

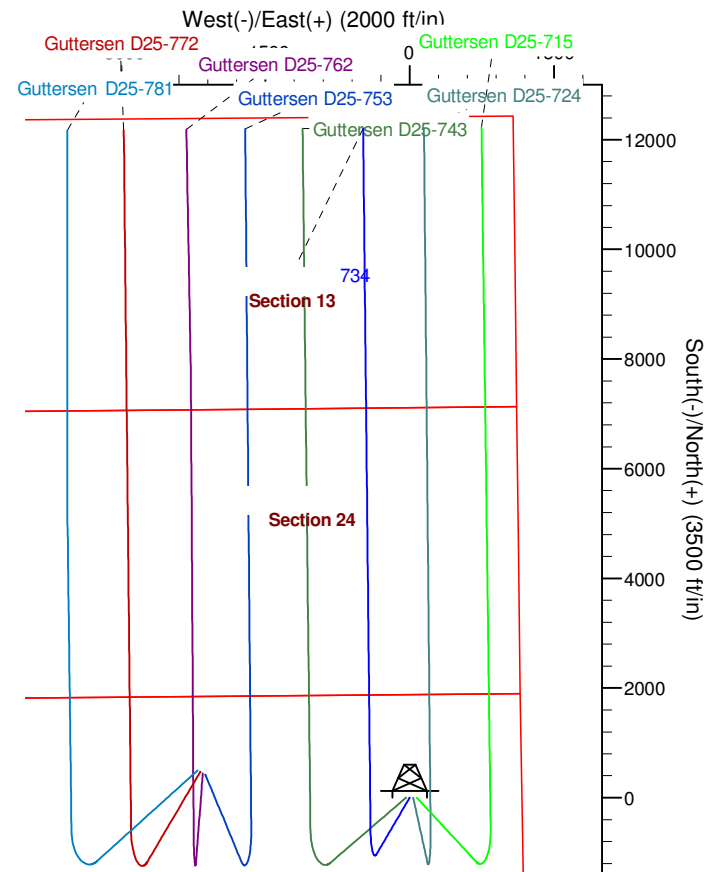
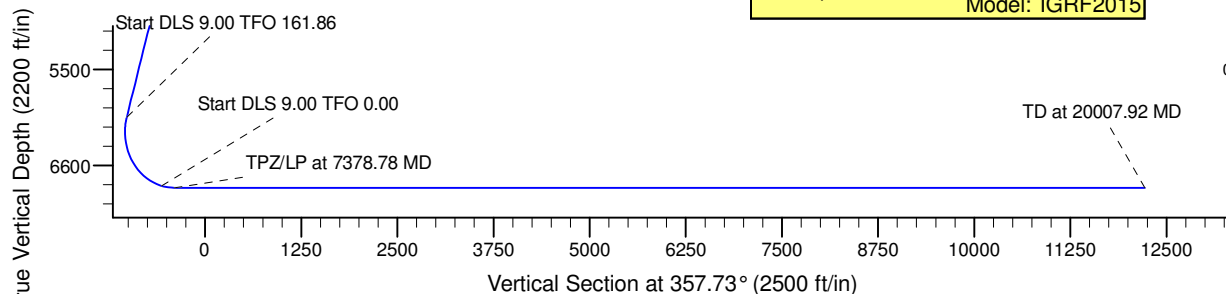
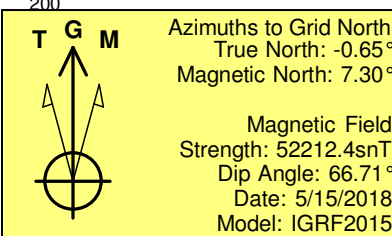
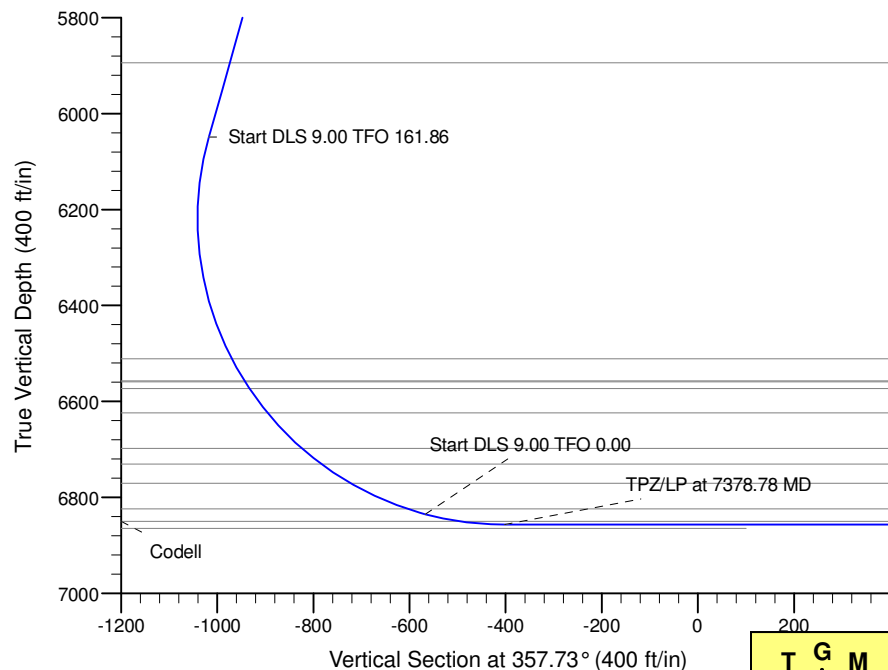
Project: Mustang
Site: D Section 25
Well: Guttersen D25-734
Wellbore: Wellbore #1
Design: Plan #1

Northern Region - DJ Basin

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

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSec	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	2834.04	16.68	198.46	2822.30	-114.35	-38.16	2.00	198.46	-112.75	
4	6202.86	16.68	198.46	6049.37	-1031.60	-344.28	0.00	0.00	-1017.17	
5	7212.12	75.00	359.66	6835.31	-583.55	-406.73	9.00	161.86	-567.00	
6	7378.78	90.00	359.66	6857.00	-418.79	-407.72	9.00	0.00	-402.32	
7	20007.92	90.00	359.66	6857.00	12210.12	-483.62	0.00	0.00	12219.69	Guttersen D25-734 BHL



WELL DETAILS: Guttersen D25-734				
0.00	0.00	1316740.24	3280864.69	4772.00
				Latitude
				Longitude
				40.1984775
				-104.4945139
Plan: Plan #1 (Guttersen D25-734/Wellbore #1)				
Created By: Colby Baxter	Date: 10:10, August 15 2018			
Checked: _____	Date: _____			
Reviewed: _____	Date: _____			
Approved: _____	Date: _____			

Northern Region - DJ Basin

Mustang

D Section 25

Guttersen D25-734

Wellbore #1

Plan: Plan #1

Standard Survey Report

15 August, 2018

Noble Energy, Inc.

Survey Report

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

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	0.00 ft	Northing:	1,316,740.24 usft	Latitude:	40.1984776
	+E/-W	0.00 ft	Easting:	3,280,864.69 usft	Longitude:	-104.4945139
Position Uncertainty		0.00 ft	Wellhead Elevation:	ft	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 #1				
Audit Notes:					
Version:	Phase:	PLAN	Tie On Depth:	0.00	
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)	
	0.00	0.00	0.00	357.73	

Survey Tool Program	Date	8/15/2018			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
0.00	20,007.92	Plan #1 (Wellbore #1)	2_MWD+IFR1+MS	A008Mb: IFR dec & multi-station analysis	

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	

Noble Energy, Inc.

Survey Report

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

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)
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	198.46	2,099.98	-1.66	-0.55	-1.63	2.00	2.00	0.00
2,200.00	4.00	198.46	2,199.84	-6.62	-2.21	-6.53	2.00	2.00	0.00
2,300.00	6.00	198.46	2,299.45	-14.89	-4.97	-14.68	2.00	2.00	0.00
2,400.00	8.00	198.46	2,398.70	-26.45	-8.83	-26.08	2.00	2.00	0.00
2,500.00	10.00	198.46	2,497.47	-41.28	-13.78	-40.71	2.00	2.00	0.00
2,600.00	12.00	198.46	2,595.62	-59.38	-19.82	-58.55	2.00	2.00	0.00
2,700.00	14.00	198.46	2,693.06	-80.72	-26.94	-79.59	2.00	2.00	0.00
2,800.00	16.00	198.46	2,789.64	-105.27	-35.13	-103.80	2.00	2.00	0.00
2,834.04	16.68	198.46	2,822.30	-114.35	-38.16	-112.75	2.00	2.00	0.00
2,900.00	16.68	198.46	2,885.49	-132.31	-44.16	-130.46	0.00	0.00	0.00
3,000.00	16.68	198.46	2,981.28	-159.54	-53.24	-157.31	0.00	0.00	0.00
3,100.00	16.68	198.46	3,077.08	-186.77	-62.33	-184.15	0.00	0.00	0.00
3,200.00	16.68	198.46	3,172.87	-214.00	-71.42	-211.00	0.00	0.00	0.00
3,300.00	16.68	198.46	3,268.66	-241.22	-80.50	-237.85	0.00	0.00	0.00
3,400.00	16.68	198.46	3,364.45	-268.45	-89.59	-264.69	0.00	0.00	0.00
3,500.00	16.68	198.46	3,460.24	-295.68	-98.68	-291.54	0.00	0.00	0.00
3,600.00	16.68	198.46	3,556.04	-322.91	-107.76	-318.39	0.00	0.00	0.00
3,700.00	16.68	198.46	3,651.83	-350.13	-116.85	-345.23	0.00	0.00	0.00
3,800.00	16.68	198.46	3,747.62	-377.36	-125.94	-372.08	0.00	0.00	0.00
3,900.00	16.68	198.46	3,843.41	-404.59	-135.03	-398.93	0.00	0.00	0.00
4,000.00	16.68	198.46	3,939.20	-431.82	-144.11	-425.77	0.00	0.00	0.00
4,100.00	16.68	198.46	4,035.00	-459.04	-153.20	-452.62	0.00	0.00	0.00
4,200.00	16.68	198.46	4,130.79	-486.27	-162.29	-479.47	0.00	0.00	0.00
4,300.00	16.68	198.46	4,226.58	-513.50	-171.37	-506.31	0.00	0.00	0.00
4,400.00	16.68	198.46	4,322.37	-540.73	-180.46	-533.16	0.00	0.00	0.00
4,500.00	16.68	198.46	4,418.16	-567.95	-189.55	-560.01	0.00	0.00	0.00
4,600.00	16.68	198.46	4,513.95	-595.18	-198.63	-586.85	0.00	0.00	0.00
4,700.00	16.68	198.46	4,609.75	-622.41	-207.72	-613.70	0.00	0.00	0.00
4,800.00	16.68	198.46	4,705.54	-649.64	-216.81	-640.55	0.00	0.00	0.00
4,900.00	16.68	198.46	4,801.33	-676.86	-225.89	-667.39	0.00	0.00	0.00
5,000.00	16.68	198.46	4,897.12	-704.09	-234.98	-694.24	0.00	0.00	0.00
5,100.00	16.68	198.46	4,992.91	-731.32	-244.07	-721.09	0.00	0.00	0.00
5,200.00	16.68	198.46	5,088.71	-758.55	-253.15	-747.93	0.00	0.00	0.00

Noble Energy, Inc.

Survey Report

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

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	16.68	198.46	5,184.50	-785.77	-262.24	-774.78	0.00	0.00	0.00
5,400.00	16.68	198.46	5,280.29	-813.00	-271.33	-801.63	0.00	0.00	0.00
5,500.00	16.68	198.46	5,376.08	-840.23	-280.41	-828.47	0.00	0.00	0.00
5,600.00	16.68	198.46	5,471.87	-867.46	-289.50	-855.32	0.00	0.00	0.00
5,700.00	16.68	198.46	5,567.67	-894.68	-298.59	-882.17	0.00	0.00	0.00
5,800.00	16.68	198.46	5,663.46	-921.91	-307.67	-909.01	0.00	0.00	0.00
5,900.00	16.68	198.46	5,759.25	-949.14	-316.76	-935.86	0.00	0.00	0.00
6,000.00	16.68	198.46	5,855.04	-976.37	-325.85	-962.71	0.00	0.00	0.00
6,100.00	16.68	198.46	5,950.83	-1,003.59	-334.93	-989.55	0.00	0.00	0.00
6,200.00	16.68	198.46	6,046.63	-1,030.82	-344.02	-1,016.40	0.00	0.00	0.00
6,202.86	16.68	198.46	6,049.37	-1,031.60	-344.28	-1,017.17	0.00	0.00	0.00
6,300.00	8.79	216.49	6,144.07	-1,050.83	-353.13	-1,036.03	9.00	-8.12	18.56
6,400.00	5.45	290.88	6,243.47	-1,055.29	-362.13	-1,040.13	9.00	-3.34	74.39
6,500.00	11.99	336.03	6,342.35	-1,044.09	-370.80	-1,028.60	9.00	6.54	45.15
6,600.00	20.47	347.13	6,438.30	-1,017.50	-378.93	-1,001.70	9.00	8.49	11.10
6,700.00	29.26	351.82	6,528.95	-976.17	-386.32	-960.12	9.00	8.79	4.69
6,800.00	38.14	354.47	6,612.07	-921.13	-392.78	-904.86	9.00	8.88	2.65
6,900.00	47.06	356.24	6,685.60	-853.73	-398.17	-837.30	9.00	8.92	1.77
7,000.00	56.00	357.56	6,747.75	-775.63	-402.33	-759.10	9.00	8.94	1.32
7,100.00	64.96	358.63	6,796.97	-688.75	-405.18	-672.17	9.00	8.95	1.07
7,200.00	73.91	359.55	6,832.06	-595.23	-406.65	-578.67	9.00	8.96	0.92
7,212.12	75.00	359.66	6,835.31	-583.55	-406.73	-567.00	9.00	8.96	0.87
7,300.00	82.91	359.66	6,852.13	-497.37	-407.24	-480.86	9.00	9.00	0.00
7,378.78	90.00	359.66	6,857.00	-418.79	-407.72	-402.32	9.00	9.00	0.00
7,400.00	90.00	359.66	6,857.00	-397.57	-407.84	-381.12	0.00	0.00	0.00
7,500.00	90.00	359.66	6,857.00	-297.57	-408.45	-281.17	0.00	0.00	0.00
7,600.00	90.00	359.66	6,857.00	-197.57	-409.05	-181.23	0.00	0.00	0.00
7,700.00	90.00	359.66	6,857.00	-97.58	-409.65	-81.29	0.00	0.00	0.00
7,800.00	90.00	359.66	6,857.00	2.42	-410.25	18.66	0.00	0.00	0.00
7,900.00	90.00	359.66	6,857.00	102.42	-410.85	118.60	0.00	0.00	0.00
8,000.00	90.00	359.66	6,857.00	202.42	-411.45	218.54	0.00	0.00	0.00
8,100.00	90.00	359.66	6,857.00	302.42	-412.05	318.49	0.00	0.00	0.00
8,200.00	90.00	359.66	6,857.00	402.41	-412.65	418.43	0.00	0.00	0.00
8,300.00	90.00	359.66	6,857.00	502.41	-413.25	518.37	0.00	0.00	0.00
8,400.00	90.00	359.66	6,857.00	602.41	-413.86	618.32	0.00	0.00	0.00
8,500.00	90.00	359.66	6,857.00	702.41	-414.46	718.26	0.00	0.00	0.00
8,600.00	90.00	359.66	6,857.00	802.41	-415.06	818.21	0.00	0.00	0.00
8,700.00	90.00	359.66	6,857.00	902.41	-415.66	918.15	0.00	0.00	0.00
8,800.00	90.00	359.66	6,857.00	1,002.40	-416.26	1,018.09	0.00	0.00	0.00
8,900.00	90.00	359.66	6,857.00	1,102.40	-416.86	1,118.04	0.00	0.00	0.00
9,000.00	90.00	359.66	6,857.00	1,202.40	-417.46	1,217.98	0.00	0.00	0.00
9,100.00	90.00	359.66	6,857.00	1,302.40	-418.06	1,317.92	0.00	0.00	0.00
9,200.00	90.00	359.66	6,857.00	1,402.40	-418.66	1,417.87	0.00	0.00	0.00

Noble Energy, Inc.

Survey Report

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

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)
9,300.00	90.00	359.66	6,857.00	1,502.40	-419.26	1,517.81	0.00	0.00	0.00
9,400.00	90.00	359.66	6,857.00	1,602.39	-419.87	1,617.75	0.00	0.00	0.00
9,500.00	90.00	359.66	6,857.00	1,702.39	-420.47	1,717.70	0.00	0.00	0.00
9,600.00	90.00	359.66	6,857.00	1,802.39	-421.07	1,817.64	0.00	0.00	0.00
9,700.00	90.00	359.66	6,857.00	1,902.39	-421.67	1,917.59	0.00	0.00	0.00
9,800.00	90.00	359.66	6,857.00	2,002.39	-422.27	2,017.53	0.00	0.00	0.00
9,900.00	90.00	359.66	6,857.00	2,102.38	-422.87	2,117.47	0.00	0.00	0.00
10,000.00	90.00	359.66	6,857.00	2,202.38	-423.47	2,217.42	0.00	0.00	0.00
10,100.00	90.00	359.66	6,857.00	2,302.38	-424.07	2,317.36	0.00	0.00	0.00
10,200.00	90.00	359.66	6,857.00	2,402.38	-424.67	2,417.30	0.00	0.00	0.00
10,300.00	90.00	359.66	6,857.00	2,502.38	-425.27	2,517.25	0.00	0.00	0.00
10,400.00	90.00	359.66	6,857.00	2,602.38	-425.88	2,617.19	0.00	0.00	0.00
10,500.00	90.00	359.66	6,857.00	2,702.37	-426.48	2,717.13	0.00	0.00	0.00
10,600.00	90.00	359.66	6,857.00	2,802.37	-427.08	2,817.08	0.00	0.00	0.00
10,700.00	90.00	359.66	6,857.00	2,902.37	-427.68	2,917.02	0.00	0.00	0.00
10,800.00	90.00	359.66	6,857.00	3,002.37	-428.28	3,016.97	0.00	0.00	0.00
10,900.00	90.00	359.66	6,857.00	3,102.37	-428.88	3,116.91	0.00	0.00	0.00
11,000.00	90.00	359.66	6,857.00	3,202.36	-429.48	3,216.85	0.00	0.00	0.00
11,100.00	90.00	359.66	6,857.00	3,302.36	-430.08	3,316.80	0.00	0.00	0.00
11,200.00	90.00	359.66	6,857.00	3,402.36	-430.68	3,416.74	0.00	0.00	0.00
11,300.00	90.00	359.66	6,857.00	3,502.36	-431.29	3,516.68	0.00	0.00	0.00
11,400.00	90.00	359.66	6,857.00	3,602.36	-431.89	3,616.63	0.00	0.00	0.00
11,500.00	90.00	359.66	6,857.00	3,702.36	-432.49	3,716.57	0.00	0.00	0.00
11,600.00	90.00	359.66	6,857.00	3,802.35	-433.09	3,816.51	0.00	0.00	0.00
11,700.00	90.00	359.66	6,857.00	3,902.35	-433.69	3,916.46	0.00	0.00	0.00
11,800.00	90.00	359.66	6,857.00	4,002.35	-434.29	4,016.40	0.00	0.00	0.00
11,900.00	90.00	359.66	6,857.00	4,102.35	-434.89	4,116.35	0.00	0.00	0.00
12,000.00	90.00	359.66	6,857.00	4,202.35	-435.49	4,216.29	0.00	0.00	0.00
12,100.00	90.00	359.66	6,857.00	4,302.34	-436.09	4,316.23	0.00	0.00	0.00
12,200.00	90.00	359.66	6,857.00	4,402.34	-436.69	4,416.18	0.00	0.00	0.00
12,300.00	90.00	359.66	6,857.00	4,502.34	-437.30	4,516.12	0.00	0.00	0.00
12,400.00	90.00	359.66	6,857.00	4,602.34	-437.90	4,616.06	0.00	0.00	0.00
12,500.00	90.00	359.66	6,857.00	4,702.34	-438.50	4,716.01	0.00	0.00	0.00
12,600.00	90.00	359.66	6,857.00	4,802.34	-439.10	4,815.95	0.00	0.00	0.00
12,700.00	90.00	359.66	6,857.00	4,902.33	-439.70	4,915.89	0.00	0.00	0.00
12,800.00	90.00	359.66	6,857.00	5,002.33	-440.30	5,015.84	0.00	0.00	0.00
12,900.00	90.00	359.66	6,857.00	5,102.33	-440.90	5,115.78	0.00	0.00	0.00
13,000.00	90.00	359.66	6,857.00	5,202.33	-441.50	5,215.73	0.00	0.00	0.00
13,100.00	90.00	359.66	6,857.00	5,302.33	-442.10	5,315.67	0.00	0.00	0.00
13,200.00	90.00	359.66	6,857.00	5,402.32	-442.71	5,415.61	0.00	0.00	0.00
13,300.00	90.00	359.66	6,857.00	5,502.32	-443.31	5,515.56	0.00	0.00	0.00
13,400.00	90.00	359.66	6,857.00	5,602.32	-443.91	5,615.50	0.00	0.00	0.00
13,500.00	90.00	359.66	6,857.00	5,702.32	-444.51	5,715.44	0.00	0.00	0.00

Noble Energy, Inc.

Survey Report

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

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)
13,600.00	90.00	359.66	6,857.00	5,802.32	-445.11	5,815.39	0.00	0.00	0.00
13,700.00	90.00	359.66	6,857.00	5,902.32	-445.71	5,915.33	0.00	0.00	0.00
13,800.00	90.00	359.66	6,857.00	6,002.31	-446.31	6,015.27	0.00	0.00	0.00
13,900.00	90.00	359.66	6,857.00	6,102.31	-446.91	6,115.22	0.00	0.00	0.00
14,000.00	90.00	359.66	6,857.00	6,202.31	-447.51	6,215.16	0.00	0.00	0.00
14,100.00	90.00	359.66	6,857.00	6,302.31	-448.11	6,315.11	0.00	0.00	0.00
14,200.00	90.00	359.66	6,857.00	6,402.31	-448.72	6,415.05	0.00	0.00	0.00
14,300.00	90.00	359.66	6,857.00	6,502.30	-449.32	6,514.99	0.00	0.00	0.00
14,400.00	90.00	359.66	6,857.00	6,602.30	-449.92	6,614.94	0.00	0.00	0.00
14,500.00	90.00	359.66	6,857.00	6,702.30	-450.52	6,714.88	0.00	0.00	0.00
14,600.00	90.00	359.66	6,857.00	6,802.30	-451.12	6,814.82	0.00	0.00	0.00
14,700.00	90.00	359.66	6,857.00	6,902.30	-451.72	6,914.77	0.00	0.00	0.00
14,800.00	90.00	359.66	6,857.00	7,002.30	-452.32	7,014.71	0.00	0.00	0.00
14,900.00	90.00	359.66	6,857.00	7,102.29	-452.92	7,114.65	0.00	0.00	0.00
15,000.00	90.00	359.66	6,857.00	7,202.29	-453.52	7,214.60	0.00	0.00	0.00
15,100.00	90.00	359.66	6,857.00	7,302.29	-454.13	7,314.54	0.00	0.00	0.00
15,200.00	90.00	359.66	6,857.00	7,402.29	-454.73	7,414.49	0.00	0.00	0.00
15,300.00	90.00	359.66	6,857.00	7,502.29	-455.33	7,514.43	0.00	0.00	0.00
15,400.00	90.00	359.66	6,857.00	7,602.28	-455.93	7,614.37	0.00	0.00	0.00
15,500.00	90.00	359.66	6,857.00	7,702.28	-456.53	7,714.32	0.00	0.00	0.00
15,600.00	90.00	359.66	6,857.00	7,802.28	-457.13	7,814.26	0.00	0.00	0.00
15,700.00	90.00	359.66	6,857.00	7,902.28	-457.73	7,914.20	0.00	0.00	0.00
15,800.00	90.00	359.66	6,857.00	8,002.28	-458.33	8,014.15	0.00	0.00	0.00
15,900.00	90.00	359.66	6,857.00	8,102.28	-458.93	8,114.09	0.00	0.00	0.00
16,000.00	90.00	359.66	6,857.00	8,202.27	-459.53	8,214.03	0.00	0.00	0.00
16,100.00	90.00	359.66	6,857.00	8,302.27	-460.14	8,313.98	0.00	0.00	0.00
16,200.00	90.00	359.66	6,857.00	8,402.27	-460.74	8,413.92	0.00	0.00	0.00
16,300.00	90.00	359.66	6,857.00	8,502.27	-461.34	8,513.87	0.00	0.00	0.00
16,400.00	90.00	359.66	6,857.00	8,602.27	-461.94	8,613.81	0.00	0.00	0.00
16,500.00	90.00	359.66	6,857.00	8,702.27	-462.54	8,713.75	0.00	0.00	0.00
16,600.00	90.00	359.66	6,857.00	8,802.26	-463.14	8,813.70	0.00	0.00	0.00
16,700.00	90.00	359.66	6,857.00	8,902.26	-463.74	8,913.64	0.00	0.00	0.00
16,800.00	90.00	359.66	6,857.00	9,002.26	-464.34	9,013.58	0.00	0.00	0.00
16,900.00	90.00	359.66	6,857.00	9,102.26	-464.94	9,113.53	0.00	0.00	0.00
17,000.00	90.00	359.66	6,857.00	9,202.26	-465.55	9,213.47	0.00	0.00	0.00
17,100.00	90.00	359.66	6,857.00	9,302.25	-466.15	9,313.41	0.00	0.00	0.00
17,200.00	90.00	359.66	6,857.00	9,402.25	-466.75	9,413.36	0.00	0.00	0.00
17,300.00	90.00	359.66	6,857.00	9,502.25	-467.35	9,513.30	0.00	0.00	0.00
17,400.00	90.00	359.66	6,857.00	9,602.25	-467.95	9,613.25	0.00	0.00	0.00
17,500.00	90.00	359.66	6,857.00	9,702.25	-468.55	9,713.19	0.00	0.00	0.00
17,600.00	90.00	359.66	6,857.00	9,802.25	-469.15	9,813.13	0.00	0.00	0.00
17,700.00	90.00	359.66	6,857.00	9,902.24	-469.75	9,913.08	0.00	0.00	0.00
17,800.00	90.00	359.66	6,857.00	10,002.24	-470.35	10,013.02	0.00	0.00	0.00
17,900.00	90.00	359.66	6,857.00	10,102.24	-470.95	10,112.96	0.00	0.00	0.00

Noble Energy, Inc.

Survey Report

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

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)
18,000.00	90.00	359.66	6,857.00	10,202.24	-471.56	10,212.91	0.00	0.00	0.00
18,100.00	90.00	359.66	6,857.00	10,302.24	-472.16	10,312.85	0.00	0.00	0.00
18,200.00	90.00	359.66	6,857.00	10,402.23	-472.76	10,412.79	0.00	0.00	0.00
18,300.00	90.00	359.66	6,857.00	10,502.23	-473.36	10,512.74	0.00	0.00	0.00
18,400.00	90.00	359.66	6,857.00	10,602.23	-473.96	10,612.68	0.00	0.00	0.00
18,500.00	90.00	359.66	6,857.00	10,702.23	-474.56	10,712.63	0.00	0.00	0.00
18,600.00	90.00	359.66	6,857.00	10,802.23	-475.16	10,812.57	0.00	0.00	0.00
18,700.00	90.00	359.66	6,857.00	10,902.23	-475.76	10,912.51	0.00	0.00	0.00
18,800.00	90.00	359.66	6,857.00	11,002.22	-476.36	11,012.46	0.00	0.00	0.00
18,900.00	90.00	359.66	6,857.00	11,102.22	-476.96	11,112.40	0.00	0.00	0.00
19,000.00	90.00	359.66	6,857.00	11,202.22	-477.57	11,212.34	0.00	0.00	0.00
19,100.00	90.00	359.66	6,857.00	11,302.22	-478.17	11,312.29	0.00	0.00	0.00
19,200.00	90.00	359.66	6,857.00	11,402.22	-478.77	11,412.23	0.00	0.00	0.00
19,300.00	90.00	359.66	6,857.00	11,502.21	-479.37	11,512.17	0.00	0.00	0.00
19,400.00	90.00	359.66	6,857.00	11,602.21	-479.97	11,612.12	0.00	0.00	0.00
19,500.00	90.00	359.66	6,857.00	11,702.21	-480.57	11,712.06	0.00	0.00	0.00
19,600.00	90.00	359.66	6,857.00	11,802.21	-481.17	11,812.01	0.00	0.00	0.00
19,700.00	90.00	359.66	6,857.00	11,902.21	-481.77	11,911.95	0.00	0.00	0.00
19,800.00	90.00	359.66	6,857.00	12,002.21	-482.37	12,011.89	0.00	0.00	0.00
19,900.00	90.00	359.66	6,857.00	12,102.20	-482.98	12,111.84	0.00	0.00	0.00
20,000.00	90.00	359.66	6,857.00	12,202.20	-483.58	12,211.78	0.00	0.00	0.00
20,007.92	90.00	359.66	6,857.00	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 SHL - 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 KOP - plan hits target center - Point	0.00	0.00	6,049.37	-1,031.60	-344.28	1,315,708.64	3,280,520.41	40.1956566	-104.4957881
Guttersen D25-734 TPZ - plan hits target center - Point	0.00	0.00	6,835.31	-583.55	-406.73	1,316,156.69	3,280,457.97	40.1968884	-104.4959935
Guttersen D25-734 BHL - plan hits target center - Point	0.00	0.00	6,857.00	12,210.12	-483.62	1,328,950.33	3,280,381.07	40.2320085	-104.4957501

Noble Energy, Inc.

Survey Report

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

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				
3,665.73	3,619.00	Parkman				
4,106.27	4,041.00	Sussex				
4,299.40	4,226.00	Shannon				
6,040.67	5,894.00	Teepee Buttes				
6,679.60	6,511.00	Sharon Springs				
6,732.63	6,557.00	Top A Chalk				
6,734.99	6,559.00	Top A Marl				
6,751.71	6,573.00	Top B Chalk				
6,815.32	6,624.00	Top B Marl				
6,918.49	6,698.00	Top C Chalk				
6,971.01	6,731.00	Top C Marl				
7,043.85	6,771.00	Top D Chalk				
7,172.88	6,824.00	Top Ft. Hayes				
7,284.27	6,850.00	Codell				

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates			
		+N/-S (ft)	+E/-W (ft)	Comment	
2000	2000	0	0	Start Build 2.00	
6203	6049	-114	-38	Start DLS 9.00 TFO 161.86	
7212	6835	-1032	-344	Start DLS 9.00 TFO 0.00	
7379	6857	-584	-407	TPZ/LP at 7378.78 MD	
20,008	6857	-419	-408	TD at 20007.92 MD	

Checked By: _____ Approved By: _____ Date: _____

Northern Region - DJ Basin

Mustang

D Section 25

Guttersen D25-734

Wellbore #1

Plan #1

Anticollision Summary Report

15 August, 2018

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 #1	Offset TVD Reference:	Offset Datum

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

Survey Tool Program	Date	8/15/2018		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.00	20,007.92	Plan #1 (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
D Section 13						
Dalbey D 13-11 (SI) - Wellbore #1 - Gyro Surveys	16,916.29	6,810.45	1,607.76	1,500.43	14.979	CC, ES
Dalbey D 13-11 (SI) - Wellbore #1 - Gyro Surveys	17,000.00	6,810.49	1,609.94	1,502.01	14.916	SF
Dalbey D 13-12 (PR) - Wellbore #1 - Gyro Surveys	16,439.06	6,835.35	2,756.70	2,652.67	26.498	CC, ES
Dalbey D 13-12 (PR) - Wellbore #1 - Gyro Surveys	16,800.00	6,839.00	2,780.23	2,673.87	26.142	SF
Dalbey D 13-13 (PR) - Wellbore #1 - No Surveys	15,515.46	6,801.00	3,019.97	2,810.78	14.436	CC, ES
Dalbey D 13-13 (PR) - Wellbore #1 - No Surveys	15,800.00	6,801.00	3,033.35	2,822.15	14.363	SF
Dalbey D 13-14 (PA) - Wellbore #1 - Gyro Surveys	15,521.71	6,803.70	1,838.73	1,741.91	18.990	CC, ES
Dalbey D 13-14 (PA) - Wellbore #1 - Gyro Surveys	15,700.00	6,805.32	1,847.36	1,749.36	18.851	SF
Guttersen 12-13 (SI) - Wellbore #1 - Gyro Surveys	18,110.69	6,941.92	3,119.38	3,002.29	26.642	CC, ES
Guttersen 12-13 (SI) - Wellbore #1 - Gyro Surveys	18,500.00	6,935.86	3,143.57	3,023.99	26.289	SF
Guttersen 13C (PR) - Wellbore #1 - Gyro Surveys	18,882.36	6,799.97	280.00	156.97	2.276	CC, ES, SF
Guttersen 13D (PR) - Wellbore #1 - Gyro Surveys	16,282.59	6,806.53	258.22	155.47	2.513	CC, ES, SF
Guttersen 13N (PR) - Wellbore #1 - Gyro Surveys	18,862.99	6,826.45	1,280.72	1,157.96	10.432	CC, ES
Guttersen 13N (PR) - Wellbore #1 - Gyro Surveys	18,900.00	6,825.41	1,281.26	1,158.21	10.413	SF
Guttersen 13S (PR) - Wellbore #1 - Gyro Surveys	17,626.28	6,800.78	262.43	149.37	2.321	CC, ES, SF
Guttersen 13T (PR) - Wellbore #1 - Gyro Surveys	15,058.22	6,804.45	153.51	60.36	1.648	CC, ES, SF
Guttersen 21-13 (SI) - Wellbore #1 - Gyro Surveys	19,475.68	6,837.27	1,845.19	1,717.65	14.467	CC
Guttersen 21-13 (SI) - Wellbore #1 - Gyro Surveys	19,500.00	6,836.91	1,845.35	1,717.61	14.446	ES
Guttersen 21-13 (SI) - Wellbore #1 - Gyro Surveys	19,600.00	6,835.45	1,849.37	1,720.99	14.405	SF
Guttersen 22-13 (SI) - Wellbore #1 - Gyro Surveys	18,220.57	6,827.28	1,696.72	1,579.05	14.419	CC, ES
Guttersen 22-13 (SI) - Wellbore #1 - Gyro Surveys	18,300.00	6,827.53	1,698.58	1,580.33	14.365	SF
Guttersen 31-13 (PR) - Wellbore #1 - Gyro Surveys	19,514.46	6,788.01	464.72	336.51	3.625	CC, ES, SF
Guttersen 32-13 (PR) - Wellbore #1 - Gyro Surveys	18,328.06	6,808.04	366.18	247.50	3.085	CC, ES, SF
Guttersen 34-13 (PR) - Wellbore #1 - Gyro Surveys	15,569.03	6,806.88	484.08	386.97	4.985	CC, ES, SF
Guttersen 41-13 (PR) - Wellbore #1 - Gyro Surveys	19,452.84	6,812.38	941.64	813.78	7.365	CC, ES
Guttersen 41-13 (PR) - Wellbore #1 - Gyro Surveys	19,500.00	6,811.26	942.82	814.74	7.361	SF
Guttersen 42-13 (PR) - Wellbore #1 - Gyro Surveys	18,188.75	6,794.57	1,029.25	911.58	8.747	CC
Guttersen 42-13 (PR) - Wellbore #1 - Gyro Surveys	18,200.00	6,794.19	1,029.31	911.56	8.742	ES, SF
Guttersen 43-13 - Wellbore #1 - Wellbore #1 - As Drilled	16,914.03	6,821.50	920.30	812.38	8.528	CC, ES, SF
Guttersen 44-13 - Wellbore #1 - Wellbore #1 - As Drilled	15,560.90	6,834.41	856.22	751.31	8.162	CC, ES
Guttersen 44-13 - Wellbore #1 - Wellbore #1 - As Drilled	15,600.00	6,834.37	857.11	752.01	8.155	SF
L F Ranch 1-13 (PR) - Wellbore #1 - Gyro Surveys	16,608.27	6,819.42	507.48	402.18	4.819	CC, ES, SF
L. F. Ranch 13-4 (SI) - Wellbore #1 - Gyro Surveys	19,123.79	7,018.63	2,717.24	2,589.87	21.333	CC, ES
L. F. Ranch 13-4 (SI) - Wellbore #1 - Gyro Surveys	19,400.00	7,002.60	2,731.19	2,602.23	21.178	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 #1	Offset TVD Reference:	Offset Datum

Summary						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
D Section 24						
Dalbey D 24-10 (PR) - Wellbore #1 - Gyro Surveys	11,271.67	6,816.11	48.26	-17.31	0.736	Level 1, CC, ES, SF
Dalbey D 24-15 (SI) - Wellbore #1 - Gyro Surveys	10,312.71	6,806.94	520.37	460.71	8.723	CC, ES, SF
Glazier 2-24 (SI) - Wellbore #1 - Gyro Surveys	13,483.26	6,808.22	599.26	517.91	7.366	CC, ES
Glazier 2-24 (SI) - Wellbore #1 - Gyro Surveys	13,500.00	6,808.14	599.49	518.06	7.362	SF
Guttersen 11-24 (PR) - Wellbore #1 - Gyro Surveys	14,265.74	6,873.62	3,078.48	2,991.54	35.407	CC
Guttersen 11-24 (PR) - Wellbore #1 - Gyro Surveys	14,300.00	6,873.63	3,078.67	2,991.46	35.302	ES
Guttersen 11-24 (PR) - Wellbore #1 - Gyro Surveys	14,800.00	6,873.71	3,124.50	3,034.20	34.604	SF
Guttersen 12-24 (PR) - Wellbore #1 - Gyro Surveys	12,968.58	6,845.13	3,096.13	3,018.90	40.088	CC
Guttersen 12-24 (PR) - Wellbore #1 - Gyro Surveys	13,000.00	6,845.07	3,096.29	3,018.82	39.969	ES
Guttersen 12-24 (PR) - Wellbore #1 - Gyro Surveys	13,600.00	6,843.95	3,159.86	3,078.77	38.968	SF
Guttersen 21-24 (PR) - Wellbore #1 - Gyro Surveys	14,278.54	6,799.62	1,762.83	1,675.57	20.202	CC
Guttersen 21-24 (PR) - Wellbore #1 - Gyro Surveys	14,300.00	6,799.69	1,762.96	1,675.53	20.165	ES
Guttersen 21-24 (PR) - Wellbore #1 - Gyro Surveys	14,500.00	6,800.32	1,776.69	1,688.07	20.048	SF
Guttersen 22-24 (PR) - Wellbore #1 - Gyro Surveys	13,049.53	6,809.23	1,712.21	1,634.26	21.966	CC, ES
Guttersen 22-24 (PR) - Wellbore #1 - Gyro Surveys	13,200.00	6,809.38	1,718.81	1,639.86	21.771	SF
Guttersen 24A (PR) - Wellbore #1 - Gyro Surveys	13,605.78	6,829.17	2,389.01	2,306.90	29.096	CC, ES
Guttersen 24A (PR) - Wellbore #1 - Gyro Surveys	13,900.00	6,831.87	2,407.06	2,323.03	28.646	SF
Guttersen 24J (PR) - Wellbore #1 - Gyro Surveys	14,902.43	6,816.80	2,299.72	2,207.83	25.025	CC, ES
Guttersen 24J (PR) - Wellbore #1 - Gyro Surveys	15,200.00	6,812.66	2,318.89	2,225.09	24.721	SF
Guttersen 24N (PR) - Wellbore #1 - MWD Surveys	13,641.30	6,792.57	1,163.20	1,081.72	14.276	CC, ES
Guttersen 24N (PR) - Wellbore #1 - MWD Surveys	13,700.00	6,792.47	1,164.68	1,082.78	14.221	SF
Guttersen 24S (PR) - Wellbore #1 - MWD Surveys	12,152.19	6,805.61	300.69	229.82	4.243	CC, ES, SF
Guttersen 43-24 (PR) - Wellbore #1 - Gyro Surveys	11,528.36	6,822.27	841.10	774.03	12.540	CC, ES
Guttersen 43-24 (PR) - Wellbore #1 - Gyro Surveys	11,600.00	6,821.95	844.15	776.76	12.527	SF
Guttersen 44-24 (PR) - Wellbore #1 - Gyro Surveys	10,291.24	6,809.96	915.06	855.73	15.423	CC
Guttersen 44-24 (PR) - Wellbore #1 - Gyro Surveys	10,300.00	6,809.98	915.10	855.73	15.412	ES, SF
Karch Blue D 24-12 (PA) - Wellbore #1 - Gyro Surveys	11,790.45	6,833.11	3,042.73	2,973.87	44.191	CC
Karch Blue D 24-12 (PA) - Wellbore #1 - Gyro Surveys	11,800.00	6,833.11	3,042.74	2,973.82	44.148	ES
Karch Blue D 24-12 (PA) - Wellbore #1 - Gyro Surveys	12,400.00	6,833.33	3,103.18	3,030.65	42.783	SF
Karch Blue D 24-14 (PR) - Wellbore #1 - No Surveys	10,263.16	6,820.00	1,478.82	1,306.57	8.585	CC, ES
Karch Blue D 24-14 (PR) - Wellbore #1 - No Surveys	10,300.00	6,820.00	1,479.28	1,306.81	8.577	SF
Karch Blue D24-11 (PA) - Wellbore #1 - Gyro Surveys	11,789.10	6,790.01	1,627.67	1,551.52	21.373	CC
Karch Blue D24-11 (PA) - Wellbore #1 - Gyro Surveys	11,800.00	6,790.12	1,627.71	1,551.47	21.351	ES
Karch Blue D24-11 (PA) - Wellbore #1 - Gyro Surveys	12,000.00	6,792.11	1,641.28	1,563.83	21.194	SF
Koerner 31-24 (SI) - Wellbore #1 - Gyro Surveys	14,328.00	6,803.23	440.12	352.65	5.031	CC, ES, SF
Koerner 32-24 (SI) - Wellbore #1 - Gyro Surveys	12,893.35	6,820.26	424.00	347.05	5.510	CC, ES
Koerner 32-24 (SI) - Wellbore #1 - Gyro Surveys	12,900.00	6,820.27	424.05	347.05	5.507	SF
Koerner 42-24 (SI) - Wellbore #1 - Gyro Surveys	12,879.14	6,814.94	878.03	801.59	11.486	CC, ES
Koerner 42-24 (SI) - Wellbore #1 - Gyro Surveys	12,900.00	6,814.70	878.27	801.71	11.472	SF
LF Ranch 1-24 (SI) - Wellbore #1 - Gyro Surveys	10,684.52	6,902.25	2,698.74	2,636.51	43.369	CC
LF Ranch 1-24 (SI) - Wellbore #1 - Gyro Surveys	10,700.00	6,902.38	2,698.78	2,636.46	43.302	ES
LF Ranch 1-24 (SI) - Wellbore #1 - Gyro Surveys	11,200.00	6,906.57	2,747.52	2,682.39	42.185	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 #1	Offset TVD Reference:	Offset Datum

Summary

Site Name Offset Well - Wellbore - Design	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Between Ellipses (ft)	Separation Factor	Warning
D Section 25						
Coors Energy 13-25D (PR) - Wellbore #1 - MWD Survey	6,650.08	6,653.84	3,070.57	3,015.04	55.295	CC, ES
Coors Energy 13-25D (PR) - Wellbore #1 - MWD Survey	7,100.00	6,963.54	3,114.84	3,057.13	53.976	SF
Coors Energy 14-25D (PR) - Wellbore #1 - MWD Survey	6,478.81	6,462.37	3,504.90	3,458.96	76.293	CC, ES
Coors Energy 14-25D (PR) - Wellbore #1 - MWD Survey	6,850.00	6,878.48	3,556.81	3,508.81	74.104	SF
Coors Energy 23-25D (PR) - Wellbore #1 - MWD Survey	6,575.62	6,578.42	1,769.76	1,718.67	34.637	CC, ES
Coors Energy 23-25D (PR) - Wellbore #1 - MWD Survey	6,750.00	6,745.44	1,777.18	1,725.50	34.387	SF
Coors Energy 24-25 (PR) - Wellbore #1 - MWD Surveys	6,423.43	6,282.84	2,520.24	2,475.45	56.275	CC, ES
Coors Energy 24-25 (PR) - Wellbore #1 - Gyro Surveys	6,650.00	6,500.78	2,551.85	2,505.74	55.342	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	7,027.29	3,753.03	3,698.11	68.327	SF
Coors Energy 25LD (PR) - Wellbore #1 - MWD Surveys	6,439.86	6,369.64	3,239.86	3,194.92	72.080	CC
Coors Energy 25LD (PR) - Wellbore #1 - MWD Surveys	6,450.00	6,394.54	3,239.90	3,194.86	71.940	ES
Coors Energy 25LD (PR) - Wellbore #1 - MWD Surveys	6,750.00	6,792.15	3,284.42	3,237.72	70.338	SF
Coors Energy 25TD (PR) - Wellbore #1 - MWD Surveys	6,374.02	6,274.49	2,295.50	2,251.84	52.582	CC, ES
Coors Energy 25TD (PR) - Wellbore #1 - MWD Surveys	6,550.00	6,448.47	2,319.56	2,274.82	51.849	SF
Coors Energy 25XD (PR) - Wellbore #1 - MWD Surveys	6,307.21	6,394.63	1,760.09	1,706.05	32.571	CC, ES
Coors Energy 25XD (PR) - Wellbore #1 - MWD Surveys	6,500.00	6,577.66	1,776.82	1,721.74	32.257	SF
Coors Energy 25YD (PR) - Wellbore #1 - MWD Surveys	4,563.01	3,965.95	2,690.86	2,657.60	80.910	CC
Coors Energy 25YD (PR) - Wellbore #1 - MWD Surveys	6,337.22	6,374.91	2,693.99	2,644.76	54.724	ES
Coors Energy 25YD (PR) - Wellbore #1 - MWD Surveys	6,600.00	6,721.04	2,734.26	2,683.55	53.920	SF
Coors Energy 33-25D (PR) - Wellbore #1 - MWD Survey	6,437.02	6,458.43	576.79	522.29	10.585	CC, ES
Coors Energy 33-25D (PR) - Wellbore #1 - MWD Survey	6,500.00	6,521.85	579.00	524.23	10.572	SF
Coors Energy 34-25 (PR) - Wellbore #1 - Gyro Surveys	6,394.98	6,237.23	2,053.26	2,008.77	46.147	CC
Coors Energy 34-25 (PR) - Wellbore #1 - Gyro Surveys	6,400.00	6,243.16	2,053.28	2,008.75	46.110	ES
Coors Energy 34-25 (PR) - Wellbore #1 - Gyro Surveys	6,550.00	6,399.38	2,070.86	2,025.38	45.537	SF
Coors Energy 43-25D (PR) - Wellbore #1 - MWD Survey	6,278.27	6,365.96	946.13	891.25	17.241	CC, ES
Coors Energy 43-25D (PR) - Wellbore #1 - MWD Survey	6,450.00	6,532.53	955.78	899.92	17.110	SF
Coors Energy 44-25D (PR) - Wellbore #1 - MWD Survey	6,350.25	6,266.20	1,903.53	1,856.89	40.807	CC, ES
Coors Energy 44-25D (PR) - Wellbore #1 - MWD Survey	6,500.00	6,410.98	1,918.96	1,871.40	40.349	SF
Dalbey D 25-03 (SI) - Wellbore #1 - Gyro Surveys	8,611.31	6,914.60	2,020.69	1,968.97	39.070	CC, ES
Dalbey D 25-03 (SI) - Wellbore #1 - Gyro Surveys	8,900.00	6,900.00	2,041.16	1,988.46	38.731	SF
Dalbey D 25-05 (SI) - Wellbore #1 - Gyro Surveys	7,671.71	7,017.04	3,213.25	3,162.71	63.573	CC, ES
Dalbey D 25-05 (SI) - Wellbore #1 - Gyro Surveys	7,900.00	6,993.95	3,221.27	3,170.53	63.486	SF
Guttersten 11-25 (PR) - Wellbore #1 - MWD Surveys	9,039.90	6,903.81	3,022.09	2,969.78	57.775	CC, ES
Guttersten 11-25 (PR) - Wellbore #1 - MWD Surveys	9,800.00	6,893.62	3,116.19	3,060.61	56.064	SF
Guttersten 22-25 (PR) - Wellbore #1 - MWD Surveys	7,771.51	6,864.20	1,595.92	1,547.66	33.071	CC, ES
Guttersten 22-25 (PR) - Wellbore #1 - MWD Surveys	7,800.00	6,863.12	1,596.18	1,547.88	33.051	SF
Guttersten 25E (PR) - Wellbore #1 - MWD Surveys	9,635.02	6,872.55	3,427.92	3,372.60	61.972	CC, ES
Guttersten 25E (PR) - Wellbore #1 - MWD Surveys	10,600.00	6,860.53	3,561.14	3,501.04	59.252	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	7,212.12	7,075.65	2,350.15	2,300.70	47.520	SF
Guttersten 25O (PR) - Wellbore #1 - MWD Surveys	7,293.07	6,834.27	1,158.67	1,110.72	24.161	CC, ES
Guttersten 25O (PR) - Wellbore #1 - MWD Surveys	7,300.00	6,835.17	1,158.70	1,110.73	24.159	SF
Guttersten D 25-17 (SI) - Wellbore #1 - Gyro Surveys	8,375.87	6,828.63	69.59	19.19	1.381	Level 3, CC, ES, SF
Guttersten D25-715 - Wellbore #1 - Plan #1	2,000.00	2,001.00	75.00	61.12	5.405	CC, ES
Guttersten D25-715 - Wellbore #1 - Plan #1	2,100.00	2,099.79	76.37	61.82	5.248	SF
Guttersten D25-724 - Wellbore #1 - Plan #1	2,000.00	2,000.00	37.50	23.63	2.703	CC, ES
Guttersten D25-724 - Wellbore #1 - Plan #1	2,100.00	2,099.85	38.27	23.72	2.630	SF
Guttersten D25-743 - Wellbore #1 - Plan #1	2,000.00	2,000.00	37.50	23.63	2.703	CC
Guttersten D25-743 - Wellbore #1 - Plan #1	2,100.00	2,099.27	37.91	23.36	2.605	ES
Guttersten D25-743 - Wellbore #1 - Plan #1	2,200.00	2,198.52	39.12	23.93	2.576	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 #1	Offset TVD Reference:	Offset Datum

Summary						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
D Section 25						
Guttersen D25-753 - Wellbore #1 - Plan #1	19,999.60	20,316.31	1,230.66	1,013.55	5.668	CC
Guttersen D25-753 - Wellbore #1 - Plan #1	20,008.58	20,314.84	1,230.69	1,013.52	5.667	ES, SF
Guttersen D25-762 - Wellbore #1 - Plan #1	15,534.07	15,762.18	1,828.48	1,681.38	12.431	CC
Guttersen D25-762 - Wellbore #1 - Plan #1	20,008.58	20,222.65	1,847.81	1,630.40	8.499	ES, SF
Guttersen D25-772 - Wellbore #1 - Plan #1	2,877.48	2,821.22	2,227.51	2,207.98	114.084	CC
Guttersen D25-772 - Wellbore #1 - Plan #1	3,100.00	3,026.25	2,228.38	2,207.35	105.978	ES
Guttersen D25-772 - Wellbore #1 - Plan #1	20,008.58	20,375.73	2,490.80	2,273.81	11.479	SF
Guttersen D25-781 - Wellbore #1 - Plan #1	1,910.78	1,925.78	2,259.78	2,246.50	170.075	CC
Guttersen D25-781 - Wellbore #1 - Plan #1	2,000.00	2,010.73	2,259.80	2,245.89	162.465	ES
Guttersen D25-781 - Wellbore #1 - Plan #1	20,008.58	20,362.10	3,084.69	2,868.05	14.238	SF
Guttersen State D36-714 - Wellbore #1 - Plan #1	2,000.00	2,000.00	167.71	153.83	12.089	CC, ES
Guttersen State D36-714 - Wellbore #1 - Plan #1	2,200.00	2,199.84	174.63	159.37	11.447	SF
Guttersen State D36-724 - Wellbore #1 - Plan #1	2,000.00	2,001.00	154.62	140.74	11.142	CC, ES
Guttersen State D36-724 - Wellbore #1 - Plan #1	2,200.00	2,200.88	161.57	146.31	10.588	SF
Guttersen State D36-733 - Wellbore #1 - Plan #1	6,940.07	6,984.65	50.07	0.37	1.008	Level 2, CC, ES, SF
Guttersen State D36-743 - Wellbore #1 - Plan #1	2,000.00	2,000.00	154.62	140.75	11.146	CC, ES
Guttersen State D36-743 - Wellbore #1 - Plan #1	2,300.00	2,301.45	167.37	151.44	10.504	SF
Guttersen State D36-752 - Wellbore #1 - Plan #1	6,950.00	7,087.99	1,194.73	1,157.84	32.387	SF
Guttersen State D36-752 - Wellbore #1 - Plan #1	6,980.70	7,072.17	1,194.39	1,157.54	32.407	CC, ES
Guttersen State D36-762 - Wellbore #1 - Plan #1	7,050.00	6,899.64	1,794.51	1,744.18	35.660	SF
Guttersen State D36-762 - Wellbore #1 - Plan #1	7,122.47	6,869.26	1,793.32	1,743.08	35.695	CC, ES
Guttersen State D36-771 - Wellbore #1 - Plan #1	2,226.06	2,232.99	2,151.35	2,135.90	139.238	CC
Guttersen State D36-771 - Wellbore #1 - Plan #1	2,300.00	2,292.62	2,151.56	2,135.66	135.364	ES
Guttersen State D36-771 - Wellbore #1 - Plan #1	7,150.00	6,669.17	2,396.41	2,346.58	48.093	SF
Guttersen State D36-781 - Wellbore #1 - Plan #1	1,910.78	1,925.78	2,184.63	2,171.34	164.418	CC
Guttersen State D36-781 - Wellbore #1 - Plan #1	2,000.00	2,010.48	2,184.64	2,170.73	157.069	ES
Guttersen State D36-781 - Wellbore #1 - Plan #1	7,700.00	6,208.99	2,936.73	2,888.00	60.267	SF
Karch Blue D 25-02 (DA) - Wellbore #1 - No Surveys	8,982.19	6,816.00	399.75	234.13	2.414	CC, ES, SF
Karch Blue D 25-08 (SI) - Wellbore #1 - Gyro Surveys	2,031.98	1,998.55	521.13	507.28	37.617	CC
Karch Blue D 25-08 (SI) - Wellbore #1 - Gyro Surveys	2,100.00	2,066.95	521.33	507.00	36.395	ES
Karch Blue D 25-08 (SI) - Wellbore #1 - Gyro Surveys	7,708.69	6,855.05	886.88	837.62	18.006	SF
Karch Blue D25-07 (SI) - Wellbore #1 - Gyro Surveys	7,708.70	6,824.52	432.54	383.87	8.887	CC, ES, SF
L F Ranch 2-25 (PR) - Wellbore #1 - Gyro Surveys	8,944.94	6,825.81	876.48	824.01	16.705	CC, ES
L F Ranch 2-25 (PR) - Wellbore #1 - Gyro Surveys	9,000.00	6,824.72	878.21	825.55	16.676	SF
LF Ranches 1 (PA) - Wellbore #1 - No Surveys	8,655.95	6,820.00	590.82	426.40	3.593	CC, ES, SF

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

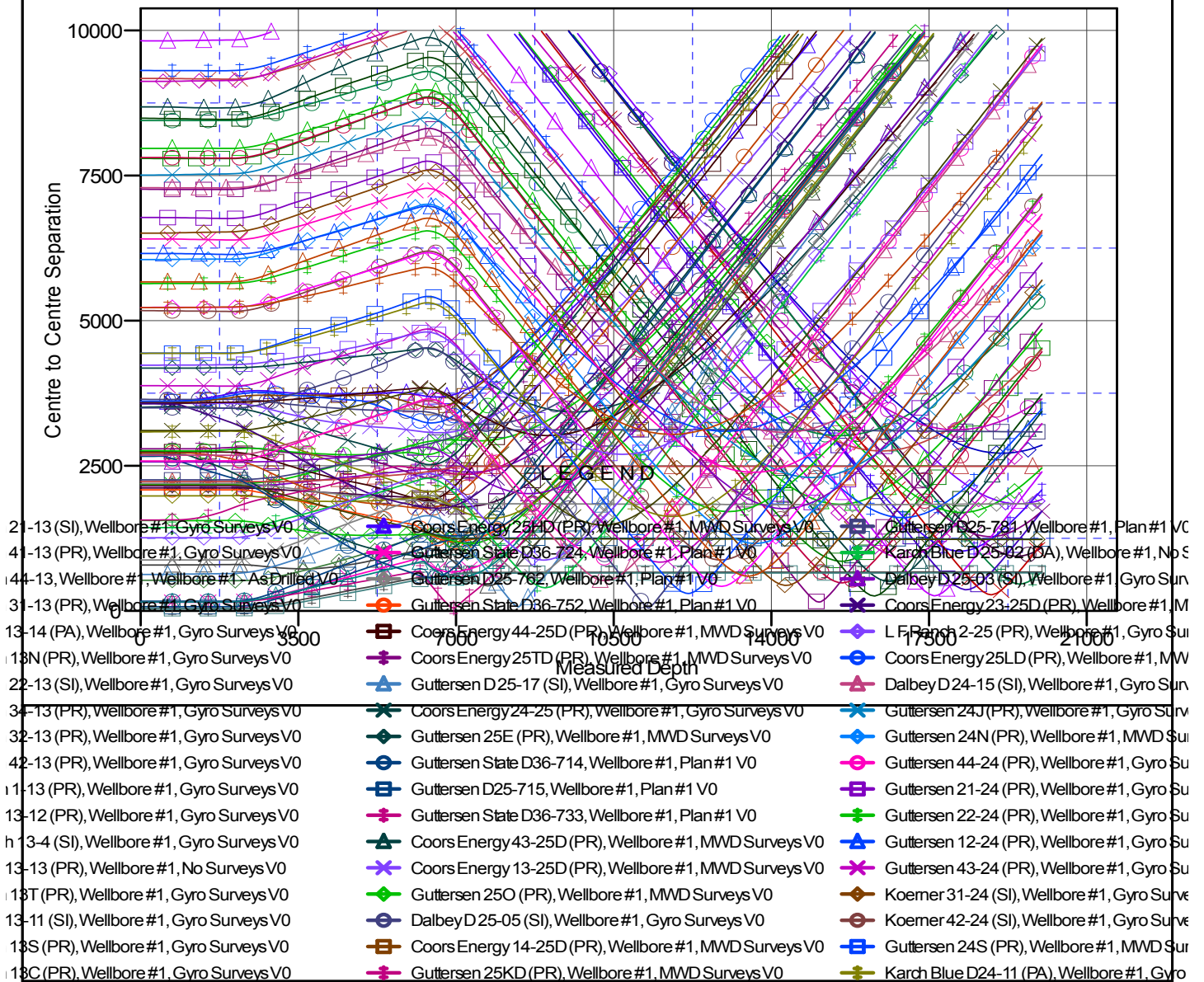
Noble Energy, Inc.
Anticollision Summary Report

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 #1	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



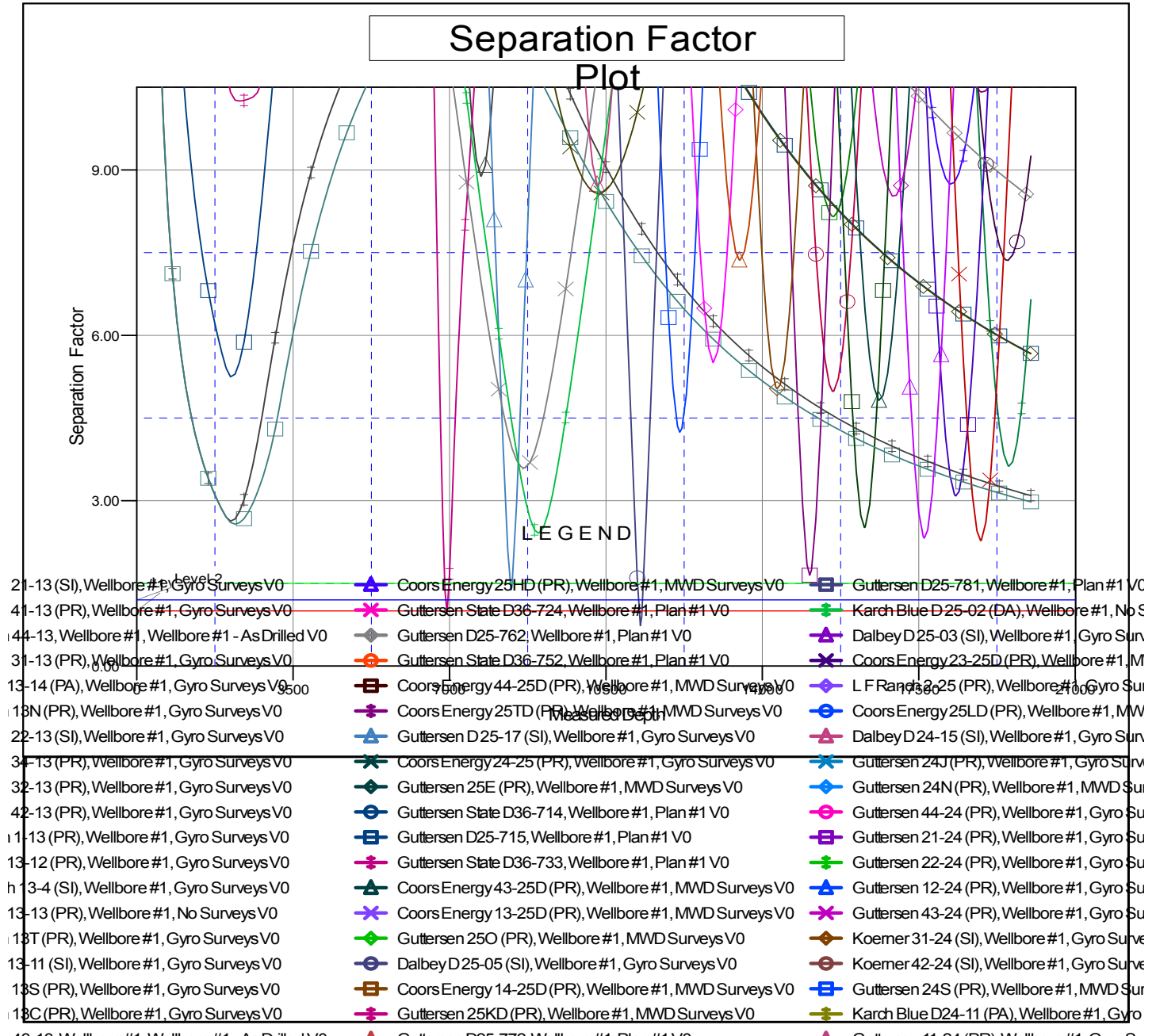
CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

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 #1	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°



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