Aristocrat H14-725 - Aristocrat H14-725 - Plan #1	16,434.62	16,331.34	2,552.19	2,381.87	14.985	SF
Aristocrat H14-735 - Aristocrat H14-735 - Plan #1	6,058.38	6,654.35	1,900.58	1,853.87	40.689	CC
Aristocrat H14-735 - Aristocrat H14-735 - Plan #1	16,421.02	16,444.52	1,914.00	1,743.77	11.244	ES, SF
Aristocrat H14-744 - Aristocrat H14-744 - Plan #1	16,427.23	16,706.11	1,275.97	1,104.98	7.463	CC, ES, SF
Aristocrat H14-756 - Aristocrat H14-756 - Plan #1	2,200.00	2,201.00	22.50	7.19	1.470	Level 3, CC
Aristocrat H14-756 - Aristocrat H14-756 - Plan #1	2,300.00	2,300.42	22.93	6.94	1.434	Level 3, ES, SF
Aristocrat H14-775 - Aristocrat H14-775 - Plan #1	2,200.00	2,200.00	22.50	7.19	1.470	Level 3, CC
Aristocrat H14-775 - Aristocrat H14-775 - Plan #1	2,400.00	2,400.58	23.38	6.71	1.402	Level 3, ES, SF
Aristocrat H14-785 - Aristocrat H14-785 - Plan #1	2,200.00	2,199.00	45.00	29.70	2.941	CC
Aristocrat H14-785 - Aristocrat H14-785 - Plan #1	2,300.00	2,299.46	45.36	29.36	2.835	ES
Aristocrat H14-785 - Aristocrat H14-785 - Plan #1	2,500.00	2,500.37	48.15	30.81	2.776	SF
Aristocrat PC H11-27D(PR) - Wellbore #1 - As Drilled	2,766.47	2,992.91	1,646.38	1,624.63	75.700	CC
Aristocrat PC H11-27D(PR) - Wellbore #1 - As Drilled	2,800.00	3,021.55	1,646.52	1,624.50	74.751	ES
Aristocrat PC H11-27D(PR) - Wellbore #1 - As Drilled	7,300.00	7,099.02	2,299.99	2,246.58	43.059	SF
Bonkiewicz 1(PA) - Wellbore #1 - Wellbore #1	2,234.99	2,234.50	2,778.18	2,762.78	180.399	CC
Bonkiewicz 1(PA) - Wellbore #1 - Wellbore #1	2,300.00	2,304.23	2,778.62	2,762.75	175.108	ES
Bonkiewicz 1(PA) - Wellbore #1 - Wellbore #1	6,850.00	6,546.64	3,904.15	3,856.33	81.642	SF
Jenson 21-2C(SI) - Wellbore #1 - Wellbore #1	2,200.00	2,139.00	3,010.76	2,984.44	114.391	CC
Jenson 21-2C(SI) - Wellbore #1 - Wellbore #1	3,000.00	2,928.64	3,013.68	2,977.73	83.828	ES
Jenson 21-2C(SI) - Wellbore #1 - Wellbore #1	6,900.00	6,581.84	3,387.47	3,303.85	40.511	SF
Jepsen #1(SI) - Wellbore #1 - Wellbore #1	6,187.46	5,943.19	669.15	593.84	8.886	CC
Jepsen #1(SI) - Wellbore #1 - Wellbore #1	6,300.00	6,048.83	670.27	593.56	8.738	ES
Jepsen #1(SI) - Wellbore #1 - Wellbore #1	6,700.00	6,424.26	692.36	610.76	8.484	SF
JEPSEN #2(PR) - Wellbore #1 - As Drilled	3,880.72	3,756.45	3,427.24	3,400.55	128.436	CC
JEPSEN #2(PR) - Wellbore #1 - As Drilled	4,000.00	3,864.46	3,427.52	3,399.98	124.458	ES
JEPSEN #2(PR) - Wellbore #1 - As Drilled	6,950.00	6,628.34	3,656.43	3,606.87	73.768	SF
JEPSEN #23A-2(DA) - Wellbore #1 - Wellbore #1	1,516.32	1,500.00	923.70	912.91	85.561	CC, ES
JEPSEN #23A-2(DA) - Wellbore #1 - Wellbore #1	1,700.00	1,500.00	941.79	930.56	83.864	SF
Jepsen #3(PA) - Wellbore #1 - Wellbore #1	6,993.99	6,659.32	938.74	889.17	18.936	CC
Jepsen #3(PA) - Wellbore #1 - Wellbore #1	7,000.00	6,663.94	938.76	889.14	18.917	ES
Jepsen #3(PA) - Wellbore #1 - Wellbore #1	7,100.00	6,733.30	945.71	895.30	18.761	SF
Jepsen #4(SI) - Wellbore #1 - Wellbore #1	6,731.05	6,438.08	2,082.32	2,000.34	25.400	CC
Jepsen #4(SI) - Wellbore #1 - Wellbore #1	6,750.00	6,455.50	2,082.56	2,000.34	25.329	ES

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



# Noble Energy, Inc.

## Anticollision Summary Report

<b>Company:</b>	Northern Region - DJ Basin	<b>Local Co-ordinate Reference:</b>	Well Aristocrat H14-765
<b>Project:</b>	Mustang	<b>TVD Reference:</b>	Well @ 4811.00ft
<b>Reference Site:</b>	H Section 02	<b>MD Reference:</b>	Well @ 4811.00ft
<b>Site Error:</b>	0.00 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Aristocrat H14-765	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Aristocrat H14-765	<b>Database:</b>	EDMP
<b>Reference Design:</b>	Plan #1	<b>Offset TVD Reference:</b>	Offset Datum

Summary						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
H Section 02						
Jepsen #4(SI) - Wellbore #1 - Wellbore #1	6,950.00	6,627.27	2,114.18	2,029.55	24.984	SF
Jepsen 11-2(PA) - Wellbore #1 - Wellbore #1	5,353.83	5,286.97	4,241.63	4,203.49	111.204	CC
Jepsen 11-2(PA) - Wellbore #1 - Wellbore #1	5,400.00	5,317.72	4,241.71	4,203.26	110.321	ES
Jepsen 11-2(PA) - Wellbore #1 - Wellbore #1	7,100.00	6,922.51	4,427.28	4,375.99	86.322	SF
Jepsen 21-02(TA) - Wellbore #1 - Wellbore #1	502.73	437.74	3,771.13	3,768.20	1,287.847	CC
Jepsen 21-02(TA) - Wellbore #1 - Wellbore #1	600.00	521.20	3,771.22	3,767.65	1,055.934	ES
Jepsen 21-02(TA) - Wellbore #1 - Wellbore #1	7,000.00	6,684.32	4,283.66	4,233.91	86.111	SF
JEPSEN 22-2(SI) - Wellbore #1 - Wellbore #1	3,938.30	3,819.56	1,331.83	1,304.71	49.112	CC
JEPSEN 22-2(SI) - Wellbore #1 - Wellbore #1	4,100.00	3,982.56	1,332.70	1,304.36	47.031	ES
JEPSEN 22-2(SI) - Wellbore #1 - Wellbore #1	6,950.00	7,200.00	1,522.48	1,436.95	17.799	SF
Jepsen 23-2(SI) - Wellbore #1 - Wellbore #1	3,955.50	3,843.02	1,299.76	1,252.20	27.328	CC
Jepsen 23-2(SI) - Wellbore #1 - Wellbore #1	4,100.00	3,978.66	1,300.71	1,251.38	26.369	ES
Jepsen 23-2(SI) - Wellbore #1 - Wellbore #1	6,700.00	6,419.26	1,607.88	1,526.76	19.821	SF
Jepsen 5-2(PA) - Wellbore #1 - Wellbore #1	5,853.43	5,619.47	3,149.54	3,107.98	75.782	CC
Jepsen 5-2(PA) - Wellbore #1 - Wellbore #1	5,900.00	5,643.23	3,149.72	3,107.88	75.274	ES
Jepsen 5-2(PA) - Wellbore #1 - Wellbore #1	6,950.00	6,618.20	3,225.51	3,175.77	64.838	SF
Shelton 17-2(PA) - Wellbore #1 - Wellbore #1	551.97	540.98	3,090.21	3,086.75	892.613	CC
Shelton 17-2(PA) - Wellbore #1 - Wellbore #1	2,219.55	2,223.52	3,099.34	3,084.02	202.373	ES
Shelton 17-2(PA) - Wellbore #1 - Wellbore #1	6,900.00	6,542.99	4,300.99	4,253.05	89.719	SF
Shelton 27-2(SI) - Wellbore #1 - Wellbore #1	0.00	22.26	2,748.50			
Shelton 27-2(SI) - Wellbore #1 - Wellbore #1	300.00	297.61	2,749.21	2,747.42	1,536.420	ES
Shelton 27-2(SI) - Wellbore #1 - Wellbore #1	6,850.00	7,267.51	5,267.66	5,198.31	75.959	SF
Shelton 31-2(PA) - Wellbore #1 - Wellbore #1	691.99	671.99	3,671.81	3,667.38	829.698	CC
Shelton 31-2(PA) - Wellbore #1 - Wellbore #1	1,900.00	1,853.53	3,676.54	3,663.67	285.472	ES
Shelton 31-2(PA) - Wellbore #1 - Wellbore #1	6,900.00	6,487.95	4,705.78	4,657.69	97.846	SF
Shelton 41-2(PA) - Wellbore #1 - Wellbore #1	1,535.45	1,529.59	3,794.52	3,784.07	363.077	CC
Shelton 41-2(PA) - Wellbore #1 - Wellbore #1	1,700.00	1,676.22	3,794.85	3,783.29	328.267	ES
Shelton 41-2(PA) - Wellbore #1 - Wellbore #1	7,000.00	6,759.18	5,299.97	5,250.85	107.911	SF
Shelton 42-2(PR) - Wellbore #1 - Wellbore #1	1,696.40	1,698.45	2,734.26	2,722.65	235.467	CC
Shelton 42-2(PR) - Wellbore #1 - Wellbore #1	2,214.66	2,229.83	2,735.05	2,719.73	178.492	ES
Shelton 42-2(PR) - Wellbore #1 - Wellbore #1	6,850.00	6,625.05	4,135.76	4,087.92	86.441	SF
Shelton 7-2(PR) - Wellbore #1 - Gyro Surveys	1,275.09	1,232.15	2,245.56	2,237.09	265.150	CC
Shelton 7-2(PR) - Wellbore #1 - Gyro Surveys	2,300.00	2,280.69	2,248.42	2,232.63	142.323	ES
Shelton 7-2(PR) - Wellbore #1 - Gyro Surveys	6,800.00	6,557.54	3,202.71	3,154.86	66.932	SF

# Noble Energy, Inc.

## Anticollision Summary Report

<b>Company:</b>	Northern Region - DJ Basin	<b>Local Co-ordinate Reference:</b>	Well Aristocrat H14-765
<b>Project:</b>	Mustang	<b>TVD Reference:</b>	Well @ 4811.00ft
<b>Reference Site:</b>	H Section 02	<b>MD Reference:</b>	Well @ 4811.00ft
<b>Site Error:</b>	0.00 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Aristocrat H14-765	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Aristocrat H14-765	<b>Database:</b>	EDMP
<b>Reference Design:</b>	Plan #1	<b>Offset TVD Reference:</b>	Offset Datum

Summary						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
H Section 11						
ARISTOCRAT #11-1(SI) - ARISTOCRAT #11-1 - Wellbor	9,314.58	6,909.58	3,059.50	3,011.79	64.127	CC, ES
ARISTOCRAT #11-1(SI) - ARISTOCRAT #11-1 - Wellbor	9,800.00	6,918.11	3,097.76	3,048.43	62.801	SF
ARISTOCRAT #11-2(PA) - ARISTOCRAT #11-2 - Wellb	2,302.18	2,334.87	2,386.44	2,373.46	183.757	CC
ARISTOCRAT #11-2(PA) - ARISTOCRAT #11-2 - Wellb	2,400.00	2,423.89	2,386.95	2,373.43	176.547	ES
ARISTOCRAT #11-2(PA) - ARISTOCRAT #11-2 - Wellb	8,500.00	6,950.01	3,010.04	2,967.36	70.516	SF
ARISTOCRAT #11-21(PR) - ARISTOCRAT #11-21(PR) -	8,100.00	6,806.01	300.86	261.46	7.636	SF
ARISTOCRAT #11-21(PR) - ARISTOCRAT #11-21(PR) -	8,127.58	6,806.01	299.59	260.63	7.690	CC, ES
ARISTOCRAT #11-24(PR) - ARISTOCRAT #11-24 - We	9,136.76	6,911.14	211.97	163.67	4.389	CC, ES, SF
ARISTOCRAT #39-11(PR) - ARISTOCRAT #39-11 - We	10,713.27	6,968.00	3,045.76	562.87	1.227	Level 3, CC, ES, SF
ARISTOCRAT PC #H11-07(SI) - ARISTOCRAT PC #H11	9,562.10	6,960.11	1,467.87	1,418.07	29.481	CC, ES
ARISTOCRAT PC #H11-07(SI) - ARISTOCRAT PC #H11	9,600.00	6,960.38	1,468.35	1,418.50	29.455	SF
ARISTOCRAT PC H#11-18D(PR) - ARISTOCRAT PC H	8,600.00	7,000.01	1,119.85	1,072.04	23.423	SF
ARISTOCRAT PC H#11-18D(PR) - ARISTOCRAT PC H	8,651.67	7,000.01	1,118.66	1,070.93	23.436	CC, ES
ARISTOCRAT PC H#11-19D(PR) - ARISTOCRAT PC H	8,184.21	6,907.00	143.70	-2,303.81	0.059	Level 1, CC, ES, SF
ARISTOCRAT PC H#11-30D (PR) - ARISTOCRAT PC H	8,181.31	6,906.00	93.40	-2,353.74	0.038	Level 1, CC, ES, SF
ARISTOCRAT PC H#11-32D(SI) - ARISTOCRAT PC H	9,921.17	7,324.76	1,618.11	1,561.15	28.408	CC, ES
ARISTOCRAT PC H#11-32D(SI) - ARISTOCRAT PC H	10,400.00	7,328.87	1,687.46	1,624.91	26.978	SF
Aristocrat PC H11-22D - Wellbore #1 - Wellbore #1 - As	9,883.51	7,361.44	2,380.75	2,311.05	34.153	CC
Aristocrat PC H11-22D - Wellbore #1 - Wellbore #1 - As	9,900.00	7,361.59	2,380.81	2,310.93	34.070	ES
Aristocrat PC H11-22D - Wellbore #1 - Wellbore #1 - As	10,600.00	7,367.63	2,486.23	2,409.18	32.270	SF
Aristocrat PC H11-29D - Wellbore #1 - Wellbore #1 - As	7,449.68	6,995.63	370.07	315.82	6.821	CC, ES
Aristocrat PC H11-29D - Wellbore #1 - Wellbore #1 - As	7,450.00	6,995.68	370.07	315.82	6.821	SF
Aristocrat PC H11-89HZ - Original Drilling - Original Drilli	8,772.00	10,193.97	137.68	92.36	3.038	CC
Aristocrat PC H11-89HZ - Original Drilling - Original Drilli	8,800.00	10,194.53	140.50	88.73	2.714	ES
Aristocrat PC H11-89HZ - Original Drilling - Original Drilli	8,900.00	10,196.51	187.97	100.86	2.158	SF
BEEBE DRAW #11-2(PR) - BEEBE DRAW #11-2 - Wellt	9,037.42	6,958.57	2,112.80	2,065.31	44.487	CC, ES
BEEBE DRAW #11-2(PR) - BEEBE DRAW #11-2 - Wellt	9,200.00	6,960.85	2,119.05	2,071.14	44.232	SF
CORNELIUS #11-22 (PR) - CORNELIUS #11-22 - Wellb	8,177.28	6,893.76	1,005.19	961.88	23.207	CC, ES
CORNELIUS #11-22 (PR) - CORNELIUS #11-22 - Wellb	8,300.00	6,890.61	1,012.65	968.38	22.875	SF
CORNELIUS #11-23 (PR) - CORNELIUS #11-23 - Wellb	9,201.14	7,164.22	1,007.75	957.88	20.210	CC, ES
CORNELIUS #11-23 (PR) - CORNELIUS #11-23 - Wellb	9,400.00	7,177.09	1,027.09	975.44	19.886	SF
CPC BEEBE DRAW #11-1(PA) - CPC BEEBE DRAW #1	4,397.05	4,291.57	1,484.97	1,460.09	59.671	CC
CPC BEEBE DRAW #11-1(PA) - CPC BEEBE DRAW #1	4,400.00	4,294.28	1,484.98	1,460.08	59.640	ES
CPC BEEBE DRAW #11-1(PA) - CPC BEEBE DRAW #1	8,000.00	6,979.58	1,585.46	1,543.68	37.941	SF
FRICO #12-11(PA) - FRICO #12-11 - Wellbore #1 - As D	10,581.73	7,100.01	1,174.09	1,113.83	19.485	CC
FRICO #12-11(PA) - FRICO #12-11 - Wellbore #1 - As D	10,600.00	7,100.01	1,174.23	1,113.74	19.410	ES
FRICO #12-11(PA) - FRICO #12-11 - Wellbore #1 - As D	10,800.00	7,100.01	1,194.21	1,131.44	19.025	SF
FRICO #23-11(PA) - FRICO #23-11 - Wellbore #1 - As D	11,338.40	6,958.23	1,260.19	1,199.19	20.658	CC, ES, SF
FRICO #25-11(PR) - FRICO #25-11 - Wellbore #1 - As D	10,619.55	6,938.00	1,851.87	-619.90	0.749	Level 1, CC, ES, SF
FRICO #33-11(SI) - FRICO #33-11 - Wellbore #1 - As Dr	11,460.54	7,313.87	1,604.37	1,535.23	23.204	CC
FRICO #33-11(SI) - FRICO #33-11 - Wellbore #1 - As Dr	11,500.00	7,313.61	1,604.85	1,535.11	23.011	ES
FRICO #33-11(SI) - FRICO #33-11 - Wellbore #1 - As Dr	11,800.00	7,311.66	1,639.88	1,566.26	22.273	SF
FRICO #35-11(SI) - FRICO #35-11 - Wellbore #1 - As Dr	12,085.55	6,948.00	1,658.93	-826.44	0.667	Level 1, CC, ES, SF
FRICO #36-11(SI) - FRICO #36-11 - Wellbore #1 - As Dr	12,114.24	6,948.00	1,690.07	-795.51	0.680	Level 1, CC, ES, SF
FRICO #37-11(SI) - FRICO #37-11 - Wellbore #1 - As Dr	12,609.33	7,017.87	2,227.19	2,152.85	29.960	CC, ES
FRICO #37-11(SI) - FRICO #37-11 - Wellbore #1 - As Dr	12,800.00	7,019.24	2,235.32	2,160.33	29.808	SF
FRICO #38-10(SI) - FRICO #38-10 - Wellbore #1 - As Dr	12,606.78	7,680.26	1,793.51	1,709.56	21.363	CC, ES
FRICO #38-10(SI) - FRICO #38-10 - Wellbore #1 - As Dr	13,000.00	7,681.58	1,836.11	1,746.61	20.514	SF
FRICO #9-10A(PA) - FRICO #9-10A - Wellbore #1 - As C	10,420.40	7,326.93	2,193.69	2,132.12	35.627	CC, ES
FRICO #9-10A(PA) - FRICO #9-10A - Wellbore #1 - As C	11,000.00	7,335.66	2,268.95	2,202.04	33.913	SF
Frico 38-10 - Wellbore #1 - Wellbore #1 - As Drilled	12,606.80	7,680.26	1,793.51	1,639.14	11.618	CC
Frico 38-10 - Wellbore #1 - Wellbore #1 - As Drilled	12,700.00	7,680.57	1,795.93	1,636.94	11.296	ES
Frico 38-10 - Wellbore #1 - Wellbore #1 - As Drilled	13,100.00	7,681.93	1,860.09	1,685.84	10.675	SF

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

**Noble Energy, Inc.**  
Anticollision Summary Report

<b>Company:</b>	Northern Region - DJ Basin	<b>Local Co-ordinate Reference:</b>	Well Aristocrat H14-765
<b>Project:</b>	Mustang	<b>TVD Reference:</b>	Well @ 4811.00ft
<b>Reference Site:</b>	H Section 02	<b>MD Reference:</b>	Well @ 4811.00ft
<b>Site Error:</b>	0.00 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Aristocrat H14-765	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Aristocrat H14-765	<b>Database:</b>	EDMP
<b>Reference Design:</b>	Plan #1	<b>Offset TVD Reference:</b>	Offset Datum

Summary						
Site Name Offset Well - Wellbore - Design	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
H Section 11						
HSR-BOST #12-11(PA) - HSR-BOST #12-11 - Wellbore	11,182.07	7,244.39	271.33	209.98	4.423	CC, ES
HSR-BOST #12-11(PA) - HSR-BOST #12-11 - Wellbore	11,200.00	7,244.05	271.92	209.98	4.390	SF
HSR-CALIENTE #16-11(SI) - HSR-CALIENTE #16-11 - V	12,100.36	6,953.00	2,868.18	380.96	1.153	Level 2, CC, ES, SF
HSR-CULLEN #10-11(PR) - HSR-CULLEN #10-11 - Wel	10,653.98	6,946.00	1,888.96	-585.84	0.763	Level 1, CC, ES, SF
HSR-GULICK #15-11(SI) - HSR-GULICK #15-11 - Wellb	11,657.39	6,946.00	2,032.31	-449.33	0.819	Level 1, CC, ES, SF
HSR-KATE #13-11(PA) - HSR-KATE #13-11 - Wellbore #	12,164.80	7,650.02	1,143.19	1,067.78	15.160	CC
HSR-KATE #13-11(PA) - HSR-KATE #13-11 - Wellbore #	12,200.00	7,650.02	1,143.73	1,067.61	15.026	ES
HSR-KATE #13-11(PA) - HSR-KATE #13-11 - Wellbore #	12,400.00	7,650.02	1,167.13	1,087.66	14.687	SF
HSR-LIBBY #11-11(PA) - HSR-LIBBY #11-11 - Wellbore	10,699.05	7,150.01	404.37	348.20	7.199	CC, ES, SF
HSR-NICHOLAS #14-11(PA) - HSR-NICHOLAS #14-11 -	12,068.79	7,143.79	332.40	261.18	4.667	CC, ES, SF
HSR-PORTER #9-11(PR) - HSR-PORTER #9-11 - Wellb	10,665.88	6,965.00	3,047.85	566.32	1.228	Level 3, CC, ES, SF



# Noble Energy, Inc.

## Anticollision Summary Report

<b>Company:</b>	Northern Region - DJ Basin	<b>Local Co-ordinate Reference:</b>	Well Aristocrat H14-765
<b>Project:</b>	Mustang	<b>TVD Reference:</b>	Well @ 4811.00ft
<b>Reference Site:</b>	H Section 02	<b>MD Reference:</b>	Well @ 4811.00ft
<b>Site Error:</b>	0.00 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Aristocrat H14-765	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Aristocrat H14-765	<b>Database:</b>	EDMP
<b>Reference Design:</b>	Plan #1	<b>Offset TVD Reference:</b>	Offset Datum

Summary						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
H Section 12						
Helms H 12-14D(SI) - Wellbore #1 - Gyro Surveys	12,183.68	7,019.41	5,612.35	5,533.68	71.342	CC
Helms H 12-14D(SI) - Wellbore #1 - Gyro Surveys	12,200.00	7,019.04	5,612.37	5,533.61	71.258	ES
Helms H 12-14D(SI) - Wellbore #1 - Gyro Surveys	13,600.00	6,987.38	5,788.21	5,702.82	67.790	SF
JOHNSON H #13-27D(PR) - Wellbore #1 - MWD Survey	12,525.28	7,078.63	7,371.97	7,288.06	87.858	CC
JOHNSON H #13-27D(PR) - Wellbore #1 - MWD Survey	12,600.00	7,078.18	7,372.35	7,287.94	87.343	ES
JOHNSON H #13-27D(PR) - Wellbore #1 - MWD Survey	15,000.00	7,064.35	7,776.24	7,678.68	79.711	SF
Ray H 12-24D(SI) - Wellbore #1 - Gyro Surveys	10,995.13	7,085.26	6,101.76	6,028.60	83.403	CC
Ray H 12-24D(SI) - Wellbore #1 - Gyro Surveys	11,000.00	7,085.32	6,101.76	6,028.58	83.376	ES
Ray H 12-24D(SI) - Wellbore #1 - Gyro Surveys	12,700.00	7,104.31	6,335.43	6,255.13	78.895	SF
SHELTON H #01-25D(SI) - Wellbore #1 - MWD Surveys	575.92	612.98	3,331.63	3,327.79	867.362	CC
SHELTON H #01-25D(SI) - Wellbore #1 - MWD Surveys	2,300.00	2,481.59	3,341.94	3,321.00	159.571	ES
SHELTON H #01-25D(SI) - Wellbore #1 - MWD Surveys	7,050.00	7,273.00	5,088.87	5,025.32	80.086	SF
Shelton H01-33D(SI) - Wellbore #1 - MWD Surveys	3,127.57	4,077.55	2,757.20	2,725.14	85.999	CC
Shelton H01-33D(SI) - Wellbore #1 - MWD Surveys	3,208.18	4,177.72	2,758.05	2,724.87	83.126	ES
Shelton H01-33D(SI) - Wellbore #1 - MWD Surveys	6,850.00	7,113.89	3,539.21	3,474.28	54.512	SF
STROH #H 12-03(SI) - Wellbore #1 - No Surveys	2,200.00	2,240.00	4,587.61	4,560.41	168.655	CC
STROH #H 12-03(SI) - Wellbore #1 - No Surveys	2,300.00	2,339.98	4,588.74	4,560.32	161.471	ES
STROH #H 12-03(SI) - Wellbore #1 - No Surveys	9,100.00	6,989.00	5,808.00	5,714.16	61.891	SF
Stroh #H12-16(SI) - Wellbore #1 - No Surveys	12,087.89	6,965.00	8,312.88	8,198.51	72.687	CC
Stroh #H12-16(SI) - Wellbore #1 - No Surveys	12,100.00	6,965.00	8,312.89	8,198.45	72.640	ES
Stroh #H12-16(SI) - Wellbore #1 - No Surveys	14,700.00	6,965.00	8,713.61	8,585.06	67.783	SF
Stroh #H12-18(PR) - Wellbore #1 - No Surveys	2,200.00	2,243.00	5,260.68	5,233.45	193.213	CC
Stroh #H12-18(PR) - Wellbore #1 - No Surveys	2,300.00	2,342.98	5,261.67	5,233.22	184.980	ES
Stroh #H12-18(PR) - Wellbore #1 - No Surveys	10,100.00	6,992.00	6,304.40	6,205.54	63.772	SF
Stroh #H12-22(PR) - Wellbore #1 - Gyro Surveys	2,240.35	2,334.97	7,000.27	6,984.59	446.482	CC, ES
Stroh #H12-22(PR) - Wellbore #1 - Gyro Surveys	12,900.00	6,800.00	8,099.78	8,024.00	106.887	SF
Stroh #H12-32(PR) - Wellbore #1 - No Surveys	9,741.94	6,975.00	3,927.23	3,828.39	39.732	CC, ES
Stroh #H12-32(PR) - Wellbore #1 - No Surveys	10,300.00	6,975.00	3,966.68	3,865.57	39.232	SF
Stroh 12-01 - Wellbore #1 - Wellbore #1 - As Drilled	228.59	270.62	7,058.37	7,057.01	5,193.814	CC
Stroh 12-01 - Wellbore #1 - Wellbore #1 - As Drilled	2,213.58	2,280.34	7,058.79	7,043.30	455.725	ES
Stroh 12-01 - Wellbore #1 - Wellbore #1 - As Drilled	12,300.00	6,985.51	9,429.76	9,359.08	133.410	SF
STROH D #07-31(PR) - Wellbore #1 - Gyro Surveys	1,960.89	2,000.00	7,563.34	7,549.73	555.399	CC
STROH D #07-31(PR) - Wellbore #1 - Gyro Surveys	2,100.00	2,100.00	7,563.77	7,549.30	522.954	ES
STROH D #07-31(PR) - Wellbore #1 - Gyro Surveys	13,100.00	6,952.42	9,666.89	9,591.20	127.716	SF
STROH H #12-05(PA) - Wellbore #1 - Gyro Surveys	467.23	490.24	4,296.93	4,294.12	1,529.415	CC
STROH H #12-05(PA) - Wellbore #1 - Gyro Surveys	2,300.00	2,343.35	4,298.03	4,282.20	271.482	ES
STROH H #12-05(PA) - Wellbore #1 - Gyro Surveys	10,200.00	7,032.81	4,832.99	4,770.45	77.282	SF
STROH H #12-06(SI) - Wellbore #1 - No Surveys	2,200.00	2,244.00	5,450.60	5,423.37	200.124	CC
STROH H #12-06(SI) - Wellbore #1 - No Surveys	2,300.00	2,343.98	5,451.37	5,422.91	191.590	ES
STROH H #12-06(SI) - Wellbore #1 - No Surveys	10,800.00	6,993.00	6,058.89	5,955.78	58.765	SF
STROH H #12-08(PR) - Wellbore #1 - No Surveys	2,200.00	2,243.00	7,600.40	7,573.17	279.146	CC
STROH H #12-08(PR) - Wellbore #1 - No Surveys	2,300.00	2,342.98	7,601.42	7,572.97	267.236	ES
STROH H #12-08(PR) - Wellbore #1 - No Surveys	12,400.00	6,992.00	8,808.12	8,696.40	78.839	SF
STROH H #12-10(PR) - Wellbore #1 - No Surveys	10,490.03	7,201.00	6,761.46	6,656.00	64.109	CC
STROH H #12-10(PR) - Wellbore #1 - No Surveys	10,500.00	7,201.00	6,761.47	6,655.95	64.076	ES
STROH H #12-10(PR) - Wellbore #1 - No Surveys	12,400.00	7,201.00	7,026.05	6,911.03	61.087	SF
STROH H #12-11(SI) - Wellbore #1 - No Surveys	10,590.80	7,002.00	5,389.28	5,284.89	51.628	CC
STROH H #12-11(SI) - Wellbore #1 - No Surveys	10,600.00	7,002.00	5,389.29	5,284.85	51.604	ES
STROH H #12-11(SI) - Wellbore #1 - No Surveys	11,700.00	7,002.00	5,502.24	5,392.54	50.157	SF
STROH H #12-12(SI) - Wellbore #1 - No Surveys	10,554.71	6,979.00	4,101.03	3,997.08	39.451	CC, ES
STROH H #12-12(SI) - Wellbore #1 - No Surveys	11,200.00	6,979.00	4,151.49	4,044.73	38.887	SF
STROH H #12-13(SI) - Wellbore #1 - No Surveys	12,213.20	6,971.00	4,266.55	4,151.23	36.999	CC, ES
STROH H #12-13(SI) - Wellbore #1 - No Surveys	12,800.00	6,971.00	4,306.71	4,188.62	36.470	SF

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

# Noble Energy, Inc.

## Anticollision Summary Report

<b>Company:</b>	Northern Region - DJ Basin	<b>Local Co-ordinate Reference:</b>	Well Aristocrat H14-765
<b>Project:</b>	Mustang	<b>TVD Reference:</b>	Well @ 4811.00ft
<b>Reference Site:</b>	H Section 02	<b>MD Reference:</b>	Well @ 4811.00ft
<b>Site Error:</b>	0.00 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Aristocrat H14-765	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Aristocrat H14-765	<b>Database:</b>	EDMP
<b>Reference Design:</b>	Plan #1	<b>Offset TVD Reference:</b>	Offset Datum

Summary						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
H Section 12						
STROH H #12-14(PA) - Wellbore #1 - No Surveys	11,348.77	6,999.00	5,378.31	5,268.85	49.135	CC
STROH H #12-14(PA) - Wellbore #1 - No Surveys	11,400.00	6,999.00	5,378.55	5,268.81	49.011	ES
STROH H #12-14(PA) - Wellbore #1 - No Surveys	12,400.00	6,999.00	5,480.08	5,365.43	47.797	SF
STROH H #12-20(PR) - Wellbore #1 - No Surveys	9,713.71	7,000.00	5,107.82	5,008.92	51.650	CC, ES
STROH H #12-20(PR) - Wellbore #1 - No Surveys	10,800.00	7,000.00	5,222.05	5,118.36	50.361	SF
STROH H #12-21(PR) - Wellbore #1 - No Surveys	2,200.00	2,248.00	6,248.82	6,221.55	229.138	CC
STROH H #12-21(PR) - Wellbore #1 - No Surveys	2,300.00	2,347.98	6,249.60	6,221.11	219.374	ES
STROH H #12-21(PR) - Wellbore #1 - No Surveys	11,500.00	6,997.00	6,810.80	6,703.47	63.454	SF
STROH H #12-28D(PR) - Wellbore #1 - MWD Surveys	458.99	496.00	3,352.57	3,349.84	1,228.800	CC
STROH H #12-28D(PR) - Wellbore #1 - MWD Surveys	800.00	818.00	3,352.93	3,347.86	662.208	ES
STROH H #12-28D(PR) - Wellbore #1 - MWD Surveys	9,400.00	9,400.00	6,421.52	6,354.83	96.290	SF
STROH H #12-4J(PR) - Wellbore #1 - No Surveys	11,514.29	6,979.00	7,695.51	7,585.08	69.685	CC
STROH H #12-4J(PR) - Wellbore #1 - No Surveys	11,600.00	6,979.00	7,695.99	7,585.04	69.367	ES
STROH H #12-4J(PR) - Wellbore #1 - No Surveys	13,800.00	6,979.00	8,027.79	7,905.19	65.483	SF
STROH H #12-9(PR) - Wellbore #1 - No Surveys	2,200.00	2,232.00	8,079.31	8,052.18	297.785	CC
STROH H #12-9(PR) - Wellbore #1 - No Surveys	2,300.00	2,331.98	8,080.14	8,051.79	285.027	ES
STROH H #12-9(PR) - Wellbore #1 - No Surveys	13,300.00	6,981.00	8,697.79	8,579.62	73.608	SF
Stroh H 12-04(PR) - Wellbore #1 - Wellbore #1	2,361.33	2,472.04	3,208.33	3,191.66	192.475	CC
Stroh H 12-04(PR) - Wellbore #1 - Wellbore #1	2,400.00	2,511.87	3,208.45	3,191.52	189.438	ES
Stroh H 12-04(PR) - Wellbore #1 - Wellbore #1	8,600.00	6,885.34	4,201.37	4,146.94	77.182	SF
Stroh H12-02 - Wellbore #1 - Wellbore #1 - As Drilled	1,884.00	1,935.16	5,514.90	5,501.79	420.516	CC
Stroh H12-02 - Wellbore #1 - Wellbore #1 - As Drilled	2,100.00	2,120.27	5,515.65	5,501.11	379.503	ES
Stroh H12-02 - Wellbore #1 - Wellbore #1 - As Drilled	10,700.00	6,951.49	7,251.55	7,188.55	115.095	SF
Stroh H12-27 - Wellbore #1 - Wellbore #1 - As Drilled	2,248.59	2,390.37	6,158.45	6,142.43	384.428	CC, ES
Stroh H12-27 - Wellbore #1 - Wellbore #1 - As Drilled	11,200.00	6,900.01	8,333.87	8,269.27	129.017	SF
STROH H12-99HZ(PR) - Wellbore #1 - MWD Surveys	2,453.01	2,567.68	3,411.42	3,394.32	199.487	CC
STROH H12-99HZ(PR) - Wellbore #1 - MWD Surveys	2,500.00	2,606.39	3,411.59	3,394.20	196.101	ES
STROH H12-99HZ(PR) - Wellbore #1 - MWD Surveys	9,400.00	6,208.74	4,074.86	4,021.57	76.461	SF
STROH PC H #12-30D(SI) - Wellbore #1 - MWD Surveys	3,008.69	3,606.01	2,887.54	2,862.92	117.292	CC, ES
STROH PC H #12-30D(SI) - Wellbore #1 - MWD Surveys	7,900.00	7,054.32	3,811.01	3,754.47	67.406	SF
STROH PC H #12-31D(SI) - Wellbore #1 - MWD Surveys	2,465.34	2,663.56	3,255.73	3,236.72	171.281	CC
STROH PC H #12-31D(SI) - Wellbore #1 - MWD Surveys	2,500.00	2,692.24	3,255.85	3,236.58	168.970	ES
STROH PC H #12-31D(SI) - Wellbore #1 - MWD Surveys	8,900.00	7,038.67	3,792.33	3,734.09	65.120	SF
Stroh/12-7(PR) - Wellbore #1 - Gyro Surveys	420.79	474.80	6,430.96	6,428.20	2,328.102	CC
Stroh/12-7(PR) - Wellbore #1 - Gyro Surveys	2,200.00	2,220.42	6,435.18	6,419.95	422.360	ES
Stroh/12-7(PR) - Wellbore #1 - Gyro Surveys	12,000.00	6,917.81	7,793.93	7,723.28	110.316	SF

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

# Noble Energy, Inc.

## Anticollision Summary Report

<b>Company:</b>	Northern Region - DJ Basin	<b>Local Co-ordinate Reference:</b>	Well Aristocrat H14-765
<b>Project:</b>	Mustang	<b>TVD Reference:</b>	Well @ 4811.00ft
<b>Reference Site:</b>	H Section 02	<b>MD Reference:</b>	Well @ 4811.00ft
<b>Site Error:</b>	0.00 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Aristocrat H14-765	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Aristocrat H14-765	<b>Database:</b>	EDMP
<b>Reference Design:</b>	Plan #1	<b>Offset TVD Reference:</b>	Offset Datum

Summary						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
H Section 13						
DILLER #42-13(PR) - Wellbore #1 - No Surveys	14,760.65	6,969.00	7,923.22	7,788.89	58.984	CC
DILLER #42-13(PR) - Wellbore #1 - No Surveys	14,800.00	6,969.00	7,923.32	7,788.73	58.871	ES
DILLER #42-13(PR) - Wellbore #1 - No Surveys	16,434.62	6,969.00	8,098.12	7,954.20	56.269	SF
EPHRAIM H #13-19(SI) - Wellbore #1 - No Surveys	14,102.12	6,978.00	4,713.10	4,583.72	36.428	CC, ES
EPHRAIM H #13-19(SI) - Wellbore #1 - No Surveys	14,800.00	6,978.00	4,764.49	4,631.67	35.871	SF
FORD H #13-29(PR) - Wellbore #1 - No Surveys	12,820.56	6,983.00	4,800.31	4,680.47	40.055	CC, ES
FORD H #13-29(PR) - Wellbore #1 - No Surveys	13,600.00	6,983.00	4,863.18	4,739.51	39.324	SF
FRIDGE USX H #13-22(SI) - Wellbore #1 - No Surveys	15,425.81	6,975.00	7,567.99	7,428.48	54.248	CC
FRIDGE USX H #13-22(SI) - Wellbore #1 - No Surveys	15,500.00	6,975.00	7,568.35	7,428.36	54.062	ES
FRIDGE USX H #13-22(SI) - Wellbore #1 - No Surveys	16,434.62	6,975.00	7,634.93	7,489.36	52.448	SF
KARAKAKES H #13-23(SI) - Wellbore #1 - No Surveys	16,433.80	6,973.00	7,381.55	7,234.22	50.100	CC
KARAKAKES H #13-23(SI) - Wellbore #1 - No Surveys	16,434.62	6,973.00	7,381.55	7,234.21	50.099	ES, SF
Karakakes H13-25 - Original Drilling - Original Drilling - A	16,434.62	7,075.78	5,137.89	5,025.82	45.845	CC, ES, SF
Karakakes H13-32 - Gyros - Gyros	15,269.29	7,100.00	3,746.90	3,644.15	36.466	CC
Karakakes H13-32 - Gyros - Gyros	15,300.00	7,100.00	3,747.03	3,644.04	36.383	ES
Karakakes H13-32 - Gyros - Gyros	16,000.00	7,100.00	3,817.49	3,709.75	35.432	SF
Karakakes H13-32 - Karakakes H13-32 OH - As-Drilled	15,269.22	7,132.77	3,746.77	3,643.94	36.437	CC
Karakakes H13-32 - Karakakes H13-32 OH - As-Drilled	15,300.00	7,132.68	3,746.90	3,643.83	36.353	ES
Karakakes H13-32 - Karakakes H13-32 OH - As-Drilled	16,000.00	7,130.60	3,817.37	3,709.56	35.408	SF
Karakakes H13-33 - Original Drilling - Original Drilling - A	16,434.62	6,992.04	3,810.20	3,699.36	34.377	CC, ES, SF
Karakakes H14-63HN - Original Drilling - Original Drilling	16,434.62	10,512.58	32.63	-95.50	0.255	Level 1, CC, ES, SF
MILDENVERGER-MOORE H #13-1(SI) - Wellbore #1 - N	13,082.85	6,972.00	8,048.96	7,927.28	66.148	CC
MILDENVERGER-MOORE H #13-1(SI) - Wellbore #1 - N	13,100.00	6,972.00	8,048.98	7,927.18	66.088	ES
MILDENVERGER-MOORE H #13-1(SI) - Wellbore #1 - N	15,400.00	6,972.00	8,375.85	8,241.50	62.339	SF
MOORE UPRC H #13-2(SI) - Wellbore #1 - No Surveys	13,375.22	6,989.00	6,707.44	6,583.43	54.090	CC
MOORE UPRC H #13-2(SI) - Wellbore #1 - No Surveys	13,400.00	6,989.00	6,707.48	6,583.32	54.023	ES
MOORE UPRC H #13-2(SI) - Wellbore #1 - No Surveys	14,900.00	6,989.00	6,878.57	6,746.40	52.044	SF
SHAFFER #32-13(SI) - Wellbore #1 - No Surveys	14,580.96	6,980.00	6,792.32	6,659.28	51.052	CC
SHAFFER #32-13(SI) - Wellbore #1 - No Surveys	14,600.00	6,980.00	6,792.35	6,659.18	51.006	ES
SHAFFER #32-13(SI) - Wellbore #1 - No Surveys	16,000.00	6,980.00	6,938.97	6,798.21	49.296	SF
UPRC #13-10J(SI) - Wellbore #1 - Gyro Surveys	15,500.00	15,500.00	6,730.61	6,596.33	50.122	ES, SF
UPRC #13-10J(SI) - Wellbore #1 - Gyro Surveys	15,890.89	7,024.31	6,719.54	6,612.77	62.935	CC
UPRC #13-11J(SI) - Wellbore #1 - No Surveys	16,433.80	7,005.00	7,381.55	7,233.94	50.006	CC
UPRC #13-11J(SI) - Wellbore #1 - No Surveys	16,434.62	7,005.00	7,381.55	7,233.93	50.004	ES, SF
UPRC #13-12J(SI) - Wellbore #1 - No Surveys	16,141.16	6,968.00	4,548.13	4,403.13	31.365	CC, ES
UPRC #13-12J(SI) - Wellbore #1 - No Surveys	16,434.62	6,968.00	4,557.59	4,411.00	31.090	SF
UPRC #13-3J(SI) - Wellbore #1 - Gyro Surveys	13,396.51	7,080.34	5,368.09	5,280.14	61.036	CC
UPRC #13-3J(SI) - Wellbore #1 - Gyro Surveys	13,400.00	7,080.34	5,368.09	5,280.12	61.021	ES
UPRC #13-3J(SI) - Wellbore #1 - Gyro Surveys	14,600.00	7,079.90	5,501.34	5,407.54	58.651	SF
UPRC #13-4J(SI) - Wellbore #1 - No Surveys	13,494.93	6,974.00	4,142.74	4,017.97	33.203	CC
UPRC #13-4J(SI) - Wellbore #1 - No Surveys	13,500.00	6,974.00	4,142.74	4,017.95	33.196	ES
UPRC #13-4J(SI) - Wellbore #1 - No Surveys	14,000.00	6,974.00	4,173.42	4,046.24	32.816	SF
UPRC #13-5J(SI) - Wellbore #1 - No Surveys	14,788.30	6,992.00	4,385.47	4,250.73	32.548	CC
UPRC #13-5J(SI) - Wellbore #1 - No Surveys	14,800.00	6,992.00	4,385.49	4,250.68	32.532	ES
UPRC #13-5J(SI) - Wellbore #1 - No Surveys	15,300.00	6,992.00	4,415.23	4,277.96	32.166	SF
UPRC #13-6J(SI) - Wellbore #1 - Gyro Surveys	14,445.79	7,000.00	5,694.43	5,599.02	59.682	CC
UPRC #13-6J(SI) - Wellbore #1 - Gyro Surveys	14,500.00	7,000.00	5,694.69	5,598.95	59.477	ES
UPRC #13-6J(SI) - Wellbore #1 - Gyro Surveys	15,700.00	7,000.00	5,830.92	5,729.28	57.369	SF
UPRC #13-9J5(SI) - Wellbore #1 - No Surveys	16,222.57	6,943.00	8,268.97	8,123.54	56.862	CC
UPRC #13-9J5(SI) - Wellbore #1 - No Surveys	16,300.00	6,943.00	8,269.33	8,123.39	56.661	ES
UPRC #13-9J5(SI) - Wellbore #1 - No Surveys	16,434.62	6,943.00	8,271.69	8,124.85	56.333	SF
UPRC 13-13J - Original Drilling - Original Drilling - As Dri	16,434.62	7,098.14	4,555.71	4,443.94	40.759	CC, ES, SF
UPRC 13-14J - Original Drilling - Original Drilling - As Dri	16,434.62	6,873.41	5,578.74	5,466.63	49.758	CC, ES, SF

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

**Noble Energy, Inc.**  
Anticollision Summary Report

<b>Company:</b>	Northern Region - DJ Basin	<b>Local Co-ordinate Reference:</b>	Well Aristocrat H14-765
<b>Project:</b>	Mustang	<b>TVD Reference:</b>	Well @ 4811.00ft
<b>Reference Site:</b>	H Section 02	<b>MD Reference:</b>	Well @ 4811.00ft
<b>Site Error:</b>	0.00 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Aristocrat H14-765	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Aristocrat H14-765	<b>Database:</b>	EDMP
<b>Reference Design:</b>	Plan #1	<b>Offset TVD Reference:</b>	Offset Datum

**Summary**

Site Name Offset Well - Wellbore - Design	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Between Ellipses (ft)	Separation Factor	Warning
<b>H Section 13</b>						
UPRC 13-15J - Original Drilling - Original Drilling - As Dri	16,434.62	6,959.68	6,958.37	6,846.60	62.260	CC, ES, SF
UPRC 13-16J - Wellbore #1 - Wellbore #1 - As Drilled	16,434.62	6,945.60	7,955.73	7,844.70	71.658	CC, ES, SF
UPRC H13-28D(SI) - Wellbore #1 - MWD Surveys	12,739.32	7,374.72	5,882.50	5,794.40	66.770	CC, ES
UPRC H13-28D(SI) - Wellbore #1 - MWD Surveys	14,000.00	7,369.53	6,016.07	5,923.49	64.982	SF
UPRC H13-30D - UPRC H13-30D OH - As-drilled	12,100.00	12,100.00	3,792.05	3,693.93	38.650	SF
UPRC H13-30D - UPRC H13-30D OH - As-drilled	12,542.09	7,163.30	3,766.44	3,680.14	43.647	CC, ES
UPRR # 39 PAN AM 'B' #2(DA) - Wellbore #1 - No Surve	13,618.90	4,595.00	5,265.67	5,170.11	55.106	CC, ES
UPRR # 39 PAN AM 'B' #2(DA) - Wellbore #1 - No Surve	14,700.00	4,595.00	5,375.50	5,274.83	53.396	SF
UPRR 39 Pan Am B1 (PA) - Original Drilling - Original Dr	16,434.62	6,996.00	4,297.58	4,071.34	18.996	CC, ES, SF
<b>H Section 14</b>						
Bohlender H14-09 - Original Drilling - Original Drilling - A	15,786.39	7,060.03	3,125.67	3,019.48	29.433	CC
Bohlender H14-09 - Original Drilling - Original Drilling - A	15,800.00	7,060.23	3,125.70	3,019.44	29.414	ES
Bohlender H14-09 - Original Drilling - Original Drilling - A	16,100.00	7,064.48	3,141.36	3,033.89	29.230	SF
Bohlender H14-15 - Original Drilling - Original Drilling - A	16,434.62	7,025.99	2,117.32	2,013.85	20.463	CC, ES, SF
Bohlender H14-16 - Original Drilling - Original Drilling - A	16,434.62	6,973.63	2,686.20	2,575.30	24.222	CC, ES, SF
FARMERS #2-14HZ(PR) - FARMERS #2-14HZ - Wellbor	12,811.05	6,957.00	2,850.85	357.06	1.143	Level 2, CC, ES, SF
FRICO #1-14(PR) - FRICO #1-14 - Wellbore #1 - As Drill	13,259.72	6,960.00	3,058.58	560.42	1.224	Level 3, CC, ES, SF
FRICO #17-14 (PR) - FRICO #17-14 - Wellbore #1 - As I	13,961.93	6,948.00	2,387.69	-111.54	0.955	Level 1, CC, ES, SF
FRICO #18-14(PR) - FRICO #18-14 - Wellbore #1 - As D	14,082.55	6,948.00	2,361.56	-138.58	0.945	Level 1, CC
FRICO #18-14(PR) - FRICO #18-14 - Wellbore #1 - As D	14,100.00	6,948.00	2,361.62	-138.59	0.945	Level 1, ES, SF
FRICO #21-14(PR) - FRICO #21-14 - Wellbore #1 - As D	14,027.70	6,948.00	2,374.70	-125.02	0.950	Level 1, CC, ES, SF
FRICO #3-14(PR) - FRICO #3-14 - Wellbore #1 - As Drill	13,094.69	6,949.00	2,397.13	-95.95	0.962	Level 1, CC
FRICO #3-14(PR) - FRICO #3-14 - Wellbore #1 - As Drill	13,100.00	6,949.00	2,397.13	-95.97	0.962	Level 1, ES, SF
FRICO #41-14(PR) - FRICO #41-14 - Wellbore #1 - As D	13,305.68	6,958.00	3,055.35	557.56	1.223	Level 3, CC, ES, SF
FRICO #4-14(PR) - FRICO #4-14 - Wellbore #1 - As Drill	13,080.33	6,947.00	2,382.95	-109.32	0.956	Level 1, CC, ES, SF
FRICO #8-14(PR) - FRICO #8-14 - Wellbore #1 - As Drill	14,574.69	6,961.00	3,075.38	566.94	1.226	Level 3, CC
FRICO #8-14(PR) - FRICO #8-14 - Wellbore #1 - As Drill	14,600.00	6,961.00	3,075.49	566.92	1.226	Level 3, ES, SF
Frico 2-14(PR) - Frico 2-14 - Wellbore #1 - As Drilled	13,365.29	6,996.43	1,808.00	1,730.04	23.191	CC, ES
Frico 2-14(PR) - Frico 2-14 - Wellbore #1 - As Drilled	13,400.00	6,996.25	1,808.33	1,730.29	23.172	SF
Frico 22-14X(PR) - Frico 22-14X - Wellbore #1 - As Drille	15,230.33	7,387.64	295.55	196.43	2.982	CC, ES, SF
Frico 24-14(PR) - Frico 24-14 - Wellbore #1 - As Drilled	15,263.91	7,005.57	2,381.48	2,289.17	25.799	CC, ES
Frico 24-14(PR) - Frico 24-14 - Wellbore #1 - As Drilled	15,400.00	7,008.68	2,385.36	2,292.54	25.697	SF
Frico 5-14(PR) - Frico 5-14 - Wellbore #1 - As Drilled	14,596.19	7,247.05	721.17	625.84	7.565	CC
Frico 5-14(PR) - Frico 5-14 - Wellbore #1 - As Drilled	14,600.00	7,246.91	721.18	625.80	7.561	ES, SF
Frico 6-14(PR) - Frico 6-14 - Wellbore #1 - As Drilled	14,572.71	7,291.53	463.05	374.62	5.237	CC, ES, SF
Frico 7-14(PR) - Frico 7-14 - Wellbore #1 - As Drilled	14,581.54	14,581.54	1,866.24	1,765.37	18.503	CC
Frico 7-14(PR) - Frico 7-14 - Wellbore #1 - As Drilled	14,600.00	14,600.00	1,866.33	1,765.37	18.487	ES
Frico 7-14(PR) - Frico 7-14 - Wellbore #1 - As Drilled	14,700.00	14,700.00	1,869.99	1,768.64	18.450	SF
Wilcox H14-03J - Original Drilling - Original Drilling - As C	16,434.62	7,362.17	628.29	521.87	5.904	CC, ES, SF
Wilcox H14-10 - Original Drilling - Original Drilling - As Dr	15,804.20	7,341.68	1,850.88	1,728.63	15.140	CC, ES, SF
Wilcox H14-11 - Original Drilling - Original Drilling - As Dr	15,809.11	7,571.04	744.25	586.32	4.713	CC, ES
Wilcox H14-11 - Original Drilling - Original Drilling - As Dr	15,900.00	7,572.40	749.78	587.13	4.610	SF
Wilcox H14-13 - Original Drilling - Original Drilling - As Dr	16,434.62	7,594.55	827.90	637.12	4.340	CC, ES, SF

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

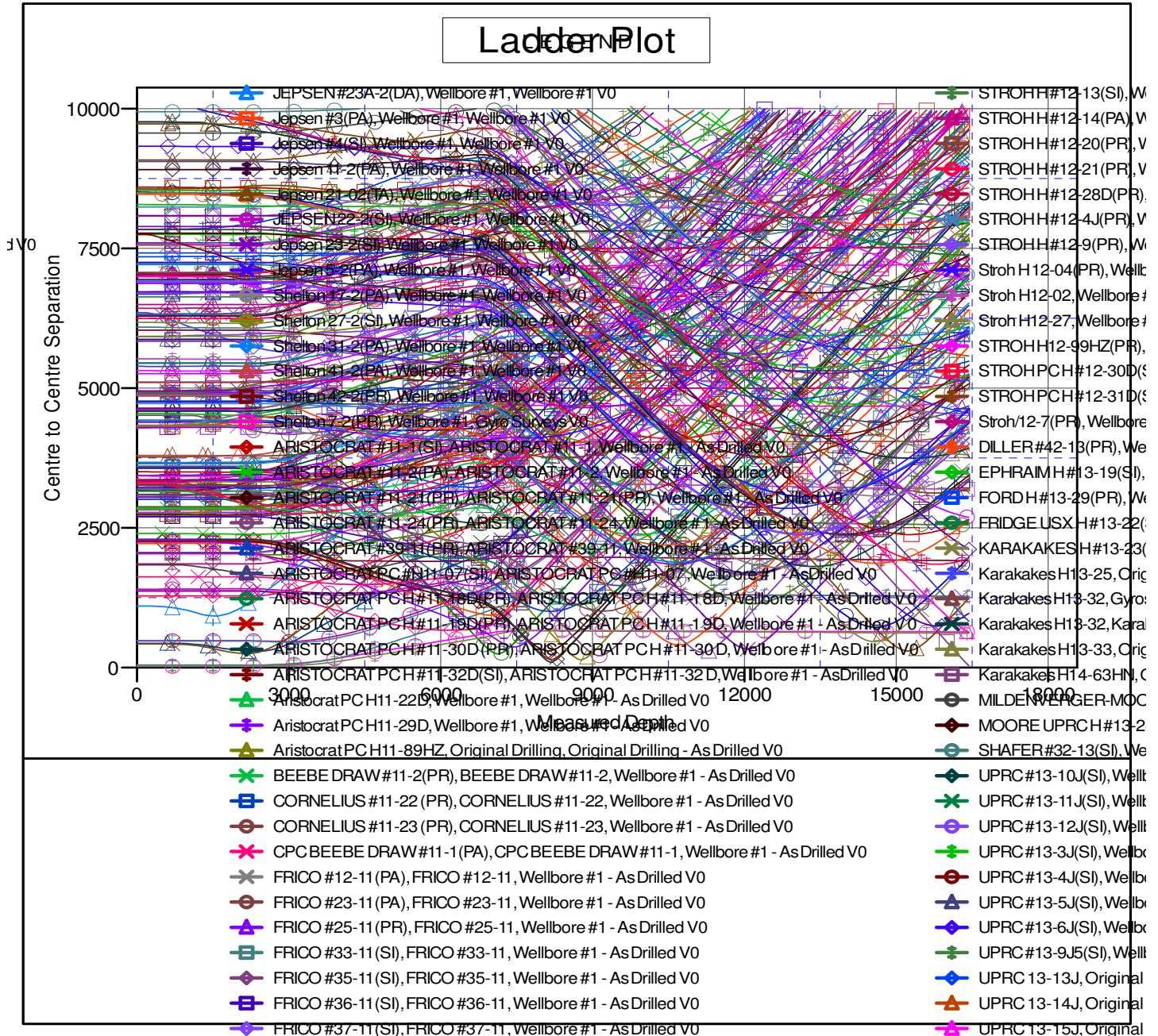


**Noble Energy, Inc.**  
**Anticollision Summary Report**

<b>Company:</b>	Northern Region - DJ Basin	<b>Local Co-ordinate Reference:</b>	Well Aristocrat H14-765
<b>Project:</b>	Mustang	<b>TVD Reference:</b>	Well @ 4811.00ft
<b>Reference Site:</b>	H Section 02	<b>MD Reference:</b>	Well @ 4811.00ft
<b>Site Error:</b>	0.00 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Aristocrat H14-765	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Aristocrat H14-765	<b>Database:</b>	EDMP
<b>Reference Design:</b>	Plan #1	<b>Offset TVD Reference:</b>	Offset Datum

Reference Depths are relative to Well @ 4811.00ft  
Offset Depths are relative to Offset Datum  
Central Meridian is -105.5000000

Coordinates are relative to: Aristocrat H14-765  
Coordinate System is US State Plane 1983, Colorado Northern Zone  
Grid Convergence at Surface is: 0.56°



CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

**Noble Energy, Inc.**  
**Anticollision Summary Report**

<b>Company:</b>	Northern Region - DJ Basin	<b>Local Co-ordinate Reference:</b>	Well Aristocrat H14-765
<b>Project:</b>	Mustang	<b>TVD Reference:</b>	Well @ 4811.00ft
<b>Reference Site:</b>	H Section 02	<b>MD Reference:</b>	Well @ 4811.00ft
<b>Site Error:</b>	0.00 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Aristocrat H14-765	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Aristocrat H14-765	<b>Database:</b>	EDMP
<b>Reference Design:</b>	Plan #1	<b>Offset TVD Reference:</b>	Offset Datum

Reference Depths are relative to Well @ 4811.00ft  
Offset Depths are relative to Offset Datum  
Central Meridian is -105.5000000

Coordinates are relative to: Aristocrat H14-765  
Coordinate System is US State Plane 1983, Colorado Northern Zone  
Grid Convergence at Surface is: 0.56°

