

Project: Mustang
Site: DD Section 30
Well: Gutteresen YY06-756
Wellbore: Gutteresen YY06-756
Design: Plan #1

Northern Region - DJ Basin

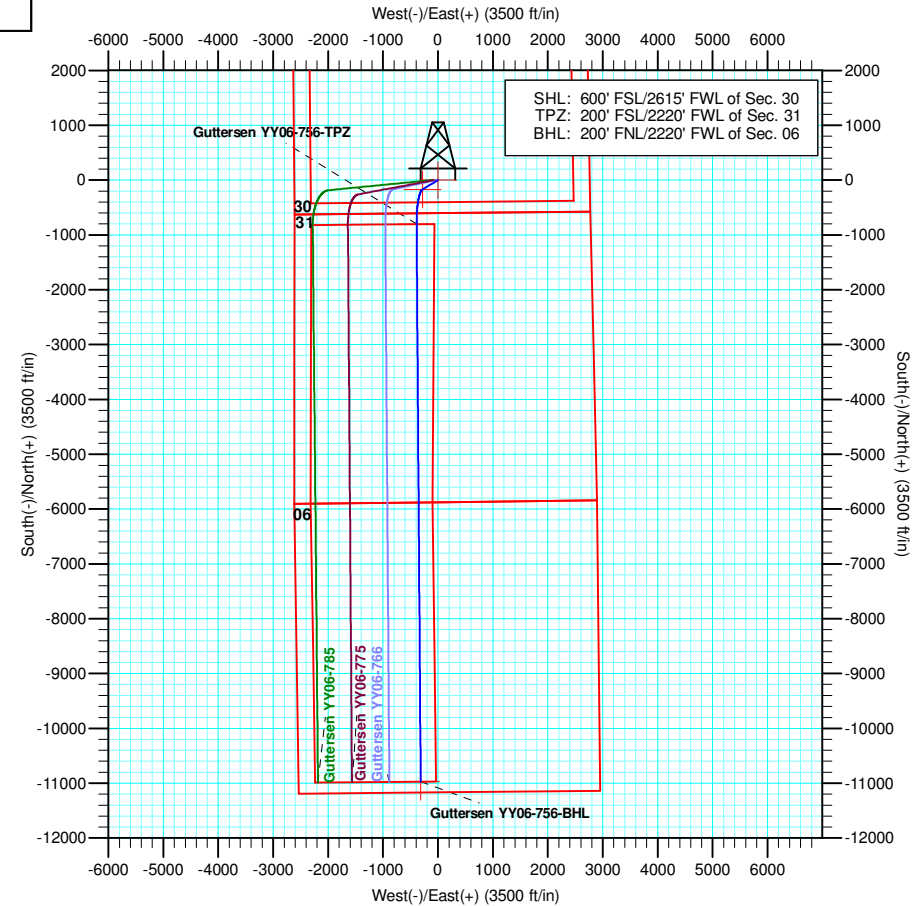
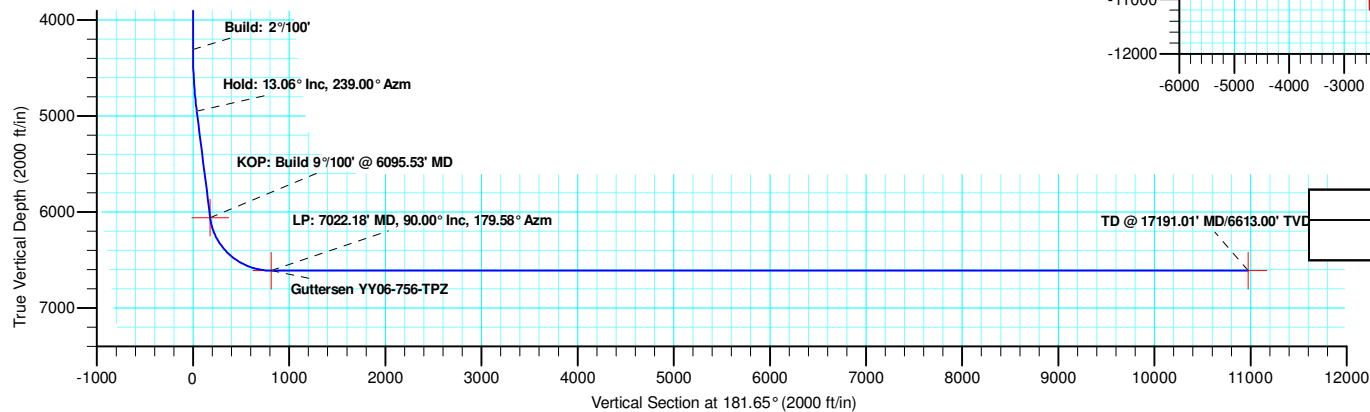
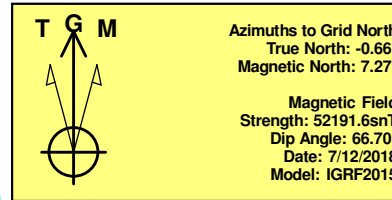
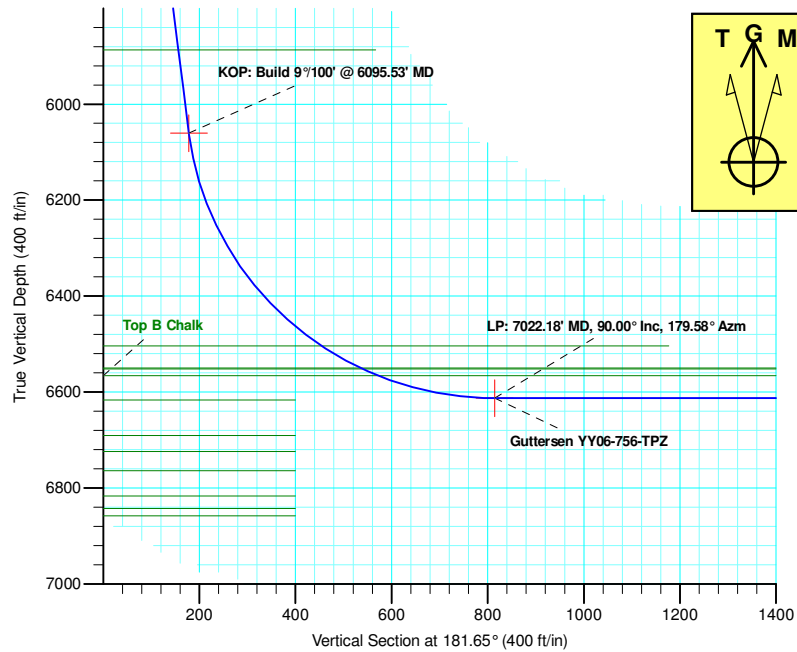
Geodetic System: US State Plane 1983
Datum: North American Datum 1983
Ellipsoid: GRS 1980
Zone: Colorado Northern Zone
System Datum: Mean Sea Level

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	4306.00	0.00	0.00	4306.00	0.00	0.00	0.00	0.00	0.00	
3	4959.09	13.06	239.00	4953.44	-38.17	-63.53	2.00	239.00	39.98	
4	6095.53	13.06	239.00	6060.49	-170.44	-283.69	0.00	0.00	178.52	
5	7022.18	90.00	179.58	6613.00	-803.63	-389.43	9.00	-60.07	814.48	Gutteresen YY06-756-TPZ
6	17191.01	90.00	179.58	6613.00	-10972.19	-315.15	0.00	0.00	10976.71	Gutteresen YY06-756-BHL

WELL DETAILS: Gutteresen YY06-756

+N/-S	+E/-W	Northing	Ground Level: Easting	4790.00 Latitude	Longitude	Slot
0.00	0.00	1313984.81	3284673.27	40.1907947	-104.4809339	



Plan: Plan #1 (Gutteresen YY06-756/Gutteresen YY06-756)

Created By: Keith Noack Date: 14:35, August 28 2018

Northern Region - DJ Basin

Mustang

DD Section 30

Guttersen YY06-756

Guttersen YY06-756

Plan: Plan #1

Standard Planning Report

28 August, 2018

Noble Energy, Inc.

Planning Report

Database:	EDMP	Local Co-ordinate Reference:	Well Guttersen YY06-756
Company:	Northern Region - DJ Basin	TVD Reference:	KB @ 4820.00ft
Project:	Mustang	MD Reference:	KB @ 4820.00ft
Site:	DD Section 30	North Reference:	Grid
Well:	Guttersen YY06-756	Survey Calculation Method:	Minimum Curvature
Wellbore:	Guttersen YY06-756		
Design:	Plan #1		

Project	Mustang, Weld County Colorado		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Northern Zone		

Site	DD Section 30		
Site Position:		Northing:	1,316,013.13 usft
From:	Lat/Long	Easting:	3,284,747.15 usft
Position Uncertainty:	0.00 ft	Slot Radius:	13.200 in
		Latitude:	40.1963600
		Longitude:	-104.4806460
		Grid Convergence:	0.66 °

Well	Guttersen YY06-756		
Well Position	+N/-S	-2,028.32 ft	Northing: 1,313,984.81 usft
	+E/-W	-73.88 ft	Easting: 3,284,673.27 usft
Position Uncertainty	0.00 ft	Wellhead Elevation:	Latitude: 40.1907947
			Longitude: -104.4809939
			Ground Level: 4,790.00 ft

Wellbore	Guttersen YY06-756				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	7/12/2018	7.93	66.70	52,191.61866311

Design	Plan #1			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.00	0.00	0.00	181.65

Plan Sections										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
4,306.00	0.00	0.00	4,306.00	0.00	0.00	0.00	0.00	0.00	0.00	
4,959.09	13.06	239.00	4,953.44	-38.17	-63.53	2.00	2.00	0.00	239.00	
6,095.53	13.06	239.00	6,060.49	-170.44	-283.69	0.00	0.00	0.00	0.00	
7,022.18	90.00	179.58	6,613.00	-803.63	-389.43	9.00	8.30	-6.41	-60.07	Guttersen YY06-75
17,191.01	90.00	179.58	6,613.00	-10,972.19	-315.15	0.00	0.00	0.00	0.00	Guttersen YY06-75

Noble Energy, Inc.

Planning Report

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Company:	Northern Region - DJ Basin	TVD Reference:	KB @ 4820.00ft
Project:	Mustang	MD Reference:	KB @ 4820.00ft
Site:	DD Section 30	North Reference:	Grid
Well:	Guttersen YY06-756	Survey Calculation Method:	Minimum Curvature
Wellbore:	Guttersen YY06-756		
Design:	Plan #1		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00
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
609.00	0.00	0.00	609.00	0.00	0.00	0.00	0.00	0.00	0.00
Pierre									
683.00	0.00	0.00	683.00	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
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
1,620.00	0.00	0.00	1,620.00	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
2,100.00	0.00	0.00	2,100.00	0.00	0.00	0.00	0.00	0.00	0.00
2,200.00	0.00	0.00	2,200.00	0.00	0.00	0.00	0.00	0.00	0.00
2,300.00	0.00	0.00	2,300.00	0.00	0.00	0.00	0.00	0.00	0.00
2,400.00	0.00	0.00	2,400.00	0.00	0.00	0.00	0.00	0.00	0.00
2,500.00	0.00	0.00	2,500.00	0.00	0.00	0.00	0.00	0.00	0.00
2,600.00	0.00	0.00	2,600.00	0.00	0.00	0.00	0.00	0.00	0.00
2,700.00	0.00	0.00	2,700.00	0.00	0.00	0.00	0.00	0.00	0.00
2,800.00	0.00	0.00	2,800.00	0.00	0.00	0.00	0.00	0.00	0.00
2,900.00	0.00	0.00	2,900.00	0.00	0.00	0.00	0.00	0.00	0.00
3,000.00	0.00	0.00	3,000.00	0.00	0.00	0.00	0.00	0.00	0.00
3,100.00	0.00	0.00	3,100.00	0.00	0.00	0.00	0.00	0.00	0.00
3,200.00	0.00	0.00	3,200.00	0.00	0.00	0.00	0.00	0.00	0.00
3,300.00	0.00	0.00	3,300.00	0.00	0.00	0.00	0.00	0.00	0.00
3,400.00	0.00	0.00	3,400.00	0.00	0.00	0.00	0.00	0.00	0.00
3,500.00	0.00	0.00	3,500.00	0.00	0.00	0.00	0.00	0.00	0.00
3,600.00	0.00	0.00	3,600.00	0.00	0.00	0.00	0.00	0.00	0.00
3,612.00	0.00	0.00	3,612.00	0.00	0.00	0.00	0.00	0.00	0.00
Parkman									
3,700.00	0.00	0.00	3,700.00	0.00	0.00	0.00	0.00	0.00	0.00
3,800.00	0.00	0.00	3,800.00	0.00	0.00	0.00	0.00	0.00	0.00
3,900.00	0.00	0.00	3,900.00	0.00	0.00	0.00	0.00	0.00	0.00
4,000.00	0.00	0.00	4,000.00	0.00	0.00	0.00	0.00	0.00	0.00
4,034.00	0.00	0.00	4,034.00	0.00	0.00	0.00	0.00	0.00	0.00
Sussex									
4,100.00	0.00	0.00	4,100.00	0.00	0.00	0.00	0.00	0.00	0.00
4,200.00	0.00	0.00	4,200.00	0.00	0.00	0.00	0.00	0.00	0.00
4,219.00	0.00	0.00	4,219.00	0.00	0.00	0.00	0.00	0.00	0.00

Noble Energy, Inc.

Planning Report

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Company:	Northern Region - DJ Basin	TVD Reference:	KB @ 4820.00ft
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Well:	Guttersen YY06-756	Survey Calculation Method:	Minimum Curvature
Wellbore:	Guttersen YY06-756		
Design:	Plan #1		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
Shannon									
4,306.00	0.00	0.00	4,306.00	0.00	0.00	0.00	0.00	0.00	0.00
Build: 2°/100'									
4,400.00	1.88	239.00	4,399.98	-0.79	-1.32	0.83	2.00	2.00	0.00
4,500.00	3.88	239.00	4,499.85	-3.38	-5.63	3.54	2.00	2.00	0.00
4,600.00	5.88	239.00	4,599.48	-7.76	-12.92	8.13	2.00	2.00	0.00
4,700.00	7.88	239.00	4,698.76	-13.93	-23.19	14.59	2.00	2.00	0.00
4,800.00	9.88	239.00	4,797.56	-21.88	-36.42	22.92	2.00	2.00	0.00
4,900.00	11.88	239.00	4,895.75	-31.60	-52.60	33.10	2.00	2.00	0.00
4,959.09	13.06	239.00	4,953.44	-38.17	-63.53	39.98	2.00	2.00	0.00
Hold: 13.06° Inc, 239.00° Azm									
5,000.00	13.06	239.00	4,993.30	-42.93	-71.46	44.97	0.00	0.00	0.00
5,100.00	13.06	239.00	5,090.71	-54.57	-90.83	57.16	0.00	0.00	0.00
5,200.00	13.06	239.00	5,188.12	-66.21	-110.21	69.35	0.00	0.00	0.00
5,300.00	13.06	239.00	5,285.54	-77.85	-129.58	81.54	0.00	0.00	0.00
5,400.00	13.06	239.00	5,382.95	-89.49	-148.95	93.73	0.00	0.00	0.00
5,500.00	13.06	239.00	5,480.36	-101.13	-168.32	105.92	0.00	0.00	0.00
5,600.00	13.06	239.00	5,577.78	-112.77	-187.70	118.11	0.00	0.00	0.00
5,700.00	13.06	239.00	5,675.19	-124.41	-207.07	130.30	0.00	0.00	0.00
5,800.00	13.06	239.00	5,772.60	-136.05	-226.44	142.49	0.00	0.00	0.00
5,900.00	13.06	239.00	5,870.01	-147.69	-245.81	154.68	0.00	0.00	0.00
5,917.44	13.06	239.00	5,887.00	-149.72	-249.19	156.81	0.00	0.00	0.00
Teepee Buttes									
6,000.00	13.06	239.00	5,967.43	-159.33	-265.19	166.87	0.00	0.00	0.00
6,095.53	13.06	239.00	6,060.49	-170.44	-283.69	178.52	0.00	0.00	0.00
KOP: Build 9°/100' @ 6095.53' MD									
6,100.00	13.27	237.48	6,064.84	-170.98	-284.56	179.08	9.00	4.59	-33.99
6,150.00	16.07	223.48	6,113.22	-179.09	-294.16	187.46	9.00	5.60	-28.00
6,200.00	19.50	213.91	6,160.83	-191.04	-303.59	199.68	9.00	6.87	-19.15
6,250.00	23.29	207.23	6,207.38	-206.77	-312.77	215.66	9.00	7.58	-13.37
6,300.00	27.29	202.36	6,252.59	-226.17	-321.66	235.31	9.00	7.99	-9.73
6,350.00	31.41	198.67	6,296.16	-249.12	-330.19	258.50	9.00	8.25	-7.38
6,400.00	35.62	195.77	6,337.85	-275.49	-338.33	285.09	9.00	8.41	-5.80
6,450.00	39.88	193.41	6,377.38	-305.11	-346.01	314.91	9.00	8.53	-4.72
6,500.00	44.18	191.44	6,414.51	-337.79	-353.18	347.79	9.00	8.61	-3.94
6,550.00	48.51	189.76	6,449.02	-373.34	-359.82	383.52	9.00	8.66	-3.37
6,600.00	52.87	188.28	6,480.69	-411.54	-365.86	421.88	9.00	8.71	-2.95
6,640.28	56.38	187.21	6,504.00	-444.08	-370.28	454.53	9.00	8.74	-2.65
Sharon Springs									
6,650.00	57.24	186.97	6,509.32	-452.15	-371.29	462.63	9.00	8.75	-2.52
6,700.00	61.62	185.78	6,534.75	-494.93	-376.05	505.52	9.00	8.76	-2.38
6,733.71	64.58	185.03	6,550.00	-524.85	-378.88	535.51	9.00	8.78	-2.22
Top A Chalk									
6,738.41	64.99	184.93	6,552.00	-529.08	-379.25	539.75	9.00	8.79	-2.15
Top A Marl									
6,750.00	66.01	184.68	6,556.81	-539.60	-380.13	550.29	9.00	8.79	-2.13
6,773.57	68.08	184.19	6,566.00	-561.23	-381.81	571.96	9.00	8.79	-2.08
Top B Chalk									
6,800.00	70.41	183.66	6,575.37	-585.89	-383.50	596.66	9.00	8.80	-2.02
6,850.00	74.81	182.69	6,590.31	-633.52	-386.14	644.34	9.00	8.81	-1.94
6,900.00	79.22	181.76	6,601.54	-682.19	-388.03	693.05	9.00	8.82	-1.86
6,950.00	83.63	180.86	6,608.99	-731.61	-389.15	742.48	9.00	8.82	-1.80
7,000.00	88.04	179.97	6,612.62	-781.46	-389.51	792.32	9.00	8.82	-1.77

Noble Energy, Inc.

Planning Report

Database:	EDMP	Local Co-ordinate Reference:	Well Guttersen YY06-756
Company:	Northern Region - DJ Basin	TVD Reference:	KB @ 4820.00ft
Project:	Mustang	MD Reference:	KB @ 4820.00ft
Site:	DD Section 30	North Reference:	Grid
Well:	Guttersen YY06-756	Survey Calculation Method:	Minimum Curvature
Wellbore:	Guttersen YY06-756		
Design:	Plan #1		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
7,022.18	90.00	179.58	6,613.00	-803.63	-389.43	814.48	9.00	8.83	-1.76
LP: 7022.18' MD, 90.00° Inc, 179.58° Azm									
7,100.00	90.00	179.58	6,613.00	-881.45	-388.86	892.25	0.00	0.00	0.00
7,200.00	90.00	179.58	6,613.00	-981.45	-388.13	992.19	0.00	0.00	0.00
7,300.00	90.00	179.58	6,613.00	-1,081.45	-387.40	1,092.12	0.00	0.00	0.00
7,400.00	90.00	179.58	6,613.00	-1,181.44	-386.67	1,192.06	0.00	0.00	0.00
7,500.00	90.00	179.58	6,613.00	-1,281.44	-385.94	1,291.99	0.00	0.00	0.00
7,600.00	90.00	179.58	6,613.00	-1,381.44	-385.21	1,391.93	0.00	0.00	0.00
7,700.00	90.00	179.58	6,613.00	-1,481.44	-384.48	1,491.86	0.00	0.00	0.00
7,800.00	90.00	179.58	6,613.00	-1,581.43	-383.75	1,591.80	0.00	0.00	0.00
7,900.00	90.00	179.58	6,613.00	-1,681.43	-383.02	1,691.74	0.00	0.00	0.00
8,000.00	90.00	179.58	6,613.00	-1,781.43	-382.29	1,791.67	0.00	0.00	0.00
8,100.00	90.00	179.58	6,613.00	-1,881.43	-381.55	1,891.61	0.00	0.00	0.00
8,200.00	90.00	179.58	6,613.00	-1,981.42	-380.82	1,991.54	0.00	0.00	0.00
8,300.00	90.00	179.58	6,613.00	-2,081.42	-380.09	2,091.48	0.00	0.00	0.00
8,400.00	90.00	179.58	6,613.00	-2,181.42	-379.36	2,191.41	0.00	0.00	0.00
8,500.00	90.00	179.58	6,613.00	-2,281.42	-378.63	2,291.35	0.00	0.00	0.00
8,600.00	90.00	179.58	6,613.00	-2,381.41	-377.90	2,391.28	0.00	0.00	0.00
8,700.00	90.00	179.58	6,613.00	-2,481.41	-377.17	2,491.22	0.00	0.00	0.00
8,800.00	90.00	179.58	6,613.00	-2,581.41	-376.44	2,591.15	0.00	0.00	0.00
8,900.00	90.00	179.58	6,613.00	-2,681.40	-375.71	2,691.09	0.00	0.00	0.00
9,000.00	90.00	179.58	6,613.00	-2,781.40	-374.98	2,791.02	0.00	0.00	0.00
9,100.00	90.00	179.58	6,613.00	-2,881.40	-374.25	2,890.96	0.00	0.00	0.00
9,200.00	90.00	179.58	6,613.00	-2,981.40	-373.52	2,990.89	0.00	0.00	0.00
9,300.00	90.00	179.58	6,613.00	-3,081.39	-372.79	3,090.83	0.00	0.00	0.00
9,400.00	90.00	179.58	6,613.00	-3,181.39	-372.06	3,190.76	0.00	0.00	0.00
9,500.00	90.00	179.58	6,613.00	-3,281.39	-371.33	3,290.70	0.00	0.00	0.00
9,600.00	90.00	179.58	6,613.00	-3,381.39	-370.60	3,390.63	0.00	0.00	0.00
9,700.00	90.00	179.58	6,613.00	-3,481.38	-369.87	3,490.57	0.00	0.00	0.00
9,800.00	90.00	179.58	6,613.00	-3,581.38	-369.14	3,590.50	0.00	0.00	0.00
9,900.00	90.00	179.58	6,613.00	-3,681.38	-368.41	3,690.44	0.00	0.00	0.00
10,000.00	90.00	179.58	6,613.00	-3,781.38	-367.68	3,790.37	0.00	0.00	0.00
10,100.00	90.00	179.58	6,613.00	-3,881.37	-366.95	3,890.31	0.00	0.00	0.00
10,200.00	90.00	179.58	6,613.00	-3,981.37	-366.21	3,990.24	0.00	0.00	0.00
10,300.00	90.00	179.58	6,613.00	-4,081.37	-365.48	4,090.18	0.00	0.00	0.00
10,400.00	90.00	179.58	6,613.00	-4,181.36	-364.75	4,190.11	0.00	0.00	0.00
10,500.00	90.00	179.58	6,613.00	-4,281.36	-364.02	4,290.05	0.00	0.00	0.00
10,600.00	90.00	179.58	6,613.00	-4,381.36	-363.29	4,389.98	0.00	0.00	0.00
10,700.00	90.00	179.58	6,613.00	-4,481.36	-362.56	4,489.92	0.00	0.00	0.00
10,800.00	90.00	179.58	6,613.00	-4,581.35	-361.83	4,589.85	0.00	0.00	0.00
10,900.00	90.00	179.58	6,613.00	-4,681.35	-361.10	4,689.79	0.00	0.00	0.00
11,000.00	90.00	179.58	6,613.00	-4,781.35	-360.37	4,789.72	0.00	0.00	0.00
11,100.00	90.00	179.58	6,613.00	-4,881.35	-359.64	4,889.66	0.00	0.00	0.00
11,200.00	90.00	179.58	6,613.00	-4,981.34	-358.91	4,989.59	0.00	0.00	0.00
11,300.00	90.00	179.58	6,613.00	-5,081.34	-358.18	5,089.53	0.00	0.00	0.00
11,400.00	90.00	179.58	6,613.00	-5,181.34	-357.45	5,189.46	0.00	0.00	0.00
11,500.00	90.00	179.58	6,613.00	-5,281.34	-356.72	5,289.40	0.00	0.00	0.00
11,600.00	90.00	179.58	6,613.00	-5,381.33	-355.99	5,389.34	0.00	0.00	0.00
11,700.00	90.00	179.58	6,613.00	-5,481.33	-355.26	5,489.27	0.00	0.00	0.00
11,800.00	90.00	179.58	6,613.00	-5,581.33	-354.53	5,589.21	0.00	0.00	0.00
11,900.00	90.00	179.58	6,613.00	-5,681.32	-353.80	5,689.14	0.00	0.00	0.00
12,000.00	90.00	179.58	6,613.00	-5,781.32	-353.07	5,789.08	0.00	0.00	0.00
12,100.00	90.00	179.58	6,613.00	-5,881.32	-352.34	5,889.01	0.00	0.00	0.00

Noble Energy, Inc.
Planning Report

Database:	EDMP	Local Co-ordinate Reference:	Well Guttersen YY06-756
Company:	Northern Region - DJ Basin	TVD Reference:	KB @ 4820.00ft
Project:	Mustang	MD Reference:	KB @ 4820.00ft
Site:	DD Section 30	North Reference:	Grid
Well:	Guttersen YY06-756	Survey Calculation Method:	Minimum Curvature
Wellbore:	Guttersen YY06-756		
Design:	Plan #1		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
12,200.00	90.00	179.58	6,613.00	-5,981.32	-351.61	5,988.95	0.00	0.00	0.00
12,300.00	90.00	179.58	6,613.00	-6,081.31	-350.88	6,088.88	0.00	0.00	0.00
12,400.00	90.00	179.58	6,613.00	-6,181.31	-350.14	6,188.82	0.00	0.00	0.00
12,500.00	90.00	179.58	6,613.00	-6,281.31	-349.41	6,288.75	0.00	0.00	0.00
12,600.00	90.00	179.58	6,613.00	-6,381.31	-348.68	6,388.69	0.00	0.00	0.00
12,700.00	90.00	179.58	6,613.00	-6,481.30	-347.95	6,488.62	0.00	0.00	0.00
12,800.00	90.00	179.58	6,613.00	-6,581.30	-347.22	6,588.56	0.00	0.00	0.00
12,900.00	90.00	179.58	6,613.00	-6,681.30	-346.49	6,688.49	0.00	0.00	0.00
13,000.00	90.00	179.58	6,613.00	-6,781.30	-345.76	6,788.43	0.00	0.00	0.00
13,100.00	90.00	179.58	6,613.00	-6,881.29	-345.03	6,888.36	0.00	0.00	0.00
13,200.00	90.00	179.58	6,613.00	-6,981.29	-344.30	6,988.30	0.00	0.00	0.00
13,300.00	90.00	179.58	6,613.00	-7,081.29	-343.57	7,088.23	0.00	0.00	0.00
13,400.00	90.00	179.58	6,613.00	-7,181.29	-342.84	7,188.17	0.00	0.00	0.00
13,500.00	90.00	179.58	6,613.00	-7,281.28	-342.11	7,288.10	0.00	0.00	0.00
13,600.00	90.00	179.58	6,613.00	-7,381.28	-341.38	7,388.04	0.00	0.00	0.00
13,700.00	90.00	179.58	6,613.00	-7,481.28	-340.65	7,487.97	0.00	0.00	0.00
13,800.00	90.00	179.58	6,613.00	-7,581.27	-339.92	7,587.91	0.00	0.00	0.00
13,900.00	90.00	179.58	6,613.00	-7,681.27	-339.19	7,687.84	0.00	0.00	0.00
14,000.00	90.00	179.58	6,613.00	-7,781.27	-338.46	7,787.78	0.00	0.00	0.00
14,100.00	90.00	179.58	6,613.00	-7,881.27	-337.73	7,887.71	0.00	0.00	0.00
14,200.00	90.00	179.58	6,613.00	-7,981.26	-337.00	7,987.65	0.00	0.00	0.00
14,300.00	90.00	179.58	6,613.00	-8,081.26	-336.27	8,087.58	0.00	0.00	0.00
14,400.00	90.00	179.58	6,613.00	-8,181.26	-335.54	8,187.52	0.00	0.00	0.00
14,500.00	90.00	179.58	6,613.00	-8,281.26	-334.81	8,287.45	0.00	0.00	0.00
14,600.00	90.00	179.58	6,613.00	-8,381.25	-334.07	8,387.39	0.00	0.00	0.00
14,700.00	90.00	179.58	6,613.00	-8,481.25	-333.34	8,487.32	0.00	0.00	0.00
14,800.00	90.00	179.58	6,613.00	-8,581.25	-332.61	8,587.26	0.00	0.00	0.00
14,900.00	90.00	179.58	6,613.00	-8,681.25	-331.88	8,687.19	0.00	0.00	0.00
15,000.00	90.00	179.58	6,613.00	-8,781.24	-331.15	8,787.13	0.00	0.00	0.00
15,100.00	90.00	179.58	6,613.00	-8,881.24	-330.42	8,887.07	0.00	0.00	0.00
15,200.00	90.00	179.58	6,613.00	-8,981.24	-329.69	8,987.00	0.00	0.00	0.00
15,300.00	90.00	179.58	6,613.00	-9,081.23	-328.96	9,086.94	0.00	0.00	0.00
15,400.00	90.00	179.58	6,613.00	-9,181.23	-328.23	9,186.87	0.00	0.00	0.00
15,500.00	90.00	179.58	6,613.00	-9,281.23	-327.50	9,286.81	0.00	0.00	0.00
15,600.00	90.00	179.58	6,613.00	-9,381.23	-326.77	9,386.74	0.00	0.00	0.00
15,700.00	90.00	179.58	6,613.00	-9,481.22	-326.04	9,486.68	0.00	0.00	0.00
15,800.00	90.00	179.58	6,613.00	-9,581.22	-325.31	9,586.61	0.00	0.00	0.00
15,900.00	90.00	179.58	6,613.00	-9,681.22	-324.58	9,686.55	0.00	0.00	0.00
16,000.00	90.00	179.58	6,613.00	-9,781.22	-323.85	9,786.48	0.00	0.00	0.00
16,100.00	90.00	179.58	6,613.00	-9,881.21	-323.12	9,886.42	0.00	0.00	0.00
16,200.00	90.00	179.58	6,613.00	-9,981.21	-322.39	9,986.35	0.00	0.00	0.00
16,300.00	90.00	179.58	6,613.00	-10,081.21	-321.66	10,086.29	0.00	0.00	0.00
16,400.00	90.00	179.58	6,613.00	-10,181.21	-320.93	10,186.22	0.00	0.00	0.00
16,500.00	90.00	179.58	6,613.00	-10,281.20	-320.20	10,286.16	0.00	0.00	0.00
16,600.00	90.00	179.58	6,613.00	-10,381.20	-319.47	10,386.09	0.00	0.00	0.00
16,700.00	90.00	179.58	6,613.00	-10,481.20	-318.73	10,486.03	0.00	0.00	0.00
16,800.00	90.00	179.58	6,613.00	-10,581.19	-318.00	10,585.96	0.00	0.00	0.00
16,900.00	90.00	179.58	6,613.00	-10,681.19	-317.27	10,685.90	0.00	0.00	0.00
17,000.00	90.00	179.58	6,613.00	-10,781.19	-316.54	10,785.83	0.00	0.00	0.00
17,100.00	90.00	179.58	6,613.00	-10,881.19	-315.81	10,885.77	0.00	0.00	0.00
17,191.01	90.00	179.58	6,613.00	-10,972.19	-315.15	10,976.71	0.00	0.00	0.00
TD @ 17191.01' MD/6613.00' TVD									

Noble Energy, Inc.

Planning Report

Database:	EDMP	Local Co-ordinate Reference:	Well Guttersen YY06-756
Company:	Northern Region - DJ Basin	TVD Reference:	KB @ 4820.00ft
Project:	Mustang	MD Reference:	KB @ 4820.00ft
Site:	DD Section 30	North Reference:	Grid
Well:	Guttersen YY06-756	Survey Calculation Method:	Minimum Curvature
Wellbore:	Guttersen YY06-756		
Design:	Plan #1		

Design Targets									
Target Name									
- hit/miss target	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- Shape	(°)	(°)	(ft)	(ft)	(ft)	(usft)	(usft)		
Guttersen YY06-756-I - plan hits target center - Point	0.00	0.00	0.00	0.00	0.00	1,313,984.81	3,284,673.27	40.1907947	-104.4809939
Guttersen YY06-756-I - plan hits target center - Point	0.00	0.00	6,060.49	-170.44	-283.69	1,313,814.37	3,284,389.58	40.1903358	-104.4820163
Guttersen YY06-756-I - plan hits target center - Point	0.00	0.00	6,613.00	-803.63	-389.43	1,313,181.18	3,284,283.84	40.1886011	-104.4824207
Guttersen YY06-756-I - plan misses target center by 0.36ft at 17190.99ft MD (6613.00 TVD, -10972.18 N, -315.15 E) - Point	0.00	0.00	6,613.00	-10,972.18	-315.51	1,303,012.66	3,284,357.76	40.1606867	-104.4825738

Formations						
Measured Depth	Vertical Depth	Name	Lithology	Dip	Dip Direction	
(ft)	(ft)			(°)	(°)	
609.00	609.00	Pierre				
683.00	683.00	Upper Pierre Aquifer Top				
1,620.00	1,620.00	Upper Pierre Aquifer Base				
3,612.00	3,612.00	Parkman				
4,034.00	4,034.00	Sussex				
4,219.00	4,219.00	Shannon				
5,917.44	5,887.00	Teepee Buttes				
6,640.28	6,504.00	Sharon Springs				
6,733.71	6,550.00	Top A Chalk				
6,738.41	6,552.00	Top A Marl				
6,773.57	6,566.00	Top B Chalk				

Plan Annotations				
Measured Depth	Vertical Depth	Local Coordinates		Comment
(ft)	(ft)	+N/-S (ft)	+E/-W (ft)	
4,306.00	4,306.00	0.00	0.00	Build: 2°/100'
4,959.09	4,953.44	-38.17	-63.53	Hold: 13.06° Inc, 239.00° Azm
6,095.53	6,060.49	-170.44	-283.69	KOP: Build 9°/100' @ 6095.53' MD
7,022.18	6,613.00	-803.63	-389.43	LP: 7022.18' MD, 90.00° Inc, 179.58° Azm
17,191.01	6,613.00	-10,972.19	-315.15	TD @ 17191.01' MD/6613.00' TVD

Northern Region - DJ Basin

Mustang

DD Section 30

Guttersen YY06-756

Guttersen YY06-756

Plan #1

Anticollision Summary Report

28 August, 2018

Noble Energy, Inc.

Anticollision Summary Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Gutttersen YY06-756
Project:	Mustang	TVD Reference:	KB @ 4820.00ft
Reference Site:	DD Section 30	MD Reference:	KB @ 4820.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Gutttersen YY06-756	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Gutttersen YY06-756	Database:	EDMP
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

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

Survey Tool Program		Date	8/20/2018		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
0.00	17,191.01	Plan #1 (Gutttersen YY06-756)	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 24						
Dalbey D 24-10 (PR) - Wellbore #1 - Gyro Surveys	4,688.03	4,558.76	7,547.45	7,515.20	234.081	CC
Dalbey D 24-10 (PR) - Wellbore #1 - Gyro Surveys	6,109.41	6,128.63	7,556.27	7,513.58	177.007	ES
Dalbey D 24-10 (PR) - Wellbore #1 - Gyro Surveys	6,700.00	6,531.80	7,780.97	7,735.08	169.528	SF
Dalbey D 24-15 (SI) - Wellbore #1 - Gyro Surveys	6,135.86	6,159.58	7,041.56	6,998.71	164.351	CC, ES
Dalbey D 24-15 (SI) - Wellbore #1 - Gyro Surveys	6,650.00	6,456.52	7,203.94	7,158.43	158.302	SF
Glazier 2-24 (SI) - Wellbore #1 - Gyro Surveys	1,117.32	1,056.32	9,191.76	9,184.47	1,261.542	CC
Glazier 2-24 (SI) - Wellbore #1 - Gyro Surveys	2,000.00	1,877.18	9,193.13	9,179.82	690.431	ES
Glazier 2-24 (SI) - Wellbore #1 - Gyro Surveys	6,650.00	6,524.51	9,485.35	9,439.67	207.619	SF
Gutttersen 11-24 (PR) - Wellbore #1 - Gyro Surveys						Out of range
Gutttersen 12-24 (PR) - Wellbore #1 - Gyro Surveys						Out of range
Gutttersen 21-24 (PR) - Wellbore #1 - Gyro Surveys						Out of range
Gutttersen 22-24 (PR) - Wellbore #1 - Gyro Surveys	3,614.31	3,544.35	9,942.14	9,917.22	398.936	CC
Gutttersen 22-24 (PR) - Wellbore #1 - Gyro Surveys	6,105.00	5,973.18	9,947.63	9,905.53	236.278	ES
Gutttersen 22-24 (PR) - Wellbore #1 - Gyro Surveys	6,350.00	6,197.21	9,986.63	9,942.90	228.329	SF
Gutttersen 24A (PR) - Wellbore #1 - Gyro Surveys						Out of range
Gutttersen 24J (PR) - Wellbore #1 - Gyro Surveys						Out of range
Gutttersen 24N (PR) - Wellbore #1 - MWD Surveys						Out of range
Gutttersen 24S (PR) - Wellbore #1 - MWD Surveys	5,327.13	5,342.55	8,148.26	8,112.02	224.868	CC
Gutttersen 24S (PR) - Wellbore #1 - MWD Surveys	5,400.00	5,386.49	8,148.39	8,111.75	222.372	ES
Gutttersen 24S (PR) - Wellbore #1 - MWD Surveys	6,700.00	6,591.29	8,405.04	8,359.92	186.279	SF
Gutttersen 43-24 (PR) - Wellbore #1 - Gyro Surveys	5,419.40	5,488.80	7,346.44	7,308.40	193.121	CC
Gutttersen 43-24 (PR) - Wellbore #1 - Gyro Surveys	5,500.00	5,539.62	7,346.59	7,308.09	190.813	ES
Gutttersen 43-24 (PR) - Wellbore #1 - Gyro Surveys	6,600.00	6,450.22	7,540.91	7,495.52	166.134	SF
Gutttersen 44-24 (PR) - Wellbore #1 - Gyro Surveys	5,783.45	5,724.58	6,214.39	6,174.30	155.011	CC
Gutttersen 44-24 (PR) - Wellbore #1 - Gyro Surveys	6,000.00	5,899.40	6,215.44	6,173.97	149.866	ES
Gutttersen 44-24 (PR) - Wellbore #1 - Gyro Surveys	6,600.00	6,431.84	6,390.07	6,344.79	141.121	SF
Karch Blue D 24-12 (PA) - Wellbore #1 - Gyro Surveys	6,146.14	6,146.14	9,830.54	9,787.70	229.508	CC
Karch Blue D 24-12 (PA) - Wellbore #1 - Gyro Surveys	6,150.00	6,150.00	9,830.55	9,787.69	229.363	ES
Karch Blue D 24-12 (PA) - Wellbore #1 - Gyro Surveys	6,700.00	6,500.00	9,997.28	9,951.50	218.343	SF
Karch Blue D 24-14 (PR) - Wellbore #1 - No Surveys	6,144.21	6,052.65	7,643.44	7,500.85	53.607	CC
Karch Blue D 24-14 (PR) - Wellbore #1 - No Surveys	6,150.00	6,058.22	7,643.46	7,500.74	53.558	ES
Karch Blue D 24-14 (PR) - Wellbore #1 - No Surveys	6,700.00	6,479.75	7,813.25	7,660.40	51.116	SF
Karch Blue D24-11 (PA) - Wellbore #1 - Gyro Surveys	6,110.29	5,886.50	8,872.47	8,826.34	192.342	CC, ES
Karch Blue D24-11 (PA) - Wellbore #1 - Gyro Surveys	6,800.00	6,383.76	9,145.95	9,094.61	178.150	SF
Koerner 31-24 (SI) - Wellbore #1 - Gyro Surveys						Out of range
Koerner 32-24 (SI) - Wellbore #1 - Gyro Surveys	5,450.37	5,411.48	9,147.68	9,109.84	241.758	CC
Koerner 32-24 (SI) - Wellbore #1 - Gyro Surveys	5,700.00	5,616.26	9,148.51	9,109.08	232.014	ES

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

Noble Energy, Inc.
Anticollision Summary Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Guttersen YY06-756
Project:	Mustang	TVD Reference:	KB @ 4820.00ft
Reference Site:	DD Section 30	MD Reference:	KB @ 4820.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Guttersen YY06-756	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Guttersen YY06-756	Database:	EDMP
Reference Design:	Plan #1	Offset TVD Reference:	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 24						
Koerner 32-24 (SI) - Wellbore #1 - Gyro Surveys	6,700.00	6,636.86	9,389.49	9,343.25	203.059	SF
Koerner 42-24 (SI) - Wellbore #1 - Gyro Surveys	4,336.12	4,289.06	8,550.95	8,520.81	283.708	CC
Koerner 42-24 (SI) - Wellbore #1 - Gyro Surveys	4,400.00	4,336.26	8,551.10	8,520.58	280.136	ES
Koerner 42-24 (SI) - Wellbore #1 - Gyro Surveys	6,650.00	6,534.00	8,823.51	8,777.75	192.807	SF
LF Ranch 1-24 (SI) - Wellbore #1 - Gyro Surveys	6,157.30	6,157.30	8,827.71	8,784.81	205.799	CC, ES
LF Ranch 1-24 (SI) - Wellbore #1 - Gyro Surveys	6,850.00	6,665.28	9,062.05	9,015.35	194.058	SF

Noble Energy, Inc.

Anticollision Summary Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Guttersten YY06-756
Project:	Mustang	TVD Reference:	KB @ 4820.00ft
Reference Site:	DD Section 30	MD Reference:	KB @ 4820.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Guttersten YY06-756	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Guttersten YY06-756	Database:	EDMP
Reference Design:	Plan #1	Offset TVD Reference:	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 25						
Coors Energy 13-25D (PR) - Wellbore #1 - MWD Survey	0.00	0.00	6,324.71			
Coors Energy 13-25D (PR) - Wellbore #1 - MWD Survey	194.78	194.16	6,324.74	6,323.75	6,333.852	ES
Coors Energy 13-25D (PR) - Wellbore #1 - MWD Survey	6,900.00	6,687.04	7,120.74	7,069.17	138.074	SF
Coors Energy 14-25D (PR) - Wellbore #1 - MWD Survey	0.00	0.00	6,308.39			
Coors Energy 14-25D (PR) - Wellbore #1 - MWD Survey	900.00	836.91	6,309.51	6,304.95	1,384.198	ES
Coors Energy 14-25D (PR) - Wellbore #1 - MWD Survey	11,000.00	6,852.93	8,385.07	8,318.59	126.132	SF
Coors Energy 23-25D (PR) - Wellbore #1 - MWD Survey	6,392.81	6,465.55	5,787.08	5,736.12	113.541	CC
Coors Energy 23-25D (PR) - Wellbore #1 - MWD Survey	6,400.00	6,470.07	5,787.10	5,736.10	113.462	ES
Coors Energy 23-25D (PR) - Wellbore #1 - MWD Survey	6,900.00	6,754.14	5,865.73	5,812.55	110.287	SF
Coors Energy 24-25 (PR) - Wellbore #1 - Gyro Surveys	6,809.44	6,597.21	5,377.70	5,331.38	116.106	CC, ES
Coors Energy 24-25 (PR) - Wellbore #1 - Gyro Surveys	9,300.00	6,626.04	6,072.65	6,016.95	109.018	SF
Coors Energy 25HD (PR) - Wellbore #1 - MWD Surveys	0.00	0.00	6,300.28			
Coors Energy 25HD (PR) - Wellbore #1 - MWD Surveys	11,000.00	6,906.76	9,132.24	9,065.52	136.866	SF
Coors Energy 25LD (PR) - Wellbore #1 - MWD Surveys	6,910.93	6,895.03	6,160.54	6,111.67	126.064	CC, ES
Coors Energy 25LD (PR) - Wellbore #1 - MWD Surveys	10,100.00	6,826.79	7,049.28	6,987.08	113.345	SF
Coors Energy 25TD (PR) - Wellbore #1 - MWD Surveys	6,895.42	6,613.91	3,449.85	3,402.64	73.085	CC
Coors Energy 25TD (PR) - Wellbore #1 - MWD Surveys	6,900.00	6,614.70	3,449.85	3,402.64	73.065	ES
Coors Energy 25TD (PR) - Wellbore #1 - MWD Surveys	7,500.00	6,618.94	3,522.94	3,474.30	72.425	SF
Coors Energy 25XD (PR) - Wellbore #1 - MWD Surveys	6,309.32	6,449.87	2,573.88	2,523.28	50.863	CC, ES
Coors Energy 25XD (PR) - Wellbore #1 - MWD Surveys	6,750.00	6,802.46	2,648.67	2,594.70	49.075	SF
Coors Energy 25YD (PR) - Wellbore #1 - MWD Surveys	6,850.00	6,760.33	2,305.29	2,256.39	47.145	SF
Coors Energy 25YD (PR) - Wellbore #1 - MWD Surveys	6,859.67	6,762.33	2,305.25	2,256.36	47.149	CC, ES
Coors Energy 33-25D (PR) - Wellbore #1 - MWD Survey	100.00	62.08	3,985.39	3,985.15	10,000.000	CC
Coors Energy 33-25D (PR) - Wellbore #1 - MWD Survey	200.00	150.75	3,985.73	3,984.98	5,282.018	ES
Coors Energy 33-25D (PR) - Wellbore #1 - MWD Survey	6,700.00	6,632.28	4,585.41	4,534.18	89.504	SF
Coors Energy 34-25 (PR) - Wellbore #1 - Gyro Surveys	6,786.88	6,569.36	4,381.88	4,335.74	94.960	CC, ES
Coors Energy 34-25 (PR) - Wellbore #1 - Gyro Surveys	8,200.00	6,600.00	4,696.76	4,646.03	92.573	SF
Coors Energy 43-25D (PR) - Wellbore #1 - MWD Survey	6,225.48	6,316.31	3,352.07	3,298.65	62.752	CC, ES
Coors Energy 43-25D (PR) - Wellbore #1 - MWD Survey	6,550.00	6,605.20	3,394.96	3,339.73	61.478	SF
Coors Energy 44-25D (PR) - Wellbore #1 - MWD Survey	6,599.30	6,542.46	2,933.02	2,888.00	65.153	CC
Coors Energy 44-25D (PR) - Wellbore #1 - MWD Survey	6,600.00	6,542.89	2,933.02	2,888.00	65.148	ES
Coors Energy 44-25D (PR) - Wellbore #1 - MWD Survey	6,900.00	6,664.45	2,963.04	2,916.69	63.926	SF
Dalbey D 25-03 (SI) - Wellbore #1 - Gyro Surveys	6,252.50	6,474.37	7,055.30	7,011.05	159.443	CC, ES
Dalbey D 25-03 (SI) - Wellbore #1 - Gyro Surveys	6,800.00	6,938.60	7,185.67	7,138.19	151.342	SF
Dalbey D 25-05 (SI) - Wellbore #1 - Gyro Surveys	6,401.00	6,954.56	7,684.58	7,637.72	163.995	CC, ES
Dalbey D 25-05 (SI) - Wellbore #1 - Gyro Surveys	6,900.00	7,070.00	7,781.66	7,732.51	158.322	SF
Guttersten 11-25 (PR) - Wellbore #1 - MWD Surveys	6,235.77	6,300.41	8,110.92	8,068.32	190.418	CC, ES
Guttersten 11-25 (PR) - Wellbore #1 - MWD Surveys	6,900.00	6,723.34	8,298.58	8,252.63	180.608	SF
Guttersten 22-25 (PR) - Wellbore #1 - MWD Surveys	6,268.04	6,340.87	6,249.63	6,206.92	146.324	CC, ES
Guttersten 22-25 (PR) - Wellbore #1 - MWD Surveys	6,850.00	6,764.45	6,386.85	6,340.97	139.225	SF
Guttersten 25E (PR) - Wellbore #1 - MWD Surveys	6,198.51	6,077.48	8,763.25	8,721.31	208.957	CC
Guttersten 25E (PR) - Wellbore #1 - MWD Surveys	6,200.00	6,079.21	8,763.25	8,721.30	208.901	ES
Guttersten 25E (PR) - Wellbore #1 - MWD Surveys	6,900.00	6,630.30	8,971.80	8,925.93	195.573	SF
Guttersten 25KD (PR) - Wellbore #1 - MWD Surveys	100.00	55.64	5,742.98	5,742.75	10,000.000	CC
Guttersten 25KD (PR) - Wellbore #1 - MWD Surveys	200.00	141.24	5,743.27	5,742.53	7,785.912	ES
Guttersten 25KD (PR) - Wellbore #1 - MWD Surveys	8,500.00	6,929.64	7,586.63	7,529.92	133.783	SF
Guttersten 25O (PR) - Wellbore #1 - MWD Surveys	6,248.20	6,107.00	5,620.16	5,578.12	133.686	CC
Guttersten 25O (PR) - Wellbore #1 - MWD Surveys	6,250.00	6,108.84	5,620.16	5,578.11	133.645	ES
Guttersten 25O (PR) - Wellbore #1 - MWD Surveys	6,850.00	6,533.94	5,758.22	5,712.87	126.964	SF
Guttersten D 25-17 (SI) - Wellbore #1 - Gyro Surveys	6,148.64	6,030.47	5,210.03	5,167.57	122.705	CC
Guttersten D 25-17 (SI) - Wellbore #1 - Gyro Surveys	6,150.00	6,031.51	5,210.04	5,167.57	122.680	ES
Guttersten D 25-17 (SI) - Wellbore #1 - Gyro Surveys	6,600.00	6,379.09	5,321.54	5,276.40	117.888	SF
Guttersten D25-715 - Wellbore #1 - Plan #1	6,231.05	6,500.00	3,259.48	3,213.88	71.483	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

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Guttersten YY06-756
Project:	Mustang	TVD Reference:	KB @ 4820.00ft
Reference Site:	DD Section 30	MD Reference:	KB @ 4820.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Guttersten YY06-756	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Guttersten YY06-756	Database:	EDMP
Reference Design:	Plan #1	Offset TVD Reference:	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 25						
Guttersten D25-715 - Wellbore #1 - Plan #1	6,450.00	6,550.00	3,287.70	3,241.45	71.086	SF
Guttersten D25-724 - Wellbore #1 - Plan #1	6,218.44	6,279.33	3,736.33	3,691.54	83.421	CC, ES
Guttersten D25-724 - Wellbore #1 - Plan #1	6,450.00	6,324.80	3,762.90	3,717.38	82.676	SF
Guttersten D25-734 - Wellbore #1 - Plan #1	6,241.30	6,279.98	4,297.46	4,252.48	95.542	CC
Guttersten D25-734 - Wellbore #1 - Plan #1	6,250.00	6,282.14	4,297.50	4,252.48	95.462	ES
Guttersten D25-734 - Wellbore #1 - Plan #1	6,500.00	6,350.00	4,328.37	4,282.32	93.996	SF
Guttersten D25-743 - Wellbore #1 - Plan #1	6,179.11	6,005.46	4,681.94	4,637.30	104.881	CC
Guttersten D25-743 - Wellbore #1 - Plan #1	6,200.00	6,026.27	4,682.08	4,637.27	104.490	ES
Guttersten D25-743 - Wellbore #1 - Plan #1	6,550.00	6,200.00	4,729.04	4,682.35	101.287	SF
Guttersten D25-753 - Wellbore #1 - Plan #1	6,349.33	6,700.00	5,478.04	5,430.28	114.682	CC
Guttersten D25-753 - Wellbore #1 - Plan #1	6,350.00	6,700.00	5,478.04	5,430.27	114.678	ES
Guttersten D25-753 - Wellbore #1 - Plan #1	6,700.00	6,750.00	5,524.09	5,475.36	113.345	SF
Guttersten D25-762 - Wellbore #1 - Plan #1	6,322.71	6,450.00	5,978.44	5,931.29	126.818	CC, ES
Guttersten D25-762 - Wellbore #1 - Plan #1	6,800.00	6,521.95	6,051.81	6,003.24	124.594	SF
Guttersten D25-772 - Wellbore #1 - Plan #1	6,310.57	6,350.00	6,484.23	6,436.96	137.163	CC, ES
Guttersten D25-772 - Wellbore #1 - Plan #1	6,850.00	6,450.00	6,569.46	6,520.23	133.445	SF
Guttersten D25-781 - Wellbore #1 - Plan #1	2,000.00	1,997.00	6,836.33	6,822.47	493.167	CC
Guttersten D25-781 - Wellbore #1 - Plan #1	2,200.00	2,157.89	6,836.90	6,821.78	452.211	ES
Guttersten D25-781 - Wellbore #1 - Plan #1	8,900.00	6,450.00	7,969.34	7,912.32	139.751	SF
Guttersten State D36-714 - Wellbore #1 - Plan #1	7,009.26	9,809.60	2,522.80	2,460.03	40.191	CC
Guttersten State D36-714 - Wellbore #1 - Plan #1	11,900.00	14,681.07	2,547.62	2,421.71	20.234	ES
Guttersten State D36-714 - Wellbore #1 - Plan #1	12,100.00	14,702.49	2,554.89	2,427.79	20.101	SF
Guttersten State D36-724 - Wellbore #1 - Plan #1	7,008.65	9,714.25	3,147.01	3,084.63	50.443	CC
Guttersten State D36-724 - Wellbore #1 - Plan #1	11,900.00	14,605.53	3,171.88	3,045.89	25.176	ES
Guttersten State D36-724 - Wellbore #1 - Plan #1	12,300.00	14,633.39	3,195.66	3,067.12	24.861	SF
Guttersten State D36-733 - Wellbore #1 - Plan #1	7,008.21	9,715.72	3,771.49	3,709.31	60.660	CC
Guttersten State D36-733 - Wellbore #1 - Plan #1	12,000.00	14,641.76	3,797.48	3,670.68	29.949	ES
Guttersten State D36-733 - Wellbore #1 - Plan #1	12,500.00	14,641.76	3,841.34	3,711.31	29.543	SF
Guttersten State D36-743 - Wellbore #1 - Plan #1	6,999.23	9,767.48	4,401.12	4,339.21	71.086	CC
Guttersten State D36-743 - Wellbore #1 - Plan #1	12,000.00	14,719.96	4,441.87	4,315.56	35.166	ES
Guttersten State D36-743 - Wellbore #1 - Plan #1	12,700.00	14,719.96	4,509.77	4,378.44	34.339	SF
Guttersten State D36-752 - Wellbore #1 - Plan #1	7,004.85	9,809.14	5,010.74	4,945.67	77.016	CC
Guttersten State D36-752 - Wellbore #1 - Plan #1	12,000.00	14,738.86	5,041.29	4,911.21	38.755	ES
Guttersten State D36-752 - Wellbore #1 - Plan #1	12,700.00	14,738.86	5,100.33	4,966.31	38.057	SF
Guttersten State D36-762 - Wellbore #1 - Plan #1	7,021.94	9,855.37	5,642.96	5,577.63	86.372	CC
Guttersten State D36-762 - Wellbore #1 - Plan #1	12,000.00	14,758.69	5,643.88	5,513.59	43.318	ES
Guttersten State D36-762 - Wellbore #1 - Plan #1	13,000.00	14,758.69	5,744.89	5,608.40	42.089	SF
Guttersten State D36-771 - Wellbore #1 - Plan #1	7,014.71	9,885.98	6,255.05	6,189.84	95.927	CC
Guttersten State D36-771 - Wellbore #1 - Plan #1	12,000.00	14,816.36	6,268.17	6,138.08	48.185	ES
Guttersten State D36-771 - Wellbore #1 - Plan #1	13,300.00	14,816.36	6,415.98	6,277.16	46.220	SF
Guttersten State D36-781 - Wellbore #1 - Plan #1	2,000.00	1,997.00	6,796.45	6,782.58	490.290	CC
Guttersten State D36-781 - Wellbore #1 - Plan #1	2,100.00	2,052.58	6,796.76	6,782.35	471.616	ES
Guttersten State D36-781 - Wellbore #1 - Plan #1	13,700.00	14,970.23	7,162.42	7,020.51	50.472	SF
Karch Blue D 25-02 (DA) - Wellbore #1 - No Surveys	6,149.74	6,053.97	5,975.73	5,833.10	41.898	CC
Karch Blue D 25-02 (DA) - Wellbore #1 - No Surveys	6,150.00	6,054.22	5,975.73	5,833.10	41.896	ES
Karch Blue D 25-02 (DA) - Wellbore #1 - No Surveys	6,650.00	6,450.32	6,113.10	5,960.96	40.180	SF
Karch Blue D 25-08 (SI) - Wellbore #1 - Gyro Surveys	6,158.73	6,113.66	4,166.02	4,123.27	97.456	CC, ES
Karch Blue D 25-08 (SI) - Wellbore #1 - Gyro Surveys	6,600.00	6,498.64	4,279.75	4,234.23	94.017	SF
Karch Blue D25-07 (SI) - Wellbore #1 - Gyro Surveys	6,178.90	5,967.35	5,195.88	5,153.58	122.824	CC, ES
Karch Blue D25-07 (SI) - Wellbore #1 - Gyro Surveys	6,900.00	6,900.00	5,420.11	5,372.45	113.740	SF
L F Ranch 2-25 (PR) - Wellbore #1 - Gyro Surveys	6,117.10	6,051.68	5,109.04	5,066.62	120.463	CC, ES
L F Ranch 2-25 (PR) - Wellbore #1 - Gyro Surveys	6,600.00	6,473.84	5,254.01	5,208.57	115.627	SF
LF Ranches 1 (PA) - Wellbore #1 - No Surveys	6,129.45	6,038.41	5,055.62	4,913.36	35.539	CC

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

Noble Energy, Inc.
Anticollision Summary Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Guttersen YY06-756
Project:	Mustang	TVD Reference:	KB @ 4820.00ft
Reference Site:	DD Section 30	MD Reference:	KB @ 4820.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Guttersen YY06-756	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Guttersen YY06-756	Database:	EDMP
Reference Design:	Plan #1	Offset TVD Reference:	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 25						
LF Ranches 1 (PA) - Wellbore #1 - No Surveys	6,150.00	6,058.22	5,055.87	4,913.15	35.424	ES
LF Ranches 1 (PA) - Wellbore #1 - No Surveys	6,600.00	6,425.69	5,187.22	5,035.70	34.235	SF
D Section 36						
Kanga State D 36-1JI (SI) - Wellbore #1 - Gyro Surveys	7,576.28	6,547.21	2,863.61	2,815.54	59.574	CC, ES
Kanga State D 36-1JI (SI) - Wellbore #1 - Gyro Surveys	8,300.00	6,523.84	2,953.56	2,902.49	57.830	SF
Kanga State D 36-2JI - Wellbore #1 - Gyro Surveys	7,207.38	6,630.52	4,308.81	4,261.43	90.940	CC, ES
Kanga State D 36-2JI - Wellbore #1 - Gyro Surveys	9,000.00	6,599.96	4,666.73	4,612.08	85.395	SF
Kanga State D36-11JI (PR) - Wellbore #1 - Gyro Surveys	10,223.93	6,535.31	5,457.39	5,352.67	52.116	CC
Kanga State D36-11JI (PR) - Wellbore #1 - Gyro Surveys	10,300.00	6,535.51	5,457.92	5,352.66	51.853	ES
Kanga State D36-11JI (PR) - Wellbore #1 - Gyro Surveys	11,800.00	6,539.65	5,680.41	5,565.38	49.383	SF
Rhoo State D36-07JI (SI) - Wellbore #1 - Gyro Surveys	8,655.17	6,573.30	4,301.02	4,248.10	81.286	CC
Rhoo State D36-07JI (SI) - Wellbore #1 - Gyro Surveys	8,700.00	6,570.99	4,301.25	4,248.09	80.914	ES
Rhoo State D36-07JI (SI) - Wellbore #1 - Gyro Surveys	10,300.00	6,488.13	4,603.65	4,541.86	74.516	SF
Spike State D 36-04 (SI) - Gyro Surveys - Wellbore #1	7,462.81	6,731.87	6,867.36	6,819.08	142.230	CC
Spike State D 36-04 (SI) - Gyro Surveys - Wellbore #1	7,500.00	6,731.26	6,867.47	6,819.06	141.884	ES
Spike State D 36-04 (SI) - Gyro Surveys - Wellbore #1	11,500.00	6,662.46	7,965.84	7,897.89	117.233	SF
Spike State D 36-3 (SI) - Wellbore #1 - No Surveys	7,649.92	6,618.00	5,666.80	5,508.83	35.873	CC, ES
Spike State D 36-3 (SI) - Wellbore #1 - No Surveys	8,700.00	6,618.00	5,763.27	5,600.46	35.397	SF
Spike State D36-05 (SI) - Wellbore #1 - Gyro Surveys	8,818.15	6,664.89	6,974.47	6,920.33	128.829	CC
Spike State D36-05 (SI) - Wellbore #1 - Gyro Surveys	9,200.00	9,200.00	6,984.88	6,919.59	106.977	ES
Spike State D36-05 (SI) - Wellbore #1 - Gyro Surveys	9,600.00	9,600.00	7,017.97	6,948.81	101.468	SF
Spike State D36-06 (PA) - Wellbore #1 - Gyro Surveys	8,856.32	6,547.45	5,702.30	5,648.31	105.601	CC
Spike State D36-06 (PA) - Wellbore #1 - Gyro Surveys	8,900.00	6,545.20	5,702.47	5,648.22	105.122	ES
Spike State D36-06 (PA) - Wellbore #1 - Gyro Surveys	11,500.00	6,449.85	6,284.32	6,215.58	91.423	SF
State 09 (SI) - Wellbore #1 - Gyro Surveys	8,116.84	6,478.12	3,549.79	3,499.82	71.045	CC, ES
State 09 (SI) - Wellbore #1 - Gyro Surveys	9,300.00	6,476.59	3,741.77	3,685.80	66.846	SF
State 30 (SI) - Wellbore #1 - Gyro Surveys	10,828.86	6,529.33	5,912.63	5,846.14	88.917	CC
State 30 (SI) - Wellbore #1 - Gyro Surveys	10,900.00	6,528.77	5,913.06	5,846.04	88.231	ES
State 30 (SI) - Wellbore #1 - Gyro Surveys	13,200.00	6,510.70	6,370.34	6,289.14	78.453	SF
DD Section 18						
Guttersen 18D - Wellbore #1 - Wellbore #1 - As Drilled						Out of range
Guttersen 24-18 - Wellbore #1 - Wellbore #1 - As Drilled						Out of range
Guttersen 33-18 - Wellbore #1 - Wellbore #1 - As Drilled						Out of range
Guttersen 34-18 - Wellbore #1 - Wellbore #1 - As Drilled						Out of range
Guttersen 43-18 - Wellbore #1 - Wellbore #1 - As Drilled						Out of range
Guttersen 44-18 - Wellbore #1 - Wellbore #1 - As Drilled						Out of range
Karch Blue DD18-03J - Wellbore #1 - Wellbore #1 - As D						Out of range
Karch Blue DD18-12 - Original Drilling - Original Drilling						Out of range
Karch Blue DD18-13 - Wellbore #1 - Wellbore #1 - As Dr						Out of range

Noble Energy, Inc.
Anticollision Summary Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Guttersen YY06-756
Project:	Mustang	TVD Reference:	KB @ 4820.00ft
Reference Site:	DD Section 30	MD Reference:	KB @ 4820.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Guttersen YY06-756	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Guttersen YY06-756	Database:	EDMP
Reference Design:	Plan #1	Offset TVD Reference:	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	4,317.00	4,338.73	8,439.80	8,409.57	279.205	CC, ES
Champlin 366 Amoco B1 (PR) - Wellbore #1 - Gyro Surv	6,850.00	7,013.59	9,105.48	9,057.95	191.555	SF
Champlin 366 Amoco D1 (PA) - Wellbore #1 - No Survey	4,306.00	4,271.00	5,718.64	5,618.02	56.832	CC
Champlin 366 Amoco D1 (PA) - Wellbore #1 - No Survey	4,500.00	4,464.85	5,720.98	5,615.82	54.404	ES
Champlin 366 Amoco D1 (PA) - Wellbore #1 - No Survey	6,500.00	6,379.51	6,002.72	5,852.45	39.947	SF
Guttersen 31-19 (PR) - Wellbore #1 - Gyro Surveys	0.00	0.00	9,247.66			
Guttersen 31-19 (PR) - Wellbore #1 - Gyro Surveys	4,315.72	4,310.95	9,257.18	9,227.07	307.396	ES
Guttersen 31-19 (PR) - Wellbore #1 - Gyro Surveys	6,600.00	6,633.18	9,711.94	9,666.09	211.825	SF
Guttersen 44-19 (SI) - Wellbore #1 - No Surveys	4,306.00	4,316.00	5,761.67	5,660.15	56.752	CC
Guttersen 44-19 (SI) - Wellbore #1 - No Surveys	4,400.00	4,409.98	5,762.88	5,659.15	55.558	ES
Guttersen 44-19 (SI) - Wellbore #1 - No Surveys	6,500.00	6,424.51	6,205.70	6,054.66	41.086	SF
DD Section 20						
Spike State DD 20-02J (PR) - Wellbore #1 - Gyro Survey	0.00	0.00	9,706.18			
Spike State DD 20-02J (PR) - Wellbore #1 - Gyro Survey	2,100.00	2,044.50	9,713.45	9,699.18	680.821	ES
Spike State DD 20-02J (PR) - Wellbore #1 - Gyro Survey	6,000.00	5,700.01	9,987.72	9,947.04	245.504	SF
Spike State DD 20-03J (PR) - Wellbore #1 - Gyro Survey	2,122.42	2,142.68	7,140.33	7,125.64	486.128	CC
Spike State DD 20-03J (PR) - Wellbore #1 - Gyro Survey	2,200.00	2,200.00	7,140.55	7,125.38	470.802	ES
Spike State DD 20-03J (PR) - Wellbore #1 - Gyro Survey	6,600.00	6,432.85	7,714.52	7,669.52	171.428	SF
DD Section 29						
Champlin 366 Amoco C UT 1 (PR) - Wellbore #1 - Gyro	4,357.66	4,529.52	7,377.11	7,346.03	237.347	CC, ES
Champlin 366 Amoco C UT 1 (PR) - Wellbore #1 - Gyro	6,700.00	6,757.38	7,913.33	7,866.85	170.258	SF
Champlin Amoco 1 (PA) - Wellbore #1 - No Surveys	4,306.00	4,348.01	4,145.07	4,042.90	40.573	CC
Champlin Amoco 1 (PA) - Wellbore #1 - No Surveys	4,400.00	4,441.99	4,146.51	4,042.14	39.730	ES
Champlin Amoco 1 (PA) - Wellbore #1 - No Surveys	6,750.00	6,598.82	4,639.39	4,484.29	29.913	SF
Guttersen 42-29 (PR) - Wellbore #1 - Gyro Surveys	4,443.87	4,854.81	7,892.90	7,854.69	206.537	CC
Guttersen 42-29 (PR) - Wellbore #1 - Gyro Surveys	4,500.00	4,910.93	7,893.44	7,854.20	201.166	ES
Guttersen 42-29 (PR) - Wellbore #1 - Gyro Surveys	6,950.00	7,054.80	8,431.03	8,352.19	106.932	SF

Noble Energy, Inc.

Anticollision Summary Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Gutttersen YY06-756
Project:	Mustang	TVD Reference:	KB @ 4820.00ft
Reference Site:	DD Section 30	MD Reference:	KB @ 4820.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Gutttersen YY06-756	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Gutttersen YY06-756	Database:	EDMP
Reference Design:	Plan #1	Offset TVD Reference:	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	290.84	240.84	4,460.63	4,459.15	3,018.676	CC
Gutttersen 11-30 (PR) - Wellbore #1 - Gyro Surveys	4,000.00	3,927.06	4,472.96	4,445.31	161.725	ES
Gutttersen 11-30 (PR) - Wellbore #1 - Gyro Surveys	6,500.00	6,450.75	4,662.68	4,617.60	103.430	SF
Gutttersen 12-30 (PR) - Wellbore #1 - Gyro Surveys	6,131.29	6,188.00	3,323.02	3,280.10	77.430	CC, ES
Gutttersen 12-30 (PR) - Wellbore #1 - Gyro Surveys	6,450.00	6,466.96	3,391.90	3,346.93	75.425	SF
Gutttersen 22-30 (PR) - Wellbore #1 - Gyro Surveys	587.90	557.92	2,779.83	2,776.17	760.760	CC
Gutttersen 22-30 (PR) - Wellbore #1 - Gyro Surveys	4,100.00	4,057.38	2,798.02	2,769.56	98.312	ES
Gutttersen 22-30 (PR) - Wellbore #1 - Gyro Surveys	6,350.00	6,345.34	2,962.73	2,918.50	66.995	SF
Gutttersen 30 A (PR) - Wellbore #1 - Gyro Surveys	4,471.00	4,460.98	3,573.48	3,542.28	114.549	CC
Gutttersen 30 A (PR) - Wellbore #1 - Gyro Surveys	4,600.00	4,599.81	3,573.81	3,541.70	111.294	ES
Gutttersen 30 A (PR) - Wellbore #1 - Gyro Surveys	6,350.00	6,284.76	3,677.42	3,633.33	83.414	SF
Gutttersen State DD30-715 - Gutttersen State DD30-715 -	2,100.25	2,133.25	1,951.44	1,936.73	132.662	CC
Gutttersen State DD30-715 - Gutttersen State DD30-715 -	2,200.00	2,225.13	1,951.50	1,936.11	126.785	ES
Gutttersen State DD30-715 - Gutttersen State DD30-715 -	7,500.00	6,400.00	2,818.07	2,770.29	58.979	SF
Gutttersen State DD30-725 - Gutttersen State DD30-725 -	2,946.71	2,989.66	1,911.45	1,890.86	92.837	CC
Gutttersen State DD30-725 - Gutttersen State DD30-725 -	3,100.00	3,137.36	1,911.89	1,890.25	88.325	ES
Gutttersen State DD30-725 - Gutttersen State DD30-725 -	6,700.00	7,035.02	2,159.07	2,111.94	45.811	SF
Gutttersen State DD30-735 - Gutttersen State DD30-735 -	6,506.99	7,358.18	1,505.40	1,457.80	31.625	CC, ES
Gutttersen State DD30-735 - Gutttersen State DD30-735 -	6,750.00	7,182.99	1,513.06	1,464.82	31.365	SF
Gutttersen State DD30-745 - Gutttersen State DD30-745 -	6,686.19	7,384.88	859.10	809.63	17.366	CC, ES
Gutttersen State DD30-745 - Gutttersen State DD30-745 -	6,750.00	7,340.92	860.20	810.60	17.341	SF
Gutttersen State DD30-755 - Gutttersen State DD30-755 -	7,040.90	6,796.37	102.55	54.56	2.137	CC, ES, SF
Gutttersen State DD30-766 - Gutttersen State DD30-766 -	2,100.00	2,103.00	154.82	140.22	10.604	CC, ES
Gutttersen State DD30-766 - Gutttersen State DD30-766 -	2,300.00	2,293.77	160.71	144.78	10.084	SF
Gutttersen State DD30-775 - Gutttersen State DD30-775 -	2,000.00	2,004.00	168.46	154.58	12.131	CC, ES
Gutttersen State DD30-775 - Gutttersen State DD30-775 -	2,200.00	2,193.56	174.63	159.40	11.472	SF
Gutttersen State DD30-785 - Gutttersen State DD30-785 -	1,912.96	1,916.96	187.48	174.22	14.135	CC
Gutttersen State DD30-785 - Gutttersen State DD30-785 -	2,000.00	2,003.32	187.50	173.62	13.506	ES
Gutttersen State DD30-785 - Gutttersen State DD30-785 -	2,200.00	2,189.16	195.55	180.37	12.878	SF
Gutttersen YY06-766 - Gutttersen YY06-766 - Plan #1	2,400.00	2,400.00	38.00	21.26	2.270	CC, ES, SF
Gutttersen YY06-775 - Gutttersen YY06-775 - Plan #1	2,100.00	2,101.00	75.01	60.42	5.140	CC, ES
Gutttersen YY06-775 - Gutttersen YY06-775 - Plan #1	2,200.00	2,198.43	76.71	61.43	5.019	SF
Gutttersen YY06-785 - Gutttersen YY06-785 - Plan #1	2,000.00	2,001.00	113.01	99.13	8.144	CC, ES
Gutttersen YY06-785 - Gutttersen YY06-785 - Plan #1	2,200.00	2,193.11	119.75	104.53	7.865	SF
Karch Blue DD 30-12 (PA) - Wellbore #1 - No Surveys	6,155.50	6,074.50	2,460.94	2,317.88	17.203	CC, ES
Karch Blue DD 30-12 (PA) - Wellbore #1 - No Surveys	6,450.00	6,333.38	2,510.49	2,361.26	16.823	SF
Karch Blue DD 30-14 (PA) - Wellbore #1 - No Surveys	6,208.34	6,130.68	336.21	191.87	2.329	CC, ES
Karch Blue DD 30-14 (PA) - Wellbore #1 - No Surveys	6,250.00	6,169.38	337.33	192.07	2.322	SF
Karch Blue DD 30-3 J (PA) - Wellbore #1 - No Surveys	6,085.21	6,011.43	1,283.56	1,141.99	9.066	CC
Karch Blue DD 30-3 J (PA) - Wellbore #1 - No Surveys	6,100.00	6,025.84	1,283.58	1,141.67	9.045	ES
Karch Blue DD 30-3 J (PA) - Wellbore #1 - No Surveys	6,250.00	6,168.38	1,300.54	1,155.24	8.951	SF
L F Ranch 2-30 (PR) - Wellbore #1 - Gyro Surveys	3,637.37	3,611.64	3,739.94	3,714.70	148.169	CC
L F Ranch 2-30 (PR) - Wellbore #1 - Gyro Surveys	3,700.00	3,657.65	3,740.08	3,714.45	145.949	ES
L F Ranch 2-30 (PR) - Wellbore #1 - Gyro Surveys	6,400.00	6,417.74	3,980.30	3,935.67	89.183	SF
State 19 (PA) - Wellbore #1 - NO Surveys	4,306.00	4,318.00	3,679.25	3,577.69	36.226	CC
State 19 (PA) - Wellbore #1 - NO Surveys	4,400.00	4,411.98	3,680.52	3,576.76	35.469	ES
State 19 (PA) - Wellbore #1 - NO Surveys	6,350.00	6,308.16	4,048.02	3,899.73	27.298	SF

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

Noble Energy, Inc.
Anticollision Summary Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Gutttersen YY06-756
Project:	Mustang	TVD Reference:	KB @ 4820.00ft
Reference Site:	DD Section 30	MD Reference:	KB @ 4820.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Gutttersen YY06-756	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Gutttersen YY06-756	Database:	EDMP
Reference Design:	Plan #1	Offset TVD Reference:	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
DD Section 31						
Gutttersen 31Q-221 (PR) - Wellbore #1 - MWD Surveys	7,300.00	10,956.62	1,054.43	943.74	9.525	SF
Gutttersen 31Q-221 (PR) - Wellbore #1 - MWD Surveys	8,949.29	9,329.70	1,028.93	938.21	11.342	CC, ES
Gutttersen 31Q-401 (PR) - Wellbore #1 - MWD Surveys	7,318.11	11,132.00	800.34	692.15	7.397	ES, SF
Gutttersen 31Q-401 (PR) - Wellbore #1 - MWD Surveys	11,678.28	6,721.92	788.43	714.62	10.681	CC
Gutttersen 31T-301 (PR) - Wellbore #1 - MWD Surveys	7,300.00	11,048.00	1,706.66	1,595.80	15.394	ES, SF
Gutttersen 31T-301 (PR) - Wellbore #1 - MWD Surveys	7,583.54	10,788.32	1,705.62	1,598.37	15.904	CC
Gutttersen 31T-441 (PR) - Wellbore #1 - MWD Surveys	7,321.89	11,127.00	1,384.44	1,274.46	12.588	ES, SF
Gutttersen 31T-441 (PR) - Wellbore #1 - MWD Surveys	10,263.62	8,184.36	1,380.46	1,301.87	17.564	CC
Gutttersen 33-31 (PR) - Wellbore #1 - Gyro Surveys	10,033.17	6,597.32	1,160.01	1,098.78	18.947	CC, ES
Gutttersen 33-31 (PR) - Wellbore #1 - Gyro Surveys	10,100.00	6,597.92	1,161.93	1,100.44	18.894	SF
YY Section 6						
Gutttersen 6M-303 (PR) - Wellbore #1 - Wellbore #1	16,571.92	10,799.77	689.17	520.17	4.078	CC
Gutttersen 6M-303 (PR) - Wellbore #1 - Wellbore #1	16,700.00	10,909.80	690.94	519.28	4.025	ES
Gutttersen 6M-303 (PR) - Wellbore #1 - Wellbore #1	16,900.00	11,090.69	699.71	523.71	3.976	SF
Gutttersen 6M-423 (PR) - Wellbore #1 - MWD Surveys	16,488.11	10,803.52	1,081.44	915.48	6.516	CC
Gutttersen 6M-423 (PR) - Wellbore #1 - MWD Surveys	16,877.55	11,193.00	1,082.20	906.63	6.164	ES
Gutttersen 6M-423 (PR) - Wellbore #1 - MWD Surveys	16,900.00	11,193.00	1,082.44	906.77	6.162	SF
Gutttersen 6R-243 (PR) - Wellbore #1 - Gyro Surveys	16,627.04	10,822.75	1,366.96	1,196.59	8.023	CC
Gutttersen 6R-243 (PR) - Wellbore #1 - Gyro Surveys	16,700.00	10,866.28	1,367.65	1,195.98	7.967	ES
Gutttersen 6R-243 (PR) - Wellbore #1 - Gyro Surveys	17,000.00	11,073.00	1,384.04	1,207.00	7.818	SF
Gutttersen 6R-403 (PR) - Wellbore #1 - MWD Surveys	16,881.59	11,233.00	1,699.33	1,522.85	9.629	CC
Gutttersen 6R-403 (PR) - Wellbore #1 - MWD Surveys	16,900.00	11,233.00	1,699.43	1,522.76	9.619	ES
Gutttersen 6R-403 (PR) - Wellbore #1 - MWD Surveys	17,000.00	11,233.00	1,703.45	1,526.10	9.605	SF
Gutterson 31-6 (SI) - Wellbore #1 - Gyro Surveys	12,795.95	6,610.99	1,247.18	1,166.17	15.397	CC
Gutterson 31-6 (SI) - Wellbore #1 - Gyro Surveys	12,800.00	6,611.06	1,247.18	1,166.16	15.393	ES
Gutterson 31-6 (SI) - Wellbore #1 - Gyro Surveys	12,900.00	6,612.80	1,251.51	1,170.09	15.372	SF
Gutterson 32-6 (SI) - Wellbore #1 - Gyro Surveys	14,072.08	6,607.59	1,249.08	1,158.42	13.778	CC, ES
Gutterson 32-6 (SI) - Wellbore #1 - Gyro Surveys	14,100.00	6,606.90	1,249.39	1,158.60	13.761	SF
J.H. Cuykendall John 1 (PA) - Wellbore #1 - Gyro Survey	16,378.03	6,659.66	1,160.12	1,051.10	10.642	CC
J.H. Cuykendall John 1 (PA) - Wellbore #1 - Gyro Survey	16,400.00	6,659.28	1,160.32	1,051.10	10.623	ES
J.H. Cuykendall John 1 (PA) - Wellbore #1 - Gyro Survey	16,500.00	6,657.60	1,166.51	1,056.67	10.620	SF

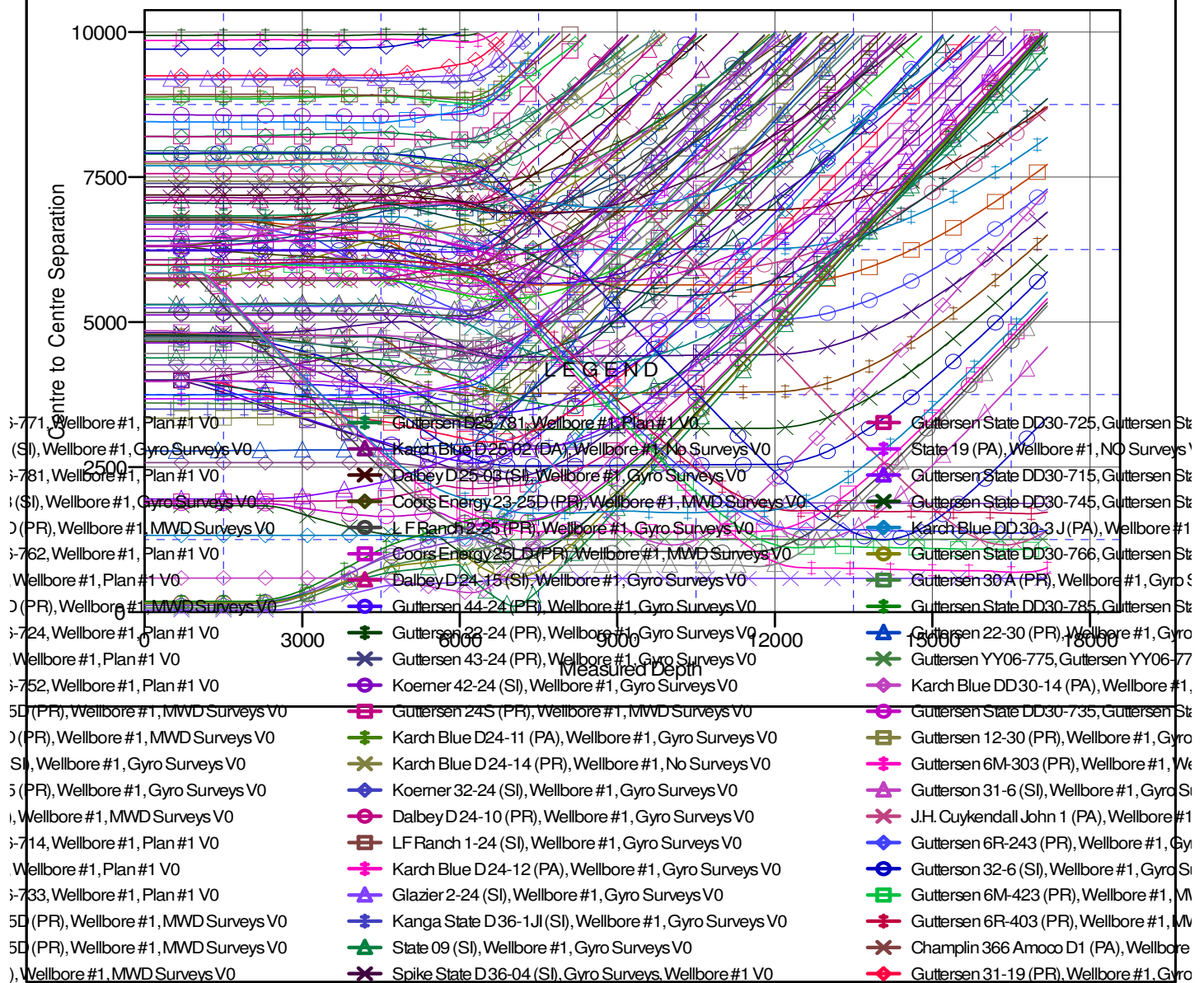
Anticollision Summary Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Guttersen YY06-756
Project:	Mustang	TVD Reference:	KB @ 4820.00ft
Reference Site:	DD Section 30	MD Reference:	KB @ 4820.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Guttersen YY06-756	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Guttersen YY06-756	Database:	EDMP
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Coordinates are relative to: Guttersen YY06-756

Coordinate System is US State Plane 1983, Colorado Northern Zone

Grid Convergence at Surface is: 0.66°



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

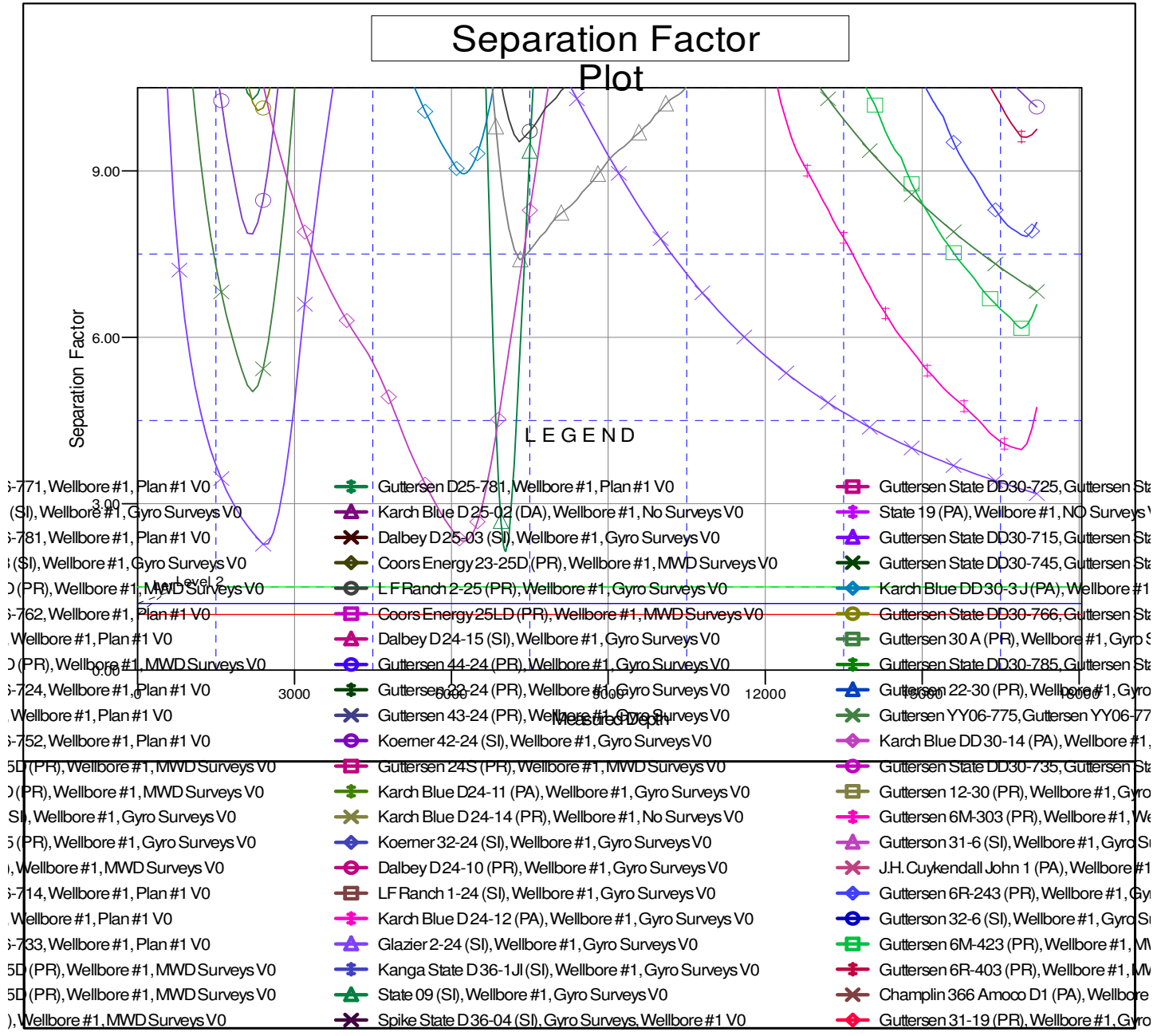
Noble Energy, Inc.

Anticollision Summary Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Guttersen YY06-756
Project:	Mustang	TVD Reference:	KB @ 4820.00ft
Reference Site:	DD Section 30	MD Reference:	KB @ 4820.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Guttersen YY06-756	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Guttersen YY06-756	Database:	EDMP
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Reference Depths are relative to KB @ 4820.00ft
Offset Depths are relative to Offset Datum
Central Meridian is -105.5000000

Coordinates are relative to: Guttersen YY06-756
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 0.66°



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