

Project: Mustang
 Site: DD Section 30
 Well: Gutteresen YY06-766
 Wellbore: Gutteresen YY06-766
 Design: Plan #1

Northern Region - DJ Basin

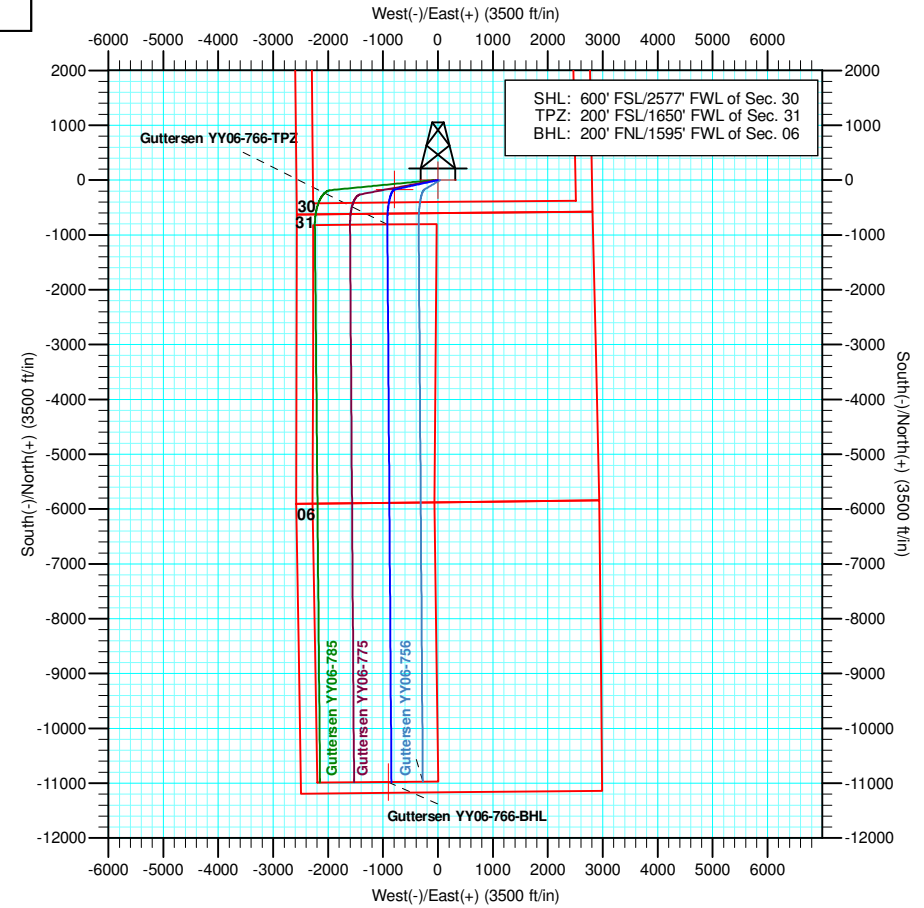
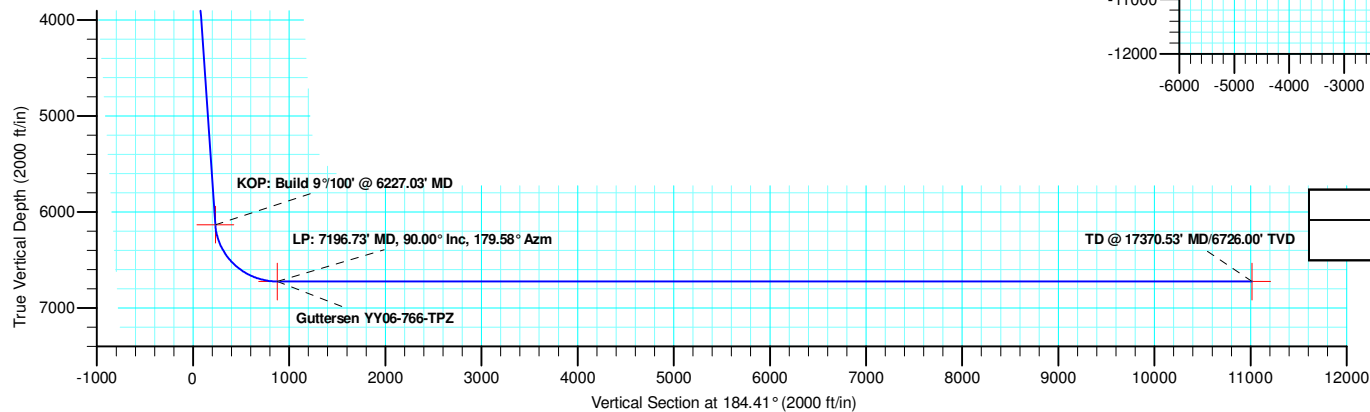
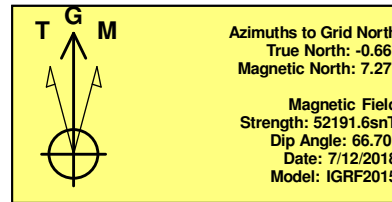
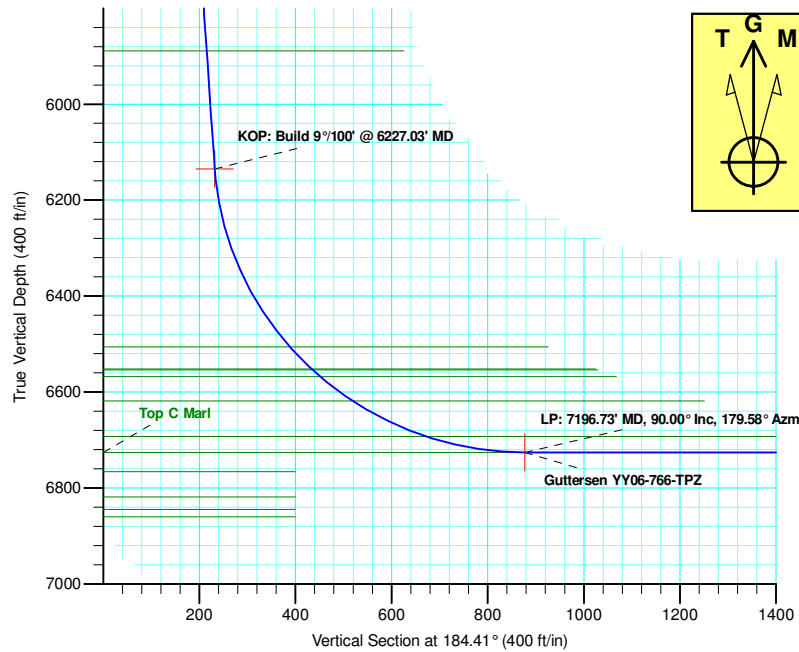
Geodetic System: US State Plane 1983
 Datum: North American Datum 1983
 Ellipsoid: GRS 1980
 Zone: Colorado Northern Zone
 System Datum: Mean Sea Level

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	V Sect	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	2400.00	0.00	0.00	2400.00	0.00	0.00	0.00	0.00	0.00	
3	3068.29	13.37	257.70	3062.25	-16.53	-75.82	2.00	257.70	22.31	
4	6227.03	13.37	257.70	6135.43	-172.07	-789.26	0.00	0.00	232.29	
5	7196.73	90.00	179.58	6726.00	-808.96	-921.92	9.00	-78.43	877.50	Gutteresen YY06-766-TPZ
6	17370.53	90.00	179.58	6726.00	-10982.49	-847.58	0.00	0.00	11015.14	Gutteresen YY06-766-BHL

WELL DETAILS: Gutteresen YY06-766

+N/-S	+E/-W	Northing	Ground Level: Easting	4790.00 Latitude	Longitude	Slot
0.00	0.00	1313984.62	3284635.27	40.1907954	-104.4811299	



Plan: Plan #1 (Gutteresen YY06-766/Gutteresen YY06-766)

Created By: Keith Noack Date: 14:27, August 28 2018

Northern Region - DJ Basin

Mustang

DD Section 30

Guttersen YY06-766

Guttersen YY06-766

Plan: Plan #1

Standard Planning Report

28 August, 2018

Noble Energy, Inc.

Planning Report

Database:	EDMP	Local Co-ordinate Reference:	Well Guttersen YY06-766
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 YY06-766	Survey Calculation Method:	Minimum Curvature
Wellbore:	Guttersen YY06-766		
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 YY06-766		
Well Position	+N/-S	-2,028.52 ft	Northing: 1,313,984.62 usft
	+E/-W	-111.88 ft	Easting: 3,284,635.27 usft
Position Uncertainty	0.00 ft	Wellhead Elevation:	Latitude: 40.1907954
			Longitude: -104.4811299
			Ground Level: 4,790.00 ft

Wellbore	Guttersen YY06-766				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	7/12/2018	7.93	66.70	52,191.57279642

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	184.41

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	
2,400.00	0.00	0.00	2,400.00	0.00	0.00	0.00	0.00	0.00	0.00	
3,068.29	13.37	257.70	3,062.25	-16.53	-75.82	2.00	2.00	0.00	257.70	
6,227.03	13.37	257.70	6,135.43	-172.07	-789.26	0.00	0.00	0.00	0.00	
7,196.73	90.00	179.58	6,726.00	-808.96	-921.92	9.00	7.90	-8.06	-78.43	Guttersen YY06-76
17,370.53	90.00	179.58	6,726.00	-10,982.49	-847.58	0.00	0.00	0.00	0.00	Guttersen YY06-76

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 YY06-766	Survey Calculation Method:	Minimum Curvature
Wellbore:	Guttersen YY06-766		
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
611.00	0.00	0.00	611.00	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
Build: 2°/100'									
2,500.00	2.00	257.70	2,499.98	-0.37	-1.71	0.50	2.00	2.00	0.00
2,600.00	4.00	257.70	2,599.84	-1.49	-6.82	2.01	2.00	2.00	0.00
2,700.00	6.00	257.70	2,699.45	-3.34	-15.33	4.51	2.00	2.00	0.00
2,800.00	8.00	257.70	2,798.70	-5.94	-27.24	8.02	2.00	2.00	0.00
2,900.00	10.00	257.70	2,897.47	-9.27	-42.52	12.52	2.00	2.00	0.00
3,000.00	12.00	257.70	2,995.62	-13.34	-61.17	18.00	2.00	2.00	0.00
3,068.29	13.37	257.70	3,062.25	-16.53	-75.82	22.31	2.00	2.00	0.00
Hold: 13.37° Inc, 257.70° Azm									
3,100.00	13.37	257.70	3,093.10	-18.09	-82.98	24.42	0.00	0.00	0.00
3,200.00	13.37	257.70	3,190.39	-23.01	-105.56	31.07	0.00	0.00	0.00
3,300.00	13.37	257.70	3,287.68	-27.94	-128.15	37.72	0.00	0.00	0.00
3,400.00	13.37	257.70	3,384.97	-32.86	-150.74	44.36	0.00	0.00	0.00
3,500.00	13.37	257.70	3,482.26	-37.79	-173.32	51.01	0.00	0.00	0.00
3,600.00	13.37	257.70	3,579.55	-42.71	-195.91	57.66	0.00	0.00	0.00
3,635.41	13.37	257.70	3,614.00	-44.46	-203.90	60.01	0.00	0.00	0.00
Parkman									
3,700.00	13.37	257.70	3,676.84	-47.64	-218.49	64.31	0.00	0.00	0.00
3,800.00	13.37	257.70	3,774.14	-52.56	-241.08	70.95	0.00	0.00	0.00
3,900.00	13.37	257.70	3,871.43	-57.48	-263.67	77.60	0.00	0.00	0.00
4,000.00	13.37	257.70	3,968.72	-62.41	-286.25	84.25	0.00	0.00	0.00
4,069.15	13.37	257.70	4,036.00	-65.81	-301.87	88.85	0.00	0.00	0.00

Noble Energy, Inc.

Planning Report

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Project:	Mustang	MD Reference:	KB @ 4820.00ft
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Well:	Guttersen YY06-766	Survey Calculation Method:	Minimum Curvature
Wellbore:	Guttersen YY06-766		
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)
Sussex									
4,100.00	13.37	257.70	4,066.01	-67.33	-308.84	90.90	0.00	0.00	0.00
4,200.00	13.37	257.70	4,163.30	-72.26	-331.43	97.55	0.00	0.00	0.00
4,259.30	13.37	257.70	4,221.00	-75.18	-344.82	101.49	0.00	0.00	0.00
Shannon									
4,300.00	13.37	257.70	4,260.59	-77.18	-354.01	104.19	0.00	0.00	0.00
4,400.00	13.37	257.70	4,357.88	-82.11	-376.60	110.84	0.00	0.00	0.00
4,500.00	13.37	257.70	4,455.18	-87.03	-399.18	117.49	0.00	0.00	0.00
4,600.00	13.37	257.70	4,552.47	-91.95	-421.77	124.14	0.00	0.00	0.00
4,700.00	13.37	257.70	4,649.76	-96.88	-444.36	130.78	0.00	0.00	0.00
4,800.00	13.37	257.70	4,747.05	-101.80	-466.94	137.43	0.00	0.00	0.00
4,900.00	13.37	257.70	4,844.34	-106.73	-489.53	144.08	0.00	0.00	0.00
5,000.00	13.37	257.70	4,941.63	-111.65	-512.12	150.73	0.00	0.00	0.00
5,100.00	13.37	257.70	5,038.92	-116.58	-534.70	157.37	0.00	0.00	0.00
5,200.00	13.37	257.70	5,136.22	-121.50	-557.29	164.02	0.00	0.00	0.00
5,300.00	13.37	257.70	5,233.51	-126.42	-579.87	170.67	0.00	0.00	0.00
5,400.00	13.37	257.70	5,330.80	-131.35	-602.46	177.32	0.00	0.00	0.00
5,500.00	13.37	257.70	5,428.09	-136.27	-625.05	183.96	0.00	0.00	0.00
5,600.00	13.37	257.70	5,525.38	-141.20	-647.63	190.61	0.00	0.00	0.00
5,700.00	13.37	257.70	5,622.67	-146.12	-670.22	197.26	0.00	0.00	0.00
5,800.00	13.37	257.70	5,719.96	-151.05	-692.80	203.91	0.00	0.00	0.00
5,900.00	13.37	257.70	5,817.26	-155.97	-715.39	210.55	0.00	0.00	0.00
5,973.74	13.37	257.70	5,889.00	-159.60	-732.05	215.46	0.00	0.00	0.00
Teepee Buttes									
6,000.00	13.37	257.70	5,914.55	-160.89	-737.98	217.20	0.00	0.00	0.00
6,100.00	13.37	257.70	6,011.84	-165.82	-760.56	223.85	0.00	0.00	0.00
6,200.00	13.37	257.70	6,109.13	-170.74	-783.15	230.50	0.00	0.00	0.00
6,227.03	13.37	257.70	6,135.43	-172.07	-789.26	232.29	0.00	0.00	0.00
KOP: Build 9°/100' @ 6227.03' MD									
6,250.00	13.93	249.26	6,157.75	-173.62	-794.43	234.23	9.00	2.44	-36.76
6,300.00	16.01	233.73	6,206.07	-179.83	-805.62	241.29	9.00	4.16	-31.06
6,350.00	18.93	222.27	6,253.78	-189.92	-816.64	252.19	9.00	5.84	-22.92
6,400.00	22.36	213.99	6,300.57	-203.81	-827.42	266.87	9.00	6.87	-16.55
6,450.00	26.11	207.90	6,346.16	-221.43	-837.89	285.25	9.00	7.49	-12.18
6,500.00	30.05	203.28	6,390.27	-242.67	-847.99	307.20	9.00	7.88	-9.25
6,550.00	34.12	199.65	6,432.63	-267.39	-857.66	332.59	9.00	8.14	-7.25
6,600.00	38.28	196.72	6,472.97	-295.44	-866.84	361.26	9.00	8.31	-5.86
6,643.18	41.91	194.59	6,506.00	-322.22	-874.32	388.54	9.00	8.42	-4.92
Sharon Springs									
6,650.00	42.49	194.29	6,511.05	-326.65	-875.47	393.05	9.00	8.47	-4.52
6,700.00	46.75	192.22	6,546.63	-360.83	-883.49	427.74	9.00	8.52	-4.14
6,707.88	47.42	191.92	6,552.00	-366.47	-884.70	433.46	9.00	8.56	-3.80
Top A Chalk									
6,710.85	47.68	191.81	6,554.00	-368.61	-885.15	435.63	9.00	8.57	-3.74
Top A Marl									
6,732.01	49.49	191.04	6,568.00	-384.17	-888.29	451.38	9.00	8.58	-3.63
Top B Chalk									
6,750.00	51.04	190.42	6,579.50	-397.76	-890.86	465.13	9.00	8.60	-3.45
6,800.00	55.36	188.83	6,609.44	-437.23	-897.54	504.99	9.00	8.63	-3.18
6,817.13	56.84	188.32	6,619.00	-451.29	-899.65	519.18	9.00	8.66	-2.96
Top B Marl									
6,850.00	59.69	187.39	6,636.28	-478.98	-903.47	547.08	9.00	8.67	-2.82
6,900.00	64.04	186.08	6,659.86	-522.76	-908.63	591.12	9.00	8.70	-2.62

Noble Energy, Inc.

Planning Report

Database:	EDMP	Local Co-ordinate Reference:	Well Guttersen YY06-766
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 YY06-766	Survey Calculation Method:	Minimum Curvature
Wellbore:	Guttersen YY06-766		
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)
6,950.00	68.40	184.86	6,680.01	-568.29	-912.99	636.86	9.00	8.72	-2.44
6,988.10	71.73	183.98	6,693.00	-603.99	-915.75	672.67	9.00	8.73	-2.31
Top C Chalk									
7,000.00	72.77	183.72	6,696.63	-615.30	-916.51	684.00	9.00	8.74	-2.25
7,050.00	77.14	182.62	6,709.60	-663.50	-919.17	732.26	9.00	8.75	-2.19
7,100.00	81.52	181.57	6,718.86	-712.60	-920.96	781.35	9.00	8.76	-2.11
7,150.00	85.90	180.54	6,724.33	-762.27	-921.87	830.95	9.00	8.76	-2.06
7,196.73	90.00	179.58	6,726.00	-808.96	-921.92	877.50	9.00	8.77	-2.04
LP: 7196.73' MD, 90.00° Inc, 179.58° Azm - Top C Marl									
7,200.00	90.00	179.58	6,726.00	-812.23	-921.90	880.76	0.00	0.00	0.00
7,300.00	90.00	179.58	6,726.00	-912.23	-921.17	980.41	0.00	0.00	0.00
7,400.00	90.00	179.58	6,726.00	-1,012.23	-920.44	1,080.05	0.00	0.00	0.00
7,500.00	90.00	179.58	6,726.00	-1,112.23	-919.70	1,179.70	0.00	0.00	0.00
7,600.00	90.00	179.58	6,726.00	-1,212.22	-918.97	1,279.34	0.00	0.00	0.00
7,700.00	90.00	179.58	6,726.00	-1,312.22	-918.24	1,378.98	0.00	0.00	0.00
7,800.00	90.00	179.58	6,726.00	-1,412.22	-917.51	1,478.63	0.00	0.00	0.00
7,900.00	90.00	179.58	6,726.00	-1,512.21	-916.78	1,578.27	0.00	0.00	0.00
8,000.00	90.00	179.58	6,726.00	-1,612.21	-916.05	1,677.92	0.00	0.00	0.00
8,100.00	90.00	179.58	6,726.00	-1,712.21	-915.32	1,777.56	0.00	0.00	0.00
8,200.00	90.00	179.58	6,726.00	-1,812.21	-914.59	1,877.21	0.00	0.00	0.00
8,300.00	90.00	179.58	6,726.00	-1,912.20	-913.86	1,976.85	0.00	0.00	0.00
8,400.00	90.00	179.58	6,726.00	-2,012.20	-913.13	2,076.50	0.00	0.00	0.00
8,500.00	90.00	179.58	6,726.00	-2,112.20	-912.40	2,176.14	0.00	0.00	0.00
8,600.00	90.00	179.58	6,726.00	-2,212.20	-911.67	2,275.79	0.00	0.00	0.00
8,700.00	90.00	179.58	6,726.00	-2,312.19	-910.94	2,375.43	0.00	0.00	0.00
8,800.00	90.00	179.58	6,726.00	-2,412.19	-910.21	2,475.08	0.00	0.00	0.00
8,900.00	90.00	179.58	6,726.00	-2,512.19	-909.47	2,574.72	0.00	0.00	0.00
9,000.00	90.00	179.58	6,726.00	-2,612.19	-908.74	2,674.37	0.00	0.00	0.00
9,100.00	90.00	179.58	6,726.00	-2,712.18	-908.01	2,774.01	0.00	0.00	0.00
9,200.00	90.00	179.58	6,726.00	-2,812.18	-907.28	2,873.65	0.00	0.00	0.00
9,300.00	90.00	179.58	6,726.00	-2,912.18	-906.55	2,973.30	0.00	0.00	0.00
9,400.00	90.00	179.58	6,726.00	-3,012.17	-905.82	3,072.94	0.00	0.00	0.00
9,500.00	90.00	179.58	6,726.00	-3,112.17	-905.09	3,172.59	0.00	0.00	0.00
9,600.00	90.00	179.58	6,726.00	-3,212.17	-904.36	3,272.23	0.00	0.00	0.00
9,700.00	90.00	179.58	6,726.00	-3,312.17	-903.63	3,371.88	0.00	0.00	0.00
9,800.00	90.00	179.58	6,726.00	-3,412.16	-902.90	3,471.52	0.00	0.00	0.00
9,900.00	90.00	179.58	6,726.00	-3,512.16	-902.17	3,571.17	0.00	0.00	0.00
10,000.00	90.00	179.58	6,726.00	-3,612.16	-901.44	3,670.81	0.00	0.00	0.00
10,100.00	90.00	179.58	6,726.00	-3,712.16	-900.71	3,770.46	0.00	0.00	0.00
10,200.00	90.00	179.58	6,726.00	-3,812.15	-899.97	3,870.10	0.00	0.00	0.00
10,300.00	90.00	179.58	6,726.00	-3,912.15	-899.24	3,969.75	0.00	0.00	0.00
10,400.00	90.00	179.58	6,726.00	-4,012.15	-898.51	4,069.39	0.00	0.00	0.00
10,500.00	90.00	179.58	6,726.00	-4,112.15	-897.78	4,169.03	0.00	0.00	0.00
10,600.00	90.00	179.58	6,726.00	-4,212.14	-897.05	4,268.68	0.00	0.00	0.00
10,700.00	90.00	179.58	6,726.00	-4,312.14	-896.32	4,368.32	0.00	0.00	0.00
10,800.00	90.00	179.58	6,726.00	-4,412.14	-895.59	4,467.97	0.00	0.00	0.00
10,900.00	90.00	179.58	6,726.00	-4,512.13	-894.86	4,567.61	0.00	0.00	0.00
11,000.00	90.00	179.58	6,726.00	-4,612.13	-894.13	4,667.26	0.00	0.00	0.00
11,100.00	90.00	179.58	6,726.00	-4,712.13	-893.40	4,766.90	0.00	0.00	0.00
11,200.00	90.00	179.58	6,726.00	-4,812.13	-892.67	4,866.55	0.00	0.00	0.00
11,300.00	90.00	179.58	6,726.00	-4,912.12	-891.94	4,966.19	0.00	0.00	0.00
11,400.00	90.00	179.58	6,726.00	-5,012.12	-891.21	5,065.84	0.00	0.00	0.00
11,500.00	90.00	179.58	6,726.00	-5,112.12	-890.48	5,165.48	0.00	0.00	0.00
11,600.00	90.00	179.58	6,726.00	-5,212.12	-889.74	5,265.13	0.00	0.00	0.00

Noble Energy, Inc.

Planning Report

Database:	EDMP	Local Co-ordinate Reference:	Well Guttersen YY06-766
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 YY06-766	Survey Calculation Method:	Minimum Curvature
Wellbore:	Guttersen YY06-766		
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)
11,700.00	90.00	179.58	6,726.00	-5,312.11	-889.01	5,364.77	0.00	0.00	0.00
11,800.00	90.00	179.58	6,726.00	-5,412.11	-888.28	5,464.41	0.00	0.00	0.00
11,900.00	90.00	179.58	6,726.00	-5,512.11	-887.55	5,564.06	0.00	0.00	0.00
12,000.00	90.00	179.58	6,726.00	-5,612.11	-886.82	5,663.70	0.00	0.00	0.00
12,100.00	90.00	179.58	6,726.00	-5,712.10	-886.09	5,763.35	0.00	0.00	0.00
12,200.00	90.00	179.58	6,726.00	-5,812.10	-885.36	5,862.99	0.00	0.00	0.00
12,300.00	90.00	179.58	6,726.00	-5,912.10	-884.63	5,962.64	0.00	0.00	0.00
12,400.00	90.00	179.58	6,726.00	-6,012.09	-883.90	6,062.28	0.00	0.00	0.00
12,500.00	90.00	179.58	6,726.00	-6,112.09	-883.17	6,161.93	0.00	0.00	0.00
12,600.00	90.00	179.58	6,726.00	-6,212.09	-882.44	6,261.57	0.00	0.00	0.00
12,700.00	90.00	179.58	6,726.00	-6,312.09	-881.71	6,361.22	0.00	0.00	0.00
12,800.00	90.00	179.58	6,726.00	-6,412.08	-880.98	6,460.86	0.00	0.00	0.00
12,900.00	90.00	179.58	6,726.00	-6,512.08	-880.24	6,560.51	0.00	0.00	0.00
13,000.00	90.00	179.58	6,726.00	-6,612.08	-879.51	6,660.15	0.00	0.00	0.00
13,100.00	90.00	179.58	6,726.00	-6,712.08	-878.78	6,759.80	0.00	0.00	0.00
13,200.00	90.00	179.58	6,726.00	-6,812.07	-878.05	6,859.44	0.00	0.00	0.00
13,300.00	90.00	179.58	6,726.00	-6,912.07	-877.32	6,959.08	0.00	0.00	0.00
13,400.00	90.00	179.58	6,726.00	-7,012.07	-876.59	7,058.73	0.00	0.00	0.00
13,500.00	90.00	179.58	6,726.00	-7,112.07	-875.86	7,158.37	0.00	0.00	0.00
13,600.00	90.00	179.58	6,726.00	-7,212.06	-875.13	7,258.02	0.00	0.00	0.00
13,700.00	90.00	179.58	6,726.00	-7,312.06	-874.40	7,357.66	0.00	0.00	0.00
13,800.00	90.00	179.58	6,726.00	-7,412.06	-873.67	7,457.31	0.00	0.00	0.00
13,900.00	90.00	179.58	6,726.00	-7,512.05	-872.94	7,556.95	0.00	0.00	0.00
14,000.00	90.00	179.58	6,726.00	-7,612.05	-872.21	7,656.60	0.00	0.00	0.00
14,100.00	90.00	179.58	6,726.00	-7,712.05	-871.48	7,756.24	0.00	0.00	0.00
14,200.00	90.00	179.58	6,726.00	-7,812.05	-870.74	7,855.89	0.00	0.00	0.00
14,300.00	90.00	179.58	6,726.00	-7,912.04	-870.01	7,955.53	0.00	0.00	0.00
14,400.00	90.00	179.58	6,726.00	-8,012.04	-869.28	8,055.18	0.00	0.00	0.00
14,500.00	90.00	179.58	6,726.00	-8,112.04	-868.55	8,154.82	0.00	0.00	0.00
14,600.00	90.00	179.58	6,726.00	-8,212.04	-867.82	8,254.46	0.00	0.00	0.00
14,700.00	90.00	179.58	6,726.00	-8,312.03	-867.09	8,354.11	0.00	0.00	0.00
14,800.00	90.00	179.58	6,726.00	-8,412.03	-866.36	8,453.75	0.00	0.00	0.00
14,900.00	90.00	179.58	6,726.00	-8,512.03	-865.63	8,553.40	0.00	0.00	0.00
15,000.00	90.00	179.58	6,726.00	-8,612.03	-864.90	8,653.04	0.00	0.00	0.00
15,100.00	90.00	179.58	6,726.00	-8,712.02	-864.17	8,752.69	0.00	0.00	0.00
15,200.00	90.00	179.58	6,726.00	-8,812.02	-863.44	8,852.33	0.00	0.00	0.00
15,300.00	90.00	179.58	6,726.00	-8,912.02	-862.71	8,951.98	0.00	0.00	0.00
15,400.00	90.00	179.58	6,726.00	-9,012.01	-861.98	9,051.62	0.00	0.00	0.00
15,500.00	90.00	179.58	6,726.00	-9,112.01	-861.25	9,151.27	0.00	0.00	0.00
15,600.00	90.00	179.58	6,726.00	-9,212.01	-860.51	9,250.91	0.00	0.00	0.00
15,700.00	90.00	179.58	6,726.00	-9,312.01	-859.78	9,350.56	0.00	0.00	0.00
15,800.00	90.00	179.58	6,726.00	-9,412.00	-859.05	9,450.20	0.00	0.00	0.00
15,900.00	90.00	179.58	6,726.00	-9,512.00	-858.32	9,549.84	0.00	0.00	0.00
16,000.00	90.00	179.58	6,726.00	-9,612.00	-857.59	9,649.49	0.00	0.00	0.00
16,100.00	90.00	179.58	6,726.00	-9,712.00	-856.86	9,749.13	0.00	0.00	0.00
16,200.00	90.00	179.58	6,726.00	-9,811.99	-856.13	9,848.78	0.00	0.00	0.00
16,300.00	90.00	179.58	6,726.00	-9,911.99	-855.40	9,948.42	0.00	0.00	0.00
16,400.00	90.00	179.58	6,726.00	-10,011.99	-854.67	10,048.07	0.00	0.00	0.00
16,500.00	90.00	179.58	6,726.00	-10,111.99	-853.94	10,147.71	0.00	0.00	0.00
16,600.00	90.00	179.58	6,726.00	-10,211.98	-853.21	10,247.36	0.00	0.00	0.00
16,700.00	90.00	179.58	6,726.00	-10,311.98	-852.48	10,347.00	0.00	0.00	0.00
16,800.00	90.00	179.58	6,726.00	-10,411.98	-851.75	10,446.65	0.00	0.00	0.00
16,900.00	90.00	179.58	6,726.00	-10,511.97	-851.01	10,546.29	0.00	0.00	0.00
17,000.00	90.00	179.58	6,726.00	-10,611.97	-850.28	10,645.94	0.00	0.00	0.00

Noble Energy, Inc.

Planning Report

Database:	EDMP	Local Co-ordinate Reference:	Well Guttersen YY06-766
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 YY06-766	Survey Calculation Method:	Minimum Curvature
Wellbore:	Guttersen YY06-766		
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)
17,100.00	90.00	179.58	6,726.00	-10,711.97	-849.55	10,745.58	0.00	0.00	0.00
17,200.00	90.00	179.58	6,726.00	-10,811.97	-848.82	10,845.23	0.00	0.00	0.00
17,300.00	90.00	179.58	6,726.00	-10,911.96	-848.09	10,944.87	0.00	0.00	0.00
17,370.53	90.00	179.58	6,726.00	-10,982.49	-847.58	11,015.14	0.00	0.00	0.00
TD @ 17370.53' MD/6726.00' TVD									

Design Targets									
Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
Guttersen YY06-766-I - plan hits target center - Point	0.00	0.00	0.00	0.00	0.00	1,313,984.62	3,284,635.27	40.1907954	-104.4811299
Guttersen YY06-766-I - plan hits target center - Point	0.00	0.01	6,135.43	-172.07	-789.25	1,313,812.55	3,283,846.02	40.1903479	-104.4839619
Guttersen YY06-766-I - plan hits target center - Point	0.00	0.00	6,726.00	-808.96	-921.92	1,313,175.66	3,283,713.35	40.1886039	-104.4844628
Guttersen YY06-766-I - plan misses target center by 54.88ft at 17365.89ft MD (6726.00 TVD, -10977.85 N, -847.61 E) - Point	0.00	0.00	6,726.00	-10,978.25	-902.49	1,303,006.39	3,283,732.78	40.1606892	-104.4848100

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
611.00	611.00	Pierre				
683.00	683.00	Upper Pierre Aquifer Top				
1,620.00	1,620.00	Upper Pierre Aquifer Base				
3,635.41	3,614.00	Parkman				
4,069.15	4,036.00	Sussex				
4,259.30	4,221.00	Shannon				
5,973.74	5,889.00	Teepee Buttes				
6,643.18	6,506.00	Sharon Springs				
6,707.88	6,552.00	Top A Chalk				
6,710.85	6,554.00	Top A Marl				
6,732.01	6,568.00	Top B Chalk				
6,817.13	6,619.00	Top B Marl				
6,988.10	6,693.00	Top C Chalk				
7,196.73	6,726.00	Top C Marl				

Noble Energy, Inc.

Planning Report

Database:	EDMP	Local Co-ordinate Reference:	Well Guttersen YY06-766
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 YY06-766	Survey Calculation Method:	Minimum Curvature
Wellbore:	Guttersen YY06-766		
Design:	Plan #1		

Plan Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
2,400.00	2,400.00	0.00	0.00	Build: 2°/100'
3,068.29	3,062.25	-16.53	-75.82	Hold: 13.37° Inc, 257.70° Azm
6,227.03	6,135.43	-172.07	-789.26	KOP: Build 9°/100' @ 6227.03' MD
7,196.73	6,726.00	-808.96	-921.92	LP: 7196.73' MD, 90.00° Inc, 179.58° Azm
17,370.53	6,726.00	-10,982.49	-847.58	TD @ 17370.53' MD/6726.00' TVD

Northern Region - DJ Basin

Mustang

DD Section 30

Guttersen YY06-766

Guttersen YY06-766

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 YY06-766
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 YY06-766	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Gutttersen YY06-766	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	17,370.53	Plan #1 (Gutttersen YY06-766)	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	6,281.92	6,227.09	7,281.03	7,236.60	163.861	CC, ES
Dalbey D 24-10 (PR) - Wellbore #1 - Gyro Surveys	6,950.00	6,759.31	7,573.04	7,524.76	156.860	SF
Dalbey D 24-15 (SI) - Wellbore #1 - Gyro Surveys	6,307.80	6,240.49	6,706.52	6,662.01	150.656	CC, ES
Dalbey D 24-15 (SI) - Wellbore #1 - Gyro Surveys	6,800.00	6,523.90	6,863.19	6,815.98	145.397	SF
Glazier 2-24 (SI) - Wellbore #1 - Gyro Surveys	6,246.41	6,144.56	9,072.69	9,028.69	206.234	CC
Glazier 2-24 (SI) - Wellbore #1 - Gyro Surveys	6,250.00	6,148.00	9,072.70	9,028.68	206.113	ES
Glazier 2-24 (SI) - Wellbore #1 - Gyro Surveys	6,850.00	6,634.10	9,328.30	9,280.65	195.799	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	6,283.67	6,101.90	9,647.23	9,603.25	219.373	CC, ES
Gutttersen 22-24 (PR) - Wellbore #1 - Gyro Surveys	6,950.00	6,605.80	9,923.90	9,876.06	207.433	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	6,272.44	6,142.11	9,893.79	9,850.77	229.990	CC, ES
Gutttersen 24N (PR) - Wellbore #1 - MWD Surveys	6,650.00	6,492.73	9,991.84	9,946.23	219.052	SF
Gutttersen 24S (PR) - Wellbore #1 - MWD Surveys	6,259.42	6,127.97	7,928.58	7,885.53	184.167	CC, ES
Gutttersen 24S (PR) - Wellbore #1 - MWD Surveys	6,800.00	6,628.27	8,128.90	8,082.30	174.408	SF
Gutttersen 43-24 (PR) - Wellbore #1 - Gyro Surveys	6,253.56	6,134.78	7,144.55	7,100.50	162.183	CC, ES
Gutttersen 43-24 (PR) - Wellbore #1 - Gyro Surveys	6,750.00	6,538.44	7,319.56	7,272.41	155.231	SF
Gutttersen 44-24 (PR) - Wellbore #1 - Gyro Surveys	6,259.80	6,094.84	5,970.54	5,926.66	136.066	CC, ES
Gutttersen 44-24 (PR) - Wellbore #1 - Gyro Surveys	6,750.00	6,523.13	6,137.40	6,090.34	130.434	SF
Karch Blue D 24-12 (PA) - Wellbore #1 - Gyro Surveys	6,329.06	6,206.87	9,447.55	9,403.10	212.541	CC, ES
Karch Blue D 24-12 (PA) - Wellbore #1 - Gyro Surveys	7,000.00	6,660.49	9,697.51	9,649.37	201.435	SF
Karch Blue D 24-14 (PR) - Wellbore #1 - No Surveys	6,323.09	6,173.20	7,264.67	7,118.28	49.624	CC
Karch Blue D 24-14 (PR) - Wellbore #1 - No Surveys	6,350.00	6,198.78	7,265.11	7,118.10	49.419	ES
Karch Blue D 24-14 (PR) - Wellbore #1 - No Surveys	6,850.00	6,581.28	7,426.47	7,270.13	47.502	SF
Karch Blue D24-11 (PA) - Wellbore #1 - Gyro Surveys	6,289.22	6,012.20	8,541.27	8,492.91	176.619	CC
Karch Blue D24-11 (PA) - Wellbore #1 - Gyro Surveys	6,300.00	6,022.58	8,541.34	8,492.87	176.226	ES
Karch Blue D24-11 (PA) - Wellbore #1 - Gyro Surveys	6,950.00	6,493.60	8,804.37	8,750.81	164.398	SF
Koerner 31-24 (SI) - Wellbore #1 - Gyro Surveys						Out of range
Koerner 32-24 (SI) - Wellbore #1 - Gyro Surveys	6,266.95	6,138.36	8,903.44	8,859.37	202.044	CC, ES
Koerner 32-24 (SI) - Wellbore #1 - Gyro Surveys	6,950.00	6,782.38	9,205.15	9,156.73	190.127	SF
Koerner 42-24 (SI) - Wellbore #1 - Gyro Surveys	6,248.22	6,189.32	8,414.72	8,370.52	190.401	CC
Koerner 42-24 (SI) - Wellbore #1 - Gyro Surveys	6,250.00	6,192.97	8,414.72	8,370.50	190.317	ES
Koerner 42-24 (SI) - Wellbore #1 - Gyro Surveys	6,850.00	6,669.17	8,670.97	8,623.16	181.366	SF
LF Ranch 1-24 (SI) - Wellbore #1 - Gyro Surveys	6,350.00	6,350.00	8,419.95	8,374.96	187.175	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 YY06-766
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 YY06-766	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Guttersen YY06-766	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						
LF Ranch 1-24 (SI) - Wellbore #1 - Gyro Surveys	6,354.57	6,314.93	8,419.93	8,375.05	187.625	CC
LF Ranch 1-24 (SI) - Wellbore #1 - Gyro Surveys	6,950.00	6,736.24	8,614.42	8,566.13	178.373	SF

Noble Energy, Inc.

Anticollision Summary Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Guttersten YY06-766
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 YY06-766	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Guttersten YY06-766	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	6,286.73			
Coors Energy 13-25D (PR) - Wellbore #1 - MWD Survey	194.76	194.11	6,286.77	6,285.77	6,297.405	ES
Coors Energy 13-25D (PR) - Wellbore #1 - MWD Survey	7,050.00	6,798.28	6,572.10	6,519.06	123.902	SF
Coors Energy 14-25D (PR) - Wellbore #1 - MWD Survey	0.00	0.00	6,270.40			
Coors Energy 14-25D (PR) - Wellbore #1 - MWD Survey	6,951.23	6,927.97	6,314.35	6,266.08	130.815	ES
Coors Energy 14-25D (PR) - Wellbore #1 - MWD Survey	10,600.00	6,939.26	7,588.02	7,522.19	115.280	SF
Coors Energy 23-25D (PR) - Wellbore #1 - MWD Survey	6,575.31	6,577.13	5,251.25	5,198.68	99.890	CC, ES
Coors Energy 23-25D (PR) - Wellbore #1 - MWD Survey	7,050.00	6,853.44	5,327.15	5,272.37	97.244	SF
Coors Energy 24-25 (PR) - Wellbore #1 - Gyro Surveys	6,988.95	6,724.34	4,809.21	4,761.23	100.232	CC
Coors Energy 24-25 (PR) - Wellbore #1 - Gyro Surveys	7,000.00	6,727.23	4,809.24	4,761.22	100.148	ES
Coors Energy 24-25 (PR) - Wellbore #1 - Gyro Surveys	8,900.00	6,749.18	5,304.25	5,248.99	95.980	SF
Coors Energy 25HD (PR) - Wellbore #1 - MWD Surveys	0.00	0.00	6,262.29			
Coors Energy 25HD (PR) - Wellbore #1 - MWD Surveys	10,800.00	7,010.79	8,451.09	8,383.91	125.808	SF
Coors Energy 25LD (PR) - Wellbore #1 - MWD Surveys	7,085.27	6,964.94	5,587.30	5,537.07	111.241	CC, ES
Coors Energy 25LD (PR) - Wellbore #1 - MWD Surveys	9,800.00	6,915.83	6,319.63	6,257.77	102.160	SF
Coors Energy 25TD (PR) - Wellbore #1 - MWD Surveys	7,066.49	6,727.98	2,880.72	2,831.96	59.085	CC, ES
Coors Energy 25TD (PR) - Wellbore #1 - MWD Surveys	7,400.00	6,738.07	2,912.18	2,862.62	58.752	SF
Coors Energy 25XD (PR) - Wellbore #1 - MWD Surveys	6,461.25	6,554.13	2,063.25	2,010.22	38.907	CC, ES
Coors Energy 25XD (PR) - Wellbore #1 - MWD Surveys	6,800.00	6,858.49	2,114.31	2,058.48	37.865	SF
Coors Energy 25YD (PR) - Wellbore #1 - MWD Surveys	7,000.00	6,868.78	1,737.62	1,687.31	34.535	SF
Coors Energy 25YD (PR) - Wellbore #1 - MWD Surveys	7,021.43	6,873.85	1,737.42	1,687.12	34.544	CC, ES
Coors Energy 33-25D (PR) - Wellbore #1 - MWD Survey	100.00	62.15	3,947.41	3,947.17	10,000.000	CC
Coors Energy 33-25D (PR) - Wellbore #1 - MWD Survey	200.00	150.92	3,947.75	3,946.99	5,229.591	ES
Coors Energy 33-25D (PR) - Wellbore #1 - MWD Survey	6,850.00	6,767.59	4,065.71	4,013.17	77.393	SF
Coors Energy 34-25 (PR) - Wellbore #1 - Gyro Surveys	6,958.00	6,657.33	3,814.75	3,767.07	80.002	CC, ES
Coors Energy 34-25 (PR) - Wellbore #1 - Gyro Surveys	7,800.00	6,696.54	3,967.19	3,916.79	78.712	SF
Coors Energy 43-25D (PR) - Wellbore #1 - MWD Survey	6,394.17	6,446.73	2,871.97	2,816.88	52.134	CC
Coors Energy 43-25D (PR) - Wellbore #1 - MWD Survey	6,400.00	6,452.62	2,871.98	2,816.86	52.100	ES
Coors Energy 43-25D (PR) - Wellbore #1 - MWD Survey	6,650.00	6,680.46	2,903.03	2,846.49	51.339	SF
Coors Energy 44-25D (PR) - Wellbore #1 - MWD Survey	6,758.23	6,644.43	2,374.75	2,328.15	50.967	CC, ES
Coors Energy 44-25D (PR) - Wellbore #1 - MWD Survey	7,050.00	6,773.69	2,408.11	2,360.03	50.091	SF
Dalbey D 25-03 (SI) - Wellbore #1 - Gyro Surveys	6,452.42	6,745.03	6,588.93	6,542.44	141.743	CC, ES
Dalbey D 25-03 (SI) - Wellbore #1 - Gyro Surveys	6,950.00	7,000.00	6,714.78	6,665.74	136.912	SF
Dalbey D 25-05 (SI) - Wellbore #1 - Gyro Surveys	6,584.47	7,051.18	7,161.82	7,113.09	146.972	CC
Dalbey D 25-05 (SI) - Wellbore #1 - Gyro Surveys	6,600.00	7,064.20	7,161.92	7,113.05	146.540	ES
Dalbey D 25-05 (SI) - Wellbore #1 - Gyro Surveys	7,050.00	7,070.00	7,256.43	7,205.97	143.779	SF
Guttersten 11-25 (PR) - Wellbore #1 - MWD Surveys	6,418.82	6,404.76	7,640.16	7,595.87	172.514	CC, ES
Guttersten 11-25 (PR) - Wellbore #1 - MWD Surveys	7,050.00	6,842.68	7,821.50	7,773.74	163.746	SF
Guttersten 22-25 (PR) - Wellbore #1 - MWD Surveys	6,465.38	6,568.03	5,762.83	5,718.02	128.607	CC, ES
Guttersten 22-25 (PR) - Wellbore #1 - MWD Surveys	7,000.00	6,853.06	5,897.59	5,850.05	124.042	SF
Guttersten 25E (PR) - Wellbore #1 - MWD Surveys	6,388.80	6,242.98	8,305.71	8,261.81	189.193	CC
Guttersten 25E (PR) - Wellbore #1 - MWD Surveys	6,400.00	6,255.79	8,305.77	8,261.78	188.821	ES
Guttersten 25E (PR) - Wellbore #1 - MWD Surveys	7,050.00	6,762.13	8,504.98	8,457.23	178.093	SF
Guttersten 25KD (PR) - Wellbore #1 - MWD Surveys	100.00	55.68	5,708.08	5,707.86	10,000.000	CC
Guttersten 25KD (PR) - Wellbore #1 - MWD Surveys	200.00	141.34	5,708.37	5,707.63	7,736.854	ES
Guttersten 25KD (PR) - Wellbore #1 - MWD Surveys	7,150.00	6,996.44	6,297.47	6,244.86	119.690	SF
Guttersten 25O (PR) - Wellbore #1 - MWD Surveys	6,433.29	6,253.54	5,127.76	5,083.84	116.764	CC
Guttersten 25O (PR) - Wellbore #1 - MWD Surveys	6,450.00	6,270.07	5,127.87	5,083.84	116.444	ES
Guttersten 25O (PR) - Wellbore #1 - MWD Surveys	6,950.00	6,630.61	5,241.67	5,194.69	111.587	SF
Guttersten D 25-17 (SI) - Wellbore #1 - Gyro Surveys	6,321.74	6,145.13	4,820.63	4,776.38	108.952	CC, ES
Guttersten D 25-17 (SI) - Wellbore #1 - Gyro Surveys	6,800.00	6,521.76	4,954.66	4,907.44	104.931	SF
Guttersten D25-715 - Wellbore #1 - Plan #1	6,367.49	6,500.00	2,809.15	2,762.53	60.258	CC, ES
Guttersten D25-715 - Wellbore #1 - Plan #1	6,500.00	6,517.49	2,821.03	2,774.02	60.010	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 YY06-766
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 YY06-766	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Gutttersen YY06-766	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						
Gutttersen D25-724 - Wellbore #1 - Plan #1	6,363.55	6,300.00	3,261.38	3,215.42	70.964	CC, ES
Gutttersen D25-724 - Wellbore #1 - Plan #1	6,550.00	6,350.00	3,281.20	3,234.56	70.345	SF
Gutttersen D25-734 - Wellbore #1 - Plan #1	6,397.16	6,317.64	3,811.32	3,764.95	82.194	CC
Gutttersen D25-734 - Wellbore #1 - Plan #1	6,400.00	6,318.34	3,811.32	3,764.94	82.170	ES
Gutttersen D25-734 - Wellbore #1 - Plan #1	6,750.00	6,400.00	3,874.63	3,826.79	80.995	SF
Gutttersen D25-743 - Wellbore #1 - Plan #1	6,364.35	6,150.00	4,185.70	4,138.99	89.606	CC, ES
Gutttersen D25-743 - Wellbore #1 - Plan #1	6,700.00	6,250.00	4,232.87	4,184.58	87.648	SF
Gutttersen D25-753 - Wellbore #1 - Plan #1	6,510.55	6,722.66	4,954.27	4,905.32	101.226	CC, ES
Gutttersen D25-753 - Wellbore #1 - Plan #1	6,800.00	6,750.00	4,989.22	4,939.41	100.160	SF
Gutttersen D25-762 - Wellbore #1 - Plan #1	6,493.66	6,500.00	5,452.83	5,404.31	112.388	CC
Gutttersen D25-762 - Wellbore #1 - Plan #1	6,500.00	6,500.00	5,452.84	5,404.30	112.339	ES
Gutttersen D25-762 - Wellbore #1 - Plan #1	6,900.00	6,550.00	5,512.54	5,462.70	110.594	SF
Gutttersen D25-772 - Wellbore #1 - Plan #1	6,486.77	6,400.00	5,957.87	5,909.05	122.030	CC, ES
Gutttersen D25-772 - Wellbore #1 - Plan #1	7,000.00	6,500.00	6,042.08	5,991.22	118.809	SF
Gutttersen D25-781 - Wellbore #1 - Plan #1	6,346.90	5,785.84	6,444.69	6,398.50	139.511	CC
Gutttersen D25-781 - Wellbore #1 - Plan #1	6,350.00	5,788.86	6,444.69	6,398.47	139.429	ES
Gutttersen D25-781 - Wellbore #1 - Plan #1	7,900.00	6,450.00	6,904.88	6,850.31	126.549	SF
Gutttersen State D36-714 - Wellbore #1 - Plan #1	7,183.25	9,805.91	1,948.55	1,884.77	30.548	CC
Gutttersen State D36-714 - Wellbore #1 - Plan #1	12,100.00	14,710.78	1,973.56	1,846.67	15.554	ES
Gutttersen State D36-714 - Wellbore #1 - Plan #1	12,200.00	14,702.49	1,977.03	1,849.65	15.521	SF
Gutttersen State D36-724 - Wellbore #1 - Plan #1	7,183.04	9,718.34	2,573.50	2,509.89	40.459	CC
Gutttersen State D36-724 - Wellbore #1 - Plan #1	12,100.00	14,635.24	2,598.54	2,471.40	20.438	ES
Gutttersen State D36-724 - Wellbore #1 - Plan #1	12,300.00	14,633.39	2,607.38	2,478.85	20.286	SF
Gutttersen State D36-733 - Wellbore #1 - Plan #1	7,182.90	9,720.12	3,198.47	3,134.97	50.368	CC
Gutttersen State D36-733 - Wellbore #1 - Plan #1	12,100.00	14,637.16	3,223.54	3,096.56	25.385	ES
Gutttersen State D36-733 - Wellbore #1 - Plan #1	12,500.00	14,641.76	3,249.73	3,119.62	24.977	SF
Gutttersen State D36-743 - Wellbore #1 - Plan #1	7,174.37	9,774.05	3,828.73	3,765.39	60.447	CC
Gutttersen State D36-743 - Wellbore #1 - Plan #1	12,100.00	14,700.48	3,868.64	3,742.16	30.587	ES
Gutttersen State D36-743 - Wellbore #1 - Plan #1	12,800.00	14,719.96	3,933.46	3,801.40	29.785	SF
Gutttersen State D36-752 - Wellbore #1 - Plan #1	7,180.07	9,803.65	4,438.34	4,372.15	67.057	CC
Gutttersen State D36-752 - Wellbore #1 - Plan #1	12,100.00	14,716.19	4,468.25	4,338.18	34.355	ES
Gutttersen State D36-752 - Wellbore #1 - Plan #1	12,800.00	14,738.86	4,523.50	4,389.06	33.645	SF
Gutttersen State D36-762 - Wellbore #1 - Plan #1	7,196.49	9,856.78	5,070.19	5,003.62	76.171	CC
Gutttersen State D36-762 - Wellbore #1 - Plan #1	12,100.00	14,760.29	5,070.61	4,940.17	38.872	ES
Gutttersen State D36-762 - Wellbore #1 - Plan #1	13,000.00	14,758.69	5,150.22	5,013.68	37.719	SF
Gutttersen State D36-771 - Wellbore #1 - Plan #1	7,189.68	9,889.23	5,682.75	5,616.24	85.434	CC
Gutttersen State D36-771 - Wellbore #1 - Plan #1	12,200.00	14,816.36	5,696.32	5,565.15	43.428	ES
Gutttersen State D36-771 - Wellbore #1 - Plan #1	13,300.00	14,816.36	5,820.09	5,681.16	41.890	SF
Gutttersen State D36-781 - Wellbore #1 - Plan #1	7,170.31	9,980.76	6,317.90	6,251.30	94.870	CC
Gutttersen State D36-781 - Wellbore #1 - Plan #1	12,200.00	14,970.23	6,367.23	6,236.14	48.572	ES
Gutttersen State D36-781 - Wellbore #1 - Plan #1	13,700.00	14,970.23	6,564.98	6,422.88	46.201	SF
Karch Blue D 25-02 (DA) - Wellbore #1 - No Surveys	6,325.12	6,171.13	5,590.59	5,444.23	38.198	CC
Karch Blue D 25-02 (DA) - Wellbore #1 - No Surveys	6,350.00	6,194.78	5,590.96	5,444.04	38.053	ES
Karch Blue D 25-02 (DA) - Wellbore #1 - No Surveys	6,800.00	6,550.44	5,723.47	5,567.89	36.787	SF
Karch Blue D 25-08 (SI) - Wellbore #1 - Gyro Surveys	6,319.84	6,185.38	3,786.49	3,742.14	85.381	CC, ES
Karch Blue D 25-08 (SI) - Wellbore #1 - Gyro Surveys	6,700.00	6,558.97	3,875.43	3,828.43	82.457	SF
Karch Blue D25-07 (SI) - Wellbore #1 - Gyro Surveys	6,358.85	6,108.26	4,747.65	4,703.47	107.454	CC, ES
Karch Blue D25-07 (SI) - Wellbore #1 - Gyro Surveys	6,800.00	6,800.00	4,840.46	4,792.37	100.648	SF
L F Ranch 2-25 (PR) - Wellbore #1 - Gyro Surveys	6,292.62	6,209.66	4,801.78	4,757.40	108.220	CC
L F Ranch 2-25 (PR) - Wellbore #1 - Gyro Surveys	6,300.00	6,219.44	4,801.81	4,757.38	108.069	ES
L F Ranch 2-25 (PR) - Wellbore #1 - Gyro Surveys	6,750.00	6,591.09	4,943.37	4,896.08	104.532	SF
LF Ranches 1 (PA) - Wellbore #1 - No Surveys	6,300.10	6,151.17	4,711.85	4,565.95	32.295	CC, ES
LF Ranches 1 (PA) - Wellbore #1 - No Surveys	6,700.00	6,491.63	4,814.62	4,660.49	31.236	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 Guttersen YY06-766
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 YY06-766	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Guttersen YY06-766	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						
D Section 36						
Kanga State D 36-1JI (SI) - Wellbore #1 - Gyro Surveys	7,745.00	6,677.75	2,294.19	2,244.52	46.186	CC, ES
Kanga State D 36-1JI (SI) - Wellbore #1 - Gyro Surveys	8,300.00	6,655.22	2,360.26	2,308.02	45.180	SF
Kanga State D 36-2JI - Wellbore #1 - Gyro Surveys	7,378.80	6,738.30	3,738.00	3,689.08	76.409	CC, ES
Kanga State D 36-2JI - Wellbore #1 - Gyro Surveys	8,700.00	6,714.53	3,964.56	3,910.11	72.811	SF
Kanga State D36-11JI (PR) - Wellbore #1 - Gyro Surveys	10,397.45	6,657.53	4,888.79	4,781.79	45.690	CC
Kanga State D36-11JI (PR) - Wellbore #1 - Gyro Surveys	10,400.00	6,657.54	4,888.79	4,781.77	45.681	ES
Kanga State D36-11JI (PR) - Wellbore #1 - Gyro Surveys	11,700.00	6,661.13	5,059.33	4,943.23	43.575	SF
Rhoo State D36-07JI (SI) - Wellbore #1 - Gyro Surveys	8,821.57	6,663.26	3,732.17	3,677.87	68.738	CC, ES
Rhoo State D36-07JI (SI) - Wellbore #1 - Gyro Surveys	10,100.00	6,586.77	3,944.14	3,882.36	63.834	SF
Spike State D 36-04 (SI) - Gyro Surveys - Wellbore #1	7,634.32	6,830.71	6,295.27	6,245.53	126.554	CC, ES
Spike State D 36-04 (SI) - Gyro Surveys - Wellbore #1	11,100.00	6,826.28	7,185.97	7,118.58	106.638	SF
Spike State D 36-3 (SI) - Wellbore #1 - No Surveys	7,823.10	6,731.00	5,096.28	4,934.92	31.582	CC, ES
Spike State D 36-3 (SI) - Wellbore #1 - No Surveys	8,700.00	6,731.00	5,171.18	5,005.66	31.242	SF
Spike State D36-05 (SI) - Wellbore #1 - Gyro Surveys	8,987.11	6,842.58	6,402.70	6,347.05	115.052	CC
Spike State D36-05 (SI) - Wellbore #1 - Gyro Surveys	9,000.00	6,842.20	6,402.72	6,346.99	114.898	ES
Spike State D36-05 (SI) - Wellbore #1 - Gyro Surveys	13,300.00	13,300.00	7,718.79	7,616.43	75.404	SF
Spike State D36-06 (PA) - Wellbore #1 - Gyro Surveys	9,021.46	6,706.99	5,133.15	5,077.63	92.458	CC, ES
Spike State D36-06 (PA) - Wellbore #1 - Gyro Surveys	11,300.00	6,563.37	5,614.47	5,545.64	81.564	SF
State 09 (SI) - Wellbore #1 - Gyro Surveys	8,280.97	6,769.79	2,979.30	2,927.38	57.385	CC
State 09 (SI) - Wellbore #1 - Gyro Surveys	8,300.00	6,768.96	2,979.36	2,927.34	57.281	ES
State 09 (SI) - Wellbore #1 - Gyro Surveys	9,200.00	9,200.00	3,117.48	3,051.81	47.473	SF
State 30 (SI) - Wellbore #1 - Gyro Surveys	11,001.08	6,651.76	5,344.07	5,276.27	78.821	CC, ES
State 30 (SI) - Wellbore #1 - Gyro Surveys	13,000.00	6,636.06	5,705.66	5,624.58	70.368	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
DD Section 19						
Champlin 366 Amoco B1 (PR) - Wellbore #1 - Gyro Surv	1,999.96	2,000.00	8,456.68	8,442.93	614.864	CC
Champlin 366 Amoco B1 (PR) - Wellbore #1 - Gyro Surv	2,400.00	2,357.58	8,458.08	8,441.65	514.764	ES
Champlin 366 Amoco B1 (PR) - Wellbore #1 - Gyro Surv	6,900.00	7,109.67	9,134.79	9,085.68	185.998	SF
Champlin 366 Amoco D1 (PA) - Wellbore #1 - No Survey	2,400.00	2,365.00	5,712.26	5,656.58	102.608	CC
Champlin 366 Amoco D1 (PA) - Wellbore #1 - No Survey	4,100.00	4,031.01	5,734.87	5,639.80	60.322	ES
Champlin 366 Amoco D1 (PA) - Wellbore #1 - No Survey	6,650.00	6,476.05	5,956.70	5,803.12	38.787	SF
Guttersen 31-19 (PR) - Wellbore #1 - Gyro Surveys	0.00	0.00	9,250.75			
Guttersen 31-19 (PR) - Wellbore #1 - Gyro Surveys	2,500.00	2,482.95	9,256.57	9,239.36	537.695	ES
Guttersen 31-19 (PR) - Wellbore #1 - Gyro Surveys	6,750.00	6,700.00	9,772.57	9,725.14	206.042	SF
Guttersen 44-19 (SI) - Wellbore #1 - No Surveys	2,400.00	2,410.00	5,775.32	5,718.75	102.091	CC
Guttersen 44-19 (SI) - Wellbore #1 - No Surveys	2,500.00	2,509.98	5,776.28	5,717.36	98.039	ES
Guttersen 44-19 (SI) - Wellbore #1 - No Surveys	6,700.00	6,556.63	6,465.65	6,310.64	41.710	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 Guttersen YY06-766
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 YY06-766	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Guttersen YY06-766	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 20						
Spike State DD 20-02J (PR) - Wellbore #1 - Gyro Survey	0.00	0.00	9,720.37			
Spike State DD 20-02J (PR) - Wellbore #1 - Gyro Survey	2,100.00	2,044.70	9,727.60	9,713.33	681.783	ES
Spike State DD 20-02J (PR) - Wellbore #1 - Gyro Survey	4,600.00	4,653.20	9,995.68	9,963.35	309.220	SF
Spike State DD 20-03J (PR) - Wellbore #1 - Gyro Survey	2,123.20	2,143.47	7,161.54	7,146.85	487.388	CC
Spike State DD 20-03J (PR) - Wellbore #1 - Gyro Survey	2,200.00	2,200.00	7,161.76	7,146.59	472.201	ES
Spike State DD 20-03J (PR) - Wellbore #1 - Gyro Survey	6,750.00	6,524.74	8,033.60	7,987.13	172.884	SF
DD Section 29						
Champlin 366 Amoco C UT 1 (PR) - Wellbore #1 - Gyro	2,425.49	2,526.68	7,456.04	7,438.90	435.106	CC, ES
Champlin 366 Amoco C UT 1 (PR) - Wellbore #1 - Gyro	6,850.00	6,837.73	8,386.99	8,339.13	175.242	SF
Champlin Amoco 1 (PA) - Wellbore #1 - No Surveys	2,400.00	2,442.01	4,182.48	4,125.27	73.107	CC
Champlin Amoco 1 (PA) - Wellbore #1 - No Surveys	2,500.00	2,541.99	4,184.23	4,124.67	70.255	ES
Champlin Amoco 1 (PA) - Wellbore #1 - No Surveys	6,950.00	6,722.02	5,197.48	5,038.74	32.741	SF
Guttersen 42-29 (PR) - Wellbore #1 - Gyro Surveys	2,422.57	2,519.73	7,976.38	7,959.29	466.749	CC, ES
Guttersen 42-29 (PR) - Wellbore #1 - Gyro Surveys	7,100.00	7,185.93	8,937.90	8,855.96	109.077	SF

Noble Energy, Inc.

Anticollision Summary Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Gutttersen YY06-766
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 YY06-766	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Gutttersen YY06-766	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	6,248.05	6,187.81	4,361.28	4,317.12	98.761	CC
Gutttersen 11-30 (PR) - Wellbore #1 - Gyro Surveys	6,250.00	6,190.01	4,361.28	4,317.10	98.727	ES
Gutttersen 11-30 (PR) - Wellbore #1 - Gyro Surveys	6,600.00	6,505.10	4,454.14	4,407.60	95.718	SF
Gutttersen 12-30 (PR) - Wellbore #1 - Gyro Surveys	6,290.42	6,290.85	3,059.21	3,014.60	68.564	CC
Gutttersen 12-30 (PR) - Wellbore #1 - Gyro Surveys	6,300.00	6,300.71	3,059.28	3,014.59	68.456	ES
Gutttersen 12-30 (PR) - Wellbore #1 - Gyro Surveys	6,600.00	6,564.48	3,129.96	3,083.25	67.016	SF
Gutttersen 22-30 (PR) - Wellbore #1 - Gyro Surveys	588.26	558.27	2,771.55	2,767.89	757.968	CC
Gutttersen 22-30 (PR) - Wellbore #1 - Gyro Surveys	2,300.00	2,251.07	2,779.81	2,764.11	177.063	ES
Gutttersen 22-30 (PR) - Wellbore #1 - Gyro Surveys	6,600.00	6,600.00	2,993.37	2,946.64	64.060	SF
Gutttersen 30 A (PR) - Wellbore #1 - Gyro Surveys	6,016.75	5,944.44	3,507.12	3,464.69	82.668	CC
Gutttersen 30 A (PR) - Wellbore #1 - Gyro Surveys	6,227.03	6,156.45	3,507.57	3,463.59	79.751	ES
Gutttersen 30 A (PR) - Wellbore #1 - Gyro Surveys	6,500.00	6,353.21	3,567.74	3,522.06	78.100	SF
Gutttersen State DD30-715 - Gutttersen State DD30-715 -	2,100.25	2,133.25	1,989.38	1,974.67	135.241	CC
Gutttersen State DD30-715 - Gutttersen State DD30-715 -	2,200.00	2,225.02	1,989.45	1,974.05	129.253	ES
Gutttersen State DD30-715 - Gutttersen State DD30-715 -	6,750.00	7,273.54	3,372.27	3,323.64	69.353	SF
Gutttersen State DD30-725 - Gutttersen State DD30-725 -	2,413.80	2,456.20	1,951.87	1,934.96	115.391	CC, ES
Gutttersen State DD30-725 - Gutttersen State DD30-725 -	6,500.00	7,307.96	2,673.88	2,626.34	56.248	SF
Gutttersen State DD30-735 - Gutttersen State DD30-735 -	2,842.95	3,167.40	1,889.89	1,869.27	91.668	CC, ES
Gutttersen State DD30-735 - Gutttersen State DD30-735 -	6,600.00	7,411.02	2,040.35	1,991.47	41.736	SF
Gutttersen State DD30-745 - Gutttersen State DD30-745 -	6,518.12	7,611.54	1,385.25	1,335.04	27.591	CC, ES
Gutttersen State DD30-745 - Gutttersen State DD30-745 -	6,600.00	7,567.50	1,386.98	1,336.62	27.537	SF
Gutttersen State DD30-755 - Gutttersen State DD30-755 -	2,000.00	2,003.00	154.26	140.37	11.111	CC, ES
Gutttersen State DD30-755 - Gutttersen State DD30-755 -	2,200.00	2,193.62	160.26	145.05	10.535	SF
Gutttersen State DD30-766 - Gutttersen State DD30-766 -	6,966.27	7,024.01	52.62	2.73	1.055	Level 2, CC, ES, SF
Gutttersen State DD30-775 - Gutttersen State DD30-775 -	2,000.00	2,004.00	154.99	141.11	11.161	CC, ES
Gutttersen State DD30-775 - Gutttersen State DD30-775 -	2,300.00	2,290.85	167.16	151.27	10.522	SF
Gutttersen State DD30-785 - Gutttersen State DD30-785 -	1,912.96	1,916.96	167.27	154.01	12.612	CC
Gutttersen State DD30-785 - Gutttersen State DD30-785 -	2,000.00	2,003.45	167.29	153.40	12.049	ES
Gutttersen State DD30-785 - Gutttersen State DD30-785 -	2,200.00	2,191.87	174.64	159.44	11.490	SF
Gutttersen YY06-756 - Gutttersen YY06-756 - 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	37.01	22.42	2.536	CC, ES
Gutttersen YY06-775 - Gutttersen YY06-775 - Plan #1	2,200.00	2,199.70	38.74	23.45	2.534	SF
Gutttersen YY06-785 - Gutttersen YY06-785 - Plan #1	2,000.00	2,001.00	75.01	61.13	5.405	CC, ES
Gutttersen YY06-785 - Gutttersen YY06-785 - Plan #1	2,100.00	2,098.40	76.73	62.17	5.267	SF
Karch Blue DD 30-12 (PA) - Wellbore #1 - No Surveys	6,304.84	6,166.72	2,087.60	1,941.37	14.277	CC, ES
Karch Blue DD 30-12 (PA) - Wellbore #1 - No Surveys	6,500.00	6,346.27	2,112.78	1,962.22	14.033	SF
Karch Blue DD 30-14 (PA) - Wellbore #1 - No Surveys	5,069.42	4,971.17	105.56	-12.01	0.898	Level 1, CC
Karch Blue DD 30-14 (PA) - Wellbore #1 - No Surveys	5,100.00	5,000.92	105.80	-12.48	0.895	Level 1, ES, SF
Karch Blue DD 30-3 J (PA) - Wellbore #1 - No Surveys	5,698.45	5,582.17	1,102.56	970.34	8.339	CC
Karch Blue DD 30-3 J (PA) - Wellbore #1 - No Surveys	6,200.00	6,070.13	1,108.63	964.72	7.704	ES
Karch Blue DD 30-3 J (PA) - Wellbore #1 - No Surveys	6,300.00	6,167.07	1,115.45	969.22	7.628	SF
L F Ranch 2-30 (PR) - Wellbore #1 - Gyro Surveys	0.00	0.00	3,741.44			
L F Ranch 2-30 (PR) - Wellbore #1 - Gyro Surveys	3,500.00	3,500.00	3,745.88	3,721.60	154.317	ES
L F Ranch 2-30 (PR) - Wellbore #1 - Gyro Surveys	6,550.00	6,516.10	3,959.34	3,913.03	85.497	SF
State 19 (PA) - Wellbore #1 - NO Surveys	2,400.00	2,412.00	3,695.41	3,638.80	65.278	CC
State 19 (PA) - Wellbore #1 - NO Surveys	2,500.00	2,511.98	3,696.47	3,637.51	62.697	ES
State 19 (PA) - Wellbore #1 - NO Surveys	6,550.00	6,444.63	4,352.66	4,200.36	28.579	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 Guttersen YY06-766
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 YY06-766	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Guttersen YY06-766	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						
Guttersen 31Q-221 (PR) - Wellbore #1 - MWD Surveys	7,400.00	10,956.00	1,631.07	1,519.93	14.676	SF
Guttersen 31Q-221 (PR) - Wellbore #1 - MWD Surveys	9,100.00	9,341.78	1,602.41	1,511.14	17.557	ES
Guttersen 31Q-221 (PR) - Wellbore #1 - MWD Surveys	9,128.06	9,324.13	1,602.32	1,511.20	17.586	CC
Guttersen 31Q-401 (PR) - Wellbore #1 - MWD Surveys	7,491.31	11,132.00	1,342.94	1,230.58	11.952	CC
Guttersen 31Q-401 (PR) - Wellbore #1 - MWD Surveys	7,500.00	11,132.00	1,342.97	1,230.57	11.949	ES, SF
Guttersen 31T-301 (PR) - Wellbore #1 - MWD Surveys	7,500.00	11,040.43	2,274.58	2,162.53	20.299	ES
Guttersen 31T-301 (PR) - Wellbore #1 - MWD Surveys	7,753.00	10,792.06	2,273.73	2,165.15	20.941	CC
Guttersen 31T-301 (PR) - Wellbore #1 - MWD Surveys	11,200.00	11,200.00	2,311.88	2,195.50	19.865	SF
Guttersen 31T-441 (PR) - Wellbore #1 - MWD Surveys	7,495.09	11,127.00	1,941.62	1,829.50	17.317	ES
Guttersen 31T-441 (PR) - Wellbore #1 - MWD Surveys	7,500.00	11,127.00	1,941.63	1,829.50	17.317	SF
Guttersen 31T-441 (PR) - Wellbore #1 - MWD Surveys	10,416.23	8,205.00	1,937.27	1,857.14	24.177	CC
Guttersen 33-31 (PR) - Wellbore #1 - Gyro Surveys	10,207.35	6,704.39	1,731.38	1,668.95	27.734	CC, ES
Guttersen 33-31 (PR) - Wellbore #1 - Gyro Surveys	10,300.00	6,705.34	1,733.85	1,671.10	27.630	SF
YY Section 6						
Guttersen 6M-303 (PR) - Wellbore #1 - Wellbore #1	16,729.71	10,784.35	1,256.88	1,088.05	7.444	CC
Guttersen 6M-303 (PR) - Wellbore #1 - Wellbore #1	16,800.00	10,835.00	1,257.41	1,087.37	7.395	ES
Guttersen 6M-303 (PR) - Wellbore #1 - Wellbore #1	17,100.00	11,076.92	1,269.81	1,094.13	7.228	SF
Guttersen 6M-423 (PR) - Wellbore #1 - MWD Surveys	16,668.96	10,811.17	1,632.97	1,464.90	9.716	CC
Guttersen 6M-423 (PR) - Wellbore #1 - MWD Surveys	17,050.76	11,193.00	1,633.93	1,456.37	9.202	ES
Guttersen 6M-423 (PR) - Wellbore #1 - MWD Surveys	17,100.00	11,193.00	1,634.67	1,456.97	9.199	SF
Guttersen 6R-243 (PR) - Wellbore #1 - Gyro Surveys	16,797.05	10,819.56	1,942.68	1,772.48	11.414	CC
Guttersen 6R-243 (PR) - Wellbore #1 - Gyro Surveys	16,900.00	10,872.74	1,943.84	1,772.04	11.315	ES
Guttersen 6R-243 (PR) - Wellbore #1 - Gyro Surveys	17,200.00	11,073.00	1,959.92	1,782.85	11.069	SF
Guttersen 6R-403 (PR) - Wellbore #1 - MWD Surveys	17,054.79	11,233.00	2,259.91	2,082.28	12.723	CC, ES
Guttersen 6R-403 (PR) - Wellbore #1 - MWD Surveys	17,200.00	11,233.00	2,264.57	2,086.03	12.684	SF
Gutterson 31-6 (SI) - Wellbore #1 - Gyro Surveys	12,970.46	6,760.81	1,818.17	1,735.90	22.100	CC, ES
Gutterson 31-6 (SI) - Wellbore #1 - Gyro Surveys	13,100.00	6,760.70	1,822.78	1,740.05	22.031	SF
Gutterson 32-6 (SI) - Wellbore #1 - Gyro Surveys	14,242.90	6,677.17	1,823.33	1,732.10	19.988	CC, ES
Gutterson 32-6 (SI) - Wellbore #1 - Gyro Surveys	14,300.00	6,675.65	1,824.22	1,732.78	19.949	SF
J.H. Cuykendall John 1 (PA) - Wellbore #1 - Gyro Survey	16,548.72	6,787.41	586.98	477.36	5.355	CC, ES
J.H. Cuykendall John 1 (PA) - Wellbore #1 - Gyro Survey	16,600.00	6,785.88	589.21	478.96	5.344	SF

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

Noble Energy, Inc.

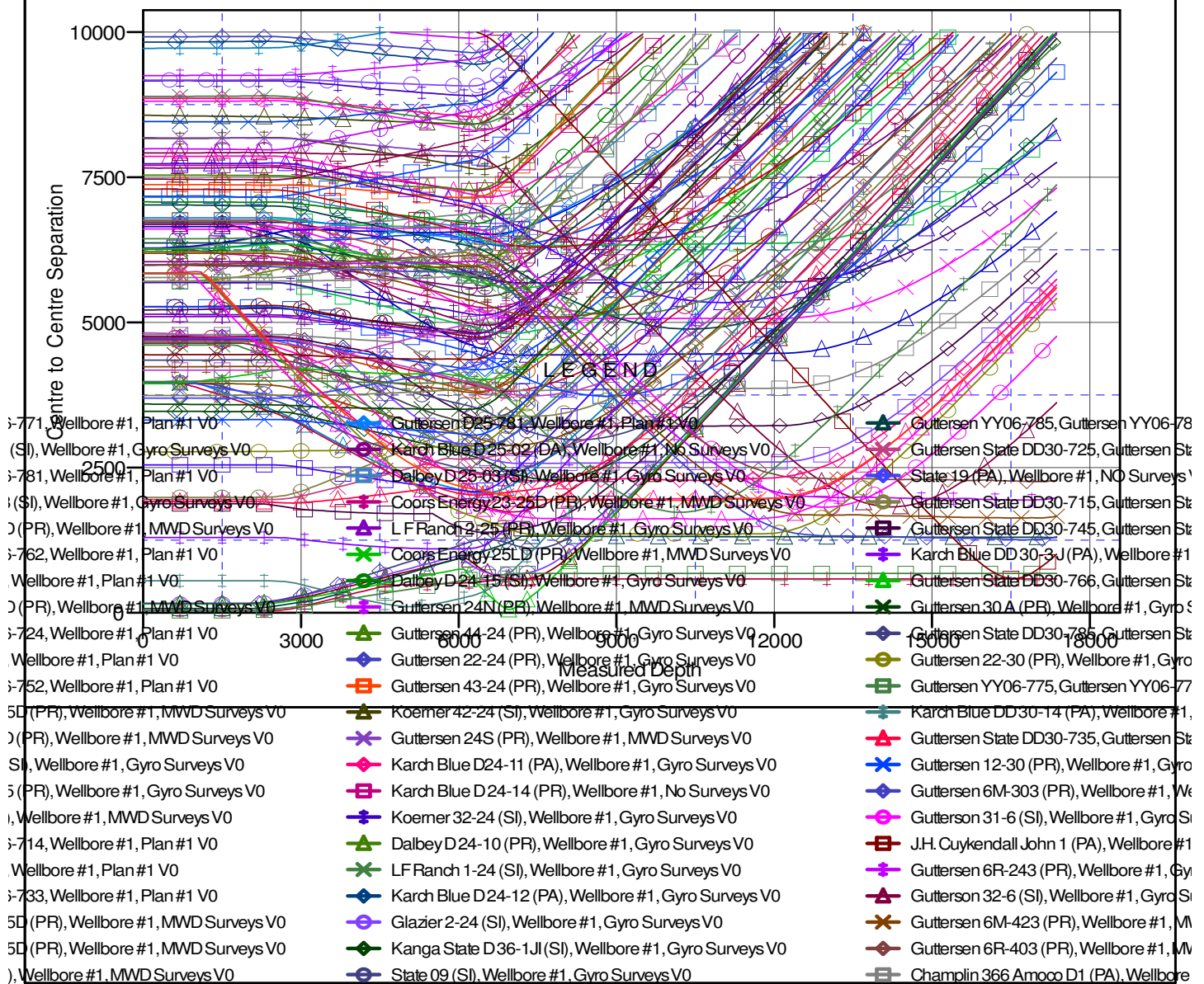
Anticollision Summary Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Guttersen YY06-766
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 YY06-766	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Guttersen YY06-766	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 YY06-766
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 0.66°

Ladder Plot



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

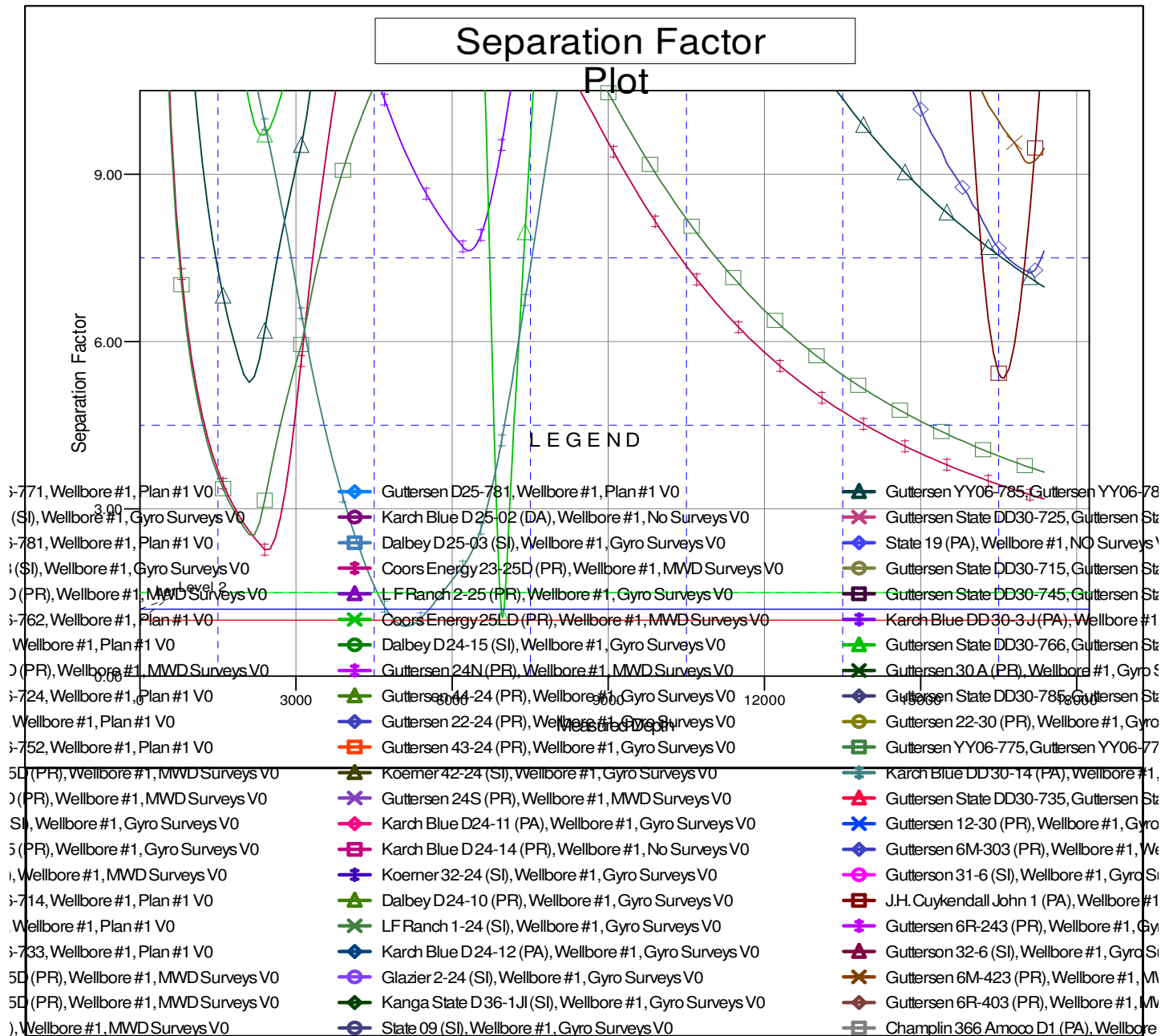
Noble Energy, Inc.

Anticollision Summary Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Guttersen YY06-766
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 YY06-766	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Guttersen YY06-766	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 YY06-766
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