

Project: Mustang
Site: D Section 25
Well: Guttersen D25-734
Wellbore: Wellbore #1
Design: Plan #2

Northern Region - DJ Basin

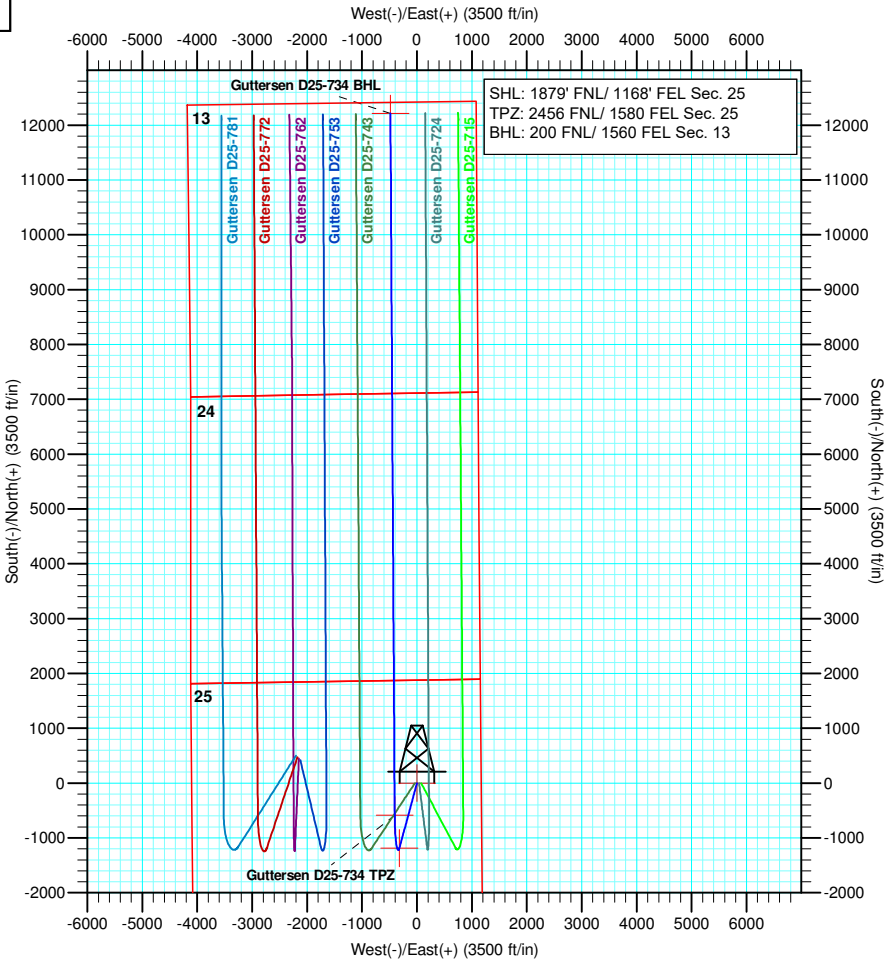
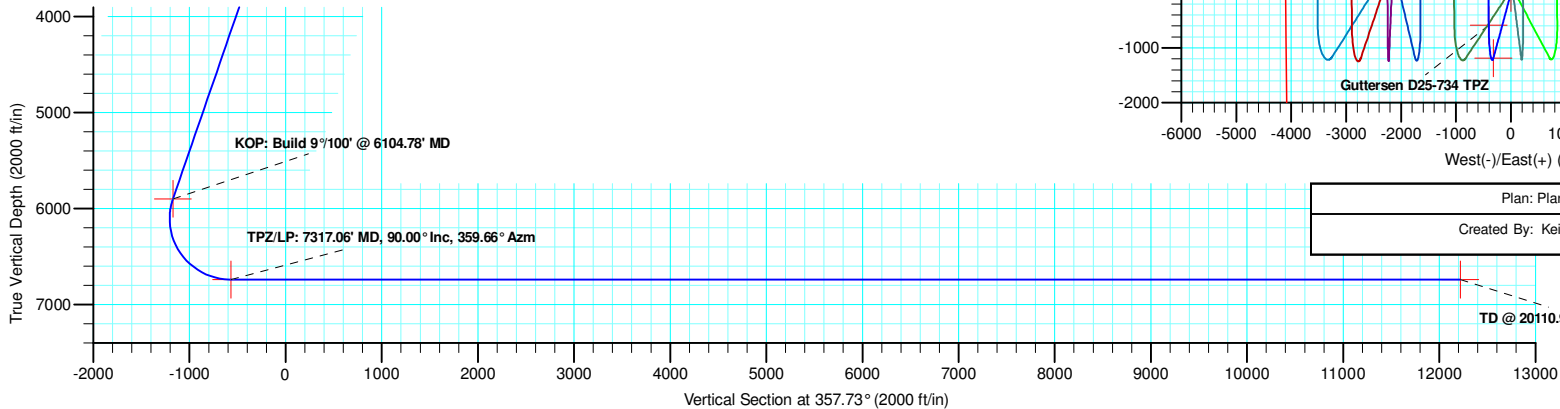
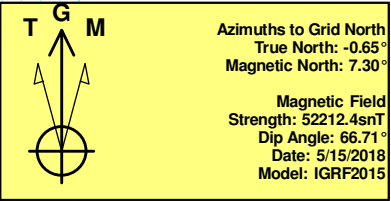
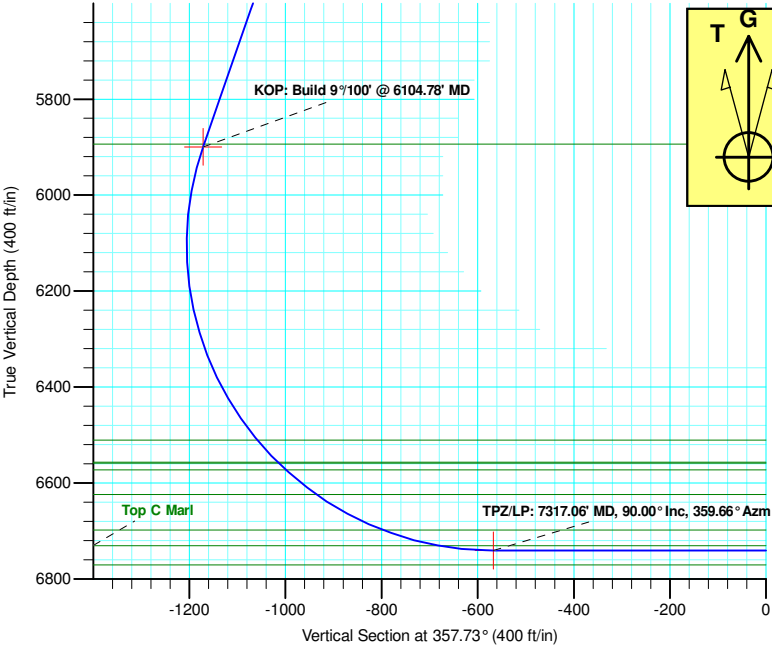
Geodetic System: US State Plane 1983
Datum: North American Datum 1983
Ellipsoid: GRS 1980
Zone: Colorado Northern Zone
System Datum: Mean Sea Level

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	Vsect	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	2000.00	0.00	0.00	2000.00	0.00	0.00	0.00	0.00	0.00	
3	2993.00	19.86	195.19	2973.23	-164.42	-44.66	2.00	195.19	-162.53	
4	6104.78	19.86	195.19	5899.94	-1184.61	-321.73	0.00	0.00	-1170.95	
5	7317.06	90.00	359.66	6741.00	-583.55	-406.73	9.00	163.53	-567.00	Guttersen D25-734 TPZ
6	20110.96	90.00	359.66	6741.00	12210.12	-483.62	0.00	0.00	12219.69	Guttersen D25-734 BHL

WELL DETAILS: Guttersen 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 #2 (Guttersen D25-734/Wellbore #1)

Created By: Keith Noack Date: 10:57, December 10 2018

Northern Region - DJ Basin

Mustang

D Section 25

Guttersen D25-734

Wellbore #1

Plan: Plan #2

Standard Planning Report

10 December, 2018

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 #2		

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 #2			
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	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	
2,993.00	19.86	195.19	2,973.23	-164.42	-44.66	2.00	2.00	0.00	195.19	
6,104.78	19.86	195.19	5,899.94	-1,184.61	-321.73	0.00	0.00	0.00	0.00	
7,317.06	90.00	359.66	6,741.00	-583.55	-406.73	9.00	5.79	13.57	163.53	Guttersen D25-734
20,110.96	90.00	359.66	6,741.00	12,210.12	-483.62	0.00	0.00	0.00	0.00	Guttersen D25-734

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 #2		

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
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
1,700.00	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	2.00	195.19	2,099.98	-1.68	-0.46	-1.66	2.00	2.00	0.00
2,200.00	4.00	195.19	2,199.84	-6.73	-1.83	-6.66	2.00	2.00	0.00
2,300.00	6.00	195.19	2,299.45	-15.14	-4.11	-14.97	2.00	2.00	0.00
2,400.00	8.00	195.19	2,398.70	-26.91	-7.31	-26.60	2.00	2.00	0.00
2,500.00	10.00	195.19	2,497.47	-42.00	-11.41	-41.52	2.00	2.00	0.00
2,600.00	12.00	195.19	2,595.62	-60.41	-16.41	-59.72	2.00	2.00	0.00
2,700.00	14.00	195.19	2,693.06	-82.12	-22.30	-81.17	2.00	2.00	0.00
2,800.00	16.00	195.19	2,789.64	-107.10	-29.09	-105.86	2.00	2.00	0.00
2,900.00	18.00	195.19	2,885.27	-135.31	-36.75	-133.75	2.00	2.00	0.00
2,993.00	19.86	195.19	2,973.23	-164.42	-44.66	-162.53	2.00	2.00	0.00
3,000.00	19.86	195.19	2,979.82	-166.72	-45.28	-164.80	0.00	0.00	0.00
3,100.00	19.86	195.19	3,073.87	-199.51	-54.18	-197.20	0.00	0.00	0.00
3,200.00	19.86	195.19	3,167.92	-232.29	-63.09	-229.61	0.00	0.00	0.00
3,300.00	19.86	195.19	3,261.98	-265.07	-71.99	-262.02	0.00	0.00	0.00
3,400.00	19.86	195.19	3,356.03	-297.86	-80.90	-294.42	0.00	0.00	0.00
3,500.00	19.86	195.19	3,450.08	-330.64	-89.80	-326.83	0.00	0.00	0.00
3,600.00	19.86	195.19	3,544.13	-363.43	-98.70	-359.24	0.00	0.00	0.00
3,700.00	19.86	195.19	3,638.19	-396.21	-107.61	-391.64	0.00	0.00	0.00
3,800.00	19.86	195.19	3,732.24	-429.00	-116.51	-424.05	0.00	0.00	0.00
3,900.00	19.86	195.19	3,826.29	-461.78	-125.42	-456.46	0.00	0.00	0.00
4,000.00	19.86	195.19	3,920.34	-494.57	-134.32	-488.86	0.00	0.00	0.00
4,100.00	19.86	195.19	4,014.40	-527.35	-143.22	-521.27	0.00	0.00	0.00
4,200.00	19.86	195.19	4,108.45	-560.14	-152.13	-553.68	0.00	0.00	0.00
4,300.00	19.86	195.19	4,202.50	-592.92	-161.03	-586.08	0.00	0.00	0.00
4,400.00	19.86	195.19	4,296.55	-625.70	-169.94	-618.49	0.00	0.00	0.00
4,500.00	19.86	195.19	4,390.61	-658.49	-178.84	-650.89	0.00	0.00	0.00
4,600.00	19.86	195.19	4,484.66	-691.27	-187.74	-683.30	0.00	0.00	0.00
4,700.00	19.86	195.19	4,578.71	-724.06	-196.65	-715.71	0.00	0.00	0.00
4,800.00	19.86	195.19	4,672.77	-756.84	-205.55	-748.11	0.00	0.00	0.00
4,900.00	19.86	195.19	4,766.82	-789.63	-214.46	-780.52	0.00	0.00	0.00
5,000.00	19.86	195.19	4,860.87	-822.41	-223.36	-812.93	0.00	0.00	0.00
5,100.00	19.86	195.19	4,954.92	-855.20	-232.26	-845.33	0.00	0.00	0.00
5,200.00	19.86	195.19	5,048.98	-887.98	-241.17	-877.74	0.00	0.00	0.00

Noble Energy, Inc.

Planning Report

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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 #2		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
5,300.00	19.86	195.19	5,143.03	-920.77	-250.07	-910.15	0.00	0.00	0.00
5,400.00	19.86	195.19	5,237.08	-953.55	-258.98	-942.55	0.00	0.00	0.00
5,500.00	19.86	195.19	5,331.13	-986.33	-267.88	-974.96	0.00	0.00	0.00
5,600.00	19.86	195.19	5,425.19	-1,019.12	-276.78	-1,007.37	0.00	0.00	0.00
5,700.00	19.86	195.19	5,519.24	-1,051.90	-285.69	-1,039.77	0.00	0.00	0.00
5,800.00	19.86	195.19	5,613.29	-1,084.69	-294.59	-1,072.18	0.00	0.00	0.00
5,900.00	19.86	195.19	5,707.34	-1,117.47	-303.50	-1,104.59	0.00	0.00	0.00
6,000.00	19.86	195.19	5,801.40	-1,150.26	-312.40	-1,136.99	0.00	0.00	0.00
6,104.78	19.86	195.19	5,899.94	-1,184.61	-321.73	-1,170.95	0.00	0.00	0.00
6,150.00	16.00	199.38	5,942.96	-1,197.90	-325.81	-1,184.07	9.00	-8.54	9.26
6,200.00	11.88	207.04	5,991.48	-1,208.99	-330.44	-1,194.97	9.00	-8.23	15.31
6,250.00	8.18	221.99	6,040.72	-1,216.23	-335.16	-1,202.01	9.00	-7.41	29.91
6,300.00	5.74	254.11	6,090.37	-1,219.55	-339.95	-1,205.14	9.00	-4.88	64.24
6,350.00	6.27	297.93	6,140.12	-1,218.96	-344.76	-1,204.36	9.00	1.07	87.64
6,400.00	9.28	323.34	6,189.67	-1,214.45	-349.58	-1,199.66	9.00	6.02	50.82
6,450.00	13.16	335.21	6,238.71	-1,206.04	-354.38	-1,191.07	9.00	7.77	23.75
6,500.00	17.34	341.61	6,286.94	-1,193.79	-359.12	-1,178.64	9.00	8.36	12.78
6,550.00	21.65	345.55	6,334.06	-1,177.78	-363.78	-1,162.46	9.00	8.61	7.88
6,600.00	26.02	348.22	6,379.79	-1,158.10	-368.32	-1,142.62	9.00	8.74	5.35
6,650.00	30.42	350.17	6,423.83	-1,134.88	-372.72	-1,119.24	9.00	8.81	3.90
6,700.00	34.85	351.67	6,465.93	-1,108.26	-376.96	-1,092.47	9.00	8.85	2.99
6,750.00	39.29	352.86	6,505.81	-1,078.40	-380.99	-1,062.47	9.00	8.88	2.39
6,800.00	43.75	353.85	6,543.24	-1,045.49	-384.81	-1,029.44	9.00	8.90	1.98
6,850.00	48.20	354.69	6,577.98	-1,009.72	-388.39	-993.56	9.00	8.92	1.68
6,900.00	52.67	355.42	6,609.82	-971.33	-391.70	-955.06	9.00	8.93	1.46
6,950.00	57.14	356.07	6,638.56	-930.54	-394.73	-914.19	9.00	8.94	1.30
7,000.00	61.61	356.66	6,664.03	-887.61	-397.45	-871.19	9.00	8.94	1.17
7,050.00	66.08	357.20	6,686.06	-842.81	-399.85	-826.32	9.00	8.95	1.08
7,100.00	70.56	357.70	6,704.53	-796.40	-401.92	-779.87	9.00	8.95	1.00
7,150.00	75.04	358.17	6,719.31	-748.68	-403.64	-732.12	9.00	8.95	0.95
7,200.00	79.51	358.63	6,730.32	-699.94	-404.99	-683.36	9.00	8.96	0.91
7,250.00	83.99	359.07	6,737.49	-650.48	-405.98	-633.90	9.00	8.96	0.89
7,300.00	88.47	359.51	6,740.77	-600.61	-406.60	-584.04	9.00	8.96	0.87
7,317.06	90.00	359.66	6,741.00	-583.55	-406.73	-567.00	9.00	8.96	0.87
7,400.00	90.00	359.66	6,741.00	-500.61	-407.23	-484.10	0.00	0.00	0.00
7,500.00	90.00	359.66	6,741.00	-400.61	-407.83	-384.16	0.00	0.00	0.00
7,600.00	90.00	359.66	6,741.00	-300.61	-408.43	-284.21	0.00	0.00	0.00
7,700.00	90.00	359.66	6,741.00	-200.62	-409.03	-184.27	0.00	0.00	0.00
7,800.00	90.00	359.66	6,741.00	-100.62	-409.63	-84.33	0.00	0.00	0.00
7,900.00	90.00	359.66	6,741.00	-0.62	-410.23	15.62	0.00	0.00	0.00
8,000.00	90.00	359.66	6,741.00	99.38	-410.83	115.56	0.00	0.00	0.00
8,100.00	90.00	359.66	6,741.00	199.38	-411.43	215.50	0.00	0.00	0.00
8,200.00	90.00	359.66	6,741.00	299.38	-412.03	315.45	0.00	0.00	0.00
8,300.00	90.00	359.66	6,741.00	399.37	-412.63	415.39	0.00	0.00	0.00
8,400.00	90.00	359.66	6,741.00	499.37	-413.24	515.34	0.00	0.00	0.00
8,500.00	90.00	359.66	6,741.00	599.37	-413.84	615.28	0.00	0.00	0.00
8,600.00	90.00	359.66	6,741.00	699.37	-414.44	715.22	0.00	0.00	0.00
8,700.00	90.00	359.66	6,741.00	799.37	-415.04	815.17	0.00	0.00	0.00
8,800.00	90.00	359.66	6,741.00	899.36	-415.64	915.11	0.00	0.00	0.00
8,900.00	90.00	359.66	6,741.00	999.36	-416.24	1,015.05	0.00	0.00	0.00
9,000.00	90.00	359.66	6,741.00	1,099.36	-416.84	1,115.00	0.00	0.00	0.00
9,100.00	90.00	359.66	6,741.00	1,199.36	-417.44	1,214.94	0.00	0.00	0.00
9,200.00	90.00	359.66	6,741.00	1,299.36	-418.04	1,314.88	0.00	0.00	0.00
9,300.00	90.00	359.66	6,741.00	1,399.36	-418.65	1,414.83	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 #2		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
9,400.00	90.00	359.66	6,741.00	1,499.35	-419.25	1,514.77	0.00	0.00	0.00
9,500.00	90.00	359.66	6,741.00	1,599.35	-419.85	1,614.72	0.00	0.00	0.00
9,600.00	90.00	359.66	6,741.00	1,699.35	-420.45	1,714.66	0.00	0.00	0.00
9,700.00	90.00	359.66	6,741.00	1,799.35	-421.05	1,814.60	0.00	0.00	0.00
9,800.00	90.00	359.66	6,741.00	1,899.35	-421.65	1,914.55	0.00	0.00	0.00
9,900.00	90.00	359.66	6,741.00	1,999.34	-422.25	2,014.49	0.00	0.00	0.00
10,000.00	90.00	359.66	6,741.00	2,099.34	-422.85	2,114.43	0.00	0.00	0.00
10,100.00	90.00	359.66	6,741.00	2,199.34	-423.45	2,214.38	0.00	0.00	0.00
10,200.00	90.00	359.66	6,741.00	2,299.34	-424.05	2,314.32	0.00	0.00	0.00
10,300.00	90.00	359.66	6,741.00	2,399.34	-424.66	2,414.26	0.00	0.00	0.00
10,400.00	90.00	359.66	6,741.00	2,499.34	-425.26	2,514.21	0.00	0.00	0.00
10,500.00	90.00	359.66	6,741.00	2,599.33	-425.86	2,614.15	0.00	0.00	0.00
10,600.00	90.00	359.66	6,741.00	2,699.33	-426.46	2,714.10	0.00	0.00	0.00
10,700.00	90.00	359.66	6,741.00	2,799.33	-427.06	2,814.04	0.00	0.00	0.00
10,800.00	90.00	359.66	6,741.00	2,899.33	-427.66	2,913.98	0.00	0.00	0.00
10,900.00	90.00	359.66	6,741.00	2,999.33	-428.26	3,013.93	0.00	0.00	0.00
11,000.00	90.00	359.66	6,741.00	3,099.32	-428.86	3,113.87	0.00	0.00	0.00
11,100.00	90.00	359.66	6,741.00	3,199.32	-429.46	3,213.81	0.00	0.00	0.00
11,200.00	90.00	359.66	6,741.00	3,299.32	-430.07	3,313.76	0.00	0.00	0.00
11,300.00	90.00	359.66	6,741.00	3,399.32	-430.67	3,413.70	0.00	0.00	0.00
11,400.00	90.00	359.66	6,741.00	3,499.32	-431.27	3,513.64	0.00	0.00	0.00
11,500.00	90.00	359.66	6,741.00	3,599.32	-431.87	3,613.59	0.00	0.00	0.00
11,600.00	90.00	359.66	6,741.00	3,699.31	-432.47	3,713.53	0.00	0.00	0.00
11,700.00	90.00	359.66	6,741.00	3,799.31	-433.07	3,813.48	0.00	0.00	0.00
11,800.00	90.00	359.66	6,741.00	3,899.31	-433.67	3,913.42	0.00	0.00	0.00
11,900.00	90.00	359.66	6,741.00	3,999.31	-434.27	4,013.36	0.00	0.00	0.00
12,000.00	90.00	359.66	6,741.00	4,099.31	-434.87	4,113.31	0.00	0.00	0.00
12,100.00	90.00	359.66	6,741.00	4,199.30	-435.47	4,213.25	0.00	0.00	0.00
12,200.00	90.00	359.66	6,741.00	4,299.30	-436.08	4,313.19	0.00	0.00	0.00
12,300.00	90.00	359.66	6,741.00	4,399.30	-436.68	4,413.14	0.00	0.00	0.00
12,400.00	90.00	359.66	6,741.00	4,499.30	-437.28	4,513.08	0.00	0.00	0.00
12,500.00	90.00	359.66	6,741.00	4,599.30	-437.88	4,613.02	0.00	0.00	0.00
12,600.00	90.00	359.66	6,741.00	4,699.30	-438.48	4,712.97	0.00	0.00	0.00
12,700.00	90.00	359.66	6,741.00	4,799.29	-439.08	4,812.91	0.00	0.00	0.00
12,800.00	90.00	359.66	6,741.00	4,899.29	-439.68	4,912.86	0.00	0.00	0.00
12,900.00	90.00	359.66	6,741.00	4,999.29	-440.28	5,012.80	0.00	0.00	0.00
13,000.00	90.00	359.66	6,741.00	5,099.29	-440.88	5,112.74	0.00	0.00	0.00
13,100.00	90.00	359.66	6,741.00	5,199.29	-441.48	5,212.69	0.00	0.00	0.00
13,200.00	90.00	359.66	6,741.00	5,299.29	-442.09	5,312.63	0.00	0.00	0.00
13,300.00	90.00	359.66	6,741.00	5,399.28	-442.69	5,412.57	0.00	0.00	0.00
13,400.00	90.00	359.66	6,741.00	5,499.28	-443.29	5,512.52	0.00	0.00	0.00
13,500.00	90.00	359.66	6,741.00	5,599.28	-443.89	5,612.46	0.00	0.00	0.00
13,600.00	90.00	359.66	6,741.00	5,699.28	-444.49	5,712.40	0.00	0.00	0.00
13,700.00	90.00	359.66	6,741.00	5,799.28	-445.09	5,812.35	0.00	0.00	0.00
13,800.00	90.00	359.66	6,741.00	5,899.27	-445.69	5,912.29	0.00	0.00	0.00
13,900.00	90.00	359.66	6,741.00	5,999.27	-446.29	6,012.24	0.00	0.00	0.00
14,000.00	90.00	359.66	6,741.00	6,099.27	-446.89	6,112.18	0.00	0.00	0.00
14,100.00	90.00	359.66	6,741.00	6,199.27	-447.50	6,212.12	0.00	0.00	0.00
14,200.00	90.00	359.66	6,741.00	6,299.27	-448.10	6,312.07	0.00	0.00	0.00
14,300.00	90.00	359.66	6,741.00	6,399.27	-448.70	6,412.01	0.00	0.00	0.00
14,400.00	90.00	359.66	6,741.00	6,499.26	-449.30	6,511.95	0.00	0.00	0.00
14,500.00	90.00	359.66	6,741.00	6,599.26	-449.90	6,611.90	0.00	0.00	0.00
14,600.00	90.00	359.66	6,741.00	6,699.26	-450.50	6,711.84	0.00	0.00	0.00
14,700.00	90.00	359.66	6,741.00	6,799.26	-451.10	6,811.78	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 #2		

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)
14,800.00	90.00	359.66	6,741.00	6,899.26	-451.70	6,911.73	0.00	0.00	0.00
14,900.00	90.00	359.66	6,741.00	6,999.25	-452.30	7,011.67	0.00	0.00	0.00
15,000.00	90.00	359.66	6,741.00	7,099.25	-452.90	7,111.62	0.00	0.00	0.00
15,100.00	90.00	359.66	6,741.00	7,199.25	-453.51	7,211.56	0.00	0.00	0.00
15,200.00	90.00	359.66	6,741.00	7,299.25	-454.11	7,311.50	0.00	0.00	0.00
15,300.00	90.00	359.66	6,741.00	7,399.25	-454.71	7,411.45	0.00	0.00	0.00
15,400.00	90.00	359.66	6,741.00	7,499.25	-455.31	7,511.39	0.00	0.00	0.00
15,500.00	90.00	359.66	6,741.00	7,599.24	-455.91	7,611.33	0.00	0.00	0.00
15,600.00	90.00	359.66	6,741.00	7,699.24	-456.51	7,711.28	0.00	0.00	0.00
15,700.00	90.00	359.66	6,741.00	7,799.24	-457.11	7,811.22	0.00	0.00	0.00
15,800.00	90.00	359.66	6,741.00	7,899.24	-457.71	7,911.16	0.00	0.00	0.00
15,900.00	90.00	359.66	6,741.00	7,999.24	-458.31	8,011.11	0.00	0.00	0.00
16,000.00	90.00	359.66	6,741.00	8,099.23	-458.92	8,111.05	0.00	0.00	0.00
16,100.00	90.00	359.66	6,741.00	8,199.23	-459.52	8,211.00	0.00	0.00	0.00
16,200.00	90.00	359.66	6,741.00	8,299.23	-460.12	8,310.94	0.00	0.00	0.00
16,300.00	90.00	359.66	6,741.00	8,399.23	-460.72	8,410.88	0.00	0.00	0.00
16,400.00	90.00	359.66	6,741.00	8,499.23	-461.32	8,510.83	0.00	0.00	0.00
16,500.00	90.00	359.66	6,741.00	8,599.23	-461.92	8,610.77	0.00	0.00	0.00
16,600.00	90.00	359.66	6,741.00	8,699.22	-462.52	8,710.71	0.00	0.00	0.00
16,700.00	90.00	359.66	6,741.00	8,799.22	-463.12	8,810.66	0.00	0.00	0.00
16,800.00	90.00	359.66	6,741.00	8,899.22	-463.72	8,910.60	0.00	0.00	0.00
16,900.00	90.00	359.66	6,741.00	8,999.22	-464.32	9,010.54	0.00	0.00	0.00
17,000.00	90.00	359.66	6,741.00	9,099.22	-464.93	9,110.49	0.00	0.00	0.00
17,100.00	90.00	359.66	6,741.00	9,199.21	-465.53	9,210.43	0.00	0.00	0.00
17,200.00	90.00	359.66	6,741.00	9,299.21	-466.13	9,310.38	0.00	0.00	0.00
17,300.00	90.00	359.66	6,741.00	9,399.21	-466.73	9,410.32	0.00	0.00	0.00
17,400.00	90.00	359.66	6,741.00	9,499.21	-467.33	9,510.26	0.00	0.00	0.00
17,500.00	90.00	359.66	6,741.00	9,599.21	-467.93	9,610.21	0.00	0.00	0.00
17,600.00	90.00	359.66	6,741.00	9,699.21	-468.53	9,710.15	0.00	0.00	0.00
17,700.00	90.00	359.66	6,741.00	9,799.20	-469.13	9,810.09	0.00	0.00	0.00
17,800.00	90.00	359.66	6,741.00	9,899.20	-469.73	9,910.04	0.00	0.00	0.00
17,900.00	90.00	359.66	6,741.00	9,999.20	-470.34	10,009.98	0.00	0.00	0.00
18,000.00	90.00	359.66	6,741.00	10,099.20	-470.94	10,109.92	0.00	0.00	0.00
18,100.00	90.00	359.66	6,741.00	10,199.20	-471.54	10,209.87	0.00	0.00	0.00
18,200.00	90.00	359.66	6,741.00	10,299.19	-472.14	10,309.81	0.00	0.00	0.00
18,300.00	90.00	359.66	6,741.00	10,399.19	-472.74	10,409.76	0.00	0.00	0.00
18,400.00	90.00	359.66	6,741.00	10,499.19	-473.34	10,509.70	0.00	0.00	0.00
18,500.00	90.00	359.66	6,741.00	10,599.19	-473.94	10,609.64	0.00	0.00	0.00
18,600.00	90.00	359.66	6,741.00	10,699.19	-474.54	10,709.59	0.00	0.00	0.00
18,700.00	90.00	359.66	6,741.00	10,799.19	-475.14	10,809.53	0.00	0.00	0.00
18,800.00	90.00	359.66	6,741.00	10,899.18	-475.74	10,909.47	0.00	0.00	0.00
18,900.00	90.00	359.66	6,741.00	10,999.18	-476.35	11,009.42	0.00	0.00	0.00
19,000.00	90.00	359.66	6,741.00	11,099.18	-476.95	11,109.36	0.00	0.00	0.00
19,100.00	90.00	359.66	6,741.00	11,199.18	-477.55	11,209.30	0.00	0.00	0.00
19,200.00	90.00	359.66	6,741.00	11,299.18	-478.15	11,309.25	0.00	0.00	0.00
19,300.00	90.00	359.66	6,741.00	11,399.18	-478.75	11,409.19	0.00	0.00	0.00
19,400.00	90.00	359.66	6,741.00	11,499.17	-479.35	11,509.14	0.00	0.00	0.00
19,500.00	90.00	359.66	6,741.00	11,599.17	-479.95	11,609.08	0.00	0.00	0.00
19,600.00	90.00	359.66	6,741.00	11,699.17	-480.55	11,709.02	0.00	0.00	0.00
19,700.00	90.00	359.66	6,741.00	11,799.17	-481.15	11,808.97	0.00	0.00	0.00
19,800.00	90.00	359.66	6,741.00	11,899.17	-481.75	11,908.91	0.00	0.00	0.00
19,900.00	90.00	359.66	6,741.00	11,999.16	-482.36	12,008.85	0.00	0.00	0.00
20,000.00	90.00	359.66	6,741.00	12,099.16	-482.96	12,108.80	0.00	0.00	0.00
20,100.00	90.00	359.66	6,741.00	12,199.16	-483.56	12,208.74	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 #2		

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)
20,110.96	90.00	359.66	6,741.00	12,210.12	-483.62	12,219.69	0.00	0.00	0.00

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 D25-734 SI - plan hits target center - Point	0.00	0.00	0.00	0.00	0.00	1,316,740.24	3,280,864.69	40.1984776	-104.4945139
Guttersen D25-734 KI - plan hits target center - Point	0.00	0.00	5,899.94	-1,184.61	-321.73	1,315,555.63	3,280,542.96	40.1952359	-104.4957136
Guttersen D25-734 BI - plan hits target center - Point	0.00	0.00	6,741.00	12,210.12	-483.62	1,328,950.33	3,280,381.07	40.2320085	-104.4957501
Guttersen D25-734 TI - plan hits target center - Point	0.00	0.00	6,741.00	-583.55	-406.73	1,316,156.69	3,280,457.97	40.1968884	-104.4959935

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				
3,679.60	3,619.00	Parkman				
4,128.29	4,041.00	Sussex				
4,324.98	4,226.00	Shannon				
6,098.46	5,894.00	Teepee Buttes				
6,756.73	6,511.00	Sharon Springs				
6,819.33	6,557.00	Top A Chalk				
6,822.18	6,559.00	Top A Marl				
6,842.57	6,573.00	Top B Chalk				
6,923.98	6,624.00	Top B Marl				
7,081.18	6,698.00	Top C Chalk				
7,203.81	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 #2		

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	Build: 2°/100'	
2,993.00	2,973.23	-164.42	-44.66	Hold: 19.86° Inc, 195.19° Azm	
6,104.78	5,899.94	-1,184.61	-321.73	KOP: Build 9°/100' @ 6104.78' MD	
7,317.06	6,741.00	-583.55	-406.73	TPZ/LP: 7317.06' MD, 90.00° Inc, 359.66° Azm	
20,110.96	6,741.00	12,210.12	-483.62	TD @ 20110.96' MD/6741.00' TVD	

Northern Region - DJ Basin

Mustang

D Section 25

Guttersen D25-734

Wellbore #1

Plan #2

Anticollision Summary Report

10 December, 2018

Noble Energy, Inc.

Anticollision Summary Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Gutttersen 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:	Gutttersen 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 #2	Offset TVD Reference:	Offset Datum

Reference	Plan #2		
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	12/10/2018		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
0.00	20,110.96	Plan #2 (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 13						
Dalbey D 13-11 (SI) - Wellbore #1 - Gyro Surveys	17,019.27	6,705.55	1,608.85	1,500.77	14.885	CC, ES
Dalbey D 13-11 (SI) - Wellbore #1 - Gyro Surveys	17,100.00	6,705.50	1,610.88	1,502.20	14.823	SF
Dalbey D 13-12 (PR) - Wellbore #1 - Gyro Surveys	16,540.92	6,714.46	2,758.06	2,653.64	26.411	CC, ES
Dalbey D 13-12 (PR) - Wellbore #1 - Gyro Surveys	16,900.00	6,720.18	2,781.34	2,674.59	26.055	SF
Dalbey D 13-13 (PR) - Wellbore #1 - No Surveys	15,618.50	6,685.00	3,019.97	2,812.29	14.541	CC, ES
Dalbey D 13-13 (PR) - Wellbore #1 - No Surveys	15,900.00	6,685.00	3,033.07	2,823.39	14.466	SF
Dalbey D 13-14 (PA) - Wellbore #1 - Gyro Surveys	15,623.58	6,685.15	1,838.99	1,741.77	18.916	CC, ES
Dalbey D 13-14 (PA) - Wellbore #1 - Gyro Surveys	15,800.00	6,687.13	1,847.43	1,749.04	18.777	SF
Gutttersen 12-13 (SI) - Wellbore #1 - Gyro Surveys	18,215.53	6,826.04	3,125.11	3,007.35	26.538	CC, ES
Gutttersen 12-13 (SI) - Wellbore #1 - Gyro Surveys	18,600.00	6,820.06	3,148.67	3,028.43	26.188	SF
Gutttersen 13C (PR) - Wellbore #1 - Gyro Surveys	18,986.71	6,716.01	277.26	153.61	2.242	CC, ES, SF
Gutttersen 13D (PR) - Wellbore #1 - Gyro Surveys	16,384.88	6,690.16	258.60	155.44	2.507	CC, ES, SF
Gutttersen 13N (PR) - Wellbore #1 - Gyro Surveys	18,969.04	6,717.44	1,283.38	1,159.87	10.391	CC, ES
Gutttersen 13N (PR) - Wellbore #1 - Gyro Surveys	19,000.00	6,716.47	1,283.75	1,160.01	10.374	SF
Gutttersen 13S (PR) - Wellbore #1 - Gyro Surveys	17,728.61	6,684.84	260.02	146.43	2.289	CC, ES, SF
Gutttersen 13T (PR) - Wellbore #1 - Gyro Surveys	15,162.06	6,688.67	152.06	58.38	1.623	CC, ES, SF
Gutttersen 21-13 (SI) - Wellbore #1 - Gyro Surveys	19,580.41	6,721.28	1,847.71	1,719.34	14.393	CC
Gutttersen 21-13 (SI) - Wellbore #1 - Gyro Surveys	19,600.00	6,721.00	1,847.81	1,719.28	14.376	ES
Gutttersen 21-13 (SI) - Wellbore #1 - Gyro Surveys	19,700.00	6,719.54	1,851.57	1,722.38	14.332	SF
Gutttersen 22-13 (SI) - Wellbore #1 - Gyro Surveys	18,323.25	6,711.30	1,698.87	1,580.51	14.353	CC, ES
Gutttersen 22-13 (SI) - Wellbore #1 - Gyro Surveys	18,400.00	6,711.54	1,700.61	1,581.68	14.299	SF
Gutttersen 31-13 (PR) - Wellbore #1 - Gyro Surveys	19,618.67	6,671.28	462.60	333.88	3.594	CC, ES, SF
Gutttersen 32-13 (PR) - Wellbore #1 - Gyro Surveys	18,431.58	6,691.99	366.79	247.52	3.075	CC, ES, SF
Gutttersen 34-13 (PR) - Wellbore #1 - Gyro Surveys	15,671.11	6,692.17	484.30	386.73	4.963	CC, ES, SF
Gutttersen 41-13 (PR) - Wellbore #1 - Gyro Surveys	19,553.68	6,627.10	933.75	806.02	7.310	CC, ES
Gutttersen 41-13 (PR) - Wellbore #1 - Gyro Surveys	19,600.00	6,627.75	934.89	806.93	7.306	SF
Gutttersen 42-13 (PR) - Wellbore #1 - Gyro Surveys	18,287.85	6,643.09	1,023.73	905.89	8.688	CC
Gutttersen 42-13 (PR) - Wellbore #1 - Gyro Surveys	18,300.00	6,643.49	1,023.80	905.88	8.682	ES, SF
Gutttersen 43-13 - Wellbore #1 - Wellbore #1 - As Drilled	17,015.14	6,703.42	918.93	810.90	8.506	CC, ES, SF
Gutttersen 44-13 - Wellbore #1 - Wellbore #1 - As Drilled	15,664.06	6,718.41	856.58	753.97	8.347	CC, ES
Gutttersen 44-13 - Wellbore #1 - Wellbore #1 - As Drilled	15,700.00	6,718.38	857.34	754.54	8.341	SF
L F Ranch 1-13 (PR) - Wellbore #1 - Gyro Surveys	16,710.43	6,703.42	508.62	402.79	4.806	CC, ES, SF
L. F. Ranch 13-4 (SI) - Wellbore #1 - Gyro Surveys	19,233.55	6,902.84	2,726.97	2,600.18	21.508	CC, ES
L. F. Ranch 13-4 (SI) - Wellbore #1 - Gyro Surveys	19,500.00	6,887.38	2,739.92	2,611.57	21.349	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 #2	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	11,374.63	6,700.11	49.13	-16.93	0.744	Level 1, CC, ES, SF
Dalbey D 24-15 (SI) - Wellbore #1 - Gyro Surveys	10,415.03	6,692.90	519.88	459.91	8.669	CC, ES, SF
Glazier 2-24 (SI) - Wellbore #1 - Gyro Surveys	13,586.87	6,693.79	598.22	516.46	7.316	CC, ES
Glazier 2-24 (SI) - Wellbore #1 - Gyro Surveys	13,600.00	6,693.72	598.36	516.54	7.312	SF
Guttersen 11-24 (PR) - Wellbore #1 - Gyro Surveys	14,368.76	6,757.64	3,080.59	2,992.95	35.150	CC
Guttersen 11-24 (PR) - Wellbore #1 - Gyro Surveys	14,400.00	6,757.64	3,080.75	2,992.86	35.054	ES
Guttersen 11-24 (PR) - Wellbore #1 - Gyro Surveys	14,900.00	6,757.73	3,126.06	3,035.08	34.359	SF
Guttersen 12-24 (PR) - Wellbore #1 - Gyro Surveys	13,071.83	6,729.14	3,097.14	3,019.17	39.721	CC
Guttersen 12-24 (PR) - Wellbore #1 - Gyro Surveys	13,100.00	6,729.08	3,097.27	3,019.08	39.615	ES
Guttersen 12-24 (PR) - Wellbore #1 - Gyro Surveys	13,700.00	6,727.96	3,160.20	3,078.38	38.623	SF
Guttersen 21-24 (PR) - Wellbore #1 - Gyro Surveys	14,381.21	6,716.38	1,762.35	1,674.52	20.067	CC
Guttersen 21-24 (PR) - Wellbore #1 - Gyro Surveys	14,400.00	6,716.32	1,762.45	1,674.47	20.034	ES
Guttersen 21-24 (PR) - Wellbore #1 - Gyro Surveys	14,600.00	6,715.68	1,775.88	1,686.70	19.914	SF
Guttersen 22-24 (PR) - Wellbore #1 - Gyro Surveys	13,152.46	6,706.77	1,712.47	1,633.88	21.790	CC, ES
Guttersen 22-24 (PR) - Wellbore #1 - Gyro Surveys	13,300.00	6,706.63	1,718.81	1,639.23	21.598	SF
Guttersen 24A (PR) - Wellbore #1 - Gyro Surveys	13,707.75	6,713.17	2,390.12	2,307.46	28.914	CC, ES
Guttersen 24A (PR) - Wellbore #1 - Gyro Surveys	14,000.00	6,715.85	2,407.92	2,323.34	28.469	SF
Guttersen 24J (PR) - Wellbore #1 - Gyro Surveys	15,006.91	6,701.15	2,300.20	2,207.70	24.867	CC, ES
Guttersen 24J (PR) - Wellbore #1 - Gyro Surveys	15,300.00	6,698.35	2,318.79	2,224.42	24.570	SF
Guttersen 24N (PR) - Wellbore #1 - MWD Surveys	13,744.69	6,679.49	1,161.99	1,080.14	14.196	CC, ES
Guttersen 24N (PR) - Wellbore #1 - MWD Surveys	13,800.00	6,679.26	1,163.31	1,081.05	14.143	SF
Guttersen 24S (PR) - Wellbore #1 - MWD Surveys	12,256.13	6,688.17	299.90	228.73	4.214	CC, ES, SF
Guttersen 43-24 (PR) - Wellbore #1 - Gyro Surveys	11,631.92	6,706.27	841.64	773.77	12.401	CC, ES
Guttersen 43-24 (PR) - Wellbore #1 - Gyro Surveys	11,700.00	6,705.96	844.39	776.23	12.388	SF
Guttersen 44-24 (PR) - Wellbore #1 - Gyro Surveys	10,394.06	6,693.81	914.28	854.46	15.284	CC
Guttersen 44-24 (PR) - Wellbore #1 - Gyro Surveys	10,400.00	6,693.82	914.30	854.45	15.276	ES, SF
Karch Blue D 24-12 (PA) - Wellbore #1 - Gyro Surveys	11,893.45	6,717.11	3,043.03	2,973.56	43.801	CC
Karch Blue D 24-12 (PA) - Wellbore #1 - Gyro Surveys	11,900.00	6,717.11	3,043.04	2,973.52	43.772	ES
Karch Blue D 24-12 (PA) - Wellbore #1 - Gyro Surveys	12,500.00	6,717.32	3,102.89	3,029.73	42.414	SF
Karch Blue D 24-14 (PR) - Wellbore #1 - No Surveys	10,366.21	6,704.00	1,478.82	1,308.27	8.671	CC, ES
Karch Blue D 24-14 (PR) - Wellbore #1 - No Surveys	10,400.00	6,704.00	1,479.21	1,308.45	8.662	SF
Karch Blue D24-11 (PA) - Wellbore #1 - Gyro Surveys	11,890.99	6,674.01	1,626.65	1,550.52	21.367	CC
Karch Blue D24-11 (PA) - Wellbore #1 - Gyro Surveys	11,900.00	6,674.10	1,626.68	1,550.48	21.349	ES
Karch Blue D24-11 (PA) - Wellbore #1 - Gyro Surveys	12,100.00	6,676.09	1,640.02	1,562.60	21.184	SF
Koerner 31-24 (SI) - Wellbore #1 - Gyro Surveys	14,430.78	6,687.11	439.40	351.29	4.987	CC, ES, SF
Koerner 32-24 (SI) - Wellbore #1 - Gyro Surveys	12,996.37	6,704.41	427.67	350.32	5.529	CC
Koerner 32-24 (SI) - Wellbore #1 - Gyro Surveys	13,000.00	6,704.40	427.68	350.30	5.527	ES, SF
Koerner 42-24 (SI) - Wellbore #1 - Gyro Surveys	12,983.49	6,701.07	877.91	800.57	11.351	CC, ES
Koerner 42-24 (SI) - Wellbore #1 - Gyro Surveys	13,000.00	6,701.26	878.06	800.63	11.339	SF
LF Ranch 1-24 (SI) - Wellbore #1 - Gyro Surveys	10,786.53	6,789.36	2,701.54	2,639.04	43.227	CC
LF Ranch 1-24 (SI) - Wellbore #1 - Gyro Surveys	10,800.00	6,789.48	2,701.57	2,638.99	43.167	ES
LF Ranch 1-24 (SI) - Wellbore #1 - Gyro Surveys	11,300.00	6,793.86	2,749.90	2,684.48	42.035	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 #2	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	6,722.38	6,653.07	3,061.49	3,005.81	54.985	CC
Coors Energy 13-25D (PR) - Wellbore #1 - MWD Survey	6,750.00	6,673.95	3,061.62	3,005.80	54.847	ES
Coors Energy 13-25D (PR) - Wellbore #1 - MWD Survey	7,100.00	6,858.34	3,091.63	3,034.31	53.935	SF
Coors Energy 14-25D (PR) - Wellbore #1 - MWD Survey	6,453.08	6,408.29	3,444.45	3,398.68	75.263	CC, ES
Coors Energy 14-25D (PR) - Wellbore #1 - MWD Survey	6,850.00	6,799.32	3,503.44	3,455.69	73.372	SF
Coors Energy 23-25D (PR) - Wellbore #1 - MWD Survey	6,630.90	6,569.74	1,751.18	1,699.34	33.782	CC, ES
Coors Energy 23-25D (PR) - Wellbore #1 - MWD Survey	6,750.00	6,676.34	1,754.35	1,702.23	33.662	SF
Coors Energy 24-25 (PR) - Wellbore #1 - Gyro Surveys	6,375.61	6,192.19	2,406.84	2,362.35	54.110	CC, ES
Coors Energy 24-25 (PR) - Wellbore #1 - Gyro Surveys	6,600.00	6,410.66	2,437.16	2,391.41	53.273	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	7,050.00	6,937.19	3,718.53	3,664.04	68.241	SF
Coors Energy 25LD (PR) - Wellbore #1 - MWD Surveys	6,398.23	6,297.46	3,144.80	3,099.95	70.115	CC
Coors Energy 25LD (PR) - Wellbore #1 - MWD Surveys	6,400.00	6,298.29	3,144.81	3,099.94	70.100	ES
Coors Energy 25LD (PR) - Wellbore #1 - MWD Surveys	6,700.00	6,658.14	3,189.66	3,143.27	68.759	SF
Coors Energy 25TD (PR) - Wellbore #1 - MWD Surveys	6,313.52	6,164.00	2,131.24	2,088.06	49.359	CC, ES
Coors Energy 25TD (PR) - Wellbore #1 - MWD Surveys	6,500.00	6,340.36	2,158.42	2,114.13	48.737	SF
Coors Energy 25XD (PR) - Wellbore #1 - MWD Surveys	6,224.27	6,250.14	1,654.50	1,601.35	31.128	CC, ES
Coors Energy 25XD (PR) - Wellbore #1 - MWD Surveys	6,450.00	6,480.36	1,674.87	1,620.49	30.803	SF
Coors Energy 25YD (PR) - Wellbore #1 - MWD Surveys	6,256.15	6,190.55	2,545.82	2,497.32	52.491	CC, ES
Coors Energy 25YD (PR) - Wellbore #1 - MWD Surveys	6,500.00	6,511.28	2,579.82	2,529.94	51.721	SF
Coors Energy 33-25D (PR) - Wellbore #1 - MWD Survey	6,421.46	6,386.73	492.75	437.52	8.921	CC, ES
Coors Energy 33-25D (PR) - Wellbore #1 - MWD Survey	6,450.00	6,414.68	493.10	437.73	8.906	SF
Coors Energy 34-25 (PR) - Wellbore #1 - Gyro Surveys	6,336.26	6,121.19	1,902.06	1,858.07	43.234	CC, ES
Coors Energy 34-25 (PR) - Wellbore #1 - Gyro Surveys	6,500.00	6,294.56	1,921.80	1,876.80	42.704	SF
Coors Energy 43-25D (PR) - Wellbore #1 - MWD Survey	6,155.14	6,189.55	874.14	820.20	16.206	CC, ES
Coors Energy 43-25D (PR) - Wellbore #1 - MWD Survey	6,350.00	6,378.13	883.47	828.47	16.062	SF
Coors Energy 44-25D (PR) - Wellbore #1 - MWD Survey	6,284.92	6,148.00	1,751.44	1,705.27	37.932	CC, ES
Coors Energy 44-25D (PR) - Wellbore #1 - MWD Survey	6,450.00	6,310.24	1,770.04	1,722.88	37.533	SF
Dalbey D 25-03 (SI) - Wellbore #1 - Gyro Surveys	8,719.08	6,823.90	2,025.35	1,973.60	39.134	CC, ES
Dalbey D 25-03 (SI) - Wellbore #1 - Gyro Surveys	9,000.00	6,812.76	2,044.70	1,991.95	38.759	SF
Dalbey D 25-05 (SI) - Wellbore #1 - Gyro Surveys	7,786.52	6,900.54	3,218.51	3,168.63	64.518	CC, ES
Dalbey D 25-05 (SI) - Wellbore #1 - Gyro Surveys	8,100.00	6,868.84	3,233.59	3,183.32	64.322	SF
Guttersen 11-25 (PR) - Wellbore #1 - MWD Surveys	9,144.31	6,786.77	3,023.88	2,971.50	57.726	CC, ES
Guttersen 11-25 (PR) - Wellbore #1 - MWD Surveys	9,900.00	6,779.42	3,116.87	3,061.13	55.921	SF
Guttersen 22-25 (PR) - Wellbore #1 - MWD Surveys	7,879.10	6,749.32	1,597.30	1,549.24	33.236	CC, ES
Guttersen 22-25 (PR) - Wellbore #1 - MWD Surveys	8,000.00	6,744.41	1,601.86	1,553.59	33.188	SF
Guttersen 25E (PR) - Wellbore #1 - MWD Surveys	9,739.55	6,742.59	3,428.24	3,372.78	61.819	CC, ES
Guttersen 25E (PR) - Wellbore #1 - MWD Surveys	10,700.00	6,729.60	3,560.22	3,499.91	59.034	SF
Guttersen 25KD (PR) - Wellbore #1 - MWD Surveys	100.00	81.63	1,566.37	1,566.10	5,746.190	CC
Guttersen 25KD (PR) - Wellbore #1 - MWD Surveys	500.00	474.99	1,567.57	1,565.15	649.251	ES
Guttersen 25KD (PR) - Wellbore #1 - MWD Surveys	7,250.00	6,988.21	2,352.78	2,303.47	47.709	SF
Guttersen 25O (PR) - Wellbore #1 - MWD Surveys	7,396.58	6,722.98	1,158.45	1,110.81	24.319	CC, ES
Guttersen 25O (PR) - Wellbore #1 - MWD Surveys	7,400.00	6,722.98	1,158.45	1,110.81	24.318	SF
Guttersen D 25-17 (SI) - Wellbore #1 - Gyro Surveys	8,480.50	6,712.68	73.21	22.63	1.448	Level 3, CC, ES, SF
Guttersen D25-715 - Wellbore #1 - Plan #1	2,000.00	2,001.00	75.00	61.12	5.405	CC, ES
Guttersen D25-715 - Wellbore #1 - Plan #1	2,100.00	2,099.79	76.28	61.73	5.242	SF
Guttersen D25-724 - Wellbore #1 - Plan #1	2,000.00	2,000.00	37.50	23.63	2.703	CC
Guttersen D25-724 - Wellbore #1 - Plan #1	2,100.00	2,099.85	38.18	23.62	2.623	ES, SF
Guttersen D25-743 - Wellbore #1 - Plan #1	2,000.00	2,000.00	37.50	23.63	2.703	CC
Guttersen D25-743 - Wellbore #1 - Plan #1	2,100.00	2,099.26	38.00	23.45	2.612	ES
Guttersen D25-743 - Wellbore #1 - Plan #1	2,200.00	2,198.51	39.50	24.31	2.601	SF
Guttersen D25-753 - Wellbore #1 - Plan #1	20,102.46	20,316.13	1,227.17	1,009.11	5.628	CC

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

Noble Energy, Inc.
Anticollision Summary Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Gutttersen 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:	Gutttersen 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 #2	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 25						
Gutttersen D25-753 - Wellbore #1 - Plan #1	20,110.96	20,314.84	1,227.20	1,009.10	5.627	ES, SF
Gutttersen D25-762 - Wellbore #1 - Plan #1	15,637.11	15,762.18	1,820.40	1,672.73	12.327	CC
Gutttersen D25-762 - Wellbore #1 - Plan #1	20,110.96	20,222.65	1,839.81	1,621.79	8.439	ES, SF
Gutttersen D25-772 - Wellbore #1 - Plan #1	1,911.24	1,925.24	2,227.97	2,214.69	167.685	CC
Gutttersen D25-772 - Wellbore #1 - Plan #1	2,300.00	2,289.10	2,228.90	2,213.09	140.943	ES
Gutttersen D25-772 - Wellbore #1 - Plan #1	20,110.96	20,375.73	2,489.54	2,272.10	11.449	SF
Gutttersen D25-781 - Wellbore #1 - Plan #1	1,910.78	1,925.78	2,259.78	2,246.50	170.075	CC
Gutttersen D25-781 - Wellbore #1 - Plan #1	2,000.00	2,010.73	2,259.80	2,245.89	162.465	ES
Gutttersen D25-781 - Wellbore #1 - Plan #1	20,110.96	20,362.10	3,079.53	2,862.54	14.192	SF
Gutttersen State D36-714 - Wellbore #1 - Plan #1	2,000.00	2,000.00	167.71	153.83	12.089	CC, ES
Gutttersen State D36-714 - Wellbore #1 - Plan #1	2,200.00	2,199.84	174.57	159.31	11.443	SF
Gutttersen State D36-724 - Wellbore #1 - Plan #1	2,000.00	2,001.00	154.62	140.74	11.142	CC, ES
Gutttersen State D36-724 - Wellbore #1 - Plan #1	2,200.00	2,200.88	161.59	146.33	10.590	SF
Gutttersen State D36-733 - Wellbore #1 - Plan #1	7,096.36	6,959.44	52.77	2.89	1.058	Level 2, CC, ES, SF
Gutttersen State D36-743 - Wellbore #1 - Plan #1	2,000.00	2,000.00	154.62	140.75	11.146	CC, ES
Gutttersen State D36-743 - Wellbore #1 - Plan #1	2,300.00	2,301.43	167.81	151.88	10.532	SF
Gutttersen State D36-752 - Wellbore #1 - Plan #1	7,050.00	7,104.44	1,195.21	1,143.88	23.288	SF
Gutttersen State D36-752 - Wellbore #1 - Plan #1	7,129.76	7,048.61	1,193.55	1,142.38	23.323	CC, ES
Gutttersen State D36-762 - Wellbore #1 - Plan #1	7,150.00	6,884.44	1,793.01	1,742.57	35.546	SF
Gutttersen State D36-762 - Wellbore #1 - Plan #1	7,355.35	6,761.48	1,785.59	1,735.61	35.726	CC, ES
Gutttersen State D36-771 - Wellbore #1 - Plan #1	2,000.00	2,015.00	2,151.70	2,137.78	154.503	CC
Gutttersen State D36-771 - Wellbore #1 - Plan #1	2,200.00	2,211.98	2,151.77	2,136.48	140.695	ES
Gutttersen State D36-771 - Wellbore #1 - Plan #1	7,511.19	6,503.10	2,372.85	2,323.47	48.053	SF
Gutttersen State D36-781 - Wellbore #1 - Plan #1	1,910.78	1,925.78	2,184.63	2,171.34	164.418	CC
Gutttersen State D36-781 - Wellbore #1 - Plan #1	2,000.00	2,010.48	2,184.64	2,170.73	157.069	ES
Gutttersen State D36-781 - Wellbore #1 - Plan #1	7,800.00	6,084.78	2,899.22	2,850.74	59.799	SF
Karch Blue D 25-02 (DA) - Wellbore #1 - No Surveys	9,085.23	6,700.00	399.75	235.99	2.441	CC, ES, SF
Karch Blue D 25-08 (SI) - Wellbore #1 - Gyro Surveys	2,040.61	2,007.18	521.12	507.21	37.455	CC
Karch Blue D 25-08 (SI) - Wellbore #1 - Gyro Surveys	2,300.00	2,270.74	522.29	506.61	33.299	ES
Karch Blue D 25-08 (SI) - Wellbore #1 - Gyro Surveys	7,814.11	6,728.44	890.67	841.52	18.125	SF
Karch Blue D25-07 (SI) - Wellbore #1 - Gyro Surveys	7,811.90	6,708.51	432.48	383.51	8.831	CC, ES, SF
L F Ranch 2-25 (PR) - Wellbore #1 - Gyro Surveys	9,050.27	6,711.71	877.39	824.50	16.589	CC, ES
L F Ranch 2-25 (PR) - Wellbore #1 - Gyro Surveys	9,100.00	6,710.69	878.80	825.74	16.562	SF
LF Ranches 1 (PA) - Wellbore #1 - No Surveys	8,759.00	6,704.00	590.82	428.33	3.636	CC, ES, SF

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

Noble Energy, Inc.

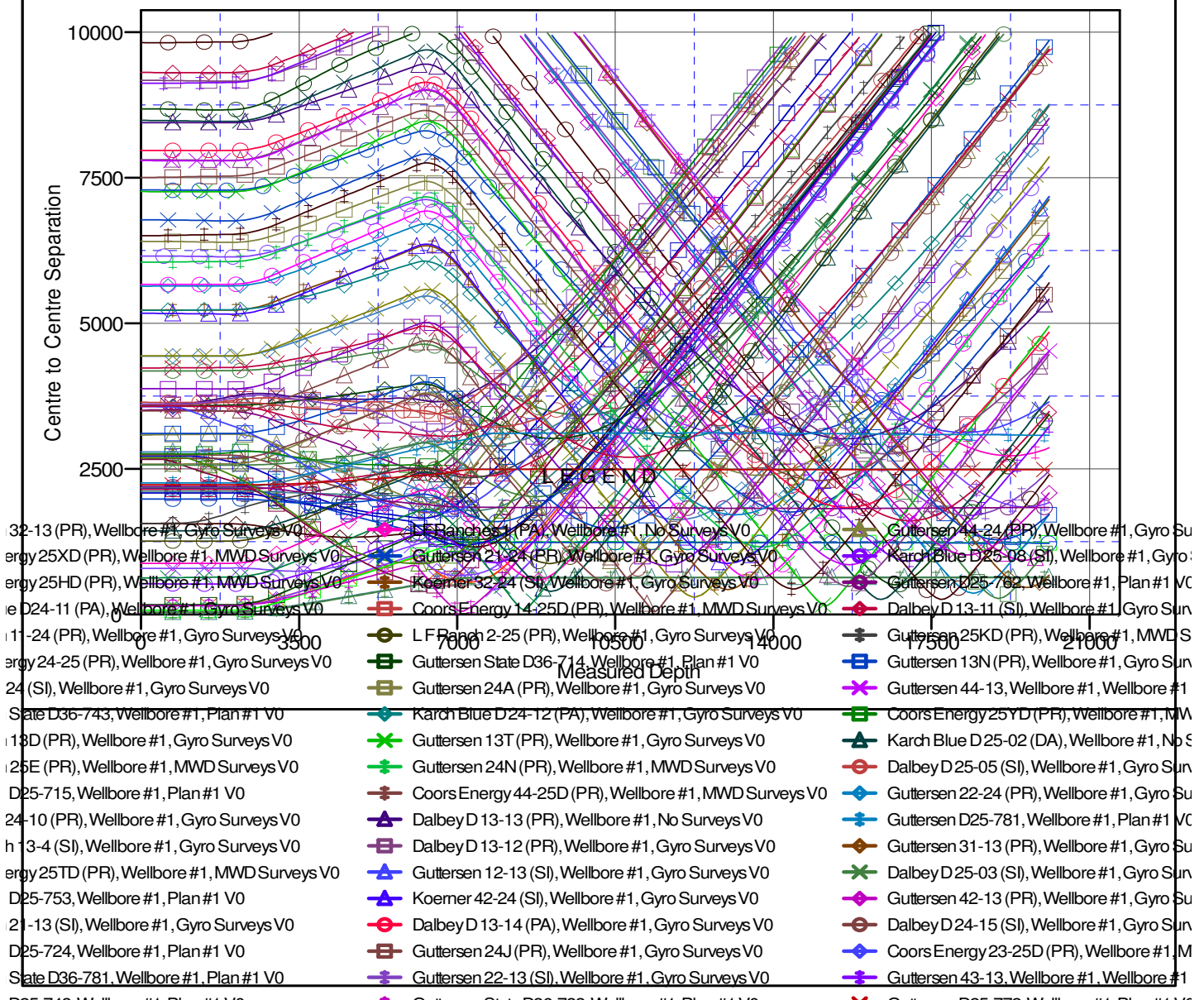
Anticollision Summary Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well 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 #2	Offset TVD Reference:	Offset Datum

Reference Depths are relative to KB @ 4802.00ft
Offset Depths are relative to Offset Datum
Central Meridian is -105.5000000

Coordinates are relative to: Guttersen D25-734
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 0.65°

Ladder Plot



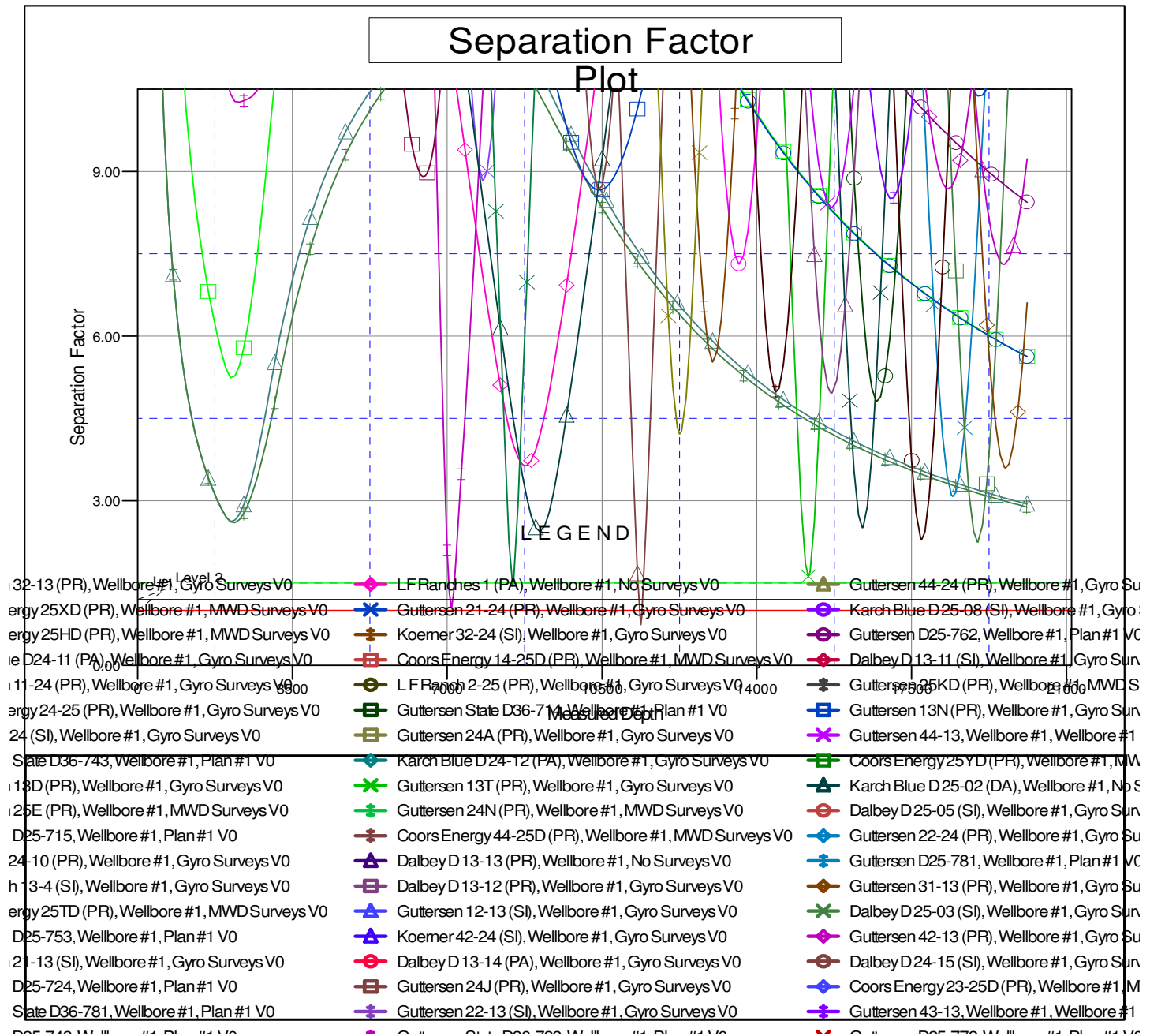
Noble Energy, Inc.

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 #2	Offset TVD Reference:	Offset Datum

Reference Depths are relative to KB @ 4802.00ft
Offset Depths are relative to Offset Datum
Central Meridian is -105.5000000

Coordinates are relative to: Guttersten D25-734
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 0.65°



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