

Project: Mustang  
Site: D Section 25  
Well: Guttersen D25-781  
Wellbore: Wellbore #1  
Design: Plan #3

# Northern Region - DJ Basin

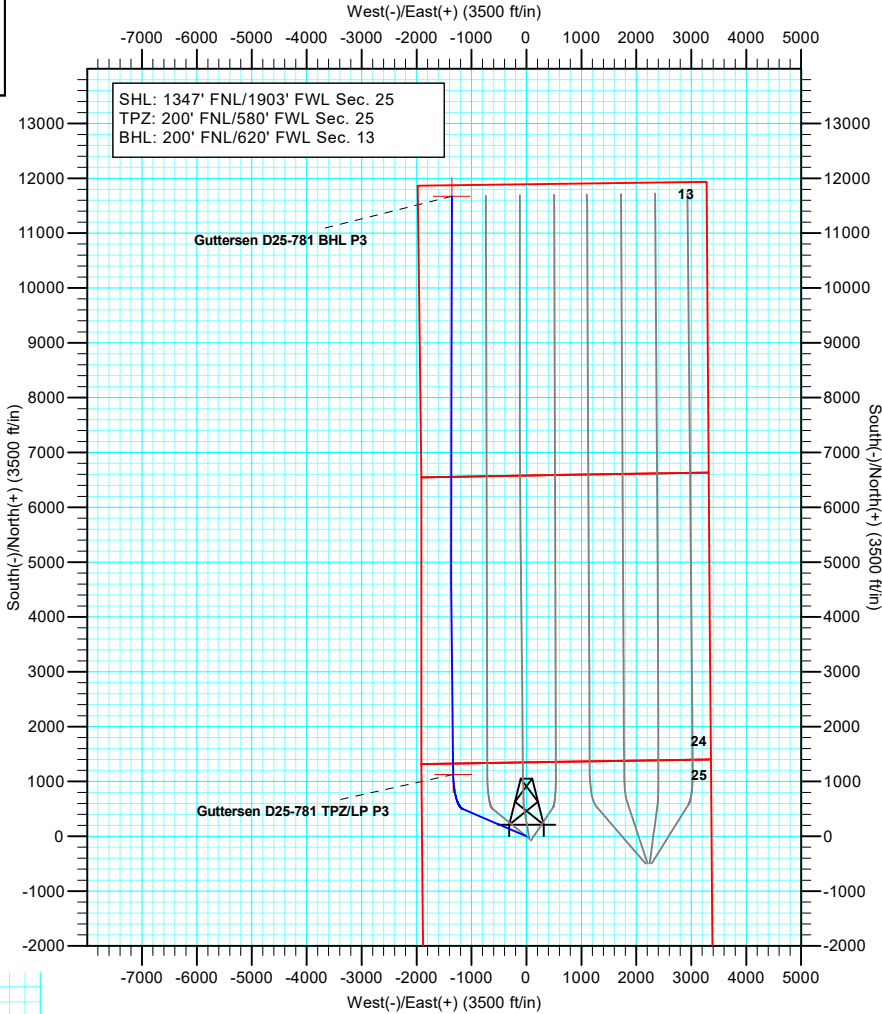
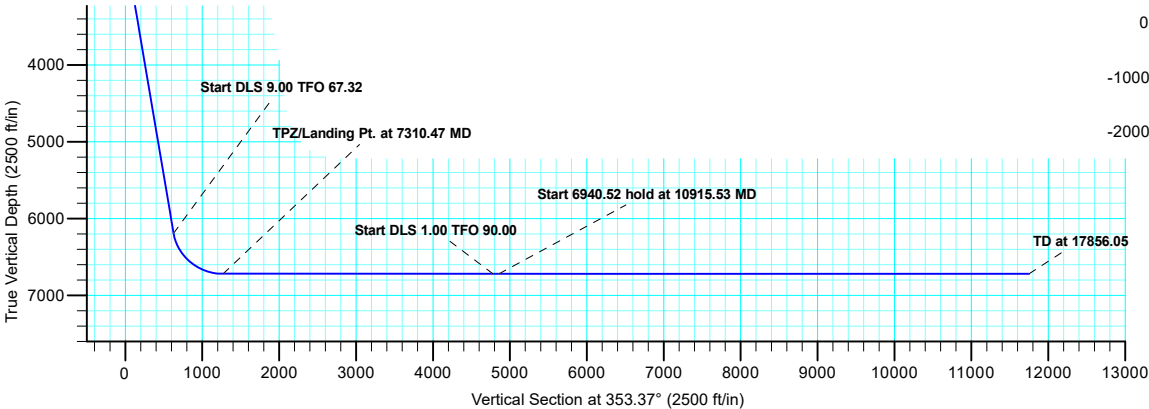
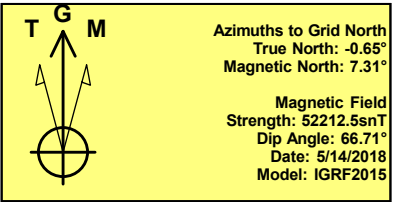
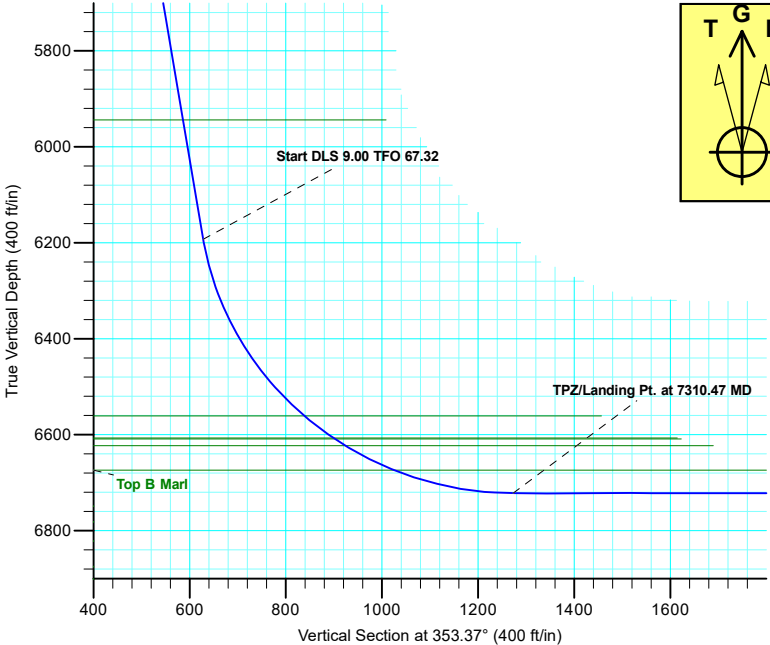
Geodetic System: US State Plane 1983  
Datum: North American Datum 1983  
Ellipsoid: GRS 1980  
Zone: Colorado Northern Zone  
System Datum: Mean Sea Level

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	2000.00	0.00	0.00	2000.00	0.00	0.00	0.00	0.00	0.00
3	2938.30	18.77	293.17	2921.61	59.93	-140.00	2.00	293.17	75.70
4	6393.39	18.77	293.17	6193.03	497.32	-1161.84	0.00	0.00	628.21
5	7310.47	90.00	359.36	6722.00	1126.68	-1333.29	9.00	67.32	1273.16
6	10838.88	90.00	359.36	6722.00	4654.87	-1372.61	0.00	0.00	4782.27
7	10915.53	90.00	0.13	6722.00	4731.52	-1372.95	1.00	90.00	4858.45
8	17856.05	90.00	0.13	6722.00	11672.02	-1357.45	0.00	0.00	11750.69

WELL DETAILS: Guttersen D25-781

+N/-S	+E/-W	Northing	Ground Level: Easting	4787.00 Latitude	Longitude	Slot
0.00	0.00	1317237.37	3278660.27	40.1999105	-104.5023850	



Plan: Plan #3 (Guttersen D25-781/Wellbore #1)

Created By: Shelly C. Peterkin Date: 9:53, June 24 2019

# **Northern Region - DJ Basin**

**Mustang**

**D Section 25**

**Guttersen D25-781**

**Wellbore #1**

**Plan: Plan #3**

## **Standard Planning Report**

**24 June, 2019**

# Noble Energy, Inc.

## Planning Report

<b>Database:</b>	EDMP	<b>Local Co-ordinate Reference:</b>	Well Guttersen D25-781
<b>Company:</b>	Northern Region - DJ Basin	<b>TVD Reference:</b>	KB @ 4817.00ft
<b>Project:</b>	Mustang	<b>MD Reference:</b>	KB @ 4817.00ft
<b>Site:</b>	D Section 25	<b>North Reference:</b>	Grid
<b>Well:</b>	Guttersen D25-781	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #3		

<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 25			
Site Position:		Northing:	1,316,029.45 usft	Latitude:	40.1965730
From:	Lat/Long	Easting:	3,279,365.57 usft	Longitude:	-104.4999090
Position Uncertainty:	0.00 ft	Slot Radius:	13.200 in	Grid Convergence:	0.65 °

Well		Guttersen D25-781				
Well Position	+N/-S	1,207.93 ft	Northing:	1,317,237.37 usft	Latitude:	40.1999105
	+E/-W	-705.29 ft	Easting:	3,278,660.27 usft	Longitude:	-104.5023850
Position Uncertainty		0.00 ft	Wellhead Elevation:		Ground Level:	4,787.00 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	5/14/2018	7.96	66.71	52,212.53852316

<b>Design</b>	Plan #3			
<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	353.37

<b>Plan Sections</b>										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,000.00	0.00	0.00	2,000.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,938.30	18.77	293.17	2,921.61	59.93	-140.00	2.00	2.00	0.00	293.17	
6,393.39	18.77	293.17	6,193.03	497.32	-1,161.84	0.00	0.00	0.00	0.00	
7,310.47	90.00	359.36	6,722.00	1,126.68	-1,333.29	9.00	7.77	7.22	67.32	Guttersen D25-781 TI
10,838.88	90.00	359.36	6,722.00	4,654.87	-1,372.61	0.00	0.00	0.00	0.00	Guttersen D25-781 IF
10,915.53	90.00	0.13	6,722.00	4,731.52	-1,372.95	1.00	0.00	1.00	90.00	
17,856.05	90.00	0.13	6,722.00	11,672.02	-1,357.45	0.00	0.00	0.00	0.00	Guttersen D25-781 BI

# Noble Energy, Inc.

## Planning Report

<b>Database:</b>	EDMP	<b>Local Co-ordinate Reference:</b>	Well Gutteresen D25-781
<b>Company:</b>	Northern Region - DJ Basin	<b>TVD Reference:</b>	KB @ 4817.00ft
<b>Project:</b>	Mustang	<b>MD Reference:</b>	KB @ 4817.00ft
<b>Site:</b>	D Section 25	<b>North Reference:</b>	Grid
<b>Well:</b>	Gutteresen D25-781	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #3		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00
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
680.00	0.00	0.00	680.00	0.00	0.00	0.00	0.00	0.00	0.00
Upper Pierre Aquifer Top									
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00
718.00	0.00	0.00	718.00	0.00	0.00	0.00	0.00	0.00	0.00
Pierre									
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	0.00
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00
1,100.00	0.00	0.00	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00
1,200.00	0.00	0.00	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00
1,300.00	0.00	0.00	1,300.00	0.00	0.00	0.00	0.00	0.00	0.00
1,400.00	0.00	0.00	1,400.00	0.00	0.00	0.00	0.00	0.00	0.00
1,500.00	0.00	0.00	1,500.00	0.00	0.00	0.00	0.00	0.00	0.00
1,600.00	0.00	0.00	1,600.00	0.00	0.00	0.00	0.00	0.00	0.00
1,617.00	0.00	0.00	1,617.00	0.00	0.00	0.00	0.00	0.00	0.00
Upper Pierre Aquifer Base									
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
Start Build 2.00									
2,100.00	2.00	293.17	2,099.98	0.69	-1.60	0.87	2.00	2.00	0.00
2,200.00	4.00	293.17	2,199.84	2.75	-6.42	3.47	2.00	2.00	0.00
2,300.00	6.00	293.17	2,299.45	6.18	-14.43	7.80	2.00	2.00	0.00
2,400.00	8.00	293.17	2,398.70	10.97	-25.63	13.86	2.00	2.00	0.00
2,500.00	10.00	293.17	2,497.47	17.13	-40.01	21.63	2.00	2.00	0.00
2,600.00	12.00	293.17	2,595.62	24.63	-57.55	31.12	2.00	2.00	0.00
2,700.00	14.00	293.17	2,693.06	33.49	-78.23	42.30	2.00	2.00	0.00
2,800.00	16.00	293.17	2,789.64	43.67	-102.02	55.16	2.00	2.00	0.00
2,900.00	18.00	293.17	2,885.27	55.18	-128.90	69.70	2.00	2.00	0.00
2,938.30	18.77	293.17	2,921.61	59.93	-140.00	75.70	2.00	2.00	0.00
Start 3455.09 hold at 2938.30 MD									
3,000.00	18.77	293.17	2,980.03	67.74	-158.25	85.57	0.00	0.00	0.00
3,100.00	18.77	293.17	3,074.72	80.40	-187.83	101.56	0.00	0.00	0.00
3,200.00	18.77	293.17	3,169.40	93.06	-217.40	117.55	0.00	0.00	0.00
3,300.00	18.77	293.17	3,264.09	105.72	-246.98	133.54	0.00	0.00	0.00
3,400.00	18.77	293.17	3,358.77	118.38	-276.55	149.53	0.00	0.00	0.00
3,500.00	18.77	293.17	3,453.45	131.04	-306.13	165.52	0.00	0.00	0.00
3,600.00	18.77	293.17	3,548.14	143.70	-335.70	181.51	0.00	0.00	0.00
3,700.00	18.77	293.17	3,642.82	156.36	-365.28	197.51	0.00	0.00	0.00
3,727.65	18.77	293.17	3,669.00	159.86	-373.45	201.93	0.00	0.00	0.00
Parkman									
3,800.00	18.77	293.17	3,737.51	169.01	-394.85	213.50	0.00	0.00	0.00
3,900.00	18.77	293.17	3,832.19	181.67	-424.43	229.49	0.00	0.00	0.00
4,000.00	18.77	293.17	3,926.87	194.33	-454.00	245.48	0.00	0.00	0.00
4,100.00	18.77	293.17	4,021.56	206.99	-483.58	261.47	0.00	0.00	0.00

# Noble Energy, Inc.

## Planning Report

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<b>Company:</b>	Northern Region - DJ Basin	<b>TVD Reference:</b>	KB @ 4817.00ft
<b>Project:</b>	Mustang	<b>MD Reference:</b>	KB @ 4817.00ft
<b>Site:</b>	D Section 25	<b>North Reference:</b>	Grid
<b>Well:</b>	Guttersen D25-781	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #3		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
4,173.34	18.77	293.17	4,091.00	216.28	-505.27	273.20	0.00	0.00	0.00
<b>Sussex</b>									
4,200.00	18.77	293.17	4,116.24	219.65	-513.15	277.46	0.00	0.00	0.00
4,300.00	18.77	293.17	4,210.93	232.31	-542.73	293.45	0.00	0.00	0.00
4,368.73	18.77	293.17	4,276.00	241.01	-563.05	304.44	0.00	0.00	0.00
<b>Shannon</b>									
4,400.00	18.77	293.17	4,305.61	244.97	-572.30	309.44	0.00	0.00	0.00
4,500.00	18.77	293.17	4,400.29	257.63	-601.87	325.44	0.00	0.00	0.00
4,600.00	18.77	293.17	4,494.98	270.29	-631.45	341.43	0.00	0.00	0.00
4,700.00	18.77	293.17	4,589.66	282.95	-661.02	357.42	0.00	0.00	0.00
4,800.00	18.77	293.17	4,684.35	295.61	-690.60	373.41	0.00	0.00	0.00
4,900.00	18.77	293.17	4,779.03	308.27	-720.17	389.40	0.00	0.00	0.00
5,000.00	18.77	293.17	4,873.71	320.93	-749.75	405.39	0.00	0.00	0.00
5,100.00	18.77	293.17	4,968.40	333.59	-779.32	421.38	0.00	0.00	0.00
5,200.00	18.77	293.17	5,063.08	346.25	-808.90	437.37	0.00	0.00	0.00
5,300.00	18.77	293.17	5,157.77	358.91	-838.47	453.36	0.00	0.00	0.00
5,400.00	18.77	293.17	5,252.45	371.57	-868.05	469.36	0.00	0.00	0.00
5,500.00	18.77	293.17	5,347.13	384.23	-897.62	485.35	0.00	0.00	0.00
5,600.00	18.77	293.17	5,441.82	396.89	-927.20	501.34	0.00	0.00	0.00
5,700.00	18.77	293.17	5,536.50	409.54	-956.77	517.33	0.00	0.00	0.00
5,800.00	18.77	293.17	5,631.19	422.20	-986.35	533.32	0.00	0.00	0.00
5,900.00	18.77	293.17	5,725.87	434.86	-1,015.92	549.31	0.00	0.00	0.00
6,000.00	18.77	293.17	5,820.55	447.52	-1,045.50	565.30	0.00	0.00	0.00
6,100.00	18.77	293.17	5,915.24	460.18	-1,075.07	581.29	0.00	0.00	0.00
6,130.38	18.77	293.17	5,944.00	464.03	-1,084.06	586.15	0.00	0.00	0.00
<b>Teepee Buttes</b>									
6,200.00	18.77	293.17	6,009.92	472.84	-1,104.65	597.29	0.00	0.00	0.00
6,300.00	18.77	293.17	6,104.61	485.50	-1,134.22	613.28	0.00	0.00	0.00
6,393.39	18.77	293.17	6,193.03	497.32	-1,161.84	628.21	0.00	0.00	0.00
<b>Start DLS 9.00 TFO 67.32</b>									
6,400.00	19.00	294.86	6,199.29	498.19	-1,163.80	629.30	9.00	3.59	25.51
6,450.00	21.24	306.25	6,246.25	506.98	-1,178.49	639.72	9.00	4.47	22.78
6,500.00	24.09	315.31	6,292.40	519.59	-1,192.98	653.93	9.00	5.70	18.13
6,550.00	27.36	322.44	6,337.45	535.96	-1,207.17	671.83	9.00	6.55	14.26
6,600.00	30.92	328.10	6,381.12	555.99	-1,220.97	693.31	9.00	7.12	11.32
6,650.00	34.68	332.67	6,423.15	579.54	-1,234.29	718.25	9.00	7.52	9.14
6,700.00	38.59	336.43	6,463.27	606.49	-1,247.07	746.49	9.00	7.80	7.53
6,750.00	42.59	339.60	6,501.23	636.65	-1,259.20	777.85	9.00	8.01	6.33
6,800.00	46.67	342.31	6,536.81	669.85	-1,270.63	812.15	9.00	8.16	5.42
6,836.26	49.66	344.05	6,561.00	695.71	-1,278.44	838.74	9.00	8.25	4.82
<b>Sharon Springs</b>									
6,850.00	50.80	344.68	6,569.79	705.88	-1,281.29	849.17	9.00	8.30	4.52
6,900.00	54.98	346.78	6,599.95	744.51	-1,291.09	888.67	9.00	8.35	4.21
6,912.44	56.02	347.27	6,607.00	754.50	-1,293.40	898.86	9.00	8.40	3.93
<b>Top A Chalk</b>									
6,916.03	56.32	347.41	6,609.00	757.41	-1,294.05	901.83	9.00	8.41	3.87
<b>Top A Marl</b>									
6,942.03	58.51	348.39	6,623.00	778.83	-1,298.64	923.64	9.00	8.42	3.76
<b>Top B Chalk</b>									
6,950.00	59.18	348.68	6,627.12	785.51	-1,300.00	930.43	9.00	8.44	3.65
7,000.00	63.42	350.41	6,651.13	828.63	-1,307.94	974.18	9.00	8.47	3.48
7,050.00	67.67	352.03	6,671.82	873.61	-1,314.87	1,019.65	9.00	8.51	3.23
7,055.79	68.17	352.21	6,674.00	878.92	-1,315.61	1,025.02	9.00	8.53	3.11

# Noble Energy, Inc.

## Planning Report

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<b>Company:</b>	Northern Region - DJ Basin	<b>TVD Reference:</b>	KB @ 4817.00ft
<b>Project:</b>	Mustang	<b>MD Reference:</b>	KB @ 4817.00ft
<b>Site:</b>	D Section 25	<b>North Reference:</b>	Grid
<b>Well:</b>	Guttersen D25-781	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #3		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
<b>Top B Marl</b>									
7,100.00	71.94	353.54	6,689.08	920.15	-1,320.76	1,066.56	9.00	8.54	3.02
7,150.00	76.22	354.99	6,702.79	967.98	-1,325.55	1,114.63	9.00	8.56	2.89
7,200.00	80.51	356.38	6,712.87	1,016.80	-1,329.23	1,163.55	9.00	8.58	2.79
7,250.00	84.80	357.74	6,719.26	1,066.31	-1,331.77	1,213.02	9.00	8.59	2.72
7,300.00	89.10	359.08	6,721.92	1,116.21	-1,333.15	1,262.74	9.00	8.59	2.68
7,310.47	90.00	359.36	6,722.00	1,126.68	-1,333.29	1,273.16	9.00	8.59	2.67
<b>TPZ/Landing Pt. at 7310.47 MD</b>									
7,400.00	90.00	359.36	6,722.00	1,216.20	-1,334.29	1,362.20	0.00	0.00	0.00
7,500.00	90.00	359.36	6,722.00	1,316.20	-1,335.41	1,461.65	0.00	0.00	0.00
7,600.00	90.00	359.36	6,722.00	1,416.19	-1,336.52	1,561.11	0.00	0.00	0.00
7,700.00	90.00	359.36	6,722.00	1,516.19	-1,337.63	1,660.56	0.00	0.00	0.00
7,800.00	90.00	359.36	6,722.00	1,616.18	-1,338.75	1,760.01	0.00	0.00	0.00
7,900.00	90.00	359.36	6,722.00	1,716.17	-1,339.86	1,859.47	0.00	0.00	0.00
8,000.00	90.00	359.36	6,722.00	1,816.17	-1,340.98	1,958.92	0.00	0.00	0.00
8,100.00	90.00	359.36	6,722.00	1,916.16	-1,342.09	2,058.37	0.00	0.00	0.00
8,200.00	90.00	359.36	6,722.00	2,016.15	-1,343.21	2,157.82	0.00	0.00	0.00
8,300.00	90.00	359.36	6,722.00	2,116.15	-1,344.32	2,257.28	0.00	0.00	0.00
8,400.00	90.00	359.36	6,722.00	2,216.14	-1,345.43	2,356.73	0.00	0.00	0.00
8,500.00	90.00	359.36	6,722.00	2,316.14	-1,346.55	2,456.18	0.00	0.00	0.00
8,600.00	90.00	359.36	6,722.00	2,416.13	-1,347.66	2,555.64	0.00	0.00	0.00
8,700.00	90.00	359.36	6,722.00	2,516.12	-1,348.78	2,655.09	0.00	0.00	0.00
8,800.00	90.00	359.36	6,722.00	2,616.12	-1,349.89	2,754.54	0.00	0.00	0.00
8,900.00	90.00	359.36	6,722.00	2,716.11	-1,351.01	2,854.00	0.00	0.00	0.00
9,000.00	90.00	359.36	6,722.00	2,816.10	-1,352.12	2,953.45	0.00	0.00	0.00
9,100.00	90.00	359.36	6,722.00	2,916.10	-1,353.23	3,052.90	0.00	0.00	0.00
9,200.00	90.00	359.36	6,722.00	3,016.09	-1,354.35	3,152.36	0.00	0.00	0.00
9,300.00	90.00	359.36	6,722.00	3,116.09	-1,355.46	3,251.81	0.00	0.00	0.00
9,400.00	90.00	359.36	6,722.00	3,216.08	-1,356.58	3,351.26	0.00	0.00	0.00
9,500.00	90.00	359.36	6,722.00	3,316.07	-1,357.69	3,450.71	0.00	0.00	0.00
9,600.00	90.00	359.36	6,722.00	3,416.07	-1,358.81	3,550.17	0.00	0.00	0.00
9,700.00	90.00	359.36	6,722.00	3,516.06	-1,359.92	3,649.62	0.00	0.00	0.00
9,800.00	90.00	359.36	6,722.00	3,616.06	-1,361.04	3,749.07	0.00	0.00	0.00
9,900.00	90.00	359.36	6,722.00	3,716.05	-1,362.15	3,848.53	0.00	0.00	0.00
10,000.00	90.00	359.36	6,722.00	3,816.04	-1,363.26	3,947.98	0.00	0.00	0.00
10,100.00	90.00	359.36	6,722.00	3,916.04	-1,364.38	4,047.43	0.00	0.00	0.00
10,200.00	90.00	359.36	6,722.00	4,016.03	-1,365.49	4,146.89	0.00	0.00	0.00
10,300.00	90.00	359.36	6,722.00	4,116.02	-1,366.61	4,246.34	0.00	0.00	0.00
10,400.00	90.00	359.36	6,722.00	4,216.02	-1,367.72	4,345.79	0.00	0.00	0.00
10,500.00	90.00	359.36	6,722.00	4,316.01	-1,368.84	4,445.25	0.00	0.00	0.00
10,600.00	90.00	359.36	6,722.00	4,416.01	-1,369.95	4,544.70	0.00	0.00	0.00
10,700.00	90.00	359.36	6,722.00	4,516.00	-1,371.06	4,644.15	0.00	0.00	0.00
10,800.00	90.00	359.36	6,722.00	4,615.99	-1,372.18	4,743.60	0.00	0.00	0.00
10,838.88	90.00	359.36	6,722.00	4,654.87	-1,372.61	4,782.27	0.00	0.00	0.00
<b>Start DLS 1.00 TFO 90.00</b>									
10,900.00	90.00	359.97	6,722.00	4,715.99	-1,372.97	4,843.02	1.00	0.00	1.00
10,915.53	90.00	0.13	6,722.00	4,731.52	-1,372.95	4,858.45	1.00	0.00	1.00
<b>Start 6940.52 hold at 10915.53 MD</b>									
11,000.00	90.00	0.13	6,722.00	4,815.99	-1,372.77	4,942.33	0.00	0.00	0.00
11,100.00	90.00	0.13	6,722.00	4,915.99	-1,372.54	5,041.63	0.00	0.00	0.00
11,200.00	90.00	0.13	6,722.00	5,015.99	-1,372.32	5,140.94	0.00	0.00	0.00
11,300.00	90.00	0.13	6,722.00	5,115.99	-1,372.09	5,240.24	0.00	0.00	0.00
11,400.00	90.00	0.13	6,722.00	5,215.99	-1,371.87	5,339.55	0.00	0.00	0.00

# Noble Energy, Inc.

## Planning Report

<b>Database:</b>	EDMP	<b>Local Co-ordinate Reference:</b>	Well Guttersen D25-781
<b>Company:</b>	Northern Region - DJ Basin	<b>TVD Reference:</b>	KB @ 4817.00ft
<b>Project:</b>	Mustang	<b>MD Reference:</b>	KB @ 4817.00ft
<b>Site:</b>	D Section 25	<b>North Reference:</b>	Grid
<b>Well:</b>	Guttersen D25-781	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #3		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
11,500.00	90.00	0.13	6,722.00	5,315.99	-1,371.65	5,438.85	0.00	0.00	0.00
11,600.00	90.00	0.13	6,722.00	5,415.99	-1,371.42	5,538.16	0.00	0.00	0.00
11,700.00	90.00	0.13	6,722.00	5,515.99	-1,371.20	5,637.46	0.00	0.00	0.00
11,800.00	90.00	0.13	6,722.00	5,615.99	-1,370.98	5,736.76	0.00	0.00	0.00
11,900.00	90.00	0.13	6,722.00	5,715.99	-1,370.75	5,836.07	0.00	0.00	0.00
12,000.00	90.00	0.13	6,722.00	5,815.99	-1,370.53	5,935.37	0.00	0.00	0.00
12,100.00	90.00	0.13	6,722.00	5,915.99	-1,370.31	6,034.68	0.00	0.00	0.00
12,200.00	90.00	0.13	6,722.00	6,015.99	-1,370.08	6,133.98	0.00	0.00	0.00
12,300.00	90.00	0.13	6,722.00	6,115.99	-1,369.86	6,233.29	0.00	0.00	0.00
12,400.00	90.00	0.13	6,722.00	6,215.99	-1,369.64	6,332.59	0.00	0.00	0.00
12,500.00	90.00	0.13	6,722.00	6,315.99	-1,369.41	6,431.90	0.00	0.00	0.00
12,600.00	90.00	0.13	6,722.00	6,415.99	-1,369.19	6,531.20	0.00	0.00	0.00
12,700.00	90.00	0.13	6,722.00	6,515.98	-1,368.97	6,630.50	0.00	0.00	0.00
12,800.00	90.00	0.13	6,722.00	6,615.98	-1,368.74	6,729.81	0.00	0.00	0.00
12,900.00	90.00	0.13	6,722.00	6,715.98	-1,368.52	6,829.11	0.00	0.00	0.00
13,000.00	90.00	0.13	6,722.00	6,815.98	-1,368.30	6,928.42	0.00	0.00	0.00
13,100.00	90.00	0.13	6,722.00	6,915.98	-1,368.07	7,027.72	0.00	0.00	0.00
13,200.00	90.00	0.13	6,722.00	7,015.98	-1,367.85	7,127.03	0.00	0.00	0.00
13,300.00	90.00	0.13	6,722.00	7,115.98	-1,367.63	7,226.33	0.00	0.00	0.00
13,400.00	90.00	0.13	6,722.00	7,215.98	-1,367.40	7,325.64	0.00	0.00	0.00
13,500.00	90.00	0.13	6,722.00	7,315.98	-1,367.18	7,424.94	0.00	0.00	0.00
13,600.00	90.00	0.13	6,722.00	7,415.98	-1,366.96	7,524.24	0.00	0.00	0.00
13,700.00	90.00	0.13	6,722.00	7,515.98	-1,366.73	7,623.55	0.00	0.00	0.00
13,800.00	90.00	0.13	6,722.00	7,615.98	-1,366.51	7,722.85	0.00	0.00	0.00
13,900.00	90.00	0.13	6,722.00	7,715.98	-1,366.29	7,822.16	0.00	0.00	0.00
14,000.00	90.00	0.13	6,722.00	7,815.98	-1,366.06	7,921.46	0.00	0.00	0.00
14,100.00	90.00	0.13	6,722.00	7,915.98	-1,365.84	8,020.77	0.00	0.00	0.00
14,200.00	90.00	0.13	6,722.00	8,015.98	-1,365.62	8,120.07	0.00	0.00	0.00
14,300.00	90.00	0.13	6,722.00	8,115.98	-1,365.39	8,219.38	0.00	0.00	0.00
14,400.00	90.00	0.13	6,722.00	8,215.98	-1,365.17	8,318.68	0.00	0.00	0.00
14,500.00	90.00	0.13	6,722.00	8,315.98	-1,364.94	8,417.98	0.00	0.00	0.00
14,600.00	90.00	0.13	6,722.00	8,415.98	-1,364.72	8,517.29	0.00	0.00	0.00
14,700.00	90.00	0.13	6,722.00	8,515.98	-1,364.50	8,616.59	0.00	0.00	0.00
14,800.00	90.00	0.13	6,722.00	8,615.98	-1,364.27	8,715.90	0.00	0.00	0.00
14,900.00	90.00	0.13	6,722.00	8,715.98	-1,364.05	8,815.20	0.00	0.00	0.00
15,000.00	90.00	0.13	6,722.00	8,815.98	-1,363.83	8,914.51	0.00	0.00	0.00
15,100.00	90.00	0.13	6,722.00	8,915.98	-1,363.60	9,013.81	0.00	0.00	0.00
15,200.00	90.00	0.13	6,722.00	9,015.98	-1,363.38	9,113.12	0.00	0.00	0.00
15,300.00	90.00	0.13	6,722.00	9,115.98	-1,363.16	9,212.42	0.00	0.00	0.00
15,400.00	90.00	0.13	6,722.00	9,215.98	-1,362.93	9,311.72	0.00	0.00	0.00
15,500.00	90.00	0.13	6,722.00	9,315.98	-1,362.71	9,411.03	0.00	0.00	0.00
15,600.00	90.00	0.13	6,722.00	9,415.98	-1,362.49	9,510.33	0.00	0.00	0.00
15,700.00	90.00	0.13	6,722.00	9,515.98	-1,362.26	9,609.64	0.00	0.00	0.00
15,800.00	90.00	0.13	6,722.00	9,615.98	-1,362.04	9,708.94	0.00	0.00	0.00
15,900.00	90.00	0.13	6,722.00	9,715.98	-1,361.82	9,808.25	0.00	0.00	0.00
16,000.00	90.00	0.13	6,722.00	9,815.98	-1,361.59	9,907.55	0.00	0.00	0.00
16,100.00	90.00	0.13	6,722.00	9,915.98	-1,361.37	10,006.86	0.00	0.00	0.00
16,200.00	90.00	0.13	6,722.00	10,015.98	-1,361.15	10,106.16	0.00	0.00	0.00
16,300.00	90.00	0.13	6,722.00	10,115.98	-1,360.92	10,205.47	0.00	0.00	0.00
16,400.00	90.00	0.13	6,722.00	10,215.98	-1,360.70	10,304.77	0.00	0.00	0.00
16,500.00	90.00	0.13	6,722.00	10,315.98	-1,360.48	10,404.07	0.00	0.00	0.00
16,600.00	90.00	0.13	6,722.00	10,415.98	-1,360.25	10,503.38	0.00	0.00	0.00
16,700.00	90.00	0.13	6,722.00	10,515.97	-1,360.03	10,602.68	0.00	0.00	0.00
16,800.00	90.00	0.13	6,722.00	10,615.97	-1,359.81	10,701.99	0.00	0.00	0.00

# Noble Energy, Inc.

## Planning Report

<b>Database:</b>	EDMP	<b>Local Co-ordinate Reference:</b>	Well Guttersten D25-781
<b>Company:</b>	Northern Region - DJ Basin	<b>TVD Reference:</b>	KB @ 4817.00ft
<b>Project:</b>	Mustang	<b>MD Reference:</b>	KB @ 4817.00ft
<b>Site:</b>	D Section 25	<b>North Reference:</b>	Grid
<b>Well:</b>	Guttersten D25-781	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #3		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
16,900.00	90.00	0.13	6,722.00	10,715.97	-1,359.58	10,801.29	0.00	0.00	0.00
17,000.00	90.00	0.13	6,722.00	10,815.97	-1,359.36	10,900.60	0.00	0.00	0.00
17,100.00	90.00	0.13	6,722.00	10,915.97	-1,359.14	10,999.90	0.00	0.00	0.00
17,200.00	90.00	0.13	6,722.00	11,015.97	-1,358.91	11,099.21	0.00	0.00	0.00
17,300.00	90.00	0.13	6,722.00	11,115.97	-1,358.69	11,198.51	0.00	0.00	0.00
17,400.00	90.00	0.13	6,722.00	11,215.97	-1,358.47	11,297.81	0.00	0.00	0.00
17,500.00	90.00	0.13	6,722.00	11,315.97	-1,358.24	11,397.12	0.00	0.00	0.00
17,600.00	90.00	0.13	6,722.00	11,415.97	-1,358.02	11,496.42	0.00	0.00	0.00
17,700.00	90.00	0.13	6,722.00	11,515.97	-1,357.79	11,595.73	0.00	0.00	0.00
17,800.00	90.00	0.13	6,722.00	11,615.97	-1,357.57	11,695.03	0.00	0.00	0.00
17,856.05	90.00	0.13	6,722.00	11,672.02	-1,357.45	11,750.69	0.00	0.00	0.00
TD at 17856.05									

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
- hit/miss target									
- Shape									
Guttersten D25-781 BHL	0.00	0.00	6,722.00	11,672.02	-1,357.45	1,328,909.37	3,277,302.83	40.2319912	-104.5067763
- plan hits target center									
- Point									
Guttersten D25-781 TPZ	0.00	0.00	6,722.00	1,126.68	-1,333.29	1,318,364.05	3,277,326.98	40.2030443	-104.5071126
- plan hits target center									
- Point									

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
680.00	680.00	Upper Pierre Aquifer Top				
718.00	718.00	Pierre				
1,617.00	1,617.00	Upper Pierre Aquifer Base				
3,727.65	3,669.00	Parkman				
4,173.34	4,091.00	Sussex				
4,368.73	4,276.00	Shannon				
6,130.38	5,944.00	Teepee Buttes				
6,836.26	6,561.00	Sharon Springs				
6,912.44	6,607.00	Top A Chalk				
6,916.03	6,609.00	Top A Marl				
6,942.03	6,623.00	Top B Chalk				
7,055.79	6,674.00	Top B Marl				



# Noble Energy, Inc.

## Planning Report

<b>Database:</b>	EDMP	<b>Local Co-ordinate Reference:</b>	Well Guttersen D25-781
<b>Company:</b>	Northern Region - DJ Basin	<b>TVD Reference:</b>	KB @ 4817.00ft
<b>Project:</b>	Mustang	<b>MD Reference:</b>	KB @ 4817.00ft
<b>Site:</b>	D Section 25	<b>North Reference:</b>	Grid
<b>Well:</b>	Guttersen D25-781	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #3		

Plan Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
2,000.00	2,000.00	0.00	0.00	Start Build 2.00
2,938.30	2,921.61	59.93	-140.00	Start 3455.09 hold at 2938.30 MD
6,393.39	6,193.03	497.32	-1,161.84	Start DLS 9.00 TFO 67.32
7,310.47	6,722.00	1,126.68	-1,333.29	TPZ/Landing Pt. at 7310.47 MD
10,838.88	6,722.00	4,654.87	-1,372.61	Start DLS 1.00 TFO 90.00
10,915.53	6,722.00	4,731.52	-1,372.95	Start 6940.52 hold at 10915.53 MD
17,856.05	6,722.00	11,672.02	-1,357.45	TD at 17856.05

# **Northern Region - DJ Basin**

**Mustang**

**D Section 25**

**Guttersen D25-781**

**Wellbore #1**

**Plan #3**

## **Anticollision Summary Report**

**24 June, 2019**

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

<b>Company:</b>	Northern Region - DJ Basin	<b>Local Co-ordinate Reference:</b>	Well Guttersten D25-781
<b>Project:</b>	Mustang	<b>TVD Reference:</b>	KB @ 4817.00ft
<b>Reference Site:</b>	D Section 25	<b>MD Reference:</b>	KB @ 4817.00ft
<b>Site Error:</b>	0.00 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Guttersten D25-781	<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 #3	<b>Offset TVD Reference:</b>	Offset Datum

Reference	Plan #3		
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	MD + Stations Interval 100.00ft	Error Model:	ISCWSA
Depth Range:	Unlimited	Scan Method:	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 10,000.00 ft	Error Surface:	Pedal Curve
Warning Levels Evaluated at:	2.00 Sigma	Casing Method:	Not applied

Survey Tool Program		Date	6/24/2019		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
0.00	17,856.05	Plan #3 (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 01						
Guttersten D12-715 - Wellbore #1 - Plan #1	17,856.05	17,394.65	4,309.59	4,091.68	19.777	CC, ES, SF
Guttersten D12-725 - Wellbore #1 - Plan #1	17,856.05	17,354.05	3,661.55	3,444.16	16.844	CC, ES, SF
Guttersten D12-735 - Wellbore #1 - Plan #1	17,856.05	17,566.38	3,014.93	2,797.88	13.890	CC, ES, SF
Guttersten D12-745 - Wellbore #1 - Plan #1	17,856.05	17,749.15	2,370.96	2,154.76	10.966	CC, ES, SF
Guttersten D12-750 - Wellbore #1 - Plan #1	17,856.05	17,957.30	2,056.02	1,839.53	9.497	CC, ES, SF
Guttersten D12-755 - Wellbore #1 - Plan #1	17,856.05	17,362.69	1,732.51	1,518.70	8.103	CC, ES, SF
Guttersten D12-765 - Wellbore #1 - Plan #1	17,856.05	17,427.57	1,110.62	903.72	5.368	CC, ES, SF
Guttersten D12-770 - Wellbore #1 - Plan #1	17,856.05	17,530.79	830.36	635.12	4.253	CC, ES, SF
Guttersten D12-775 - Wellbore #1 - Plan #1	17,856.05	17,387.70	553.67	393.62	3.459	CC, ES, SF
Guttersten D12-785 - Wellbore #1 - Plan #1	17,856.05	17,570.64	485.20	358.24	3.822	CC, ES, SF
D Section 02						
Booth D11-715 - Booth D11-715 - Plan #1	17,856.05	17,531.72	1,049.64	880.34	6.200	CC, ES, SF
Booth D11-725 - Booth D11-725 - Plan #1	17,856.05	17,473.90	1,673.40	1,494.21	9.338	CC, ES, SF
Booth D11-730 - Booth D11-730 - Plan #1	17,856.05	17,544.11	1,999.54	1,818.68	11.056	CC, ES, SF
Booth D11-735 - Booth D11-735 - Plan #1	17,856.05	17,341.28	2,309.65	2,126.83	12.634	CC, ES, SF
Booth D11-745 - Booth D11-745 - Plan #1	17,856.05	17,438.95	2,955.19	2,771.06	16.049	CC, ES, SF
Booth D11-755 - Booth D11-755 - Plan #1	17,856.05	17,399.56	3,601.56	3,416.99	19.513	CC, ES, SF
Booth D11-765 - Booth D11-765 - Plan #1	17,856.05	17,474.67	4,249.66	4,064.47	22.948	CC, ES, SF
Booth D11-770 - Booth D11-770 - Plan #1	17,856.05	17,651.37	4,578.29	4,393.22	24.737	CC, ES, SF
Booth D11-775 - Booth D11-775 - Plan #1	17,856.05	17,638.00	4,898.75	4,713.05	26.380	CC, ES, SF
Booth D11-785 - Booth D11-785 - Plan #1	17,856.05	17,818.48	5,546.97	5,360.48	29.744	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 Gutteresen D25-781
<b>Project:</b>	Mustang	<b>TVD Reference:</b>	KB @ 4817.00ft
<b>Reference Site:</b>	D Section 25	<b>MD Reference:</b>	KB @ 4817.00ft
<b>Site Error:</b>	0.00 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Gutteresen D25-781	<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 #3	<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 12						
GUTTERERSEN STATE D #12-7J(SI) - Wellbore #1 - No	17,856.05	6,661.00	4,445.72	4,321.21	35.706	CC, ES, SF
GUTTERSEN #12D(PR) - Wellbore #1 - No Surveys	17,856.05	6,655.00	3,669.31	3,518.46	24.324	CC, ES, SF
Gutteresen #33-12(PR) - Wellbore #1 - No Surveys	17,856.05	6,645.00	3,444.55	3,304.19	24.541	CC, ES, SF
GUTTERSEN #34-12(PR) - Wellbore #1 - No Surveys	17,856.05	6,645.00	2,828.76	2,675.04	18.402	CC, ES, SF
Gutteresen #43-12(PR) - Wellbore #1 - Gyro	17,856.05	6,600.51	4,592.21	4,479.75	40.835	CC, ES, SF
GUTTERSEN #44-12(PR) - Wellbore #1 - Gyro	17,856.05	6,469.13	4,074.17	3,954.94	34.169	CC, ES, SF
GUTTERSEN D #12-20(PR) - Wellbore #1 - No Surveys	17,856.05	6,645.00	2,945.70	2,847.18	29.898	CC, ES, SF
GUTTERSEN D #12-25(PR) - Wellbore #1 - No Surveys	17,856.05	6,652.00	1,803.69	1,690.27	15.903	CC, ES, SF
GUTTERSEN STATE D #12-19(PR) - Wellbore #1 - No S	17,856.05	6,652.00	4,307.31	4,210.46	44.476	CC, ES, SF
GUTTERSEN STATE D #12-2J(SI) - Wellbore #1 - No Su	17,856.05	6,685.00	5,555.47	5,437.10	46.934	CC, ES, SF
Gutteresen State D12-01JL - Wellbore #1 - Wellbore #1 - A	17,856.05	7,061.96	6,211.90	6,114.32	63.662	CC, ES, SF
Gutteresen State D12-08JL - Wellbore #1 - Wellbore #1 - A	17,856.05	6,737.66	5,264.88	5,158.79	49.629	CC, ES, SF
KARCH BLUE D #12-11(PR) - Wellbore #1 - No Surveys	17,856.05	6,636.00	2,680.73	2,558.32	21.899	CC, ES, SF
KARCH BLUE D #12-12(PR) - Wellbore #1 - No Surveys	17,856.05	6,633.00	2,240.05	2,148.48	24.462	CC, ES, SF
KARCH BLUE D #12-14(PR) - Wellbore #1 - No Surveys	17,856.05	6,639.00	1,610.09	1,464.38	11.050	CC, ES, SF
L F RANCH #2-12(SI) - Wellbore #1 - No Surveys	17,856.05	6,630.00	1,266.89	1,162.42	12.127	CC, ES, SF
SPIKE STATE #D 12-3(PR) - Wellbore #1 - No Surveys	17,856.05	6,644.00	5,042.23	4,939.40	49.037	CC, ES, SF
SPIKE STATE #D 12-4(PR) - Wellbore #1 - No Surveys	17,856.05	6,635.00	4,750.15	4,660.39	52.922	CC, ES, SF
SPIKE STATE #D 12-5(PR) - Wellbore #1 - No Surveys	17,856.05	6,632.00	3,533.55	3,443.24	39.130	CC, ES, SF
SPIKE STATE #D 12-6(PA) - Wellbore #1 - Gyro	17,856.05	6,670.23	3,745.08	3,670.95	50.524	CC, ES, SF
STATE #10(TA) - Wellbore #1 - No Surveys	17,856.05	6,699.00	5,467.75	5,338.94	42.446	CC, ES, SF

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

<b>Company:</b>	Northern Region - DJ Basin	<b>Local Co-ordinate Reference:</b>	Well Guttersen D25-781
<b>Project:</b>	Mustang	<b>TVD Reference:</b>	KB @ 4817.00ft
<b>Reference Site:</b>	D Section 25	<b>MD Reference:</b>	KB @ 4817.00ft
<b>Site Error:</b>	0.00 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Guttersen D25-781	<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 #3	<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 13						
Dalbey D 13-11 (SI) - Wellbore #1 - Gyro Surveys	14,798.96	6,629.65	1,494.34	1,397.60	15.446	CC
Dalbey D 13-11 (SI) - Wellbore #1 - Gyro Surveys	14,800.00	6,629.65	1,494.35	1,397.60	15.446	ES, SF
Dalbey D 13-12 (PR) - Wellbore #1 - Gyro Surveys	14,300.00	6,647.81	349.34	256.09	3.746	SF
Dalbey D 13-12 (PR) - Wellbore #1 - Gyro Surveys	14,310.46	6,647.91	349.18	256.05	3.749	CC, ES
Dalbey D 13-13 (SI) - Wellbore #1 - As-Drilled	13,397.42	6,650.33	103.16	17.03	1.198	Level 2, CC, ES, SF
Dalbey D 13-14 (PA) - Wellbore #1 - Gyro Surveys	13,401.15	6,649.60	1,276.21	1,189.91	14.788	CC, ES, SF
Guttersen 13D (PR) - Wellbore #1 - Gyro Surveys	15,985.42	6,638.76	36.01	-69.72	0.341	Level 1, CC, ES, SF
Guttersen 13C (PR) - Wellbore #1 - Gyro Surveys	16,782.89	6,583.47	3,363.07	3,251.11	30.039	CC
Guttersen 13C (PR) - Wellbore #1 - Gyro Surveys	16,800.00	6,583.36	3,363.11	3,251.06	30.014	ES
Guttersen 13C (PR) - Wellbore #1 - Gyro Surveys	17,100.00	6,581.44	3,377.99	3,264.65	29.805	SF
Guttersen 14D (PR) - Wellbore #1 - Gyro Surveys	14,179.80	6,635.00	3,367.41	3,275.32	36.566	CC
Guttersen 13D (PR) - Wellbore #1 - Gyro Surveys	14,200.00	6,635.25	3,367.47	3,275.27	36.523	ES
Guttersen 13D (PR) - Wellbore #1 - Gyro Surveys	14,600.00	6,640.05	3,393.52	3,299.59	36.129	SF
Guttersen 13N (PR) - Wellbore #1 - Gyro Surveys	16,753.35	6,617.72	1,802.75	1,690.86	16.112	CC, ES
Guttersen 13N (PR) - Wellbore #1 - Gyro Surveys	16,800.00	6,617.25	1,803.35	1,691.33	16.098	SF
Guttersen 13S (PR) - Wellbore #1 - Gyro Surveys	15,523.04	6,581.71	3,356.34	3,254.25	32.877	CC, ES
Guttersen 13S (PR) - Wellbore #1 - Gyro Surveys	15,900.00	6,584.44	3,377.44	3,273.72	32.565	SF
Guttersen 13T (PR) - Wellbore #1 - Gyro Surveys	12,956.61	6,633.32	3,270.57	3,187.68	39.456	CC, ES
Guttersen 13T (PR) - Wellbore #1 - Gyro Surveys	13,400.00	6,632.53	3,300.49	3,215.75	38.949	SF
Guttersen 21-13 (SI) - Wellbore #1 - Gyro Surveys	17,359.65	6,622.49	1,233.47	1,116.79	10.571	CC, ES, SF
Guttersen 22-13 (SI) - Wellbore #1 - Gyro Surveys	16,101.80	6,618.68	1,392.87	1,286.12	13.047	CC, ES, SF
Guttersen 31-13 (PR) - Wellbore #1 - Gyro Surveys	17,407.54	6,696.64	2,619.71	2,502.00	22.255	CC, ES
Guttersen 31-13 (PR) - Wellbore #1 - Gyro Surveys	17,600.00	6,694.60	2,626.77	2,508.36	22.183	SF
Guttersen 32-13 (PR) - Wellbore #1 - Gyro Surveys	16,221.81	6,637.96	2,724.96	2,617.03	25.247	CC, ES
Guttersen 32-13 (PR) - Wellbore #1 - Gyro Surveys	16,400.00	6,636.99	2,730.78	2,622.13	25.135	SF
Guttersen 34-13 (PR) - Wellbore #1 - Gyro Surveys	13,459.89	6,648.62	2,630.33	2,543.65	30.345	CC, ES
Guttersen 34-13 (PR) - Wellbore #1 - Gyro Surveys	13,700.00	6,650.26	2,641.27	2,553.67	30.151	SF
Guttersen 41-13 (PR) - Wellbore #1 - Gyro Surveys	17,353.71	6,464.48	4,009.03	3,893.23	34.622	CC, ES
Guttersen 41-13 (PR) - Wellbore #1 - Gyro Surveys	17,800.00	6,462.57	4,033.79	3,915.91	34.219	SF
Guttersen 42-13 (PR) - Wellbore #1 - Gyro Surveys	16,084.92	6,496.45	4,112.57	4,006.52	38.779	CC
Guttersen 42-13 (PR) - Wellbore #1 - Gyro Surveys	16,100.00	6,496.81	4,112.59	4,006.45	38.747	ES
Guttersen 42-13 (PR) - Wellbore #1 - Gyro Surveys	16,600.00	6,507.42	4,144.68	4,036.11	38.177	SF
Guttersen 43-13 - Wellbore #1 - Wellbore #1 - As Drilled	14,814.70	6,651.52	4,022.04	3,925.09	41.486	CC, ES
Guttersen 43-13 - Wellbore #1 - Wellbore #1 - As Drilled	15,400.00	6,658.54	4,064.40	3,964.70	40.766	SF
Guttersen 44-13 - Wellbore #1 - Wellbore #1 - As Drilled	13,464.23	6,694.21	3,971.46	3,880.11	43.475	CC
Guttersen 44-13 - Wellbore #1 - Wellbore #1 - As Drilled	13,500.00	6,694.17	3,971.62	3,880.07	43.382	ES
Guttersen 44-13 - Wellbore #1 - Wellbore #1 - As Drilled	14,100.00	6,693.54	4,022.02	3,927.77	42.675	SF
L F Ranch 1-13 (PR) - Wellbore #1 - Gyro Surveys	14,498.84	6,639.55	2,597.10	2,502.47	27.443	CC
L F Ranch 1-13 (PR) - Wellbore #1 - Gyro Surveys	14,500.00	6,639.55	2,597.10	2,502.46	27.441	ES
L F Ranch 1-13 (PR) - Wellbore #1 - Gyro Surveys	14,700.00	6,640.83	2,604.88	2,509.47	27.302	SF
L. F. Ranch 13-4 (SI) - Wellbore #1 - Gyro Surveys	17,000.00	6,616.94	346.93	233.25	3.052	SF
L. F. Ranch 13-4 (SI) - Wellbore #1 - Gyro Surveys	17,017.29	6,616.48	346.50	233.01	3.053	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 D25-781
<b>Project:</b>	Mustang	<b>TVD Reference:</b>	KB @ 4817.00ft
<b>Reference Site:</b>	D Section 25	<b>MD Reference:</b>	KB @ 4817.00ft
<b>Site Error:</b>	0.00 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Guttersen D25-781	<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 #3	<b>Offset TVD Reference:</b>	Offset Datum

**Summary**

Site Name Offset Well - Wellbore - Design	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Between Ellipses (ft)	Separation Factor	Warning
D Section 14						
Dalbey D 14-1 (SI) - Wellbore #1 - Gyro Surveys	17,347.20	6,673.52	1,362.83	1,245.94	11.659	CC, ES
Dalbey D 14-1 (SI) - Wellbore #1 - Gyro Surveys	17,500.00	6,673.16	1,371.36	1,252.90	11.576	SF
Dalbey D 14-2 (SI) - Wellbore #1 - Gyro Surveys	17,096.41	6,683.19	2,277.16	2,162.29	19.823	CC
Dalbey D 14-2 (SI) - Wellbore #1 - Gyro Surveys	17,100.00	6,683.21	2,277.17	2,162.25	19.816	ES
Dalbey D 14-2 (SI) - Wellbore #1 - Gyro Surveys	17,400.00	6,685.52	2,297.31	2,179.72	19.536	SF
Dalbey D 14-3 (SI) - Wellbore #1 - Gyro Surveys	17,305.82	6,744.19	3,712.78	3,596.11	31.821	CC, ES
Dalbey D 14-3 (SI) - Wellbore #1 - Gyro Surveys	17,856.05	6,746.63	3,753.33	3,632.06	30.950	SF
Dalbey D 14-6 (SI) - Wellbore #1 - Gyro Surveys	16,140.20	6,696.66	3,914.33	3,806.83	36.414	CC
Dalbey D 14-6 (SI) - Wellbore #1 - Gyro Surveys	16,200.00	6,696.81	3,914.79	3,806.71	36.223	ES
Dalbey D 14-6 (SI) - Wellbore #1 - Gyro Surveys	16,900.00	6,698.51	3,987.39	3,873.88	35.128	SF
Dalbey D 14-7 (SI) - Wellbore #1 - Gyro Surveys	16,014.22	6,714.73	2,656.08	2,549.65	24.956	CC, ES
Dalbey D 14-7 (SI) - Wellbore #1 - Gyro Surveys	16,400.00	6,716.08	2,683.95	2,574.14	24.442	SF
Dalbey D 14-8 (SI) - Wellbore #1 - Gyro Surveys	16,060.31	6,676.91	1,403.97	1,297.25	13.156	CC, ES
Dalbey D 14-8 (SI) - Wellbore #1 - Gyro Surveys	16,200.00	6,677.51	1,410.90	1,302.67	13.036	SF
Guttersen State D 14-23 (SI) - Wellbore #1 - Gyro Survey	13,981.32	6,758.60	1,847.01	1,756.39	20.382	CC
Guttersen State D 14-23 (SI) - Wellbore #1 - Gyro Survey	14,000.00	6,758.53	1,847.10	1,756.26	20.334	ES
Guttersen State D 14-23 (SI) - Wellbore #1 - Gyro Survey	14,300.00	6,757.27	1,874.30	1,780.75	20.036	SF
Guttersen State D 14-24 (PR) - Wellbore #1 - Gyro Survey	14,089.65	6,714.18	3,309.26	3,217.55	36.082	CC
Guttersen State D 14-24 (PR) - Wellbore #1 - Gyro Survey	14,100.00	6,714.17	3,309.28	3,217.46	36.042	ES
Guttersen State D 14-24 (PR) - Wellbore #1 - Gyro Survey	14,800.00	6,713.62	3,384.64	3,287.27	34.759	SF
Guttersen State D 14-33 (PR) - Wellbore #1 - Gyro Survey	14,146.89	6,856.32	5,570.86	5,478.44	60.275	CC
Guttersen State D 14-33 (PR) - Wellbore #1 - Gyro Survey	14,200.00	6,856.14	5,571.11	5,478.21	59.969	ES
Guttersen State D 14-33 (PR) - Wellbore #1 - Gyro Survey	15,900.00	6,851.24	5,840.19	5,735.14	55.596	SF
HSR-Guttersen State 4-14 (PA) - Wellbore #1 - Gyro Survey	17,314.04	6,741.14	5,245.58	5,129.18	45.066	CC
HSR-Guttersen State 4-14 (PA) - Wellbore #1 - Gyro Survey	17,400.00	6,740.81	5,246.29	5,129.09	44.764	ES
HSR-Guttersen State 4-14 (PA) - Wellbore #1 - Gyro Survey	17,856.05	6,739.05	5,273.51	5,152.46	43.563	SF
HSR-Guttersen State 5-14 (PA) - Wellbore #1 - Gyro Survey	16,143.87	6,700.10	5,201.37	5,094.25	48.556	CC
HSR-Guttersen State 5-14 (PA) - Wellbore #1 - Gyro Survey	16,200.00	6,699.96	5,201.68	5,094.04	48.324	ES
HSR-Guttersen State 5-14 (PA) - Wellbore #1 - Gyro Survey	17,500.00	6,696.74	5,375.26	5,258.18	45.914	SF
Spike D 14-09 (SI) - Wellbore #1 - Gyro Surveys	14,925.71	6,675.57	1,064.45	966.52	10.870	CC, ES
Spike D 14-09 (SI) - Wellbore #1 - Gyro Surveys	15,000.00	6,675.96	1,067.04	968.15	10.790	SF
Spike D 14-16 (SI) - Wellbore #1 - Gyro Surveys	13,293.19	6,711.39	1,110.58	1,025.10	12.992	CC
Spike D 14-16 (SI) - Wellbore #1 - Gyro Surveys	13,300.00	6,711.37	1,110.60	1,025.02	12.977	ES
Spike D 14-16 (SI) - Wellbore #1 - Gyro Surveys	13,400.00	6,711.15	1,115.71	1,028.92	12.857	SF
Spike State D 14-11 (PR) - Wellbore #1 - Gyro Surveys	14,916.79	6,734.75	3,682.11	3,584.02	37.540	CC, ES
Spike State D 14-11 (PR) - Wellbore #1 - Gyro Surveys	15,700.00	6,730.34	3,764.48	3,660.22	36.107	SF
Spike State D 14-12 (PR) - Wellbore #1 - Gyro Surveys	14,869.42	6,729.19	5,211.93	5,114.21	53.332	CC
Spike State D 14-12 (PR) - Wellbore #1 - Gyro Surveys	14,900.00	6,729.12	5,212.02	5,114.02	53.181	ES
Spike State D 14-12 (PR) - Wellbore #1 - Gyro Surveys	16,300.00	6,725.53	5,404.70	5,296.44	49.922	SF
Spike State D 14-13 (SI) - Wellbore #1 - Gyro Surveys	13,292.54	6,789.86	5,205.11	5,119.29	60.648	CC
Spike State D 14-13 (SI) - Wellbore #1 - Gyro Surveys	13,300.00	6,789.86	5,205.12	5,119.23	60.601	ES
Spike State D 14-13 (SI) - Wellbore #1 - Gyro Surveys	14,900.00	6,791.20	5,447.67	5,350.12	55.842	SF
Spike State D 14-14 (SI) - Wellbore #1 - Gyro Surveys	13,221.93	6,726.54	3,708.04	3,622.86	43.528	CC, ES
Spike State D 14-14 (SI) - Wellbore #1 - Gyro Surveys	14,100.00	6,731.48	3,810.59	3,718.53	41.396	SF
Spike State D 14-15 (SI) - Wellbore #1 - Gyro Surveys	13,337.35	6,817.50	2,385.05	2,299.17	27.771	CC, ES
Spike State D 14-15 (SI) - Wellbore #1 - Gyro Surveys	13,800.00	6,810.47	2,429.50	2,339.60	27.026	SF
Spike State D14-13J (SI) - Wellbore #1 - Gyro Surveys	14,083.60	6,748.51	4,753.99	4,662.15	51.762	CC
Spike State D14-13J (SI) - Wellbore #1 - Gyro Surveys	14,100.00	6,748.50	4,754.02	4,662.03	51.678	ES
Spike State D14-13J (SI) - Wellbore #1 - Gyro Surveys	15,400.00	6,747.79	4,932.88	4,831.28	48.549	SF
Spike State GWS D 14-10 (SI) - Wellbore #1 - Gyro Survey	14,580.14	6,715.93	2,502.52	2,407.16	26.244	CC
Spike State GWS D 14-10 (SI) - Wellbore #1 - Gyro Survey	14,600.00	6,715.53	2,502.60	2,407.03	26.187	ES
Spike State GWS D 14-10 (SI) - Wellbore #1 - Gyro Survey	15,000.00	6,707.37	2,537.48	2,438.48	25.631	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 D25-781
<b>Project:</b>	Mustang	<b>TVD Reference:</b>	KB @ 4817.00ft
<b>Reference Site:</b>	D Section 25	<b>MD Reference:</b>	KB @ 4817.00ft
<b>Site Error:</b>	0.00 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Guttersten D25-781	<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 #3	<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 23						
Guttersten 23-20 (SI) - Wellbore #1 - Gyro Surveys	10,296.61	6,775.04	4,517.84	4,453.17	69.867	CC
Guttersten 23-20 (SI) - Wellbore #1 - Gyro Surveys	10,300.00	6,775.01	4,517.84	4,453.15	69.839	ES
Guttersten 23-20 (SI) - Wellbore #1 - Gyro Surveys	11,900.00	6,764.17	4,806.78	4,731.11	63.522	SF
Guttersten 23-32 (SI) - Wellbore #1 - Gyro Surveys	10,792.84	6,770.90	2,359.69	2,291.97	34.846	CC
Guttersten 23-32 (SI) - Wellbore #1 - Gyro Surveys	10,800.00	6,770.87	2,359.70	2,291.92	34.812	ES
Guttersten 23-32 (SI) - Wellbore #1 - Gyro Surveys	11,300.00	6,768.40	2,419.10	2,347.25	33.670	SF
Guttersten 31-23 (PR) - Wellbore #1 - Gyro Surveys	12,077.77	6,713.60	1,208.82	1,132.41	15.820	CC
Guttersten 23-41 (PR) - Wellbore #1 - Gyro Surveys	12,100.00	6,713.20	1,209.02	1,132.32	15.763	ES
Guttersten 23-41 (PR) - Wellbore #1 - Gyro Surveys	12,200.00	6,711.36	1,214.98	1,137.14	15.609	SF
Guttersten 31-23 (PR) - Wellbore #1 - Gyro Surveys	12,057.26	6,796.82	2,549.10	2,472.44	33.251	CC
Guttersten 31-23 (PR) - Wellbore #1 - Gyro Surveys	12,100.00	6,796.11	2,549.46	2,472.37	33.072	ES
Guttersten 31-23 (PR) - Wellbore #1 - Gyro Surveys	12,600.00	6,787.76	2,606.22	2,525.02	32.096	SF
Guttersten 42-23 (PR) - Wellbore #1 - Gyro Surveys	10,757.51	6,730.65	1,226.78	1,159.29	18.178	CC, ES
Guttersten 42-23 (PR) - Wellbore #1 - Gyro Surveys	10,915.53	6,729.08	1,237.42	1,168.30	17.901	SF
Guttersten D23-711 - Wellbore #1 - Plan #1	10,887.10	10,760.82	587.58	504.85	7.102	CC
Guttersten D23-711 - Wellbore #1 - Plan #1	17,856.05	17,723.12	622.02	436.04	3.345	ES, SF
Guttersten D35-720 - Wellbore #1 - Plan #1	7,382.90	7,185.39	1,240.49	1,188.21	23.728	CC, ES
Guttersten D35-720 - Wellbore #1 - Plan #1	7,700.00	6,959.18	1,251.93	1,198.99	23.648	SF
Guttersten D35-730 - Wellbore #1 - Plan #1	7,494.76	7,012.96	1,900.17	1,848.50	36.780	CC
Guttersten D35-730 - Wellbore #1 - Plan #1	7,500.00	7,008.23	1,900.17	1,848.50	36.778	ES
Guttersten D35-730 - Wellbore #1 - Plan #1	8,100.00	6,631.24	1,936.18	1,882.86	36.316	SF
Guttersten D35-740 - Wellbore #1 - Plan #1	7,890.57	6,498.44	2,506.88	2,454.91	48.235	CC
Guttersten D35-740 - Wellbore #1 - Plan #1	7,900.00	6,495.46	2,506.90	2,454.89	48.202	ES
Guttersten D35-740 - Wellbore #1 - Plan #1	8,500.00	6,384.51	2,574.42	2,519.60	46.964	SF
Guttersten D35-750 - Wellbore #1 - Plan #1	7,356.07	7,220.20	3,194.90	3,142.97	61.523	CC, ES
Guttersten D35-750 - Wellbore #1 - Plan #1	8,900.00	6,600.00	3,396.50	3,339.08	59.151	SF
Guttersten D35-760 - Wellbore #1 - Plan #1	7,871.66	6,558.71	3,797.14	3,745.63	73.718	CC
Guttersten D35-760 - Wellbore #1 - Plan #1	7,900.00	6,550.00	3,797.23	3,745.62	73.578	ES
Guttersten D35-760 - Wellbore #1 - Plan #1	9,400.00	6,375.03	4,076.60	4,017.48	68.958	SF
Guttersten D35-770 - Wellbore #1 - Plan #1	7,998.09	6,002.43	4,467.10	4,416.20	87.770	CC
Guttersten D35-770 - Wellbore #1 - Plan #1	8,000.00	6,002.23	4,467.10	4,416.20	87.756	ES
Guttersten D35-770 - Wellbore #1 - Plan #1	9,900.00	5,808.64	4,851.26	4,790.75	80.170	SF
Guttersten D35-780 - Wellbore #1 - Plan #1	8,033.10	5,525.22	4,824.60	4,774.88	97.022	CC, ES
Guttersten D35-780 - Wellbore #1 - Plan #1	10,200.00	5,300.49	5,284.06	5,223.48	87.223	SF
Guttersten State D23-721 - Wellbore #1 - Plan #2	10,895.74	10,601.58	1,256.58	1,173.95	15.208	CC
Guttersten State D23-721 - Wellbore #1 - Plan #2	17,856.05	17,550.58	1,281.02	1,094.86	6.882	ES, SF
Guttersten State D23-731 - Wellbore #1 - Plan #2	10,892.21	10,572.04	1,917.49	1,835.09	23.272	CC
Guttersten State D23-731 - Wellbore #1 - Plan #2	17,856.05	17,527.71	1,941.45	1,755.17	10.422	ES, SF
Guttersten State D23-741 - Guttersten State D23-741 OH	7,171.66	6,619.53	2,568.11	2,517.35	50.594	CC
Guttersten State D23-741 - Guttersten State D23-741 OH	17,856.05	17,639.86	2,601.42	2,415.74	14.010	ES, SF
Guttersten State D23-751 - Wellbore #1 - BHI-Rev A.0	10,892.33	10,590.21	3,212.44	3,129.77	38.855	CC
Guttersten State D23-751 - Wellbore #1 - BHI-Rev A.0	17,856.05	17,545.49	3,240.60	3,054.09	17.375	ES, SF
Guttersten State D23-761 - Wellbore #1 - BHI-Rev A.0	10,891.36	10,547.57	3,872.39	3,789.92	46.957	CC
Guttersten State D23-761 - Wellbore #1 - BHI-Rev A.0	17,856.05	17,501.89	3,901.75	3,715.23	20.919	ES, SF
Guttersten State D23-771 - Wellbore #1 - BHI Rev-B.0	10,847.01	10,614.09	4,477.44	4,395.95	54.945	CC
Guttersten State D23-771 - Wellbore #1 - BHI Rev-B.0	17,856.05	17,623.20	4,560.20	4,374.46	24.551	ES, SF
Guttersten State D23-781 - Wellbore #1 - BHI Rev-A.0	7,393.29	5,524.57	4,888.28	4,840.36	102.000	CC
Guttersten State D23-781 - Wellbore #1 - BHI Rev-A.0	7,400.00	5,522.77	4,888.29	4,840.35	101.972	ES
Guttersten State D23-781 - Wellbore #1 - BHI Rev-A.0	17,856.05	17,579.32	5,169.21	4,983.40	27.819	SF
Guttersten State D35-790 - Wellbore #1 - Plan #1	7,407.93	7,331.18	581.72	528.36	10.901	CC, ES
Guttersten State D35-790 - Wellbore #1 - Plan #1	7,500.00	7,257.91	583.27	529.64	10.876	SF
Guttersten USX D 23-17 (PR) - Wellbore #1 - Gyro Survey	11,415.35	6,753.41	1,951.26	1,879.27	27.104	CC, ES
Guttersten USX D 23-17 (PR) - Wellbore #1 - Gyro Survey	11,800.00	6,752.18	1,988.81	1,913.42	26.380	SF

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



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

<b>Company:</b>	Northern Region - DJ Basin	<b>Local Co-ordinate Reference:</b>	Well Guttersen D25-781
<b>Project:</b>	Mustang	<b>TVD Reference:</b>	KB @ 4817.00ft
<b>Reference Site:</b>	D Section 25	<b>MD Reference:</b>	KB @ 4817.00ft
<b>Site Error:</b>	0.00 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Guttersen D25-781	<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 #3	<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 23						
Parker Blue D 23-09 (SI) - Wellbore #1 - Gyro Surveys	9,118.48	6,685.89	975.89	918.63	17.044	CC, ES
Parker Blue D 23-09 (SI) - Wellbore #1 - Gyro Surveys	9,300.00	6,683.11	992.63	933.67	16.838	SF
Parker Blue D 23-10 (SI) - Wellbore #1 - Gyro Surveys	9,297.55	6,709.32	2,237.69	2,179.32	38.337	CC
Parker Blue D 23-10 (SI) - Wellbore #1 - Gyro Surveys	9,300.00	6,709.30	2,237.69	2,179.30	38.324	ES
Parker Blue D 23-10 (SI) - Wellbore #1 - Gyro Surveys	9,800.00	6,706.21	2,293.41	2,231.33	36.943	SF
Parker Blue D 23-11 (SI) - Wellbore #1 - Gyro Surveys	9,720.78	6,764.93	3,706.15	3,645.14	60.741	CC, ES
Parker Blue D 23-14 (SI) - Wellbore #1 - Gyro Surveys	10,915.53	6,758.99	3,894.45	3,825.20	56.234	SF
Parker Blue D 23-13 (SI) - Wellbore #1 - Gyro Surveys	8,541.65	6,678.34	5,249.73	5,195.40	96.626	CC
Parker Blue D 23-13 (SI) - Wellbore #1 - Gyro Surveys	8,600.00	6,678.10	5,250.06	5,195.40	96.056	ES
Parker Blue D 23-13 (SI) - Wellbore #1 - Gyro Surveys	10,915.53	6,667.42	5,761.97	5,693.49	84.149	SF
Parker Blue D 23-14 (SI) - Wellbore #1 - Gyro Surveys	8,437.99	6,751.28	3,753.07	3,699.10	69.535	CC, ES
Parker Blue D 23-14 (SI) - Wellbore #1 - Gyro Surveys	9,800.00	6,746.53	3,992.57	3,930.44	64.268	SF
Parker Blue D 23-15 (SI) - Wellbore #1 - Gyro Surveys	7,997.59	6,707.52	2,469.98	2,418.01	47.522	CC
Parker Blue D 23-15 (SI) - Wellbore #1 - Gyro Surveys	8,000.00	6,707.50	2,469.98	2,417.99	47.510	ES
Parker Blue D 23-15 (SI) - Wellbore #1 - Gyro Surveys	8,700.00	6,700.11	2,567.91	2,511.99	45.924	SF
Parker Blue D 23-3J (SI) - Wellbore #1 - Gyro Surveys	9,557.57	6,803.13	4,722.49	4,659.13	74.539	CC
Parker Blue D 23-3J (SI) - Wellbore #1 - Gyro Surveys	9,600.00	6,803.31	4,722.68	4,659.02	74.190	ES
Parker Blue D 23-3J (SI) - Wellbore #1 - Gyro Surveys	11,400.00	6,810.92	5,075.66	5,000.13	67.207	SF
Parker Red D 23-05 (PR) - Wellbore #1 - Gyro Surveys	10,773.81	6,695.35	5,157.79	5,090.09	76.182	CC
Parker Red D 23-05 (PR) - Wellbore #1 - Gyro Surveys	10,800.00	6,695.33	5,157.86	5,089.94	75.950	ES
Parker Red D 23-05 (PR) - Wellbore #1 - Gyro Surveys	12,700.00	6,693.76	5,528.52	5,447.63	68.352	SF
Parker Red D 23-2J (SI) - Wellbore #1 - Gyro Surveys	11,068.79	6,628.93	4,325.71	4,256.16	62.198	CC
Parker Red D 23-2J (SI) - Wellbore #1 - Gyro Surveys	11,100.00	6,629.47	4,325.82	4,256.01	61.966	ES
Parker Red D 23-2J (SI) - Wellbore #1 - Gyro Surveys	12,500.00	6,655.66	4,556.24	4,476.41	57.074	SF
Parker Red D 23-3 (PR) - Wellbore #1 - Gyro Surveys	12,064.24	6,643.93	3,855.14	3,778.57	50.349	CC
Parker Red D 23-3 (PR) - Wellbore #1 - Gyro Surveys	12,100.00	6,643.11	3,855.31	3,778.42	50.142	ES
Parker Red D 23-3 (PR) - Wellbore #1 - Gyro Surveys	13,100.00	6,621.24	3,991.80	3,907.42	47.308	SF
Parker Red D 23-4 (SI) - Wellbore #1 - Gyro Surveys	11,962.35	6,725.43	5,190.37	5,114.38	68.308	CC
Parker Red D 23-4 (SI) - Wellbore #1 - Gyro Surveys	12,000.00	6,725.67	5,190.51	5,114.20	68.022	ES
Parker Red D 23-4 (SI) - Wellbore #1 - Gyro Surveys	13,800.00	6,737.35	5,506.06	5,417.02	61.835	SF
Two E Ranch 1-23 (SI) - Wellbore #1 - Gyro Surveys	8,624.58	6,720.33	1,475.61	1,420.85	26.948	CC, ES
Two E Ranch 1-23 (SI) - Wellbore #1 - Gyro Surveys	8,900.00	6,718.58	1,501.09	1,444.29	26.428	SF



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

<b>Company:</b>	Northern Region - DJ Basin	<b>Local Co-ordinate Reference:</b>	Well Guttersten D25-781
<b>Project:</b>	Mustang	<b>TVD Reference:</b>	KB @ 4817.00ft
<b>Reference Site:</b>	D Section 25	<b>MD Reference:</b>	KB @ 4817.00ft
<b>Site Error:</b>	0.00 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Guttersten D25-781	<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 #3	<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 24						
Dalbey D 24-10 (PR) - Wellbore #1 - Gyro Surveys	9,126.20	6,644.18	3,077.57	3,020.47	53.899	CC, ES
Dalbey D 24-10 (PR) - Wellbore #1 - Gyro Surveys	9,700.00	6,642.17	3,130.60	3,071.46	52.936	SF
Dalbey D 24-15 (SI) - Wellbore #1 - Gyro Surveys	100.00	36.23	2,362.61	2,362.41	10,000.000	CC
Dalbey D 24-15 (SI) - Wellbore #1 - Gyro Surveys	2,200.00	2,150.68	2,364.30	2,349.33	157.895	ES
Dalbey D 24-15 (SI) - Wellbore #1 - Gyro Surveys	8,500.00	6,668.33	2,623.29	2,569.82	49.066	SF
Glazier 2-24 (PR) - Wellbore #1 - Gyro Surveys	11,385.22	6,638.36	3,729.81	3,658.32	52.178	CC
Glazier 2-24 (PR) - Wellbore #1 - Gyro Surveys	11,400.00	6,638.29	3,729.83	3,658.28	52.123	ES
Glazier 2-24 (PR) - Wellbore #1 - Gyro Surveys	12,000.00	6,635.74	3,780.13	3,705.96	50.967	SF
Guttersten 11-24 (SI) - Wellbore #1 - Gyro Surveys	12,136.44	6,666.98	43.90	-32.93	0.571	Level 1, CC, ES, SF
Guttersten 12-24 (SI) - Wellbore #1 - Gyro Surveys	10,838.88	6,667.83	38.22	-29.67	0.563	Level 1, ES, SF
Guttersten 12-24 (SI) - Wellbore #1 - Gyro Surveys	10,839.06	6,667.83	38.22	-29.64	0.563	Level 1, CC
Guttersten 21-24 (SI) - Wellbore #1 - Gyro Surveys	12,159.75	6,659.17	1,363.17	1,286.00	17.666	CC, ES
Guttersten 21-24 (SI) - Wellbore #1 - Gyro Surveys	12,200.00	6,659.27	1,363.76	1,286.53	17.659	SF
Guttersten 22-24 (PR) - Wellbore #1 - Gyro Surveys	10,931.45	6,651.60	1,423.02	1,354.60	20.799	CC, ES
Guttersten 22-24 (PR) - Wellbore #1 - Gyro Surveys	11,000.00	6,651.72	1,424.67	1,356.13	20.788	SF
Guttersten 24A (SI) - Wellbore #1 - Gyro Surveys	11,480.64	6,649.47	740.44	668.31	10.265	CC, ES, SF
Guttersten 24J (PR) - Wellbore #1 - Gyro Surveys	12,781.49	6,654.59	819.95	738.32	10.044	CC, ES, SF
Guttersten 24N (SI) - Wellbore #1 - MWD Surveys	11,528.28	6,673.92	1,968.87	1,897.19	27.470	CC, ES
Guttersten 24N (SI) - Wellbore #1 - MWD Surveys	11,700.00	6,673.10	1,976.34	1,904.19	27.392	SF
Guttersten 24S (PR) - Wellbore #1 - MWD Surveys	10,006.34	6,615.30	3,430.91	3,369.62	55.979	CC, ES
Guttersten 24S (PR) - Wellbore #1 - MWD Surveys	10,600.00	6,610.54	3,481.89	3,418.19	54.660	SF
Guttersten 43-24 (PR) - Wellbore #1 - Gyro Surveys	9,378.93	6,713.13	3,970.10	3,911.25	67.455	CC
Guttersten 43-24 (PR) - Wellbore #1 - Gyro Surveys	9,400.00	6,713.23	3,970.16	3,911.21	67.348	ES
Guttersten 43-24 (PR) - Wellbore #1 - Gyro Surveys	10,300.00	6,717.25	4,075.55	4,012.92	65.079	SF
Guttersten 44-24 (PR) - Wellbore #1 - Gyro Surveys	794.46	737.48	3,380.49	3,375.47	673.624	CC
Guttersten 44-24 (PR) - Wellbore #1 - Gyro Surveys	2,000.00	1,942.41	3,382.18	3,368.64	249.721	ES
Guttersten 44-24 (PR) - Wellbore #1 - Gyro Surveys	9,200.00	6,632.74	4,172.65	4,116.87	74.801	SF
Karch Blue D 24-12 (PA) - Wellbore #1 - Gyro Surveys	9,660.29	6,675.02	86.60	26.34	1.437	Level 3, CC, ES, SF
Karch Blue D 24-14 (PR) - Wellbore #1 - No Surveys	8,125.05	6,670.00	1,643.05	1,480.44	10.104	CC, ES, SF
Karch Blue D24-11 (PA) - Wellbore #1 - Gyro Surveys	9,650.51	6,667.49	1,503.23	1,436.29	22.458	CC, ES
Karch Blue D24-11 (PA) - Wellbore #1 - Gyro Surveys	9,700.00	6,667.99	1,504.04	1,436.99	22.430	SF
Koerner 31-24 (SI) - Wellbore #1 - Gyro Surveys	12,220.26	6,727.16	2,685.75	2,607.94	34.517	CC, ES
Koerner 31-24 (SI) - Wellbore #1 - Gyro Surveys	12,500.00	6,726.56	2,700.28	2,621.39	34.230	SF
Koerner 32-24 (SI) - Wellbore #1 - Gyro Surveys	10,750.00	6,550.73	2,704.21	2,637.64	40.626	CC, ES
Koerner 32-24 (SI) - Wellbore #1 - Gyro Surveys	11,100.00	6,550.72	2,723.81	2,655.94	40.136	SF
Koerner 42-24 (SI) - Wellbore #1 - Gyro Surveys	10,730.59	6,664.10	4,013.16	3,945.96	59.724	CC, ES
Koerner 42-24 (SI) - Wellbore #1 - Gyro Surveys	11,600.00	6,655.34	4,096.78	4,025.78	57.706	SF
LF Ranch 1-24 (SI) - Wellbore #1 - Gyro Surveys	8,550.30	6,675.33	420.31	366.29	7.780	CC, ES, SF

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

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

<b>Company:</b>	Northern Region - DJ Basin	<b>Local Co-ordinate Reference:</b>	Well Guttersen D25-781
<b>Project:</b>	Mustang	<b>TVD Reference:</b>	KB @ 4817.00ft
<b>Reference Site:</b>	D Section 25	<b>MD Reference:</b>	KB @ 4817.00ft
<b>Site Error:</b>	0.00 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Guttersen D25-781	<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 #3	<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 25						
Coors Energy 13-25D (PR) - Wellbore #1 - MWD Surveys	5,297.27	5,552.81	2,371.85	2,325.07	50.703	CC
Coors Energy 13-25D (PR) - Wellbore #1 - MWD Surveys	5,300.00	5,554.63	2,371.85	2,325.05	50.685	ES
Coors Energy 13-25D (PR) - Wellbore #1 - MWD Surveys	6,500.00	6,481.00	2,475.73	2,422.45	46.470	SF
Coors Energy 14-25D (PR) - Wellbore #1 - MWD Surveys	1,005.54	1,003.63	3,109.19	3,103.66	562.235	CC
Coors Energy 14-25D (PR) - Wellbore #1 - MWD Surveys	1,100.00	1,067.19	3,109.66	3,103.56	509.894	ES
Coors Energy 14-25D (PR) - Wellbore #1 - MWD Surveys	6,600.00	6,550.19	3,799.01	3,746.34	72.132	SF
Coors Energy 23-25D (PR) - Wellbore #1 - MWD Surveys	4,424.38	4,987.08	2,467.91	2,432.00	68.726	CC
Coors Energy 23-25D (PR) - Wellbore #1 - MWD Surveys	4,600.00	5,150.82	2,469.21	2,431.68	65.789	ES
Coors Energy 23-25D (PR) - Wellbore #1 - MWD Surveys	6,500.00	6,455.16	2,785.50	2,734.99	55.150	SF
Coors Energy 24-25 (PR) - Wellbore #1 - Gyro Surveys	2,082.76	2,127.54	3,422.02	3,407.51	235.960	CC
Coors Energy 24-25 (PR) - Wellbore #1 - Gyro Surveys	2,100.00	2,143.69	3,422.04	3,407.42	234.066	ES
Coors Energy 24-25 (PR) - Wellbore #1 - Gyro Surveys	6,650.00	6,417.77	4,358.98	4,311.56	91.924	SF
Coors Energy 25HD (PR) - Wellbore #1 - MWD Surveys	2,417.75	2,558.61	3,016.08	2,993.79	135.294	CC
Coors Energy 25HD (PR) - Wellbore #1 - MWD Surveys	2,500.00	2,632.78	3,016.35	2,993.29	130.810	ES
Coors Energy 25HD (PR) - Wellbore #1 - MWD Surveys	6,550.00	6,541.17	3,178.73	3,118.71	52.960	SF
Coors Energy 25LD (PR) - Wellbore #1 - MWD Surveys	0.00	0.00	3,121.19			
Coors Energy 25LD (PR) - Wellbore #1 - MWD Surveys	800.00	780.95	3,123.36	3,119.33	774.085	ES
Coors Energy 25LD (PR) - Wellbore #1 - MWD Surveys	6,700.00	6,576.17	4,409.15	4,360.96	91.481	SF
Coors Energy 25TD (PR) - Wellbore #1 - MWD Surveys	1,243.35	1,216.37	3,853.95	3,846.82	540.551	CC
Coors Energy 25TD (PR) - Wellbore #1 - MWD Surveys	1,300.00	1,251.61	3,854.10	3,846.65	517.344	ES
Coors Energy 25TD (PR) - Wellbore #1 - MWD Surveys	6,750.00	6,592.46	5,629.34	5,582.13	119.221	SF
Coors Energy 25XD (PR) - Wellbore #1 - MWD Surveys	843.64	830.95	3,789.44	3,785.16	885.113	CC
Coors Energy 25XD (PR) - Wellbore #1 - MWD Surveys	1,500.00	1,458.49	3,790.71	3,781.77	424.261	ES
Coors Energy 25XD (PR) - Wellbore #1 - MWD Surveys	6,650.00	6,635.13	5,506.16	5,450.41	98.756	SF
Coors Energy 25YD (PR) - Wellbore #1 - MWD Surveys	869.68	902.07	3,823.03	3,818.53	849.104	CC, ES
Coors Energy 25YD (PR) - Wellbore #1 - MWD Surveys	6,800.00	6,956.69	6,406.76	6,355.98	126.175	SF
Coors Energy 33-25D (PR) - Wellbore #1 - MWD Surveys	3,741.63	4,724.04	3,091.89	3,060.06	97.127	CC
Coors Energy 33-25D (PR) - Wellbore #1 - MWD Surveys	3,800.00	4,756.00	3,092.22	3,059.99	95.917	ES
Coors Energy 33-25D (PR) - Wellbore #1 - MWD Surveys	6,550.00	6,561.14	3,616.49	3,566.90	72.931	SF
Coors Energy 34-25 (PR) - Wellbore #1 - Gyro Surveys	0.00	0.00	3,643.27			
Coors Energy 34-25 (PR) - Wellbore #1 - Gyro Surveys	2,003.97	1,990.51	3,656.22	3,642.48	266.095	ES
Coors Energy 34-25 (PR) - Wellbore #1 - Gyro Surveys	6,650.00	6,375.84	4,797.13	4,750.08	101.971	SF
Coors Energy 43-25D (PR) - Wellbore #1 - MWD Surveys	2,500.26	3,135.68	3,613.67	3,591.63	163.967	CC, ES
Coors Energy 43-25D (PR) - Wellbore #1 - MWD Surveys	6,600.00	6,654.30	4,652.85	4,596.08	81.952	SF
Coors Energy 44-25D (PR) - Wellbore #1 - MWD Surveys	100.00	70.07	3,814.04	3,813.79	10,000.000	CC
Coors Energy 44-25D (PR) - Wellbore #1 - MWD Surveys	500.00	453.99	3,815.19	3,812.81	1,607.411	ES
Coors Energy 44-25D (PR) - Wellbore #1 - MWD Surveys	6,750.00	6,534.34	5,566.95	5,518.53	114.976	SF
Dalbey D 25-03 (SI) - Wellbore #1 - Gyro Surveys	3,525.15	3,449.41	206.53	182.10	8.456	CC, ES
Dalbey D 25-03 (SI) - Wellbore #1 - Gyro Surveys	3,600.00	3,520.29	207.87	182.92	8.331	SF
Dalbey D 25-05 (SI) - Wellbore #1 - Gyro Surveys	5,928.28	5,753.95	1,109.49	1,067.13	26.190	CC
Dalbey D 25-05 (SI) - Wellbore #1 - Gyro Surveys	6,000.00	5,819.59	1,109.75	1,066.84	25.866	ES
Dalbey D 25-05 (SI) - Wellbore #1 - Gyro Surveys	6,450.00	6,227.72	1,129.69	1,083.44	24.424	SF
Guttersen 11-25 (PR) - Wellbore #1 - MWD Surveys	6,865.62	6,563.33	45.95	-1.05	0.978	Level 1, CC, ES, SF
Guttersen 22-25 (PA) - Wellbore #1 - MWD Surveys	1,281.79	1,254.80	564.18	556.77	76.173	CC
Guttersen 22-25 (PA) - Wellbore #1 - MWD Surveys	1,400.00	1,368.94	564.51	556.29	68.679	ES
Guttersen 22-25 (PA) - Wellbore #1 - MWD Surveys	2,900.00	2,855.86	677.56	658.86	36.226	SF
Guttersen 25E (PR) - Wellbore #1 - MWD Surveys	7,508.86	6,705.92	309.56	260.15	6.264	CC, ES, SF
Guttersen 25KD (PR) - Wellbore #1 - MWD Surveys	2,280.53	2,375.90	1,100.82	1,082.84	61.240	CC
Guttersen 25KD (PR) - Wellbore #1 - MWD Surveys	2,300.00	2,395.60	1,100.86	1,082.70	60.595	ES
Guttersen 25KD (PR) - Wellbore #1 - MWD Surveys	5,700.00	5,697.85	1,617.11	1,565.47	31.316	SF
Guttersen 25O (PR) - Wellbore #1 - MWD Surveys	1,042.54	1,010.54	1,267.27	1,261.49	219.228	CC
Guttersen 25O (PR) - Wellbore #1 - MWD Surveys	2,017.51	1,992.15	1,267.69	1,255.04	100.197	ES
Guttersen 25O (PR) - Wellbore #1 - MWD Surveys	6,500.00	6,277.82	2,387.14	2,342.33	53.273	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 D25-781
<b>Project:</b>	Mustang	<b>TVD Reference:</b>	KB @ 4817.00ft
<b>Reference Site:</b>	D Section 25	<b>MD Reference:</b>	KB @ 4817.00ft
<b>Site Error:</b>	0.00 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Guttersten D25-781	<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 #3	<b>Offset TVD Reference:</b>	Offset Datum

**Summary**

Site Name Offset Well - Wellbore - Design	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
D Section 25						
Guttersten D 25-17 (SI) - Wellbore #1 - Gyro Surveys	2,045.50	2,026.47	1,939.02	1,925.00	138.271	CC, ES
Guttersten D 25-17 (SI) - Wellbore #1 - Gyro Surveys	6,850.00	6,615.92	3,210.20	3,162.14	66.792	SF
Guttersten D25-715 - Wellbore #1 - Plan #3	2,000.00	1,986.00	2,332.79	2,318.96	168.765	CC, ES
Guttersten D25-715 - Wellbore #1 - Plan #3	17,856.05	17,810.78	4,288.55	4,089.67	21.563	SF
Guttersten D25-724 - Wellbore #1 - Plan #3	2,000.00	1,985.00	2,296.27	2,282.46	166.167	CC, ES
Guttersten D25-724 - Wellbore #1 - Plan #3	17,856.05	17,680.54	3,699.04	3,500.30	18.613	SF
Guttersten D25-734 - Wellbore #1 - Plan #5	2,000.00	1,985.00	2,259.78	2,245.97	163.526	CC
Guttersten D25-734 - Wellbore #1 - Plan #5	2,100.00	2,143.04	2,260.41	2,245.68	153.435	ES
Guttersten D25-734 - Wellbore #1 - Plan #5	17,856.05	17,692.94	3,078.46	2,879.36	15.462	SF
Guttersten D25-743 - Wellbore #1 - Plan #3	2,812.83	3,421.35	2,166.41	2,145.13	101.795	CC, ES
Guttersten D25-743 - Wellbore #1 - Plan #3	17,856.05	17,805.47	2,459.21	2,260.28	12.362	SF
Guttersten D25-753 - Wellbore #1 - Plan #3	2,000.00	2,000.00	112.50	98.63	8.109	CC, ES
Guttersten D25-753 - Wellbore #1 - Plan #3	2,200.00	2,200.88	118.08	102.79	7.723	SF
Guttersten D25-762 - Wellbore #1 - Plan #3	2,000.00	2,000.00	75.00	61.13	5.406	CC
Guttersten D25-762 - Wellbore #1 - Plan #3	2,100.00	2,102.14	75.20	60.61	5.155	ES
Guttersten D25-762 - Wellbore #1 - Plan #3	2,300.00	2,305.72	78.11	62.13	4.888	SF
Guttersten D25-772 - Wellbore #1 - Plan #3	2,446.96	2,451.62	36.25	19.38	2.149	CC
Guttersten D25-772 - Wellbore #1 - Plan #3	2,500.00	2,505.27	36.34	19.13	2.111	ES
Guttersten D25-772 - Wellbore #1 - Plan #3	2,600.00	2,606.35	37.09	19.25	2.078	SF
Guttersten State D36-714 - Wellbore #1 - Plan #1	2,000.00	1,985.00	2,303.61	2,289.79	166.698	CC, ES
Guttersten State D36-714 - Wellbore #1 - Plan #1	6,700.00	5,537.84	4,427.70	4,385.20	104.191	SF
Guttersten State D36-724 - Wellbore #1 - Plan #1	2,000.00	1,986.00	2,266.62	2,252.80	163.978	CC, ES
Guttersten State D36-724 - Wellbore #1 - Plan #1	6,700.00	6,107.76	3,978.01	3,932.66	87.726	SF
Guttersten State D36-733 - Wellbore #1 - Plan #1	2,000.00	1,985.00	2,229.65	2,215.83	161.346	CC, ES
Guttersten State D36-733 - Wellbore #1 - Plan #1	6,393.39	6,250.00	3,345.22	3,299.76	73.571	SF
Guttersten State D36-743 - Wellbore #1 - Plan #1	2,000.00	1,985.00	2,192.70	2,178.88	158.672	CC, ES
Guttersten State D36-743 - Wellbore #1 - Plan #1	6,300.00	6,400.00	2,819.47	2,772.79	60.390	SF
Guttersten State D36-752 - Wellbore #1 - Plan #1	2,000.00	2,000.00	187.50	173.63	13.516	CC, ES
Guttersten State D36-752 - Wellbore #1 - Plan #1	2,300.00	2,297.49	201.49	185.51	12.616	SF
Guttersten State D36-762 - Wellbore #1 - Plan #1	2,000.00	2,000.00	167.71	153.83	12.089	CC, ES
Guttersten State D36-762 - Wellbore #1 - Plan #1	2,300.00	2,301.92	178.96	162.98	11.196	SF
Guttersten State D36-771 - Wellbore #1 - Plan #1	2,000.00	2,000.00	154.62	140.75	11.146	CC, ES
Guttersten State D36-771 - Wellbore #1 - Plan #1	2,600.00	2,615.03	176.21	158.22	9.795	SF
Guttersten State D36-781 - Wellbore #1 - Plan #1	2,710.50	2,736.36	116.44	97.92	6.288	CC, ES
Guttersten State D36-781 - Wellbore #1 - Plan #1	2,800.00	2,825.31	119.07	99.89	6.209	SF
Karch Blue D 25-02 (DA) - Wellbore #1 - No Surveys	2,000.00	1,944.00	1,547.25	1,501.44	33.771	CC
Karch Blue D 25-02 (DA) - Wellbore #1 - No Surveys	2,100.00	2,043.98	1,548.39	1,500.22	32.145	ES
Karch Blue D 25-02 (DA) - Wellbore #1 - No Surveys	7,000.00	6,595.13	2,699.09	2,541.67	17.145	SF
Karch Blue D 25-08 (SI) - Wellbore #1 - Gyro Surveys	2,010.78	1,971.02	2,775.24	2,761.55	202.765	CC, ES
Karch Blue D 25-08 (SI) - Wellbore #1 - Gyro Surveys	6,900.00	6,581.31	4,192.11	4,144.15	87.415	SF
Karch Blue D25-07 (SI) - Wellbore #1 - Gyro Surveys	2,035.59	2,006.64	1,525.30	1,511.39	109.655	CC, ES
Karch Blue D25-07 (SI) - Wellbore #1 - Gyro Surveys	6,500.00	6,294.64	2,786.00	2,740.37	61.054	SF
L F Ranch 2-25 (PR) - Wellbore #1 - Gyro Surveys	100.00	41.28	2,746.63	2,746.43	10,000.000	CC
L F Ranch 2-25 (PR) - Wellbore #1 - Gyro Surveys	2,000.00	1,933.95	2,753.32	2,739.79	203.489	ES
L F Ranch 2-25 (PR) - Wellbore #1 - Gyro Surveys	7,400.00	6,697.92	4,037.91	3,988.22	81.264	SF
LF Ranches 1 (PA) - Wellbore #1 - No Surveys	2,000.00	1,948.00	2,407.63	2,361.74	52.458	CC
LF Ranches 1 (PA) - Wellbore #1 - No Surveys	2,100.00	2,047.98	2,409.12	2,360.87	49.931	ES
LF Ranches 1 (PA) - Wellbore #1 - No Surveys	7,050.00	6,619.82	3,729.59	3,571.59	23.605	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 D25-781
<b>Project:</b>	Mustang	<b>TVD Reference:</b>	KB @ 4817.00ft
<b>Reference Site:</b>	D Section 25	<b>MD Reference:</b>	KB @ 4817.00ft
<b>Site Error:</b>	0.00 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Guttersten D25-781	<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 #3	<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 26						
Adam Red D 26-11 (PR) - Wellbore #1 - Gyro Surveys	6,630.66	6,611.52	4,850.21	4,802.60	101.857	CC, ES
Adam Red D 26-11 (PR) - Wellbore #1 - Gyro Surveys	7,100.00	6,808.19	4,962.99	4,912.71	98.712	SF
Adam Red D 26-12 (PR) - Wellbore #1 - Gyro Surveys	6,663.66	6,462.52	5,894.95	5,841.57	110.425	CC, ES
Adam Red D 26-12 (PR) - Wellbore #1 - Gyro Surveys	7,200.00	6,743.81	6,016.97	5,959.73	105.129	SF
Adam Red D 26-13 (PR) - Wellbore #1 - Gyro Surveys	6,557.31	6,357.33	6,323.53	6,276.91	135.646	CC, ES
Adam Red D 26-13 (PR) - Wellbore #1 - Gyro Surveys	8,700.00	8,700.00	7,550.31	7,488.57	122.310	SF
Adam Red D 26-14 (PR) - Wellbore #1 - Gyro Surveys	6,503.73	6,337.49	5,274.59	5,224.35	104.990	CC, ES
Adam Red D 26-14 (PR) - Wellbore #1 - Gyro Surveys	7,000.00	6,688.22	5,415.21	5,361.01	99.925	SF
Coors Energy 14-25H (PR) - Wellbore #1 - MWD Surveys	0.00	0.00	3,216.28			
Coors Energy 14-25H (PR) - Wellbore #1 - MWD Surveys	6,600.00	6,777.00	3,361.33	3,312.88	69.375	SF
Heyde 1-26 (PR) - Wellbore #1 - Gyro Surveys	6,887.06	6,582.65	1,625.20	1,576.93	33.670	CC
Heyde 1-26 (PR) - Wellbore #1 - Gyro Surveys	6,900.00	6,591.44	1,625.28	1,576.93	33.613	ES
Heyde 1-26 (PR) - Wellbore #1 - Gyro Surveys	7,050.00	6,659.77	1,638.87	1,589.62	33.275	SF
Heyde 26ND (PR) - Wellbore #1 - MWD Surveys	6,902.95	6,828.31	3,234.67	3,182.14	61.576	CC, ES
Heyde 26ND (PR) - Wellbore #1 - MWD Surveys	7,300.00	6,948.79	3,301.05	3,245.89	59.850	SF
Heyde 26RD (PR) - Wellbore #1 - MWD Surveys	7,460.52	6,806.77	1,837.33	1,784.74	34.941	CC, ES
Heyde 26RD (PR) - Wellbore #1 - MWD Surveys	7,800.00	6,803.32	1,868.42	1,814.03	34.350	SF
Heyde 26VD (PR) - Wellbore #1 - MWD Surveys	6,557.07	6,486.80	914.89	861.65	17.186	CC, ES
Heyde 26VD (PR) - Wellbore #1 - MWD Surveys	6,650.00	6,563.89	920.56	866.43	17.009	SF
Heyde 31-26 (PR) - Wellbore #1 - No Surveys	7,111.64	6,713.28	2,823.15	2,773.83	57.238	CC, ES
Heyde 31-26 (PR) - Wellbore #1 - No Surveys	7,500.00	6,740.31	2,877.11	2,826.30	56.627	SF
Heyde 32-26 (SI) - Wellbore #1 - Gyro Surveys	6,685.14	6,489.76	2,999.88	2,952.51	63.332	CC
Heyde 32-26 (SI) - Wellbore #1 - Gyro Surveys	6,700.00	6,501.26	2,999.98	2,952.51	63.193	ES
Heyde 32-26 (SI) - Wellbore #1 - Gyro Surveys	7,050.00	6,740.94	3,062.09	3,012.33	61.539	SF
Heyde 41-26 (PR) - Wellbore #1 - Gyro Surveys	7,136.99	6,701.09	1,176.00	1,126.63	23.819	CC, ES
Heyde 41-26 (PR) - Wellbore #1 - Gyro Surveys	7,200.00	6,711.59	1,178.60	1,128.91	23.718	SF
Heyde 42-26 (PR) - Wellbore #1 - Gyro Surveys	6,527.76	6,315.50	1,770.71	1,724.27	38.131	CC, ES
Heyde 42-26 (PR) - Wellbore #1 - Gyro Surveys	6,750.00	6,493.35	1,800.95	1,752.87	37.457	SF
HSR-Waste Services 10-26 (SI) - Wellbore #1 - No Surve	6,480.67	6,303.67	3,647.54	3,496.97	24.224	CC
HSR-Waste Services 10-26 (SI) - Wellbore #1 - No Surve	6,500.00	6,321.40	3,647.77	3,496.76	24.155	ES
HSR-Waste Services 10-26 (SI) - Wellbore #1 - No Surve	6,800.00	6,565.81	3,711.02	3,553.81	23.606	SF
HSR-Waste Services 15-26 (SI) - Wellbore #1 - No Surve	6,449.24	6,290.55	4,576.23	4,425.95	30.452	CC
HSR-Waste Services 15-26 (SI) - Wellbore #1 - No Surve	6,450.00	6,291.25	4,576.23	4,425.94	30.448	ES
HSR-Waste Services 15-26 (SI) - Wellbore #1 - No Surve	6,850.00	6,614.79	4,680.70	4,522.24	29.538	SF
HSR-Waste Services 16-26 (SI) - Wellbore #1 - Gyro Sur	6,394.36	6,268.04	3,974.78	3,928.59	86.044	CC
HSR-Waste Services 16-26 (SI) - Wellbore #1 - Gyro Sur	6,400.00	6,273.35	3,974.80	3,928.57	85.966	ES
HSR-Waste Services 16-26 (SI) - Wellbore #1 - Gyro Sur	6,750.00	6,564.86	4,068.67	4,019.94	83.489	SF
HSR-Waste Services 9-26 (PA) - Wellbore #1 - Gyro Sur	6,425.22	6,291.46	2,762.09	2,715.74	59.592	CC, ES
HSR-Waste Services 9-26 (PA) - Wellbore #1 - Gyro Sur	6,700.00	6,498.79	2,818.50	2,770.22	58.380	SF
Waste Management 11-26 (PR) - Wellbore #1 - Gyro Sur	7,141.28	6,550.38	5,242.08	5,193.13	107.089	CC
Waste Management 11-26 (PR) - Wellbore #1 - Gyro Sur	7,150.00	6,552.26	5,242.11	5,193.12	107.010	ES
Waste Management 11-26 (PR) - Wellbore #1 - Gyro Sur	9,600.00	6,524.13	5,940.64	5,880.67	99.071	SF
Waste Management 12-26 (PR) - Wellbore #1 - Gyro Sur	6,827.85	6,483.13	5,516.27	5,468.51	115.482	CC, ES
Waste Management 12-26 (PR) - Wellbore #1 - Gyro Sur	8,200.00	6,615.18	5,949.18	5,895.75	111.351	SF
Waste Management 12-26A (PR) - Wellbore #1 - Gyro Su	6,916.30	6,518.31	4,761.25	4,713.07	98.822	CC, ES
Waste Management 12-26A (PR) - Wellbore #1 - Gyro Su	8,000.00	6,624.96	5,040.86	4,988.24	95.794	SF
Waste Management 21-26 (PR) - Wellbore #1 - Gyro Sur	7,192.13	6,788.99	3,766.06	3,716.39	75.828	CC
Waste Management 21-26 (PR) - Wellbore #1 - Gyro Sur	7,200.00	6,790.25	3,766.08	3,716.39	75.787	ES
Waste Management 21-26 (PR) - Wellbore #1 - Gyro Sur	8,400.00	6,790.33	4,018.08	3,963.35	73.404	SF
Waste Management 22-26 (PR) - Wellbore #1 - Gyro Sur	6,777.90	6,576.64	4,160.80	4,112.90	86.853	CC, ES
Waste Management 22-26 (PR) - Wellbore #1 - Gyro Sur	7,200.00	6,800.31	4,233.34	4,183.07	84.216	SF
Waste Management 26FD (PR) - Wellbore #1 - MWD Su	7,019.92	6,840.31	5,858.91	5,808.33	115.826	CC, ES
Waste Management 26FD (PR) - Wellbore #1 - MWD Su	10,000.00	6,937.83	6,924.18	6,858.04	104.686	SF

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



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

<b>Company:</b>	Northern Region - DJ Basin	<b>Local Co-ordinate Reference:</b>	Well Guttersen D25-781
<b>Project:</b>	Mustang	<b>TVD Reference:</b>	KB @ 4817.00ft
<b>Reference Site:</b>	D Section 25	<b>MD Reference:</b>	KB @ 4817.00ft
<b>Site Error:</b>	0.00 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Guttersen D25-781	<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 #3	<b>Offset TVD Reference:</b>	Offset Datum

**Summary**

Site Name Offset Well - Wellbore - Design	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Between Ellipses (ft)	Separation Factor	Warning
<b>D Section 26</b>						
Waste Management 26KD (PR) - Wellbore #1 - MWD Su	6,697.59	6,561.02	4,988.71	4,934.51	92.049	CC
Waste Management 26KD (PR) - Wellbore #1 - MWD Su	6,700.00	6,562.16	4,988.71	4,934.50	92.027	ES
Waste Management 26KD (PR) - Wellbore #1 - MWD Su	7,100.00	6,694.03	5,056.80	5,000.77	90.254	SF
Waste Management D 26-25 (SI) - Wellbore #1 - Gyro Su	6,570.96	6,448.81	5,485.50	5,438.52	116.751	CC, ES
Waste Management D 26-25 (SI) - Wellbore #1 - Gyro Su	7,000.00	6,801.18	5,578.29	5,528.31	111.610	SF
Waste Management 26JD (PR) - Wellbore #1 - MWD Surv	7,457.17	6,803.67	4,506.86	4,453.09	83.821	CC, ES
Waste Management 26JD (PR) - Wellbore #1 - MWD Surv	9,400.00	6,806.72	4,907.79	4,843.97	76.905	SF
<b>DD Section 06</b>						
Guttersen DD18-715 - Guttersen DD18-715 - Plan #1	17,856.05	12,557.40	9,613.35	9,460.54	62.912	CC, ES, SF
Guttersen DD18-725 - Guttersen DD18-725 - Plan #1	17,856.05	12,400.75	8,953.01	8,801.04	58.913	CC, ES, SF
Guttersen DD18-730 - Guttersen DD18-730 - Plan #1	17,856.05	12,607.94	8,622.94	8,470.64	56.618	CC, ES, SF
Guttersen DD18-735 - Guttersen DD18-735 - Plan #1	17,856.05	12,518.88	8,291.78	8,139.55	54.468	CC, ES, SF
Guttersen DD18-746 - Guttersen DD18-746 - Plan #1	17,856.05	12,518.45	7,631.23	7,478.72	50.038	CC, ES, SF
Guttersen DD18-750 - Guttersen DD18-750 - Plan #1	17,856.05	12,782.72	7,301.68	7,148.20	47.572	CC, ES, SF
Guttersen DD18-754 - Guttersen DD18-754 - Plan #1	17,856.05	12,594.29	6,970.20	6,817.14	45.537	CC, ES, SF
Guttersen DD18-765 - Guttersen DD18-765 - Plan #1	17,856.05	12,419.12	6,309.71	6,157.46	41.442	CC, ES, SF
Guttersen DD18-770 - Guttersen DD18-770 - Plan #1	17,856.05	12,605.02	5,980.23	5,827.78	39.227	CC, ES, SF
Guttersen DD18-775 - Guttersen DD18-775 - Plan #1	17,856.05	12,501.27	5,648.65	5,496.33	37.084	CC, ES, SF
Guttersen DD18-785 - Guttersen DD18-785 - Plan #1	17,856.05	12,489.81	4,988.26	4,835.74	32.706	CC, ES, SF
<b>DD Section 18</b>						
Guttersen 18D - Wellbore #1 - Wellbore #1 - As Drilled	14,170.63	6,543.73	8,613.92	8,523.40	95.170	CC
Guttersen 18D - Wellbore #1 - Wellbore #1 - As Drilled	14,200.00	6,543.35	8,613.97	8,523.26	94.965	ES
Guttersen 18D - Wellbore #1 - Wellbore #1 - As Drilled	17,200.00	6,504.74	9,131.00	9,024.35	85.614	SF
Guttersen 24-18 - Wellbore #1 - Wellbore #1 - As Drilled	13,501.53	6,635.08	6,741.80	6,655.73	78.326	CC, ES
Guttersen 24-18 - Wellbore #1 - Wellbore #1 - As Drilled	15,500.00	6,636.68	7,031.77	6,935.38	72.955	SF
Guttersen 33-18 - Wellbore #1 - Wellbore #1 - As Drilled	14,927.57	6,681.41	8,011.98	7,914.01	81.777	CC
Guttersen 33-18 - Wellbore #1 - Wellbore #1 - As Drilled	15,000.00	6,680.84	8,012.31	7,913.85	81.378	ES
Guttersen 33-18 - Wellbore #1 - Wellbore #1 - As Drilled	17,400.00	6,662.81	8,384.77	8,273.60	75.419	SF
Guttersen 34-18 - Wellbore #1 - Wellbore #1 - As Drilled	13,485.19	6,675.64	7,954.28	7,868.46	92.684	CC
Guttersen 34-18 - Wellbore #1 - Wellbore #1 - As Drilled	13,500.00	6,675.85	7,954.29	7,868.37	92.578	ES
Guttersen 34-18 - Wellbore #1 - Wellbore #1 - As Drilled	16,200.00	6,707.71	8,404.75	8,304.32	83.693	SF
Guttersen 43-18 - Wellbore #1 - Wellbore #1 - As Drilled	14,938.99	6,688.17	9,209.14	9,108.84	91.815	CC
Guttersen 43-18 - Wellbore #1 - Wellbore #1 - As Drilled	15,000.00	6,687.92	9,209.34	9,108.63	91.438	ES
Guttersen 43-18 - Wellbore #1 - Wellbore #1 - As Drilled	17,856.05	6,675.95	9,660.09	9,543.51	82.861	SF
Guttersen 44-18 - Wellbore #1 - Wellbore #1 - As Drilled	13,571.12	6,651.00	9,296.06	9,209.77	107.724	CC
Guttersen 44-18 - Wellbore #1 - Wellbore #1 - As Drilled	13,600.00	6,651.04	9,296.11	9,209.62	107.482	ES
Guttersen 44-18 - Wellbore #1 - Wellbore #1 - As Drilled	17,200.00	6,657.48	9,979.25	9,873.26	94.152	SF
Karch Blue DD18-03J - Wellbore #1 - Wellbore #1 - As D	14,553.30	6,779.10	6,334.01	6,238.12	66.055	CC
Karch Blue DD18-03J - Wellbore #1 - Wellbore #1 - As D	14,600.00	6,779.12	6,334.18	6,237.99	65.850	ES
Karch Blue DD18-03J - Wellbore #1 - Wellbore #1 - As D	16,100.00	6,779.65	6,520.12	6,416.14	62.710	SF
Karch Blue DD18-12 - Original Drilling - Original Drilling	14,920.00	6,632.06	5,192.91	5,091.03	50.972	CC, ES
Karch Blue DD18-12 - Original Drilling - Original Drilling	15,900.00	6,636.27	5,284.57	5,177.72	49.457	SF
Karch Blue DD18-13 - Wellbore #1 - Wellbore #1 - As Dri	13,429.23	6,612.64	5,159.24	5,073.08	59.881	CC
Karch Blue DD18-13 - Wellbore #1 - Wellbore #1 - As Dri	13,800.00	13,800.00	5,172.53	5,059.29	45.676	ES
Karch Blue DD18-13 - Wellbore #1 - Wellbore #1 - As Dri	14,500.00	14,500.00	5,269.21	5,150.30	44.310	SF
SPIKE STATE GWS DD #18-1J(PA) - SPIKE STATE GW	16,876.10	6,722.00	8,604.30	8,379.77	38.321	CC
SPIKE STATE GWS DD #18-1J(PA) - SPIKE STATE GW	16,900.00	6,722.00	8,604.33	8,379.64	38.293	ES
SPIKE STATE GWS DD #18-1J(PA) - SPIKE STATE GW	17,856.05	6,722.00	8,659.92	8,429.11	37.519	SF

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

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

<b>Company:</b>	Northern Region - DJ Basin	<b>Local Co-ordinate Reference:</b>	Well Guttersen D25-781
<b>Project:</b>	Mustang	<b>TVD Reference:</b>	KB @ 4817.00ft
<b>Reference Site:</b>	D Section 25	<b>MD Reference:</b>	KB @ 4817.00ft
<b>Site Error:</b>	0.00 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Guttersen D25-781	<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 #3	<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						
DD Section 19						
Champlin 366 Amoco B1 (PR) - Wellbore #1 - Gyro Surv	11,211.32	6,555.82	8,977.87	8,908.03	128.545	CC
Champlin 366 Amoco B1 (PR) - Wellbore #1 - Gyro Surv	11,300.00	6,554.57	8,978.31	8,907.92	127.564	ES
Champlin 366 Amoco B1 (PR) - Wellbore #1 - Gyro Surv	15,300.00	6,509.80	9,864.72	9,773.78	108.478	SF
Champlin 366 Amoco D1 (PA) - Wellbore #1 - No Survey	2,000.00	1,968.00	5,540.58	5,494.29	119.676	CC
Champlin 366 Amoco D1 (PA) - Wellbore #1 - No Survey	2,100.00	2,067.98	5,541.74	5,493.09	113.912	ES
Champlin 366 Amoco D1 (PA) - Wellbore #1 - No Survey	9,600.00	6,690.00	6,448.16	6,278.67	38.044	SF
Guttersen 31-19 (PR) - Wellbore #1 - Gyro Surveys	12,193.50	6,641.57	8,045.77	7,968.53	104.164	CC
Guttersen 31-19 (PR) - Wellbore #1 - Gyro Surveys	12,200.00	6,641.45	8,045.77	7,968.49	104.109	ES
Guttersen 31-19 (PR) - Wellbore #1 - Gyro Surveys	14,000.00	14,000.00	8,245.95	8,132.76	72.847	SF
Guttersen 44-19 (SI) - Wellbore #1 - No Surveys	2,000.00	2,013.00	8,319.24	8,272.04	176.268	CC
Guttersen 44-19 (SI) - Wellbore #1 - No Surveys	2,100.00	2,112.98	8,320.61	8,271.06	167.927	ES
Guttersen 44-19 (SI) - Wellbore #1 - No Surveys	11,000.00	6,735.00	9,784.45	9,606.80	55.075	SF

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

<b>Company:</b>	Northern Region - DJ Basin	<b>Local Co-ordinate Reference:</b>	Well Gutttersen D25-781
<b>Project:</b>	Mustang	<b>TVD Reference:</b>	KB @ 4817.00ft
<b>Reference Site:</b>	D Section 25	<b>MD Reference:</b>	KB @ 4817.00ft
<b>Site Error:</b>	0.00 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Gutttersen D25-781	<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 #3	<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						
DD Section 30						
Gutttersen 11-30 (PR) - Wellbore #1 - Gyro Surveys	921.79	874.79	4,099.03	4,093.08	688.530	CC
Gutttersen 11-30 (PR) - Wellbore #1 - Gyro Surveys	2,001.64	1,956.62	4,103.39	4,089.79	301.729	ES
Gutttersen 11-30 (PR) - Wellbore #1 - Gyro Surveys	8,600.00	6,622.74	5,598.90	5,546.28	106.406	SF
Gutttersen 12-30 (PR) - Wellbore #1 - Gyro Surveys	1,393.74	1,346.75	4,019.62	4,010.33	432.371	CC
Gutttersen 12-30 (PR) - Wellbore #1 - Gyro Surveys	2,000.00	1,927.60	4,021.12	4,007.63	297.974	ES
Gutttersen 12-30 (PR) - Wellbore #1 - Gyro Surveys	7,050.00	6,538.67	5,464.22	5,416.12	113.606	SF
Gutttersen 22-30 (PR) - Wellbore #1 - Gyro Surveys	2,009.76	2,000.35	5,393.37	5,379.58	391.104	CC, ES
Gutttersen 22-30 (PR) - Wellbore #1 - Gyro Surveys	7,200.00	6,548.26	6,855.42	6,806.95	141.434	SF
Gutttersen 30 A (PR) - Wellbore #1 - Gyro Surveys	100.00	36.89	4,694.63	4,694.44	10,000.000	CC
Gutttersen 30 A (PR) - Wellbore #1 - Gyro Surveys	2,000.00	1,942.05	4,704.68	4,691.12	347.009	ES
Gutttersen 30 A (PR) - Wellbore #1 - Gyro Surveys	8,400.00	6,629.95	6,455.23	6,403.53	124.856	SF
Gutttersen State DD30-715 - Gutttersen State DD30-715 -	2,000.00	2,036.00	8,638.91	8,624.90	616.981	CC, ES
Gutttersen State DD30-715 - Gutttersen State DD30-715 -	15,000.00	17,403.77	9,958.21	9,799.17	62.616	SF
Gutttersen State DD30-725 - Gutttersen State DD30-725 -	2,000.00	2,036.00	8,604.96	8,590.96	614.557	CC
Gutttersen State DD30-725 - Gutttersen State DD30-725 -	4,200.00	11,067.08	8,631.56	8,574.66	151.702	ES
Gutttersen State DD30-725 - Gutttersen State DD30-725 -	14,600.00	17,269.51	9,249.50	9,092.99	59.099	SF
Gutttersen State DD30-735 - Gutttersen State DD30-735 -	4,426.23	11,268.00	8,035.14	7,975.68	135.137	CC
Gutttersen State DD30-735 - Gutttersen State DD30-735 -	4,500.00	11,277.57	8,035.47	7,975.67	134.355	ES
Gutttersen State DD30-735 - Gutttersen State DD30-735 -	14,300.00	17,436.50	8,546.40	8,392.11	55.389	SF
Gutttersen State DD30-745 - Gutttersen State DD30-745 -	4,627.05	11,450.55	7,404.81	7,342.83	119.483	CC, ES
Gutttersen State DD30-745 - Gutttersen State DD30-745 -	13,900.00	17,588.29	7,828.98	7,677.44	51.663	SF
Gutttersen State DD30-755 - Gutttersen State DD30-755 -	4,902.98	11,269.92	6,703.27	6,642.40	110.126	CC, ES
Gutttersen State DD30-755 - Gutttersen State DD30-755 -	13,800.00	17,383.05	7,088.62	6,936.31	46.539	SF
Gutttersen State DD30-766 - Gutttersen State DD30-766 -	5,071.45	11,244.51	6,011.70	5,949.18	96.148	CC
Gutttersen State DD30-766 - Gutttersen State DD30-766 -	5,100.00	11,248.20	6,011.77	5,949.11	95.952	ES
Gutttersen State DD30-766 - Gutttersen State DD30-766 -	13,500.00	17,329.34	6,344.53	6,195.23	42.495	SF
Gutttersen State DD30-775 - Gutttersen State DD30-775 -	5,162.20	11,447.05	5,440.40	5,375.46	83.774	CC
Gutttersen State DD30-775 - Gutttersen State DD30-775 -	5,200.00	11,452.00	5,440.53	5,375.45	83.596	ES
Gutttersen State DD30-775 - Gutttersen State DD30-775 -	13,200.00	17,481.59	5,706.68	5,559.05	38.656	SF
Gutttersen State DD30-785 - Gutttersen State DD30-785 -	5,449.39	11,807.35	4,846.48	4,777.96	70.738	CC, ES
Gutttersen State DD30-785 - Gutttersen State DD30-785 -	13,000.00	17,796.63	5,052.33	4,905.47	34.402	SF
Karch Blue DD 30-12 (PA) - Wellbore #1 - No Surveys	2,000.00	1,959.00	4,282.67	4,236.55	92.866	CC
Karch Blue DD 30-12 (PA) - Wellbore #1 - No Surveys	2,100.00	2,058.98	4,284.41	4,235.94	88.395	ES
Karch Blue DD 30-12 (PA) - Wellbore #1 - No Surveys	6,900.00	6,558.95	5,768.07	5,611.77	36.904	SF
Karch Blue DD 30-14 (PA) - Wellbore #1 - No Surveys	2,000.00	1,965.00	6,331.34	6,285.10	136.934	CC
Karch Blue DD 30-14 (PA) - Wellbore #1 - No Surveys	2,100.00	2,064.98	6,333.07	6,284.48	130.339	ES
Karch Blue DD 30-14 (PA) - Wellbore #1 - No Surveys	7,000.00	6,616.13	7,879.35	7,721.63	49.958	SF
Karch Blue DD 30-3 J (PA) - Wellbore #1 - No Surveys	2,000.00	1,964.00	5,576.50	5,530.28	120.660	CC
Karch Blue DD 30-3 J (PA) - Wellbore #1 - No Surveys	2,100.00	2,063.98	5,578.24	5,529.67	114.851	ES
Karch Blue DD 30-3 J (PA) - Wellbore #1 - No Surveys	7,000.00	6,615.13	7,113.74	6,956.07	45.117	SF
L F Ranch 2-30 (PR) - Wellbore #1 - Gyro Surveys	2,011.50	2,007.55	5,352.14	5,338.30	386.830	CC, ES
L F Ranch 2-30 (PR) - Wellbore #1 - Gyro Surveys	9,700.00	6,902.33	7,354.49	7,296.81	127.499	SF
State 19 (PA) - Wellbore #1 - NO Surveys	2,000.00	2,015.00	7,545.90	7,498.66	159.747	CC
State 19 (PA) - Wellbore #1 - NO Surveys	2,100.00	2,114.98	7,547.50	7,497.91	152.201	ES
State 19 (PA) - Wellbore #1 - NO Surveys	7,300.00	6,736.92	8,937.32	8,776.33	55.516	SF

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