

Project: Mustang
Site: D Section 25
Well: Gutteresen D25-734
Wellbore: Wellbore #1
Design: Plan #5

Northern Region - DJ Basin

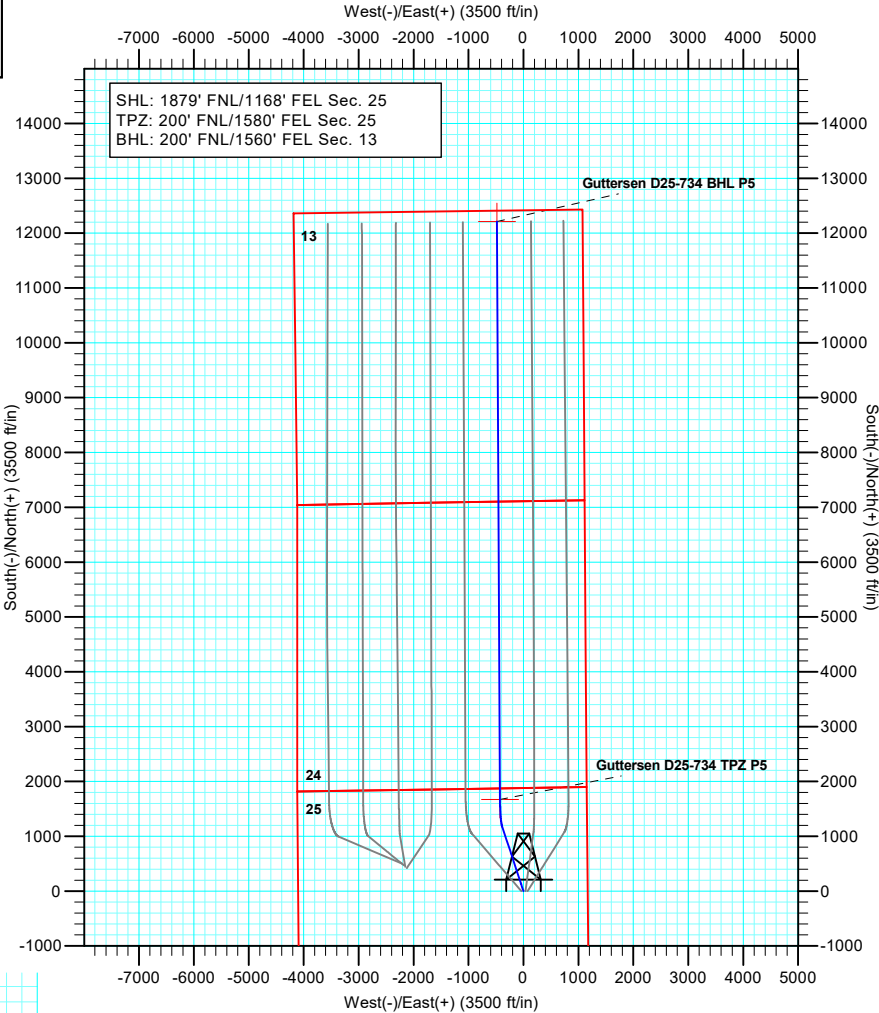
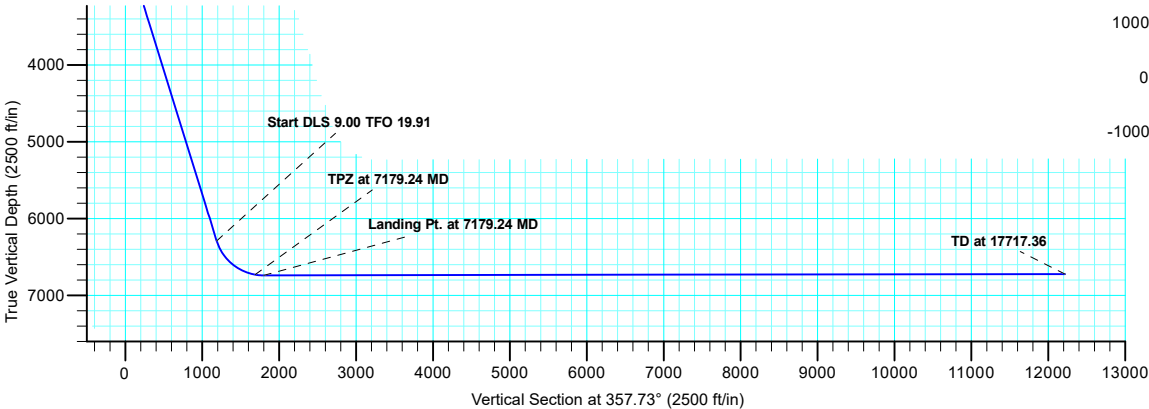
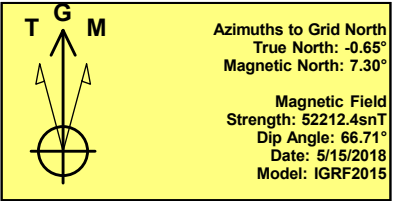
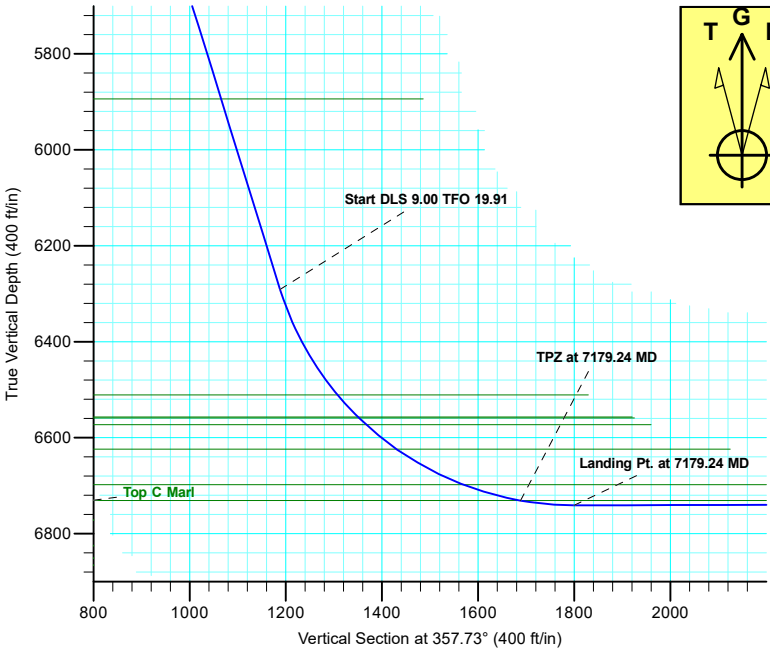
Geodetic System: US State Plane 1983
Datum: North American Datum 1983
Ellipsoid: GRS 1980
Zone: Colorado Northern Zone
System Datum: Mean Sea Level

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSec
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	2000.00	0.00	0.00	2000.00	0.00	0.00	0.00	0.00	0.00
3	2891.93	17.84	341.73	2877.59	130.79	-43.17	2.00	341.73	132.40
4	6478.02	17.84	341.73	6291.28	1173.98	-387.50	0.00	0.00	1188.40
5	7179.24	80.00	359.69	6731.33	1672.73	-427.10	9.00	19.91	1688.32
6	7291.48	90.10	359.69	6741.00	1784.40	-427.70	9.00	0.00	1799.93
7	17717.36	90.10	359.69	6722.62	12210.12	-483.62	0.00	0.00	12219.69

WELL DETAILS: Gutteresen D25-734

+N/-S	+E/-W	Northing	Ground Level: Easting	4772.00 Latitude	Longitude	Slot
0.00	0.00	1316740.24	3280864.69	40.1984775	-104.4945139	



Plan: Plan #5 (Gutteresen D25-734/Wellbore #1)

Created By: Shelly C. Peterkin Date: 12:21, June 24 2019

Northern Region - DJ Basin

Mustang

D Section 25

Guttersen D25-734

Wellbore #1

Plan: Plan #5

Standard Planning Report

24 June, 2019

Noble Energy, Inc.

Planning Report

Database:	EDMP	Local Co-ordinate Reference:	Well Guttersen D25-734
Company:	Northern Region - DJ Basin	TVD Reference:	KB @ 4802.00ft
Project:	Mustang	MD Reference:	KB @ 4802.00ft
Site:	D Section 25	North Reference:	Grid
Well:	Guttersen D25-734	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #5		

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

Well	Guttersen D25-734					
Well Position	+N/-S	710.79 ft	Northing:	1,316,740.24 usft	Latitude:	40.1984776
	+E/-W	1,499.13 ft	Easting:	3,280,864.69 usft	Longitude:	-104.4945139
Position Uncertainty		0.00 ft	Wellhead Elevation:		Ground Level:	4,772.00 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	5/15/2018	7.95	66.71	52,212.35909562

Design	Plan #5				
Audit Notes:					
Version:	Phase:	PLAN	Tie On Depth:	0.00	
Vertical Section:	Depth From (TVD)	+N/-S (ft)	+E/-W (ft)	Direction (°)	
	0.00	0.00	0.00	357.73	

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	
2,000.00	0.00	0.00	2,000.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,891.93	17.84	341.73	2,877.59	130.79	-43.17	2.00	2.00	0.00	341.73	
6,478.02	17.84	341.73	6,291.28	1,173.98	-387.50	0.00	0.00	0.00	0.00	
7,179.24	80.00	359.69	6,731.33	1,672.73	-427.10	9.00	8.86	2.56	19.91	Guttersen D25-734 TI
7,291.48	90.10	359.69	6,741.00	1,784.40	-427.70	9.00	9.00	0.00	0.00	
17,717.36	90.10	359.69	6,722.62	12,210.12	-483.62	0.00	0.00	0.00	0.00	Guttersen D25-734 BI

Noble Energy, Inc.

Planning Report

Database:	EDMP	Local Co-ordinate Reference:	Well Guttersen D25-734
Company:	Northern Region - DJ Basin	TVD Reference:	KB @ 4802.00ft
Project:	Mustang	MD Reference:	KB @ 4802.00ft
Site:	D Section 25	North Reference:	Grid
Well:	Guttersen D25-734	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #5		

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
665.00	0.00	0.00	665.00	0.00	0.00	0.00	0.00	0.00	0.00
Upper Pierre Aquifer Top									
668.00	0.00	0.00	668.00	0.00	0.00	0.00	0.00	0.00	0.00
Pierre									
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
1,602.00	0.00	0.00	1,602.00	0.00	0.00	0.00	0.00	0.00	0.00
Upper Pierre Aquifer Base									
1,700.00	0.00	0.00	1,700.00	0.00	0.00	0.00	0.00	0.00	0.00
1,800.00	0.00	0.00	1,800.00	0.00	0.00	0.00	0.00	0.00	0.00
1,900.00	0.00	0.00	1,900.00	0.00	0.00	0.00	0.00	0.00	0.00
2,000.00	0.00	0.00	2,000.00	0.00	0.00	0.00	0.00	0.00	0.00
Start Build 2.00									
2,100.00	2.00	341.73	2,099.98	1.66	-0.55	1.68	2.00	2.00	0.00
2,200.00	4.00	341.73	2,199.84	6.63	-2.19	6.71	2.00	2.00	0.00
2,300.00	6.00	341.73	2,299.45	14.90	-4.92	15.09	2.00	2.00	0.00
2,400.00	8.00	341.73	2,398.70	26.48	-8.74	26.80	2.00	2.00	0.00
2,500.00	10.00	341.73	2,497.47	41.33	-13.64	41.84	2.00	2.00	0.00
2,600.00	12.00	341.73	2,595.62	59.45	-19.62	60.18	2.00	2.00	0.00
2,700.00	14.00	341.73	2,693.06	80.81	-26.67	81.80	2.00	2.00	0.00
2,800.00	16.00	341.73	2,789.64	105.38	-34.78	106.68	2.00	2.00	0.00
2,891.93	17.84	341.73	2,877.59	130.79	-43.17	132.40	2.00	2.00	0.00
Start 3586.09 hold at 2891.93 MD									
2,900.00	17.84	341.73	2,885.27	133.14	-43.94	134.77	0.00	0.00	0.00
3,000.00	17.84	341.73	2,980.46	162.23	-53.55	164.22	0.00	0.00	0.00
3,100.00	17.84	341.73	3,075.66	191.32	-63.15	193.67	0.00	0.00	0.00
3,200.00	17.84	341.73	3,170.85	220.41	-72.75	223.11	0.00	0.00	0.00
3,300.00	17.84	341.73	3,266.04	249.50	-82.35	252.56	0.00	0.00	0.00
3,400.00	17.84	341.73	3,361.23	278.59	-91.95	282.01	0.00	0.00	0.00
3,500.00	17.84	341.73	3,456.43	307.68	-101.56	311.45	0.00	0.00	0.00
3,600.00	17.84	341.73	3,551.62	336.77	-111.16	340.90	0.00	0.00	0.00
3,670.78	17.84	341.73	3,619.00	357.36	-117.95	361.75	0.00	0.00	0.00
Parkman									
3,700.00	17.84	341.73	3,646.81	365.86	-120.76	370.35	0.00	0.00	0.00
3,800.00	17.84	341.73	3,742.00	394.95	-130.36	399.80	0.00	0.00	0.00
3,900.00	17.84	341.73	3,837.20	424.04	-139.96	429.24	0.00	0.00	0.00
4,000.00	17.84	341.73	3,932.39	453.13	-149.56	458.69	0.00	0.00	0.00
4,100.00	17.84	341.73	4,027.58	482.22	-159.17	488.14	0.00	0.00	0.00

Noble Energy, Inc.

Planning Report

Database:	EDMP	Local Co-ordinate Reference:	Well Guttersen D25-734
Company:	Northern Region - DJ Basin	TVD Reference:	KB @ 4802.00ft
Project:	Mustang	MD Reference:	KB @ 4802.00ft
Site:	D Section 25	North Reference:	Grid
Well:	Guttersen D25-734	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #5		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
4,114.10	17.84	341.73	4,041.00	486.32	-160.52	492.29	0.00	0.00	0.00
Sussex									
4,200.00	17.84	341.73	4,122.77	511.31	-168.77	517.59	0.00	0.00	0.00
4,300.00	17.84	341.73	4,217.96	540.40	-178.37	547.03	0.00	0.00	0.00
4,308.44	17.84	341.73	4,226.00	542.85	-179.18	549.52	0.00	0.00	0.00
Shannon									
4,400.00	17.84	341.73	4,313.16	569.49	-187.97	576.48	0.00	0.00	0.00
4,500.00	17.84	341.73	4,408.35	598.58	-197.57	605.93	0.00	0.00	0.00
4,600.00	17.84	341.73	4,503.54	627.67	-207.18	635.37	0.00	0.00	0.00
4,700.00	17.84	341.73	4,598.73	656.76	-216.78	664.82	0.00	0.00	0.00
4,800.00	17.84	341.73	4,693.93	685.85	-226.38	694.27	0.00	0.00	0.00
4,900.00	17.84	341.73	4,789.12	714.94	-235.98	723.72	0.00	0.00	0.00
5,000.00	17.84	341.73	4,884.31	744.03	-245.58	753.16	0.00	0.00	0.00
5,100.00	17.84	341.73	4,979.50	773.12	-255.18	782.61	0.00	0.00	0.00
5,200.00	17.84	341.73	5,074.70	802.21	-264.79	812.06	0.00	0.00	0.00
5,300.00	17.84	341.73	5,169.89	831.30	-274.39	841.50	0.00	0.00	0.00
5,400.00	17.84	341.73	5,265.08	860.39	-283.99	870.95	0.00	0.00	0.00
5,500.00	17.84	341.73	5,360.27	889.48	-293.59	900.40	0.00	0.00	0.00
5,600.00	17.84	341.73	5,455.47	918.57	-303.19	929.85	0.00	0.00	0.00
5,700.00	17.84	341.73	5,550.66	947.66	-312.79	959.29	0.00	0.00	0.00
5,800.00	17.84	341.73	5,645.85	976.75	-322.40	988.74	0.00	0.00	0.00
5,900.00	17.84	341.73	5,741.04	1,005.84	-332.00	1,018.19	0.00	0.00	0.00
6,000.00	17.84	341.73	5,836.23	1,034.93	-341.60	1,047.63	0.00	0.00	0.00
6,060.68	17.84	341.73	5,894.00	1,052.58	-347.43	1,065.50	0.00	0.00	0.00
Teepee Buttes									
6,100.00	17.84	341.73	5,931.43	1,064.02	-351.20	1,077.08	0.00	0.00	0.00
6,200.00	17.84	341.73	6,026.62	1,093.11	-360.80	1,106.53	0.00	0.00	0.00
6,300.00	17.84	341.73	6,121.81	1,122.20	-370.41	1,135.98	0.00	0.00	0.00
6,400.00	17.84	341.73	6,217.00	1,151.29	-380.01	1,165.42	0.00	0.00	0.00
6,478.02	17.84	341.73	6,291.28	1,173.98	-387.50	1,188.40	0.00	0.00	0.00
Start DLS 9.00 TFO 19.91									
6,500.00	19.71	343.73	6,312.08	1,180.74	-389.59	1,195.23	9.00	8.51	9.09
6,550.00	24.03	347.15	6,358.48	1,198.76	-394.22	1,213.43	9.00	8.64	6.83
6,600.00	28.40	349.57	6,403.32	1,220.39	-398.64	1,235.21	9.00	8.74	4.84
6,650.00	32.80	351.39	6,446.35	1,245.49	-402.82	1,260.46	9.00	8.81	3.64
6,700.00	37.23	352.82	6,487.29	1,273.90	-406.74	1,289.00	9.00	8.85	2.86
6,730.33	39.92	353.55	6,511.00	1,292.68	-408.99	1,307.85	9.00	8.87	2.42
Sharon Springs									
6,750.00	41.67	353.98	6,525.89	1,305.45	-410.38	1,320.67	9.00	8.88	2.20
6,792.95	45.49	354.83	6,557.00	1,334.91	-413.25	1,350.22	9.00	8.90	1.98
Top A Chalk									
6,795.81	45.74	354.89	6,559.00	1,336.95	-413.44	1,352.26	9.00	8.90	1.84
Top A Marl									
6,800.00	46.12	354.96	6,561.92	1,339.95	-413.70	1,355.27	9.00	8.90	1.82
6,816.20	47.56	355.25	6,573.00	1,351.72	-414.71	1,367.08	9.00	8.91	1.76
Top B Chalk									
6,850.00	50.57	355.81	6,595.14	1,377.18	-416.70	1,392.59	9.00	8.91	1.65
6,897.63	54.82	356.51	6,624.00	1,414.97	-419.23	1,430.45	9.00	8.92	1.49
Top B Marl									
6,900.00	55.03	356.55	6,625.36	1,416.91	-419.35	1,432.39	9.00	8.93	1.40
6,950.00	59.50	357.21	6,652.39	1,458.89	-421.63	1,474.44	9.00	8.93	1.33
7,000.00	63.97	357.82	6,676.07	1,502.88	-423.54	1,518.46	9.00	8.94	1.21
7,050.00	68.44	358.38	6,696.24	1,548.59	-425.05	1,564.20	9.00	8.94	1.12

Noble Energy, Inc.

Planning Report

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Company:	Northern Region - DJ Basin	TVD Reference:	KB @ 4802.00ft
Project:	Mustang	MD Reference:	KB @ 4802.00ft
Site:	D Section 25	North Reference:	Grid
Well:	Guttersen D25-734	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #5		

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)
7,054.84	68.87	358.43	6,698.00	1,553.09	-425.18	1,568.70	9.00	8.94	1.08
Top C Chalk									
7,100.00	72.91	358.90	6,712.78	1,595.74	-426.17	1,611.36	9.00	8.94	1.05
7,150.00	77.38	359.41	6,725.60	1,644.06	-426.88	1,659.66	9.00	8.95	1.01
7,177.36	79.83	359.67	6,731.00	1,670.87	-427.09	1,686.47	9.00	8.95	0.98
Top C Marl									
7,179.24	80.00	359.69	6,731.33	1,672.73	-427.10	1,688.32	9.00	8.95	0.97
TPZ at 7179.24 MD									
7,200.00	81.87	359.69	6,734.60	1,693.22	-427.21	1,708.81	9.00	9.00	0.00
7,250.00	86.37	359.69	6,739.72	1,742.95	-427.48	1,758.50	9.00	9.00	0.00
7,291.48	90.10	359.69	6,741.00	1,784.40	-427.70	1,799.93	9.00	9.00	0.00
Landing Pt. at 7179.24 MD									
7,300.00	90.10	359.69	6,740.99	1,792.92	-427.75	1,808.44	0.00	0.00	0.00
7,400.00	90.10	359.69	6,740.81	1,892.92	-428.28	1,908.39	0.00	0.00	0.00
7,500.00	90.10	359.69	6,740.63	1,992.92	-428.82	2,008.33	0.00	0.00	0.00
7,600.00	90.10	359.69	6,740.46	2,092.91	-429.36	2,108.27	0.00	0.00	0.00
7,700.00	90.10	359.69	6,740.28	2,192.91	-429.89	2,208.21	0.00	0.00	0.00
7,800.00	90.10	359.69	6,740.10	2,292.91	-430.43	2,308.15	0.00	0.00	0.00
7,900.00	90.10	359.69	6,739.93	2,392.91	-430.97	2,408.09	0.00	0.00	0.00
8,000.00	90.10	359.69	6,739.75	2,492.91	-431.50	2,508.03	0.00	0.00	0.00
8,100.00	90.10	359.69	6,739.58	2,592.91	-432.04	2,607.97	0.00	0.00	0.00
8,200.00	90.10	359.69	6,739.40	2,692.91	-432.58	2,707.92	0.00	0.00	0.00
8,300.00	90.10	359.69	6,739.22	2,792.90	-433.11	2,807.86	0.00	0.00	0.00
8,400.00	90.10	359.69	6,739.05	2,892.90	-433.65	2,907.80	0.00	0.00	0.00
8,500.00	90.10	359.69	6,738.87	2,992.90	-434.18	3,007.74	0.00	0.00	0.00
8,600.00	90.10	359.69	6,738.69	3,092.90	-434.72	3,107.68	0.00	0.00	0.00
8,700.00	90.10	359.69	6,738.52	3,192.90	-435.26	3,207.62	0.00	0.00	0.00
8,800.00	90.10	359.69	6,738.34	3,292.90	-435.79	3,307.56	0.00	0.00	0.00
8,900.00	90.10	359.69	6,738.17	3,392.89	-436.33	3,407.50	0.00	0.00	0.00
9,000.00	90.10	359.69	6,737.99	3,492.89	-436.87	3,507.45	0.00	0.00	0.00
9,100.00	90.10	359.69	6,737.81	3,592.89	-437.40	3,607.39	0.00	0.00	0.00
9,200.00	90.10	359.69	6,737.64	3,692.89	-437.94	3,707.33	0.00	0.00	0.00
9,300.00	90.10	359.69	6,737.46	3,792.89	-438.48	3,807.27	0.00	0.00	0.00
9,400.00	90.10	359.69	6,737.28	3,892.89	-439.01	3,907.21	0.00	0.00	0.00
9,500.00	90.10	359.69	6,737.11	3,992.88	-439.55	4,007.15	0.00	0.00	0.00
9,600.00	90.10	359.69	6,736.93	4,092.88	-440.08	4,107.09	0.00	0.00	0.00
9,700.00	90.10	359.69	6,736.75	4,192.88	-440.62	4,207.03	0.00	0.00	0.00
9,800.00	90.10	359.69	6,736.58	4,292.88	-441.16	4,306.98	0.00	0.00	0.00
9,900.00	90.10	359.69	6,736.40	4,392.88	-441.69	4,406.92	0.00	0.00	0.00
10,000.00	90.10	359.69	6,736.23	4,492.88	-442.23	4,506.86	0.00	0.00	0.00
10,100.00	90.10	359.69	6,736.05	4,592.88	-442.77	4,606.80	0.00	0.00	0.00
10,200.00	90.10	359.69	6,735.87	4,692.87	-443.30	4,706.74	0.00	0.00	0.00
10,300.00	90.10	359.69	6,735.70	4,792.87	-443.84	4,806.68	0.00	0.00	0.00
10,400.00	90.10	359.69	6,735.52	4,892.87	-444.38	4,906.62	0.00	0.00	0.00
10,500.00	90.10	359.69	6,735.34	4,992.87	-444.91	5,006.57	0.00	0.00	0.00
10,600.00	90.10	359.69	6,735.17	5,092.87	-445.45	5,106.51	0.00	0.00	0.00
10,700.00	90.10	359.69	6,734.99	5,192.87	-445.98	5,206.45	0.00	0.00	0.00
10,800.00	90.10	359.69	6,734.82	5,292.86	-446.52	5,306.39	0.00	0.00	0.00
10,900.00	90.10	359.69	6,734.64	5,392.86	-447.06	5,406.33	0.00	0.00	0.00
11,000.00	90.10	359.69	6,734.46	5,492.86	-447.59	5,506.27	0.00	0.00	0.00
11,100.00	90.10	359.69	6,734.29	5,592.86	-448.13	5,606.21	0.00	0.00	0.00
11,200.00	90.10	359.69	6,734.11	5,692.86	-448.67	5,706.15	0.00	0.00	0.00
11,300.00	90.10	359.69	6,733.93	5,792.86	-449.20	5,806.10	0.00	0.00	0.00

Noble Energy, Inc.

Planning Report

Database:	EDMP	Local Co-ordinate Reference:	Well Guttersen D25-734
Company:	Northern Region - DJ Basin	TVD Reference:	KB @ 4802.00ft
Project:	Mustang	MD Reference:	KB @ 4802.00ft
Site:	D Section 25	North Reference:	Grid
Well:	Guttersen D25-734	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #5		

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)
11,400.00	90.10	359.69	6,733.76	5,892.85	-449.74	5,906.04	0.00	0.00	0.00
11,500.00	90.10	359.69	6,733.58	5,992.85	-450.28	6,005.98	0.00	0.00	0.00
11,600.00	90.10	359.69	6,733.40	6,092.85	-450.81	6,105.92	0.00	0.00	0.00
11,700.00	90.10	359.69	6,733.23	6,192.85	-451.35	6,205.86	0.00	0.00	0.00
11,800.00	90.10	359.69	6,733.05	6,292.85	-451.88	6,305.80	0.00	0.00	0.00
11,900.00	90.10	359.69	6,732.88	6,392.85	-452.42	6,405.74	0.00	0.00	0.00
12,000.00	90.10	359.69	6,732.70	6,492.84	-452.96	6,505.68	0.00	0.00	0.00
12,100.00	90.10	359.69	6,732.52	6,592.84	-453.49	6,605.63	0.00	0.00	0.00
12,200.00	90.10	359.69	6,732.35	6,692.84	-454.03	6,705.57	0.00	0.00	0.00
12,300.00	90.10	359.69	6,732.17	6,792.84	-454.57	6,805.51	0.00	0.00	0.00
12,400.00	90.10	359.69	6,731.99	6,892.84	-455.10	6,905.45	0.00	0.00	0.00
12,500.00	90.10	359.69	6,731.82	6,992.84	-455.64	7,005.39	0.00	0.00	0.00
12,600.00	90.10	359.69	6,731.64	7,092.84	-456.18	7,105.33	0.00	0.00	0.00
12,700.00	90.10	359.69	6,731.47	7,192.83	-456.71	7,205.27	0.00	0.00	0.00
12,800.00	90.10	359.69	6,731.29	7,292.83	-457.25	7,305.21	0.00	0.00	0.00
12,900.00	90.10	359.69	6,731.11	7,392.83	-457.78	7,405.16	0.00	0.00	0.00
13,000.00	90.10	359.69	6,730.94	7,492.83	-458.32	7,505.10	0.00	0.00	0.00
13,100.00	90.10	359.69	6,730.76	7,592.83	-458.86	7,605.04	0.00	0.00	0.00
13,200.00	90.10	359.69	6,730.58	7,692.83	-459.39	7,704.98	0.00	0.00	0.00
13,300.00	90.10	359.69	6,730.41	7,792.82	-459.93	7,804.92	0.00	0.00	0.00
13,400.00	90.10	359.69	6,730.23	7,892.82	-460.47	7,904.86	0.00	0.00	0.00
13,500.00	90.10	359.69	6,730.06	7,992.82	-461.00	8,004.80	0.00	0.00	0.00
13,600.00	90.10	359.69	6,729.88	8,092.82	-461.54	8,104.75	0.00	0.00	0.00
13,700.00	90.10	359.69	6,729.70	8,192.82	-462.08	8,204.69	0.00	0.00	0.00
13,800.00	90.10	359.69	6,729.53	8,292.82	-462.61	8,304.63	0.00	0.00	0.00
13,900.00	90.10	359.69	6,729.35	8,392.81	-463.15	8,404.57	0.00	0.00	0.00
14,000.00	90.10	359.69	6,729.17	8,492.81	-463.68	8,504.51	0.00	0.00	0.00
14,100.00	90.10	359.69	6,729.00	8,592.81	-464.22	8,604.45	0.00	0.00	0.00
14,200.00	90.10	359.69	6,728.82	8,692.81	-464.76	8,704.39	0.00	0.00	0.00
14,300.00	90.10	359.69	6,728.64	8,792.81	-465.29	8,804.33	0.00	0.00	0.00
14,400.00	90.10	359.69	6,728.47	8,892.81	-465.83	8,904.28	0.00	0.00	0.00
14,500.00	90.10	359.69	6,728.29	8,992.81	-466.37	9,004.22	0.00	0.00	0.00
14,600.00	90.10	359.69	6,728.12	9,092.80	-466.90	9,104.16	0.00	0.00	0.00
14,700.00	90.10	359.69	6,727.94	9,192.80	-467.44	9,204.10	0.00	0.00	0.00
14,800.00	90.10	359.69	6,727.76	9,292.80	-467.98	9,304.04	0.00	0.00	0.00
14,900.00	90.10	359.69	6,727.59	9,392.80	-468.51	9,403.98	0.00	0.00	0.00
15,000.00	90.10	359.69	6,727.41	9,492.80	-469.05	9,503.92	0.00	0.00	0.00
15,100.00	90.10	359.69	6,727.23	9,592.80	-469.58	9,603.86	0.00	0.00	0.00
15,200.00	90.10	359.69	6,727.06	9,692.79	-470.12	9,703.81	0.00	0.00	0.00
15,300.00	90.10	359.69	6,726.88	9,792.79	-470.66	9,803.75	0.00	0.00	0.00
15,400.00	90.10	359.69	6,726.71	9,892.79	-471.19	9,903.69	0.00	0.00	0.00
15,500.00	90.10	359.69	6,726.53	9,992.79	-471.73	10,003.63	0.00	0.00	0.00
15,600.00	90.10	359.69	6,726.35	10,092.79	-472.27	10,103.57	0.00	0.00	0.00
15,700.00	90.10	359.69	6,726.18	10,192.79	-472.80	10,203.51	0.00	0.00	0.00
15,800.00	90.10	359.69	6,726.00	10,292.78	-473.34	10,303.45	0.00	0.00	0.00
15,900.00	90.10	359.69	6,725.82	10,392.78	-473.88	10,403.39	0.00	0.00	0.00
16,000.00	90.10	359.69	6,725.65	10,492.78	-474.41	10,503.34	0.00	0.00	0.00
16,100.00	90.10	359.69	6,725.47	10,592.78	-474.95	10,603.28	0.00	0.00	0.00
16,200.00	90.10	359.69	6,725.30	10,692.78	-475.48	10,703.22	0.00	0.00	0.00
16,300.00	90.10	359.69	6,725.12	10,792.78	-476.02	10,803.16	0.00	0.00	0.00
16,400.00	90.10	359.69	6,724.94	10,892.77	-476.56	10,903.10	0.00	0.00	0.00
16,500.00	90.10	359.69	6,724.77	10,992.77	-477.09	11,003.04	0.00	0.00	0.00
16,600.00	90.10	359.69	6,724.59	11,092.77	-477.63	11,102.98	0.00	0.00	0.00
16,700.00	90.10	359.69	6,724.41	11,192.77	-478.17	11,202.93	0.00	0.00	0.00

Noble Energy, Inc.

Planning Report

Database:	EDMP	Local Co-ordinate Reference:	Well Guttersten D25-734
Company:	Northern Region - DJ Basin	TVD Reference:	KB @ 4802.00ft
Project:	Mustang	MD Reference:	KB @ 4802.00ft
Site:	D Section 25	North Reference:	Grid
Well:	Guttersten D25-734	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #5		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
16,800.00	90.10	359.69	6,724.24	11,292.77	-478.70	11,302.87	0.00	0.00	0.00
16,900.00	90.10	359.69	6,724.06	11,392.77	-479.24	11,402.81	0.00	0.00	0.00
17,000.00	90.10	359.69	6,723.88	11,492.77	-479.78	11,502.75	0.00	0.00	0.00
17,100.00	90.10	359.69	6,723.71	11,592.76	-480.31	11,602.69	0.00	0.00	0.00
17,200.00	90.10	359.69	6,723.53	11,692.76	-480.85	11,702.63	0.00	0.00	0.00
17,300.00	90.10	359.69	6,723.36	11,792.76	-481.39	11,802.57	0.00	0.00	0.00
17,400.00	90.10	359.69	6,723.18	11,892.76	-481.92	11,902.51	0.00	0.00	0.00
17,500.00	90.10	359.69	6,723.00	11,992.76	-482.46	12,002.46	0.00	0.00	0.00
17,600.00	90.10	359.69	6,722.83	12,092.76	-482.99	12,102.40	0.00	0.00	0.00
17,700.00	90.10	359.69	6,722.65	12,192.75	-483.53	12,202.34	0.00	0.00	0.00
17,717.36	90.10	359.69	6,722.62	12,210.12	-483.62	12,219.69	0.00	0.00	0.00
TD at 17717.36									

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
- hit/miss target									
- Shape									
Guttersten D25-734 BHL	0.00	0.00	6,722.62	12,210.12	-483.62	1,328,950.33	3,280,381.07	40.2320085	-104.4957501
- plan hits target center									
- Point									
Guttersten D25-734 TPZ	0.00	0.00	6,731.33	1,672.73	-427.10	1,318,412.96	3,280,437.59	40.2030824	-104.4959750
- plan hits target center									
- Point									

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
665.00	665.00	Upper Pierre Aquifer Top				
668.00	668.00	Pierre				
1,602.00	1,602.00	Upper Pierre Aquifer Base				
3,670.78	3,619.00	Parkman				
4,114.10	4,041.00	Sussex				
4,308.44	4,226.00	Shannon				
6,060.68	5,894.00	Teepee Buttes				
6,730.33	6,511.00	Sharon Springs				
6,792.95	6,557.00	Top A Chalk				
6,795.81	6,559.00	Top A Marl				
6,816.20	6,573.00	Top B Chalk				
6,897.63	6,624.00	Top B Marl				
7,054.84	6,698.00	Top C Chalk				
7,177.36	6,731.00	Top C Marl				

Noble Energy, Inc.

Planning Report

Database:	EDMP	Local Co-ordinate Reference:	Well Guttersen D25-734
Company:	Northern Region - DJ Basin	TVD Reference:	KB @ 4802.00ft
Project:	Mustang	MD Reference:	KB @ 4802.00ft
Site:	D Section 25	North Reference:	Grid
Well:	Guttersen D25-734	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #5		

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment	
		+N/-S (ft)	+E/-W (ft)		
2,000.00	2,000.00	0.00	0.00	Start Build 2.00	
2,891.93	2,877.59	130.79	-43.17	Start 3586.09 hold at 2891.93 MD	
6,478.02	6,291.28	1,173.98	-387.50	Start DLS 9.00 TFO 19.91	
7,179.24	6,731.33	1,672.73	-427.10	TPZ at 7179.24 MD	
7,291.48	6,741.00	1,784.40	-427.70	Landing Pt. at 7179.24 MD	
17,717.36	6,722.62	12,210.12	-483.62	TD at 17717.36	

Northern Region - DJ Basin

Mustang

D Section 25

Guttersen D25-734

Wellbore #1

Plan #5

Anticollision Summary Report

24 June, 2019

Noble Energy, Inc.
Anticollision Summary Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Guttersten D25-734
Project:	Mustang	TVD Reference:	KB @ 4802.00ft
Reference Site:	D Section 25	MD Reference:	KB @ 4802.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Guttersten D25-734	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDMP
Reference Design:	Plan #5	Offset TVD Reference:	Offset Datum

Reference	Plan #5		
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	MD + Stations Interval 100.00ft	Error Model:	ISCWSA
Depth Range:	Unlimited	Scan Method:	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 10,000.00 ft	Error Surface:	Pedal Curve
Warning Levels Evaluated at:	2.00 Sigma	Casing Method:	Not applied

Survey Tool Program	Date	6/24/2019		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.00	17,717.36	Plan #5 (Wellbore #1)	2_MWD+IFR1+MS	A008Mb: IFR dec & multi-station analysis

Summary						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
D Section 01						
Guttersten D12-715 - Wellbore #1 - Plan #1	17,717.36	17,394.65	1,276.74	1,065.15	6.034	CC, ES, SF
Guttersten D12-725 - Wellbore #1 - Plan #1	17,717.36	17,354.05	690.75	506.60	3.751	CC, ES, SF
Guttersten D12-735 - Wellbore #1 - Plan #1	17,717.36	17,566.38	410.56	333.62	5.336	CC, ES, SF
Guttersten D12-745 - Wellbore #1 - Plan #1	17,717.36	17,749.15	843.01	645.93	4.278	CC, ES, SF
Guttersten D12-750 - Wellbore #1 - Plan #1	17,717.36	17,957.30	1,148.13	941.74	5.563	CC, ES, SF
Guttersten D12-755 - Wellbore #1 - Plan #1	17,717.36	17,362.69	1,450.41	1,237.71	6.819	CC, ES, SF
Guttersten D12-765 - Wellbore #1 - Plan #1	17,717.36	17,427.57	2,083.99	1,866.36	9.576	CC, ES, SF
Guttersten D12-770 - Wellbore #1 - Plan #1	17,717.36	17,530.79	2,408.56	2,190.26	11.033	CC, ES, SF
Guttersten D12-775 - Wellbore #1 - Plan #1	17,717.36	17,387.70	2,725.68	2,506.24	12.421	CC, ES, SF
Guttersten D12-785 - Wellbore #1 - Plan #1	17,717.36	17,570.64	3,371.42	3,151.54	15.333	CC, ES, SF
D Section 02						
Booth D11-715 - Booth D11-715 - Plan #1	17,717.36	17,531.72	4,067.54	3,878.79	21.550	CC, ES, SF
Booth D11-725 - Booth D11-725 - Plan #1	17,717.36	17,473.90	4,717.09	4,527.78	24.917	CC, ES, SF
Booth D11-730 - Booth D11-730 - Plan #1	17,717.36	17,544.11	5,044.83	4,855.29	26.616	CC, ES, SF
Booth D11-735 - Booth D11-735 - Plan #1	17,717.36	17,341.28	5,366.34	5,176.76	28.307	CC, ES, SF
Booth D11-745 - Booth D11-745 - Plan #1	17,717.36	17,438.95	6,016.99	5,827.17	31.698	CC, ES, SF
Booth D11-755 - Booth D11-755 - Plan #1	17,717.36	17,399.56	6,667.29	6,477.62	35.152	CC, ES, SF
Booth D11-765 - Booth D11-765 - Plan #1	17,717.36	17,474.67	7,317.87	7,128.02	38.546	CC, ES, SF
Booth D11-770 - Booth D11-770 - Plan #1	17,717.36	17,651.37	7,645.52	7,455.64	40.265	CC, ES, SF
Booth D11-775 - Booth D11-775 - Plan #1	17,717.36	17,638.00	7,968.66	7,778.55	41.918	CC, ES, SF
Booth D11-785 - Booth D11-785 - Plan #1	17,717.36	17,818.48	8,618.78	8,428.26	45.238	CC, ES, SF

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

Noble Energy, Inc.
Anticollision Summary Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Gutteresen D25-734
Project:	Mustang	TVD Reference:	KB @ 4802.00ft
Reference Site:	D Section 25	MD Reference:	KB @ 4802.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Gutteresen D25-734	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDMP
Reference Design:	Plan #5	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 12						
GUTTERERSEN STATE D #12-7JI(SI) - Wellbore #1 - No	17,717.36	6,676.62	3,696.32	3,603.86	39.979	CC, ES, SF
GUTTERSEN #12D(PR) - Wellbore #1 - No Surveys	17,717.36	6,670.62	1,544.77	1,449.90	16.284	CC, ES, SF
Gutteresen #33-12(PR) - Wellbore #1 - No Surveys	17,717.36	6,660.62	2,222.42	2,128.61	23.689	CC, ES, SF
GUTTERSEN #34-12(PR) - Wellbore #1 - No Surveys	17,717.36	6,660.62	950.37	843.14	8.863	CC, ES, SF
Gutteresen #43-12(PR) - Wellbore #1 - Gyro	17,717.36	6,615.99	2,455.92	2,383.42	33.874	CC, ES, SF
GUTTERSEN #44-12(PR) - Wellbore #1 - Gyro	17,717.36	6,610.13	1,276.41	1,177.10	12.853	CC, ES, SF
GUTTERSEN D #12-20(PR) - Wellbore #1 - No Surveys	17,717.36	6,660.62	3,800.67	3,673.52	29.891	CC, ES, SF
GUTTERSEN D #12-25(PR) - Wellbore #1 - No Surveys	17,717.36	6,667.62	2,831.59	2,689.62	19.944	CC, ES, SF
GUTTERSEN STATE D #12-19(PR) - Wellbore #1 - No S	17,717.36	6,667.62	4,840.13	4,727.09	42.816	CC, ES, SF
GUTTERSEN STATE D #12-2JI(SI) - Wellbore #1 - No Su	17,717.36	6,700.62	4,868.10	4,777.28	53.600	CC, ES, SF
Gutteresen State D12-01JI - Wellbore #1 - Wellbore #1 - A	17,717.36	7,183.92	4,857.35	4,795.03	77.942	CC, ES, SF
Gutteresen State D12-08JI - Wellbore #1 - Wellbore #1 - A	17,717.36	6,744.89	3,463.52	3,396.49	51.678	CC, ES, SF
KARCH BLUE D #12-11(PR) - Wellbore #1 - No Surveys	17,717.36	6,651.62	2,769.46	2,648.15	22.830	CC, ES, SF
KARCH BLUE D #12-12(PR) - Wellbore #1 - No Surveys	17,717.36	6,648.62	3,696.57	3,556.64	26.417	CC, ES, SF
KARCH BLUE D #12-14(PR) - Wellbore #1 - No Surveys	17,717.36	6,654.62	1,926.28	1,777.34	12.933	CC, ES, SF
L F RANCH #2-12(SI) - Wellbore #1 - No Surveys	17,717.36	6,645.62	2,955.54	2,804.87	19.616	CC, ES, SF
SPIKE STATE #D 12-3(PR) - Wellbore #1 - No Surveys	17,717.36	6,659.62	5,137.00	5,035.15	50.434	CC, ES, SF
SPIKE STATE #D 12-4(PR) - Wellbore #1 - No Surveys	17,717.36	6,650.62	5,684.41	5,566.02	48.015	CC, ES, SF
SPIKE STATE #D 12-5(PR) - Wellbore #1 - No Surveys	17,717.36	6,647.62	4,645.44	4,518.59	36.622	CC, ES, SF
SPIKE STATE #D 12-6(PA) - Wellbore #1 - Gyro	17,717.36	6,719.12	3,885.72	3,811.00	52.002	CC, ES, SF
STATE #10(TA) - Wellbore #1 - No Surveys	17,717.36	6,714.62	4,300.75	4,209.06	46.903	CC, ES, SF

Noble Energy, Inc.
Anticollision Summary Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Guttersten D25-734
Project:	Mustang	TVD Reference:	KB @ 4802.00ft
Reference Site:	D Section 25	MD Reference:	KB @ 4802.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Guttersten D25-734	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDMP
Reference Design:	Plan #5	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 13						
Dalbey D 13-11 (SI) - Wellbore #1 - Gyro Surveys	14,624.59	6,718.50	1,606.98	1,506.89	16.056	CC, ES
Dalbey D 13-11 (SI) - Wellbore #1 - Gyro Surveys	14,800.00	6,718.71	1,616.52	1,515.18	15.952	SF
Dalbey D 13-12 (PR) - Wellbore #1 - Gyro Surveys	14,145.30	6,700.22	2,755.88	2,659.49	28.591	CC, ES
Dalbey D 13-12 (PR) - Wellbore #1 - Gyro Surveys	14,600.00	6,706.12	2,793.14	2,693.65	28.076	SF
Dalbey D 13-13 (SI) - Wellbore #1 - As-Drilled	13,232.94	6,724.20	3,008.31	2,918.86	33.632	CC, ES
Dalbey D 13-13 (SI) - Wellbore #1 - As-Drilled	13,800.00	6,719.20	3,061.29	2,968.05	32.833	SF
Dalbey D 13-14 (PA) - Wellbore #1 - Gyro Surveys	13,228.67	6,673.66	1,836.10	1,746.84	20.571	CC, ES
Dalbey D 13-14 (PA) - Wellbore #1 - Gyro Surveys	13,400.00	6,675.22	1,844.07	1,753.51	20.364	SF
Guttersten 12-13 (SI) - Wellbore #1 - Gyro Surveys	15,819.88	6,811.00	3,124.63	3,014.97	28.495	CC, ES
Guttersten 12-13 (SI) - Wellbore #1 - Gyro Surveys	16,300.00	6,802.70	3,161.29	3,048.31	27.982	SF
Guttersten 13C (PR) - Wellbore #1 - Gyro Surveys	16,593.49	6,732.42	277.60	161.97	2.401	CC, ES, SF
Guttersten 13D (PR) - Wellbore #1 - Gyro Surveys	13,991.39	6,677.88	261.02	165.88	2.744	CC, ES, SF
Guttersten 13N (PR) - Wellbore #1 - Gyro Surveys	16,575.04	6,698.14	1,283.08	1,167.71	11.121	CC, ES
Guttersten 13N (PR) - Wellbore #1 - Gyro Surveys	16,700.00	6,694.46	1,289.15	1,172.91	11.091	SF
Guttersten 13S (PR) - Wellbore #1 - Gyro Surveys	15,335.10	6,670.55	261.27	155.75	2.476	CC, ES, SF
Guttersten 13T (PR) - Wellbore #1 - Gyro Surveys	12,768.60	6,679.09	155.16	69.38	1.809	CC, ES, SF
Guttersten 21-13 (SI) - Wellbore #1 - Gyro Surveys	17,185.80	6,704.04	1,847.74	1,727.46	15.361	CC
Guttersten 21-13 (SI) - Wellbore #1 - Gyro Surveys	17,200.00	6,703.80	1,847.80	1,727.38	15.345	ES
Guttersten 21-13 (SI) - Wellbore #1 - Gyro Surveys	17,300.00	6,702.09	1,851.27	1,730.07	15.275	SF
Guttersten 22-13 (SI) - Wellbore #1 - Gyro Surveys	15,928.45	6,703.95	1,698.00	1,587.71	15.395	CC, ES
Guttersten 22-13 (SI) - Wellbore #1 - Gyro Surveys	16,100.00	6,703.71	1,706.65	1,595.12	15.303	SF
Guttersten 31-13 (PR) - Wellbore #1 - Gyro Surveys	17,224.98	6,653.88	461.95	341.39	3.832	CC, ES, SF
Guttersten 32-13 (PR) - Wellbore #1 - Gyro Surveys	16,037.82	6,676.71	365.79	254.63	3.291	CC, ES, SF
Guttersten 34-13 (PR) - Wellbore #1 - Gyro Surveys	13,277.12	6,681.51	481.47	391.85	5.373	CC, ES
Guttersten 34-13 (PR) - Wellbore #1 - Gyro Surveys	13,300.00	6,681.63	482.02	392.17	5.365	SF
Guttersten 41-13 (PR) - Wellbore #1 - Gyro Surveys	17,160.58	6,609.77	932.93	813.37	7.803	CC, ES
Guttersten 41-13 (PR) - Wellbore #1 - Gyro Surveys	17,200.00	6,610.17	933.76	814.09	7.803	SF
Guttersten 42-13 (PR) - Wellbore #1 - Gyro Surveys	15,894.50	6,628.19	1,024.21	914.48	9.334	CC
Guttersten 42-13 (PR) - Wellbore #1 - Gyro Surveys	15,900.00	6,628.36	1,024.22	914.47	9.332	ES, SF
Guttersten 43-13 - Wellbore #1 - Wellbore #1 - As Drilled	14,621.88	6,691.35	920.76	820.77	9.208	CC, ES, SF
Guttersten 44-13 - Wellbore #1 - Wellbore #1 - As Drilled	13,271.02	6,707.88	859.49	765.07	9.103	CC, ES
Guttersten 44-13 - Wellbore #1 - Wellbore #1 - As Drilled	13,300.00	6,707.80	859.98	765.45	9.098	SF
L F Ranch 1-13 (PR) - Wellbore #1 - Gyro Surveys	14,316.40	6,690.99	506.55	408.75	5.180	CC, ES, SF
L. F. Ranch 13-4 (SI) - Wellbore #1 - Gyro Surveys	16,838.77	6,886.12	2,727.82	2,609.39	23.032	CC, ES
L. F. Ranch 13-4 (SI) - Wellbore #1 - Gyro Surveys	17,100.00	6,870.51	2,740.26	2,619.99	22.784	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 D25-734
Project:	Mustang	TVD Reference:	KB @ 4802.00ft
Reference Site:	D Section 25	MD Reference:	KB @ 4802.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Guttersen D25-734	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDMP
Reference Design:	Plan #5	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 14						
Dalbey D 14-1 (SI) - Wellbore #1 - Gyro Surveys	17,194.27	6,706.66	4,444.93	4,324.51	36.914	CC
Dalbey D 14-1 (SI) - Wellbore #1 - Gyro Surveys	17,200.00	6,706.62	4,444.93	4,324.47	36.899	ES
Dalbey D 14-1 (SI) - Wellbore #1 - Gyro Surveys	17,717.36	6,702.31	4,475.60	4,351.35	36.021	SF
Dalbey D 14-2 (SI) - Wellbore #1 - Gyro Surveys	16,950.84	6,736.17	5,360.85	5,242.31	45.221	CC
Dalbey D 14-2 (SI) - Wellbore #1 - Gyro Surveys	17,000.00	6,736.39	5,361.08	5,242.12	45.067	ES
Dalbey D 14-2 (SI) - Wellbore #1 - Gyro Surveys	17,717.36	6,739.65	5,415.38	5,291.26	43.630	SF
Dalbey D 14-3 (SI) - Wellbore #1 - Gyro Surveys	17,170.95	6,800.00	6,794.61	6,674.10	56.380	CC
Dalbey D 14-3 (SI) - Wellbore #1 - Gyro Surveys	17,200.00	6,800.00	6,794.67	6,673.92	56.267	ES
Dalbey D 14-3 (SI) - Wellbore #1 - Gyro Surveys	17,717.36	6,800.00	6,816.55	6,691.75	54.622	SF
Dalbey D 14-6 (SI) - Wellbore #1 - Gyro Surveys	16,006.88	6,723.29	7,005.64	6,894.59	63.090	CC
Dalbey D 14-6 (SI) - Wellbore #1 - Gyro Surveys	16,100.00	6,723.29	7,006.25	6,894.45	62.665	ES
Dalbey D 14-6 (SI) - Wellbore #1 - Gyro Surveys	17,717.36	6,723.24	7,211.43	7,088.79	58.802	SF
Dalbey D 14-7 (SI) - Wellbore #1 - Gyro Surveys	15,871.32	6,773.68	5,747.69	5,637.57	52.195	CC
Dalbey D 14-7 (SI) - Wellbore #1 - Gyro Surveys	15,900.00	6,773.68	5,747.76	5,637.40	52.083	ES
Dalbey D 14-7 (SI) - Wellbore #1 - Gyro Surveys	17,300.00	6,773.71	5,922.59	5,803.09	49.560	SF
Dalbey D 14-8 (SI) - Wellbore #1 - Gyro Surveys	15,908.07	6,744.22	4,495.52	4,385.21	40.754	CC, ES
Dalbey D 14-8 (SI) - Wellbore #1 - Gyro Surveys	16,800.00	6,747.85	4,583.14	4,466.84	39.407	SF
Guttersen State D 14-23 (SI) - Wellbore #1 - Gyro Survey	13,832.06	6,800.00	4,952.74	4,858.50	52.551	CC
Guttersen State D 14-23 (SI) - Wellbore #1 - Gyro Survey	13,900.00	6,800.00	4,953.21	4,858.41	52.248	ES
Guttersen State D 14-23 (SI) - Wellbore #1 - Gyro Survey	15,100.00	6,800.00	5,112.47	5,009.87	49.827	SF
Guttersen State D 14-24 (PR) - Wellbore #1 - Gyro Survey	13,951.74	6,730.04	6,416.20	6,321.19	67.535	CC
Guttersen State D 14-24 (PR) - Wellbore #1 - Gyro Survey	14,000.00	6,729.92	6,416.38	6,320.98	67.261	ES
Guttersen State D 14-24 (PR) - Wellbore #1 - Gyro Survey	15,900.00	6,725.72	6,705.47	6,597.80	62.282	SF
Guttersen State D 14-33 (PR) - Wellbore #1 - Gyro Survey	14,025.21	6,954.25	8,675.92	8,579.82	90.286	CC
Guttersen State D 14-33 (PR) - Wellbore #1 - Gyro Survey	14,100.00	6,953.61	8,676.24	8,579.55	89.729	ES
Guttersen State D 14-33 (PR) - Wellbore #1 - Gyro Survey	17,400.00	6,925.22	9,309.13	9,191.48	79.126	SF
HSR-Guttersen State 4-14 (PA) - Wellbore #1 - Gyro Survey	17,190.44	6,788.68	8,327.65	8,207.57	69.354	CC
HSR-Guttersen State 4-14 (PA) - Wellbore #1 - Gyro Survey	17,300.00	6,788.06	8,328.37	8,207.39	68.844	ES
HSR-Guttersen State 4-14 (PA) - Wellbore #1 - Gyro Survey	17,717.36	6,785.69	8,344.30	8,220.04	67.151	SF
HSR-Guttersen State 5-14 (PA) - Wellbore #1 - Gyro Survey	16,020.24	6,720.78	8,292.64	8,182.02	74.961	CC
HSR-Guttersen State 5-14 (PA) - Wellbore #1 - Gyro Survey	16,100.00	6,720.44	8,293.03	8,181.75	74.525	ES
HSR-Guttersen State 5-14 (PA) - Wellbore #1 - Gyro Survey	17,717.36	6,713.57	8,464.52	8,341.74	68.939	SF
Spike D 14-09 (SI) - Wellbore #1 - Gyro Surveys	14,770.77	6,748.94	4,164.67	4,063.28	41.076	CC
Spike D 14-09 (SI) - Wellbore #1 - Gyro Surveys	14,800.00	6,748.85	4,164.77	4,063.14	40.978	ES
Spike D 14-09 (SI) - Wellbore #1 - Gyro Surveys	15,600.00	6,746.50	4,246.42	4,139.43	39.691	SF
Spike D 14-16 (SI) - Wellbore #1 - Gyro Surveys	13,138.29	6,816.70	4,222.72	4,133.77	47.470	CC
Spike D 14-16 (SI) - Wellbore #1 - Gyro Surveys	13,200.00	6,817.04	4,223.17	4,133.71	47.208	ES
Spike D 14-16 (SI) - Wellbore #1 - Gyro Surveys	14,100.00	6,822.09	4,330.84	4,235.43	45.391	SF
Spike State D 14-11 (PR) - Wellbore #1 - Gyro Surveys	14,781.43	6,762.86	6,782.61	6,681.06	66.790	CC
Spike State D 14-11 (PR) - Wellbore #1 - Gyro Surveys	14,800.00	6,762.71	6,782.64	6,680.94	66.691	ES
Spike State D 14-11 (PR) - Wellbore #1 - Gyro Surveys	16,800.00	6,748.21	7,076.59	6,961.91	61.704	SF
Spike State D 14-12 (PR) - Wellbore #1 - Gyro Surveys	14,745.80	6,771.44	8,312.72	8,211.39	82.041	CC
Spike State D 14-12 (PR) - Wellbore #1 - Gyro Surveys	14,800.00	6,771.27	8,312.89	8,211.13	81.690	ES
Spike State D 14-12 (PR) - Wellbore #1 - Gyro Surveys	17,700.00	6,761.41	8,822.05	8,701.77	73.350	SF
Spike State D 14-13 (SI) - Wellbore #1 - Gyro Surveys	13,168.97	6,874.89	8,317.61	8,228.23	93.062	CC
Spike State D 14-13 (SI) - Wellbore #1 - Gyro Surveys	13,200.00	6,874.89	8,317.66	8,228.04	92.807	ES
Spike State D 14-13 (SI) - Wellbore #1 - Gyro Surveys	16,500.00	6,874.95	8,959.82	8,849.26	81.044	SF
Spike State D 14-14 (SI) - Wellbore #1 - Gyro Surveys	13,087.22	6,748.44	6,821.57	6,733.16	77.161	CC
Spike State D 14-14 (SI) - Wellbore #1 - Gyro Surveys	13,100.00	6,748.49	6,821.58	6,733.07	77.072	ES
Spike State D 14-14 (SI) - Wellbore #1 - Gyro Surveys	15,400.00	6,755.91	7,202.96	7,099.60	69.686	SF
Spike State D 14-15 (SI) - Wellbore #1 - Gyro Surveys	13,189.47	6,980.42	5,493.54	5,404.05	61.385	CC
Spike State D 14-15 (SI) - Wellbore #1 - Gyro Surveys	13,200.00	6,980.23	5,493.55	5,403.97	61.327	ES
Spike State D 14-15 (SI) - Wellbore #1 - Gyro Surveys	14,800.00	6,952.61	5,724.68	5,624.65	57.231	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 Gutteresen D25-734
Project:	Mustang	TVD Reference:	KB @ 4802.00ft
Reference Site:	D Section 25	MD Reference:	KB @ 4802.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Gutteresen D25-734	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDMP
Reference Design:	Plan #5	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 14						
Spike State D14-13J (SI) - Wellbore #1 - Gyro Surveys	13,956.63	6,783.41	7,860.87	7,765.58	82.499	CC
Spike State D14-13J (SI) - Wellbore #1 - Gyro Surveys	14,000.00	6,783.31	7,860.99	7,765.36	82.200	ES
Spike State D14-13J (SI) - Wellbore #1 - Gyro Surveys	16,800.00	6,776.54	8,359.30	8,245.81	73.658	SF
Spike State GWS D 14-10 (SI) - Wellbore #1 - Gyro Surv	14,434.90	6,763.01	5,605.31	5,506.48	56.717	CC
Spike State GWS D 14-10 (SI) - Wellbore #1 - Gyro Surv	14,500.00	6,761.71	5,605.69	5,506.33	56.419	ES
Spike State GWS D 14-10 (SI) - Wellbore #1 - Gyro Surv	15,900.00	6,734.16	5,793.53	5,685.12	53.440	SF

Noble Energy, Inc.
Anticollision Summary Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Guttersten D25-734
Project:	Mustang	TVD Reference:	KB @ 4802.00ft
Reference Site:	D Section 25	MD Reference:	KB @ 4802.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Guttersten D25-734	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDMP
Reference Design:	Plan #5	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 23						
Guttersten 23-20 (SI) - Wellbore #1 - Gyro Surveys	10,107.26	6,810.52	7,645.70	7,578.85	114.368	CC
Guttersten 23-20 (SI) - Wellbore #1 - Gyro Surveys	10,200.00	6,809.91	7,646.26	7,578.76	113.269	ES
Guttersten 23-20 (SI) - Wellbore #1 - Gyro Surveys	13,700.00	6,784.98	8,447.71	8,358.93	95.148	SF
Guttersten 23-32 (SI) - Wellbore #1 - Gyro Surveys	10,615.59	6,907.46	5,488.07	5,417.62	77.897	CC, ES
Guttersten 23-32 (SI) - Wellbore #1 - Gyro Surveys	12,600.00	6,899.18	5,835.81	5,752.82	70.317	SF
Guttersten 23-41 (PR) - Wellbore #1 - Gyro Surveys	11,922.12	6,837.57	4,328.83	4,249.26	54.402	CC, ES
Guttersten 23-41 (PR) - Wellbore #1 - Gyro Surveys	13,100.00	6,820.31	4,486.18	4,398.91	51.403	SF
Guttersten 31-23 (PR) - Wellbore #1 - Gyro Surveys	11,911.24	6,909.01	5,670.20	5,590.16	70.847	CC, ES
Guttersten 31-23 (PR) - Wellbore #1 - Gyro Surveys	13,800.00	6,857.20	5,976.31	5,884.28	64.943	SF
Guttersten 42-23 (PR) - Wellbore #1 - Gyro Surveys	10,586.57	6,804.19	4,356.85	4,286.73	62.142	CC
Guttersten 42-23 (PR) - Wellbore #1 - Gyro Surveys	10,600.00	6,803.99	4,356.87	4,286.65	62.053	ES
Guttersten 42-23 (PR) - Wellbore #1 - Gyro Surveys	11,900.00	6,786.07	4,550.48	4,472.05	58.016	SF
Guttersten D23-711 - Wellbore #1 - Plan #1	17,687.92	17,723.12	3,698.56	3,509.38	19.550	CC
Guttersten D23-711 - Wellbore #1 - Plan #1	17,717.36	17,723.12	3,698.68	3,509.28	19.529	ES, SF
Guttersten D35-720 - Wellbore #1 - Plan #1	7,185.78	7,216.33	4,350.69	4,297.94	82.471	CC, ES
Guttersten D35-720 - Wellbore #1 - Plan #1	9,200.00	6,630.82	4,661.92	4,601.27	76.868	SF
Guttersten D35-730 - Wellbore #1 - Plan #1	7,177.20	7,166.34	5,010.96	4,958.80	96.070	CC
Guttersten D35-730 - Wellbore #1 - Plan #1	7,200.00	7,148.28	5,010.98	4,958.79	96.002	ES
Guttersten D35-730 - Wellbore #1 - Plan #1	9,700.00	6,400.00	5,409.50	5,347.54	87.312	SF
Guttersten D35-740 - Wellbore #1 - Plan #1	7,770.18	6,263.88	5,606.58	5,554.97	108.647	CC
Guttersten D35-740 - Wellbore #1 - Plan #1	7,800.00	6,260.10	5,606.65	5,554.92	108.384	ES
Guttersten D35-740 - Wellbore #1 - Plan #1	10,300.00	5,943.00	6,142.53	6,079.09	96.824	SF
Guttersten D35-750 - Wellbore #1 - Plan #1	7,177.36	7,239.67	6,305.07	6,252.69	120.371	CC
Guttersten D35-750 - Wellbore #1 - Plan #1	7,179.24	7,238.77	6,305.07	6,252.69	120.358	ES
Guttersten D35-750 - Wellbore #1 - Plan #1	10,900.00	6,472.99	7,107.79	7,038.73	102.923	SF
Guttersten D35-760 - Wellbore #1 - Plan #1	7,713.21	6,500.00	6,908.46	6,856.59	133.183	CC, ES
Guttersten D35-760 - Wellbore #1 - Plan #1	11,600.00	6,305.00	7,907.92	7,836.16	110.200	SF
Guttersten D35-770 - Wellbore #1 - Plan #1	7,868.70	5,454.49	7,533.53	7,484.51	153.678	CC
Guttersten D35-770 - Wellbore #1 - Plan #1	7,900.00	5,451.21	7,533.60	7,484.44	153.251	ES
Guttersten D35-770 - Wellbore #1 - Plan #1	12,300.00	5,009.41	8,727.85	8,657.41	123.902	SF
Guttersten D35-780 - Wellbore #1 - Plan #1	4,214.49	2,835.81	7,667.84	7,643.22	311.448	CC
Guttersten D35-780 - Wellbore #1 - Plan #1	4,300.00	2,860.79	7,668.19	7,643.17	306.532	ES
Guttersten D35-780 - Wellbore #1 - Plan #1	12,400.00	4,204.93	8,992.74	8,925.06	132.873	SF
Guttersten State D23-721 - Wellbore #1 - Plan #2	17,690.06	17,550.58	4,358.74	4,169.22	22.999	CC
Guttersten State D23-721 - Wellbore #1 - Plan #2	17,717.36	17,550.58	4,358.83	4,169.09	22.973	ES, SF
Guttersten State D23-731 - Wellbore #1 - Plan #2	17,691.18	17,527.71	5,018.80	4,828.99	26.441	CC
Guttersten State D23-731 - Wellbore #1 - Plan #2	17,717.36	17,527.71	5,018.87	4,828.84	26.411	ES, SF
Guttersten State D23-741 - Guttersten State D23-741 OH	6,418.56	5,801.84	5,619.12	5,574.63	126.298	CC
Guttersten State D23-741 - Guttersten State D23-741 OH	17,717.36	17,639.86	5,678.95	5,489.46	29.970	ES, SF
Guttersten State D23-751 - Wellbore #1 - BHI-Rev A.0	17,695.94	17,545.49	6,318.51	6,128.59	33.269	CC
Guttersten State D23-751 - Wellbore #1 - BHI-Rev A.0	17,717.36	17,545.49	6,318.55	6,128.46	33.239	ES, SF
Guttersten State D23-761 - Wellbore #1 - BHI-Rev A.0	17,695.80	17,501.89	6,980.17	6,790.35	36.772	CC
Guttersten State D23-761 - Wellbore #1 - BHI-Rev A.0	17,717.36	17,501.89	6,980.20	6,790.20	36.738	ES, SF
Guttersten State D23-771 - Wellbore #1 - BHI Rev-B.0	5,048.21	3,882.84	7,489.92	7,458.35	237.232	CC
Guttersten State D23-771 - Wellbore #1 - BHI Rev-B.0	17,717.36	17,634.34	7,638.23	7,448.77	40.314	ES, SF
Guttersten State D23-781 - Wellbore #1 - BHI Rev-A.0	4,206.47	2,900.00	7,635.53	7,610.76	308.230	CC
Guttersten State D23-781 - Wellbore #1 - BHI Rev-A.0	4,300.00	2,930.98	7,635.95	7,610.72	302.725	ES
Guttersten State D23-781 - Wellbore #1 - BHI Rev-A.0	17,717.36	17,599.74	8,247.69	8,058.26	43.541	SF
Guttersten State D35-790 - Wellbore #1 - Plan #1	7,210.26	7,366.83	3,690.01	3,636.03	68.367	CC, ES
Guttersten State D35-790 - Wellbore #1 - Plan #1	8,800.00	6,950.00	3,930.43	3,869.87	64.898	SF
Guttersten USX D 23-17 (PR) - Wellbore #1 - Gyro Survey	11,266.90	6,807.19	5,077.91	5,002.90	67.700	CC
Guttersten USX D 23-17 (PR) - Wellbore #1 - Gyro Survey	11,300.00	6,807.06	5,078.02	5,002.76	67.473	ES
Guttersten USX D 23-17 (PR) - Wellbore #1 - Gyro Survey	12,900.00	6,800.00	5,334.05	5,248.61	62.430	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 D25-734
Project:	Mustang	TVD Reference:	KB @ 4802.00ft
Reference Site:	D Section 25	MD Reference:	KB @ 4802.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Guttersen D25-734	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDMP
Reference Design:	Plan #5	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 23						
Parker Blue D 23-09 (SI) - Wellbore #1 - Gyro Surveys	8,949.44	6,717.04	4,097.14	4,038.08	69.375	CC
Parker Blue D 23-09 (SI) - Wellbore #1 - Gyro Surveys	9,000.00	6,716.28	4,097.45	4,038.07	69.003	ES
Parker Blue D 23-09 (SI) - Wellbore #1 - Gyro Surveys	10,300.00	6,696.12	4,313.94	4,246.94	64.386	SF
Parker Blue D 23-10 (SI) - Wellbore #1 - Gyro Surveys	9,121.53	6,739.58	5,360.00	5,299.80	89.039	CC, ES
Parker Blue D 23-10 (SI) - Wellbore #1 - Gyro Surveys	11,300.00	6,722.13	5,785.76	5,712.68	79.173	SF
Parker Blue D 23-11 (SI) - Wellbore #1 - Gyro Surveys	9,536.14	6,810.03	6,830.62	6,767.55	108.297	CC
Parker Blue D 23-11 (SI) - Wellbore #1 - Gyro Surveys	9,600.00	6,809.71	6,830.92	6,767.41	107.568	ES
Parker Blue D 23-11 (SI) - Wellbore #1 - Gyro Surveys	12,700.00	6,793.31	7,527.75	7,445.67	91.715	SF
Parker Blue D 23-13 (SI) - Wellbore #1 - Gyro Surveys	8,348.62	6,670.70	8,367.75	8,312.30	150.918	CC
Parker Blue D 23-13 (SI) - Wellbore #1 - Gyro Surveys	8,400.00	6,670.38	8,367.91	8,312.17	150.144	ES
Parker Blue D 23-13 (SI) - Wellbore #1 - Gyro Surveys	13,200.00	6,633.33	9,672.33	9,589.48	116.747	SF
Parker Blue D 23-14 (SI) - Wellbore #1 - Gyro Surveys	8,253.21	6,797.12	6,870.18	6,814.83	124.128	CC
Parker Blue D 23-14 (SI) - Wellbore #1 - Gyro Surveys	8,300.00	6,796.95	6,870.33	6,814.73	123.556	ES
Parker Blue D 23-14 (SI) - Wellbore #1 - Gyro Surveys	11,800.00	6,782.80	7,731.68	7,656.39	102.698	SF
Parker Blue D 23-15 (SI) - Wellbore #1 - Gyro Surveys	7,820.20	6,731.26	5,584.83	5,531.89	105.490	CC, ES
Parker Blue D 23-15 (SI) - Wellbore #1 - Gyro Surveys	10,400.00	6,698.48	6,151.81	6,085.16	92.291	SF
Parker Blue D 23-3J (SI) - Wellbore #1 - Gyro Surveys	9,367.47	6,867.97	7,845.70	7,780.17	119.720	CC
Parker Blue D 23-3J (SI) - Wellbore #1 - Gyro Surveys	9,400.00	6,868.05	7,845.77	7,780.02	119.329	ES
Parker Blue D 23-3J (SI) - Wellbore #1 - Gyro Surveys	13,300.00	6,877.74	8,776.09	8,686.85	98.346	SF
Parker Red D 23-05 (PR) - Wellbore #1 - Gyro Surveys	10,581.24	6,683.17	8,288.66	8,218.94	118.882	CC
Parker Red D 23-05 (PR) - Wellbore #1 - Gyro Surveys	10,600.00	6,683.13	8,288.68	8,218.82	118.651	ES
Parker Red D 23-05 (PR) - Wellbore #1 - Gyro Surveys	14,600.00	6,674.33	9,211.53	9,117.17	97.620	SF
Parker Red D 23-2J (SI) - Wellbore #1 - Gyro Surveys	10,938.14	6,584.03	7,455.17	7,383.22	103.621	CC
Parker Red D 23-2J (SI) - Wellbore #1 - Gyro Surveys	11,000.00	6,584.81	7,455.43	7,383.02	102.966	ES
Parker Red D 23-2J (SI) - Wellbore #1 - Gyro Surveys	14,200.00	6,631.76	8,137.36	8,045.02	88.125	SF
Parker Red D 23-3 (PR) - Wellbore #1 - Gyro Surveys	11,931.60	6,600.00	6,977.16	6,897.94	88.071	CC
Parker Red D 23-3 (PR) - Wellbore #1 - Gyro Surveys	12,000.00	6,600.00	6,977.50	6,897.75	87.494	ES
Parker Red D 23-3 (PR) - Wellbore #1 - Gyro Surveys	14,600.00	6,562.28	7,469.85	7,373.86	77.823	SF
Parker Red D 23-4 (SI) - Wellbore #1 - Gyro Surveys	11,838.96	6,740.86	8,313.49	8,234.47	105.197	CC
Parker Red D 23-4 (SI) - Wellbore #1 - Gyro Surveys	11,900.00	6,741.15	8,313.72	8,234.22	104.580	ES
Parker Red D 23-4 (SI) - Wellbore #1 - Gyro Surveys	15,500.00	6,759.46	9,083.89	8,981.82	89.000	SF
Two E Ranch 1-23 (SI) - Wellbore #1 - Gyro Surveys	8,452.83	6,763.74	4,593.85	4,537.53	81.570	CC
Two E Ranch 1-23 (SI) - Wellbore #1 - Gyro Surveys	8,500.00	6,763.38	4,594.09	4,537.50	81.178	ES
Two E Ranch 1-23 (SI) - Wellbore #1 - Gyro Surveys	10,200.00	6,750.54	4,914.86	4,848.66	74.243	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 Guttersten D25-734
Project:	Mustang	TVD Reference:	KB @ 4802.00ft
Reference Site:	D Section 25	MD Reference:	KB @ 4802.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Guttersten D25-734	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDMP
Reference Design:	Plan #5	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 24						
Dalbey D 24-10 (PR) - Wellbore #1 - Gyro Surveys	8,981.03	6,697.09	43.50	-15.65	0.735	Level 1, CC, ES, SF
Dalbey D 24-15 (SI) - Wellbore #1 - Gyro Surveys	8,021.08	6,691.59	513.61	459.83	9.551	CC, ES, SF
Glazier 2-24 (PR) - Wellbore #1 - Gyro Surveys	11,193.70	6,686.92	602.39	528.30	8.131	CC, ES
Glazier 2-24 (PR) - Wellbore #1 - Gyro Surveys	11,200.00	6,686.88	602.42	528.31	8.129	SF
Guttersten 11-24 (SI) - Wellbore #1 - Gyro Surveys	11,973.06	6,749.32	3,077.02	2,997.19	38.540	CC
Guttersten 11-24 (SI) - Wellbore #1 - Gyro Surveys	12,000.00	6,749.28	3,077.14	2,997.08	38.436	ES
Guttersten 11-24 (SI) - Wellbore #1 - Gyro Surveys	12,600.00	6,748.33	3,140.24	3,056.18	37.357	SF
Guttersten 12-24 (SI) - Wellbore #1 - Gyro Surveys	10,676.18	6,723.13	3,092.64	3,022.23	43.923	CC
Guttersten 12-24 (SI) - Wellbore #1 - Gyro Surveys	10,700.00	6,723.05	3,092.73	3,022.13	43.810	ES
Guttersten 12-24 (SI) - Wellbore #1 - Gyro Surveys	11,400.00	6,720.51	3,176.21	3,101.08	42.276	SF
Guttersten 21-24 (SI) - Wellbore #1 - Gyro Surveys	11,986.45	6,724.64	1,758.61	1,678.56	21.969	CC
Guttersten 21-24 (SI) - Wellbore #1 - Gyro Surveys	12,000.00	6,724.62	1,758.66	1,678.49	21.938	ES
Guttersten 21-24 (SI) - Wellbore #1 - Gyro Surveys	12,200.00	6,724.34	1,771.52	1,689.95	21.716	SF
Guttersten 22-24 (PR) - Wellbore #1 - Gyro Surveys	10,757.73	6,712.90	1,707.98	1,636.96	24.048	CC, ES
Guttersten 22-24 (PR) - Wellbore #1 - Gyro Surveys	11,000.00	6,713.08	1,725.08	1,652.37	23.727	SF
Guttersten 24A (SI) - Wellbore #1 - Gyro Surveys	11,312.50	6,706.14	2,386.05	2,311.08	31.827	CC, ES
Guttersten 24A (SI) - Wellbore #1 - Gyro Surveys	11,700.00	6,709.13	2,417.31	2,339.65	31.127	SF
Guttersten 24J (PR) - Wellbore #1 - Gyro Surveys	12,611.89	6,691.46	2,296.93	2,212.34	27.151	CC, ES
Guttersten 24J (PR) - Wellbore #1 - Gyro Surveys	12,900.00	6,688.18	2,314.93	2,228.26	26.710	SF
Guttersten 24N (SI) - Wellbore #1 - MWD Surveys	11,350.38	6,672.56	1,157.81	1,083.68	15.619	CC, ES
Guttersten 24N (SI) - Wellbore #1 - MWD Surveys	11,500.00	6,671.64	1,167.43	1,092.27	15.533	SF
Guttersten 24S (PR) - Wellbore #1 - MWD Surveys	9,862.76	6,683.53	304.94	241.08	4.775	CC, ES, SF
Guttersten 43-24 (PR) - Wellbore #1 - Gyro Surveys	9,238.87	6,702.86	847.14	786.31	13.926	CC, ES
Guttersten 43-24 (PR) - Wellbore #1 - Gyro Surveys	9,300.00	6,702.47	849.34	788.30	13.914	SF
Guttersten 44-24 (PR) - Wellbore #1 - Gyro Surveys	8,001.05	6,692.49	920.55	866.89	17.154	CC, ES
Guttersten 44-24 (PR) - Wellbore #1 - Gyro Surveys	8,100.00	6,692.49	925.86	871.88	17.152	SF
Karch Blue D 24-12 (PA) - Wellbore #1 - Gyro Surveys	9,497.86	6,713.20	3,037.72	2,975.43	48.763	CC
Karch Blue D 24-12 (PA) - Wellbore #1 - Gyro Surveys	9,500.00	6,713.20	3,037.72	2,975.41	48.751	ES
Karch Blue D 24-12 (PA) - Wellbore #1 - Gyro Surveys	10,300.00	6,712.08	3,141.85	3,074.60	46.722	SF
Karch Blue D 24-14 (PR) - Wellbore #1 - No Surveys	7,971.64	6,702.80	1,472.52	1,308.13	8.958	CC, ES
Karch Blue D 24-14 (PR) - Wellbore #1 - No Surveys	8,000.00	6,702.75	1,472.79	1,308.24	8.951	SF
Karch Blue D24-11 (PA) - Wellbore #1 - Gyro Surveys	9,496.32	6,670.16	1,621.30	1,552.37	23.522	CC
Karch Blue D24-11 (PA) - Wellbore #1 - Gyro Surveys	9,500.00	6,670.19	1,621.30	1,552.35	23.512	ES
Karch Blue D24-11 (PA) - Wellbore #1 - Gyro Surveys	9,700.00	6,671.82	1,634.04	1,563.73	23.241	SF
Koerner 31-24 (SI) - Wellbore #1 - Gyro Surveys	12,036.86	6,678.69	435.67	355.39	5.427	CC, ES, SF
Koerner 32-24 (SI) - Wellbore #1 - Gyro Surveys	10,602.49	6,698.50	423.25	353.45	6.063	CC, ES, SF
Koerner 42-24 (SI) - Wellbore #1 - Gyro Surveys	10,590.52	6,706.90	882.51	812.70	12.641	CC, ES
Koerner 42-24 (SI) - Wellbore #1 - Gyro Surveys	10,600.00	6,707.02	882.56	812.71	12.635	SF
LF Ranch 1-24 (SI) - Wellbore #1 - Gyro Surveys	8,391.04	6,787.55	2,695.56	2,639.56	48.141	CC
LF Ranch 1-24 (SI) - Wellbore #1 - Gyro Surveys	8,400.00	6,787.61	2,695.57	2,639.52	48.095	ES
LF Ranch 1-24 (SI) - Wellbore #1 - Gyro Surveys	9,100.00	6,792.73	2,787.22	2,727.17	46.411	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 Guttersten D25-734
Project:	Mustang	TVD Reference:	KB @ 4802.00ft
Reference Site:	D Section 25	MD Reference:	KB @ 4802.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Guttersten D25-734	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDMP
Reference Design:	Plan #5	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 25						
Coors Energy 13-25D (PR) - Wellbore #1 - MWD Surveys	0.00	11.11	3,573.55			
Coors Energy 13-25D (PR) - Wellbore #1 - MWD Surveys	2,000.00	2,057.13	3,575.93	3,558.74	207.969	ES
Coors Energy 13-25D (PR) - Wellbore #1 - MWD Surveys	6,750.00	6,708.05	4,085.61	4,026.72	69.370	SF
Coors Energy 14-25D (PR) - Wellbore #1 - MWD Surveys	0.00	12.91	3,604.97			
Coors Energy 14-25D (PR) - Wellbore #1 - MWD Surveys	900.00	895.00	3,605.84	3,601.07	756.931	ES
Coors Energy 14-25D (PR) - Wellbore #1 - MWD Surveys	6,900.00	6,875.40	5,136.00	5,084.45	99.627	SF
Coors Energy 23-25D (PR) - Wellbore #1 - MWD Surveys	4,810.31	5,352.19	2,920.19	2,882.81	78.119	CC, ES
Coors Energy 23-25D (PR) - Wellbore #1 - MWD Surveys	6,700.00	6,660.96	3,201.66	3,153.42	66.373	SF
Coors Energy 24-25 (PR) - Wellbore #1 - Gyro Surveys	2,085.35	2,163.34	3,490.82	3,476.19	238.604	CC
Coors Energy 24-25 (PR) - Wellbore #1 - Gyro Surveys	2,100.00	2,177.02	3,490.85	3,476.11	236.981	ES
Coors Energy 24-25 (PR) - Wellbore #1 - Gyro Surveys	6,800.00	6,610.20	4,618.12	4,569.94	95.843	SF
Coors Energy 25HD (PR) - Wellbore #1 - MWD Surveys	216.98	232.19	3,593.83	3,592.86	3,729.169	CC
Coors Energy 25HD (PR) - Wellbore #1 - MWD Surveys	300.00	279.14	3,594.30	3,592.83	2,440.914	ES
Coors Energy 25HD (PR) - Wellbore #1 - MWD Surveys	6,850.00	6,849.09	4,926.04	4,866.61	82.890	SF
Coors Energy 25LD (PR) - Wellbore #1 - MWD Surveys	0.00	12.62	3,612.77			
Coors Energy 25LD (PR) - Wellbore #1 - MWD Surveys	600.00	595.00	3,614.29	3,611.31	1,211.027	ES
Coors Energy 25LD (PR) - Wellbore #1 - MWD Surveys	6,850.00	6,892.62	5,171.26	5,122.80	106.699	SF
Coors Energy 25TD (PR) - Wellbore #1 - MWD Surveys	1,306.47	1,294.51	2,792.76	2,785.15	366.736	CC
Coors Energy 25TD (PR) - Wellbore #1 - MWD Surveys	1,400.00	1,357.71	2,793.27	2,785.11	342.298	ES
Coors Energy 25TD (PR) - Wellbore #1 - MWD Surveys	6,750.00	6,624.65	4,645.85	4,598.98	99.122	SF
Coors Energy 25XD (PR) - Wellbore #1 - MWD Surveys	2,415.09	2,832.45	2,591.41	2,571.87	132.659	CC, ES
Coors Energy 25XD (PR) - Wellbore #1 - MWD Surveys	6,478.02	6,545.14	3,562.43	3,505.41	62.477	SF
Coors Energy 25YD (PR) - Wellbore #1 - MWD Surveys	1,166.30	1,155.19	2,755.77	2,749.15	416.403	CC
Coors Energy 25YD (PR) - Wellbore #1 - MWD Surveys	1,200.00	1,181.00	2,755.84	2,749.01	403.306	ES
Coors Energy 25YD (PR) - Wellbore #1 - MWD Surveys	6,700.00	6,896.67	4,822.73	4,767.97	88.073	SF
Coors Energy 33-25D (PR) - Wellbore #1 - MWD Surveys	2,794.25	3,401.39	2,202.31	2,177.78	89.767	CC
Coors Energy 33-25D (PR) - Wellbore #1 - MWD Surveys	2,800.00	3,404.88	2,202.32	2,177.75	89.624	ES
Coors Energy 33-25D (PR) - Wellbore #1 - MWD Surveys	6,550.00	6,570.30	2,677.54	2,626.04	51.996	SF
Coors Energy 34-25 (PR) - Wellbore #1 - Gyro Surveys	0.00	0.00	3,082.44			
Coors Energy 34-25 (PR) - Wellbore #1 - Gyro Surveys	6,700.00	6,484.70	4,330.56	4,283.27	91.560	SF
Coors Energy 43-25D (PR) - Wellbore #1 - MWD Surveys	2,796.05	3,498.54	2,252.47	2,229.49	98.016	CC
Coors Energy 43-25D (PR) - Wellbore #1 - MWD Surveys	3,600.00	4,406.00	2,255.63	2,224.13	71.604	ES
Coors Energy 43-25D (PR) - Wellbore #1 - MWD Surveys	6,500.00	6,589.98	2,761.68	2,709.02	52.443	SF
Coors Energy 44-25D (PR) - Wellbore #1 - MWD Surveys	2,028.59	2,046.55	2,735.00	2,721.90	208.772	CC, ES
Coors Energy 44-25D (PR) - Wellbore #1 - MWD Surveys	6,650.00	6,511.17	4,088.23	4,038.91	82.890	SF
Dalbey D 25-03 (SI) - Wellbore #1 - Gyro Surveys	6,625.36	6,455.21	2,093.94	2,047.02	44.633	CC
Dalbey D 25-03 (SI) - Wellbore #1 - Gyro Surveys	6,650.00	6,480.56	2,094.08	2,046.97	44.451	ES
Dalbey D 25-03 (SI) - Wellbore #1 - Gyro Surveys	7,000.00	6,733.33	2,135.67	2,086.09	43.077	SF
Dalbey D 25-05 (SI) - Wellbore #1 - Gyro Surveys	6,023.85	5,882.70	3,495.94	3,453.40	82.168	CC
Dalbey D 25-05 (SI) - Wellbore #1 - Gyro Surveys	6,200.00	6,051.97	3,496.10	3,452.26	79.737	ES
Dalbey D 25-05 (SI) - Wellbore #1 - Gyro Surveys	7,000.00	6,703.34	3,594.60	3,545.09	72.605	SF
Guttersten 11-25 (PR) - Wellbore #1 - MWD Surveys	6,913.81	6,676.76	3,029.90	2,982.09	63.377	CC, ES
Guttersten 11-25 (PR) - Wellbore #1 - MWD Surveys	7,500.00	6,779.02	3,108.92	3,058.29	61.404	SF
Guttersten 22-25 (PA) - Wellbore #1 - MWD Surveys	4,289.52	4,183.70	1,897.32	1,868.76	66.424	CC
Guttersten 22-25 (PA) - Wellbore #1 - MWD Surveys	4,400.00	4,282.69	1,897.79	1,868.44	64.676	ES
Guttersten 22-25 (PA) - Wellbore #1 - MWD Surveys	6,650.00	6,408.34	2,044.93	1,999.12	44.645	SF
Guttersten 25E (PR) - Wellbore #1 - MWD Surveys	7,343.72	6,742.51	3,421.53	3,371.48	68.364	CC, ES
Guttersten 25E (PR) - Wellbore #1 - MWD Surveys	8,400.00	6,726.12	3,580.83	3,525.89	65.174	SF
Guttersten 25KD (PR) - Wellbore #1 - MWD Surveys	100.00	81.63	1,566.37	1,566.10	5,746.190	CC
Guttersten 25KD (PR) - Wellbore #1 - MWD Surveys	500.00	474.99	1,567.57	1,565.15	649.251	ES
Guttersten 25KD (PR) - Wellbore #1 - MWD Surveys	6,850.00	6,899.91	3,103.75	3,051.32	59.205	SF
Guttersten 25O (PR) - Wellbore #1 - MWD Surveys	2,212.53	2,199.26	1,557.09	1,543.02	110.665	CC
Guttersten 25O (PR) - Wellbore #1 - MWD Surveys	2,400.00	2,380.71	1,557.71	1,542.34	101.365	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 D25-734
Project:	Mustang	TVD Reference:	KB @ 4802.00ft
Reference Site:	D Section 25	MD Reference:	KB @ 4802.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Guttersten D25-734	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDMP
Reference Design:	Plan #5	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						
Guttersten 25O (PR) - Wellbore #1 - MWD Surveys	6,600.00	6,374.85	2,087.07	2,041.37	45.670	SF
Guttersten D 25-17 (SI) - Wellbore #1 - Gyro Surveys	4,572.40	4,444.08	82.00	50.22	2.580	CC, ES
Guttersten D 25-17 (SI) - Wellbore #1 - Gyro Surveys	4,600.00	4,470.46	82.40	50.41	2.576	SF
Guttersten D25-715 - Wellbore #1 - Plan #3	2,000.00	2,001.00	75.00	61.12	5.405	CC, ES
Guttersten D25-715 - Wellbore #1 - Plan #3	2,100.00	2,099.57	76.47	61.89	5.244	SF
Guttersten D25-724 - Wellbore #1 - Plan #3	2,000.00	2,000.00	37.50	23.63	2.703	CC, ES
Guttersten D25-724 - Wellbore #1 - Plan #3	2,100.00	2,099.80	38.28	23.70	2.625	SF
Guttersten D25-743 - Wellbore #1 - Plan #3	2,000.00	2,000.00	37.50	23.63	2.703	CC
Guttersten D25-743 - Wellbore #1 - Plan #3	2,100.00	2,099.16	38.09	23.51	2.612	ES
Guttersten D25-743 - Wellbore #1 - Plan #3	2,200.00	2,198.30	39.87	24.59	2.610	SF
Guttersten D25-753 - Wellbore #1 - Plan #3	17,709.82	17,754.65	1,218.53	1,019.22	6.114	CC, ES
Guttersten D25-753 - Wellbore #1 - Plan #3	17,717.36	17,749.89	1,218.57	1,019.25	6.114	SF
Guttersten D25-762 - Wellbore #1 - Plan #3	17,702.85	17,634.09	1,839.16	1,640.11	9.240	CC
Guttersten D25-762 - Wellbore #1 - Plan #3	17,717.36	17,634.09	1,839.21	1,640.04	9.234	ES, SF
Guttersten D25-772 - Wellbore #1 - Plan #3	1,911.24	1,925.24	2,227.97	2,214.69	167.685	CC
Guttersten D25-772 - Wellbore #1 - Plan #3	2,400.00	2,244.48	2,229.58	2,213.46	138.329	ES
Guttersten D25-772 - Wellbore #1 - Plan #3	17,717.36	17,786.62	2,459.01	2,260.00	12.356	SF
Guttersten D25-781 - Wellbore #1 - Plan #3	1,910.78	1,925.78	2,259.78	2,246.50	170.075	CC
Guttersten D25-781 - Wellbore #1 - Plan #3	2,200.00	2,121.03	2,260.66	2,245.66	150.701	ES
Guttersten D25-781 - Wellbore #1 - Plan #3	17,717.36	17,856.05	3,078.56	2,879.19	15.441	SF
Guttersten State D36-714 - Wellbore #1 - Plan #1	2,606.80	2,596.05	138.01	119.95	7.642	CC, ES
Guttersten State D36-714 - Wellbore #1 - Plan #1	2,700.00	2,681.17	142.01	123.39	7.629	SF
Guttersten State D36-724 - Wellbore #1 - Plan #1	2,707.66	2,703.18	84.45	65.69	4.502	CC, ES, SF
Guttersten State D36-733 - Wellbore #1 - Plan #1	2,788.36	2,782.12	3.19	-16.07	0.166	Level 1, CC, ES, SF
Guttersten State D36-743 - Wellbore #1 - Plan #1	2,800.45	2,785.77	57.31	38.08	2.979	CC, ES, SF
Guttersten State D36-752 - Wellbore #1 - Plan #1	4,620.53	4,621.24	1,713.68	1,680.75	52.039	CC
Guttersten State D36-752 - Wellbore #1 - Plan #1	4,700.00	4,688.16	1,714.22	1,680.71	51.163	ES
Guttersten State D36-752 - Wellbore #1 - Plan #1	6,500.00	6,203.75	1,991.29	1,945.16	43.164	SF
Guttersten State D36-762 - Wellbore #1 - Plan #1	4,032.42	3,892.35	1,954.29	1,926.51	70.355	CC
Guttersten State D36-762 - Wellbore #1 - Plan #1	4,100.00	3,950.15	1,954.60	1,926.35	69.196	ES
Guttersten State D36-762 - Wellbore #1 - Plan #1	6,550.00	6,043.46	2,351.93	2,306.66	51.947	SF
Guttersten State D36-771 - Wellbore #1 - Plan #1	3,296.65	3,009.35	2,086.76	2,064.99	95.841	CC
Guttersten State D36-771 - Wellbore #1 - Plan #1	3,300.00	3,011.48	2,086.76	2,064.97	95.760	ES
Guttersten State D36-771 - Wellbore #1 - Plan #1	6,600.00	5,775.09	2,756.97	2,712.89	62.543	SF
Guttersten State D36-781 - Wellbore #1 - Plan #1	3,006.76	2,676.69	2,167.76	2,148.21	110.892	CC, ES
Guttersten State D36-781 - Wellbore #1 - Plan #1	6,600.00	5,444.94	3,117.13	3,074.59	73.278	SF
Karch Blue D 25-02 (DA) - Wellbore #1 - No Surveys	6,649.28	6,404.75	419.08	266.33	2.744	CC
Karch Blue D 25-02 (DA) - Wellbore #1 - No Surveys	6,650.00	6,405.35	419.08	266.31	2.743	ES
Karch Blue D 25-02 (DA) - Wellbore #1 - No Surveys	6,700.00	6,446.29	420.47	266.65	2.733	SF
Karch Blue D 25-08 (SI) - Wellbore #1 - Gyro Surveys	2,025.61	1,992.36	521.15	507.34	37.724	CC
Karch Blue D 25-08 (SI) - Wellbore #1 - Gyro Surveys	2,100.00	2,066.94	521.51	507.17	36.364	ES
Karch Blue D 25-08 (SI) - Wellbore #1 - Gyro Surveys	3,000.00	2,934.36	608.34	587.81	29.632	SF
Karch Blue D25-07 (SI) - Wellbore #1 - Gyro Surveys	3,030.88	2,980.63	784.24	763.41	37.649	CC
Karch Blue D25-07 (SI) - Wellbore #1 - Gyro Surveys	3,100.00	3,048.16	784.48	763.16	36.801	ES
Karch Blue D25-07 (SI) - Wellbore #1 - Gyro Surveys	5,100.00	4,938.69	1,021.67	986.08	28.707	SF
L F Ranch 2-25 (PR) - Wellbore #1 - Gyro Surveys	5,619.05	5,438.98	811.78	772.39	20.613	CC
L F Ranch 2-25 (PR) - Wellbore #1 - Gyro Surveys	5,700.00	5,519.04	811.96	771.99	20.311	ES
L F Ranch 2-25 (PR) - Wellbore #1 - Gyro Surveys	6,650.00	6,414.02	870.29	823.50	18.600	SF
LF Ranches 1 (PA) - Wellbore #1 - No Surveys	4,934.67	4,785.12	436.73	323.18	3.846	CC
LF Ranches 1 (PA) - Wellbore #1 - No Surveys	5,000.00	4,847.31	437.19	322.14	3.800	ES
LF Ranches 1 (PA) - Wellbore #1 - No Surveys	5,300.00	5,132.89	450.84	328.95	3.699	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 D25-734
Project:	Mustang	TVD Reference:	KB @ 4802.00ft
Reference Site:	D Section 25	MD Reference:	KB @ 4802.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Guttersen D25-734	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDMP
Reference Design:	Plan #5	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 26						
Adam Red D 26-11 (PR) - Wellbore #1 - Gyro Surveys	5,387.23	5,300.00	7,624.55	7,586.58	200.780	CC
Adam Red D 26-11 (PR) - Wellbore #1 - Gyro Surveys	5,500.00	5,387.29	7,624.81	7,586.09	196.886	ES
Adam Red D 26-11 (PR) - Wellbore #1 - Gyro Surveys	9,300.00	6,937.64	8,855.61	8,796.47	149.736	SF
Adam Red D 26-12 (PR) - Wellbore #1 - Gyro Surveys	6,320.66	6,164.61	8,771.06	8,720.98	175.158	CC
Adam Red D 26-12 (PR) - Wellbore #1 - Gyro Surveys	6,500.00	6,335.61	8,771.35	8,719.50	169.160	ES
Adam Red D 26-12 (PR) - Wellbore #1 - Gyro Surveys	9,500.00	6,774.80	9,954.07	9,886.78	147.931	SF
Adam Red D 26-13 (PR) - Wellbore #1 - Gyro Surveys	2,690.47	2,750.08	8,895.72	8,876.90	472.627	CC
Adam Red D 26-13 (PR) - Wellbore #1 - Gyro Surveys	2,800.00	2,800.00	8,896.07	8,876.69	458.982	ES
Adam Red D 26-13 (PR) - Wellbore #1 - Gyro Surveys	8,600.00	8,600.00	9,943.03	9,880.93	160.112	SF
Adam Red D 26-14 (PR) - Wellbore #1 - Gyro Surveys	1,194.43	1,259.44	7,644.72	7,636.44	923.380	CC
Adam Red D 26-14 (PR) - Wellbore #1 - Gyro Surveys	2,000.00	2,010.07	7,648.93	7,635.15	555.113	ES
Adam Red D 26-14 (PR) - Wellbore #1 - Gyro Surveys	7,250.00	6,813.89	8,065.98	8,010.53	145.460	SF
Coors Energy 14-25H (PR) - Wellbore #1 - MWD Surveys	5,795.34	10,327.75	3,252.39	3,129.84	26.538	CC
Coors Energy 14-25H (PR) - Wellbore #1 - MWD Surveys	5,800.00	10,327.52	3,252.40	3,129.78	26.526	ES
Coors Energy 14-25H (PR) - Wellbore #1 - MWD Surveys	6,400.00	10,281.00	3,307.62	3,180.06	25.929	SF
Heyde 1-26 (PR) - Wellbore #1 - Gyro Surveys	6,748.21	6,500.00	4,684.13	4,636.53	98.397	CC
Heyde 1-26 (PR) - Wellbore #1 - Gyro Surveys	6,750.00	6,500.00	4,684.13	4,636.52	98.380	ES
Heyde 1-26 (PR) - Wellbore #1 - Gyro Surveys	8,400.00	6,716.01	5,069.99	5,014.54	91.422	SF
Heyde 26ND (PR) - Wellbore #1 - MWD Surveys	6,735.85	6,814.49	6,283.23	6,231.87	122.327	CC
Heyde 26ND (PR) - Wellbore #1 - MWD Surveys	6,750.00	6,823.49	6,283.27	6,231.81	122.089	ES
Heyde 26ND (PR) - Wellbore #1 - MWD Surveys	9,900.00	7,036.65	7,328.77	7,259.76	106.212	SF
Heyde 26RD (PR) - Wellbore #1 - MWD Surveys	7,286.69	6,868.34	4,948.61	4,895.38	92.976	CC
Heyde 26RD (PR) - Wellbore #1 - MWD Surveys	7,300.00	6,868.22	4,948.63	4,895.34	92.876	ES
Heyde 26RD (PR) - Wellbore #1 - MWD Surveys	9,400.00	6,844.13	5,381.05	5,317.14	84.198	SF
Heyde 26VD (PR) - Wellbore #1 - MWD Surveys	6,595.22	6,571.31	3,820.36	3,769.63	75.302	CC
Heyde 26VD (PR) - Wellbore #1 - MWD Surveys	6,600.00	6,574.12	3,820.37	3,769.60	75.254	ES
Heyde 26VD (PR) - Wellbore #1 - MWD Surveys	7,400.00	6,767.05	3,981.12	3,925.42	71.478	SF
Heyde 31-26 (PR) - Wellbore #1 - No Surveys	6,938.46	6,703.04	5,920.94	5,871.80	120.490	CC
Heyde 31-26 (PR) - Wellbore #1 - No Surveys	6,950.00	6,709.07	5,920.96	5,871.75	120.313	ES
Heyde 31-26 (PR) - Wellbore #1 - No Surveys	9,900.00	6,827.75	6,737.79	6,674.43	106.331	SF
Heyde 32-26 (SI) - Wellbore #1 - Gyro Surveys	6,554.51	6,437.63	5,933.83	5,887.24	127.356	CC, ES
Heyde 32-26 (SI) - Wellbore #1 - Gyro Surveys	8,600.00	6,882.32	6,592.87	6,536.24	116.418	SF
Heyde 41-26 (PR) - Wellbore #1 - Gyro Surveys	7,006.66	6,713.08	4,279.03	4,229.53	86.458	CC, ES
Heyde 41-26 (PR) - Wellbore #1 - Gyro Surveys	8,500.00	6,727.79	4,574.27	4,518.06	81.390	SF
Heyde 42-26 (PR) - Wellbore #1 - Gyro Surveys	6,490.44	6,305.47	4,558.01	4,512.13	99.337	CC
Heyde 42-26 (PR) - Wellbore #1 - Gyro Surveys	6,500.00	6,313.51	4,558.03	4,512.08	99.193	ES
Heyde 42-26 (PR) - Wellbore #1 - Gyro Surveys	7,200.00	6,738.33	4,696.56	4,646.15	93.155	SF
HSR-Waste Services 10-26 (SI) - Wellbore #1 - No Surve	3,153.45	3,170.53	6,073.12	5,998.67	81.574	CC
HSR-Waste Services 10-26 (SI) - Wellbore #1 - No Surve	4,600.00	4,547.54	6,089.26	5,981.76	56.642	ES
HSR-Waste Services 10-26 (SI) - Wellbore #1 - No Surve	7,050.00	6,740.24	6,308.98	6,147.73	39.125	SF
HSR-Waste Services 15-26 (SI) - Wellbore #1 - No Surve	2,000.00	2,060.00	6,648.75	6,600.61	138.123	CC
HSR-Waste Services 15-26 (SI) - Wellbore #1 - No Surve	2,600.00	2,655.62	6,655.19	6,593.01	107.037	ES
HSR-Waste Services 15-26 (SI) - Wellbore #1 - No Surve	7,000.00	6,736.07	7,042.18	6,881.23	43.753	SF
HSR-Waste Services 16-26 (SI) - Wellbore #1 - Gyro Sur	0.00	0.00	5,420.08			
HSR-Waste Services 16-26 (SI) - Wellbore #1 - Gyro Sur	6,950.00	6,669.74	6,056.55	6,007.35	123.099	SF
HSR-Waste Services 9-26 (PA) - Wellbore #1 - Gyro Sur	1,854.15	1,879.19	4,864.99	4,852.17	379.496	CC
HSR-Waste Services 9-26 (PA) - Wellbore #1 - Gyro Sur	2,300.00	2,300.00	4,865.82	4,849.94	306.382	ES
HSR-Waste Services 9-26 (PA) - Wellbore #1 - Gyro Sur	7,050.00	6,740.46	5,183.13	5,133.28	103.970	SF
Waste Management 11-26 (PR) - Wellbore #1 - Gyro Sur	6,857.19	6,352.99	8,339.07	8,291.52	175.386	CC
Waste Management 11-26 (PR) - Wellbore #1 - Gyro Sur	6,900.00	6,374.44	8,339.27	8,291.46	174.417	ES
Waste Management 11-26 (PR) - Wellbore #1 - Gyro Sur	12,100.00	6,418.61	9,993.70	9,920.04	135.668	SF
Waste Management 12-26 (PR) - Wellbore #1 - Gyro Sur	6,566.04	6,284.37	8,531.13	8,485.05	185.163	CC
Waste Management 12-26 (PR) - Wellbore #1 - Gyro Sur	6,600.00	6,310.41	8,531.33	8,485.03	184.230	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 D25-734
Project:	Mustang	TVD Reference:	KB @ 4802.00ft
Reference Site:	D Section 25	MD Reference:	KB @ 4802.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Guttersten D25-734	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDMP
Reference Design:	Plan #5	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 26						
Waste Management 12-26 (PR) - Wellbore #1 - Gyro Sur	10,700.00	6,503.75	9,985.66	9,919.77	151.546	SF
Waste Management 12-26A (PR) - Wellbore #1 - Gyro Su	6,637.85	6,302.59	7,812.87	7,766.44	168.264	CC
Waste Management 12-26A (PR) - Wellbore #1 - Gyro Su	6,650.00	6,311.20	7,812.90	7,766.38	167.966	ES
Waste Management 12-26A (PR) - Wellbore #1 - Gyro Su	8,200.00	8,200.00	8,095.10	8,035.30	135.359	SF
Waste Management 21-26 (PR) - Wellbore #1 - Gyro Sur	7,021.27	6,824.27	6,871.33	6,821.58	138.120	CC
Waste Management 21-26 (PR) - Wellbore #1 - Gyro Sur	7,050.00	6,835.20	6,871.46	6,821.58	137.744	ES
Waste Management 21-26 (PR) - Wellbore #1 - Gyro Sur	10,900.00	6,836.52	8,001.68	7,932.98	116.470	SF
Waste Management 22-26 (PR) - Wellbore #1 - Gyro Sur	6,578.77	6,440.23	7,147.38	7,100.69	153.094	CC
Waste Management 22-26 (PR) - Wellbore #1 - Gyro Sur	6,600.00	6,457.66	7,147.47	7,100.64	152.603	ES
Waste Management 22-26 (PR) - Wellbore #1 - Gyro Sur	10,000.00	6,876.94	8,397.97	8,334.96	133.278	SF
Waste Management 26FD (PR) - Wellbore #1 - MWD Su	1,031.92	1,085.00	8,219.09	8,212.19	1,191.727	CC, ES
Waste Management 26FD (PR) - Wellbore #1 - MWD Su	10,500.00	6,970.89	9,962.45	9,892.10	141.602	SF
Waste Management 26KD (PR) - Wellbore #1 - MWD Su	6,499.18	6,419.72	7,921.15	7,867.88	148.707	CC
Waste Management 26KD (PR) - Wellbore #1 - MWD Su	6,500.00	6,420.26	7,921.15	7,867.87	148.694	ES
Waste Management 26KD (PR) - Wellbore #1 - MWD Su	9,600.00	6,661.76	9,065.62	8,999.38	136.845	SF
Waste Management D 26-25 (SI) - Wellbore #1 - Gyro Su	2,066.37	2,128.37	8,146.29	8,131.84	563.638	CC
Waste Management D 26-25 (SI) - Wellbore #1 - Gyro Su	2,200.00	2,200.00	8,146.73	8,131.55	536.781	ES
Waste Management D 26-25 (SI) - Wellbore #1 - Gyro Su	9,300.00	6,845.82	9,518.63	9,459.95	162.197	SF
Waste Management 26JD (PR) - Wellbore #1 - MWD Surv	7,265.08	6,804.88	7,618.64	7,564.58	140.906	CC
Waste Management 26JD (PR) - Wellbore #1 - MWD Surv	7,300.00	6,805.42	7,618.71	7,564.50	140.517	ES
Waste Management 26JD (PR) - Wellbore #1 - MWD Surv	11,700.00	6,804.34	8,813.81	8,736.22	113.596	SF
DD Section 06						
Guttersten DD18-715 - Guttersten DD18-715 - Plan #1	17,717.36	12,558.60	6,534.87	6,378.63	41.826	CC, ES, SF
Guttersten DD18-725 - Guttersten DD18-725 - Plan #1	17,717.36	12,397.72	5,875.00	5,719.58	37.801	CC, ES, SF
Guttersten DD18-730 - Guttersten DD18-730 - Plan #1	17,717.36	12,589.17	5,544.56	5,389.07	35.658	CC, ES, SF
Guttersten DD18-735 - Guttersten DD18-735 - Plan #1	17,717.36	12,514.63	5,213.24	5,057.65	33.506	CC, ES, SF
Guttersten DD18-746 - Guttersten DD18-746 - Plan #1	17,717.36	12,511.48	4,553.16	4,397.32	29.217	CC, ES, SF
Guttersten DD18-750 - Guttersten DD18-750 - Plan #1	17,700.00	12,808.26	4,223.64	4,066.70	26.913	ES, SF
Guttersten DD18-750 - Guttersten DD18-750 - Plan #1	17,717.36	12,774.38	4,223.55	4,066.72	26.931	CC
Guttersten DD18-754 - Guttersten DD18-754 - Plan #1	17,717.36	12,584.58	3,891.67	3,735.26	24.882	CC, ES, SF
Guttersten DD18-765 - Guttersten DD18-765 - Plan #1	17,717.36	12,406.69	3,231.89	3,076.24	20.764	CC, ES, SF
Guttersten DD18-770 - Guttersten DD18-770 - Plan #1	17,717.36	12,608.77	2,902.45	2,746.66	18.630	CC, ES, SF
Guttersten DD18-775 - Guttersten DD18-775 - Plan #1	17,717.36	12,486.11	2,570.13	2,414.52	16.517	CC, ES, SF
Guttersten DD18-785 - Guttersten DD18-785 - Plan #1	17,717.36	12,471.92	1,911.07	1,755.46	12.281	CC, ES, SF

Noble Energy, Inc.
Anticollision Summary Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Guttersen D25-734
Project:	Mustang	TVD Reference:	KB @ 4802.00ft
Reference Site:	D Section 25	MD Reference:	KB @ 4802.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Guttersen D25-734	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDMP
Reference Design:	Plan #5	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 18						
Guttersen 18D - Wellbore #1 - Wellbore #1 - As Drilled	13,941.22	6,630.70	5,508.35	5,414.88	58.931	CC
Guttersen 18D - Wellbore #1 - Wellbore #1 - As Drilled	14,000.00	6,629.84	5,508.66	5,414.77	58.670	ES
Guttersen 18D - Wellbore #1 - Wellbore #1 - As Drilled	15,300.00	6,610.62	5,673.43	5,572.13	56.009	SF
Guttersen 24-18 - Wellbore #1 - Wellbore #1 - As Drilled	13,287.38	6,690.59	3,630.57	3,541.66	40.834	CC
Guttersen 24-18 - Wellbore #1 - Wellbore #1 - As Drilled	13,300.00	6,690.57	3,630.59	3,541.59	40.794	ES
Guttersen 24-18 - Wellbore #1 - Wellbore #1 - As Drilled	13,900.00	6,689.52	3,681.89	3,589.52	39.861	SF
Guttersen 33-18 - Wellbore #1 - Wellbore #1 - As Drilled	14,703.41	6,715.43	4,911.17	4,810.42	48.745	CC, ES
Guttersen 33-18 - Wellbore #1 - Wellbore #1 - As Drilled	15,700.00	6,706.57	5,011.26	4,904.71	47.034	SF
Guttersen 34-18 - Wellbore #1 - Wellbore #1 - As Drilled	13,262.23	6,722.30	4,842.58	4,754.05	54.704	CC
Guttersen 34-18 - Wellbore #1 - Wellbore #1 - As Drilled	13,300.00	6,722.59	4,842.72	4,753.93	54.539	ES
Guttersen 34-18 - Wellbore #1 - Wellbore #1 - As Drilled	14,400.00	6,730.60	4,974.44	4,879.33	52.306	SF
Guttersen 43-18 - Wellbore #1 - Wellbore #1 - As Drilled	14,705.86	6,724.54	6,108.43	6,005.24	59.196	CC, ES
Guttersen 43-18 - Wellbore #1 - Wellbore #1 - As Drilled	16,200.00	6,715.59	6,288.50	6,176.49	56.143	SF
Guttersen 44-18 - Wellbore #1 - Wellbore #1 - As Drilled	13,337.66	6,696.92	6,185.11	6,096.17	69.545	CC
Guttersen 44-18 - Wellbore #1 - Wellbore #1 - As Drilled	13,400.00	6,696.98	6,185.42	6,096.03	69.197	ES
Guttersen 44-18 - Wellbore #1 - Wellbore #1 - As Drilled	15,100.00	6,698.50	6,431.28	6,332.01	64.780	SF
Karch Blue DD18-03J - Wellbore #1 - Wellbore #1 - As D	14,342.05	6,764.08	3,230.27	3,131.87	32.828	CC, ES
Karch Blue DD18-03J - Wellbore #1 - Wellbore #1 - As D	14,800.00	6,763.47	3,262.57	3,161.59	32.311	SF
Karch Blue DD18-12 - Original Drilling - Original Drilling -	14,717.72	6,679.56	2,092.32	1,987.13	19.890	CC, ES
Karch Blue DD18-12 - Original Drilling - Original Drilling -	14,900.00	6,680.01	2,100.25	1,994.10	19.786	SF
Karch Blue DD18-13 - Wellbore #1 - Wellbore #1 - As Dri	13,227.97	6,667.53	2,048.36	1,959.28	22.994	CC, ES
Karch Blue DD18-13 - Wellbore #1 - Wellbore #1 - As Dri	13,400.00	6,669.76	2,055.57	1,965.57	22.839	SF
SPIKE STATE GWS DD #18-1J(PA) - SPIKE STATE GW	16,647.61	6,739.51	5,518.18	5,290.57	24.243	CC
SPIKE STATE GWS DD #18-1J(PA) - SPIKE STATE GW	16,700.00	6,739.41	5,518.43	5,290.43	24.203	ES
SPIKE STATE GWS DD #18-1J(PA) - SPIKE STATE GW	17,400.00	6,738.18	5,569.24	5,336.82	23.962	SF
DD Section 19						
Champlin 366 Amoco B1 (PR) - Wellbore #1 - Gyro Surv	10,978.59	6,614.55	5,850.03	5,777.82	81.017	CC
Champlin 366 Amoco B1 (PR) - Wellbore #1 - Gyro Surv	11,000.00	6,613.66	5,850.07	5,777.72	80.860	ES
Champlin 366 Amoco B1 (PR) - Wellbore #1 - Gyro Surv	16,000.00	16,000.00	7,708.47	7,585.19	62.531	SF
Champlin 366 Amoco D1 (PA) - Wellbore #1 - No Survey	8,363.42	6,722.11	3,234.08	3,067.27	19.387	CC, ES
Champlin 366 Amoco D1 (PA) - Wellbore #1 - No Survey	8,700.00	6,721.52	3,251.55	3,083.08	19.300	SF
Guttersen 31-19 (PR) - Wellbore #1 - Gyro Surveys	11,968.57	6,691.16	4,924.37	4,844.60	61.734	CC
Guttersen 31-19 (PR) - Wellbore #1 - Gyro Surveys	12,000.00	6,690.59	4,924.47	4,844.49	61.569	ES
Guttersen 31-19 (PR) - Wellbore #1 - Gyro Surveys	13,200.00	6,667.62	5,075.95	4,989.18	58.494	SF
Guttersen 44-19 (SI) - Wellbore #1 - No Surveys	8,111.78	6,767.55	6,266.74	6,100.35	37.663	CC, ES
Guttersen 44-19 (SI) - Wellbore #1 - No Surveys	9,400.00	6,765.28	6,397.78	6,224.67	36.958	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 Guttersten D25-734
Project:	Mustang	TVD Reference:	KB @ 4802.00ft
Reference Site:	D Section 25	MD Reference:	KB @ 4802.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Guttersten D25-734	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDMP
Reference Design:	Plan #5	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
DD Section 30						
Guttersten 11-30 (PR) - Wellbore #1 - Gyro Surveys	4,862.29	4,758.63	2,095.87	2,061.86	61.631	CC
Guttersten 11-30 (PR) - Wellbore #1 - Gyro Surveys	4,900.00	4,790.51	2,095.94	2,061.67	61.167	ES
Guttersten 11-30 (PR) - Wellbore #1 - Gyro Surveys	7,179.24	6,682.91	2,262.55	2,212.67	45.360	SF
Guttersten 12-30 (PR) - Wellbore #1 - Gyro Surveys	1,321.67	1,289.69	1,773.55	1,764.71	200.672	CC
Guttersten 12-30 (PR) - Wellbore #1 - Gyro Surveys	1,900.00	1,857.80	1,774.94	1,762.05	137.680	ES
Guttersten 12-30 (PR) - Wellbore #1 - Gyro Surveys	6,650.00	6,335.41	2,543.57	2,497.34	55.020	SF
Guttersten 22-30 (PR) - Wellbore #1 - Gyro Surveys	2,022.92	2,019.25	3,161.89	3,147.99	227.414	CC
Guttersten 22-30 (PR) - Wellbore #1 - Gyro Surveys	2,100.00	2,094.96	3,162.25	3,147.80	218.938	ES
Guttersten 22-30 (PR) - Wellbore #1 - Gyro Surveys	6,900.00	6,530.60	3,852.88	3,804.84	80.195	SF
Guttersten 30 A (PR) - Wellbore #1 - Gyro Surveys	0.00	0.00	2,561.42			
Guttersten 30 A (PR) - Wellbore #1 - Gyro Surveys	2,100.00	2,064.32	2,569.72	2,555.38	179.210	ES
Guttersten 30 A (PR) - Wellbore #1 - Gyro Surveys	7,000.00	6,625.65	3,105.23	3,056.32	63.486	SF
Guttersten State DD30-715 - Guttersten State DD30-715 -	2,000.00	2,051.00	6,426.61	6,412.56	457.226	CC, ES
Guttersten State DD30-715 - Guttersten State DD30-715 -	13,600.00	17,403.77	6,670.67	6,514.77	42.787	SF
Guttersten State DD30-725 - Guttersten State DD30-725 -	6,185.52	11,414.01	5,931.34	5,863.92	87.975	CC
Guttersten State DD30-725 - Guttersten State DD30-725 -	12,500.00	17,269.51	5,938.43	5,788.87	39.705	ES
Guttersten State DD30-725 - Guttersten State DD30-725 -	13,400.00	17,269.51	6,008.85	5,854.51	38.932	SF
Guttersten State DD30-735 - Guttersten State DD30-735 -	12,474.34	17,436.50	5,277.76	5,128.67	35.399	CC
Guttersten State DD30-735 - Guttersten State DD30-735 -	12,500.00	17,436.50	5,277.83	5,128.57	35.360	ES
Guttersten State DD30-735 - Guttersten State DD30-735 -	13,100.00	17,436.50	5,314.72	5,162.40	34.893	SF
Guttersten State DD30-745 - Guttersten State DD30-745 -	12,466.17	17,588.29	4,616.75	4,468.18	31.076	CC
Guttersten State DD30-745 - Guttersten State DD30-745 -	12,500.00	17,588.29	4,616.87	4,468.12	31.037	ES
Guttersten State DD30-745 - Guttersten State DD30-745 -	12,900.00	17,588.29	4,637.08	4,486.55	30.805	SF
Guttersten State DD30-755 - Guttersten State DD30-755 -	12,454.67	17,391.31	3,880.42	3,730.93	25.958	CC, ES
Guttersten State DD30-755 - Guttersten State DD30-755 -	12,800.00	17,383.05	3,895.54	3,744.31	25.759	SF
Guttersten State DD30-766 - Guttersten State DD30-766 -	12,449.01	17,329.34	3,170.56	3,022.41	21.402	CC, ES
Guttersten State DD30-766 - Guttersten State DD30-766 -	12,700.00	17,329.34	3,180.51	3,031.33	21.320	SF
Guttersten State DD30-775 - Guttersten State DD30-775 -	12,441.40	17,481.59	2,563.34	2,415.54	17.344	CC, ES
Guttersten State DD30-775 - Guttersten State DD30-775 -	12,500.00	17,481.59	2,564.01	2,416.01	17.324	SF
Guttersten State DD30-785 - Guttersten State DD30-785 -	12,428.76	17,805.81	1,920.85	1,772.53	12.951	CC, ES, SF
Karch Blue DD 30-12 (PA) - Wellbore #1 - No Surveys	2,000.00	1,974.00	2,121.99	2,075.58	45.716	CC
Karch Blue DD 30-12 (PA) - Wellbore #1 - No Surveys	2,100.00	2,073.98	2,123.43	2,074.66	43.536	ES
Karch Blue DD 30-12 (PA) - Wellbore #1 - No Surveys	6,650.00	6,420.35	3,281.86	3,129.10	21.483	SF
Karch Blue DD 30-14 (PA) - Wellbore #1 - No Surveys	2,000.00	1,980.00	4,246.14	4,199.61	91.243	CC
Karch Blue DD 30-14 (PA) - Wellbore #1 - No Surveys	2,100.00	2,079.98	4,247.64	4,198.74	86.875	ES
Karch Blue DD 30-14 (PA) - Wellbore #1 - No Surveys	6,800.00	6,541.92	5,484.31	5,328.53	35.206	SF
Karch Blue DD 30-3 J (PA) - Wellbore #1 - No Surveys	2,000.00	1,979.00	3,397.30	3,350.78	73.034	CC
Karch Blue DD 30-3 J (PA) - Wellbore #1 - No Surveys	2,100.00	2,078.98	3,398.65	3,349.77	69.539	ES
Karch Blue DD 30-3 J (PA) - Wellbore #1 - No Surveys	6,800.00	6,540.92	4,557.27	4,401.50	29.256	SF
L F Ranch 2-30 (PR) - Wellbore #1 - Gyro Surveys	2,136.35	2,132.74	3,267.15	3,252.43	222.033	CC
L F Ranch 2-30 (PR) - Wellbore #1 - Gyro Surveys	2,600.00	2,593.60	3,268.99	3,251.03	181.999	ES
L F Ranch 2-30 (PR) - Wellbore #1 - Gyro Surveys	7,291.48	6,849.75	3,641.12	3,590.25	71.580	SF
State 19 (PA) - Wellbore #1 - NO Surveys	2,000.00	2,030.00	5,373.35	5,325.81	113.036	CC
State 19 (PA) - Wellbore #1 - NO Surveys	2,300.00	2,329.45	5,376.62	5,322.03	98.487	ES
State 19 (PA) - Wellbore #1 - NO Surveys	7,250.00	6,769.72	5,882.57	5,720.19	36.228	SF

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