

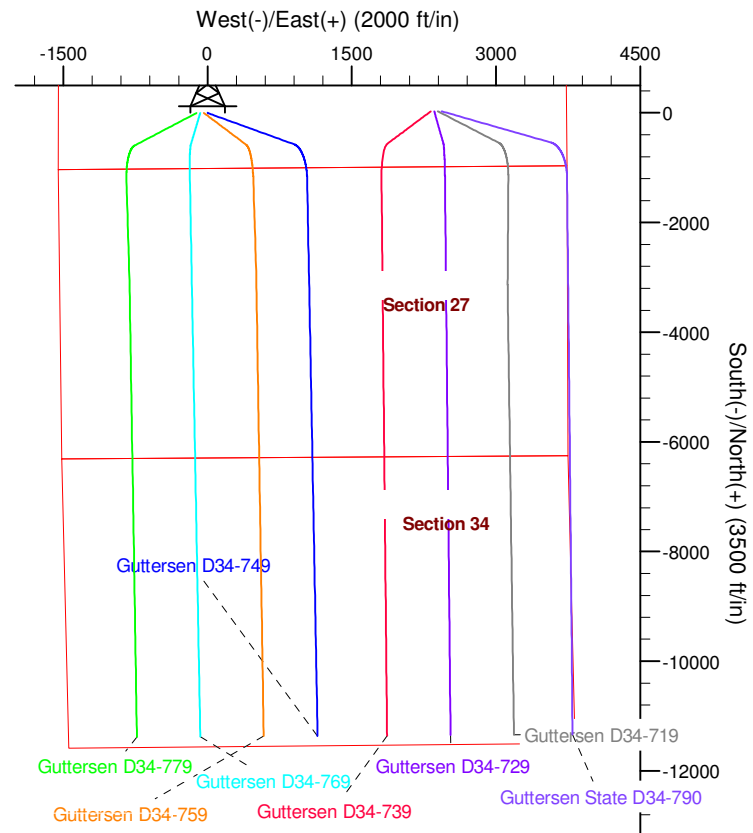
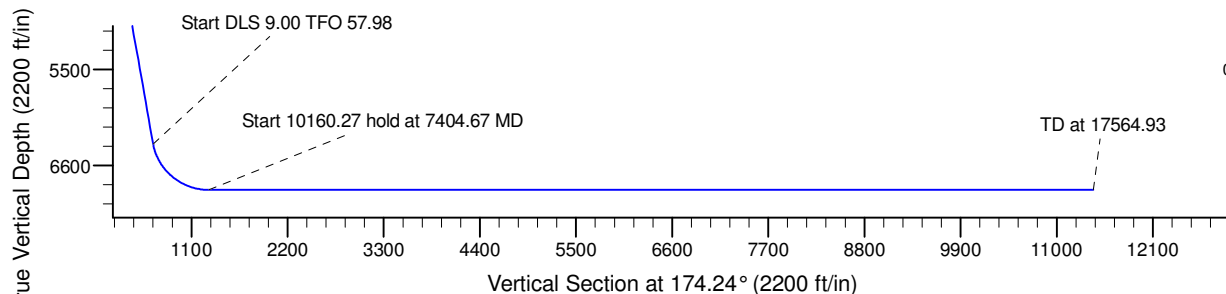
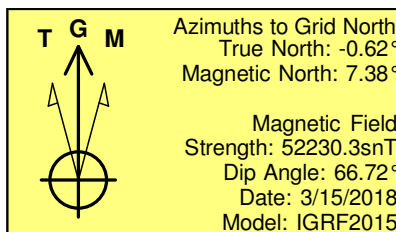
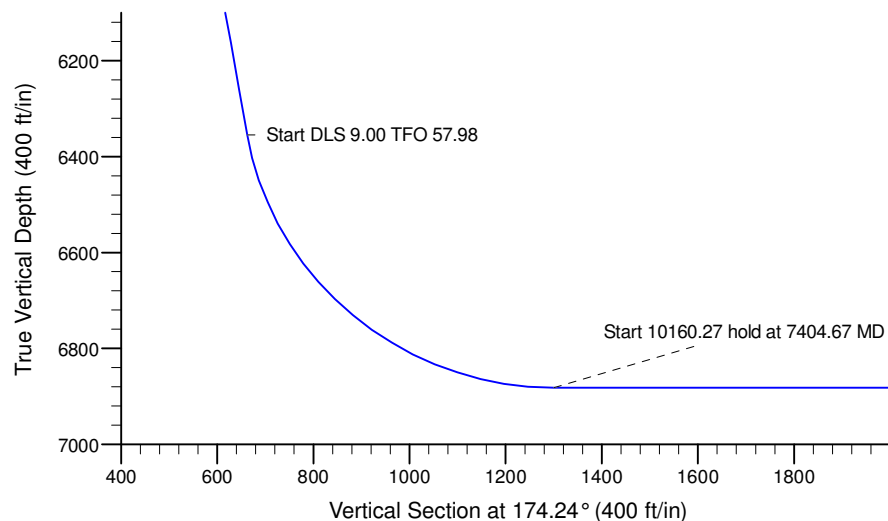
Project: Mustang  
Site: D Section 22  
Well: Gutteresen D34-749  
Wellbore: Wellbore #1  
Design: Plan 1

# 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	2200.00	0.00	0.00	2200.00	0.00	0.00	0.00	0.00	0.00	
3	2996.52	15.93	122.42	2986.29	-58.99	92.87	2.00	122.42	68.01	
4	6500.28	15.93	122.42	6355.49	-574.62	904.62	0.00	0.00	662.44	
5	7404.67	90.00	179.39	6882.00	-1202.70	1037.29	9.00	57.98	1300.66	Gutteresen State D34-749 TPZ/LP
6	17564.93	90.00	179.39	6882.00	-11362.39	1145.30	0.00	0.00	11419.97	Gutteresen State D34-749 BHL



## WELL DETAILS: Gutteresen D34-749

	Northing	Easting	Latitude	Longitude
0.00	0.00	1319483.03	4825.00 40.2064050	-104.5413430

## Plan: Plan 1 (Gutteresen D34-749/Wellbore #1)

Created By: Colby Baxter Date: 8:14, August 14 2018

Checked: \_\_\_\_\_ Date: \_\_\_\_\_

Reviewed: \_\_\_\_\_ Date: \_\_\_\_\_

Approved: \_\_\_\_\_ Date: \_\_\_\_\_

# **Northern Region - DJ Basin**

**Mustang**

**D Section 22**

**Guttersen D34-749**

**Wellbore #1**

**Plan: Plan 1**

## **Standard Survey Report**

**13 August, 2018**

# Noble Energy, Inc.

## Survey Report

<b>Company:</b>	Northern Region - DJ Basin	<b>Local Co-ordinate Reference:</b>	Well Guttersen D34-749
<b>Project:</b>	Mustang	<b>TVD Reference:</b>	KB @ 4855.00ft
<b>Site:</b>	D Section 22	<b>MD Reference:</b>	KB @ 4855.00ft
<b>Well:</b>	Guttersen D34-749	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Plan 1	<b>Database:</b>	EDMP

<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		D Section 22			
Site Position:		Northing:	1,323,172.04 usft	Latitude:	40.2165600
From:	Lat/Long	Easting:	3,266,778.49 usft	Longitude:	-104.5446900
Position Uncertainty:	0.00 ft	Slot Radius:	13.200 in	Grid Convergence:	0.62 °

Well		Guttersen D34-749				
Well Position	+N/-S	0.00 ft	Northing:	1,319,483.03 usft	Latitude:	40.2064050
	+E/-W	0.00 ft	Easting:	3,267,753.13 usft	Longitude:	-104.5413430
Position Uncertainty		0.00 ft	Wellhead Elevation:	ft	Ground Level:	4,825.00 ft

<b>Wellbore</b>	Wellbore #1				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2015	3/15/2018	8.00	66.72	52,230.25572585

<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	174.24	

<b>Survey Tool Program</b>	<b>Date</b>	8/2/2018			
<b>From (ft)</b>	<b>To (ft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>	
0.00	17,564.39	Plan 1 (Wellbore #1)	2_MWD+IFR1+MS	A008Mb: IFR dec & multi-station analysis	

<b>Planned Survey</b>										
<b>Measured Depth (ft)</b>	<b>Inclination (°)</b>	<b>Azimuth (°)</b>	<b>Vertical Depth (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Vertical Section (ft)</b>	<b>Dogleg Rate (°/100ft)</b>	<b>Build Rate (°/100ft)</b>	<b>Turn Rate (°/100ft)</b>	
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	
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	
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	

# Noble Energy, Inc.

## Survey Report

<b>Company:</b>	Northern Region - DJ Basin	<b>Local Co-ordinate Reference:</b>	Well Guttersen D34-749
<b>Project:</b>	Mustang	<b>TVD Reference:</b>	KB @ 4855.00ft
<b>Site:</b>	D Section 22	<b>MD Reference:</b>	KB @ 4855.00ft
<b>Well:</b>	Guttersen D34-749	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Plan 1	<b>Database:</b>	EDMP

### 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)
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
1,600.00	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	2.00	122.42	2,299.98	-0.94	1.47	1.08	2.00	2.00	0.00
2,400.00	4.00	122.42	2,399.84	-3.74	5.89	4.31	2.00	2.00	0.00
2,500.00	6.00	122.42	2,499.45	-8.41	13.25	9.70	2.00	2.00	0.00
2,600.00	8.00	122.42	2,598.70	-14.95	23.53	17.23	2.00	2.00	0.00
2,700.00	10.00	122.42	2,697.47	-23.34	36.74	26.90	2.00	2.00	0.00
2,800.00	12.00	122.42	2,795.62	-33.57	52.84	38.70	2.00	2.00	0.00
2,900.00	14.00	122.42	2,893.06	-45.63	71.83	52.60	2.00	2.00	0.00
2,996.52	15.93	122.42	2,986.29	-58.99	92.87	68.01	2.00	2.00	0.00
3,000.00	15.93	122.42	2,989.64	-59.50	93.67	68.60	0.00	0.00	0.00
3,100.00	15.93	122.42	3,085.80	-74.22	116.84	85.56	0.00	0.00	0.00
3,200.00	15.93	122.42	3,181.96	-88.94	140.01	102.53	0.00	0.00	0.00
3,300.00	15.93	122.42	3,278.12	-103.65	163.18	119.49	0.00	0.00	0.00
3,400.00	15.93	122.42	3,374.28	-118.37	186.35	136.46	0.00	0.00	0.00
3,500.00	15.93	122.42	3,470.44	-133.08	209.51	153.43	0.00	0.00	0.00
3,600.00	15.93	122.42	3,566.60	-147.80	232.68	170.39	0.00	0.00	0.00
3,700.00	15.93	122.42	3,662.76	-162.52	255.85	187.36	0.00	0.00	0.00
3,800.00	15.93	122.42	3,758.92	-177.23	279.02	204.32	0.00	0.00	0.00
3,900.00	15.93	122.42	3,855.08	-191.95	302.19	221.29	0.00	0.00	0.00
4,000.00	15.93	122.42	3,951.24	-206.67	325.35	238.25	0.00	0.00	0.00
4,100.00	15.93	122.42	4,047.40	-221.38	348.52	255.22	0.00	0.00	0.00
4,200.00	15.93	122.42	4,143.56	-236.10	371.69	272.19	0.00	0.00	0.00
4,300.00	15.93	122.42	4,239.72	-250.82	394.86	289.15	0.00	0.00	0.00
4,400.00	15.93	122.42	4,335.88	-265.53	418.03	306.12	0.00	0.00	0.00
4,500.00	15.93	122.42	4,432.04	-280.25	441.19	323.08	0.00	0.00	0.00
4,600.00	15.93	122.42	4,528.20	-294.97	464.36	340.05	0.00	0.00	0.00
4,700.00	15.93	122.42	4,624.36	-309.68	487.53	357.01	0.00	0.00	0.00
4,800.00	15.93	122.42	4,720.52	-324.40	510.70	373.98	0.00	0.00	0.00
4,900.00	15.93	122.42	4,816.68	-339.12	533.87	390.95	0.00	0.00	0.00
5,000.00	15.93	122.42	4,912.84	-353.83	557.03	407.91	0.00	0.00	0.00
5,100.00	15.93	122.42	5,009.00	-368.55	580.20	424.88	0.00	0.00	0.00
5,200.00	15.93	122.42	5,105.16	-383.26	603.37	441.84	0.00	0.00	0.00

# Noble Energy, Inc.

## Survey Report

<b>Company:</b>	Northern Region - DJ Basin	<b>Local Co-ordinate Reference:</b>	Well Guttersen D34-749
<b>Project:</b>	Mustang	<b>TVD Reference:</b>	KB @ 4855.00ft
<b>Site:</b>	D Section 22	<b>MD Reference:</b>	KB @ 4855.00ft
<b>Well:</b>	Guttersen D34-749	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Plan 1	<b>Database:</b>	EDMP

### 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)
5,300.00	15.93	122.42	5,201.31	-397.98	626.54	458.81	0.00	0.00	0.00
5,400.00	15.93	122.42	5,297.47	-412.70	649.71	475.78	0.00	0.00	0.00
5,500.00	15.93	122.42	5,393.63	-427.41	672.87	492.74	0.00	0.00	0.00
5,600.00	15.93	122.42	5,489.79	-442.13	696.04	509.71	0.00	0.00	0.00
5,700.00	15.93	122.42	5,585.95	-456.85	719.21	526.67	0.00	0.00	0.00
5,800.00	15.93	122.42	5,682.11	-471.56	742.38	543.64	0.00	0.00	0.00
5,900.00	15.93	122.42	5,778.27	-486.28	765.54	560.60	0.00	0.00	0.00
6,000.00	15.93	122.42	5,874.43	-501.00	788.71	577.57	0.00	0.00	0.00
6,100.00	15.93	122.42	5,970.59	-515.71	811.88	594.54	0.00	0.00	0.00
6,200.00	15.93	122.42	6,066.75	-530.43	835.05	611.50	0.00	0.00	0.00
6,300.00	15.93	122.42	6,162.91	-545.15	858.22	628.47	0.00	0.00	0.00
6,400.00	15.93	122.42	6,259.07	-559.86	881.38	645.43	0.00	0.00	0.00
6,500.00	15.93	122.42	6,355.23	-574.58	904.55	662.40	0.00	0.00	0.00
6,500.28	15.93	122.42	6,355.49	-574.62	904.62	662.44	0.00	0.00	0.00
6,600.00	22.01	143.09	6,449.86	-596.94	927.44	686.95	9.00	6.10	20.73
6,700.00	29.57	154.45	6,539.89	-634.27	949.38	726.28	9.00	7.56	11.35
6,800.00	37.72	161.37	6,623.10	-685.62	969.84	779.43	9.00	8.15	6.93
6,900.00	46.15	166.10	6,697.44	-749.75	988.31	845.08	9.00	8.43	4.73
7,000.00	54.73	169.65	6,761.07	-825.07	1,004.34	921.63	9.00	8.58	3.54
7,100.00	63.39	172.51	6,812.44	-909.72	1,017.53	1,007.18	9.00	8.66	2.86
7,200.00	72.10	174.96	6,850.28	-1,001.63	1,027.56	1,099.63	9.00	8.71	2.45
7,300.00	80.84	177.18	6,873.65	-1,098.53	1,034.18	1,196.71	9.00	8.74	2.22
7,400.00	89.59	179.29	6,881.98	-1,198.03	1,037.24	1,296.02	9.00	8.75	2.11
7,404.67	90.00	179.39	6,882.00	-1,202.70	1,037.29	1,300.66	9.00	8.75	2.09
7,500.00	90.00	179.39	6,882.00	-1,298.03	1,038.30	1,395.61	0.00	0.00	0.00
7,600.00	90.00	179.39	6,882.00	-1,398.02	1,039.37	1,495.21	0.00	0.00	0.00
7,700.00	90.00	179.39	6,882.00	-1,498.02	1,040.43	1,594.81	0.00	0.00	0.00
7,800.00	90.00	179.39	6,882.00	-1,598.01	1,041.49	1,694.40	0.00	0.00	0.00
7,900.00	90.00	179.39	6,882.00	-1,698.00	1,042.55	1,794.00	0.00	0.00	0.00
8,000.00	90.00	179.39	6,882.00	-1,798.00	1,043.62	1,893.60	0.00	0.00	0.00
8,100.00	90.00	179.39	6,882.00	-1,897.99	1,044.68	1,993.19	0.00	0.00	0.00
8,200.00	90.00	179.39	6,882.00	-1,997.99	1,045.74	2,092.79	0.00	0.00	0.00
8,300.00	90.00	179.39	6,882.00	-2,097.98	1,046.81	2,192.39	0.00	0.00	0.00
8,400.00	90.00	179.39	6,882.00	-2,197.98	1,047.87	2,291.98	0.00	0.00	0.00
8,500.00	90.00	179.39	6,882.00	-2,297.97	1,048.93	2,391.58	0.00	0.00	0.00
8,600.00	90.00	179.39	6,882.00	-2,397.96	1,050.00	2,491.18	0.00	0.00	0.00
8,700.00	90.00	179.39	6,882.00	-2,497.96	1,051.06	2,590.77	0.00	0.00	0.00
8,800.00	90.00	179.39	6,882.00	-2,597.95	1,052.12	2,690.37	0.00	0.00	0.00
8,900.00	90.00	179.39	6,882.00	-2,697.95	1,053.18	2,789.97	0.00	0.00	0.00
9,000.00	90.00	179.39	6,882.00	-2,797.94	1,054.25	2,889.57	0.00	0.00	0.00
9,100.00	90.00	179.39	6,882.00	-2,897.94	1,055.31	2,989.16	0.00	0.00	0.00
9,200.00	90.00	179.39	6,882.00	-2,997.93	1,056.37	3,088.76	0.00	0.00	0.00
9,300.00	90.00	179.39	6,882.00	-3,097.93	1,057.44	3,188.36	0.00	0.00	0.00

# Noble Energy, Inc.

## Survey Report

<b>Company:</b>	Northern Region - DJ Basin	<b>Local Co-ordinate Reference:</b>	Well Guttersen D34-749
<b>Project:</b>	Mustang	<b>TVD Reference:</b>	KB @ 4855.00ft
<b>Site:</b>	D Section 22	<b>MD Reference:</b>	KB @ 4855.00ft
<b>Well:</b>	Guttersen D34-749	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Plan 1	<b>Database:</b>	EDMP

### 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)
9,400.00	90.00	179.39	6,882.00	-3,197.92	1,058.50	3,287.95	0.00	0.00	0.00
9,500.00	90.00	179.39	6,882.00	-3,297.91	1,059.56	3,387.55	0.00	0.00	0.00
9,600.00	90.00	179.39	6,882.00	-3,397.91	1,060.63	3,487.15	0.00	0.00	0.00
9,700.00	90.00	179.39	6,882.00	-3,497.90	1,061.69	3,586.74	0.00	0.00	0.00
9,800.00	90.00	179.39	6,882.00	-3,597.90	1,062.75	3,686.34	0.00	0.00	0.00
9,900.00	90.00	179.39	6,882.00	-3,697.89	1,063.81	3,785.94	0.00	0.00	0.00
10,000.00	90.00	179.39	6,882.00	-3,797.89	1,064.88	3,885.53	0.00	0.00	0.00
10,100.00	90.00	179.39	6,882.00	-3,897.88	1,065.94	3,985.13	0.00	0.00	0.00
10,200.00	90.00	179.39	6,882.00	-3,997.87	1,067.00	4,084.73	0.00	0.00	0.00
10,300.00	90.00	179.39	6,882.00	-4,097.87	1,068.07	4,184.32	0.00	0.00	0.00
10,400.00	90.00	179.39	6,882.00	-4,197.86	1,069.13	4,283.92	0.00	0.00	0.00
10,500.00	90.00	179.39	6,882.00	-4,297.86	1,070.19	4,383.52	0.00	0.00	0.00
10,600.00	90.00	179.39	6,882.00	-4,397.85	1,071.26	4,483.11	0.00	0.00	0.00
10,700.00	90.00	179.39	6,882.00	-4,497.85	1,072.32	4,582.71	0.00	0.00	0.00
10,800.00	90.00	179.39	6,882.00	-4,597.84	1,073.38	4,682.31	0.00	0.00	0.00
10,900.00	90.00	179.39	6,882.00	-4,697.83	1,074.45	4,781.90	0.00	0.00	0.00
11,000.00	90.00	179.39	6,882.00	-4,797.83	1,075.51	4,881.50	0.00	0.00	0.00
11,100.00	90.00	179.39	6,882.00	-4,897.82	1,076.57	4,981.10	0.00	0.00	0.00
11,200.00	90.00	179.39	6,882.00	-4,997.82	1,077.63	5,080.70	0.00	0.00	0.00
11,300.00	90.00	179.39	6,882.00	-5,097.81	1,078.70	5,180.29	0.00	0.00	0.00
11,400.00	90.00	179.39	6,882.00	-5,197.81	1,079.76	5,279.89	0.00	0.00	0.00
11,500.00	90.00	179.39	6,882.00	-5,297.80	1,080.82	5,379.49	0.00	0.00	0.00
11,600.00	90.00	179.39	6,882.00	-5,397.80	1,081.89	5,479.08	0.00	0.00	0.00
11,700.00	90.00	179.39	6,882.00	-5,497.79	1,082.95	5,578.68	0.00	0.00	0.00
11,800.00	90.00	179.39	6,882.00	-5,597.78	1,084.01	5,678.28	0.00	0.00	0.00
11,900.00	90.00	179.39	6,882.00	-5,697.78	1,085.08	5,777.87	0.00	0.00	0.00
12,000.00	90.00	179.39	6,882.00	-5,797.77	1,086.14	5,877.47	0.00	0.00	0.00
12,100.00	90.00	179.39	6,882.00	-5,897.77	1,087.20	5,977.07	0.00	0.00	0.00
12,200.00	90.00	179.39	6,882.00	-5,997.76	1,088.26	6,076.66	0.00	0.00	0.00
12,300.00	90.00	179.39	6,882.00	-6,097.76	1,089.33	6,176.26	0.00	0.00	0.00
12,400.00	90.00	179.39	6,882.00	-6,197.75	1,090.39	6,275.86	0.00	0.00	0.00
12,500.00	90.00	179.39	6,882.00	-6,297.74	1,091.45	6,375.45	0.00	0.00	0.00
12,600.00	90.00	179.39	6,882.00	-6,397.74	1,092.52	6,475.05	0.00	0.00	0.00
12,700.00	90.00	179.39	6,882.00	-6,497.73	1,093.58	6,574.65	0.00	0.00	0.00
12,800.00	90.00	179.39	6,882.00	-6,597.73	1,094.64	6,674.24	0.00	0.00	0.00
12,900.00	90.00	179.39	6,882.00	-6,697.72	1,095.71	6,773.84	0.00	0.00	0.00
13,000.00	90.00	179.39	6,882.00	-6,797.72	1,096.77	6,873.44	0.00	0.00	0.00
13,100.00	90.00	179.39	6,882.00	-6,897.71	1,097.83	6,973.04	0.00	0.00	0.00
13,200.00	90.00	179.39	6,882.00	-6,997.70	1,098.90	7,072.63	0.00	0.00	0.00
13,300.00	90.00	179.39	6,882.00	-7,097.70	1,099.96	7,172.23	0.00	0.00	0.00
13,400.00	90.00	179.39	6,882.00	-7,197.69	1,101.02	7,271.83	0.00	0.00	0.00
13,500.00	90.00	179.39	6,882.00	-7,297.69	1,102.08	7,371.42	0.00	0.00	0.00
13,600.00	90.00	179.39	6,882.00	-7,397.68	1,103.15	7,471.02	0.00	0.00	0.00

# Noble Energy, Inc.

## Survey Report

<b>Company:</b>	Northern Region - DJ Basin	<b>Local Co-ordinate Reference:</b>	Well Guttersen D34-749
<b>Project:</b>	Mustang	<b>TVD Reference:</b>	KB @ 4855.00ft
<b>Site:</b>	D Section 22	<b>MD Reference:</b>	KB @ 4855.00ft
<b>Well:</b>	Guttersen D34-749	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Plan 1	<b>Database:</b>	EDMP

### 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)
13,700.00	90.00	179.39	6,882.00	-7,497.68	1,104.21	7,570.62	0.00	0.00	0.00
13,800.00	90.00	179.39	6,882.00	-7,597.67	1,105.27	7,670.21	0.00	0.00	0.00
13,900.00	90.00	179.39	6,882.00	-7,697.67	1,106.34	7,769.81	0.00	0.00	0.00
14,000.00	90.00	179.39	6,882.00	-7,797.66	1,107.40	7,869.41	0.00	0.00	0.00
14,100.00	90.00	179.39	6,882.00	-7,897.65	1,108.46	7,969.00	0.00	0.00	0.00
14,200.00	90.00	179.39	6,882.00	-7,997.65	1,109.53	8,068.60	0.00	0.00	0.00
14,300.00	90.00	179.39	6,882.00	-8,097.64	1,110.59	8,168.20	0.00	0.00	0.00
14,400.00	90.00	179.39	6,882.00	-8,197.64	1,111.65	8,267.79	0.00	0.00	0.00
14,500.00	90.00	179.39	6,882.00	-8,297.63	1,112.71	8,367.39	0.00	0.00	0.00
14,600.00	90.00	179.39	6,882.00	-8,397.63	1,113.78	8,466.99	0.00	0.00	0.00
14,700.00	90.00	179.39	6,882.00	-8,497.62	1,114.84	8,566.58	0.00	0.00	0.00
14,800.00	90.00	179.39	6,882.00	-8,597.61	1,115.90	8,666.18	0.00	0.00	0.00
14,900.00	90.00	179.39	6,882.00	-8,697.61	1,116.97	8,765.78	0.00	0.00	0.00
15,000.00	90.00	179.39	6,882.00	-8,797.60	1,118.03	8,865.37	0.00	0.00	0.00
15,100.00	90.00	179.39	6,882.00	-8,897.60	1,119.09	8,964.97	0.00	0.00	0.00
15,200.00	90.00	179.39	6,882.00	-8,997.59	1,120.16	9,064.57	0.00	0.00	0.00
15,300.00	90.00	179.39	6,882.00	-9,097.59	1,121.22	9,164.17	0.00	0.00	0.00
15,400.00	90.00	179.39	6,882.00	-9,197.58	1,122.28	9,263.76	0.00	0.00	0.00
15,500.00	90.00	179.39	6,882.00	-9,297.58	1,123.34	9,363.36	0.00	0.00	0.00
15,600.00	90.00	179.39	6,882.00	-9,397.57	1,124.41	9,462.96	0.00	0.00	0.00
15,700.00	90.00	179.39	6,882.00	-9,497.56	1,125.47	9,562.55	0.00	0.00	0.00
15,800.00	90.00	179.39	6,882.00	-9,597.56	1,126.53	9,662.15	0.00	0.00	0.00
15,900.00	90.00	179.39	6,882.00	-9,697.55	1,127.60	9,761.75	0.00	0.00	0.00
16,000.00	90.00	179.39	6,882.00	-9,797.55	1,128.66	9,861.34	0.00	0.00	0.00
16,100.00	90.00	179.39	6,882.00	-9,897.54	1,129.72	9,960.94	0.00	0.00	0.00
16,200.00	90.00	179.39	6,882.00	-9,997.54	1,130.79	10,060.54	0.00	0.00	0.00
16,300.00	90.00	179.39	6,882.00	-10,097.53	1,131.85	10,160.13	0.00	0.00	0.00
16,400.00	90.00	179.39	6,882.00	-10,197.52	1,132.91	10,259.73	0.00	0.00	0.00
16,500.00	90.00	179.39	6,882.00	-10,297.52	1,133.98	10,359.33	0.00	0.00	0.00
16,600.00	90.00	179.39	6,882.00	-10,397.51	1,135.04	10,458.92	0.00	0.00	0.00
16,700.00	90.00	179.39	6,882.00	-10,497.51	1,136.10	10,558.52	0.00	0.00	0.00
16,800.00	90.00	179.39	6,882.00	-10,597.50	1,137.16	10,658.12	0.00	0.00	0.00
16,900.00	90.00	179.39	6,882.00	-10,697.50	1,138.23	10,757.71	0.00	0.00	0.00
17,000.00	90.00	179.39	6,882.00	-10,797.49	1,139.29	10,857.31	0.00	0.00	0.00
17,100.00	90.00	179.39	6,882.00	-10,897.48	1,140.35	10,956.91	0.00	0.00	0.00
17,200.00	90.00	179.39	6,882.00	-10,997.48	1,141.42	11,056.51	0.00	0.00	0.00
17,300.00	90.00	179.39	6,882.00	-11,097.47	1,142.48	11,156.10	0.00	0.00	0.00
17,400.00	90.00	179.39	6,882.00	-11,197.47	1,143.54	11,255.70	0.00	0.00	0.00
17,500.00	90.00	179.39	6,882.00	-11,297.46	1,144.61	11,355.30	0.00	0.00	0.00
17,564.93	90.00	179.39	6,882.00	-11,362.39	1,145.30	11,419.97	0.00	0.00	0.00

# Noble Energy, Inc.

## Survey Report

<b>Company:</b>	Northern Region - DJ Basin	<b>Local Co-ordinate Reference:</b>	Well Guttersen D34-749
<b>Project:</b>	Mustang	<b>TVD Reference:</b>	KB @ 4855.00ft
<b>Site:</b>	D Section 22	<b>MD Reference:</b>	KB @ 4855.00ft
<b>Well:</b>	Guttersen D34-749	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Plan 1	<b>Database:</b>	EDMP

Design Targets									
Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
Guttersen State D34-749 - plan hits target center - Point	0.00	0.00	0.00	0.00	0.00	1,319,483.03	3,267,753.13	40.2064050	-104.5413430
Guttersen State D34-749 - plan misses target center by 2.24ft at 6500.52ft MD (6355.73 TVD, -574.66 N, 904.67 E) - Point	0.00	0.00	6,356.08	-575.34	902.57	1,318,907.69	3,268,655.70	40.2047989	-104.5381340
Guttersen State D34-749 - plan hits target center - Point	0.00	0.00	6,882.00	-11,362.39	1,145.30	1,308,120.66	3,268,898.42	40.1751817	-104.5376842
Guttersen State D34-749 - plan hits target center - Point	0.00	0.00	6,882.00	-1,202.70	1,037.29	1,318,280.33	3,268,790.41	40.2030728	-104.5376761

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

# **Northern Region - DJ Basin**

**Mustang**

**D Section 22**

**Guttersen D34-749**

**Wellbore #1**

**Plan 1**

## **Anticollision Summary Report**

**13 August, 2018**

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

<b>Company:</b>	Northern Region - DJ Basin	<b>Local Co-ordinate Reference:</b>	Well Guttersten D34-749
<b>Project:</b>	Mustang	<b>TVD Reference:</b>	KB @ 4855.00ft
<b>Reference Site:</b>	D Section 22	<b>MD Reference:</b>	KB @ 4855.00ft
<b>Site Error:</b>	0.00 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Guttersten D34-749	<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>	Wellbore #1	<b>Database:</b>	EDMP
<b>Reference Design:</b>	Plan 1	<b>Offset TVD Reference:</b>	Offset Datum

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

<b>Survey Tool Program</b>	<b>Date</b>	8/2/2018		
<b>From (ft)</b>	<b>To (ft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>
0.00	17,564.39	Plan 1 (Wellbore #1)	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						
D Section 21						
Casey Blue D 21-11 (PR) - Wellbore #1 - No Surveys	2,200.00	2,159.00	4,949.19	4,898.36	97.361	CC
Casey Blue D 21-11 (PR) - Wellbore #1 - No Surveys	2,300.00	2,258.98	4,950.83	4,897.65	93.100	ES
Casey Blue D 21-11 (PR) - Wellbore #1 - No Surveys	7,150.00	6,792.12	6,191.29	6,029.79	38.335	SF
Casey Blue D21-13 (PR) - Wellbore #1 - Gyro Surveys	100.00	26.07	6,159.69	6,159.52	10,000.000	CC
Casey Blue D21-13 (PR) - Wellbore #1 - Gyro Surveys	1,900.00	1,791.22	6,167.05	6,154.37	486.657	ES
Casey Blue D21-13 (PR) - Wellbore #1 - Gyro Surveys	10,500.00	6,999.34	8,209.07	8,147.62	133.599	SF
Casey Blue D21-14 (SI) - Wellbore #1 - Gyro Surveys	401.84	360.85	4,741.15	4,738.86	2,065.892	CC
Casey Blue D21-14 (SI) - Wellbore #1 - Gyro Surveys	1,900.00	1,825.17	4,747.35	4,734.57	371.330	ES
Casey Blue D21-14 (SI) - Wellbore #1 - Gyro Surveys	8,600.00	6,876.78	6,101.17	6,047.80	114.311	SF
Casey Blue D21-3J (PR) - Wellbore #1 - Gyro Surveys	1,556.24	1,505.26	5,924.71	5,914.27	567.502	CC
Casey Blue D21-3J (PR) - Wellbore #1 - Gyro Surveys	2,200.00	2,142.22	5,925.78	5,910.82	396.012	ES
Casey Blue D21-3J (PR) - Wellbore #1 - Gyro Surveys	8,700.00	6,914.34	7,565.17	7,511.72	141.525	SF
Guttersten 21-31 (SI) - Wellbore #1 - Gyro Surveys	2,205.81	2,153.71	5,005.97	4,990.95	333.235	CC, ES
Guttersten 21-31 (SI) - Wellbore #1 - Gyro Surveys	6,950.00	6,698.29	6,257.46	6,209.38	130.152	SF
Guttersten 21-42 (SI) - Wellbore #1 - Gyro Surveys	100.00	47.29	3,159.83	3,159.62	10,000.000	CC
Guttersten 21-42 (SI) - Wellbore #1 - Gyro Surveys	2,231.21	2,219.77	3,161.64	3,146.30	206.085	ES
Guttersten 21-42 (SI) - Wellbore #1 - Gyro Surveys	6,800.00	6,591.45	4,310.78	4,263.57	91.308	SF
Guttersten 32-21 (PR) - Wellbore #1 - No Surveys	2,200.00	2,163.00	4,164.54	4,113.62	81.796	CC
Guttersten 32-21 (PR) - Wellbore #1 - No Surveys	2,300.00	2,262.98	4,166.28	4,113.03	78.229	ES
Guttersten 32-21 (PR) - Wellbore #1 - No Surveys	6,950.00	6,693.70	5,428.13	5,269.39	34.195	SF
Guttersten 33-21 (PR) - Wellbore #1 - Gyro Surveys	395.46	360.46	3,647.67	3,645.40	1,606.812	CC
Guttersten 33-21 (PR) - Wellbore #1 - Gyro Surveys	2,000.00	1,939.63	3,654.02	3,640.48	269.893	ES
Guttersten 33-21 (PR) - Wellbore #1 - Gyro Surveys	7,100.00	6,800.24	4,882.36	4,833.33	99.581	SF
Guttersten 34-21 (PR) - Wellbore #1 - Gyro Surveys	100.00	59.25	3,534.95	3,534.72	10,000.000	CC
Guttersten 34-21 (PR) - Wellbore #1 - Gyro Surveys	1,300.00	1,241.65	3,538.50	3,529.90	411.798	ES
Guttersten 34-21 (PR) - Wellbore #1 - Gyro Surveys	7,350.00	6,977.05	4,554.62	4,503.97	89.931	SF
Guttersten 41-21 (PR) - Wellbore #1 - Gyro Surveys	100.00	41.51	4,222.43	4,222.23	10,000.000	CC
Guttersten 41-21 (PR) - Wellbore #1 - Gyro Surveys	1,900.00	1,827.25	4,230.76	4,217.97	330.693	ES
Guttersten 41-21 (PR) - Wellbore #1 - Gyro Surveys	6,900.00	6,671.98	5,397.58	5,349.72	112.764	SF
Guttersten 43-21 (PR) - Wellbore #1 - Gyro Surveys	702.64	667.65	2,449.36	2,444.91	551.166	CC
Guttersten 43-21 (PR) - Wellbore #1 - Gyro Surveys	2,200.00	2,152.19	2,454.70	2,439.70	163.699	ES
Guttersten 43-21 (PR) - Wellbore #1 - Gyro Surveys	6,800.00	6,574.64	3,668.35	3,621.13	77.679	SF
Guttersten D21-32D (SI) - Wellbore #1 - MWD Surveys	0.00	0.00	5,175.15			
Guttersten D21-32D (SI) - Wellbore #1 - MWD Surveys	100.00	47.11	5,175.16	5,174.95	10,000.000	ES
Guttersten D21-32D (SI) - Wellbore #1 - MWD Surveys	9,800.00	9,800.00	9,117.99	9,047.56	129.471	SF
Guttersten USX D21-17 (PR) - Wellbore #1 - No Surveys	2,200.00	2,147.00	4,092.07	4,041.48	80.881	CC
Guttersten USX D21-17 (PR) - Wellbore #1 - No Surveys	2,300.00	2,246.98	4,093.77	4,040.83	77.332	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 Guttersten D34-749
<b>Project:</b>	Mustang	<b>TVD Reference:</b>	KB @ 4855.00ft
<b>Reference Site:</b>	D Section 22	<b>MD Reference:</b>	KB @ 4855.00ft
<b>Site Error:</b>	0.00 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Guttersten D34-749	<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>	Wellbore #1	<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
<b>Offset Well - Wellbore - Design</b>						
D Section 21						
Guttersten USX D21-17 (PR) - Wellbore #1 - No Surveys	6,850.00	6,608.50	5,290.75	5,134.05	33.764	SF
Guttersten USX D21-20D (PR) - Wellbore #1 - MWD Surv	785.34	751.00	5,110.60	5,105.61	1,024.257	CC
Guttersten USX D21-20D (PR) - Wellbore #1 - MWD Surv	1,100.00	1,023.87	5,111.49	5,104.32	712.814	ES
Guttersten USX D21-20D (PR) - Wellbore #1 - MWD Surv	7,150.00	7,004.02	6,957.11	6,902.19	126.679	SF
Guttersten USX D21-21D (SI) - Wellbore #1 - MWD Surve	2,664.66	3,466.47	4,840.78	4,815.71	193.142	CC
Guttersten USX D21-21D (SI) - Wellbore #1 - MWD Surve	2,700.00	3,492.06	4,841.02	4,815.68	191.004	ES
Guttersten USX D21-21D (SI) - Wellbore #1 - MWD Surve	6,950.00	6,970.35	5,756.70	5,698.28	98.531	SF
Guttersten USX D21-24D (PR) - Wellbore #1 - MWD Surv	2,977.66	4,116.93	4,666.53	4,641.50	186.421	CC
Guttersten USX D21-24D (PR) - Wellbore #1 - MWD Surv	2,996.52	4,126.48	4,666.60	4,641.46	185.621	ES
Guttersten USX D21-24D (PR) - Wellbore #1 - MWD Surv	7,350.00	7,005.14	5,510.85	5,459.43	107.185	SF
Guttersten USX D21-25 (PR) - Wellbore #1 - MWD Surve	1,214.08	1,180.22	5,135.12	5,126.98	630.969	CC
Guttersten USX D21-25 (PR) - Wellbore #1 - MWD Surve	2,000.00	1,935.77	5,136.98	5,123.33	376.399	ES
Guttersten USX D21-25 (PR) - Wellbore #1 - MWD Surve	7,350.00	6,900.90	6,296.04	6,245.48	124.514	SF
Guttersten USX D21-27D (PR) - Wellbore #1 - MWD Surv	850.92	796.92	4,093.56	4,088.19	763.110	CC
Guttersten USX D21-27D (PR) - Wellbore #1 - MWD Surv	1,000.00	904.26	4,094.08	4,087.81	652.925	ES
Guttersten USX D21-27D (PR) - Wellbore #1 - MWD Surv	6,800.00	6,710.45	6,184.81	6,133.86	121.400	SF
Guttersten USX D21-28D (PR) - Wellbore #1 - MWD Surv	100.00	43.10	4,091.04	4,090.84	10,000.000	CC
Guttersten USX D21-28D (PR) - Wellbore #1 - MWD Surv	300.00	226.49	4,091.64	4,090.39	3,276.674	ES
Guttersten USX D21-28D (PR) - Wellbore #1 - MWD Surv	8,600.00	8,600.00	8,222.34	8,164.07	141.093	SF
Guttersten USX D21-33D (SI) - Wellbore #1 - MWD Surve	100.00	64.24	5,156.89	5,156.65	10,000.000	CC
Guttersten USX D21-33D (SI) - Wellbore #1 - MWD Surve	600.00	534.77	5,158.74	5,155.11	1,422.439	ES
Guttersten USX D21-33D (SI) - Wellbore #1 - MWD Surve	12,100.00	3,899.71	9,954.54	9,899.11	179.572	SF
Guttersten USX D22-30D (PR) - Wellbore #1 - MWD Surv	2,281.84	2,409.22	4,027.75	4,008.69	211.384	CC
Guttersten USX D22-30D (PR) - Wellbore #1 - MWD Surv	2,300.00	2,420.88	4,027.82	4,008.62	209.753	ES
Guttersten USX D22-30D (PR) - Wellbore #1 - MWD Surv	6,750.00	6,875.81	5,461.52	5,400.58	89.627	SF
Guttersten 18-21 (SI) - Wellbore #1 - Gyro Surveys	2,209.16	2,183.78	6,096.26	6,081.12	402.504	CC, ES
Guttersten 18-21 (SI) - Wellbore #1 - Gyro Surveys	7,000.00	6,781.67	7,401.18	7,352.81	153.008	SF
HSR Guttersten B 5-21 (PR) - Wellbore #1 - Gyro Survey	453.98	400.00	6,530.20	6,527.58	2,489.995	CC
HSR Guttersten B 5-21 (PR) - Wellbore #1 - Gyro Survey	2,100.00	2,008.28	6,533.37	6,519.24	462.346	ES
HSR Guttersten B 5-21 (PR) - Wellbore #1 - Gyro Survey	6,950.00	6,715.74	7,745.14	7,696.87	160.482	SF
HSR Guttersten 4-21 (PR) - Wellbore #1 - Gyro Surveys	2,146.03	2,100.00	7,074.38	7,059.62	479.170	CC
HSR Guttersten 4-21 (PR) - Wellbore #1 - Gyro Surveys	2,201.50	2,159.30	7,074.39	7,059.21	466.304	ES
HSR Guttersten 4-21 (PR) - Wellbore #1 - Gyro Surveys	7,100.00	6,798.36	8,444.28	8,395.49	173.049	SF
HSR-Guttersten 3-21 (SI) - Wellbore #1 - Gyro Surveys	2,221.33	2,215.98	5,990.76	5,975.46	391.499	CC, ES
HSR-Guttersten 3-21 (SI) - Wellbore #1 - Gyro Surveys	6,900.00	7,189.51	7,099.27	7,048.12	138.790	SF
HSR-Guttersten 6-21 (SI) - Wellbore #1 - Gyro Surveys	785.29	733.31	5,324.06	5,319.09	1,070.565	CC
HSR-Guttersten 6-21 (SI) - Wellbore #1 - Gyro Surveys	2,100.00	2,011.93	5,326.31	5,312.17	376.550	ES
HSR-Guttersten 6-21 (SI) - Wellbore #1 - Gyro Surveys	6,950.00	6,740.53	6,535.47	6,487.25	135.518	SF
Two E Ranch 1-21C (SI) - Wellbore #1 - Gyro Surveys	410.83	374.84	2,576.83	2,574.45	1,083.955	CC
Two E Ranch 1-21C (SI) - Wellbore #1 - Gyro Surveys	1,600.00	1,547.07	2,582.84	2,572.10	240.596	ES
Two E Ranch 1-21C (SI) - Wellbore #1 - Gyro Surveys	7,250.00	6,953.25	3,880.10	3,829.89	77.283	SF
Vogler State D21-720 - Wellbore #1 - Plan 1	2,000.00	1,995.00	2,144.79	2,130.94	154.804	CC
Vogler State D21-720 - Wellbore #1 - Plan 1	2,200.00	2,178.16	2,145.56	2,130.38	141.331	ES
Vogler State D21-720 - Wellbore #1 - Plan 1	7,700.00	6,921.92	3,257.91	3,205.17	61.773	SF
Vogler State D21-731 - Wellbore #1 - Plan 1	6,081.17	7,925.60	3,824.27	3,774.48	76.809	CC
Vogler State D21-731 - Wellbore #1 - Plan 1	6,100.00	7,922.81	3,824.31	3,774.45	76.698	ES
Vogler State D21-731 - Wellbore #1 - Plan 1	7,800.00	7,350.00	3,998.32	3,944.29	73.998	SF
Vogler State D21-740 - Wellbore #1 - Plan 1	2,200.00	2,200.00	4,035.43	4,020.13	263.638	CC
Vogler State D21-740 - Wellbore #1 - Plan 1	2,300.00	2,359.56	4,036.14	4,019.96	249.421	ES
Vogler State D21-740 - Wellbore #1 - Plan 1	8,500.00	7,000.00	4,710.66	4,655.07	84.736	SF
Vogler State D21-750 - Wellbore #1 - Plan 1	2,000.00	1,999.00	4,072.43	4,058.56	293.630	CC
Vogler State D21-750 - Wellbore #1 - Plan 1	2,200.00	2,179.47	4,072.90	4,057.72	268.209	ES
Vogler State D21-750 - Wellbore #1 - Plan 1	9,300.00	6,600.00	5,480.23	5,423.18	96.068	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 D34-749
<b>Project:</b>	Mustang	<b>TVD Reference:</b>	KB @ 4855.00ft
<b>Reference Site:</b>	D Section 22	<b>MD Reference:</b>	KB @ 4855.00ft
<b>Site Error:</b>	0.00 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Guttersten D34-749	<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>	Wellbore #1	<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 21						
Vogler State D21-760 - Wellbore #1 - Plan 1	5,722.70	8,023.61	5,702.76	5,654.53	118.236	CC, ES
Vogler State D21-760 - Wellbore #1 - Plan 1	9,700.00	7,050.00	6,323.28	6,263.03	104.958	SF
Vogler State D21-770 - Wellbore #1 - Plan 1	2,200.00	2,167.00	5,796.21	5,781.02	381.620	CC, ES
Vogler State D21-770 - Wellbore #1 - Plan 1	10,100.00	6,700.00	7,039.58	6,978.56	115.359	SF
Vogler State D21-780 - Wellbore #1 - Plan 1	2,004.79	1,969.79	5,833.24	5,819.46	423.259	CC
Vogler State D21-780 - Wellbore #1 - Plan 1	2,200.00	2,116.83	5,833.92	5,818.94	389.358	ES
Vogler State D21-780 - Wellbore #1 - Plan 1	11,200.00	6,500.00	8,006.96	7,941.49	122.300	SF
Vogler State D21-790 - Wellbore #1 - Plan 1	2,200.00	2,205.00	2,106.91	2,091.59	137.485	CC, ES
Vogler State D21-790 - Wellbore #1 - Plan 1	6,850.00	7,552.00	2,548.90	2,497.79	49.870	SF
Vogler State D33-711 - Wellbore #1 - Plan 1	2,514.22	2,701.17	2,080.91	2,062.98	116.045	CC, ES
Vogler State D33-711 - Wellbore #1 - Plan 1	17,564.94	17,485.93	2,620.20	2,426.69	13.541	SF
Vogler State D33-718 - Wellbore #1 - Plan 1	2,200.00	2,206.00	2,137.99	2,122.67	139.481	CC, ES
Vogler State D33-718 - Wellbore #1 - Plan 1	17,564.94	17,368.32	3,248.21	3,056.07	16.906	SF
Vogler State D33-728 - Wellbore #1 - Plan 1	5,935.02	6,875.72	3,714.24	3,666.93	78.518	CC
Vogler State D33-728 - Wellbore #1 - Plan 1	6,000.00	6,915.45	3,714.49	3,666.72	77.761	ES
Vogler State D33-728 - Wellbore #1 - Plan 1	17,564.94	17,618.25	3,909.88	3,716.66	20.235	SF
Vogler State D33-738 - Wellbore #1 - Plan 1	2,200.00	2,204.00	4,034.08	4,018.76	263.303	CC, ES
Vogler State D33-738 - Wellbore #1 - Plan 1	17,564.94	17,266.69	4,565.29	4,374.22	23.894	SF
Vogler State D33-752 - Wellbore #1 - Plan 1	2,200.00	2,204.00	4,071.06	4,055.74	265.716	CC, ES
Vogler State D33-752 - Wellbore #1 - Plan 1	17,564.94	17,472.55	5,220.26	5,026.77	26.980	SF
Vogler State D33-759 - Wellbore #1 - Plan 1	2,964.61	4,216.34	5,576.99	5,552.15	224.512	CC
Vogler State D33-759 - Wellbore #1 - Plan 1	2,996.52	4,248.24	5,577.14	5,552.07	222.414	ES
Vogler State D33-759 - Wellbore #1 - Plan 1	17,564.94	17,537.23	5,871.07	5,678.12	30.428	SF
Vogler State D33-769 - Wellbore #1 - Plan 1	2,200.00	2,171.00	5,796.02	5,780.82	381.247	CC, ES
Vogler State D33-769 - Wellbore #1 - Plan 1	17,564.94	17,456.23	6,531.06	6,337.97	33.824	SF
Vogler State D33-779 - Wellbore #1 - Plan 1	2,000.00	1,971.00	5,833.06	5,819.29	423.641	CC
Vogler State D33-779 - Wellbore #1 - Plan 1	2,100.00	2,045.79	5,833.22	5,818.83	405.454	ES
Vogler State D33-779 - Wellbore #1 - Plan 1	17,564.94	17,439.23	7,191.01	6,997.69	37.198	SF

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

<b>Company:</b>	Northern Region - DJ Basin	<b>Local Co-ordinate Reference:</b>	Well Guttersten D34-749
<b>Project:</b>	Mustang	<b>TVD Reference:</b>	KB @ 4855.00ft
<b>Reference Site:</b>	D Section 22	<b>MD Reference:</b>	KB @ 4855.00ft
<b>Site Error:</b>	0.00 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Guttersten D34-749	<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>	Wellbore #1	<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 22						
Dalbey D22-05 (SI) - Wellbore #1 - Gyro Surveys	100.00	41.48	2,425.73	2,425.53	10,000.000	CC
Dalbey D22-05 (SI) - Wellbore #1 - Gyro Surveys	800.00	733.73	2,429.41	2,424.37	482.813	ES
Dalbey D22-05 (SI) - Wellbore #1 - Gyro Surveys	6,800.00	6,610.59	3,528.04	3,480.66	74.459	SF
O'SH D 22-11 (SI) - Wellbore #1 - No Surveys	2,200.00	2,174.00	744.32	693.18	14.556	CC
O'SH D 22-11 (SI) - Wellbore #1 - No Surveys	2,400.00	2,373.84	746.95	691.14	13.384	ES
O'SH D 22-11 (SI) - Wellbore #1 - No Surveys	5,500.00	5,367.63	1,277.86	1,150.95	10.069	SF
Dalbey D 22-04 (PR) - Wellbore #1 - Gyro Surveys	674.92	615.94	3,815.11	3,810.95	915.204	CC
Dalbey D 22-04 (PR) - Wellbore #1 - Gyro Surveys	1,000.00	922.33	3,815.94	3,809.54	596.334	ES
Dalbey D 22-04 (PR) - Wellbore #1 - Gyro Surveys	6,750.00	6,557.78	4,838.66	4,791.51	102.625	SF
Dalbey D 22-3 (SI) - Wellbore #1 - Gyro Surveys	204.47	155.48	3,780.32	3,779.45	4,338.785	CC
Dalbey D 22-3 (SI) - Wellbore #1 - Gyro Surveys	2,300.00	2,253.14	3,787.72	3,772.02	241.245	ES
Dalbey D 22-3 (SI) - Wellbore #1 - Gyro Surveys	6,800.00	6,577.89	4,452.81	4,405.17	93.461	SF
Dalbey D22-6 (SI) - Wellbore #1 - Gyro Surveys	241.11	192.11	2,619.59	2,618.45	2,314.795	CC
Dalbey D22-6 (SI) - Wellbore #1 - Gyro Surveys	1,800.00	1,731.13	2,622.24	2,610.15	216.809	ES
Dalbey D22-6 (SI) - Wellbore #1 - Gyro Surveys	6,750.00	6,515.91	3,421.32	3,374.24	72.677	SF
Guttersten D 22-18 (SI) - Wellbore #1 - Gyro Surveys	1,995.64	1,954.80	3,176.47	3,162.89	233.782	CC
Guttersten D 22-18 (SI) - Wellbore #1 - Gyro Surveys	2,100.00	2,032.41	3,176.93	3,162.70	223.247	ES
Guttersten D 22-18 (SI) - Wellbore #1 - Gyro Surveys	6,800.00	6,581.42	3,684.42	3,636.62	77.086	SF
Guttersten D34-719 - Wellbore #1 - Plan 1	17,564.94	17,517.73	2,042.94	1,850.02	10.589	CC, ES, SF
Guttersten D34-729 - Wellbore #1 - Plan 1	17,564.94	17,467.02	1,382.89	1,189.58	7.154	CC, ES, SF
Guttersten D34-739 - Wellbore #1 - Plan 1	17,564.94	17,460.38	723.52	530.41	3.747	CC, ES, SF
Guttersten D34-759 - Wellbore #1 - Plan 1	2,200.00	2,200.00	37.43	22.12	2.445	CC, ES
Guttersten D34-759 - Wellbore #1 - Plan 1	2,300.00	2,300.02	38.90	22.89	2.430	SF
Guttersten D34-769 - Wellbore #1 - Plan 1	2,200.00	2,199.00	74.85	59.55	4.891	CC, ES
Guttersten D34-769 - Wellbore #1 - Plan 1	2,300.00	2,298.50	76.62	60.64	4.793	SF
Guttersten D34-779 - Wellbore #1 - Plan 1	2,200.00	2,201.00	112.56	97.25	7.352	CC, ES
Guttersten D34-779 - Wellbore #1 - Plan 1	2,400.00	2,398.84	118.47	101.78	7.096	SF
Guttersten State D 22-22 (SI) - Wellbore #1 - Gyro Survey	6,519.33	6,395.26	2,683.68	2,637.33	57.899	CC, ES
Guttersten State D 22-22 (SI) - Wellbore #1 - Gyro Survey	6,800.00	6,627.59	2,737.62	2,689.30	56.655	SF
Guttersten State D 22-24 (SI) - Wellbore #1 - Gyro Survey	4,761.24	4,607.65	1,052.13	1,019.04	31.796	CC
Guttersten State D 22-24 (SI) - Wellbore #1 - Gyro Survey	4,800.00	4,641.74	1,052.25	1,018.89	31.540	ES
Guttersten State D 22-24 (SI) - Wellbore #1 - Gyro Survey	6,550.00	6,377.96	1,142.99	1,096.60	24.641	SF
Guttersten State D22-730 - Wellbore #1 - Plan 1	7,536.23	6,939.75	1,287.19	1,234.33	24.354	CC, ES
Guttersten State D22-730 - Wellbore #1 - Plan 1	7,600.00	6,918.65	1,288.50	1,235.48	24.300	SF
Guttersten State D22-740 - Wellbore #1 - Plan 1	7,181.02	7,286.29	740.67	688.88	14.302	CC, ES
Guttersten State D22-740 - Wellbore #1 - Plan 1	7,200.00	7,273.84	740.82	689.01	14.298	SF
Guttersten State D22-750 - Wellbore #1 - Plan 1	7,077.72	7,427.91	72.60	19.52	1.368	Level 3, CC, ES, SF
Guttersten State D22-760 - Wellbore #1 - Plan 1	2,491.00	2,485.78	151.61	134.31	8.766	CC
Guttersten State D22-760 - Wellbore #1 - Plan 1	2,500.00	2,494.37	151.62	134.26	8.737	ES
Guttersten State D22-760 - Wellbore #1 - Plan 1	2,700.00	2,685.34	157.02	138.40	8.433	SF
Guttersten State D22-770 - Wellbore #1 - Plan 1	2,200.00	2,199.00	167.71	152.41	10.959	CC, ES
Guttersten State D22-770 - Wellbore #1 - Plan 1	2,400.00	2,388.41	173.12	156.53	10.437	SF
Guttersten State D22-780 - Wellbore #1 - Plan 1	2,000.00	1,999.00	187.44	173.57	13.515	CC, ES
Guttersten State D22-780 - Wellbore #1 - Plan 1	2,200.00	2,186.69	193.83	178.65	12.762	SF
Guttersten State D34-790 - Wellbore #1 - Plan 1	3,500.78	2,948.78	2,377.08	2,355.11	108.202	CC, ES
Guttersten State D34-790 - Wellbore #1 - Plan 1	17,564.94	17,636.91	2,652.32	2,459.31	13.742	SF
OSH D 22-12 (SI) - Wellbore #1 - Gyro Surveys	1,360.98	1,320.99	1,425.00	1,415.91	156.819	CC
OSH D 22-12 (SI) - Wellbore #1 - Gyro Surveys	2,000.00	1,950.65	1,427.43	1,413.86	105.181	ES
OSH D 22-12 (SI) - Wellbore #1 - Gyro Surveys	6,650.00	6,468.27	2,557.23	2,510.99	55.304	SF
OSH D 22-13 (SI) - Wellbore #1 - Gyro Surveys	1,590.23	1,564.28	1,153.34	1,142.58	107.158	CC
OSH D 22-13 (SI) - Wellbore #1 - Gyro Surveys	2,200.00	2,168.75	1,155.24	1,140.19	76.743	ES
OSH D 22-13 (SI) - Wellbore #1 - Gyro Surveys	6,750.00	6,641.54	2,033.46	1,985.98	42.827	SF
OSH D 22-14 (PR) - Wellbore #1 - Gyro Surveys	5,036.45	4,928.67	108.70	73.51	3.088	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 Guttersten D34-749
<b>Project:</b>	Mustang	<b>TVD Reference:</b>	KB @ 4855.00ft
<b>Reference Site:</b>	D Section 22	<b>MD Reference:</b>	KB @ 4855.00ft
<b>Site Error:</b>	0.00 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Guttersten D34-749	<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>	Wellbore #1	<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 22						
Sevendust State D 22-1 (SI) - Wellbore #1 - Gyro Survey	4,671.63	4,570.52	4,812.75	4,780.19	147.789	CC
Sevendust State D 22-1 (SI) - Wellbore #1 - Gyro Survey	4,800.00	4,662.86	4,813.25	4,779.85	144.144	ES
Sevendust State D 22-1 (SI) - Wellbore #1 - Gyro Survey	6,950.00	6,698.92	5,012.19	4,963.14	102.171	SF
Spike ST GWS D 22-07 (SI) - Wellbore #1 - No Surveys	3,199.52	3,148.50	2,631.88	2,557.80	35.528	CC
Spike ST GWS D 22-07 (SI) - Wellbore #1 - No Surveys	4,000.00	3,918.24	2,641.04	2,548.56	28.559	ES
Spike ST GWS D 22-07 (SI) - Wellbore #1 - No Surveys	6,700.00	6,506.89	2,831.64	2,676.76	18.282	SF
Spike ST GWS D 22-08 (SI) - Wellbore #1 - Gyro Survey	6,536.28	6,397.87	3,605.85	3,559.44	77.695	CC
Spike ST GWS D 22-08 (SI) - Wellbore #1 - Gyro Survey	6,550.00	6,414.28	3,605.96	3,559.44	77.509	ES
Spike ST GWS D 22-08 (SI) - Wellbore #1 - Gyro Survey	6,900.00	6,722.68	3,686.77	3,637.72	75.173	SF
Spike ST GWS D 22-09 (PA) - Wellbore #1 - No Surveys	6,605.73	6,436.16	2,879.59	2,726.39	18.797	CC
Spike ST GWS D 22-09 (PA) - Wellbore #1 - No Surveys	6,650.00	6,476.60	2,880.59	2,726.39	18.681	ES
Spike ST GWS D 22-09 (PA) - Wellbore #1 - No Surveys	6,900.00	6,678.44	2,924.59	2,765.29	18.359	SF
Spike ST GWS D 22-15 (PR) - Wellbore #1 - Gyro Surve	6,675.53	6,492.78	820.50	773.27	17.373	CC, ES
Spike ST GWS D 22-15 (PR) - Wellbore #1 - Gyro Surve	6,800.00	6,599.52	829.00	780.82	17.209	SF
Spike ST GWS D 22-4J (PR) - Wellbore #1 - Gyro Surve	6,780.85	6,622.57	1,917.87	1,869.92	39.996	CC, ES
Spike ST GWS D 22-4J (PR) - Wellbore #1 - Gyro Surve	7,050.00	6,799.90	1,951.80	1,902.02	39.212	SF
Spike State D22-1J (PA) - Wellbore #1 - Gyro Surveys	3,552.90	3,496.31	3,652.91	3,628.46	149.391	CC
Spike State D22-1J (PA) - Wellbore #1 - Gyro Surveys	3,900.00	3,835.13	3,653.53	3,626.58	135.566	ES
Spike State D22-1J (PA) - Wellbore #1 - Gyro Surveys	6,800.00	6,648.31	3,824.99	3,776.74	79.263	SF
Spike State GWS D 22-10 (PA) - Wellbore #1 - Gyro Sur	5,212.84	5,055.67	1,704.48	1,668.09	46.841	CC
Spike State GWS D 22-10 (PA) - Wellbore #1 - Gyro Sur	5,900.00	5,759.21	1,706.32	1,664.72	41.016	ES
Spike State GWS D 22-10 (PA) - Wellbore #1 - Gyro Sur	6,650.00	6,471.73	1,739.13	1,692.04	36.925	SF
Spike State GWS D 22-2 (PR) - Wellbore #1 - Gyro Surv	1,685.63	1,644.66	4,105.31	4,093.93	360.813	CC
Spike State GWS D 22-2 (PR) - Wellbore #1 - Gyro Surv	2,300.00	2,264.99	4,106.46	4,090.73	261.021	ES
Spike State GWS D 22-2 (PR) - Wellbore #1 - Gyro Surv	6,800.00	6,589.76	4,562.11	4,514.20	95.219	SF

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

<b>Company:</b>	Northern Region - DJ Basin	<b>Local Co-ordinate Reference:</b>	Well Guttersen D34-749
<b>Project:</b>	Mustang	<b>TVD Reference:</b>	KB @ 4855.00ft
<b>Reference Site:</b>	D Section 22	<b>MD Reference:</b>	KB @ 4855.00ft
<b>Site Error:</b>	0.00 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Guttersen D34-749	<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>	Wellbore #1	<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 23						
Guttersen 23-20 (SI) - Wellbore #1 - Gyro Surveys	6,646.11	6,481.24	4,752.48	4,705.43	101.008	CC
Guttersen 23-20 (SI) - Wellbore #1 - Gyro Surveys	6,650.00	6,484.56	4,752.49	4,705.41	100.948	ES
Guttersen 23-20 (SI) - Wellbore #1 - Gyro Surveys	7,200.00	6,847.75	4,889.43	4,838.82	96.617	SF
Guttersen 23-32 (SI) - Wellbore #1 - Gyro Surveys	6,693.61	6,436.02	6,894.09	6,847.02	146.454	CC
Guttersen 23-32 (SI) - Wellbore #1 - Gyro Surveys	6,700.00	6,439.56	6,894.11	6,847.00	146.330	ES
Guttersen 23-32 (SI) - Wellbore #1 - Gyro Surveys	10,100.00	10,100.00	8,729.78	8,657.33	120.499	SF
Guttersen 23-41 (PR) - Wellbore #1 - Gyro Surveys	6,648.38	6,368.93	8,529.29	8,482.63	182.768	CC
Guttersen 23-41 (PR) - Wellbore #1 - Gyro Surveys	6,650.00	6,370.15	8,529.29	8,482.61	182.724	ES
Guttersen 23-41 (PR) - Wellbore #1 - Gyro Surveys	8,800.00	6,700.00	9,591.66	9,535.99	172.266	SF
Guttersen 31-23 (PR) - Wellbore #1 - Gyro Surveys	6,602.87	6,359.76	7,387.40	7,340.89	158.812	CC, ES
Guttersen 31-23 (PR) - Wellbore #1 - Gyro Surveys	7,300.00	6,819.88	7,605.49	7,554.62	149.492	SF
Guttersen 42-23 (PR) - Wellbore #1 - Gyro Surveys	6,734.31	6,449.93	7,925.06	7,877.83	167.798	CC
Guttersen 42-23 (PR) - Wellbore #1 - Gyro Surveys	6,750.00	6,460.13	7,925.15	7,877.82	167.433	ES
Guttersen 42-23 (PR) - Wellbore #1 - Gyro Surveys	9,900.00	6,804.12	9,414.98	9,353.84	153.999	SF
Guttersen USX D 23-17 (PR) - Wellbore #1 - Gyro Surveys	6,642.66	6,276.59	7,549.17	7,502.82	162.861	CC
Guttersen USX D 23-17 (PR) - Wellbore #1 - Gyro Surveys	6,650.00	6,280.03	7,549.20	7,502.80	162.709	ES
Guttersen USX D 23-17 (PR) - Wellbore #1 - Gyro Surveys	7,100.00	7,100.00	7,636.77	7,585.64	149.362	SF
Parker Blue D 23-09 (SI) - Wellbore #1 - Gyro Surveys	6,979.47	6,690.28	7,721.15	7,672.24	157.858	CC
Parker Blue D 23-09 (SI) - Wellbore #1 - Gyro Surveys	7,000.00	6,704.13	7,721.26	7,672.22	157.433	ES
Parker Blue D 23-09 (SI) - Wellbore #1 - Gyro Surveys	11,200.00	6,893.43	9,404.33	9,336.19	138.014	SF
Parker Blue D 23-10 (SI) - Wellbore #1 - Gyro Surveys	6,891.70	6,626.41	6,523.37	6,474.97	134.779	CC
Parker Blue D 23-10 (SI) - Wellbore #1 - Gyro Surveys	6,900.00	6,637.77	6,523.39	6,474.91	134.576	ES
Parker Blue D 23-10 (SI) - Wellbore #1 - Gyro Surveys	9,600.00	6,842.19	7,555.68	7,495.32	125.157	SF
Parker Blue D 23-11 (SI) - Wellbore #1 - Gyro Surveys	6,754.18	6,565.70	5,240.48	5,192.76	109.812	CC, ES
Parker Blue D 23-11 (SI) - Wellbore #1 - Gyro Surveys	7,300.00	6,859.87	5,350.16	5,299.19	104.961	SF
Parker Blue D 23-13 (SI) - Wellbore #1 - Gyro Surveys	6,916.87	6,732.13	3,418.17	3,369.36	70.030	CC, ES
Parker Blue D 23-13 (SI) - Wellbore #1 - Gyro Surveys	7,300.00	6,879.48	3,472.07	3,421.15	68.186	SF
Parker Blue D 23-14 (SI) - Wellbore #1 - Gyro Surveys	7,020.70	6,726.53	4,868.75	4,819.56	98.988	CC, ES
Parker Blue D 23-14 (SI) - Wellbore #1 - Gyro Surveys	8,600.00	6,833.97	5,313.97	5,257.89	94.768	SF
Parker Blue D 23-15 (SI) - Wellbore #1 - Gyro Surveys	7,200.22	6,826.69	6,092.61	6,042.65	121.944	CC, ES
Parker Blue D 23-15 (SI) - Wellbore #1 - Gyro Surveys	10,300.00	6,882.21	7,040.20	6,975.71	109.157	SF
Parker Blue D 23-3J (SI) - Wellbore #1 - Gyro Surveys	6,706.41	6,485.91	4,234.17	4,184.25	84.810	CC, ES
Parker Blue D 23-3J (SI) - Wellbore #1 - Gyro Surveys	7,250.00	6,803.37	4,350.27	4,296.38	80.717	SF
Parker Red D 23-05 (PR) - Wellbore #1 - Gyro Surveys	6,586.16	6,458.78	4,498.93	4,452.11	96.097	CC
Parker Red D 23-05 (PR) - Wellbore #1 - Gyro Surveys	6,600.00	6,476.41	4,499.02	4,452.09	95.857	ES
Parker Red D 23-05 (PR) - Wellbore #1 - Gyro Surveys	7,050.00	6,800.00	4,612.14	4,562.22	92.377	SF
Parker Red D 23-2J (SI) - Wellbore #1 - Gyro Surveys	6,608.77	6,508.97	5,375.65	5,328.61	114.287	CC, ES
Parker Red D 23-2J (SI) - Wellbore #1 - Gyro Surveys	7,200.00	6,980.79	5,547.55	5,496.34	108.319	SF
Parker Red D 23-3 (PR) - Wellbore #1 - Gyro Surveys	6,592.83	6,592.83	6,374.84	6,327.52	134.735	CC
Parker Red D 23-3 (PR) - Wellbore #1 - Gyro Surveys	6,600.00	6,615.03	6,374.86	6,327.45	134.456	ES
Parker Red D 23-3 (PR) - Wellbore #1 - Gyro Surveys	7,000.00	6,851.64	6,465.53	6,415.60	129.502	SF
Parker Red D 23-4 (SI) - Wellbore #1 - Gyro Surveys	6,528.02	6,356.98	5,366.59	5,320.29	115.895	CC, ES
Parker Red D 23-4 (SI) - Wellbore #1 - Gyro Surveys	7,050.00	6,753.85	5,529.62	5,479.85	111.100	SF
Two E Ranch 1-23 (SI) - Wellbore #1 - Gyro Surveys	7,059.66	6,722.69	7,149.21	7,099.91	145.023	CC, ES
Two E Ranch 1-23 (SI) - Wellbore #1 - Gyro Surveys	10,900.00	6,834.42	8,538.70	8,471.25	126.588	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 D34-749
<b>Project:</b>	Mustang	<b>TVD Reference:</b>	KB @ 4855.00ft
<b>Reference Site:</b>	D Section 22	<b>MD Reference:</b>	KB @ 4855.00ft
<b>Site Error:</b>	0.00 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Guttersten D34-749	<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>	Wellbore #1	<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
<b>Offset Well - Wellbore - Design</b>						
D Section 26						
Adam Red D 26-11 (PR) - Wellbore #1 - Gyro Surveys	10,486.25	6,793.01	4,498.28	4,431.57	67.426	CC
Adam Red D 26-11 (PR) - Wellbore #1 - Gyro Surveys	10,500.00	6,793.10	4,498.30	4,431.48	67.317	ES
Adam Red D 26-11 (PR) - Wellbore #1 - Gyro Surveys	12,100.00	6,802.87	4,778.98	4,701.28	61.505	SF
Adam Red D 26-12 (PR) - Wellbore #1 - Gyro Surveys	10,471.79	6,916.11	3,295.27	3,221.02	44.377	CC
Adam Red D 26-12 (PR) - Wellbore #1 - Gyro Surveys	10,500.00	6,915.97	3,295.39	3,220.90	44.240	ES
Adam Red D 26-12 (PR) - Wellbore #1 - Gyro Surveys	11,300.00	6,912.00	3,397.76	3,317.41	42.290	SF
Adam Red D 26-13 (PR) - Wellbore #1 - Gyro Surveys	11,618.52	6,900.00	3,469.11	3,394.26	46.347	CC, ES
Adam Red D 26-13 (PR) - Wellbore #1 - Gyro Surveys	12,500.00	6,900.00	3,579.35	3,497.92	43.954	SF
Adam Red D 26-14 (PR) - Wellbore #1 - Gyro Surveys	11,640.37	6,853.31	4,833.64	4,754.04	60.724	CC
Adam Red D 26-14 (PR) - Wellbore #1 - Gyro Surveys	11,700.00	6,854.01	4,834.01	4,753.90	60.348	ES
Adam Red D 26-14 (PR) - Wellbore #1 - Gyro Surveys	13,200.00	6,871.50	5,078.99	4,988.29	55.997	SF
Coors Energy 14-25H (PR) - Wellbore #1 - MWD Survey	11,331.62	5,938.00	8,038.32	7,969.76	117.250	CC
Coors Energy 14-25H (PR) - Wellbore #1 - MWD Survey	11,400.00	5,938.00	8,038.61	7,969.52	116.360	ES
Coors Energy 14-25H (PR) - Wellbore #1 - MWD Survey	15,200.00	5,938.00	8,920.70	8,827.19	95.393	SF
Heyde 1-26 (PR) - Wellbore #1 - Gyro Surveys	8,171.50	6,850.39	6,992.88	6,939.36	130.653	CC
Heyde 1-26 (PR) - Wellbore #1 - Gyro Surveys	8,200.00	6,850.49	6,992.94	6,939.28	130.320	ES
Heyde 1-26 (PR) - Wellbore #1 - Gyro Surveys	12,200.00	6,864.34	8,070.26	7,993.91	105.708	SF
Heyde 26ND (PR) - Wellbore #1 - MWD Surveys	8,528.39	6,924.35	5,427.69	5,370.15	94.324	CC
Heyde 26ND (PR) - Wellbore #1 - MWD Surveys	8,600.00	6,924.45	5,428.17	5,370.15	93.559	ES
Heyde 26ND (PR) - Wellbore #1 - MWD Surveys	11,300.00	6,927.64	6,094.39	6,017.76	79.529	SF
Heyde 26RD (PR) - Wellbore #1 - MWD Surveys	7,362.62	6,857.31	6,701.35	6,648.53	126.852	CC, ES
Heyde 26RD (PR) - Wellbore #1 - MWD Surveys	11,200.00	6,883.57	7,771.27	7,698.59	106.920	SF
Heyde 26VD (PR) - Wellbore #1 - MWD Surveys	8,554.89	7,072.28	7,903.88	7,845.82	136.132	CC
Heyde 26VD (PR) - Wellbore #1 - MWD Surveys	8,600.00	7,072.68	7,904.01	7,845.67	135.475	ES
Heyde 26VD (PR) - Wellbore #1 - MWD Surveys	13,300.00	7,127.00	9,218.72	9,129.48	103.309	SF
Heyde 31-26 (PR) - Wellbore #1 - No Surveys	7,883.24	6,829.99	5,737.16	5,684.93	109.843	CC
Heyde 31-26 (PR) - Wellbore #1 - No Surveys	7,900.00	6,830.00	5,737.19	5,684.89	109.692	ES
Heyde 31-26 (PR) - Wellbore #1 - No Surveys	10,900.00	6,831.33	6,481.97	6,413.36	94.473	SF
Heyde 32-26 (SI) - Wellbore #1 - Gyro Surveys	9,179.28	6,743.86	5,893.03	5,834.63	100.912	CC
Heyde 32-26 (SI) - Wellbore #1 - Gyro Surveys	9,200.00	6,743.99	5,893.07	5,834.54	100.683	ES
Heyde 32-26 (SI) - Wellbore #1 - Gyro Surveys	12,000.00	6,762.79	6,533.29	6,457.42	86.108	SF
Heyde 41-26 (PR) - Wellbore #1 - Gyro Surveys	7,686.31	6,862.89	7,372.44	7,320.79	142.739	CC
Heyde 41-26 (PR) - Wellbore #1 - Gyro Surveys	7,700.00	6,863.18	7,372.45	7,320.75	142.597	ES
Heyde 41-26 (PR) - Wellbore #1 - Gyro Surveys	12,200.00	6,957.14	8,643.92	8,567.96	113.799	SF
Heyde 42-26 (PR) - Wellbore #1 - Gyro Surveys	9,137.77	6,904.09	7,293.87	7,235.31	124.557	CC
Heyde 42-26 (PR) - Wellbore #1 - Gyro Surveys	9,200.00	6,903.42	7,294.13	7,235.19	123.739	ES
Heyde 42-26 (PR) - Wellbore #1 - Gyro Surveys	13,100.00	6,938.71	8,300.48	8,217.62	100.174	SF
HSR-Waste Services 10-26 (SI) - Wellbore #1 - No Surve	10,707.59	6,873.00	6,204.18	6,022.19	34.092	CC
HSR-Waste Services 10-26 (SI) - Wellbore #1 - No Surve	10,800.00	6,873.00	6,204.87	6,022.17	33.963	ES
HSR-Waste Services 10-26 (SI) - Wellbore #1 - No Surve	12,100.00	6,873.00	6,358.51	6,166.33	33.086	SF
HSR-Waste Services 15-26 (SI) - Wellbore #1 - No Surve	11,702.20	6,889.00	5,950.42	5,761.16	31.441	CC, ES
HSR-Waste Services 15-26 (SI) - Wellbore #1 - No Surve	13,000.00	6,889.00	6,090.31	5,891.26	30.597	SF
HSR-Waste Services 16-26 (SI) - Wellbore #1 - Gyro Su	11,719.24	6,980.24	7,199.92	7,124.55	95.521	CC
HSR-Waste Services 16-26 (SI) - Wellbore #1 - Gyro Su	11,800.00	6,979.84	7,200.38	7,124.35	94.714	ES
HSR-Waste Services 16-26 (SI) - Wellbore #1 - Gyro Su	14,800.00	6,964.92	7,831.33	7,735.28	81.535	SF
HSR-Waste Services 9-26 (PA) - Wellbore #1 - Gyro Sur	10,465.50	6,802.41	7,384.31	7,317.77	110.984	CC
HSR-Waste Services 9-26 (PA) - Wellbore #1 - Gyro Sur	10,500.00	6,802.59	7,384.39	7,317.60	110.561	ES
HSR-Waste Services 9-26 (PA) - Wellbore #1 - Gyro Sur	14,100.00	6,821.28	8,230.26	8,140.31	91.492	SF
Waste Management 11-26 (PR) - Wellbore #1 - Gyro Sur	7,964.56	6,941.77	3,306.75	3,253.89	62.552	CC, ES
Waste Management 11-26 (PR) - Wellbore #1 - Gyro Sur	9,100.00	6,956.70	3,496.23	3,437.20	59.223	SF
Waste Management 12-26 (PR) - Wellbore #1 - Gyro Sur	9,265.66	6,948.60	3,249.26	3,189.83	54.680	CC
Waste Management 12-26 (PR) - Wellbore #1 - Gyro Sur	9,300.00	6,950.18	3,249.44	3,189.77	54.455	ES
Waste Management 12-26 (PR) - Wellbore #1 - Gyro Sur	10,300.00	6,996.37	3,409.58	3,343.17	51.341	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 Gutteresen D34-749
<b>Project:</b>	Mustang	<b>TVD Reference:</b>	KB @ 4855.00ft
<b>Reference Site:</b>	D Section 22	<b>MD Reference:</b>	KB @ 4855.00ft
<b>Site Error:</b>	0.00 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Gutteresen D34-749	<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>	Wellbore #1	<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 26						
Waste Management 12-26A (PR) - Wellbore #1 - Gyro S	8,706.51	6,867.70	3,896.90	3,840.73	69.383	CC, ES
Waste Management 12-26A (PR) - Wellbore #1 - Gyro S	10,200.00	6,960.67	4,171.75	4,106.26	63.701	SF
Waste Management 21-26 (PR) - Wellbore #1 - Gyro Sur	7,750.89	6,796.18	4,781.80	4,730.14	92.564	CC, ES
Waste Management 21-26 (PR) - Wellbore #1 - Gyro Sur	10,000.00	6,818.35	5,284.28	5,220.81	83.266	SF
Waste Management 22-26 (PR) - Wellbore #1 - Gyro Sur	9,206.93	6,806.78	4,657.48	4,598.80	79.377	CC, ES
Waste Management 22-26 (PR) - Wellbore #1 - Gyro Sur	11,100.00	6,812.72	5,027.51	4,956.88	71.180	SF
Waste Management 26FD (PR) - Wellbore #1 - MWD Su	8,538.82	7,036.65	2,758.85	2,702.32	48.800	CC, ES
Waste Management 26FD (PR) - Wellbore #1 - MWD Su	9,500.00	7,029.29	2,921.49	2,857.97	45.996	SF
Waste Management 26KD (PR) - Wellbore #1 - MWD Su	9,804.40	7,029.61	3,981.51	3,911.97	57.254	CC, ES
Waste Management 26KD (PR) - Wellbore #1 - MWD Su	11,000.00	7,042.02	4,157.13	4,079.46	53.528	SF
Waste Management D 26-25 (SI) - Wellbore #1 - Gyro S	11,148.33	6,800.00	4,168.74	4,097.44	58.471	CC
Waste Management D 26-25 (SI) - Wellbore #1 - Gyro S	11,200.00	6,800.00	4,169.06	4,097.34	58.124	ES
Waste Management D 26-25 (SI) - Wellbore #1 - Gyro S	13,700.00	13,700.00	4,887.24	4,777.61	44.578	SF
Waste Management 26JD (PR) - Wellbore #1 - MWD Surv	7,350.14	7,004.64	4,029.96	3,975.67	74.221	CC, ES
Waste Management 26JD (PR) - Wellbore #1 - MWD Surv	8,800.00	6,999.50	4,310.43	4,249.02	70.197	SF

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

<b>Company:</b>	Northern Region - DJ Basin	<b>Local Co-ordinate Reference:</b>	Well Guttersen D34-749
<b>Project:</b>	Mustang	<b>TVD Reference:</b>	KB @ 4855.00ft
<b>Reference Site:</b>	D Section 22	<b>MD Reference:</b>	KB @ 4855.00ft
<b>Site Error:</b>	0.00 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Guttersen D34-749	<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>	Wellbore #1	<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 27						
Camolo Red 27-3J (SI) - Wellbore #1 - Gyro Surveys	11,522.68	6,847.78	1,647.81	1,574.10	22.353	CC, ES
Camolo Red 27-3J (SI) - Wellbore #1 - Gyro Surveys	11,600.00	6,849.72	1,649.63	1,575.67	22.306	SF
Camolo Red D 27-02J (SI) - Wellbore #1 - Gyro Surveys	8,138.45	6,864.23	950.11	900.47	19.139	CC, ES, SF
Camolo Red D 27-04 (SI) - Wellbore #1 - Gyro Surveys	1,109.70	1,090.80	1,884.10	1,876.71	254.920	CC
Camolo Red D 27-04 (SI) - Wellbore #1 - Gyro Surveys	2,100.00	2,071.88	1,885.13	1,870.77	131.269	ES
Camolo Red D 27-04 (SI) - Wellbore #1 - Gyro Surveys	8,000.00	6,857.42	2,113.16	2,060.67	40.257	SF
Camolo Red D 27-05 (SI) - Wellbore #1 - Gyro Surveys	9,205.82	6,962.37	1,890.56	1,831.11	31.799	CC, ES
Camolo Red D 27-05 (SI) - Wellbore #1 - Gyro Surveys	9,400.00	6,975.16	1,900.46	1,840.35	31.613	SF
Camolo Red D 27-06 (SI) - Wellbore #1 - Gyro Surveys	9,073.81	6,901.43	568.01	509.60	9.724	CC, ES, SF
Camolo Red D 27-11 (PA) - Wellbore #1 - No Surveys	10,528.45	6,905.00	624.18	442.77	3.441	CC, ES, SF
Camolo Red D 27-12 (SI) - Wellbore #1 - Gyro Surveys	10,486.33	6,838.98	2,003.48	1,936.88	30.080	CC
Camolo Red D 27-12 (SI) - Wellbore #1 - Gyro Surveys	10,500.00	6,839.00	2,003.53	1,936.87	30.058	ES
Camolo Red D 27-12 (SI) - Wellbore #1 - Gyro Surveys	10,600.00	6,839.17	2,006.70	1,939.71	29.954	SF
Camolo Red D 27-14 (PR) - Wellbore #1 - Gyro Surveys	11,778.52	6,920.76	632.59	556.53	8.317	CC, ES, SF
Estes D 27-10 (SI) - Wellbore #1 - Gyro Surveys	10,718.70	6,854.54	722.16	653.41	10.505	CC, ES
Estes D 27-10 (SI) - Wellbore #1 - Gyro Surveys	10,800.00	6,857.94	726.71	657.00	10.425	SF
Estes D27-07 (SI) - Wellbore #1 - Gyro Surveys	9,137.44	6,874.85	562.90	504.35	9.614	CC, ES
Estes D27-07 (SI) - Wellbore #1 - Gyro Surveys	9,200.00	6,873.79	566.36	507.05	9.549	SF
Hippo D 27-23 D (PR) - Wellbore #1 - MWD Surveys	11,108.40	7,129.87	1,275.12	1,199.03	16.758	CC, ES
Hippo D 27-23 D (PR) - Wellbore #1 - MWD Surveys	11,400.00	7,129.52	1,308.04	1,227.03	16.148	SF
Hippo D 27-24 D (PR) - Wellbore #1 - MWD Surveys	11,177.24	6,974.41	64.32	-9.48	0.872	Level 1, CC, ES, SF
Hippo D 27-25 D (PR) - Wellbore #1 - MWD Surveys	11,184.34	7,150.06	1,292.87	1,217.51	17.156	CC
Hippo D 27-25 D (PR) - Wellbore #1 - MWD Surveys	11,200.00	7,150.88	1,292.97	1,217.47	17.127	ES
Hippo D 27-25 D (PR) - Wellbore #1 - MWD Surveys	11,300.00	7,155.99	1,298.02	1,221.78	17.026	SF
Hippo D 34-27 D (PR) - Wellbore #1 - MWD Surveys	12,423.03	7,484.34	1,327.75	1,226.00	13.049	CC, ES
Hippo D 34-27 D (PR) - Wellbore #1 - MWD Surveys	12,700.00	7,484.02	1,356.33	1,248.46	12.573	SF
Hippo D 34-28 D (PR) - Wellbore #1 - MWD Surveys	12,414.02	7,310.86	87.06	-10.82	0.889	Level 1, CC, ES, SF
Hippo D 34-29 D (PR) - Wellbore #1 - MWD Surveys	12,408.17	7,391.78	1,348.90	1,249.41	13.558	CC, ES
Hippo D 34-29 D (PR) - Wellbore #1 - MWD Surveys	12,500.00	7,392.26	1,352.03	1,251.52	13.452	SF
Hippo D 34-30 D (PR) - Wellbore #1 - MWD Surveys	12,535.20	7,796.68	2,743.90	2,637.93	25.894	CC
Hippo D 34-30 D (PR) - Wellbore #1 - MWD Surveys	12,600.00	7,796.75	2,744.66	2,637.58	25.631	ES
Hippo D 34-30 D (PR) - Wellbore #1 - MWD Surveys	13,200.00	7,797.41	2,823.29	2,707.76	24.440	SF
Kyle D 27-16 (PR) - Wellbore #1 - Gyro Surveys	11,469.55	6,917.25	1,645.65	1,571.78	22.280	CC
Kyle D 27-16 (PR) - Wellbore #1 - Gyro Surveys	11,500.00	6,917.16	1,645.96	1,571.78	22.189	ES
Kyle D 27-16 (PR) - Wellbore #1 - Gyro Surveys	11,700.00	6,916.60	1,661.99	1,586.01	21.874	SF
Kyle White D 27-1 (PR) - Wellbore #1 - Gyro Surveys	7,722.99	6,870.81	2,192.49	2,140.67	42.308	CC, ES
Kyle White D 27-1 (PR) - Wellbore #1 - Gyro Surveys	8,200.00	6,873.14	2,243.78	2,189.51	41.347	SF
Kyle White D 27-15 (SI) - Wellbore #1 - Gyro Surveys	11,902.07	6,911.71	566.67	489.76	7.367	CC, ES
Kyle White D 27-15 (SI) - Wellbore #1 - Gyro Surveys	12,000.00	6,912.23	575.07	496.99	7.365	SF
Kyle White D 27-2 (SI) - Wellbore #1 - Gyro Surveys	7,756.72	6,879.71	706.05	654.33	13.652	CC, ES
Kyle White D 27-2 (SI) - Wellbore #1 - Gyro Surveys	7,800.00	6,881.36	707.37	655.35	13.599	SF
Kyle White D 27-8 (PR) - Wellbore #1 - Gyro Surveys	9,324.22	6,880.70	2,085.71	2,026.04	34.955	CC, ES
Kyle White D 27-8 (PR) - Wellbore #1 - Gyro Surveys	9,800.00	6,908.21	2,139.12	2,075.95	33.864	SF
Kyle White D 27-9 (PR) - Wellbore #1 - Gyro Surveys	10,430.12	6,855.65	2,117.57	2,050.97	31.796	CC, ES
Kyle White D 27-9 (PR) - Wellbore #1 - Gyro Surveys	10,900.00	6,904.95	2,168.69	2,098.36	30.834	SF
Rhino D 27 18 D (PR) - Wellbore #1 - MWD Surveys	8,526.81	7,113.59	41.27	-22.68	0.645	Level 1, CC, ES, SF
Rhino D 27-19 D (PR) - Wellbore #1 - MWD Surveys	8,400.00	7,266.77	1,271.77	1,204.93	19.028	SF
Rhino D 27-19 D (PR) - Wellbore #1 - MWD Surveys	8,525.52	7,269.53	1,265.56	1,199.72	19.220	CC, ES
Rhino D 27-20 D (PR) - Wellbore #1 - MWD Surveys	9,768.52	7,075.78	1,291.55	1,228.79	20.580	CC, ES
Rhino D 27-20 D (PR) - Wellbore #1 - MWD Surveys	9,800.00	7,077.06	1,291.93	1,229.13	20.571	SF
Rhino D 27-21 (PR) - Wellbore #1 - Gyro Surveys	9,951.81	6,912.55	104.68	40.92	1.642	CC, ES, SF
Rhino D 27-22 D (PR) - Wellbore #1 - MWD Surveys	9,787.42	7,079.58	1,381.68	1,318.19	21.763	CC
Rhino D 27-22 D (PR) - Wellbore #1 - MWD Surveys	9,800.00	7,080.14	1,381.74	1,318.14	21.727	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 Guttersen D34-749
<b>Project:</b>	Mustang	<b>TVD Reference:</b>	KB @ 4855.00ft
<b>Reference Site:</b>	D Section 22	<b>MD Reference:</b>	KB @ 4855.00ft
<b>Site Error:</b>	0.00 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Guttersen D34-749	<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>	Wellbore #1	<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 27						
Rhino D 27-22 D (PR) - Wellbore #1 - MWD Surveys	10,000.00	7,089.07	1,397.90	1,332.56	21.394	SF
Rhino State D 27-27 D (PR) - Wellbore #1 - MWD Surve	7,100.00	7,707.16	1,405.29	1,325.00	17.503	SF
Rhino State D 27-27 D (PR) - Wellbore #1 - MWD Surve	7,230.84	7,758.10	1,396.75	1,317.55	17.635	CC, ES
Rhino State D 27-28 D (PR) - Wellbore #1 - MWD Surve	7,313.31	7,522.95	28.64	-47.98	0.374	Level 1, CC, ES, SF
UPRR Amoco 1 63 (PA) - Wellbore #1 - No Surveys	10,855.93	6,907.00	1,024.38	840.70	5.577	CC, ES
UPRR Amoco 1 63 (PA) - Wellbore #1 - No Surveys	10,900.00	6,907.00	1,025.32	841.12	5.566	SF

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

<b>Company:</b>	Northern Region - DJ Basin	<b>Local Co-ordinate Reference:</b>	Well Guttersen D34-749
<b>Project:</b>	Mustang	<b>TVD Reference:</b>	KB @ 4855.00ft
<b>Reference Site:</b>	D Section 22	<b>MD Reference:</b>	KB @ 4855.00ft
<b>Site Error:</b>	0.00 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Guttersen D34-749	<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>	Wellbore #1	<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)	Between Ellipses (ft)	Separation Factor	Warning
<b>Offset Well - Wellbore - Design</b>						
D Section 28						
O'SH D 28-7 (P&A) - Wellbore #1 - No Surveys	9,155.56	6,837.00	4,563.14	4,391.64	26.607	CC, ES
O'SH D 28-7 (P&A) - Wellbore #1 - No Surveys	9,700.00	6,837.00	4,595.51	4,421.52	26.413	SF
Spike ST GWS D 28-12 (SI) - Wellbore #1 - Gyro Surve	10,512.68	6,802.24	7,304.95	7,238.17	109.398	CC, ES
Spike ST GWS D 28-12 (SI) - Wellbore #1 - Gyro Surve	13,500.00	6,833.94	7,892.10	7,809.96	96.081	SF
Guttersen D State 28-29D (PR) - Wellbore #1 - MWD Su	2,945.85	4,069.37	5,877.67	5,853.09	239.090	CC
Guttersen D State 28-29D (PR) - Wellbore #1 - MWD Su	3,100.00	4,271.69	5,878.83	5,852.81	225.930	ES
Guttersen D State 28-29D (PR) - Wellbore #1 - MWD Su	10,300.00	6,953.65	7,232.70	7,169.32	114.108	SF
Guttersen D State 28-30D - Wellbore #1 - Guttersen D S	853.79	826.33	6,272.74	6,268.46	1,464.822	CC, ES
Guttersen D State 28-30D - Wellbore #1 - Guttersen D S	9,100.00	9,100.00	8,152.29	8,088.59	127.978	SF
Guttersen State D28-18D (PR) - Wellbore #1 - MWD Sur	2,341.20	2,458.81	4,858.84	4,840.08	259.016	CC, ES
Guttersen State D28-18D (PR) - Wellbore #1 - MWD Sur	10,000.00	6,877.40	5,630.01	5,566.81	89.091	SF
Guttersen State D28-21D (SI) - Wellbore #1 - MWD Surv	9,653.95	9,653.95	5,274.02	5,200.90	72.132	CC
Guttersen State D28-21D (SI) - Wellbore #1 - MWD Surv	9,700.00	9,700.00	5,274.22	5,200.70	71.740	ES
Guttersen State D28-21D (SI) - Wellbore #1 - MWD Surv	12,000.00	12,000.00	5,772.25	5,680.91	63.197	SF
Guttersen State D28-24D (SI) - Wellbore #1 - MWD Surv	11,211.81	6,870.61	5,297.69	5,221.28	69.335	CC, ES
Guttersen State D28-24D (SI) - Wellbore #1 - MWD Surv	12,500.00	6,895.58	5,451.98	5,369.77	66.320	SF
Guttersen State D28-28D (PR) - Wellbore #1 - MWD Sur	2,801.27	3,466.00	4,621.58	4,598.40	199.315	CC, ES
Guttersen State D28-28D (PR) - Wellbore #1 - MWD Sur	8,900.00	6,920.85	5,632.10	5,573.75	96.519	SF
Guttersen State D28-79HN - Wellbore #1 - Actual	5,400.00	11,086.00	7,617.48	7,516.17	75.190	ES
Guttersen State D28-79HN - Wellbore #1 - Actual	7,500.00	11,081.49	7,755.08	7,644.00	69.814	SF
Guttersen State D28-79HN - Wellbore #1 - Actual	11,212.44	7,593.00	7,611.50	7,534.44	98.775	CC
HSR Guttersen State 10-28 (SI) - Wellbore #1 - Gyro Su	10,442.37	6,422.61	4,830.96	4,766.64	75.114	CC, ES
HSR Guttersen State 10-28 (SI) - Wellbore #1 - Gyro Su	11,800.00	6,444.47	5,018.06	4,947.36	70.986	SF
HSR Guttersen State 15-28 (SI) - Wellbore #1 - Gyro Su	12,099.54	7,043.61	4,249.99	4,169.89	53.061	CC
HSR Guttersen State 15-28 (SI) - Wellbore #1 - Gyro Su	12,100.00	7,043.67	4,249.99	4,169.89	53.059	ES
HSR Guttersen State 15-28 (SI) - Wellbore #1 - Gyro Su	13,200.00	7,175.18	4,388.18	4,301.46	50.599	SF
HSR Guttersen State 7-28 (PR) - Wellbore #1 - Gyro Sur	773.45	713.47	4,753.84	4,748.97	977.770	CC
HSR Guttersen State 7-28 (PR) - Wellbore #1 - Gyro Sur	9,100.00	7,175.84	4,755.93	4,694.73	77.722	ES
HSR Guttersen State 7-28 (PR) - Wellbore #1 - Gyro Sur	10,400.00	7,119.90	4,935.87	4,869.36	74.219	SF
O'SH D 28-1 (SI) - Wellbore #1 - Gyro Surveys	2,226.42	2,208.25	3,241.99	3,226.70	212.144	CC
O'SH D 28-1 (SI) - Wellbore #1 - Gyro Surveys	2,300.00	2,283.57	3,242.28	3,226.48	205.224	ES
O'SH D 28-1 (SI) - Wellbore #1 - Gyro Surveys	8,900.00	6,847.83	3,632.33	3,576.33	64.868	SF
O'SH D 28-2 (SI) - Wellbore #1 - Gyro Surveys	2,253.64	2,253.84	3,883.14	3,867.60	249.823	CC
O'SH D 28-2 (SI) - Wellbore #1 - Gyro Surveys	2,300.00	2,297.06	3,883.36	3,867.51	244.939	ES
O'SH D 28-2 (SI) - Wellbore #1 - Gyro Surveys	9,100.00	6,837.32	4,719.72	4,663.59	84.094	SF
O'SH D 28-8 (SI) - Wellbore #1 - Gyro Surveys	9,231.09	6,923.28	3,209.61	3,150.44	54.243	CC, ES
O'SH D 28-8 (SI) - Wellbore #1 - Gyro Surveys	9,800.00	6,946.37	3,259.56	3,198.05	52.987	SF
Spike ST GWS D 28-03 (PR) - Wellbore #1 - Gyro Surve	100.00	29.27	4,955.26	4,955.09	10,000.000	CC
Spike ST GWS D 28-03 (PR) - Wellbore #1 - Gyro Surve	1,400.00	1,303.50	4,961.61	4,952.44	540.639	ES
Spike ST GWS D 28-03 (PR) - Wellbore #1 - Gyro Surve	9,500.00	6,778.03	6,065.44	5,991.98	82.566	SF
Spike ST GWS D 28-4 (SI) - Wellbore #1 - Gyro Surveys	1,006.44	937.45	6,320.87	6,314.39	976.366	CC
Spike ST GWS D 28-4 (SI) - Wellbore #1 - Gyro Surveys	2,200.00	2,085.78	6,324.61	6,309.85	428.452	ES
Spike ST GWS D 28-4 (SI) - Wellbore #1 - Gyro Surveys	11,300.00	6,827.75	8,048.27	7,982.28	121.949	SF
Spike State D 28-13 (SI) - Wellbore #1 - Gyro Surveys	11,956.60	6,816.88	7,231.68	7,154.76	94.011	CC
Spike State D 28-13 (SI) - Wellbore #1 - Gyro Surveys	12,000.00	6,816.94	7,231.81	7,154.61	93.676	ES
Spike State D 28-13 (SI) - Wellbore #1 - Gyro Surveys	14,500.00	6,820.47	7,665.91	7,575.51	84.801	SF
Spike State D28-05 (PR) - Wellbore #1 - Gyro Surveys	542.24	483.24	6,916.79	6,913.56	2,144.295	CC
Spike State D28-05 (PR) - Wellbore #1 - Gyro Surveys	1,300.00	1,300.00	6,920.76	6,911.97	786.753	ES
Spike State D28-05 (PR) - Wellbore #1 - Gyro Surveys	12,400.00	6,879.42	8,073.90	8,000.26	109.640	SF
Spike State D28-06 (SI) - Wellbore #1 - Gyro Surveys	1,580.95	1,522.98	5,429.56	5,418.99	513.301	CC
Spike State D28-06 (SI) - Wellbore #1 - Gyro Surveys	2,300.00	2,263.29	5,432.83	5,417.11	345.492	ES
Spike State D28-06 (SI) - Wellbore #1 - Gyro Surveys	11,000.00	6,926.54	5,957.52	5,890.58	88.996	SF
Spike State D28-11 (SI) - Wellbore #1 - Gyro Surveys	10,312.67	6,664.00	5,706.67	5,641.86	88.061	CC, 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 Guttersen D34-749
<b>Project:</b>	Mustang	<b>TVD Reference:</b>	KB @ 4855.00ft
<b>Reference Site:</b>	D Section 22	<b>MD Reference:</b>	KB @ 4855.00ft
<b>Site Error:</b>	0.00 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Guttersen D34-749	<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>	Wellbore #1	<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 28						
Spike State D28-11 (SI) - Wellbore #1 - Gyro Surveys	13,600.00	13,600.00	6,583.42	6,480.39	63.901	SF
Spike State GWS D 28-14 (P&A) - Wellbore #1 - Gyro Su	12,025.91	6,847.82	5,697.85	5,620.26	73.432	CC, ES
Spike State GWS D 28-14 (P&A) - Wellbore #1 - Gyro Su	13,700.00	6,917.30	5,938.10	5,851.70	68.732	SF
D Section 33						
Cydney White D33-01 (PR) - Wellbore #1 - Gyro Surveys	13,209.34	6,863.25	3,224.99	3,138.64	37.348	CC, ES
Cydney White D33-01 (PR) - Wellbore #1 - Gyro Surveys	13,600.00	6,866.72	3,248.56	3,160.42	36.857	SF
Cydney White D33-02 (PR) - Wellbore #1 - Gyro Surveys	13,150.05	6,839.01	4,534.49	4,448.65	52.825	CC
Cydney White D33-02 (PR) - Wellbore #1 - Gyro Surveys	13,200.00	6,839.39	4,534.77	4,448.63	52.642	ES
Cydney White D33-02 (PR) - Wellbore #1 - Gyro Surveys	14,000.00	6,846.00	4,613.46	4,523.33	51.186	SF
Cydney White D33-07 (PR) - Wellbore #1 - Gyro Surveys	14,439.89	6,924.78	4,612.90	4,516.94	48.069	CC, ES
Cydney White D33-07 (PR) - Wellbore #1 - Gyro Surveys	15,300.00	6,872.37	4,692.41	4,592.33	46.885	SF
Guttersen D 33-09 (PR) - Wellbore #1 - Gyro Surveys	15,979.46	6,873.59	3,117.31	3,009.56	28.932	CC
Guttersen D 33-09 (PR) - Wellbore #1 - Gyro Surveys	16,000.00	6,873.66	3,117.38	3,009.52	28.901	ES
Guttersen D 33-09 (PR) - Wellbore #1 - Gyro Surveys	16,300.00	6,874.72	3,133.75	3,024.58	28.706	SF
Guttersen D 33-16 (PR) - Wellbore #1 - Gyro Surveys	17,158.73	6,849.00	3,256.50	3,156.49	32.561	CC, ES
Guttersen D 33-16 (PR) - Wellbore #1 - Gyro Surveys	17,500.00	6,844.13	3,274.33	3,172.84	32.262	SF
Guttersen D 33-23 (PR) - Wellbore #1 - Gyro Surveys	16,436.70	6,839.18	3,926.22	3,815.01	35.306	CC, ES
Guttersen D 33-23 (PR) - Wellbore #1 - Gyro Surveys	16,900.00	6,837.21	3,953.46	3,839.98	34.840	SF
Guttersen D33-10 (SI) - Wellbore #1 - No Surveys	15,693.72	6,858.00	4,573.24	4,354.36	20.894	CC
Guttersen D33-10 (SI) - Wellbore #1 - No Surveys	15,700.00	6,858.00	4,573.24	4,354.33	20.890	ES
Guttersen D33-10 (SI) - Wellbore #1 - No Surveys	16,100.00	6,858.00	4,591.25	4,370.09	20.760	SF
Guttersen D33-15 (PR) - Wellbore #1 - No Surveys	17,019.71	6,863.00	4,570.39	4,340.98	19.922	CC, ES
Guttersen D33-15 (PR) - Wellbore #1 - No Surveys	17,400.00	6,863.00	4,586.19	4,354.63	19.806	SF
HSR Guttersen 11-33 (SI) - Wellbore #1 - No Surveys	15,679.17	6,852.00	5,872.51	5,653.87	26.859	CC
HSR Guttersen 11-33 (SI) - Wellbore #1 - No Surveys	15,700.00	6,852.00	5,872.55	5,653.77	26.842	ES
HSR Guttersen 11-33 (SI) - Wellbore #1 - No Surveys	16,500.00	6,852.00	5,929.60	5,706.21	26.544	SF
HSR Guttersen 13-33 (SI) - Wellbore #1 - Gyro Surveys	17,075.26	6,880.54	7,283.88	7,167.44	62.552	CC
HSR Guttersen 13-33 (SI) - Wellbore #1 - Gyro Surveys	17,100.00	6,880.55	7,283.92	7,167.31	62.461	ES
HSR Guttersen 13-33 (SI) - Wellbore #1 - Gyro Surveys	17,564.94	6,880.67	7,300.32	7,180.66	61.007	SF
HSR Guttersen 14-33 (SI) - Wellbore #1 - Gyro Surveys	17,171.71	6,924.26	5,795.47	5,678.38	49.497	CC
HSR Guttersen 14-33 (SI) - Wellbore #1 - Gyro Surveys	17,200.00	6,924.26	5,795.54	5,678.26	49.417	ES
HSR Guttersen 14-33 (SI) - Wellbore #1 - Gyro Surveys	17,564.94	6,924.33	5,808.80	5,689.26	48.594	SF
HSR Guttersen 3-33 (SI) - Wellbore #1 - Gyro Surveys	12,800.00	12,800.00	5,851.90	5,747.43	56.013	ES, SF
HSR Guttersen 3-33 (SI) - Wellbore #1 - Gyro Surveys	13,126.98	6,931.21	5,842.79	5,756.77	67.921	CC
HSR Guttersen 4-33 (P&A) - Wellbore #1 - No Surveys	13,184.50	6,867.00	7,326.11	7,126.37	36.678	CC
HSR Guttersen 4-33 (P&A) - Wellbore #1 - No Surveys	13,200.00	6,867.00	7,326.13	7,126.28	36.659	ES
HSR Guttersen 4-33 (P&A) - Wellbore #1 - No Surveys	14,600.00	6,867.00	7,461.61	7,253.46	35.847	SF
HSR-Guttersen 12-33 (SI) - Wellbore #1 - Gyro Surveys	15,908.25	6,939.65	7,214.15	7,106.71	67.143	CC
HSR-Guttersen 12-33 (SI) - Wellbore #1 - Gyro Surveys	16,000.00	6,939.68	7,214.74	7,106.66	66.758	ES
HSR-Guttersen 12-33 (SI) - Wellbore #1 - Gyro Surveys	17,564.94	6,940.24	7,401.93	7,285.15	63.381	SF
HSR-Guttersen 5-33 (SI) - Wellbore #1 - Gyro Surveys	14,639.43	6,860.34	6,899.63	6,802.32	70.904	CC
HSR-Guttersen 5-33 (SI) - Wellbore #1 - Gyro Surveys	14,700.00	6,859.85	6,899.89	6,802.18	70.614	ES
HSR-Guttersen 5-33 (SI) - Wellbore #1 - Gyro Surveys	16,500.00	6,845.72	7,146.08	7,038.78	66.603	SF
HSR-Guttersen 6-33 (SI) - Wellbore #1 - Gyro Surveys	14,557.88	6,873.05	5,754.92	5,658.43	59.642	CC
HSR-Guttersen 6-33 (SI) - Wellbore #1 - Gyro Surveys	14,600.00	6,873.49	5,755.07	5,658.31	59.474	ES
HSR-Guttersen 6-33 (SI) - Wellbore #1 - Gyro Surveys	15,900.00	6,887.02	5,909.33	5,805.84	57.100	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 D34-749
<b>Project:</b>	Mustang	<b>TVD Reference:</b>	KB @ 4855.00ft
<b>Reference Site:</b>	D Section 22	<b>MD Reference:</b>	KB @ 4855.00ft
<b>Site Error:</b>	0.00 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Guttersten D34-749	<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>	Wellbore #1	<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
<b>Offset Well - Wellbore - Design</b>						
D Section 34						
HSR Waste Services 4-34 (SI) - Wellbore #1 - Gyro Surv	13,029.31	6,903.24	1,717.16	1,631.99	20.161	CC, ES
HSR Waste Services 4-34 (SI) - Wellbore #1 - Gyro Surv	13,100.00	6,901.36	1,718.61	1,633.23	20.129	SF
HSR Waste Services 5-34 (SI) - Wellbore #1 - Gyro Surv	14,254.53	6,914.69	2,133.04	2,038.47	22.554	CC, ES
HSR Waste Services 5-34 (SI) - Wellbore #1 - Gyro Surv	14,400.00	6,914.13	2,138.00	2,042.90	22.481	SF
Liam D 34-11 (PR) - Wellbore #1 - Gyro Surveys	15,856.25	6,917.93	606.53	499.48	5.666	CC, ES, SF
Liam D 34-12 (PR) - Wellbore #1 - Gyro Surveys	15,642.29	6,917.93	2,002.86	1,897.47	19.004	CC, ES
Liam D 34-12 (PR) - Wellbore #1 - Gyro Surveys	15,700.00	6,917.55	2,003.70	1,898.08	18.971	SF
Liam D 34-13 (PR) - Wellbore #1 - Gyro Surveys	17,025.04	6,893.87	1,961.37	1,845.29	16.897	CC, ES
Liam D 34-13 (PR) - Wellbore #1 - Gyro Surveys	17,100.00	6,893.74	1,962.80	1,846.46	16.871	SF
Liam D 34-14 (PR) - Wellbore #1 - Gyro Surveys	17,177.60	6,909.98	596.94	479.53	5.085	CC, ES, SF
Liam D 34-25 (SI) - Wellbore #1 - Gyro Surveys	16,423.62	6,909.06	1,292.36	1,180.90	11.594	CC, ES, SF
Liam D 34-33 (SI) - Wellbore #1 - Gyro Surveys	16,417.74	6,889.85	2,445.96	2,334.68	21.980	CC, ES
Liam D 34-33 (SI) - Wellbore #1 - Gyro Surveys	16,600.00	6,888.41	2,452.74	2,340.76	21.904	SF
D Section 35						
UPRR 1 (DA) - Wellbore #1 - No Surveys	13,150.20	6,932.00	3,327.11	3,126.33	16.571	CC
UPRR 1 (DA) - Wellbore #1 - No Surveys	13,200.00	6,932.00	3,327.48	3,126.23	16.534	ES
UPRR 1 (DA) - Wellbore #1 - No Surveys	13,600.00	6,932.00	3,357.38	3,152.80	16.411	SF
Waste Management 22-35 (SI) - Wellbore #1 - Gyro Surv	14,545.88	6,942.92	4,711.98	4,615.23	48.702	CC
Waste Management 22-35 (SI) - Wellbore #1 - Gyro Surv	14,600.00	6,943.00	4,712.29	4,615.05	48.459	ES
Waste Management 22-35 (SI) - Wellbore #1 - Gyro Surv	15,800.00	6,944.90	4,876.02	4,770.16	46.063	SF
Waste Management 31-35 (SI) - Wellbore #1 - Gyro Surv	13,029.10	6,965.10	5,734.64	5,649.70	67.519	CC
Waste Management 31-35 (SI) - Wellbore #1 - Gyro Surv	13,100.00	6,964.60	5,735.08	5,649.53	67.044	ES
Waste Management 31-35 (SI) - Wellbore #1 - Gyro Surv	14,900.00	6,951.83	6,032.10	5,933.97	61.472	SF
Waste Management 41-35 (SI) - Wellbore #1 - Gyro Surv	13,147.68	6,914.46	7,303.72	7,217.63	84.843	CC
Waste Management 41-35 (SI) - Wellbore #1 - Gyro Surv	13,200.00	6,914.10	7,303.91	7,217.38	84.415	ES
Waste Management 41-35 (SI) - Wellbore #1 - Gyro Surv	16,000.00	6,900.01	7,840.90	7,735.40	74.325	SF
Waste Management D 35-15 (PR) - Wellbore #1 - Gyro S	17,217.59	6,891.30	5,867.47	5,749.82	49.872	CC
Waste Management D 35-15 (PR) - Wellbore #1 - Gyro S	17,300.00	6,889.74	5,868.05	5,749.66	49.566	ES
Waste Management D 35-15 (PR) - Wellbore #1 - Gyro S	17,564.94	6,884.53	5,877.74	5,757.09	48.717	SF
Waste Management USX D 35-11 (SI) - Wellbore #1 - Gy	15,877.29	6,910.85	4,608.20	4,501.05	43.009	CC
Waste Management USX D 35-11 (SI) - Wellbore #1 - Gy	15,900.00	6,912.21	4,608.25	4,500.89	42.924	ES
Waste Management USX D 35-11 (SI) - Wellbore #1 - Gy	16,900.00	6,960.89	4,720.06	4,605.36	41.154	SF
Waste Management USX D 35-14 (SI) - Wellbore #1 - No	16,918.91	6,920.00	4,715.53	4,485.77	20.524	CC
Waste Management USX D 35-14 (SI) - Wellbore #1 - No	17,000.00	6,920.00	4,716.23	4,485.72	20.460	ES
Waste Management USX D 35-14 (SI) - Wellbore #1 - No	17,564.94	6,920.00	4,759.58	4,524.55	20.251	SF
Waste Management USX D 35-7 (PR) - Wellbore #1 - Gy	14,391.17	6,878.57	5,918.83	5,823.35	61.985	CC
Waste Management USX D 35-7 (PR) - Wellbore #1 - Gy	14,400.00	6,878.48	5,918.84	5,823.27	61.935	ES
Waste Management USX D 35-7 (PR) - Wellbore #1 - Gy	16,200.00	6,858.79	6,189.03	6,080.81	57.185	SF
Waste Management USX D 35-9 (SI) - Wellbore #1 - No	15,866.41	7,559.00	7,541.44	7,311.40	32.783	CC
Waste Management USX D 35-9 (SI) - Wellbore #1 - No	15,900.00	7,559.00	7,541.51	7,311.19	32.743	ES
Waste Management USX D 35-9 (SI) - Wellbore #1 - No	17,500.00	7,559.00	7,716.34	7,474.01	31.842	SF
Waste Services 21-35 (PR) - Wellbore #1 - Gyro Surveys	12,955.72	6,891.75	4,771.85	4,687.19	56.363	CC
Waste Services 21-35 (PR) - Wellbore #1 - Gyro Surveys	13,000.00	6,891.46	4,772.06	4,687.01	56.108	ES
Waste Services 21-35 (PR) - Wellbore #1 - Gyro Surveys	14,400.00	6,881.96	4,985.62	4,890.68	52.515	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 D34-749
<b>Project:</b>	Mustang	<b>TVD Reference:</b>	KB @ 4855.00ft
<b>Reference Site:</b>	D Section 22	<b>MD Reference:</b>	KB @ 4855.00ft
<b>Site Error:</b>	0.00 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Guttersten D34-749	<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>	Wellbore #1	<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						
Y Section 02						
Waste Management 2I-221 - Wellbore #1 - Wellbore #1 -	17,564.94	11,210.02	3,269.55	3,093.44	18.566	CC, ES, SF
Waste Management 2I-401 - Wellbore #1 - Wellbore #1 -	17,564.94	11,425.02	2,939.62	2,766.07	16.938	CC, ES, SF
Waste Management 2L-201 - Wellbore #1 - Wellbore #1 -	17,564.94	11,213.02	3,908.92	3,730.44	21.901	CC, ES, SF
Waste Management 2L-301 - Wellbore #1 - Wellbore #1 -	17,564.94	11,326.02	4,245.36	4,068.33	23.981	CC, ES, SF
Waste Management 2L-421 - Wellbore #1 - Wellbore #1 -	17,564.94	11,433.02	4,578.88	4,401.00	25.741	CC, ES, SF
Waste Management 2L-441 - Wellbore #1 - Wellbore #1 -	17,564.94	11,379.02	3,568.56	3,391.67	20.174	CC, ES, SF
Waste Management 2Q-201 - Wellbore #1 - Wellbore #1 -	17,564.94	11,274.02	5,514.85	5,337.11	31.028	CC, ES, SF
Waste Management 2Q-321 - Wellbore #1 - Wellbore #1 -	17,564.94	11,347.02	5,837.40	5,658.76	32.676	CC, ES, SF
Waste Management 2Q-341 - Wellbore #1 - Wellbore #1 -	17,564.94	11,345.02	4,923.24	4,744.16	27.492	CC, ES, SF
Waste Management 2Q-401 - Wellbore #1 - Wellbore #1 -	17,564.94	11,502.02	5,236.87	5,057.20	29.148	CC, ES, SF
Waste Management 2T-221 - Wellbore #1 - Wellbore #1 -	17,564.94	11,189.02	7,188.66	7,007.87	39.762	CC, ES, SF
Waste Management 2T-241 - Wellbore #1 - Wellbore #1 -	17,564.94	11,213.02	6,175.51	5,996.13	34.426	CC, ES, SF
Waste Management 2T-301 - Wellbore #1 - Wellbore #1 -	17,564.94	11,316.02	6,473.39	6,293.28	35.941	CC, ES, SF
Waste Management 2T-401 - Wellbore #1 - Wellbore #1 -	17,564.94	11,385.02	6,855.38	6,675.00	38.004	CC, ES, SF
Waste Management 2Y-201 - Wellbore #1 - Wellbore #1 -	17,564.94	11,229.02	7,846.83	7,665.44	43.259	CC, ES, SF
Waste Management 2Y-441 - Wellbore #1 - Wellbore #1 -	17,564.94	11,403.02	7,529.38	7,348.59	41.648	CC, ES, SF
Y Section 03						
Waste Management USX Y03-03 - Wellbore #1 - Wellbo	17,564.94	6,913.82	1,065.72	976.41	11.932	CC, ES, SF
Waste Management USX Y03-04 - Wellbore #1 - Wellbo	17,564.94	6,918.99	2,144.87	2,028.95	18.502	CC, ES, SF
Waste Management USX Y03-05 - Wellbore #1 - Wellbo	17,564.94	6,884.82	2,813.80	2,717.23	29.139	CC, ES, SF
Waste Management USX Y03-06 - Wellbore #1 - Wellbo	17,564.94	7,014.67	2,305.51	2,237.56	33.929	CC, ES, SF
Waste Management USX Y03-11 - Wellbore #1 - Wellbo	17,564.94	6,887.83	3,642.22	3,576.98	55.823	CC, ES, SF
Waste Management USX Y03-12 - Wellbore #1 - Wellbo	17,564.94	6,924.87	3,939.07	3,851.95	45.215	CC, ES, SF
Waste Management USX Y03-13 - Wellbore #1 - Wellbo	17,564.94	6,904.45	5,122.36	5,045.81	66.910	CC, ES, SF
Waste Management USX Y03-14 - Wellbore #1 - Wellbo	17,564.94	6,800.46	4,977.48	4,916.42	81.524	CC, ES, SF
Waste Management USX Y03-19 - Wellbore #1 - Wellbo	17,564.94	6,904.61	2,011.51	1,911.80	20.175	CC, ES, SF
Waste Management USX Y03-25 - Wellbore #1 - Wellbo	17,564.94	6,917.79	4,284.56	4,211.90	58.966	CC, ES, SF
Waste Management USX Y3-15 - Wellbore #1 - As Drille	17,564.94	6,933.10	4,846.49	4,790.30	86.257	CC, ES, SF
Y Section 04						
HSR-Guttersten 01-04 - Original Drilling - Original Drilling	17,564.94	6,774.74	3,601.98	3,483.00	30.273	CC, ES, SF
HSR-Guttersten 02-04 - Original Drilling - Original Drilling	17,564.94	6,905.33	4,683.18	4,562.76	38.890	CC, ES, SF
HSR-Guttersten 03-04 - Original Drilling - Original Drilling	17,564.94	6,963.09	6,116.67	5,995.93	50.656	CC, ES, SF
HSR-Guttersten 05-04 - Original Drilling - Original Drilling	17,564.94	7,226.00	7,504.53	7,384.72	62.639	CC, ES, SF
HSR-Guttersten 07-04 - Original Drilling - Original Drilling	17,564.94	6,921.19	5,190.84	5,074.71	44.697	CC, ES, SF
Melvin Y04-04 - Original Drilling - Original Drilling - As Dr	17,564.94	7,200.00	6,949.62	6,827.92	57.104	CC, ES, SF

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

<b>Company:</b>	Northern Region - DJ Basin	<b>Local Co-ordinate Reference:</b>	Well Guttersten D34-749
<b>Project:</b>	Mustang	<b>TVD Reference:</b>	KB @ 4855.00ft
<b>Reference Site:</b>	D Section 22	<b>MD Reference:</b>	KB @ 4855.00ft
<b>Site Error:</b>	0.00 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Guttersten D34-749	<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>	Wellbore #1	<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						
Y Section 10						
Bison Ridge Y22-711 - Original Drilling - As-Drilled	17,564.94	6,329.00	8,723.34	8,665.99	152.109	CC, ES, SF
Bison Ridge Y22-719 - Original Drilling - Original Drilling	17,564.94	6,297.00	8,549.84	8,495.63	157.721	CC, ES, SF
Bison Ridge Y22-771 - Original Drilling - As-Drilled	17,564.94	6,331.00	8,415.22	8,359.16	150.110	CC, ES, SF
Oscar Y10-72-1HC - Original Drilling - Original Drilling - A	17,564.94	14,600.03	2,246.46	2,085.82	13.984	CC, ES, SF
Oscar Y10-72-1HN - Original Drilling - Original Drilling - A	17,564.94	14,333.03	2,391.97	2,223.16	14.170	CC, ES, SF
Oscar Y10-72HN - Original Drilling - Original Drilling - As	17,564.94	14,445.03	2,148.78	1,981.01	12.808	CC, ES, SF
Oscar Y10-73-1HC - Original Drilling - Original Drilling - A	17,564.94	14,438.03	1,578.89	1,413.68	9.557	CC, ES, SF
Oscar Y10-73-1HN - Original Drilling - Original Drilling - A	17,564.94	14,398.03	1,760.73	1,593.80	10.548	CC, ES, SF
Oscar Y10-73HN - Original Drilling - Original Drilling - As	17,564.94	14,549.00	1,454.37	1,289.90	8.843	CC, ES, SF
Oscar Y10-74-1HC - Original Drilling - Original Drilling - A	17,564.94	14,684.00	939.19	785.35	6.105	CC, ES, SF
Oscar Y10-74-1HN - Original Drilling - Original Drilling - A	17,564.94	14,377.03	1,119.54	961.90	7.102	CC, ES, SF
Oscar Y10-74HN - Original Drilling - Original Drilling - As	17,564.94	12,678.03	2,151.51	2,080.00	30.085	CC, ES, SF
Oscar Y10-75-1HC - Original Drilling - Original Drilling - A	17,564.94	14,440.00	401.99	279.02	3.269	CC, ES, SF
Oscar Y10-75-1HN - Original Drilling - Original Drilling - A	17,564.94	14,437.03	488.79	353.04	3.601	CC, ES, SF
Oscar Y10-75HN - Original Drilling - Original Drilling - As	17,564.94	14,544.00	280.80	210.30	3.983	CC, ES, SF
Oscar Y10-76-1HN - Original Drilling - Original Drilling - A	17,564.94	14,399.00	355.98	243.29	3.159	CC, ES, SF
Oscar Y10-76HN - Original Drilling - Original Drilling - As	17,564.94	14,574.99	604.15	453.79	4.018	CC, ES, SF
Oscar Y10-77-1HC - Original Drilling - Original Drilling - A	17,564.94	14,740.00	902.03	736.34	5.444	CC, ES, SF
Oscar Y10-77HN - Original Drilling - Original Drilling - As	17,564.94	14,600.00	1,249.89	1,088.08	7.724	CC, ES, SF
Oscar Y10-78-1HC - Original Drilling - Original Drilling - A	17,564.94	14,759.00	1,554.64	1,320.30	6.634	CC, ES, SF
Oscar Y10-78-1HN - Original Drilling - Original Drilling - As	17,564.94	14,469.00	1,555.83	1,323.09	6.685	CC, ES, SF
Oscar Y10-78HN - Original Drilling - Original Drilling - As	17,564.94	13,936.00	2,096.07	1,945.03	13.878	CC, ES, SF
Oscar Y10-79-1HC - Original Drilling - Original Drilling - A	17,564.94	14,740.00	2,197.48	1,960.80	9.284	CC, ES, SF
Oscar Y10-79-1HN - Original Drilling - Original Drilling - A	17,564.94	14,437.00	2,195.28	1,959.33	9.304	CC, ES, SF
Oscar Y10-79HN - Original Drilling - Original Drilling - As	17,564.94	7,926.00	7,400.86	7,323.87	96.124	CC, ES, SF
Oscar Y10-79HN - Original Drilling - ST01 - ST01 - As Dr	17,564.94	14,611.00	2,446.31	2,209.89	10.347	CC, ES, SF
Oscar Y11-79HN - Original Drilling - Original Drilling - As	17,564.94	8,396.02	6,867.12	6,795.95	96.494	CC, ES, SF
Oscar Y11-79HN - ST01 Original Drilling - ST01 Original	17,564.94	14,458.03	2,683.25	2,514.56	15.906	CC, ES, SF

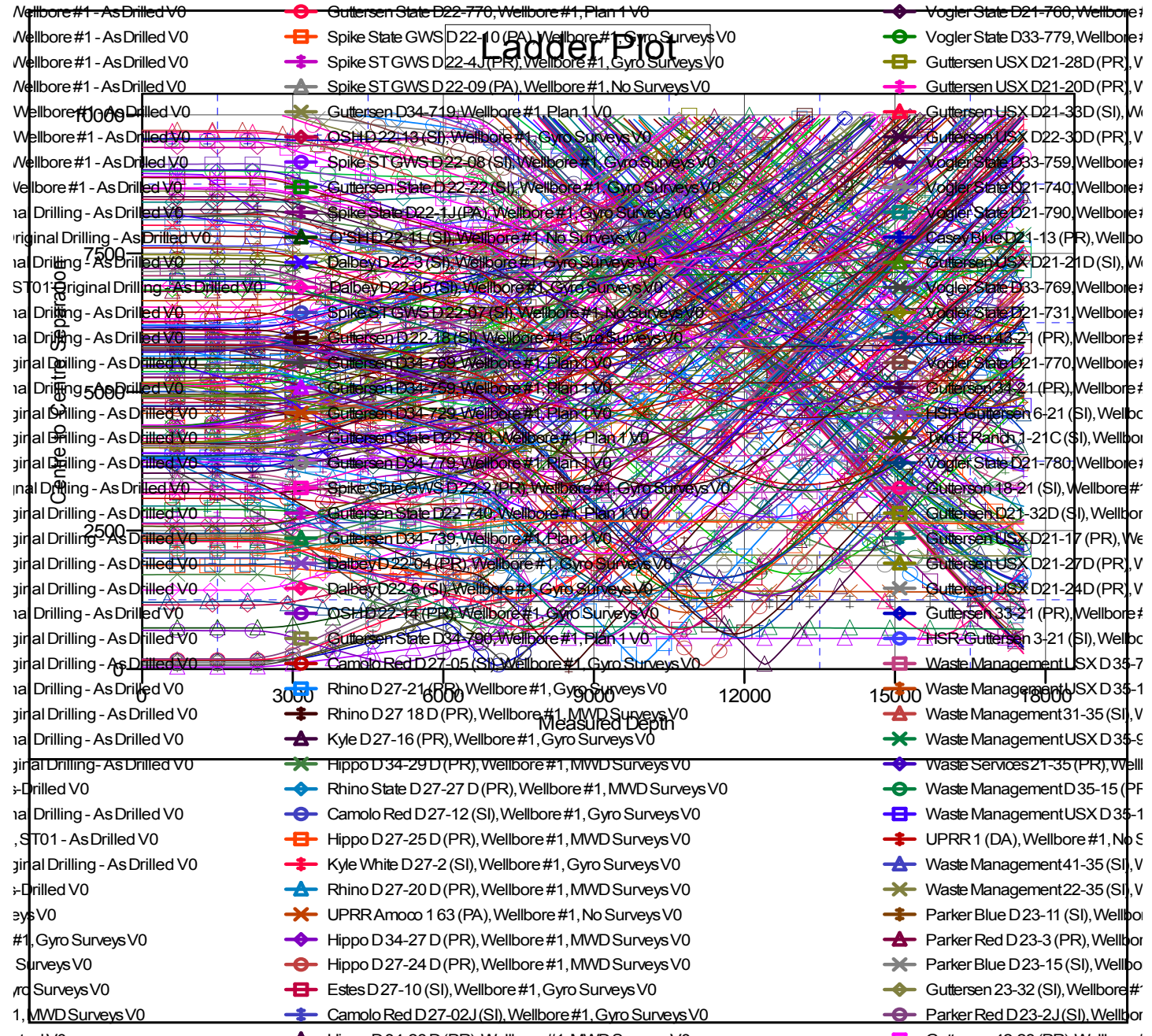
## Anticollision Summary Report

<b>Company:</b>	Northern Region - DJ Basin	<b>Local Co-ordinate Reference:</b>	Well Guttersen D34-749
<b>Project:</b>	Mustang	<b>TVD Reference:</b>	KB @ 4855.00ft
<b>Reference Site:</b>	D Section 22	<b>MD Reference:</b>	KB @ 4855.00ft
<b>Site Error:</b>	0.00 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Guttersen D34-749	<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>	Wellbore #1	<b>Database:</b>	EDMP
<b>Reference Design:</b>	Plan 1	<b>Offset TVD Reference:</b>	Offset Datum

Coordinates are relative to: Guttersen D34-749

Coordinate System is US State Plane 1983, Colorado Northern Zone

Grid Convergence at Surface is: 0.62°

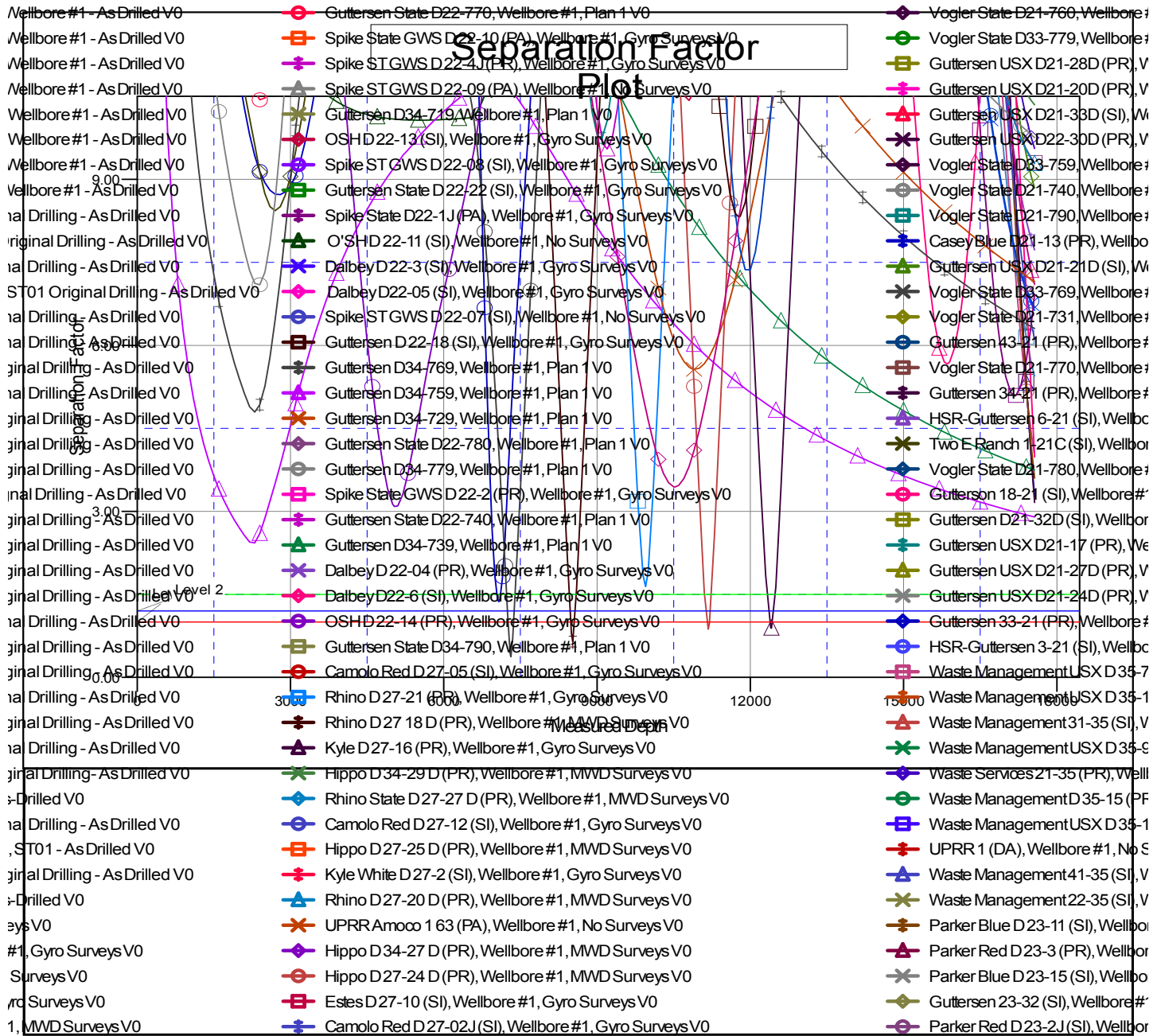


CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

## Anticollision Summary Report

<b>Company:</b>	Northern Region - DJ Basin	<b>Local Co-ordinate Reference:</b>	Well Guttersen D34-749
<b>Project:</b>	Mustang	<b>TVD Reference:</b>	KB @ 4855.00ft
<b>Reference Site:</b>	D Section 22	<b>MD Reference:</b>	KB @ 4855.00ft
<b>Site Error:</b>	0.00 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Guttersen D34-749	<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>	Wellbore #1	<b>Database:</b>	EDMP
<b>Reference Design:</b>	Plan 1	<b>Offset TVD Reference:</b>	Offset Datum

Grid Convergence at Surface is: 0.62°



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