

Project: Mustang  
Site: C Section 33  
Well: Gutteresen D09-765  
Wellbore: Gutteresen D09-765  
Design: Plan #1

# Northern Region - DJ Basin

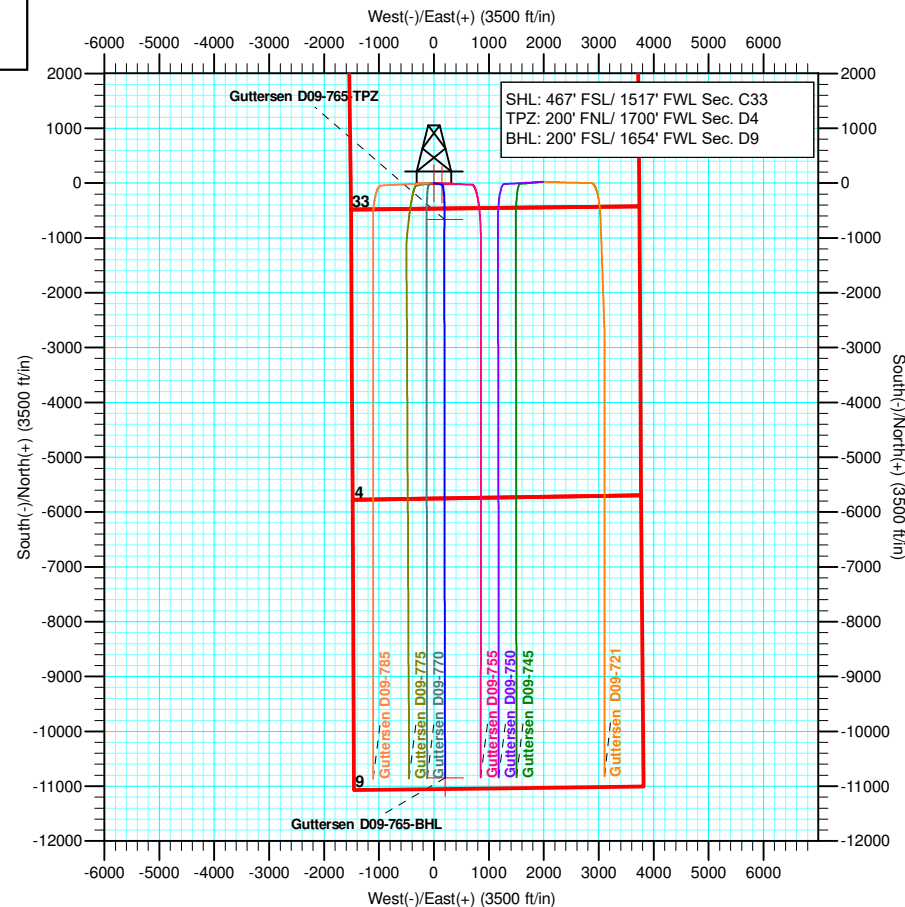
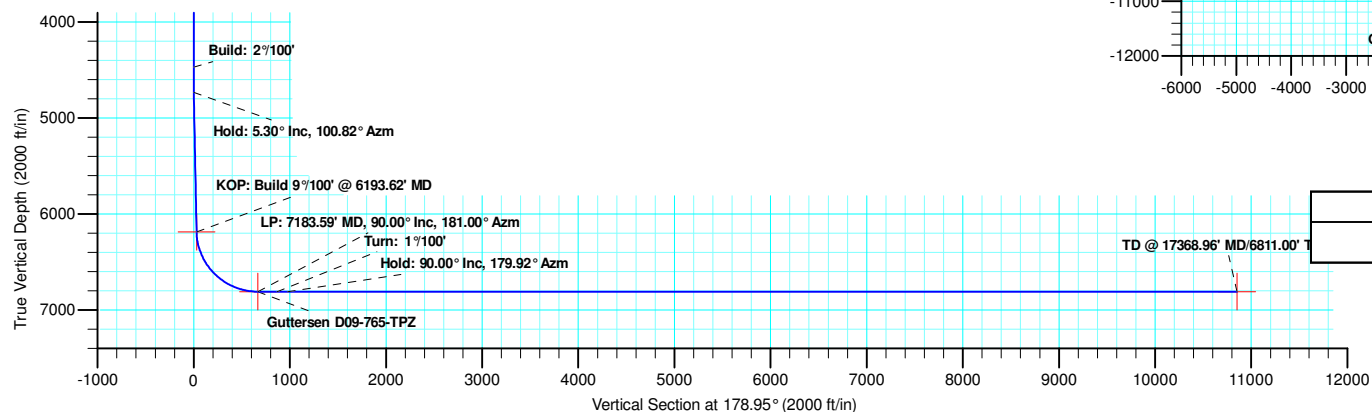
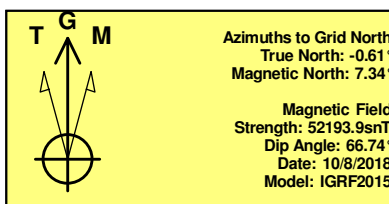
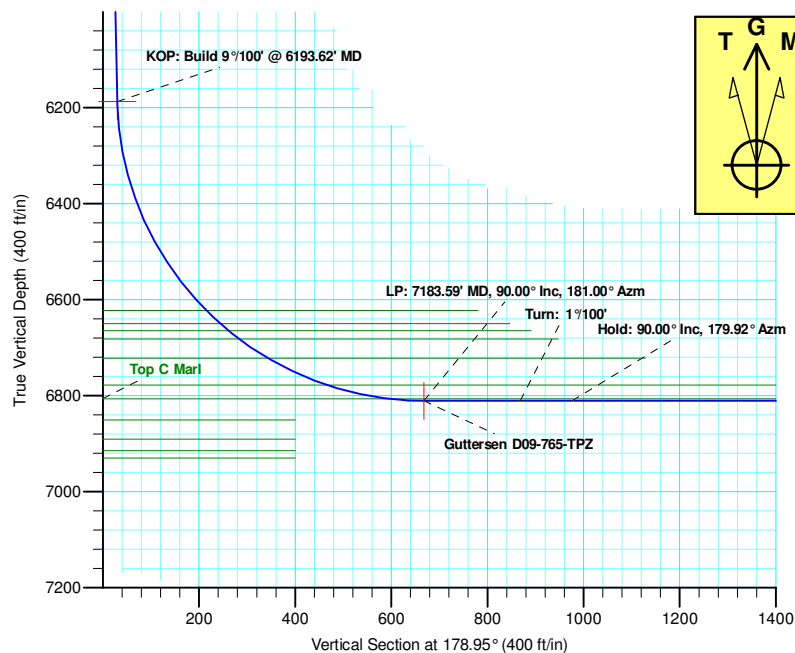
Geodetic System: US State Plane 1983  
Datum: North American Datum 1983  
Ellipsoid: GRS 1980  
Zone: Colorado Northern Zone  
System Datum: Mean Sea Level

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSec	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	4470.00	0.00	0.00	4470.00	0.00	0.00	0.00	0.00	0.00	
3	4734.93	5.30	100.82	4734.55	-2.30	12.02	2.00	100.82	2.52	
4	6193.62	5.30	100.82	6187.01	-27.57	144.34	0.00	0.00	30.22	
5	7183.59	90.00	181.00	6811.00	-665.01	190.24	9.00	80.23	668.40	Gutteresen D09-765-TPZ
6	7383.59	90.00	181.00	6811.00	-864.98	186.75	0.00	0.00	868.27	
7	7491.48	90.00	179.92	6811.00	-972.86	185.88	1.00	-90.00	976.11	
8	17368.96	90.00	179.92	6811.00	-10850.33	199.48	0.00	0.00	10852.17	Gutteresen D09-765-BHL

WELL DETAILS: Gutteresen D09-765

+N/-S	+E/-W	Northing	Ground Level: Easting	4725.00 Latitude	Longitude	Slot
0.00	0.00	1340051.40	3262343.60	40.2630230	-104.5599290	



Plan: Plan #1 (Gutteresen D09-765/Gutteresen D09-765)

Created By: Keith Noack Date: 11:09, October 09 2018

# **Northern Region - DJ Basin**

**Mustang**

**C Section 33**

**Guttersen D09-765**

**Guttersen D09-765**

**Plan: Plan #1**

## **Standard Planning Report**

**09 October, 2018**

# Noble Energy, Inc.

## Planning Report

<b>Database:</b>	EDMP	<b>Local Co-ordinate Reference:</b>	Well Guttersen D09-765
<b>Company:</b>	Northern Region - DJ Basin	<b>TVD Reference:</b>	Well @ 4755.00ft
<b>Project:</b>	Mustang	<b>MD Reference:</b>	Well @ 4755.00ft
<b>Site:</b>	C Section 33	<b>North Reference:</b>	Grid
<b>Well:</b>	Guttersen D09-765	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Guttersen D09-765		
<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	C Section 33				
Site Position:		Northing:	1,339,901.69 usft	Latitude:	40.2626140
From:	Lat/Long	Easting:	3,262,275.97 usft	Longitude:	-104.5601770
Position Uncertainty:	0.00 ft	Slot Radius:	13.200 in	Grid Convergence:	0.61 °

Well	Guttersen D09-765					
Well Position	+N/-S	149.72 ft	Northing:	1,340,051.40 usft	Latitude:	40.2630230
	+E/-W	67.63 ft	Easting:	3,262,343.60 usft	Longitude:	-104.5599290
Position Uncertainty		0.00 ft	Wellhead Elevation:		Ground Level:	4,725.00 ft

<b>Wellbore</b>	Guttersen D09-765				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2015	10/8/2018	7.95	66.74	52,193.90185502

<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	178.95

<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	
4,470.00	0.00	0.00	4,470.00	0.00	0.00	0.00	0.00	0.00	0.00	
4,734.93	5.30	100.82	4,734.55	-2.30	12.02	2.00	2.00	0.00	100.82	
6,193.62	5.30	100.82	6,187.01	-27.57	144.34	0.00	0.00	0.00	0.00	
7,183.59	90.00	181.00	6,811.00	-665.01	190.24	9.00	8.56	8.10	80.23	Guttersen D09-765
7,383.59	90.00	181.00	6,811.00	-864.98	186.75	0.00	0.00	0.00	0.00	
7,491.48	90.00	179.92	6,811.00	-972.86	185.88	1.00	0.00	-1.00	-90.00	
17,368.96	90.00	179.92	6,811.00	-10,850.33	199.48	0.00	0.00	0.00	0.00	Guttersen D09-765

# Noble Energy, Inc.

## Planning Report

<b>Database:</b>	EDMP	<b>Local Co-ordinate Reference:</b>	Well Guttersen D09-765
<b>Company:</b>	Northern Region - DJ Basin	<b>TVD Reference:</b>	Well @ 4755.00ft
<b>Project:</b>	Mustang	<b>MD Reference:</b>	Well @ 4755.00ft
<b>Site:</b>	C Section 33	<b>North Reference:</b>	Grid
<b>Well:</b>	Guttersen D09-765	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Guttersen D09-765		
<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
461.00	0.00	0.00	461.00	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
594.00	0.00	0.00	594.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Upper Pierre Aquifer Top</b>									
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00
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
1,514.00	0.00	0.00	1,514.00	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
2,300.00	0.00	0.00	2,300.00	0.00	0.00	0.00	0.00	0.00	0.00
2,400.00	0.00	0.00	2,400.00	0.00	0.00	0.00	0.00	0.00	0.00
2,500.00	0.00	0.00	2,500.00	0.00	0.00	0.00	0.00	0.00	0.00
2,600.00	0.00	0.00	2,600.00	0.00	0.00	0.00	0.00	0.00	0.00
2,700.00	0.00	0.00	2,700.00	0.00	0.00	0.00	0.00	0.00	0.00
2,800.00	0.00	0.00	2,800.00	0.00	0.00	0.00	0.00	0.00	0.00
2,900.00	0.00	0.00	2,900.00	0.00	0.00	0.00	0.00	0.00	0.00
3,000.00	0.00	0.00	3,000.00	0.00	0.00	0.00	0.00	0.00	0.00
3,100.00	0.00	0.00	3,100.00	0.00	0.00	0.00	0.00	0.00	0.00
3,200.00	0.00	0.00	3,200.00	0.00	0.00	0.00	0.00	0.00	0.00
3,300.00	0.00	0.00	3,300.00	0.00	0.00	0.00	0.00	0.00	0.00
3,400.00	0.00	0.00	3,400.00	0.00	0.00	0.00	0.00	0.00	0.00
3,500.00	0.00	0.00	3,500.00	0.00	0.00	0.00	0.00	0.00	0.00
3,593.00	0.00	0.00	3,593.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Parkman</b>									
3,600.00	0.00	0.00	3,600.00	0.00	0.00	0.00	0.00	0.00	0.00
3,700.00	0.00	0.00	3,700.00	0.00	0.00	0.00	0.00	0.00	0.00
3,800.00	0.00	0.00	3,800.00	0.00	0.00	0.00	0.00	0.00	0.00
3,900.00	0.00	0.00	3,900.00	0.00	0.00	0.00	0.00	0.00	0.00
3,998.00	0.00	0.00	3,998.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Sussex</b>									
4,000.00	0.00	0.00	4,000.00	0.00	0.00	0.00	0.00	0.00	0.00
4,100.00	0.00	0.00	4,100.00	0.00	0.00	0.00	0.00	0.00	0.00
4,200.00	0.00	0.00	4,200.00	0.00	0.00	0.00	0.00	0.00	0.00
4,300.00	0.00	0.00	4,300.00	0.00	0.00	0.00	0.00	0.00	0.00

# Noble Energy, Inc.

## Planning Report

<b>Database:</b>	EDMP	<b>Local Co-ordinate Reference:</b>	Well Guttersen D09-765
<b>Company:</b>	Northern Region - DJ Basin	<b>TVD Reference:</b>	Well @ 4755.00ft
<b>Project:</b>	Mustang	<b>MD Reference:</b>	Well @ 4755.00ft
<b>Site:</b>	C Section 33	<b>North Reference:</b>	Grid
<b>Well:</b>	Guttersen D09-765	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Guttersen D09-765		
<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)
4,400.00	0.00	0.00	4,400.00	0.00	0.00	0.00	0.00	0.00	0.00
4,470.00	0.00	0.00	4,470.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Build: 2°/100'</b>									
4,500.00	0.60	100.82	4,500.00	-0.03	0.15	0.03	2.00	2.00	0.00
4,550.01	1.60	100.82	4,550.00	-0.21	1.10	0.23	2.00	2.00	0.00
<b>Shannon</b>									
4,600.00	2.60	100.82	4,599.96	-0.55	2.90	0.61	2.00	2.00	0.00
4,700.00	4.60	100.82	4,699.75	-1.73	9.06	1.90	2.00	2.00	0.00
4,734.93	5.30	100.82	4,734.55	-2.30	12.02	2.52	2.00	2.00	0.00
<b>Hold: 5.30° Inc, 100.82° Azm</b>									
4,800.00	5.30	100.82	4,799.34	-3.42	17.93	3.75	0.00	0.00	0.00
4,900.00	5.30	100.82	4,898.92	-5.16	27.00	5.65	0.00	0.00	0.00
5,000.00	5.30	100.82	4,998.49	-6.89	36.07	7.55	0.00	0.00	0.00
5,100.00	5.30	100.82	5,098.06	-8.62	45.14	9.45	0.00	0.00	0.00
5,200.00	5.30	100.82	5,197.64	-10.36	54.21	11.35	0.00	0.00	0.00
5,300.00	5.30	100.82	5,297.21	-12.09	63.28	13.25	0.00	0.00	0.00
5,400.00	5.30	100.82	5,396.78	-13.82	72.35	15.15	0.00	0.00	0.00
5,500.00	5.30	100.82	5,496.35	-15.55	81.42	17.05	0.00	0.00	0.00
5,600.00	5.30	100.82	5,595.93	-17.29	90.49	18.95	0.00	0.00	0.00
5,700.00	5.30	100.82	5,695.50	-19.02	99.56	20.85	0.00	0.00	0.00
5,800.00	5.30	100.82	5,795.07	-20.75	108.63	22.75	0.00	0.00	0.00
5,900.00	5.30	100.82	5,894.64	-22.49	117.70	24.64	0.00	0.00	0.00
5,935.51	5.30	100.82	5,930.00	-23.10	120.92	25.32	0.00	0.00	0.00
<b>Teepee Buttes</b>									
6,000.00	5.30	100.82	5,994.22	-24.22	126.77	26.54	0.00	0.00	0.00
6,100.00	5.30	100.82	6,093.79	-25.95	135.84	28.44	0.00	0.00	0.00
6,193.62	5.30	100.82	6,187.01	-27.57	144.34	30.22	0.00	0.00	0.00
<b>KOP: Build 9°/100' @ 6193.62' MD</b>									
6,200.00	5.43	106.81	6,193.36	-27.72	144.91	30.37	9.00	1.99	93.97
6,250.00	7.93	140.00	6,243.04	-31.04	149.40	33.78	9.00	5.01	66.37
6,300.00	11.69	154.80	6,292.30	-38.27	153.77	41.09	9.00	7.53	29.59
6,350.00	15.84	162.21	6,340.86	-49.36	158.02	52.26	9.00	8.30	14.83
6,400.00	20.14	166.57	6,388.41	-64.24	162.10	67.21	9.00	8.59	8.71
6,450.00	24.51	169.44	6,434.65	-82.81	166.01	85.85	9.00	8.74	5.73
6,500.00	28.91	171.48	6,479.31	-104.97	169.70	108.07	9.00	8.81	4.08
6,550.00	33.34	173.02	6,522.10	-130.58	173.16	133.74	9.00	8.86	3.08
6,600.00	37.79	174.23	6,562.76	-159.47	176.38	162.68	9.00	8.89	2.43
6,650.00	42.24	175.22	6,601.05	-191.47	179.32	194.74	9.00	8.91	1.99
6,680.31	44.94	175.75	6,623.00	-212.31	180.96	215.60	9.00	8.92	1.72
<b>Sharon Springs</b>									
6,700.00	46.70	176.06	6,636.72	-226.39	181.97	229.70	9.00	8.93	1.59
6,719.69	48.46	176.36	6,650.00	-240.90	182.93	244.22	9.00	8.93	1.50
<b>Top A Chalk</b>									
6,742.78	50.52	176.68	6,665.00	-258.42	183.99	261.76	9.00	8.94	1.42
<b>Top A Marl</b>									
6,750.00	51.17	176.78	6,669.56	-264.01	184.31	267.35	9.00	8.94	1.36
6,770.25	52.98	177.05	6,682.00	-279.95	185.17	283.31	9.00	8.94	1.32
<b>Top B Chalk</b>									
6,800.00	55.64	177.42	6,699.36	-304.09	186.34	307.46	9.00	8.94	1.24
6,842.18	59.41	177.90	6,722.00	-339.64	187.79	343.03	9.00	8.95	1.15
<b>Top B Marl</b>									
6,850.00	60.11	177.99	6,725.94	-346.39	188.03	349.79	9.00	8.95	1.10

# Noble Energy, Inc.

## Planning Report

<b>Database:</b>	EDMP	<b>Local Co-ordinate Reference:</b>	Well Guttersen D09-765
<b>Company:</b>	Northern Region - DJ Basin	<b>TVD Reference:</b>	Well @ 4755.00ft
<b>Project:</b>	Mustang	<b>MD Reference:</b>	Well @ 4755.00ft
<b>Site:</b>	C Section 33	<b>North Reference:</b>	Grid
<b>Well:</b>	Guttersen D09-765	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Guttersen D09-765		
<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)
6,900.00	64.59	178.51	6,749.13	-390.65	189.38	394.06	9.00	8.95	1.04
6,950.00	69.07	179.00	6,768.80	-436.59	190.37	440.02	9.00	8.96	0.97
6,977.27	71.51	179.25	6,778.00	-462.26	190.76	465.69	9.00	8.96	0.92
<b>Top C Chalk</b>									
7,000.00	73.55	179.45	6,784.82	-483.94	191.01	487.37	9.00	8.96	0.90
7,050.00	78.03	179.89	6,797.10	-532.39	191.29	535.82	9.00	8.96	0.87
7,100.00	82.51	180.31	6,805.55	-581.66	191.20	585.08	9.00	8.96	0.84
7,112.01	83.58	180.41	6,807.00	-593.58	191.12	596.99	9.00	8.96	0.83
<b>Top C Marl</b>									
7,150.00	86.99	180.72	6,810.12	-631.44	190.75	634.84	9.00	8.96	0.82
7,183.59	90.00	181.00	6,811.00	-665.01	190.24	668.40	9.00	8.96	0.82
<b>LP: 7183.59' MD, 90.00° Inc, 181.00° Azm</b>									
7,200.00	90.00	181.00	6,811.00	-681.42	189.96	684.79	0.00	0.00	0.00
7,300.00	90.00	181.00	6,811.00	-781.40	188.21	784.73	0.00	0.00	0.00
7,383.59	90.00	181.00	6,811.00	-864.98	186.75	868.27	0.00	0.00	0.00
<b>Turn: 1°/100'</b>									
7,400.00	90.00	180.84	6,811.00	-881.39	186.49	884.66	1.00	0.00	-1.00
7,491.48	90.00	179.92	6,811.00	-972.86	185.88	976.11	1.00	0.00	-1.00
<b>Hold: 90.00° Inc, 179.92° Azm</b>									
7,500.00	90.00	179.92	6,811.00	-981.38	185.90	984.63	0.00	0.00	0.00
7,600.00	90.00	179.92	6,811.00	-1,081.38	186.03	1,084.62	0.00	0.00	0.00
7,700.00	90.00	179.92	6,811.00	-1,181.38	186.17	1,184.60	0.00	0.00	0.00
7,800.00	90.00	179.92	6,811.00	-1,281.38	186.31	1,284.59	0.00	0.00	0.00
7,900.00	90.00	179.92	6,811.00	-1,381.38	186.45	1,384.58	0.00	0.00	0.00
8,000.00	90.00	179.92	6,811.00	-1,481.38	186.58	1,484.56	0.00	0.00	0.00
8,100.00	90.00	179.92	6,811.00	-1,581.38	186.72	1,584.55	0.00	0.00	0.00
8,200.00	90.00	179.92	6,811.00	-1,681.38	186.86	1,684.53	0.00	0.00	0.00
8,300.00	90.00	179.92	6,811.00	-1,781.38	187.00	1,784.52	0.00	0.00	0.00
8,400.00	90.00	179.92	6,811.00	-1,881.38	187.13	1,884.50	0.00	0.00	0.00
8,500.00	90.00	179.92	6,811.00	-1,981.38	187.27	1,984.49	0.00	0.00	0.00
8,600.00	90.00	179.92	6,811.00	-2,081.38	187.41	2,084.47	0.00	0.00	0.00
8,700.00	90.00	179.92	6,811.00	-2,181.38	187.55	2,184.46	0.00	0.00	0.00
8,800.00	90.00	179.92	6,811.00	-2,281.38	187.68	2,284.45	0.00	0.00	0.00
8,900.00	90.00	179.92	6,811.00	-2,381.38	187.82	2,384.43	0.00	0.00	0.00
9,000.00	90.00	179.92	6,811.00	-2,481.38	187.96	2,484.42	0.00	0.00	0.00
9,100.00	90.00	179.92	6,811.00	-2,581.38	188.10	2,584.40	0.00	0.00	0.00
9,200.00	90.00	179.92	6,811.00	-2,681.38	188.24	2,684.39	0.00	0.00	0.00
9,300.00	90.00	179.92	6,811.00	-2,781.38	188.37	2,784.37	0.00	0.00	0.00
9,400.00	90.00	179.92	6,811.00	-2,881.38	188.51	2,884.36	0.00	0.00	0.00
9,500.00	90.00	179.92	6,811.00	-2,981.38	188.65	2,984.34	0.00	0.00	0.00
9,600.00	90.00	179.92	6,811.00	-3,081.38	188.79	3,084.33	0.00	0.00	0.00
9,700.00	90.00	179.92	6,811.00	-3,181.38	188.92	3,184.32	0.00	0.00	0.00
9,800.00	90.00	179.92	6,811.00	-3,281.38	189.06	3,284.30	0.00	0.00	0.00
9,900.00	90.00	179.92	6,811.00	-3,381.38	189.20	3,384.29	0.00	0.00	0.00
10,000.00	90.00	179.92	6,811.00	-3,481.38	189.34	3,484.27	0.00	0.00	0.00
10,100.00	90.00	179.92	6,811.00	-3,581.38	189.47	3,584.26	0.00	0.00	0.00
10,200.00	90.00	179.92	6,811.00	-3,681.38	189.61	3,684.24	0.00	0.00	0.00
10,300.00	90.00	179.92	6,811.00	-3,781.38	189.75	3,784.23	0.00	0.00	0.00
10,400.00	90.00	179.92	6,811.00	-3,881.38	189.89	3,884.21	0.00	0.00	0.00
10,500.00	90.00	179.92	6,811.00	-3,981.38	190.02	3,984.20	0.00	0.00	0.00
10,600.00	90.00	179.92	6,811.00	-4,081.38	190.16	4,084.19	0.00	0.00	0.00
10,700.00	90.00	179.92	6,811.00	-4,181.38	190.30	4,184.17	0.00	0.00	0.00
10,800.00	90.00	179.92	6,811.00	-4,281.38	190.44	4,284.16	0.00	0.00	0.00
10,900.00	90.00	179.92	6,811.00	-4,381.38	190.58	4,384.14	0.00	0.00	0.00

# Noble Energy, Inc.

## Planning Report

<b>Database:</b>	EDMP	<b>Local Co-ordinate Reference:</b>	Well Guttersen D09-765
<b>Company:</b>	Northern Region - DJ Basin	<b>TVD Reference:</b>	Well @ 4755.00ft
<b>Project:</b>	Mustang	<b>MD Reference:</b>	Well @ 4755.00ft
<b>Site:</b>	C Section 33	<b>North Reference:</b>	Grid
<b>Well:</b>	Guttersen D09-765	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Guttersen D09-765		
<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)
11,000.00	90.00	179.92	6,811.00	-4,481.38	190.71	4,484.13	0.00	0.00	0.00
11,100.00	90.00	179.92	6,811.00	-4,581.38	190.85	4,584.11	0.00	0.00	0.00
11,200.00	90.00	179.92	6,811.00	-4,681.38	190.99	4,684.10	0.00	0.00	0.00
11,300.00	90.00	179.92	6,811.00	-4,781.38	191.13	4,784.08	0.00	0.00	0.00
11,400.00	90.00	179.92	6,811.00	-4,881.38	191.26	4,884.07	0.00	0.00	0.00
11,500.00	90.00	179.92	6,811.00	-4,981.38	191.40	4,984.06	0.00	0.00	0.00
11,600.00	90.00	179.92	6,811.00	-5,081.38	191.54	5,084.04	0.00	0.00	0.00
11,700.00	90.00	179.92	6,811.00	-5,181.38	191.68	5,184.03	0.00	0.00	0.00
11,800.00	90.00	179.92	6,811.00	-5,281.38	191.81	5,284.01	0.00	0.00	0.00
11,900.00	90.00	179.92	6,811.00	-5,381.38	191.95	5,384.00	0.00	0.00	0.00
12,000.00	90.00	179.92	6,811.00	-5,481.38	192.09	5,483.98	0.00	0.00	0.00
12,100.00	90.00	179.92	6,811.00	-5,581.38	192.23	5,583.97	0.00	0.00	0.00
12,200.00	90.00	179.92	6,811.00	-5,681.38	192.36	5,683.95	0.00	0.00	0.00
12,300.00	90.00	179.92	6,811.00	-5,781.38	192.50	5,783.94	0.00	0.00	0.00
12,400.00	90.00	179.92	6,811.00	-5,881.38	192.64	5,883.92	0.00	0.00	0.00
12,500.00	90.00	179.92	6,811.00	-5,981.38	192.78	5,983.91	0.00	0.00	0.00
12,600.00	90.00	179.92	6,811.00	-6,081.38	192.91	6,083.90	0.00	0.00	0.00
12,700.00	90.00	179.92	6,811.00	-6,181.38	193.05	6,183.88	0.00	0.00	0.00
12,800.00	90.00	179.92	6,811.00	-6,281.38	193.19	6,283.87	0.00	0.00	0.00
12,900.00	90.00	179.92	6,811.00	-6,381.38	193.33	6,383.85	0.00	0.00	0.00
13,000.00	90.00	179.92	6,811.00	-6,481.38	193.47	6,483.84	0.00	0.00	0.00
13,100.00	90.00	179.92	6,811.00	-6,581.38	193.60	6,583.82	0.00	0.00	0.00
13,200.00	90.00	179.92	6,811.00	-6,681.38	193.74	6,683.81	0.00	0.00	0.00
13,300.00	90.00	179.92	6,811.00	-6,781.38	193.88	6,783.79	0.00	0.00	0.00
13,400.00	90.00	179.92	6,811.00	-6,881.38	194.02	6,883.78	0.00	0.00	0.00
13,500.00	90.00	179.92	6,811.00	-6,981.38	194.15	6,983.77	0.00	0.00	0.00
13,600.00	90.00	179.92	6,811.00	-7,081.38	194.29	7,083.75	0.00	0.00	0.00
13,700.00	90.00	179.92	6,811.00	-7,181.38	194.43	7,183.74	0.00	0.00	0.00
13,800.00	90.00	179.92	6,811.00	-7,281.38	194.57	7,283.72	0.00	0.00	0.00
13,900.00	90.00	179.92	6,811.00	-7,381.38	194.70	7,383.71	0.00	0.00	0.00
14,000.00	90.00	179.92	6,811.00	-7,481.38	194.84	7,483.69	0.00	0.00	0.00
14,100.00	90.00	179.92	6,811.00	-7,581.38	194.98	7,583.68	0.00	0.00	0.00
14,200.00	90.00	179.92	6,811.00	-7,681.38	195.12	7,683.66	0.00	0.00	0.00
14,300.00	90.00	179.92	6,811.00	-7,781.38	195.25	7,783.65	0.00	0.00	0.00
14,400.00	90.00	179.92	6,811.00	-7,881.38	195.39	7,883.64	0.00	0.00	0.00
14,500.00	90.00	179.92	6,811.00	-7,981.38	195.53	7,983.62	0.00	0.00	0.00
14,600.00	90.00	179.92	6,811.00	-8,081.38	195.67	8,083.61	0.00	0.00	0.00
14,700.00	90.00	179.92	6,811.00	-8,181.38	195.81	8,183.59	0.00	0.00	0.00
14,800.00	90.00	179.92	6,811.00	-8,281.38	195.94	8,283.58	0.00	0.00	0.00
14,900.00	90.00	179.92	6,811.00	-8,381.38	196.08	8,383.56	0.00	0.00	0.00
15,000.00	90.00	179.92	6,811.00	-8,481.38	196.22	8,483.55	0.00	0.00	0.00
15,100.00	90.00	179.92	6,811.00	-8,581.38	196.36	8,583.53	0.00	0.00	0.00
15,200.00	90.00	179.92	6,811.00	-8,681.37	196.49	8,683.52	0.00	0.00	0.00
15,300.00	90.00	179.92	6,811.00	-8,781.37	196.63	8,783.51	0.00	0.00	0.00
15,400.00	90.00	179.92	6,811.00	-8,881.37	196.77	8,883.49	0.00	0.00	0.00
15,500.00	90.00	179.92	6,811.00	-8,981.37	196.91	8,983.48	0.00	0.00	0.00
15,600.00	90.00	179.92	6,811.00	-9,081.37	197.04	9,083.46	0.00	0.00	0.00
15,700.00	90.00	179.92	6,811.00	-9,181.37	197.18	9,183.45	0.00	0.00	0.00
15,800.00	90.00	179.92	6,811.00	-9,281.37	197.32	9,283.43	0.00	0.00	0.00
15,900.00	90.00	179.92	6,811.00	-9,381.37	197.46	9,383.42	0.00	0.00	0.00
16,000.00	90.00	179.92	6,811.00	-9,481.37	197.59	9,483.40	0.00	0.00	0.00
16,100.00	90.00	179.92	6,811.00	-9,581.37	197.73	9,583.39	0.00	0.00	0.00
16,200.00	90.00	179.92	6,811.00	-9,681.37	197.87	9,683.38	0.00	0.00	0.00
16,300.00	90.00	179.92	6,811.00	-9,781.37	198.01	9,783.36	0.00	0.00	0.00

**Noble Energy, Inc.**  
Planning Report

<b>Database:</b>	EDMP	<b>Local Co-ordinate Reference:</b>	Well Guttersen D09-765
<b>Company:</b>	Northern Region - DJ Basin	<b>TVD Reference:</b>	Well @ 4755.00ft
<b>Project:</b>	Mustang	<b>MD Reference:</b>	Well @ 4755.00ft
<b>Site:</b>	C Section 33	<b>North Reference:</b>	Grid
<b>Well:</b>	Guttersen D09-765	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Guttersen D09-765		
<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)
16,400.00	90.00	179.92	6,811.00	-9,881.37	198.14	9,883.35	0.00	0.00	0.00
16,500.00	90.00	179.92	6,811.00	-9,981.37	198.28	9,983.33	0.00	0.00	0.00
16,600.00	90.00	179.92	6,811.00	-10,081.37	198.42	10,083.32	0.00	0.00	0.00
16,700.00	90.00	179.92	6,811.00	-10,181.37	198.56	10,183.30	0.00	0.00	0.00
16,800.00	90.00	179.92	6,811.00	-10,281.37	198.70	10,283.29	0.00	0.00	0.00
16,900.00	90.00	179.92	6,811.00	-10,381.37	198.83	10,383.27	0.00	0.00	0.00
17,000.00	90.00	179.92	6,811.00	-10,481.37	198.97	10,483.26	0.00	0.00	0.00
17,100.00	90.00	179.92	6,811.00	-10,581.37	199.11	10,583.25	0.00	0.00	0.00
17,200.00	90.00	179.92	6,811.00	-10,681.37	199.25	10,683.23	0.00	0.00	0.00
17,300.00	90.00	179.92	6,811.00	-10,781.37	199.38	10,783.22	0.00	0.00	0.00
17,368.96	90.00	179.92	6,811.00	-10,850.33	199.48	10,852.17	0.00	0.00	0.00
TD @ 17368.96' MD/6811.00' TVD									

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
Guttersen D09-765-SI - hit/miss target - plan hits target center - Shape - Point	0.00	0.00	0.00	0.00	0.00	1,340,051.40	3,262,343.60	40.2630230	-104.5599290
Guttersen D09-765-KI - plan hits target center - Point	0.00	0.00	6,187.01	-27.57	144.34	1,340,023.83	3,262,487.94	40.2629431	-104.5594129
Guttersen D09-765-BI - plan hits target center - Point	0.00	0.00	6,811.00	-10,850.33	199.48	1,329,201.09	3,262,543.08	40.2332337	-104.5596265
Guttersen D09-765-TI - plan hits target center - Point	0.00	0.00	6,811.00	-665.01	190.24	1,339,386.39	3,262,533.84	40.2611921	-104.5592726



# Noble Energy, Inc.

## Planning Report

<b>Database:</b>	EDMP	<b>Local Co-ordinate Reference:</b>	Well Guttersen D09-765
<b>Company:</b>	Northern Region - DJ Basin	<b>TVD Reference:</b>	Well @ 4755.00ft
<b>Project:</b>	Mustang	<b>MD Reference:</b>	Well @ 4755.00ft
<b>Site:</b>	C Section 33	<b>North Reference:</b>	Grid
<b>Well:</b>	Guttersen D09-765	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Guttersen D09-765		
<b>Design:</b>	Plan #1		

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
461.00	461.00	Pierre				
594.00	594.00	Upper Pierre Aquifer Top				
1,514.00	1,514.00	Upper Pierre Aquifer Base				
3,593.00	3,593.00	Parkman				
3,998.00	3,998.00	Sussex				
4,550.01	4,550.00	Shannon				
5,935.51	5,930.00	Teepee Buttes				
6,680.31	6,623.00	Sharon Springs				
6,719.69	6,650.00	Top A Chalk				
6,742.78	6,665.00	Top A Marl				
6,770.25	6,682.00	Top B Chalk				
6,842.18	6,722.00	Top B Marl				
6,977.27	6,778.00	Top C Chalk				
7,112.01	6,807.00	Top C Marl				

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates			
		+N/-S (ft)	+E/-W (ft)	Comment	
4,470.00	4,470.00	0.00	0.00	Build: 2°/100'	
4,734.93	4,734.55	-2.30	12.02	Hold: 5.30° Inc, 100.82° Azm	
6,193.62	6,187.01	-27.57	144.34	KOP: Build 9°/100' @ 6193.62' MD	
7,183.59	6,811.00	-665.01	190.24	LP: 7183.59' MD, 90.00° Inc, 181.00° Azm	
7,383.59	6,811.00	-864.98	186.75	Turn: 1°/100'	
7,491.48	6,811.00	-972.86	185.88	Hold: 90.00° Inc, 179.92° Azm	
17,368.96	6,811.00	-10,850.33	199.48	TD @ 17368.96' MD/6811.00' TVD	

# **Northern Region - DJ Basin**

**Mustang**

**C Section 33**

**Guttersen D09-765**

**Guttersen D09-765**

**Plan #1**

## **Anticollision Summary Report**

**08 October, 2018**

# Noble Energy, Inc.

## Anticollision Summary Report

<b>Company:</b>	Northern Region - DJ Basin	<b>Local Co-ordinate Reference:</b>	Well Guttersen D09-765
<b>Project:</b>	Mustang	<b>TVD Reference:</b>	Well @ 4755.00ft
<b>Reference Site:</b>	C Section 33	<b>MD Reference:</b>	Well @ 4755.00ft
<b>Site Error:</b>	0.00 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Guttersen D09-765	<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>	Guttersen D09-765	<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	10/8/2018		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
0.00	17,368.96	Plan #1 (Guttersen D09-765)	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
C Section 32						
HENNINGTON C #32-10(PR) - Wellbore #1 - No Surveys	4,470.00	4,485.00	3,793.15	3,738.22	69.055	CC
HENNINGTON C #32-10(PR) - Wellbore #1 - No Surveys	4,500.00	4,515.00	3,793.30	3,738.01	68.600	ES
HENNINGTON C #32-10(PR) - Wellbore #1 - No Surveys	6,750.00	6,684.56	4,069.27	3,987.62	49.835	SF
HENNINGTON C #32-2(PR) - Wellbore #1 - No Surveys	4,470.00	4,486.00	5,534.22	5,479.28	100.735	CC
HENNINGTON C #32-2(PR) - Wellbore #1 - No Surveys	4,500.00	4,516.00	5,534.34	5,479.04	100.070	ES
HENNINGTON C #32-2(PR) - Wellbore #1 - No Surveys	6,700.00	6,652.72	5,824.62	5,743.37	71.689	SF
HENNINGTON C #32-7(PA) - Wellbore #1 - Gyro Survey	0.00	7.07	4,663.59			
HENNINGTON C #32-7(PA) - Wellbore #1 - Gyro Survey	4,500.00	4,503.28	4,684.05	4,652.58	148.856	ES
HENNINGTON C #32-7(PA) - Wellbore #1 - Gyro Survey	6,650.00	6,448.41	4,943.42	4,898.02	108.887	SF
HOWELL #1(SI) - Wellbore #1 - No Surveys	4,470.00	4,515.00	5,621.17	5,565.98	101.848	CC
HOWELL #1(SI) - Wellbore #1 - No Surveys	4,500.00	4,545.00	5,621.33	5,565.77	101.180	ES
HOWELL #1(SI) - Wellbore #1 - No Surveys	7,100.00	6,850.55	5,890.72	5,806.86	70.241	SF
HOWELL #32-1(SI) - Wellbore #1 - No Surveys	4,470.00	4,499.00	5,470.85	5,415.80	99.376	CC
HOWELL #32-1(SI) - Wellbore #1 - No Surveys	4,500.00	4,529.00	5,471.00	5,415.58	98.722	ES
HOWELL #32-1(SI) - Wellbore #1 - No Surveys	6,850.00	6,754.94	5,801.75	5,719.28	70.347	SF
HOWELL #32-2(SI) - Wellbore #1 - No Surveys	4,470.00	4,493.00	6,200.90	6,145.90	112.745	CC
HOWELL #32-2(SI) - Wellbore #1 - No Surveys	4,500.00	4,523.00	6,201.04	6,145.68	112.002	ES
HOWELL #32-2(SI) - Wellbore #1 - No Surveys	6,800.00	6,722.36	6,538.58	6,456.51	79.674	SF
HOWELL #32-23(PR) - Wellbore #1 - No Surveys	4,470.00	4,526.00	6,653.45	6,598.17	120.343	CC
HOWELL #32-23(PR) - Wellbore #1 - No Surveys	4,500.00	4,556.00	6,653.61	6,597.95	119.554	ES
HOWELL #32-23(PR) - Wellbore #1 - No Surveys	6,900.00	6,805.13	6,995.47	6,912.46	84.267	SF
HOWELL #C 32-12(SI) - Wellbore #1 - No Surveys	4,470.00	4,540.00	6,306.35	6,250.94	113.813	CC
HOWELL #C 32-12(SI) - Wellbore #1 - No Surveys	4,500.00	4,570.00	6,306.50	6,250.73	113.069	ES
HOWELL #C 32-12(SI) - Wellbore #1 - No Surveys	7,050.00	6,867.10	6,620.02	6,536.13	78.916	SF
MCGUIRK-HOWELL C #32-11(SI) - Wellbore #1 - No Su	4,470.00	4,498.00	5,079.82	5,024.77	92.288	CC
MCGUIRK-HOWELL C #32-11(SI) - Wellbore #1 - No Su	4,500.00	4,528.00	5,079.97	5,024.56	91.681	ES
MCGUIRK-HOWELL C #32-11(SI) - Wellbore #1 - No Su	6,950.00	6,796.80	5,402.98	5,319.92	65.046	SF
MCGUIRK-HOWELL C #32-14(TA) - Wellbore #1 - No Si	4,470.00	4,504.00	4,951.87	4,896.77	89.878	CC
MCGUIRK-HOWELL C #32-14(TA) - Wellbore #1 - No Si	4,500.00	4,534.00	4,952.02	4,896.56	89.287	ES
MCGUIRK-HOWELL C #32-14(TA) - Wellbore #1 - No Si	7,150.00	6,844.12	5,197.01	5,113.10	61.938	SF
MCGUIRK-HOWELL C #32-4(SI) - Wellbore #1 - No Sur	4,470.00	4,541.00	7,390.03	7,334.61	133.350	CC
MCGUIRK-HOWELL C #32-4(SI) - Wellbore #1 - No Sur	4,500.00	4,571.00	7,390.17	7,334.39	132.477	ES
MCGUIRK-HOWELL C #32-4(SI) - Wellbore #1 - No Sur	6,850.00	6,796.94	7,743.55	7,660.73	93.497	SF
NELSON #32-25(PR) - Wellbore #1 - No Surveys	4,470.00	4,530.00	6,487.71	6,432.39	117.271	CC
NELSON #32-25(PR) - Wellbore #1 - No Surveys	4,500.00	4,560.00	6,487.86	6,432.17	116.503	ES
NELSON #32-25(PR) - Wellbore #1 - No Surveys	6,850.00	6,785.94	6,832.52	6,749.79	82.585	SF
PLUSS #32-43(PA) - Wellbore #1 - Gyro Surveys	0.00	19.54	3,672.93			

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 Gutttersen D09-765
<b>Project:</b>	Mustang	<b>TVD Reference:</b>	Well @ 4755.00ft
<b>Reference Site:</b>	C Section 33	<b>MD Reference:</b>	Well @ 4755.00ft
<b>Site Error:</b>	0.00 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Gutttersen D09-765	<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>	Gutttersen D09-765	<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
C Section 32						
PLUSS #32-43(PA) - Wellbore #1 - Gyro Surveys	1,200.00	1,195.97	3,676.07	3,667.99	455.041	ES
PLUSS #32-43(PA) - Wellbore #1 - Gyro Surveys	7,100.00	6,634.88	4,026.33	3,979.23	85.487	SF
PTF #C 32-1(SI) - Wellbore #1 - No Surveys	4,470.00	4,478.00	4,551.88	4,497.01	82.959	CC
PTF #C 32-1(SI) - Wellbore #1 - No Surveys	4,500.00	4,508.00	4,551.98	4,496.74	82.411	ES
PTF #C 32-1(SI) - Wellbore #1 - No Surveys	6,600.00	6,570.76	4,777.91	4,697.60	59.494	SF
PTF #C 32-16(SI) - Wellbore #1 - No Surveys	4,470.00	4,479.00	2,197.64	2,142.77	40.046	CC
PTF #C 32-16(SI) - Wellbore #1 - No Surveys	4,500.00	4,509.00	2,197.80	2,142.56	39.784	ES
PTF #C 32-16(SI) - Wellbore #1 - No Surveys	6,850.00	6,734.94	2,425.79	2,343.44	29.454	SF
PTF #C 32-8(SI) - Wellbore #1 - No Surveys	4,470.00	4,468.00	3,408.52	3,353.74	62.220	CC
PTF #C 32-8(SI) - Wellbore #1 - No Surveys	4,500.00	4,498.00	3,408.64	3,353.49	61.810	ES
PTF #C 32-8(SI) - Wellbore #1 - No Surveys	6,550.00	6,520.10	3,620.51	3,540.79	45.413	SF
PTF #C 32-9(SI) - Wellbore #1 - No Surveys	4,470.00	4,470.00	2,501.11	2,446.31	45.642	CC
PTF #C 32-9(SI) - Wellbore #1 - No Surveys	4,500.00	4,500.00	2,501.25	2,446.09	45.341	ES
PTF #C 32-9(SI) - Wellbore #1 - No Surveys	6,550.00	6,522.10	2,716.28	2,636.55	34.069	SF

# Noble Energy, Inc.

## Anticollision Summary Report

<b>Company:</b>	Northern Region - DJ Basin	<b>Local Co-ordinate Reference:</b>	Well Guttersen D09-765
<b>Project:</b>	Mustang	<b>TVD Reference:</b>	Well @ 4755.00ft
<b>Reference Site:</b>	C Section 33	<b>MD Reference:</b>	Well @ 4755.00ft
<b>Site Error:</b>	0.00 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Guttersen D09-765	<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>	Guttersen D09-765	<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						
C Section 33						
GUTTERSEN C #33-31D - GUTTERSEN C #33-31D OH	715.91	749.71	2,388.34	2,384.69	654.071	CC, ES
GUTTERSEN C #33-31D - GUTTERSEN C #33-31D OH	6,500.00	6,686.26	4,014.14	3,966.80	84.780	SF
GUTTERSEN C #33-32 - Wellbore #1 - No Surveys	4,470.00	4,479.00	2,403.10	2,210.47	12.475	CC
GUTTERSEN C #33-32 - Wellbore #1 - No Surveys	4,600.00	4,608.96	2,405.17	2,206.90	12.131	ES
GUTTERSEN C #33-32 - Wellbore #1 - No Surveys	6,400.00	6,402.59	2,548.15	2,271.97	9.226	SF
GUTTERSEN C #33-33D - GUTTERSEN C #33-33D OH	4,679.34	4,982.36	1,861.40	1,820.18	45.156	CC
GUTTERSEN C #33-33D - GUTTERSEN C #33-33D OH	4,805.14	5,155.43	1,862.48	1,819.90	43.747	ES
GUTTERSEN C #33-33D - GUTTERSEN C #33-33D OH	6,350.00	6,510.55	1,991.27	1,939.13	38.191	SF
Guttersen C28-715 - Guttersen C28-715 - Plan #1	2,200.00	2,193.00	2,064.93	2,049.64	135.125	CC, ES
Guttersen C28-715 - Guttersen C28-715 - Plan #1	8,400.00	6,296.19	3,220.05	3,168.66	62.650	SF
Guttersen C28-725 - Guttersen C28-725 - Plan #1	2,200.00	2,191.00	2,042.63	2,027.36	133.728	CC, ES
Guttersen C28-725 - Guttersen C28-725 - Plan #1	7,800.00	6,464.36	2,542.87	2,493.71	51.732	SF
Guttersen C28-735 - Guttersen C28-735 - Plan #1	7,040.50	7,040.36	1,897.27	1,848.99	39.297	CC, ES
Guttersen C28-735 - Guttersen C28-735 - Plan #1	7,100.00	6,989.67	1,897.77	1,849.44	39.266	SF
Guttersen C28-745 - Guttersen C28-745 - Plan #1	6,879.42	7,117.01	1,250.09	1,202.16	26.083	CC, ES
Guttersen C28-745 - Guttersen C28-745 - Plan #1	6,900.00	7,103.84	1,250.20	1,202.26	26.077	SF
Guttersen C28-750 - Guttersen C28-750 - Plan #1	7,003.10	7,220.59	934.03	884.93	19.021	CC, ES
Guttersen C28-750 - Guttersen C28-750 - Plan #1	7,050.00	7,187.07	934.84	885.67	19.013	SF
Guttersen C28-755 - Guttersen C28-755 - Plan #1	2,200.00	2,198.00	151.50	136.20	9.902	CC, ES
Guttersen C28-755 - Guttersen C28-755 - Plan #1	2,400.00	2,389.02	157.21	140.58	9.450	SF
Guttersen C28-765 - Guttersen C28-765 - Plan #1	6,867.55	7,087.22	51.26	3.51	1.073	Level 2, CC, ES, SF
Guttersen C28-770 - Guttersen C28-770 - Plan #1	2,200.00	2,198.00	151.68	136.38	9.914	CC, ES
Guttersen C28-770 - Guttersen C28-770 - Plan #1	7,183.59	6,940.21	371.01	322.58	7.660	SF
Guttersen C28-775 - Guttersen C28-775 - Plan #1	2,200.00	2,199.00	156.46	141.16	10.224	CC, ES
Guttersen C28-775 - Guttersen C28-775 - Plan #1	2,400.00	2,388.58	162.91	146.29	9.799	SF
Guttersen C28-785 - Guttersen C28-785 - Plan #1	2,200.00	2,199.00	164.28	148.98	10.735	CC, ES
Guttersen C28-785 - Guttersen C28-785 - Plan #1	2,400.00	2,388.94	170.23	153.59	10.232	SF
GUTTERSEN D #03-30D - Wellbore #1 - No Surveys	6,259.57	6,211.51	381.56	113.15	1.422	Level 3, CC
GUTTERSEN D #03-30D - Wellbore #1 - No Surveys	6,300.00	6,251.30	382.41	112.27	1.416	Level 3, ES, SF
Guttersen D09-721 - Guttersen D09-721 - Plan #1	2,200.00	2,197.00	2,016.31	2,001.01	131.819	CC, ES
Guttersen D09-721 - Guttersen D09-721 - Plan #1	17,368.96	17,566.03	2,902.60	2,718.50	15.766	SF
Guttersen D09-745 - Guttersen D09-745 - Plan #1	7,114.15	7,154.06	1,299.21	1,250.57	26.708	CC
Guttersen D09-745 - Guttersen D09-745 - Plan #1	17,364.29	17,392.83	1,304.27	1,120.29	7.089	ES, SF
Guttersen D09-750 - Guttersen D09-750 - Plan #1	7,137.60	7,334.93	983.00	933.47	19.847	CC
Guttersen D09-750 - Guttersen D09-750 - Plan #1	17,363.80	17,558.62	986.67	802.18	5.348	ES, SF
Guttersen D09-755 - Guttersen D09-755 - Plan #1	2,200.00	2,199.00	22.33	7.02	1.459	Level 3, CC, ES, SF
Guttersen D09-770 - Guttersen D09-770 - Plan #1	4,470.00	4,470.00	22.61	-8.97	0.716	Level 1, CC, SF
Guttersen D09-770 - Guttersen D09-770 - Plan #1	4,500.00	4,500.00	22.76	-9.03	0.716	Level 1, ES
Guttersen D09-775 - Guttersen D09-775 - Plan #1	3,102.38	3,102.38	45.22	23.44	2.076	CC
Guttersen D09-775 - Guttersen D09-775 - Plan #1	3,200.00	3,199.54	45.37	22.90	2.019	ES, SF
Guttersen D09-785 - Guttersen D09-785 - Plan #1	2,200.00	2,200.00	67.54	52.23	4.412	CC, ES
Guttersen D09-785 - Guttersen D09-785 - Plan #1	2,300.00	2,297.66	69.24	53.24	4.328	SF
LINDSAY #33-1 - LINDSAY #33-1 OH - As-Drilled	6,450.70	6,400.05	1,583.18	1,538.45	35.394	CC, ES
LINDSAY #33-1 - LINDSAY #33-1 OH - As-Drilled	6,750.00	6,637.24	1,608.65	1,562.24	34.659	SF
LINDSAY #33-3 - Wellbore #1 - No Surveys	4,470.00	4,436.00	2,872.46	2,681.23	15.021	CC
LINDSAY #33-3 - Wellbore #1 - No Surveys	6,200.00	6,159.36	2,882.37	2,616.22	10.830	ES
LINDSAY #33-3 - Wellbore #1 - No Surveys	6,450.00	6,400.65	2,935.31	2,658.68	10.611	SF
LINDSAY #33-4 - Wellbore #1 - No Surveys	6,214.45	6,173.74	3,307.35	3,040.58	12.398	CC
LINDSAY #33-4 - Wellbore #1 - No Surveys	6,250.00	6,209.04	3,308.23	3,039.93	12.330	ES
LINDSAY #33-4 - Wellbore #1 - No Surveys	6,550.00	6,488.10	3,384.48	3,104.06	12.069	SF
LINDSAY #33-5 - Wellbore #1 - No Surveys	6,241.11	6,185.23	2,250.48	1,983.18	8.419	CC
LINDSAY #33-5 - Wellbore #1 - No Surveys	6,250.00	6,205.96	2,250.53	1,982.36	8.392	ES
LINDSAY #33-5 - Wellbore #1 - No Surveys	6,500.00	6,430.31	2,288.45	2,010.50	8.233	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 Guttersen D09-765
<b>Project:</b>	Mustang	<b>TVD Reference:</b>	Well @ 4755.00ft
<b>Reference Site:</b>	C Section 33	<b>MD Reference:</b>	Well @ 4755.00ft
<b>Site Error:</b>	0.00 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Guttersen D09-765	<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>	Guttersen D09-765	<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						
C Section 33						
LINDSAY #33-6 - Wellbore #1 - No Surveys	6,172.05	5,739.53	1,577.94	1,328.69	6.331	CC
LINDSAY #33-6 - Wellbore #1 - No Surveys	6,200.00	5,767.36	1,577.98	1,327.51	6.300	ES
LINDSAY #33-6 - Wellbore #1 - No Surveys	6,350.00	5,914.86	1,596.89	1,340.02	6.217	SF
LINDSAY #33-7 - Wellbore #1 - No Surveys	4,470.00	4,444.00	4,179.91	3,988.36	21.821	CC
LINDSAY #33-7 - Wellbore #1 - No Surveys	6,200.00	6,167.36	4,195.94	3,929.47	15.747	ES
LINDSAY #33-7 - Wellbore #1 - No Surveys	6,550.00	6,503.90	4,296.97	4,015.93	15.290	SF
LINDSAY #33-8 - Wellbore #1 - No Surveys	6,204.20	6,174.54	4,484.44	4,217.67	16.810	CC
LINDSAY #33-8 - Wellbore #1 - No Surveys	6,250.00	6,220.04	4,486.00	4,217.25	16.692	ES
LINDSAY #33-8 - Wellbore #1 - No Surveys	6,600.00	6,539.76	4,597.35	4,314.74	16.267	SF
LINDSAY #C33-10 - Wellbore #1 - No Surveys	4,470.00	4,460.00	4,293.05	4,100.86	22.337	CC
LINDSAY #C33-10 - Wellbore #1 - No Surveys	6,193.62	6,177.01	4,354.10	4,087.28	16.319	ES
LINDSAY #C33-10 - Wellbore #1 - No Surveys	6,650.00	6,608.95	4,521.53	4,236.06	15.839	SF
LINDSAY #C33-11 - LINDSAY #C33-11 OH - As-Drilled	1,771.35	1,756.40	2,973.21	2,961.13	246.076	CC
LINDSAY #C33-11 - LINDSAY #C33-11 OH - As-Drilled	2,200.00	2,159.67	2,975.31	2,960.29	198.062	ES
LINDSAY #C33-11 - LINDSAY #C33-11 OH - As-Drilled	6,450.00	6,445.61	3,194.11	3,149.19	71.095	SF
LINDSAY #C33-12 - Wellbore #1 - No Surveys	4,470.00	4,447.00	1,746.37	1,554.70	9.111	CC
LINDSAY #C33-12 - Wellbore #1 - No Surveys	4,700.00	4,676.75	1,752.41	1,550.77	8.691	ES
LINDSAY #C33-12 - Wellbore #1 - No Surveys	6,350.00	6,317.86	1,871.48	1,598.53	6.856	SF
LINDSAY #C33-13 - LINDSAY #C33-13 OH - As-Drilled	100.00	80.16	868.06	867.79	3,262.774	CC
LINDSAY #C33-13 - LINDSAY #C33-13 OH - As-Drilled	2,100.00	2,075.84	874.26	859.88	60.815	ES
LINDSAY #C33-13 - LINDSAY #C33-13 OH - As-Drilled	6,400.00	6,376.65	1,097.15	1,052.64	24.652	SF
LINDSAY #C33-14 - Wellbore #1 - No Surveys	6,221.95	6,208.80	5,102.10	4,833.91	19.024	CC, ES
LINDSAY #C33-14 - Wellbore #1 - No Surveys	6,700.00	6,612.72	5,246.96	4,961.18	18.360	SF
LINDSAY #C33-15 - Wellbore #1 - No Surveys	6,239.73	6,205.15	4,098.68	3,830.79	15.299	CC
LINDSAY #C33-15 - Wellbore #1 - No Surveys	6,300.00	6,254.30	4,100.75	3,830.68	15.184	ES
LINDSAY #C33-15 - Wellbore #1 - No Surveys	6,700.00	6,601.28	4,216.51	3,931.38	14.788	SF
LINDSAY #C33-16 - Wellbore #1 - No Surveys	6,528.35	6,452.82	2,929.26	2,650.38	10.504	CC
LINDSAY #C33-16 - Wellbore #1 - No Surveys	6,600.00	6,511.76	2,930.24	2,648.80	10.411	ES
LINDSAY #C33-16 - Wellbore #1 - No Surveys	6,900.00	6,701.87	2,960.14	2,670.32	10.213	SF
LINDSAY #C33-9 - Wellbore #1 - No Surveys	6,282.62	6,219.24	3,333.13	3,064.35	12.401	CC
LINDSAY #C33-9 - Wellbore #1 - No Surveys	6,350.00	6,284.86	3,334.98	3,063.34	12.277	ES
LINDSAY #C33-9 - Wellbore #1 - No Surveys	6,700.00	6,580.72	3,405.03	3,120.52	11.968	SF
LINDSAY C #33-17 - Wellbore #1 - No Surveys	6,216.28	6,184.56	4,106.27	3,839.06	15.367	CC
LINDSAY C #33-17 - Wellbore #1 - No Surveys	6,250.00	6,218.04	4,107.05	3,838.39	15.287	ES
LINDSAY C #33-17 - Wellbore #1 - No Surveys	6,550.00	6,502.90	4,181.48	3,900.47	14.880	SF
LINDSAY C #33-18 - Wellbore #1 - As-Drilled	1,174.46	1,158.98	3,386.53	3,371.17	220.421	CC
LINDSAY C #33-18 - Wellbore #1 - As-Drilled	1,300.00	1,241.00	3,387.42	3,370.52	200.434	ES
LINDSAY C #33-18 - Wellbore #1 - As-Drilled	6,500.00	6,546.61	3,718.49	3,602.79	32.137	SF
LINDSAY C #33-19 - Wellbore #1 - No Surveys	4,470.00	4,453.00	3,454.38	3,262.46	18.000	CC
LINDSAY C #33-19 - Wellbore #1 - No Surveys	6,200.00	6,176.36	3,498.89	3,232.07	13.113	ES
LINDSAY C #33-19 - Wellbore #1 - No Surveys	6,500.00	6,462.31	3,578.84	3,299.62	12.817	SF
LINDSAY C #33-20 - Wellbore #1 - No Surveys	4,470.00	4,449.00	1,999.88	1,808.13	10.430	CC
LINDSAY C #33-20 - Wellbore #1 - No Surveys	6,200.00	6,172.36	2,048.38	1,781.72	7.682	ES
LINDSAY C #33-20 - Wellbore #1 - No Surveys	6,400.00	6,367.41	2,087.42	1,812.29	7.587	SF
LINDSAY C #33-21 - Wellbore #1 - No Surveys	6,209.20	6,164.52	2,255.97	1,989.59	8.469	CC
LINDSAY C #33-21 - Wellbore #1 - No Surveys	6,250.00	6,205.04	2,257.17	1,989.03	8.418	ES
LINDSAY C #33-21 - Wellbore #1 - No Surveys	6,450.00	6,403.35	2,297.53	2,020.80	8.302	SF
LINDSAY C #33-22 - Wellbore #1 - No Surveys	6,244.14	6,203.77	3,057.10	2,789.05	11.405	CC
LINDSAY C #33-22 - Wellbore #1 - No Surveys	6,300.00	6,251.30	3,058.82	2,788.67	11.323	ES
LINDSAY C #33-22 - Wellbore #1 - No Surveys	6,600.00	6,521.76	3,126.36	2,844.46	11.091	SF
LINDSAY C #33-23 - Wellbore #1 - No Surveys	6,316.99	6,256.89	2,404.80	2,134.40	8.893	CC
LINDSAY C #33-23 - Wellbore #1 - No Surveys	6,400.00	6,336.41	2,407.09	2,133.24	8.790	ES
LINDSAY C #33-23 - Wellbore #1 - No Surveys	6,700.00	6,584.72	2,456.45	2,171.79	8.629	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 Guttersen D09-765
<b>Project:</b>	Mustang	<b>TVD Reference:</b>	Well @ 4755.00ft
<b>Reference Site:</b>	C Section 33	<b>MD Reference:</b>	Well @ 4755.00ft
<b>Site Error:</b>	0.00 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Guttersen D09-765	<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>	Guttersen D09-765	<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						
C Section 33						
LINDSAY C #33-24 - Wellbore #1 - No Surveys	6,242.54	6,205.36	1,276.47	1,008.35	4.761	CC
LINDSAY C #33-24 - Wellbore #1 - No Surveys	6,300.00	6,251.30	1,278.32	1,008.17	4.732	ES
LINDSAY C #33-24 - Wellbore #1 - No Surveys	6,450.00	6,406.35	1,300.98	1,024.15	4.699	SF
LINDSAY C #33-25 - Wellbore #1 - No Surveys	4,470.00	4,441.00	783.44	592.00	4.093	CC
LINDSAY C #33-25 - Wellbore #1 - No Surveys	5,500.00	5,467.35	818.84	582.83	3.469	ES
LINDSAY C #33-25 - Wellbore #1 - No Surveys	6,250.00	6,214.04	855.79	587.31	3.187	SF
D Section 03						
Becca D03-32D - Wellbore #1 - Wellbore #1- As Drilled	9,610.69	6,913.18	3,489.42	3,430.08	58.808	CC, ES
Becca D03-32D - Wellbore #1 - Wellbore #1- As Drilled	11,500.00	6,898.91	3,968.04	3,890.04	50.872	SF



# Noble Energy, Inc.

## Anticollision Summary Report

<b>Company:</b>	Northern Region - DJ Basin	<b>Local Co-ordinate Reference:</b>	Well Guttersen D09-765
<b>Project:</b>	Mustang	<b>TVD Reference:</b>	Well @ 4755.00ft
<b>Reference Site:</b>	C Section 33	<b>MD Reference:</b>	Well @ 4755.00ft
<b>Site Error:</b>	0.00 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Guttersen D09-765	<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>	Guttersen D09-765	<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
D Section 04						
Burghart D04-22 - Wellbore #1 - Wellbore #1- As Drilled	9,458.18	6,768.21	2,259.88	2,202.89	39.653	CC, ES
Burghart D04-22 - Wellbore #1 - Wellbore #1- As Drilled	9,900.00	6,762.13	2,302.66	2,243.20	38.725	SF
Gittlein Blue D04-08 - Wellbore #1 - Wellbore #1- As Drill	9,010.22	6,744.30	2,846.25	2,791.81	52.286	CC, ES
Gittlein Blue D04-08 - Wellbore #1 - Wellbore #1- As Drill	9,700.00	6,737.69	2,928.63	2,870.57	50.437	SF
GITTLEIN D #04-24(PR) - GITTLEIN D #04-24 - No Surv	11,000.74	6,775.00	841.60	662.69	4.704	CC, ES, SF
Gittlein D #04-33(PR) - Gittlein D #04-33 - No Surveys	10,990.19	6,779.00	1,452.72	1,273.80	8.120	CC
Gittlein D #04-33(PR) - Gittlein D #04-33 - No Surveys	11,000.00	6,779.00	1,452.75	1,273.78	8.117	ES
Gittlein D #04-33(PR) - Gittlein D #04-33 - No Surveys	11,100.00	6,779.00	1,456.86	1,277.36	8.116	SF
GUTTERSEN D #04-32(PR) - GUTTERSEN D #04-32 -	9,482.92	6,801.00	1,515.11	1,345.42	8.929	CC, ES
GUTTERSEN D #04-32(PR) - GUTTERSEN D #04-32 -	9,500.00	6,801.00	1,515.21	1,345.43	8.925	SF
Guttersen D 04-18(PR) - Guttersen D 04-18 - Wellbore #	8,303.18	6,769.50	649.30	608.90	16.075	CC, ES, SF
Guttersen D 04-21(SI) - Guttersen D 04-21 - Wellbore #1	9,769.22	6,773.95	1,120.96	1,072.41	23.089	CC, ES
Guttersen D 04-21(SI) - Guttersen D 04-21 - Wellbore #1	9,900.00	6,771.74	1,128.56	1,079.22	22.875	SF
Guttersen D03-33D - Wellbore #1 - Wellbore #1- As Drill	10,802.85	6,830.88	3,376.19	3,307.02	48.807	CC, ES
Guttersen D03-33D - Wellbore #1 - Wellbore #1- As Drill	11,500.00	6,835.02	3,447.42	3,374.66	47.386	SF
Guttersen D04-30D - Plan B - Plan B	1,117.81	1,125.90	1,429.50	1,423.05	221.738	CC
Guttersen D04-30D - Plan B - Plan B	1,200.00	1,194.03	1,429.80	1,422.82	204.741	ES
Guttersen D04-30D - Plan B - Plan B	7,050.00	6,843.89	1,781.26	1,734.01	37.704	SF
Guttersen D04-31D - Plan B - Plan B	926.56	930.07	1,443.16	1,438.12	286.503	CC, ES
Guttersen D04-31D - Plan B - Plan B	8,600.00	7,027.17	1,784.28	1,725.64	30.428	SF
Guttersen D04-69HN - Original Drilling - Original Drilling	6,898.67	7,902.75	56.34	23.14	1.697	CC
Guttersen D04-69HN - Original Drilling - Original Drilling	6,950.00	7,903.22	77.72	20.77	1.365	Level 3, ES, SF
Karch Blue D04-02 - Wellbore #1 - Wellbore #1- As Drille	7,734.11	6,699.47	1,707.05	1,658.11	34.883	CC, ES
Karch Blue D04-02 - Wellbore #1 - Wellbore #1- As Drille	7,900.00	6,697.32	1,715.09	1,665.61	34.665	SF
Karch Blue D04-07 - Wellbore #1 - Wellbore #1- As Drille	9,065.15	6,740.17	1,559.10	1,504.37	28.487	CC, ES
Karch Blue D04-07 - Wellbore #1 - Wellbore #1- As Drille	9,300.00	6,737.94	1,576.68	1,520.71	28.167	SF
Karch D04-17 - Wellbore #1 - Wellbore #1- As Drilled	8,328.92	6,822.39	2,244.60	2,193.18	43.648	CC, ES
Karch D04-17 - Wellbore #1 - Wellbore #1- As Drilled	8,800.00	6,826.23	2,293.50	2,239.94	42.820	SF
MARIE #D4-11(PR) - MARIE #D4-11 - No Surveys	10,263.40	6,769.00	485.86	312.00	2.795	CC, ES, SF
MARIE D #04-20(PR) - MARIE D #04-20 - No Surveys	9,592.23	6,779.00	368.60	198.71	2.170	CC, ES, SF
MARIE D #4-12(PR) - MARIE D #4-12 - No Surveys	10,289.72	6,781.00	945.55	771.28	5.426	CC, ES
MARIE D #4-12(PR) - MARIE D #4-12 - No Surveys	10,300.00	6,781.00	945.60	771.28	5.424	SF
MARIE D #4-13 (PR) - MARIE D #4-13 - No Surveys	11,627.08	6,775.00	827.18	643.88	4.513	CC, ES, SF
MARIE D #4-14(PR) - MARIE D #4-14 - No Surveys	11,615.04	6,773.00	319.99	136.82	1.747	CC, ES, SF
MARIE D #4-19 (SI) - MARIE D #4-19 - No Surveys	8,274.92	6,789.00	132.34	-30.99	0.810	Level 1, CC, ES, SF
MARIE D #4-25(PR) - MARIE D #4-25 - No Surveys	10,826.45	6,774.00	284.65	106.95	1.602	CC, ES, SF
MARIE D #4-3(SI) - MARIE D #4-3 - No Surveys	7,662.57	6,771.00	297.41	136.61	1.850	CC, ES, SF
MARIE D #4-4(SI) - MARIE D #4-4 - No Surveys	7,675.17	6,791.00	1,070.06	908.83	6.637	CC, ES
MARIE D #4-4(SI) - MARIE D #4-4 - No Surveys	7,700.00	6,791.00	1,070.35	909.05	6.636	SF
MARIE D #4-5(SI) - MARIE D #4-5 - No Surveys	8,974.78	6,786.00	1,045.28	878.71	6.275	CC, ES
MARIE D #4-5(SI) - MARIE D #4-5 - No Surveys	9,000.00	6,786.00	1,045.58	878.90	6.273	SF
MARIE D #4-6(SI) - MARIE D #4-6 - No Surveys	9,079.79	6,770.00	288.18	121.37	1.728	CC, ES, SF
Marie D04-09 - Wellbore #1 - Wellbore #1- As Drilled	10,231.29	6,790.78	2,893.56	2,831.75	46.818	CC, ES
Marie D04-09 - Wellbore #1 - Wellbore #1- As Drilled	10,900.00	6,789.95	2,969.82	2,904.04	45.148	SF
Marie D04-10 - Wellbore #1 - Wellbore #1- As Drilled	10,401.02	6,765.76	1,660.76	1,597.92	26.430	CC, ES
Marie D04-10 - Wellbore #1 - Wellbore #1- As Drilled	10,600.00	6,765.03	1,672.64	1,608.54	26.094	SF
Marie D04-15 - Wellbore #1 - Wellbore #1- As Drilled	11,590.67	6,766.24	1,619.37	1,548.38	22.810	CC
Marie D04-15 - Wellbore #1 - Wellbore #1- As Drilled	11,600.00	6,766.31	1,619.40	1,548.33	22.787	ES
Marie D04-15 - Wellbore #1 - Wellbore #1- As Drilled	11,800.00	6,767.69	1,632.84	1,560.49	22.568	SF
Marie D04-16 - Wellbore #1 - Wellbore #1- As Drilled	11,510.85	6,747.61	2,877.50	2,807.12	40.888	CC, ES
Marie D04-16 - Wellbore #1 - Wellbore #1- As Drilled	12,100.00	6,750.20	2,937.19	2,863.12	39.653	SF
Marie D04-23 - Wellbore #1 - Wellbore #1-As Drilled	10,918.02	6,757.08	2,265.00	2,198.74	34.180	CC, ES
Marie D04-23 - Wellbore #1 - Wellbore #1-As Drilled	11,300.00	6,757.62	2,296.99	2,228.32	33.453	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 Guttersen D09-765
<b>Project:</b>	Mustang	<b>TVD Reference:</b>	Well @ 4755.00ft
<b>Reference Site:</b>	C Section 33	<b>MD Reference:</b>	Well @ 4755.00ft
<b>Site Error:</b>	0.00 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Guttersen D09-765	<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>	Guttersen D09-765	<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						
D Section 04						
Marie D04-72-1HN - Original Drilling - Original Drilling - A	7,300.00	11,395.00	3,229.71	3,119.02	29.178	SF
Marie D04-72-1HN - Original Drilling - Original Drilling - A	12,123.72	6,122.60	3,147.55	3,075.04	43.407	CC, ES
Marie D04-73-1HN - Original Drilling - Original Drilling - A	7,491.48	11,120.00	2,420.70	2,311.23	22.113	ES, SF
Marie D04-73-1HN - Original Drilling - Original Drilling - A	9,347.52	9,264.85	2,412.73	2,327.81	28.412	CC
Marie D04-74-1HN - Original Drilling - Original Drilling - P	12,164.97	6,806.46	1,934.09	1,861.03	26.470	CC, ES
Marie D04-74-1HN - Original Drilling - Original Drilling - P	12,400.00	6,806.47	1,948.32	1,873.67	26.100	SF
Marie D04-74-1HN - Original Drilling - ST01 - ST-01- As	7,844.91	10,870.23	1,899.51	1,835.18	29.529	CC, ES
Marie D04-74-1HN - Original Drilling - ST01 - ST-01- As	12,400.00	6,505.57	2,020.91	1,947.75	27.626	SF
Two E Ranch 01-04 - Wellbore #1 - Wellbore #1- As Drill	7,679.06	6,770.75	2,582.32	2,533.43	52.815	CC, ES
Two E Ranch 01-04 - Wellbore #1 - Wellbore #1- As Drill	8,200.00	6,765.24	2,634.34	2,583.64	51.962	SF

# Noble Energy, Inc.

## Anticollision Summary Report

<b>Company:</b>	Northern Region - DJ Basin	<b>Local Co-ordinate Reference:</b>	Well Guttersen D09-765
<b>Project:</b>	Mustang	<b>TVD Reference:</b>	Well @ 4755.00ft
<b>Reference Site:</b>	C Section 33	<b>MD Reference:</b>	Well @ 4755.00ft
<b>Site Error:</b>	0.00 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Guttersen D09-765	<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>	Guttersen D09-765	<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
D Section 05						
BECKER #15-9I(PR) - Wellbore #1 - Gyro Surveys	10,864.45	6,784.24	4,413.59	4,347.59	66.869	CC
BECKER #15-9I(PR) - Wellbore #1 - Gyro Surveys	10,900.00	6,783.83	4,413.73	4,347.50	66.639	ES
BECKER #15-9I(PR) - Wellbore #1 - Gyro Surveys	12,100.00	6,769.79	4,583.25	4,510.35	62.869	SF
BECKER #5-13(PA) - Wellbore #1 - No Surveys	10,396.72	6,824.00	4,972.67	4,873.77	50.282	CC
BECKER #5-13(PA) - Wellbore #1 - No Surveys	10,400.00	6,824.00	4,972.67	4,873.75	50.271	ES
BECKER #5-13(PA) - Wellbore #1 - No Surveys	11,600.00	6,824.00	5,116.18	5,010.27	48.307	SF
BECKER #5-14(PA) - Wellbore #1 - Gyro Surveys	11,557.79	6,724.08	6,237.57	6,166.98	88.366	CC
BECKER #5-14(PA) - Wellbore #1 - Gyro Surveys	11,600.00	6,722.57	6,237.71	6,166.84	88.013	ES
BECKER #5-14(PA) - Wellbore #1 - Gyro Surveys	13,900.00	6,600.00	6,661.67	6,578.06	79.679	SF
BECKER #5-16(PA) - Wellbore #1 - Gyro Surveys	10,260.83	6,851.14	2,516.07	2,453.80	40.406	CC, ES
BECKER #5-16(PA) - Wellbore #1 - Gyro Surveys	10,700.00	6,857.11	2,554.10	2,489.51	39.544	SF
BECKER #5-2(PA) - Wellbore #1 - Gyro Surveys	11,437.09	6,879.77	5,252.76	5,182.44	74.691	CC
BECKER #5-2(PA) - Wellbore #1 - Gyro Surveys	11,500.00	6,879.29	5,253.14	5,182.39	74.246	ES
BECKER #5-2(PA) - Wellbore #1 - Gyro Surveys	13,100.00	6,867.09	5,509.69	5,429.82	68.985	SF
BECKER #5-5(PA) - Wellbore #1 - Gyro Surveys	11,531.11	6,795.53	2,500.91	2,430.23	35.387	CC, ES
BECKER #5-5(PA) - Wellbore #1 - Gyro Surveys	11,900.00	6,792.45	2,527.96	2,455.24	34.759	SF
BECKER #5-8(PR) - Wellbore #1 - Gyro Surveys	10,712.06	6,900.00	6,117.15	6,051.73	93.504	CC, ES
BECKER #5-8(PR) - Wellbore #1 - Gyro Surveys	13,100.00	6,900.00	6,566.72	6,487.80	83.202	SF
BECKER #6(SI) - Wellbore #1 - Gyro Surveys	10,838.48	6,662.04	3,096.54	3,031.17	47.369	CC, ES
BECKER #6(SI) - Wellbore #1 - Gyro Surveys	11,500.00	6,655.86	3,166.41	3,097.47	45.930	SF
Becker 5-1(PA) - Wellbore #1 - Gyro Surveys	10,307.67	6,800.09	3,719.11	3,656.75	59.633	CC, ES
Becker 5-1(PA) - Wellbore #1 - Gyro Surveys	11,300.00	6,790.40	3,849.21	3,781.54	56.876	SF
Becker 5-15(PA) - Wellbore #1 - Gyro Surveys	11,830.19	6,650.77	3,940.57	3,866.07	52.894	CC, ES
Becker 5-15(PA) - Wellbore #1 - Gyro Surveys	12,600.00	6,605.60	4,014.81	3,936.40	51.204	SF
Becker Ranch #5E-223 - Wellbore #1 - As Drilled	500.00	560.48	5,934.46	5,931.21	1,827.220	CC, ES
Becker Ranch #5E-223 - Wellbore #1 - As Drilled	13,200.00	11,398.00	6,585.29	6,445.94	47.257	SF
Becker Ranch #5E-403 - As Drilled - As Drilled	0.00	53.90	5,942.53			
Becker Ranch #5E-403 - As Drilled - As Drilled	13,300.00	11,599.00	6,889.54	6,744.49	47.497	SF
Becker Ranch #5J-103 - Wellbore #1 - As Drilled	4,545.90	4,775.27	5,700.04	5,667.01	172.586	CC, ES
Becker Ranch #5J-103 - Wellbore #1 - As Drilled	10,600.00	8,438.00	5,986.24	5,908.81	77.318	SF
Becker Ranch #5J-203 - Wellbore #1 - Plan #1	100.00	175.00	4,647.05	4,646.50	8,500.656	CC
Becker Ranch #5J-203 - Wellbore #1 - Plan #1	200.00	229.93	4,647.41	4,646.31	4,218.931	ES
Becker Ranch #5J-203 - Wellbore #1 - Plan #1	13,200.00	11,568.80	5,618.78	5,515.25	54.273	SF
Becker Ranch #5J-303 - Wellbore #1 - As Drilled	11,849.22	11,473.00	5,780.27	5,643.99	42.415	CC
Becker Ranch #5J-303 - Wellbore #1 - As Drilled	11,900.00	11,473.00	5,780.50	5,643.89	42.316	ES
Becker Ranch #5J-303 - Wellbore #1 - As Drilled	12,700.00	11,473.00	5,842.55	5,702.00	41.569	SF
Becker Ranch #5J-323 - Wellbore #1 - As Drilled	0.00	53.49	4,652.13			
Becker Ranch #5J-323 - Wellbore #1 - As Drilled	12,700.00	11,430.00	5,204.03	5,063.72	37.089	SF
Becker Ranch #5J-323R - Wellbore #1 - Plan #1	600.00	673.00	4,654.24	4,650.11	1,127.536	CC
Becker Ranch #5J-323R - Wellbore #1 - Plan #1	700.00	733.77	4,654.55	4,649.85	989.723	ES
Becker Ranch #5J-323R - Wellbore #1 - Plan #1	13,000.00	11,454.00	5,251.27	5,150.10	51.905	SF
Becker Ranch #5J-343 - Wellbore #1 - As Drilled	900.81	978.96	5,906.47	5,900.29	955.803	CC
Becker Ranch #5J-343 - Wellbore #1 - As Drilled	1,000.00	1,050.00	5,906.79	5,900.00	870.056	ES
Becker Ranch #5J-343 - Wellbore #1 - As Drilled	12,900.00	11,500.00	6,193.81	6,052.87	43.948	SF
Becker Ranch #5M-203 - Wellbore #1 - Plan #1	404.90	444.40	3,487.01	3,484.40	1,336.084	CC
Becker Ranch #5M-203 - Wellbore #1 - Plan #1	500.00	500.00	3,487.24	3,484.09	1,106.946	ES
Becker Ranch #5M-203 - Wellbore #1 - Plan #1	12,600.00	11,268.00	4,250.16	4,150.80	42.772	SF
Becker Ranch #5M-243 - Wellbore #1 - Plan #1	1,400.00	1,475.00	4,656.55	4,646.68	471.935	CC
Becker Ranch #5M-243 - Wellbore #1 - Plan #1	1,700.00	1,739.94	4,657.58	4,645.70	391.785	ES
Becker Ranch #5M-243 - Wellbore #1 - Plan #1	12,800.00	11,282.50	4,886.45	4,787.23	49.248	SF
Becker Ranch #5M-303 - Wellbore #1 - Plan #1	4,604.45	4,900.00	4,392.29	4,358.72	130.852	CC, ES
Becker Ranch #5M-303 - Wellbore #1 - Plan #1	12,600.00	11,462.20	4,525.75	4,427.41	46.021	SF
Becker Ranch #5M-323 - Wellbore #1 - Plan #1	1,404.90	1,444.40	3,426.79	3,417.01	350.412	CC

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 Guttersten D09-765
<b>Project:</b>	Mustang	<b>TVD Reference:</b>	Well @ 4755.00ft
<b>Reference Site:</b>	C Section 33	<b>MD Reference:</b>	Well @ 4755.00ft
<b>Site Error:</b>	0.00 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Guttersten D09-765	<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>	Guttersten D09-765	<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
D Section 05						
Becker Ranch #5M-323 - Wellbore #1 - Plan #1	1,500.00	1,520.96	3,426.89	3,416.50	329.712	ES
Becker Ranch #5M-323 - Wellbore #1 - Plan #1	12,400.00	11,315.70	3,809.17	3,711.58	39.031	SF
Becker Ranch #5M-423 - Wellbore #1 - Plan #1	904.90	944.40	3,456.90	3,450.70	558.051	CC
Becker Ranch #5M-423 - Wellbore #1 - Plan #1	1,000.00	1,000.00	3,457.12	3,450.39	513.337	ES
Becker Ranch #5M-423 - Wellbore #1 - Plan #1	12,500.00	11,437.50	4,031.36	3,932.80	40.904	SF
Becker Ranch #5R-203 - Wellbore #1 - Plan #1	904.90	944.40	2,430.72	2,424.53	392.394	CC
Becker Ranch #5R-243 - Wellbore #1 - Plan #1	1,000.00	1,023.88	2,430.85	2,424.03	356.477	ES
Becker Ranch #5R-203 - Wellbore #1 - Plan #1	12,200.00	11,257.60	2,861.06	2,764.62	29.668	SF
Becker Ranch #5R-243 - Wellbore #1 - Plan #1	2,905.81	2,944.31	3,399.42	3,378.89	165.532	CC
Becker Ranch #5R-243 - Wellbore #1 - Plan #1	3,100.00	3,117.32	3,399.85	3,378.00	155.596	ES
Becker Ranch #5R-243 - Wellbore #1 - Plan #1	12,300.00	11,231.80	3,561.26	3,464.73	36.894	SF
Becker Ranch #5R-303 - Wellbore #1 - Plan #1	4,696.66	4,971.66	3,070.20	3,036.06	89.932	CC
Becker Ranch #5R-303 - Wellbore #1 - Plan #1	11,810.86	11,308.90	3,114.77	3,020.57	33.066	ES
Becker Ranch #5R-303 - Wellbore #1 - Plan #1	12,200.00	11,308.90	3,138.99	3,042.86	32.655	SF
Becker Ranch #5R-323 - Wellbore #1 - Plan #1	2,903.98	2,944.48	2,401.23	2,380.70	116.960	CC
Becker Ranch #5R-323 - Wellbore #1 - Plan #1	3,000.00	3,027.79	2,401.34	2,380.16	113.420	ES
Becker Ranch #5R-323 - Wellbore #1 - Plan #1	12,100.00	11,332.80	2,639.56	2,543.93	27.601	SF
Becker Ranch #5R-443 - Wellbore #1 - Plan #1	4,542.43	4,668.32	3,390.07	3,357.54	104.236	CC, ES
Becker Ranch #5R-443 - Wellbore #1 - Plan #1	12,300.00	11,417.20	3,505.03	3,408.19	36.193	SF
Becker Ranch #5U-243 - Wellbore #1 - Plan #1	4,636.81	4,800.53	2,238.15	2,204.88	67.268	CC
Becker Ranch #5U-243 - Wellbore #1 - Plan #1	11,800.00	11,243.60	2,259.30	2,165.59	24.109	ES
Becker Ranch #5U-243 - Wellbore #1 - Plan #1	12,000.00	11,243.60	2,268.23	2,173.53	23.953	SF
Becker Ranch #5U-303 - Wellbore #1 - Plan #1	5,077.98	5,300.00	1,839.11	1,802.30	49.958	CC
Becker Ranch #5U-303 - Wellbore #1 - Plan #1	11,800.00	11,348.00	1,844.69	1,750.38	19.560	ES
Becker Ranch #5U-303 - Wellbore #1 - Plan #1	11,900.00	11,348.00	1,847.64	1,752.93	19.507	SF
Becker Ranch #5U-443 - Wellbore #1 - Plan #1	4,662.91	4,845.03	1,997.28	1,963.68	59.446	CC
Becker Ranch #5U-443 - Wellbore #1 - Plan #1	11,800.00	11,407.70	2,055.06	1,960.68	21.774	ES
Becker Ranch #5U-443 - Wellbore #1 - Plan #1	12,000.00	11,407.70	2,065.03	1,969.80	21.685	SF
LDS #D08-18D(PR) - Wellbore #1 - MWD Surveys	13,636.14	7,280.75	4,210.65	4,110.56	42.068	CC, ES
LDS #D08-18D(PR) - Wellbore #1 - MWD Surveys	14,000.00	7,278.73	4,226.34	4,125.18	41.779	SF
LDS #D08-29(SI) - Wellbore #1 - Gyro Surveys	12,058.87	6,799.22	5,514.33	5,439.82	74.010	CC
LDS #D08-29(SI) - Wellbore #1 - Gyro Surveys	12,100.00	6,798.93	5,514.48	5,439.68	73.728	ES
LDS #D08-29(SI) - Wellbore #1 - Gyro Surveys	13,800.00	6,787.47	5,782.67	5,698.05	68.342	SF
LDS D08-28D(PR) - Wellbore #1 - MWD Surveys	12,142.62	6,906.79	4,509.16	4,432.91	59.137	CC
LDS D08-28D(PR) - Wellbore #1 - MWD Surveys	12,200.00	6,905.40	4,509.52	4,432.89	58.843	ES
LDS D08-28D(PR) - Wellbore #1 - MWD Surveys	13,400.00	6,877.94	4,681.07	4,597.45	55.981	SF
LDS D08-30D(SI) - Wellbore #1 - MWD Surveys	12,242.98	7,026.78	7,042.99	6,965.28	90.630	CC
LDS D08-30D(SI) - Wellbore #1 - MWD Surveys	12,300.00	7,030.47	7,043.22	6,965.08	90.135	ES
LDS D08-30D(SI) - Wellbore #1 - MWD Surveys	14,300.00	14,300.00	7,336.99	7,222.09	63.856	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 Guttersten D09-765
<b>Project:</b>	Mustang	<b>TVD Reference:</b>	Well @ 4755.00ft
<b>Reference Site:</b>	C Section 33	<b>MD Reference:</b>	Well @ 4755.00ft
<b>Site Error:</b>	0.00 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Guttersten D09-765	<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>	Guttersten D09-765	<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
D Section 08						
Becker D17-715 - Wellbore #1 - Plan #1	17,368.96	12,442.79	2,004.31	1,850.39	13.022	CC, ES, SF
Becker D17-725 - Wellbore #1 - Plan #1	17,368.96	12,270.14	2,652.56	2,499.29	17.307	CC, ES, SF
Becker D17-730 - Wellbore #1 - Plan #1	12,121.89	7,171.67	2,988.92	2,910.25	37.994	CC
Becker D17-730 - Wellbore #1 - Plan #1	17,368.96	12,478.18	2,998.93	2,845.23	19.512	ES, SF
Becker D17-735 - Wellbore #1 - Plan #1	17,368.96	12,387.76	3,300.31	3,147.13	21.545	CC, ES, SF
Becker D17-745 - Wellbore #1 - Plan #1	11,765.69	6,276.87	3,872.43	3,800.48	53.815	CC
Becker D17-745 - Wellbore #1 - Plan #1	17,368.96	12,339.86	3,948.51	3,795.54	25.812	ES, SF
Becker D17-750 - Wellbore #1 - Plan #1	11,544.14	5,931.35	4,049.17	3,980.97	59.370	CC
Becker D17-750 - Wellbore #1 - Plan #1	11,600.00	5,951.81	4,049.50	3,980.79	58.931	ES
Becker D17-750 - Wellbore #1 - Plan #1	17,368.96	12,606.57	4,274.41	4,121.55	27.963	SF
Becker D17-755 - Wellbore #1 - Plan #1	17,368.96	12,578.70	4,596.36	4,443.85	30.140	CC, ES, SF
Becker D17-765 - Wellbore #1 - Plan #1	17,368.96	12,312.75	5,244.18	5,076.24	31.226	CC, ES, SF
Becker D17-770 - Wellbore #1 - Plan #1	17,368.96	12,445.76	5,569.98	5,401.87	33.132	CC, ES, SF
Becker D17-775 - Wellbore #1 - Plan #1	17,368.96	12,300.92	5,892.42	5,724.63	35.118	CC, ES, SF
Becker D17-785 - Wellbore #1 - Plan #1	12,000.59	6,713.64	6,529.22	6,453.72	86.483	CC
Becker D17-785 - Wellbore #1 - Plan #1	17,368.96	12,200.16	6,540.29	6,388.64	43.128	ES, SF
HSR-ALVIN DECHANT #12-8 (SI) - Wellbore #1 - No Su	15,531.77	6,818.00	6,129.31	5,992.50	44.802	CC
HSR-ALVIN DECHANT #12-8 (SI) - Wellbore #1 - No Su	15,600.00	6,818.00	6,129.69	5,992.37	44.637	ES
HSR-ALVIN DECHANT #12-8 (SI) - Wellbore #1 - No Su	16,900.00	6,818.00	6,280.17	6,134.77	43.193	SF
HSR-ALVIN DECHANT #13-8(SI) - Wellbore #1 - No Sur	17,117.15	6,807.00	6,204.42	6,055.21	41.583	CC
HSR-ALVIN DECHANT #13-8(SI) - Wellbore #1 - No Sur	17,200.00	6,807.00	6,204.97	6,055.13	41.412	ES
HSR-ALVIN DECHANT #13-8(SI) - Wellbore #1 - No Sur	17,368.96	6,807.00	6,209.52	6,058.45	41.101	SF
HSR-LDS #14-8(SI) - Wellbore #1 - No Surveys	16,589.61	6,798.00	5,067.23	4,922.28	34.958	CC
HSR-LDS #14-8(SI) - Wellbore #1 - No Surveys	16,600.00	6,798.00	5,067.24	4,922.21	34.939	ES
HSR-LDS #14-8(SI) - Wellbore #1 - No Surveys	17,368.96	6,798.00	5,126.82	4,976.86	34.188	SF
HSR-LDS #15-8(SI) - Wellbore #1 - No Surveys	16,860.77	6,795.00	3,632.48	3,485.41	24.699	CC
HSR-LDS #15-8(SI) - Wellbore #1 - No Surveys	16,900.00	6,795.00	3,632.69	3,485.33	24.652	ES
HSR-LDS #15-8(SI) - Wellbore #1 - No Surveys	17,300.00	6,795.00	3,658.94	3,509.15	24.426	SF
HSR-LDS #16-8(SI) - Wellbore #1 - No Surveys	16,972.27	6,794.00	2,274.54	2,126.60	15.375	CC
HSR-LDS #16-8(SI) - Wellbore #1 - No Surveys	17,000.00	6,794.00	2,274.71	2,126.57	15.355	ES
HSR-LDS #16-8(SI) - Wellbore #1 - No Surveys	17,100.00	6,794.00	2,278.13	2,129.38	15.315	SF
HSR-LDS #3-8(SI) - Wellbore #1 - No Surveys	13,084.96	6,796.00	5,059.78	4,941.97	42.950	CC
HSR-LDS #3-8(SI) - Wellbore #1 - No Surveys	13,100.00	6,796.00	5,059.80	4,941.89	42.911	ES
HSR-LDS #3-8(SI) - Wellbore #1 - No Surveys	14,200.00	6,796.00	5,181.18	5,056.50	41.555	SF
HSR-LDS #4-8(SI) - Wellbore 1 - No Surveys	13,240.93	6,821.00	6,197.34	6,078.15	51.992	CC
HSR-LDS #4-8(SI) - Wellbore 1 - No Surveys	13,300.00	6,821.00	6,197.62	6,078.00	51.807	ES
HSR-LDS #4-8(SI) - Wellbore 1 - No Surveys	14,800.00	6,821.00	6,390.44	6,261.48	49.553	SF
HSR-LDS #5-8(SI) - Wellbore #1 - No Surveys	14,393.55	6,814.00	6,357.29	6,229.36	49.693	CC
HSR-LDS #5-8(SI) - Wellbore #1 - No Surveys	14,400.00	6,814.00	6,357.29	6,229.31	49.674	ES
HSR-LDS #5-8(SI) - Wellbore #1 - No Surveys	15,900.00	6,814.00	6,533.34	6,395.88	47.531	SF
HSR-LDS #6-8(SI) - Wellbore #1 - No Surveys	14,329.94	6,794.00	4,956.41	4,829.15	38.945	CC
HSR-LDS #6-8(SI) - Wellbore #1 - No Surveys	14,400.00	6,794.00	4,956.91	4,829.13	38.792	ES
HSR-LDS #6-8(SI) - Wellbore #1 - No Surveys	15,300.00	6,794.00	5,050.45	4,917.14	37.884	SF
HSR-LDS #9-8(SI) - Wellbore #1 - No Surveys	15,413.47	6,789.00	2,319.50	2,183.87	17.101	CC, ES
HSR-LDS #9-8(SI) - Wellbore #1 - No Surveys	15,600.00	6,789.00	2,326.99	2,190.22	17.015	SF
HSR-LDS A #10-8(SI) - Wellbore #1 - No Surveys	15,694.27	6,793.00	3,550.95	3,413.08	25.757	CC
HSR-LDS A #10-8(SI) - Wellbore #1 - No Surveys	15,700.00	6,793.00	3,550.95	3,413.04	25.749	ES
HSR-LDS A #10-8(SI) - Wellbore #1 - No Surveys	16,100.00	6,793.00	3,574.05	3,433.62	25.451	SF
HSR-LDS A #11-8(SI) - Wellbore #1 - No Surveys	15,550.83	6,795.00	5,009.60	4,872.84	36.631	CC
HSR-LDS A #11-8(SI) - Wellbore #1 - No Surveys	15,600.00	6,795.00	5,009.84	4,872.72	36.535	ES
HSR-LDS A #11-8(SI) - Wellbore #1 - No Surveys	16,400.00	6,795.00	5,081.06	4,938.91	35.743	SF
LDS #18-8(SI) - Wellbore #1 - No Surveys	13,781.99	6,816.00	5,597.86	5,474.60	45.416	CC
LDS #18-8(SI) - Wellbore #1 - No Surveys	13,800.00	6,816.00	5,597.89	5,474.50	45.367	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 Gutttersen D09-765
<b>Project:</b>	Mustang	<b>TVD Reference:</b>	Well @ 4755.00ft
<b>Reference Site:</b>	C Section 33	<b>MD Reference:</b>	Well @ 4755.00ft
<b>Site Error:</b>	0.00 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Gutttersen D09-765	<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>	Gutttersen D09-765	<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
D Section 08						
LDS #18-8(SI) - Wellbore #1 - No Surveys	15,000.00	6,816.00	5,728.84	5,597.92	43.757	SF
LDS #20-8(SI) - Wellbore #1 - No Surveys	16,319.28	6,792.00	2,975.71	2,832.94	20.843	CC, ES
LDS #20-8(SI) - Wellbore #1 - No Surveys	16,600.00	6,792.00	2,988.92	2,844.40	20.682	SF
LDS D #09-30(SI) - Wellbore #1 - No Surveys	12,484.92	6,783.00	1,849.64	1,736.42	16.336	CC
LDS D #09-30(SI) - Wellbore #1 - No Surveys	12,500.00	6,783.00	1,849.70	1,736.38	16.323	ES
LDS D #09-30(SI) - Wellbore #1 - No Surveys	12,600.00	6,783.00	1,853.22	1,739.30	16.269	SF
LDS D #09-31D(SI) - Wellbore #1 - No Surveys	12,509.35	6,783.00	1,851.65	1,738.25	16.328	CC, ES
LDS D #09-31D(SI) - Wellbore #1 - No Surveys	12,700.00	6,783.00	1,861.44	1,746.98	16.263	SF
RUBY RED #D #8-1D(PA) - Wellbore #1 - Gyro Surveys	13,312.04	6,754.57	2,697.68	2,614.07	32.265	CC, ES
RUBY RED #D #8-1D(PA) - Wellbore #1 - Gyro Surveys	13,700.00	6,751.38	2,725.43	2,639.61	31.757	SF
RUBY RED #D 8-7(PR) - Wellbore #1 - Gyro Surveys	14,373.28	6,803.53	3,788.42	3,696.50	41.213	CC
RUBY RED #D 8-7(PR) - Wellbore #1 - Gyro Surveys	14,400.00	6,803.39	3,788.52	3,696.40	41.127	ES
RUBY RED #D 8-7(PR) - Wellbore #1 - Gyro Surveys	15,100.00	6,799.84	3,857.49	3,761.35	40.120	SF
RUBY RED #D 8-8(PR) - Wellbore #1 - Gyro Surveys	14,373.11	6,805.72	2,141.01	2,049.09	23.292	CC
RUBY RED #D 8-8(PR) - Wellbore #1 - Gyro Surveys	14,400.00	6,805.39	2,141.18	2,049.08	23.247	ES
RUBY RED #D 8-8(PR) - Wellbore #1 - Gyro Surveys	14,600.00	6,802.95	2,153.00	2,059.81	23.103	SF
RUBY RED D8-2(PA) - Wellbore #1 - Gyro Surveys	12,829.42	6,810.06	3,876.63	3,796.43	48.334	CC
RUBY RED D8-2(PA) - Wellbore #1 - Gyro Surveys	13,000.00	13,000.00	3,880.38	3,777.44	37.694	ES
RUBY RED D8-2(PA) - Wellbore #1 - Gyro Surveys	13,500.00	13,500.00	3,934.19	3,826.59	36.564	SF
TWO E RANCHES #1(PA) - Wellbore #1 - Gyro Surveys	15,986.11	6,800.00	5,915.91	5,811.48	56.647	CC
TWO E RANCHES #1(PA) - Wellbore #1 - Gyro Surveys	16,000.00	6,800.00	5,915.93	5,811.39	56.590	ES
TWO E RANCHES #1(PA) - Wellbore #1 - Gyro Surveys	17,368.96	6,800.00	6,075.38	5,962.49	53.816	SF

CC - Min centre to center distance or covergent 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 Guttersten D09-765
<b>Project:</b>	Mustang	<b>TVD Reference:</b>	Well @ 4755.00ft
<b>Reference Site:</b>	C Section 33	<b>MD Reference:</b>	Well @ 4755.00ft
<b>Site Error:</b>	0.00 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Guttersten D09-765	<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>	Guttersten D09-765	<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						
D Section 09						
ART RED #D 9-14(PR) - ART RED #D 9-14 - No Surveys	16,980.26	6,797.00	422.63	197.98	1.881	CC, ES, SF
ART RED #D 9-3J(PA) - ART RED #D 9-3J - No Surveys	16,515.51	6,789.00	694.27	473.45	3.144	CC, ES, SF
ART RED #D 9-4J(PR) - ART RED #D 9-4J - No Surveys	15,829.86	6,787.00	2,533.29	2,317.90	11.762	CC, ES
ART RED #D 9-4J(PR) - ART RED #D 9-4J - No Surveys	16,000.00	6,787.00	2,539.00	2,322.34	11.719	SF
ART RED D #9-10(PR) - ART RED D #9-10 - No Surveys	15,478.59	6,793.00	1,681.84	1,469.08	7.905	CC
ART RED D #9-10(PR) - ART RED D #9-10 - No Surveys	15,500.00	6,793.00	1,681.98	1,469.04	7.899	ES
ART RED D #9-10(PR) - ART RED D #9-10 - No Surveys	15,600.00	6,793.00	1,686.22	1,472.59	7.893	SF
ART RED D #9-11(PR) - ART RED D #9-11 - No Surveys	15,545.97	6,785.00	308.86	95.74	1.449	Level 3, CC, ES, SF
Art Red D 9-16 (PR) - Wellbore #1 - Gyro Surveys	16,931.33	6,795.62	3,143.37	3,031.46	28.089	CC, ES
Art Red D 9-16 (PR) - Wellbore #1 - Gyro Surveys	17,368.96	6,799.29	3,173.69	3,058.90	27.649	SF
FRONT RANGE #D09-20D(PR) - FRONT RANGE #D09	14,983.18	7,150.22	324.95	217.77	3.032	CC
FRONT RANGE #D09-20D(PR) - FRONT RANGE #D09	15,000.00	7,150.34	325.38	217.62	3.019	ES, SF
FRONT RANGE #D09-25D(PR) - FRONT RANGE #D09	16,095.08	7,022.23	166.78	59.46	1.554	CC
FRONT RANGE #D09-25D(PR) - FRONT RANGE #D09	16,100.00	7,022.22	166.86	59.45	1.554	ES, SF
FRONT RANGE #D09-32D(PR) - FRONT RANGE #D09	14,964.67	7,023.68	1,568.47	1,462.61	14.817	CC, ES
FRONT RANGE #D09-32D(PR) - FRONT RANGE #D09	15,000.00	7,023.65	1,568.87	1,462.81	14.792	SF
FRONT RANGE D #09-28(SI) - FRONT RANGE D #09-2	12,458.59	6,778.00	968.72	779.33	5.115	CC, ES
FRONT RANGE D #09-28(SI) - FRONT RANGE D #09-2	12,500.00	6,778.00	969.61	779.89	5.111	SF
FRONT RANGE D #09-33(PR) - FRONT RANGE D #09-	16,261.89	6,794.00	1,479.75	1,260.82	6.759	CC, ES
FRONT RANGE D #09-33(PR) - FRONT RANGE D #09-	16,300.00	6,794.00	1,480.24	1,261.07	6.754	SF
FRONT RANGE D #16-29(SI) - FRONT RANGE D #16-2	17,368.96	6,795.25	436.33	331.00	4.143	CC, ES, SF
FRONT RANGE D #16-30(SI) - FRONT RANGE D #16-3	17,142.49	6,795.00	1,409.41	1,183.51	6.239	CC, ES
FRONT RANGE D #16-30(SI) - FRONT RANGE D #16-3	17,200.00	6,795.00	1,410.58	1,184.35	6.235	SF
GITTLEIN #18-9(PR) - GITTLEIN #18-9 - No Surveys	13,799.36	6,900.25	587.97	500.35	6.711	CC
GITTLEIN #18-9(PR) - GITTLEIN #18-9 - No Surveys	13,800.00	6,900.25	587.97	500.34	6.710	ES, SF
GITTLEIN #D #9-7(PR) - GITTLEIN #D #9-7 - No Survey	14,350.54	6,741.00	1,465.88	1,262.92	7.223	CC, ES
GITTLEIN #D #9-7(PR) - GITTLEIN #D #9-7 - No Survey	14,400.00	6,741.00	1,466.71	1,263.37	7.213	SF
GITTLEIN WHITE #D 9-2(SI) - GITTLEIN WHITE #D 9-2	12,898.67	6,775.00	1,752.77	1,560.16	9.100	CC
GITTLEIN WHITE #D 9-2(SI) - GITTLEIN WHITE #D 9-2	12,900.00	6,775.00	1,752.77	1,560.15	9.100	ES
GITTLEIN WHITE #D 9-2(SI) - GITTLEIN WHITE #D 9-2	13,000.00	6,775.00	1,755.69	1,562.34	9.080	SF
GITTLEIN-UPRC #9-12(PA) - GITTLEIN-UPRC #9-12 - V	15,571.40	6,790.59	817.11	727.14	9.081	CC, ES
GITTLEIN-UPRC #9-12(PA) - GITTLEIN-UPRC #9-12 - V	15,600.00	6,790.95	817.61	727.50	9.073	SF
GUTTERSEN #9-15(PR) - GUTTERSEN #9-15 - No Sur	16,852.41	6,788.00	1,638.77	1,415.31	7.333	CC, ES
GUTTERSEN #9-15(PR) - GUTTERSEN #9-15 - No Sur	16,900.00	6,788.00	1,639.46	1,415.62	7.324	SF
GUTTERSEN D #09-09(PR) - GUTTERSEN D #09-09 -	15,379.24	6,781.00	3,077.68	2,865.94	14.535	CC
GUTTERSEN D #09-09(PR) - GUTTERSEN D #09-09 -	15,400.00	6,781.00	3,077.75	2,865.85	14.524	ES
GUTTERSEN D #09-09(PR) - GUTTERSEN D #09-09 -	15,700.00	6,781.00	3,094.35	2,880.34	14.459	SF
GUTTERSEN D #09-21(PR) - GUTTERSEN D #09-21 -	14,998.01	6,785.00	1,022.13	813.28	4.894	CC
GUTTERSEN D #09-21(PR) - GUTTERSEN D #09-21 -	15,000.00	6,785.00	1,022.14	813.27	4.894	ES, SF
GUTTERSEN D #09-22(SI) - GUTTERSEN D #09-22 - N	14,909.86	6,788.00	2,274.56	2,066.33	10.924	CC, ES
GUTTERSEN D #09-22(SI) - GUTTERSEN D #09-22 - N	15,100.00	6,788.00	2,282.49	2,072.90	10.890	SF
GUTTERSEN D #09-24(PR) - GUTTERSEN D #09-24 -	16,166.50	6,797.00	1,121.47	903.24	5.139	CC, ES
GUTTERSEN D #09-24(PR) - GUTTERSEN D #09-24 -	16,200.00	6,797.00	1,121.97	903.47	5.135	SF
GUTTERSEN D #16-28(PR) - GUTTERSEN D #16-28 -	17,368.96	6,792.00	904.86	678.04	3.989	CC, ES, SF
Guttersten D09-27D - Wellbore #1 - Wellbore #1- As Drill	12,143.51	6,885.77	2,277.34	2,196.85	28.294	CC, ES
Guttersten D09-27D - Wellbore #1 - Wellbore #1- As Drill	12,600.00	6,888.25	2,322.64	2,237.86	27.397	SF
Guttersten D10-30D - Wellbore #1 - Wellbore #1- As Drill	12,305.99	6,824.89	3,528.76	3,450.00	44.805	CC, ES
Guttersten D10-30D - Wellbore #1 - Wellbore #1- As Drill	13,000.00	6,824.10	3,596.36	3,513.87	43.599	SF
HSR TIM GITTLEIN #3-9(SI) - HSR TIM GITTLEIN #3-9	12,915.75	6,778.00	304.10	111.31	1.577	CC, ES, SF
HSR TIM GITTLEIN #4-9(SI) - HSR TIM GITTLEIN #4-9	13,072.27	6,780.00	866.93	672.92	4.469	CC, ES
HSR TIM GITTLEIN #4-9(SI) - HSR TIM GITTLEIN #4-9	13,100.00	6,780.00	867.37	673.22	4.468	SF
HSR TIM GITTLEIN #5-9(SI) - HSR TIM GITTLEIN #5-9	14,108.67	6,782.00	862.70	660.78	4.273	CC, ES, SF
HSR TIM GITTLEIN #6-9(SI) - HSR TIM GITTLEIN #6-9	14,014.01	6,781.00	316.20	115.03	1.572	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 Guttersen D09-765
<b>Project:</b>	Mustang	<b>TVD Reference:</b>	Well @ 4755.00ft
<b>Reference Site:</b>	C Section 33	<b>MD Reference:</b>	Well @ 4755.00ft
<b>Site Error:</b>	0.00 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Guttersen D09-765	<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>	Guttersen D09-765	<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
D Section 09						
KARCH WHITE #D 9-1(SI) - KARCH WHITE #D 9-1 - No	12,895.21	6,773.00	2,905.66	2,713.12	15.091	CC
KARCH WHITE #D 9-1(SI) - KARCH WHITE #D 9-1 - No	12,900.00	6,773.00	2,905.66	2,713.09	15.088	ES
KARCH WHITE #D 9-1(SI) - KARCH WHITE #D 9-1 - No	13,200.00	6,773.00	2,921.60	2,726.90	15.006	SF
KARCH WHITE #D 9-8(PR) - KARCH WHITE #D 9-8 - N	14,427.92	6,776.00	2,857.17	2,652.92	13.988	CC, ES
KARCH WHITE #D 9-8(PR) - KARCH WHITE #D 9-8 - N	14,700.00	6,776.00	2,870.10	2,663.89	13.919	SF
ROADHOUSE D #9-17(SI) - ROADHOUSE D #9-17 - No	13,556.43	6,777.00	2,319.45	2,121.85	11.738	CC, ES
ROADHOUSE D #9-17(SI) - ROADHOUSE D #9-17 - No	13,700.00	6,777.00	2,323.89	2,125.22	11.697	SF
D Section 10						
Guttersen State D15-27 - Wellbore #1 - Wellbore #1 - As	17,295.19	6,838.46	7,635.41	7,520.44	66.410	CC
Guttersen State D15-27 - Wellbore #1 - Wellbore #1 - As	17,368.96	6,838.91	7,635.77	7,520.20	66.070	ES, SF
Karch Blue D 10-07 (SI) - Wellbore #1 - Gyro Surveys	14,269.75	6,827.42	6,772.75	6,681.57	74.283	CC
Karch Blue D 10-07 (SI) - Wellbore #1 - Gyro Surveys	14,300.00	6,827.27	6,772.81	6,681.40	74.090	ES
Karch Blue D 10-07 (SI) - Wellbore #1 - Gyro Surveys	16,500.00	6,816.57	7,130.50	7,025.31	67.788	SF
Karch State D 10-22 (SI) - Wellbore #1 - No Surveys	14,830.33	6,830.00	7,466.01	7,123.23	21.780	CC
Karch State D 10-22 (SI) - Wellbore #1 - No Surveys	14,900.00	6,830.00	7,466.34	7,123.00	21.746	ES
Karch State D 10-22 (SI) - Wellbore #1 - No Surveys	15,900.00	6,830.00	7,542.25	7,191.64	21.512	SF
Spike ST GWS D 10-14 (PR) - Wellbore #1 - Gyro Surve	17,018.50	6,837.46	5,581.05	5,468.33	49.511	CC
Spike ST GWS D 10-14 (PR) - Wellbore #1 - Gyro Surve	17,100.00	6,838.01	5,581.64	5,468.26	49.229	ES
Spike ST GWS D 10-14 (PR) - Wellbore #1 - Gyro Surve	17,368.96	6,839.83	5,592.04	5,476.61	48.445	SF
Spike ST GWS D 10-16 (PA) - Wellbore #1 - No Surveys	16,849.11	6,834.00	8,172.09	7,947.74	36.424	CC
Spike ST GWS D 10-16 (PA) - Wellbore #1 - No Surveys	16,900.00	6,834.00	8,172.25	7,947.48	36.359	ES
Spike ST GWS D 10-16 (PA) - Wellbore #1 - No Surveys	17,368.96	6,834.00	8,188.61	7,960.21	35.852	SF
Spike State D 10-21D (SI) - Wellbore #1 - Wellbore #1	15,066.78	6,959.53	6,314.47	6,216.30	64.325	CC
Spike State D 10-21D (SI) - Wellbore #1 - Wellbore #1	15,100.00	6,959.46	6,314.55	6,216.14	64.166	ES
Spike State D 10-21D (SI) - Wellbore #1 - Wellbore #1	16,900.00	6,956.01	6,575.19	6,465.88	60.151	SF
Spike State GWS D 10-15 (PA) - Wellbore #1 - No Surve	16,713.32	7,106.00	7,274.10	7,051.22	32.637	CC
Spike State GWS D 10-15 (PA) - Wellbore #1 - No Surve	16,800.00	7,106.00	7,274.61	7,051.04	32.538	ES
Spike State GWS D 10-15 (PA) - Wellbore #1 - No Surve	17,368.96	7,106.00	7,303.58	7,075.71	32.050	SF
Two E Ranch 4-10 (SI) - Wellbore #1 - No Surveys	14,271.33	6,802.00	4,366.60	4,029.21	12.942	CC
Two E Ranch 4-10 (SI) - Wellbore #1 - No Surveys	14,300.00	6,802.00	4,366.69	4,029.07	12.934	ES
Two E Ranch 4-10 (SI) - Wellbore #1 - No Surveys	14,700.00	6,802.00	4,387.59	4,047.05	12.884	SF
Volley State D 10-13 (PR) - Wellbore #1 - Gyro Surveys	16,967.72	6,725.28	4,156.32	4,044.36	37.123	CC
Volley State D 10-13 (PR) - Wellbore #1 - Gyro Surveys	17,000.00	6,725.41	4,156.45	4,044.22	37.037	ES
Volley State D 10-13 (PR) - Wellbore #1 - Gyro Surveys	17,368.96	6,726.91	4,175.64	4,060.75	36.345	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 Guttersen D09-765
<b>Project:</b>	Mustang	<b>TVD Reference:</b>	Well @ 4755.00ft
<b>Reference Site:</b>	C Section 33	<b>MD Reference:</b>	Well @ 4755.00ft
<b>Site Error:</b>	0.00 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Guttersen D09-765	<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>	Guttersen D09-765	<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						
D Section 16						
Diggen State D16-23 (SI) - Wellbore #1 - Gyro Surveys	17,368.96	6,822.75	4,733.62	4,659.85	64.162	CC, ES, SF
Diggin State D 16-07 (SI) - Wellbore #1 - No Surveys	17,368.96	6,834.00	2,734.31	2,541.48	14.179	CC, ES, SF
Diggin State D 16-19J (PR) - Wellbore #1 - No Surveys	17,368.96	6,793.00	1,609.81	1,438.04	9.372	CC, ES, SF
Diggin State D16-13 (PR) - Wellbore #1 - Gyro Surveys	17,368.96	6,787.07	4,889.35	4,830.72	83.394	CC, ES, SF
Guttersen ST D 15-32 (SI) - Wellbore #1 - Gyro Surveys	17,368.96	6,841.37	4,567.44	4,471.30	47.508	CC, ES, SF
Guttersen ST D 16-21 (SI) - Wellbore #1 - Gyro Surveys	17,368.96	6,823.20	3,114.22	3,050.25	48.678	CC, ES, SF
Guttersen ST D 16-22D (SI) - Wellbore #1 - MWD Surve	17,368.96	6,948.20	3,549.24	3,460.32	39.918	CC, ES, SF
Guttersen ST D 16-33 (SI) - Wellbore #1 - No Surveys	17,368.96	6,808.00	4,344.83	4,164.25	24.061	CC, ES, SF
Guttersen State D 15-31 (PR) - Wellbore #1 - Gyro Surve	17,368.96	6,831.62	3,651.49	3,541.02	33.054	CC, ES, SF
Guttersen State D 15-33 (SI) - Wellbore #1 - Gyro Survey	17,368.96	6,758.70	5,484.15	5,397.41	63.222	CC, ES, SF
Guttersen State D 16-15X (PR) - Wellbore #1 - Gyro Sur	17,368.96	6,859.47	4,949.27	4,885.91	78.112	CC, ES, SF
Guttersen State D 16-18 (SI) - Wellbore #1 - No Surveys	17,368.96	6,808.00	1,703.22	1,511.00	8.861	CC, ES, SF
Guttersen State D 16-20 (SI) - Wellbore #1 - Gyro Survey	17,368.96	6,800.81	2,894.99	2,840.29	52.923	CC, ES, SF
Guttersen State D 16-24 (SI) - Wellbore #1 - Gyro Survey	17,368.96	6,823.61	4,171.89	4,113.03	70.889	CC, ES, SF
Guttersen State D 16-27 (PR) - Wellbore #1 - No Survey	17,368.96	6,804.00	2,289.70	2,063.30	10.113	CC, ES, SF
Guttersen State D 16-31 (PR) - Wellbore #1 - No Survey	17,368.96	6,804.00	2,117.17	1,913.54	10.397	CC, ES, SF
Guttersen State D 16-32D (SI) - Wellbore #1 - MWD Sur	17,368.96	7,002.68	3,139.88	3,060.68	39.646	CC, ES, SF
Guttersen State D16-63-1HN - Original Drilling - Original	17,368.96	10,159.53	4,512.61	4,394.52	38.214	CC, ES, SF
Guttersen State D16-65-1HN - Original Drilling - Original	17,368.96	10,140.78	3,202.00	3,084.57	27.269	CC, ES, SF
Spike ST GWS D 16-01 (SI) - Wellbore #1 - Gyro Survey	17,368.96	6,829.96	3,073.31	2,960.39	27.216	CC, ES, SF
Spike ST GWS D 16-02 (P&A) - Wellbore #1 - Gyro Surv	17,368.96	6,824.99	1,675.22	1,551.82	13.576	CC, ES, SF
Spike ST GWS D 16-03 (PR) - Wellbore #1 - No Surveys	17,368.96	6,802.00	894.28	716.87	5.041	CC, ES, SF
Spike ST GWS D 16-04 (SI) - Wellbore #1 - No Surveys	17,368.96	6,797.00	1,306.08	1,097.19	6.252	CC, ES, SF
Spike ST GWS D 16-05 (PR) - Wellbore #1 - Gyro Survey	17,368.96	6,805.35	2,438.11	2,366.63	34.108	CC, ES, SF
Spike ST GWS D 16-06 (SI) - Wellbore #1 - No Surveys	17,368.96	6,810.00	2,183.55	2,016.08	13.039	CC, ES, SF
Spike ST GWS D 16-08 (PR) - Wellbore #1 - Gyro Survey	17,368.96	6,837.40	3,836.11	3,736.00	38.319	CC, ES, SF
Spike ST GWS D 16-12 (PA) - Wellbore #1 - Gyro Survey	17,368.96	6,789.90	3,509.84	3,445.03	54.156	CC, ES, SF
Spike ST GWS D 16-14 (SI) - Wellbore #1 - No Surveys	17,368.96	6,843.00	5,044.95	4,878.57	30.321	CC, ES, SF
Spike ST GWS D 16-16 (SI) - Wellbore #1 - No Surveys	17,368.96	6,842.00	5,664.69	5,474.53	29.788	CC, ES, SF
Spike State D 16-10 (SI) - Wellbore #1 - Gyro Surveys	17,368.96	6,818.36	3,811.16	3,741.70	54.868	CC, ES, SF
Spike State D 16-11 (SI) - Wellbore #1 - Gyro Surveys	17,368.96	6,815.26	3,411.77	3,357.89	63.326	CC, ES, SF
Spike State D 16-9 (SI) - Wellbore #1 - Gyro Surveys	17,368.96	6,824.65	4,612.96	4,526.74	53.500	CC, ES, SF
Spike State D16-15 (P&A) - Wellbore #1 - Wellbore #1	17,368.96	6,950.54	5,024.41	4,949.89	67.422	CC, ES, SF
Spike State D16-99HZ - Original Drilling - Original	17,368.96	9,933.24	3,937.63	3,824.81	34.903	CC, ES, SF
Spike State GWS D 16-7J (PR) - Wellbore #1 - No Surve	17,368.96	6,827.00	2,686.82	2,471.26	12.464	CC, ES, SF
Spike State GWS D16-13J (PR) - Wellbore #1 - Gyro Su	17,368.96	6,779.19	4,218.28	4,164.21	78.012	CC, ES, SF



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

<b>Company:</b>	Northern Region - DJ Basin	<b>Local Co-ordinate Reference:</b>	Well Guttersen D09-765
<b>Project:</b>	Mustang	<b>TVD Reference:</b>	Well @ 4755.00ft
<b>Reference Site:</b>	C Section 33	<b>MD Reference:</b>	Well @ 4755.00ft
<b>Site Error:</b>	0.00 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Guttersen D09-765	<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>	Guttersen D09-765	<b>Database:</b>	EDMP
<b>Reference Design:</b>	Plan #1	<b>Offset TVD Reference:</b>	Offset Datum

Reference Depths are relative to Well @ 4755.00ft

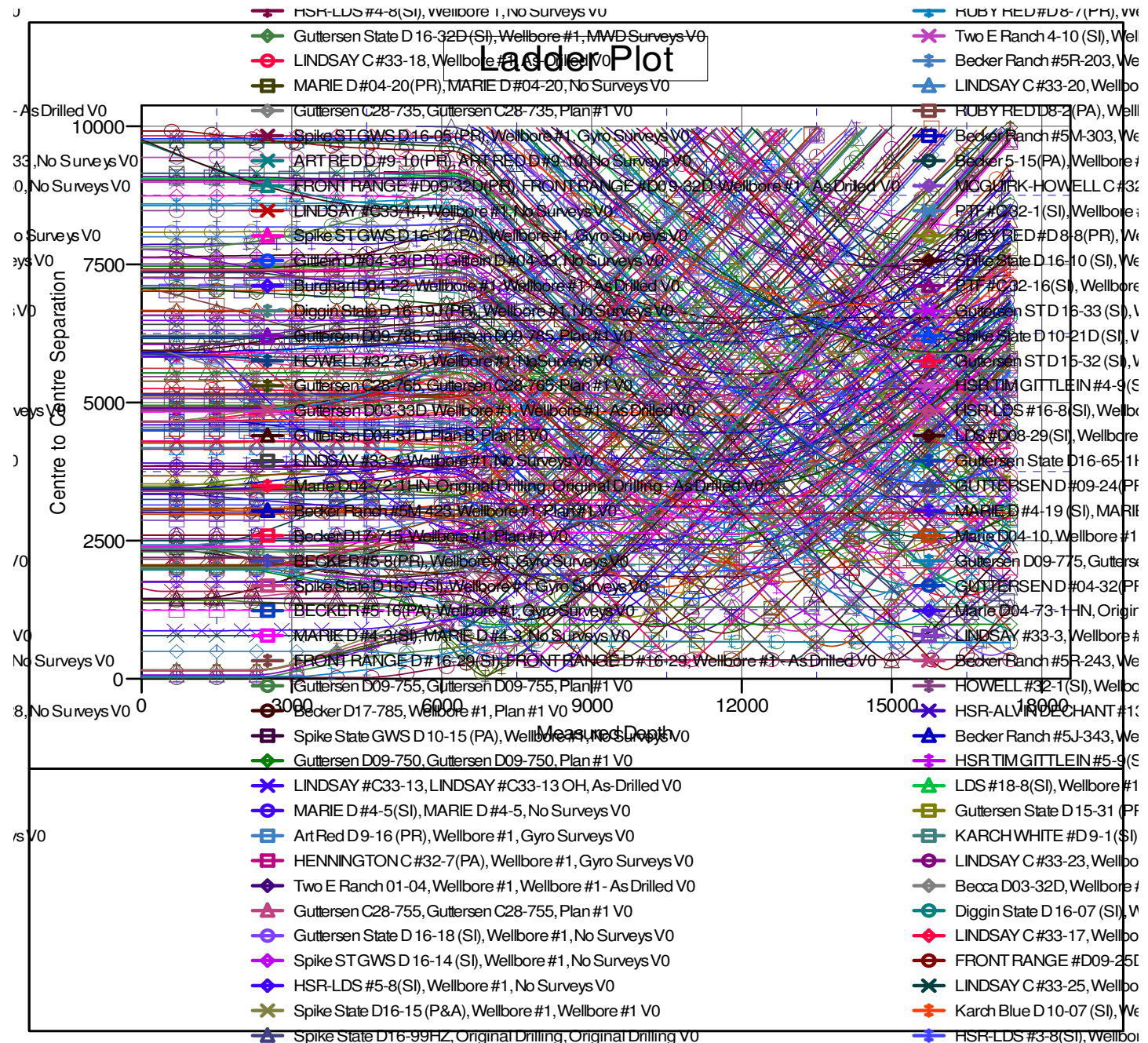
Offset Depths are relative to Offset Datum

Central Meridian is -105.5000000

Coordinates are relative to: Guttersen D09-765

Coordinate System is US State Plane 1983, Colorado Northern Zone

Grid Convergence at Surface is: 0.61°



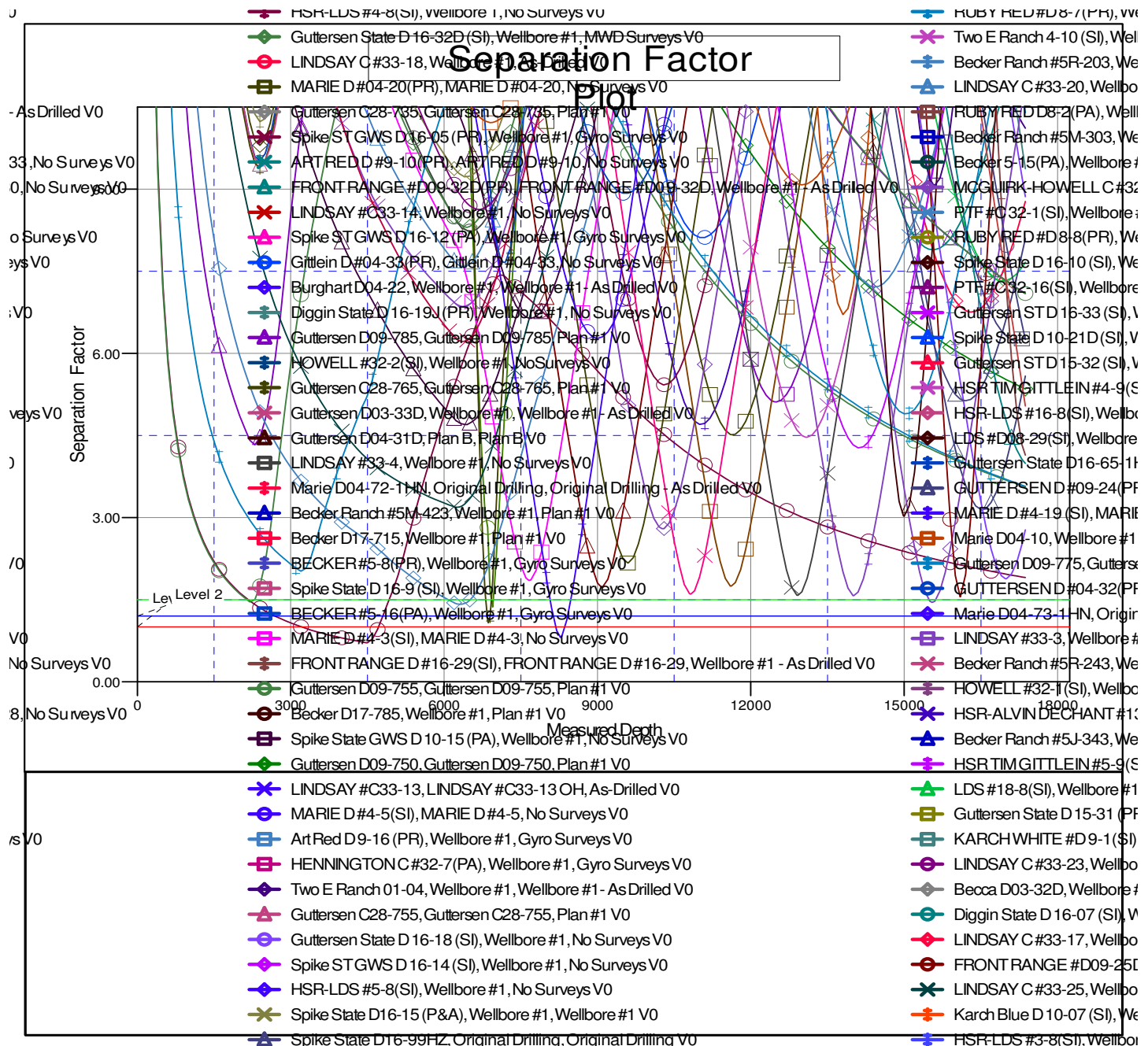
CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

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

<b>Company:</b>	Northern Region - DJ Basin	<b>Local Co-ordinate Reference:</b>	Well Guttersen D09-765
<b>Project:</b>	Mustang	<b>TVD Reference:</b>	Well @ 4755.00ft
<b>Reference Site:</b>	C Section 33	<b>MD Reference:</b>	Well @ 4755.00ft
<b>Site Error:</b>	0.00 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Guttersen D09-765	<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>	Guttersen D09-765	<b>Database:</b>	EDMP
<b>Reference Design:</b>	Plan #1	<b>Offset TVD Reference:</b>	Offset Datum

Reference Depths are relative to Well @ 4755.00ft  
Offset Depths are relative to Offset Datum  
Central Meridian is -105.5000000

Coordinates are relative to: Guttersen D09-765  
Coordinate System is US State Plane 1983, Colorado Northern Zone  
Grid Convergence at Surface is: 0.61°



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