

Project: Mustang
Site: D Section 25
Well: Guttersen D25-743
Wellbore: Wellbore #1
Design: Plan #3

Northern Region - DJ Basin

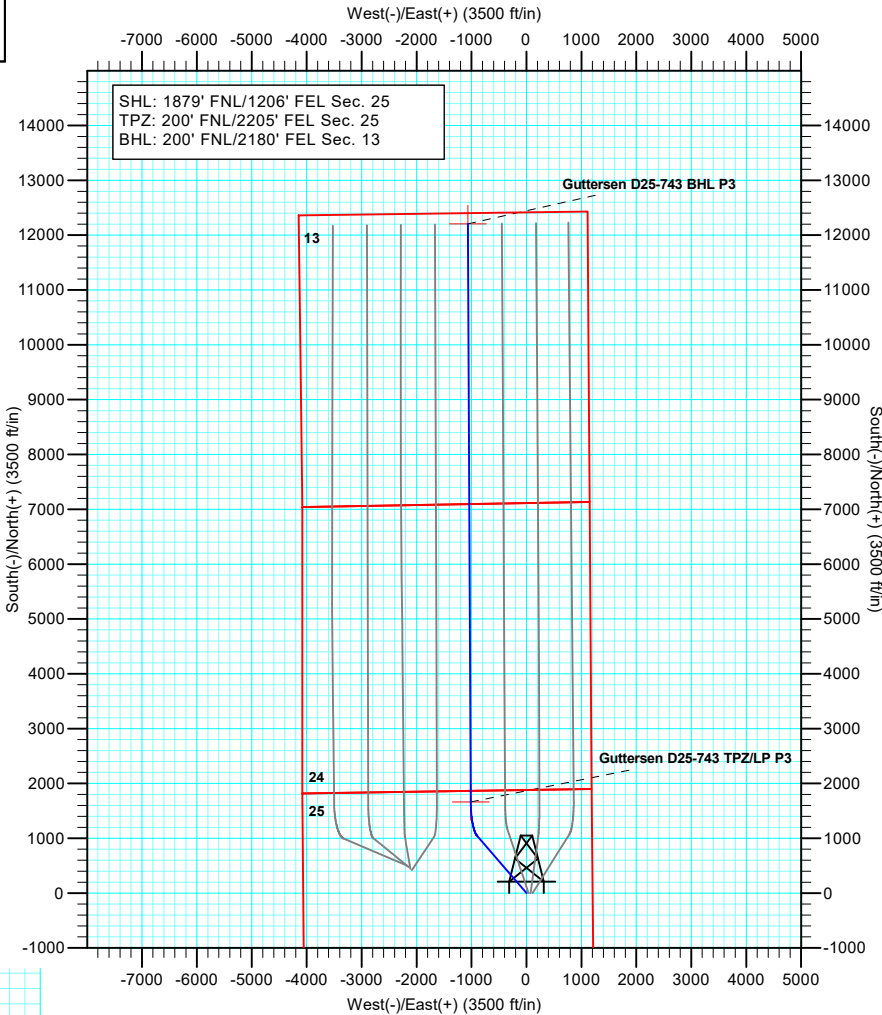
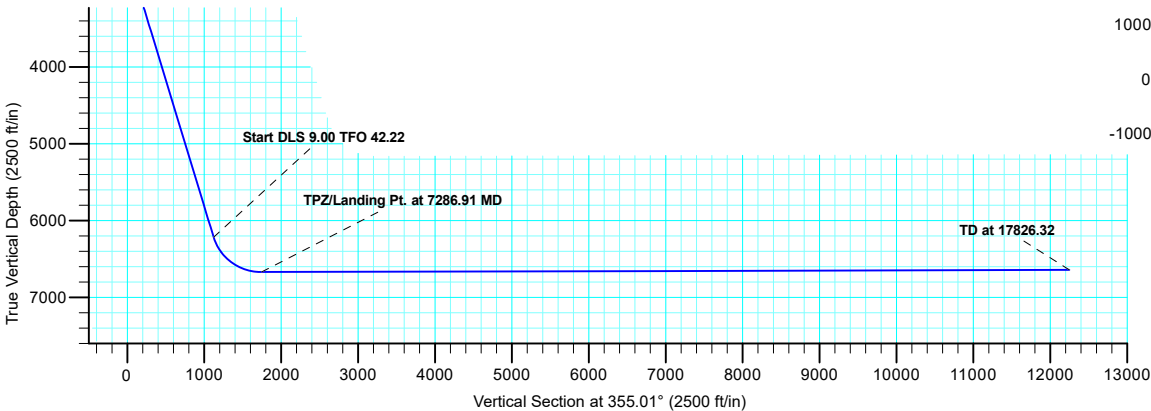
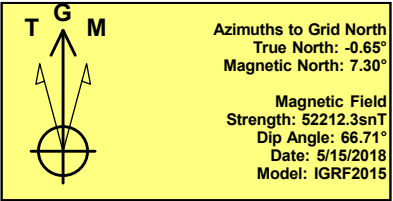
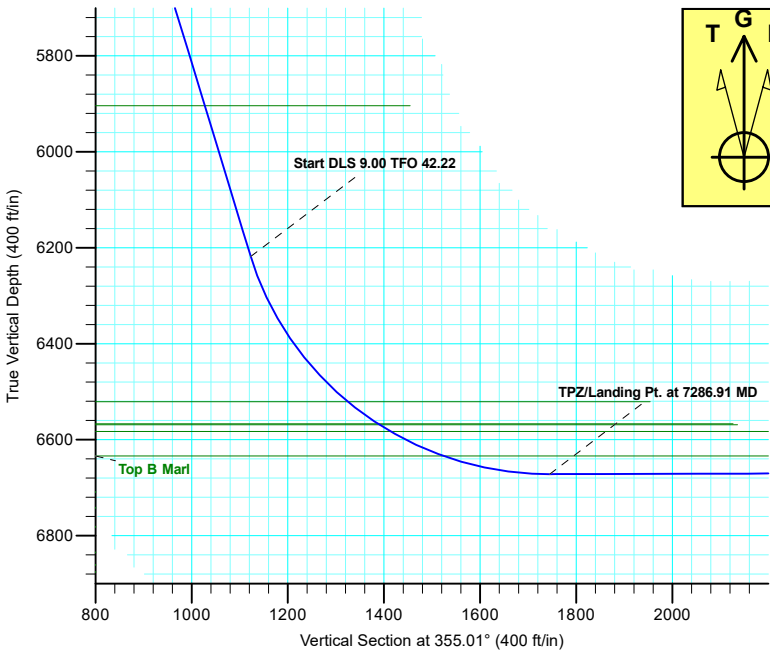
Geodetic System: US State Plane 1983
Datum: North American Datum 1983
Ellipsoid: GRS 1980
Zone: Colorado Northern Zone
System Datum: Mean Sea Level

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect
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	3024.35	20.49	319.31	3002.66	137.40	-118.12	2.00	319.31	147.16
4	6457.04	20.49	319.31	6218.24	1048.44	-901.33	0.00	0.00	1122.91
5	7286.91	90.15	359.72	6672.00	1663.11	-1014.54	9.00	42.22	1745.10
6	17826.32	90.15	359.72	6644.50	12202.36	-1066.08	0.00	0.00	12248.84

WELL DETAILS: Guttersen D25-743

+N/-S	+E/-W	Northing	Ground Level: Easting	4772.00 Latitude	Longitude	Slot
0.00	0.00	1316739.75	3280827.19	40.1984774	-104.4946482	



Plan: Plan #3 (Guttersen D25-743/Wellbore #1)

Created By: Shelly C. Peterkin Date: 11:54, June 24 2019

Northern Region - DJ Basin

Mustang

D Section 25

Guttersen D25-743

Wellbore #1

Plan: Plan #3

Standard Planning Report

24 June, 2019

Noble Energy, Inc.

Planning Report

Database:	EDMP	Local Co-ordinate Reference:	Well Guttersen D25-743
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 D25-743	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #3		

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 D25-743					
Well Position	+N/-S	710.30 ft	Northing:	1,316,739.75 usft	Latitude:	40.1984774
	+E/-W	1,461.63 ft	Easting:	3,280,827.19 usft	Longitude:	-104.4946482
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	52,212.34673057

Design	Plan #3			
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	355.01

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	
3,024.35	20.49	319.31	3,002.66	137.40	-118.12	2.00	2.00	0.00	319.31	
6,457.04	20.49	319.31	6,218.24	1,048.44	-901.33	0.00	0.00	0.00	0.00	
7,286.91	90.15	359.72	6,672.00	1,663.11	-1,014.54	9.00	8.39	4.87	42.22	Guttersen D25-743 TI
17,826.32	90.15	359.72	6,644.50	12,202.36	-1,066.08	0.00	0.00	0.00	0.00	Guttersen D25-743 BI

Noble Energy, Inc.

Planning Report

Database:	EDMP	Local Co-ordinate Reference:	Well Guttersten D25-743
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 D25-743	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #3		

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									
678.00	0.00	0.00	678.00	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	319.31	2,099.98	1.32	-1.14	1.42	2.00	2.00	0.00
2,200.00	4.00	319.31	2,199.84	5.29	-4.55	5.67	2.00	2.00	0.00
2,300.00	6.00	319.31	2,299.45	11.90	-10.23	12.75	2.00	2.00	0.00
2,400.00	8.00	319.31	2,398.70	21.14	-18.17	22.64	2.00	2.00	0.00
2,500.00	10.00	319.31	2,497.47	33.00	-28.37	35.35	2.00	2.00	0.00
2,600.00	12.00	319.31	2,595.62	47.47	-40.81	50.84	2.00	2.00	0.00
2,700.00	14.00	319.31	2,693.06	64.53	-55.47	69.11	2.00	2.00	0.00
2,800.00	16.00	319.31	2,789.64	84.15	-72.35	90.13	2.00	2.00	0.00
2,900.00	18.00	319.31	2,885.27	106.32	-91.41	113.88	2.00	2.00	0.00
3,000.00	20.00	319.31	2,979.82	131.01	-112.63	140.32	2.00	2.00	0.00
3,024.35	20.49	319.31	3,002.66	137.40	-118.12	147.16	2.00	2.00	0.00
Start 3432.69 hold at 3024.35 MD									
3,100.00	20.49	319.31	3,073.53	157.48	-135.38	168.66	0.00	0.00	0.00
3,200.00	20.49	319.31	3,167.20	184.02	-158.20	197.09	0.00	0.00	0.00
3,300.00	20.49	319.31	3,260.88	210.56	-181.01	225.51	0.00	0.00	0.00
3,400.00	20.49	319.31	3,354.55	237.10	-203.83	253.94	0.00	0.00	0.00
3,500.00	20.49	319.31	3,448.23	263.64	-226.65	282.36	0.00	0.00	0.00
3,600.00	20.49	319.31	3,541.90	290.18	-249.46	310.79	0.00	0.00	0.00
3,692.98	20.49	319.31	3,629.00	314.86	-270.68	337.22	0.00	0.00	0.00
Parkman									
3,700.00	20.49	319.31	3,635.58	316.72	-272.28	339.21	0.00	0.00	0.00
3,800.00	20.49	319.31	3,729.25	343.26	-295.09	367.64	0.00	0.00	0.00
3,900.00	20.49	319.31	3,822.93	369.80	-317.91	396.07	0.00	0.00	0.00
4,000.00	20.49	319.31	3,916.60	396.34	-340.73	424.49	0.00	0.00	0.00
4,100.00	20.49	319.31	4,010.28	422.88	-363.54	452.92	0.00	0.00	0.00

Noble Energy, Inc.

Planning Report

Database:	EDMP	Local Co-ordinate Reference:	Well Guttersen D25-743
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 D25-743	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #3		

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)
4,143.47	20.49	319.31	4,051.00	434.42	-373.46	465.27	0.00	0.00	0.00
Sussex									
4,200.00	20.49	319.31	4,103.95	449.42	-386.36	481.34	0.00	0.00	0.00
4,300.00	20.49	319.31	4,197.63	475.96	-409.18	509.77	0.00	0.00	0.00
4,340.96	20.49	319.31	4,236.00	486.83	-418.52	521.41	0.00	0.00	0.00
Shannon									
4,400.00	20.49	319.31	4,291.30	502.50	-431.99	538.19	0.00	0.00	0.00
4,500.00	20.49	319.31	4,384.98	529.04	-454.81	566.62	0.00	0.00	0.00
4,600.00	20.49	319.31	4,478.65	555.58	-477.63	595.04	0.00	0.00	0.00
4,700.00	20.49	319.31	4,572.33	582.12	-500.44	623.47	0.00	0.00	0.00
4,800.00	20.49	319.31	4,666.00	608.66	-523.26	651.89	0.00	0.00	0.00
4,900.00	20.49	319.31	4,759.68	635.20	-546.07	680.32	0.00	0.00	0.00
5,000.00	20.49	319.31	4,853.35	661.74	-568.89	708.74	0.00	0.00	0.00
5,100.00	20.49	319.31	4,947.03	688.28	-591.71	737.17	0.00	0.00	0.00
5,200.00	20.49	319.31	5,040.70	714.82	-614.52	765.59	0.00	0.00	0.00
5,300.00	20.49	319.31	5,134.38	741.36	-637.34	794.02	0.00	0.00	0.00
5,400.00	20.49	319.31	5,228.06	767.90	-660.16	822.45	0.00	0.00	0.00
5,500.00	20.49	319.31	5,321.73	794.44	-682.97	850.87	0.00	0.00	0.00
5,600.00	20.49	319.31	5,415.41	820.98	-705.79	879.30	0.00	0.00	0.00
5,700.00	20.49	319.31	5,509.08	847.52	-728.60	907.72	0.00	0.00	0.00
5,800.00	20.49	319.31	5,602.76	874.06	-751.42	936.15	0.00	0.00	0.00
5,900.00	20.49	319.31	5,696.43	900.60	-774.24	964.57	0.00	0.00	0.00
6,000.00	20.49	319.31	5,790.11	927.14	-797.05	993.00	0.00	0.00	0.00
6,100.00	20.49	319.31	5,883.78	953.68	-819.87	1,021.42	0.00	0.00	0.00
6,121.58	20.49	319.31	5,904.00	959.41	-824.79	1,027.56	0.00	0.00	0.00
Teepee Buttes									
6,200.00	20.49	319.31	5,977.46	980.22	-842.69	1,049.85	0.00	0.00	0.00
6,300.00	20.49	319.31	6,071.13	1,006.77	-865.50	1,078.27	0.00	0.00	0.00
6,400.00	20.49	319.31	6,164.81	1,033.31	-888.32	1,106.70	0.00	0.00	0.00
6,457.04	20.49	319.31	6,218.24	1,048.44	-901.33	1,122.91	0.00	0.00	0.00
Start DLS 9.00 TFO 42.22									
6,500.00	23.49	325.84	6,258.08	1,061.23	-911.04	1,136.50	9.00	6.99	15.20
6,550.00	27.24	331.65	6,303.25	1,079.56	-922.08	1,155.72	9.00	7.51	11.61
6,600.00	31.18	336.11	6,346.89	1,101.48	-932.76	1,178.48	9.00	7.88	8.93
6,650.00	35.24	339.66	6,388.72	1,126.85	-943.02	1,204.65	9.00	8.12	7.08
6,700.00	39.39	342.54	6,428.48	1,155.53	-952.80	1,234.07	9.00	8.29	5.78
6,750.00	43.60	344.96	6,465.92	1,187.33	-962.04	1,266.56	9.00	8.41	4.83
6,800.00	47.85	347.03	6,500.82	1,222.06	-970.68	1,301.90	9.00	8.50	4.14
6,830.86	50.49	348.17	6,521.00	1,244.86	-975.69	1,325.06	9.00	8.55	3.70
Sharon Springs									
6,850.00	52.13	348.84	6,532.96	1,259.50	-978.66	1,339.90	9.00	8.58	3.48
6,900.00	56.44	350.44	6,562.15	1,299.43	-985.95	1,380.31	9.00	8.61	3.22
6,908.87	57.20	350.71	6,567.00	1,306.75	-987.16	1,387.70	9.00	8.64	3.02
Top A Chalk									
6,912.58	57.52	350.82	6,569.00	1,309.83	-987.66	1,390.82	9.00	8.64	2.99
Top A Marl									
6,939.52	59.85	351.60	6,583.00	1,332.57	-991.18	1,413.78	9.00	8.65	2.90
Top B Chalk									
6,950.00	60.76	351.90	6,588.19	1,341.59	-992.48	1,422.88	9.00	8.66	2.81
7,000.00	65.10	353.23	6,610.94	1,385.73	-998.23	1,467.35	9.00	8.68	2.67
7,050.00	69.45	354.48	6,630.25	1,431.57	-1,003.16	1,513.45	9.00	8.70	2.49
7,060.92	70.40	354.74	6,634.00	1,441.78	-1,004.12	1,523.71	9.00	8.71	2.40
Top B Marl									

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 D25-743	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #3		

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)
7,100.00	73.81	355.66	6,646.00	1,478.83	-1,007.23	1,560.89	9.00	8.72	2.34
7,150.00	78.18	356.78	6,658.10	1,527.23	-1,010.42	1,609.38	9.00	8.73	2.25
7,200.00	82.55	357.87	6,666.47	1,576.46	-1,012.72	1,658.62	9.00	8.74	2.18
7,250.00	86.92	358.94	6,671.06	1,626.21	-1,014.11	1,708.31	9.00	8.75	2.14
7,286.91	90.15	359.72	6,672.00	1,663.11	-1,014.54	1,745.10	9.00	8.75	2.12
TPZ/Landing Pt. at 7286.91 MD									
7,300.00	90.15	359.72	6,671.97	1,676.19	-1,014.60	1,758.14	0.00	0.00	0.00
7,400.00	90.15	359.72	6,671.71	1,776.19	-1,015.09	1,857.80	0.00	0.00	0.00
7,500.00	90.15	359.72	6,671.44	1,876.19	-1,015.58	1,957.46	0.00	0.00	0.00
7,600.00	90.15	359.72	6,671.18	1,976.19	-1,016.07	2,057.12	0.00	0.00	0.00
7,700.00	90.15	359.72	6,670.92	2,076.19	-1,016.56	2,156.79	0.00	0.00	0.00
7,800.00	90.15	359.72	6,670.66	2,176.19	-1,017.05	2,256.45	0.00	0.00	0.00
7,900.00	90.15	359.72	6,670.40	2,276.19	-1,017.54	2,356.11	0.00	0.00	0.00
8,000.00	90.15	359.72	6,670.14	2,376.18	-1,018.03	2,455.77	0.00	0.00	0.00
8,100.00	90.15	359.72	6,669.88	2,476.18	-1,018.51	2,555.43	0.00	0.00	0.00
8,200.00	90.15	359.72	6,669.62	2,576.18	-1,019.00	2,655.09	0.00	0.00	0.00
8,300.00	90.15	359.72	6,669.36	2,676.18	-1,019.49	2,754.76	0.00	0.00	0.00
8,400.00	90.15	359.72	6,669.10	2,776.18	-1,019.98	2,854.42	0.00	0.00	0.00
8,500.00	90.15	359.72	6,668.83	2,876.18	-1,020.47	2,954.08	0.00	0.00	0.00
8,600.00	90.15	359.72	6,668.57	2,976.17	-1,020.96	3,053.74	0.00	0.00	0.00
8,700.00	90.15	359.72	6,668.31	3,076.17	-1,021.45	3,153.40	0.00	0.00	0.00
8,800.00	90.15	359.72	6,668.05	3,176.17	-1,021.94	3,253.06	0.00	0.00	0.00
8,900.00	90.15	359.72	6,667.79	3,276.17	-1,022.43	3,352.72	0.00	0.00	0.00
9,000.00	90.15	359.72	6,667.53	3,376.17	-1,022.92	3,452.39	0.00	0.00	0.00
9,100.00	90.15	359.72	6,667.27	3,476.17	-1,023.41	3,552.05	0.00	0.00	0.00
9,200.00	90.15	359.72	6,667.01	3,576.17	-1,023.89	3,651.71	0.00	0.00	0.00
9,300.00	90.15	359.72	6,666.75	3,676.16	-1,024.38	3,751.37	0.00	0.00	0.00
9,400.00	90.15	359.72	6,666.49	3,776.16	-1,024.87	3,851.03	0.00	0.00	0.00
9,500.00	90.15	359.72	6,666.23	3,876.16	-1,025.36	3,950.69	0.00	0.00	0.00
9,600.00	90.15	359.72	6,665.96	3,976.16	-1,025.85	4,050.36	0.00	0.00	0.00
9,700.00	90.15	359.72	6,665.70	4,076.16	-1,026.34	4,150.02	0.00	0.00	0.00
9,800.00	90.15	359.72	6,665.44	4,176.16	-1,026.83	4,249.68	0.00	0.00	0.00
9,900.00	90.15	359.72	6,665.18	4,276.15	-1,027.32	4,349.34	0.00	0.00	0.00
10,000.00	90.15	359.72	6,664.92	4,376.15	-1,027.81	4,449.00	0.00	0.00	0.00
10,100.00	90.15	359.72	6,664.66	4,476.15	-1,028.30	4,548.66	0.00	0.00	0.00
10,200.00	90.15	359.72	6,664.40	4,576.15	-1,028.78	4,648.32	0.00	0.00	0.00
10,300.00	90.15	359.72	6,664.14	4,676.15	-1,029.27	4,747.99	0.00	0.00	0.00
10,400.00	90.15	359.72	6,663.88	4,776.15	-1,029.76	4,847.65	0.00	0.00	0.00
10,500.00	90.15	359.72	6,663.62	4,876.15	-1,030.25	4,947.31	0.00	0.00	0.00
10,600.00	90.15	359.72	6,663.36	4,976.14	-1,030.74	5,046.97	0.00	0.00	0.00
10,700.00	90.15	359.72	6,663.09	5,076.14	-1,031.23	5,146.63	0.00	0.00	0.00
10,800.00	90.15	359.72	6,662.83	5,176.14	-1,031.72	5,246.29	0.00	0.00	0.00
10,900.00	90.15	359.72	6,662.57	5,276.14	-1,032.21	5,345.96	0.00	0.00	0.00
11,000.00	90.15	359.72	6,662.31	5,376.14	-1,032.70	5,445.62	0.00	0.00	0.00
11,100.00	90.15	359.72	6,662.05	5,476.14	-1,033.19	5,545.28	0.00	0.00	0.00
11,200.00	90.15	359.72	6,661.79	5,576.13	-1,033.68	5,644.94	0.00	0.00	0.00
11,300.00	90.15	359.72	6,661.53	5,676.13	-1,034.16	5,744.60	0.00	0.00	0.00
11,400.00	90.15	359.72	6,661.27	5,776.13	-1,034.65	5,844.26	0.00	0.00	0.00
11,500.00	90.15	359.72	6,661.01	5,876.13	-1,035.14	5,943.93	0.00	0.00	0.00
11,600.00	90.15	359.72	6,660.75	5,976.13	-1,035.63	6,043.59	0.00	0.00	0.00
11,700.00	90.15	359.72	6,660.49	6,076.13	-1,036.12	6,143.25	0.00	0.00	0.00
11,800.00	90.15	359.72	6,660.22	6,176.13	-1,036.61	6,242.91	0.00	0.00	0.00
11,900.00	90.15	359.72	6,659.96	6,276.12	-1,037.10	6,342.57	0.00	0.00	0.00
12,000.00	90.15	359.72	6,659.70	6,376.12	-1,037.59	6,442.23	0.00	0.00	0.00

Noble Energy, Inc.

Planning Report

Database:	EDMP	Local Co-ordinate Reference:	Well Guttersen D25-743
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 D25-743	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #3		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
12,100.00	90.15	359.72	6,659.44	6,476.12	-1,038.08	6,541.89	0.00	0.00	0.00
12,200.00	90.15	359.72	6,659.18	6,576.12	-1,038.57	6,641.56	0.00	0.00	0.00
12,300.00	90.15	359.72	6,658.92	6,676.12	-1,039.05	6,741.22	0.00	0.00	0.00
12,400.00	90.15	359.72	6,658.66	6,776.12	-1,039.54	6,840.88	0.00	0.00	0.00
12,500.00	90.15	359.72	6,658.40	6,876.11	-1,040.03	6,940.54	0.00	0.00	0.00
12,600.00	90.15	359.72	6,658.14	6,976.11	-1,040.52	7,040.20	0.00	0.00	0.00
12,700.00	90.15	359.72	6,657.88	7,076.11	-1,041.01	7,139.86	0.00	0.00	0.00
12,800.00	90.15	359.72	6,657.62	7,176.11	-1,041.50	7,239.53	0.00	0.00	0.00
12,900.00	90.15	359.72	6,657.35	7,276.11	-1,041.99	7,339.19	0.00	0.00	0.00
13,000.00	90.15	359.72	6,657.09	7,376.11	-1,042.48	7,438.85	0.00	0.00	0.00
13,100.00	90.15	359.72	6,656.83	7,476.11	-1,042.97	7,538.51	0.00	0.00	0.00
13,200.00	90.15	359.72	6,656.57	7,576.10	-1,043.46	7,638.17	0.00	0.00	0.00
13,300.00	90.15	359.72	6,656.31	7,676.10	-1,043.95	7,737.83	0.00	0.00	0.00
13,400.00	90.15	359.72	6,656.05	7,776.10	-1,044.43	7,837.49	0.00	0.00	0.00
13,500.00	90.15	359.72	6,655.79	7,876.10	-1,044.92	7,937.16	0.00	0.00	0.00
13,600.00	90.15	359.72	6,655.53	7,976.10	-1,045.41	8,036.82	0.00	0.00	0.00
13,700.00	90.15	359.72	6,655.27	8,076.10	-1,045.90	8,136.48	0.00	0.00	0.00
13,800.00	90.15	359.72	6,655.01	8,176.09	-1,046.39	8,236.14	0.00	0.00	0.00
13,900.00	90.15	359.72	6,654.74	8,276.09	-1,046.88	8,335.80	0.00	0.00	0.00
14,000.00	90.15	359.72	6,654.48	8,376.09	-1,047.37	8,435.46	0.00	0.00	0.00
14,100.00	90.15	359.72	6,654.22	8,476.09	-1,047.86	8,535.13	0.00	0.00	0.00
14,200.00	90.15	359.72	6,653.96	8,576.09	-1,048.35	8,634.79	0.00	0.00	0.00
14,300.00	90.15	359.72	6,653.70	8,676.09	-1,048.84	8,734.45	0.00	0.00	0.00
14,400.00	90.15	359.72	6,653.44	8,776.09	-1,049.32	8,834.11	0.00	0.00	0.00
14,500.00	90.15	359.72	6,653.18	8,876.08	-1,049.81	8,933.77	0.00	0.00	0.00
14,600.00	90.15	359.72	6,652.92	8,976.08	-1,050.30	9,033.43	0.00	0.00	0.00
14,700.00	90.15	359.72	6,652.66	9,076.08	-1,050.79	9,133.10	0.00	0.00	0.00
14,800.00	90.15	359.72	6,652.40	9,176.08	-1,051.28	9,232.76	0.00	0.00	0.00
14,900.00	90.15	359.72	6,652.14	9,276.08	-1,051.77	9,332.42	0.00	0.00	0.00
15,000.00	90.15	359.72	6,651.87	9,376.08	-1,052.26	9,432.08	0.00	0.00	0.00
15,100.00	90.15	359.72	6,651.61	9,476.07	-1,052.75	9,531.74	0.00	0.00	0.00
15,200.00	90.15	359.72	6,651.35	9,576.07	-1,053.24	9,631.40	0.00	0.00	0.00
15,300.00	90.15	359.72	6,651.09	9,676.07	-1,053.73	9,731.06	0.00	0.00	0.00
15,400.00	90.15	359.72	6,650.83	9,776.07	-1,054.22	9,830.73	0.00	0.00	0.00
15,500.00	90.15	359.72	6,650.57	9,876.07	-1,054.70	9,930.39	0.00	0.00	0.00
15,600.00	90.15	359.72	6,650.31	9,976.07	-1,055.19	10,030.05	0.00	0.00	0.00
15,700.00	90.15	359.72	6,650.05	10,076.07	-1,055.68	10,129.71	0.00	0.00	0.00
15,800.00	90.15	359.72	6,649.79	10,176.06	-1,056.17	10,229.37	0.00	0.00	0.00
15,900.00	90.15	359.72	6,649.53	10,276.06	-1,056.66	10,329.03	0.00	0.00	0.00
16,000.00	90.15	359.72	6,649.27	10,376.06	-1,057.15	10,428.70	0.00	0.00	0.00
16,100.00	90.15	359.72	6,649.00	10,476.06	-1,057.64	10,528.36	0.00	0.00	0.00
16,200.00	90.15	359.72	6,648.74	10,576.06	-1,058.13	10,628.02	0.00	0.00	0.00
16,300.00	90.15	359.72	6,648.48	10,676.06	-1,058.62	10,727.68	0.00	0.00	0.00
16,400.00	90.15	359.72	6,648.22	10,776.05	-1,059.11	10,827.34	0.00	0.00	0.00
16,500.00	90.15	359.72	6,647.96	10,876.05	-1,059.59	10,927.00	0.00	0.00	0.00
16,600.00	90.15	359.72	6,647.70	10,976.05	-1,060.08	11,026.66	0.00	0.00	0.00
16,700.00	90.15	359.72	6,647.44	11,076.05	-1,060.57	11,126.33	0.00	0.00	0.00
16,800.00	90.15	359.72	6,647.18	11,176.05	-1,061.06	11,225.99	0.00	0.00	0.00
16,900.00	90.15	359.72	6,646.92	11,276.05	-1,061.55	11,325.65	0.00	0.00	0.00
17,000.00	90.15	359.72	6,646.66	11,376.05	-1,062.04	11,425.31	0.00	0.00	0.00
17,100.00	90.15	359.72	6,646.40	11,476.04	-1,062.53	11,524.97	0.00	0.00	0.00
17,200.00	90.15	359.72	6,646.13	11,576.04	-1,063.02	11,624.63	0.00	0.00	0.00
17,300.00	90.15	359.72	6,645.87	11,676.04	-1,063.51	11,724.30	0.00	0.00	0.00
17,400.00	90.15	359.72	6,645.61	11,776.04	-1,064.00	11,823.96	0.00	0.00	0.00

Noble Energy, Inc.

Planning Report

Database:	EDMP	Local Co-ordinate Reference:	Well Guttersten D25-743
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 D25-743	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #3		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
17,500.00	90.15	359.72	6,645.35	11,876.04	-1,064.48	11,923.62	0.00	0.00	0.00
17,600.00	90.15	359.72	6,645.09	11,976.04	-1,064.97	12,023.28	0.00	0.00	0.00
17,700.00	90.15	359.72	6,644.83	12,076.03	-1,065.46	12,122.94	0.00	0.00	0.00
17,800.00	90.15	359.72	6,644.57	12,176.03	-1,065.95	12,222.60	0.00	0.00	0.00
17,826.32	90.15	359.72	6,644.50	12,202.36	-1,066.08	12,248.84	0.00	0.00	0.00
TD at 17826.32									

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 D25-743 BHL	0.00	0.00	6,644.50	12,202.36	-1,066.08	1,328,942.08	3,279,761.11	40.2320051	-104.4979708
- plan hits target center									
- Point									
Guttersten D25-743 TPZ	0.00	0.00	6,672.00	1,663.11	-1,014.54	1,318,402.85	3,279,812.66	40.2030740	-104.4982126
- 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			
678.00	678.00	Pierre			
1,602.00	1,602.00	Upper Pierre Aquifer Base			
3,692.98	3,629.00	Parkman			
4,143.47	4,051.00	Sussex			
4,340.96	4,236.00	Shannon			
6,121.58	5,904.00	Teepee Buttes			
6,830.86	6,521.00	Sharon Springs			
6,908.87	6,567.00	Top A Chalk			
6,912.58	6,569.00	Top A Marl			
6,939.52	6,583.00	Top B Chalk			
7,060.92	6,634.00	Top B Marl			

Plan Annotations				
Measured Depth (ft)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Comment
2,000.00	2,000.00	0.00	0.00	Start Build 2.00
3,024.35	3,002.66	137.40	-118.12	Start 3432.69 hold at 3024.35 MD
6,457.04	6,218.24	1,048.44	-901.33	Start DLS 9.00 TFO 42.22
7,286.91	6,672.00	1,663.11	-1,014.54	TPZ/Landing Pt. at 7286.91 MD
17,826.32	6,644.50	12,202.36	-1,066.08	TD at 17826.32

Northern Region - DJ Basin

Mustang

D Section 25

Guttersen D25-743

Wellbore #1

Plan #3

Anticollision Summary Report

24 June, 2019

Noble Energy, Inc.
Anticollision Summary Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Guttersten D25-743
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 D25-743	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 #3	Offset TVD Reference:	Offset Datum

Reference	Plan #3		
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	17,826.32	Plan #3 (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	17,826.32	17,394.65	1,877.89	1,659.65	8.605	CC, ES, SF
Guttersten D12-725 - Wellbore #1 - Plan #1	17,826.32	17,354.05	1,247.19	1,034.84	5.873	CC, ES, SF
Guttersten D12-735 - Wellbore #1 - Plan #1	17,826.32	17,566.38	670.78	487.32	3.656	CC, ES, SF
Guttersten D12-745 - Wellbore #1 - Plan #1	17,826.32	17,749.15	429.35	341.65	4.896	CC, ES, SF
Guttersten D12-750 - Wellbore #1 - Plan #1	17,826.32	17,957.30	637.40	474.90	3.922	CC, ES, SF
Guttersten D12-755 - Wellbore #1 - Plan #1	17,826.32	17,362.69	870.94	675.13	4.448	CC, ES, SF
Guttersten D12-765 - Wellbore #1 - Plan #1	17,826.32	17,427.57	1,485.33	1,273.19	7.001	CC, ES, SF
Guttersten D12-770 - Wellbore #1 - Plan #1	17,826.32	17,530.79	1,810.01	1,595.88	8.453	CC, ES, SF
Guttersten D12-775 - Wellbore #1 - Plan #1	17,826.32	17,387.70	2,114.70	1,897.48	9.735	CC, ES, SF
Guttersten D12-785 - Wellbore #1 - Plan #1	17,826.32	17,570.64	2,759.07	2,540.69	12.634	CC, ES, SF
D Section 02						
Booth D11-715 - Booth D11-715 - Plan #1	17,826.32	17,531.72	3,451.41	3,263.17	18.335	CC, ES, SF
Booth D11-725 - Booth D11-725 - Plan #1	17,826.32	17,473.90	4,101.86	3,912.98	21.716	CC, ES, SF
Booth D11-730 - Booth D11-730 - Plan #1	17,826.32	17,544.11	4,431.64	4,242.59	23.442	CC, ES, SF
Booth D11-735 - Booth D11-735 - Plan #1	17,826.32	17,341.28	4,749.13	4,559.83	25.088	CC, ES, SF
Booth D11-745 - Booth D11-745 - Plan #1	17,826.32	17,438.95	5,400.54	5,211.02	28.496	CC, ES, SF
Booth D11-755 - Booth D11-755 - Plan #1	17,826.32	17,399.56	6,050.35	5,860.88	31.933	CC, ES, SF
Booth D11-765 - Booth D11-765 - Plan #1	17,826.32	17,474.67	6,700.67	6,511.02	35.331	CC, ES, SF
Booth D11-770 - Booth D11-770 - Plan #1	17,826.32	17,651.37	7,029.67	6,840.07	37.076	CC, ES, SF
Booth D11-775 - Booth D11-775 - Plan #1	17,826.32	17,638.00	7,351.30	7,161.39	38.710	CC, ES, SF
Booth D11-785 - Booth D11-785 - Plan #1	17,826.32	17,818.48	8,000.38	7,809.99	42.021	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 D25-743
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 D25-743	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 #3	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	17,826.32	6,598.50	3,656.13	3,565.90	40.519	CC, ES, SF
GUTTERSEN #12D(PR) - Wellbore #1 - No Surveys	17,826.32	6,592.50	1,758.69	1,639.14	14.711	CC, ES, SF
Guttersen #33-12(PR) - Wellbore #1 - No Surveys	17,826.32	6,582.50	2,193.10	2,100.65	23.722	CC, ES, SF
GUTTERSEN #34-12(PR) - Wellbore #1 - No Surveys	17,826.32	6,582.50	899.21	797.65	8.854	CC, ES, SF
Guttersen #43-12(PR) - Wellbore #1 - Gyro	17,826.32	6,551.99	2,744.20	2,654.79	30.694	CC, ES, SF
GUTTERSEN #44-12(PR) - Wellbore #1 - Gyro	17,826.32	6,507.83	1,763.62	1,649.66	15.476	CC, ES, SF
GUTTERSEN D #12-20(PR) - Wellbore #1 - No Surveys	17,826.32	6,582.50	3,429.16	3,314.61	29.935	CC, ES, SF
GUTTERSEN D #12-25(PR) - Wellbore #1 - No Surveys	17,826.32	6,589.50	2,352.45	2,222.12	18.049	CC, ES, SF
GUTTERSEN STATE D #12-19(PR) - Wellbore #1 - No S	17,826.32	6,589.50	4,573.94	4,472.19	44.950	CC, ES, SF
GUTTERSEN STATE D #12-2JI(SI) - Wellbore #1 - No Su	17,826.32	6,622.50	4,859.74	4,768.49	53.254	CC, ES, SF
Guttersen State D12-01JI - Wellbore #1 - Wellbore #1 - A	17,826.32	7,084.78	5,015.32	4,943.38	69.716	CC, ES, SF
Guttersen State D12-08JI - Wellbore #1 - Wellbore #1 - A	17,826.32	6,678.29	3,693.69	3,613.18	45.876	CC, ES, SF
KARCH BLUE D #12-11(PR) - Wellbore #1 - No Surveys	17,826.32	6,573.50	2,459.31	2,355.46	23.680	CC, ES, SF
KARCH BLUE D #12-12(PR) - Wellbore #1 - No Surveys	17,826.32	6,570.50	3,224.73	3,094.48	24.758	CC, ES, SF
KARCH BLUE D #12-14(PR) - Wellbore #1 - No Surveys	17,826.32	6,576.50	1,400.37	1,263.93	10.263	CC, ES, SF
L F RANCH #2-12(SI) - Wellbore #1 - No Surveys	17,826.32	6,567.50	2,403.10	2,259.14	16.693	CC, ES, SF
SPIKE STATE #D 12-3(PR) - Wellbore #1 - No Surveys	17,826.32	6,581.50	4,966.91	4,874.21	53.583	CC, ES, SF
SPIKE STATE #D 12-4(PR) - Wellbore #1 - No Surveys	17,826.32	6,572.50	5,368.88	5,260.48	49.530	CC, ES, SF
SPIKE STATE #D 12-5(PR) - Wellbore #1 - No Surveys	17,826.32	6,569.50	4,268.98	4,152.86	36.762	CC, ES, SF
SPIKE STATE #D 12-6(PA) - Wellbore #1 - Gyro	17,826.32	6,634.31	3,656.08	3,593.97	58.861	CC, ES, SF
STATE #10(TA) - Wellbore #1 - No Surveys	17,826.32	6,636.50	4,389.54	4,290.53	44.331	CC, ES, SF

Noble Energy, Inc.
Anticollision Summary Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Guttersten D25-743
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 D25-743	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 #3	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	14,737.88	6,601.72	986.34	886.30	9.860	CC, ES
Dalbey D 13-11 (SI) - Wellbore #1 - Gyro Surveys	14,800.00	6,601.69	988.29	887.52	9.807	SF
Dalbey D 13-12 (PR) - Wellbore #1 - Gyro Surveys	14,257.26	6,608.27	2,134.79	2,038.37	22.141	CC
Dalbey D 13-12 (PR) - Wellbore #1 - Gyro Surveys	14,300.00	6,608.51	2,135.22	2,038.36	22.045	ES
Dalbey D 13-12 (PR) - Wellbore #1 - Gyro Surveys	14,600.00	6,610.26	2,162.13	2,062.92	21.794	SF
Dalbey D 13-13 (SI) - Wellbore #1 - As-Drilled	13,346.31	6,644.13	2,387.54	2,298.06	26.685	CC, ES
Dalbey D 13-13 (SI) - Wellbore #1 - As-Drilled	13,700.00	6,640.47	2,413.59	2,321.16	26.114	SF
Dalbey D 13-14 (PA) - Wellbore #1 - Gyro Surveys	13,341.24	6,594.26	1,213.89	1,124.51	13.582	CC, ES
Dalbey D 13-14 (PA) - Wellbore #1 - Gyro Surveys	13,500.00	6,595.30	1,224.23	1,133.35	13.472	SF
Guttersten 12-13 (SI) - Wellbore #1 - Gyro Surveys	15,934.39	6,688.43	2,508.05	2,398.56	22.907	CC, ES
Guttersten 12-13 (SI) - Wellbore #1 - Gyro Surveys	16,300.00	6,680.77	2,534.55	2,422.07	22.534	SF
Guttersten 13C (PR) - Wellbore #1 - Gyro Surveys	16,708.64	6,577.84	896.21	780.83	7.767	CC, ES, SF
Guttersten 13D (PR) - Wellbore #1 - Gyro Surveys	14,105.19	6,593.38	882.32	787.18	9.274	CC, ES, SF
Guttersten 13N (PR) - Wellbore #1 - Gyro Surveys	16,690.32	6,597.15	664.20	548.84	5.758	CC
Guttersten 13N (PR) - Wellbore #1 - Gyro Surveys	16,700.00	6,597.02	664.27	548.76	5.751	ES, SF
Guttersten 13S (PR) - Wellbore #1 - Gyro Surveys	15,448.81	6,580.34	880.57	775.11	8.350	CC, ES, SF
Guttersten 13T (PR) - Wellbore #1 - Gyro Surveys	12,883.06	6,603.17	776.91	690.99	9.042	CC, ES, SF
Guttersten 21-13 (SI) - Wellbore #1 - Gyro Surveys	17,300.60	6,609.93	1,229.24	1,109.01	10.224	CC, ES
Guttersten 21-13 (SI) - Wellbore #1 - Gyro Surveys	17,400.00	6,607.89	1,233.25	1,112.00	10.171	SF
Guttersten 22-13 (SI) - Wellbore #1 - Gyro Surveys	16,041.38	6,609.01	1,078.74	968.51	9.787	CC, ES
Guttersten 22-13 (SI) - Wellbore #1 - Gyro Surveys	16,100.00	6,609.26	1,080.33	969.42	9.740	SF
Guttersten 31-13 (PR) - Wellbore #1 - Gyro Surveys	17,339.69	6,587.70	159.60	38.86	1.322	Level 3, CC, ES, SF
Guttersten 32-13 (PR) - Wellbore #1 - Gyro Surveys	16,152.24	6,596.08	254.47	143.28	2.289	CC, ES, SF
Guttersten 34-13 (PR) - Wellbore #1 - Gyro Surveys	13,390.52	6,605.13	140.40	50.67	1.565	CC, ES, SF
Guttersten 41-13 (PR) - Wellbore #1 - Gyro Surveys	17,274.79	6,507.03	1,547.09	1,427.73	12.962	CC, ES
Guttersten 41-13 (PR) - Wellbore #1 - Gyro Surveys	17,300.00	6,506.93	1,547.30	1,427.86	12.955	SF
Guttersten 42-13 (PR) - Wellbore #1 - Gyro Surveys	16,006.33	6,531.19	1,641.09	1,531.52	14.978	CC, ES
Guttersten 42-13 (PR) - Wellbore #1 - Gyro Surveys	16,100.00	6,533.26	1,643.76	1,533.92	14.966	SF
Guttersten 43-13 - Wellbore #1 - Wellbore #1 - As Drilled	14,735.26	6,621.32	1,541.57	1,441.46	15.398	CC, ES
Guttersten 43-13 - Wellbore #1 - Wellbore #1 - As Drilled	14,800.00	6,621.89	1,542.93	1,442.62	15.381	SF
Guttersten 44-13 - Wellbore #1 - Wellbore #1 - As Drilled	13,385.66	6,635.47	1,481.82	1,388.93	15.953	CC, ES
Guttersten 44-13 - Wellbore #1 - Wellbore #1 - As Drilled	13,400.00	6,635.42	1,481.89	1,388.95	15.945	SF
L F Ranch 1-13 (PR) - Wellbore #1 - Gyro Surveys	14,429.81	6,609.68	114.30	16.46	1.168	Level 2, CC, ES, SF
L. F. Ranch 13-4 (SI) - Wellbore #1 - Gyro Surveys	16,959.42	6,744.39	2,115.96	1,998.47	18.010	CC
L. F. Ranch 13-4 (SI) - Wellbore #1 - Gyro Surveys	17,000.00	6,741.97	2,116.35	1,998.42	17.947	ES
L. F. Ranch 13-4 (SI) - Wellbore #1 - Gyro Surveys	17,200.00	6,730.68	2,129.55	2,009.92	17.801	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 D25-743
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 D25-743	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 #3	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	17,306.48	6,635.36	3,825.22	3,704.79	31.761	CC, ES
Dalbey D 14-1 (SI) - Wellbore #1 - Gyro Surveys	17,826.32	6,634.06	3,860.39	3,735.80	30.986	SF
Dalbey D 14-2 (SI) - Wellbore #1 - Gyro Surveys	17,061.83	6,647.09	4,741.47	4,622.97	40.011	CC
Dalbey D 14-2 (SI) - Wellbore #1 - Gyro Surveys	17,100.00	6,647.33	4,741.62	4,622.77	39.895	ES
Dalbey D 14-2 (SI) - Wellbore #1 - Gyro Surveys	17,826.32	6,651.69	4,802.71	4,678.28	38.599	SF
Dalbey D 14-3 (SI) - Wellbore #1 - Gyro Surveys	17,281.48	6,738.00	6,175.76	6,055.26	51.250	CC
Dalbey D 14-3 (SI) - Wellbore #1 - Gyro Surveys	17,300.00	6,738.05	6,175.79	6,055.12	51.179	ES
Dalbey D 14-3 (SI) - Wellbore #1 - Gyro Surveys	17,826.32	6,739.35	6,199.75	6,074.70	49.578	SF
Dalbey D 14-6 (SI) - Wellbore #1 - Gyro Surveys	16,117.42	6,654.05	6,385.02	6,273.93	57.473	CC
Dalbey D 14-6 (SI) - Wellbore #1 - Gyro Surveys	16,200.00	6,654.38	6,385.56	6,273.74	57.105	ES
Dalbey D 14-6 (SI) - Wellbore #1 - Gyro Surveys	17,826.32	6,660.02	6,609.75	6,486.58	53.665	SF
Dalbey D 14-7 (SI) - Wellbore #1 - Gyro Surveys	15,982.47	6,703.71	5,128.19	5,018.08	46.572	CC
Dalbey D 14-7 (SI) - Wellbore #1 - Gyro Surveys	16,000.00	6,703.73	5,128.22	5,017.95	46.505	ES
Dalbey D 14-7 (SI) - Wellbore #1 - Gyro Surveys	17,200.00	6,705.24	5,270.74	5,151.87	44.340	SF
Dalbey D 14-8 (SI) - Wellbore #1 - Gyro Surveys	16,019.69	6,649.78	3,875.66	3,765.40	35.149	CC, ES
Dalbey D 14-8 (SI) - Wellbore #1 - Gyro Surveys	16,800.00	6,651.10	3,953.44	3,837.40	34.072	SF
Guttersten State D 14-23 (SI) - Wellbore #1 - Gyro Survey	13,943.61	6,800.00	4,333.34	4,238.97	45.918	CC
Guttersten State D 14-23 (SI) - Wellbore #1 - Gyro Survey	14,000.00	6,800.00	4,333.71	4,238.83	45.675	ES
Guttersten State D 14-23 (SI) - Wellbore #1 - Gyro Survey	14,900.00	6,800.00	4,437.62	4,336.05	43.690	SF
Guttersten State D 14-24 (PR) - Wellbore #1 - Gyro Surve	14,062.79	6,700.00	5,794.62	5,699.42	60.869	CC
Guttersten State D 14-24 (PR) - Wellbore #1 - Gyro Surve	14,100.00	6,700.00	5,794.74	5,699.21	60.664	ES
Guttersten State D 14-24 (PR) - Wellbore #1 - Gyro Surve	15,800.00	6,681.66	6,049.37	5,942.08	56.381	SF
Guttersten State D 14-33 (PR) - Wellbore #1 - Gyro Surve	14,135.73	6,861.52	8,056.12	7,959.92	83.741	CC
Guttersten State D 14-33 (PR) - Wellbore #1 - Gyro Surve	14,200.00	6,861.08	8,056.38	7,959.63	83.274	ES
Guttersten State D 14-33 (PR) - Wellbore #1 - Gyro Surve	17,200.00	6,844.88	8,619.20	8,502.36	73.772	SF
HSR-Guttersten State 4-14 (PA) - Wellbore #1 - Gyro Surv	17,300.95	6,704.82	7,708.22	7,587.91	64.069	CC
HSR-Guttersten State 4-14 (PA) - Wellbore #1 - Gyro Surv	17,400.00	6,704.17	7,708.86	7,587.69	63.619	ES
HSR-Guttersten State 4-14 (PA) - Wellbore #1 - Gyro Surv	17,826.32	6,701.39	7,726.11	7,601.40	61.952	SF
HSR-Guttersten State 5-14 (PA) - Wellbore #1 - Gyro Surv	16,130.68	6,643.65	7,671.90	7,560.90	69.114	CC
HSR-Guttersten State 5-14 (PA) - Wellbore #1 - Gyro Surv	16,200.00	6,643.29	7,672.21	7,560.61	68.745	ES
HSR-Guttersten State 5-14 (PA) - Wellbore #1 - Gyro Surv	17,826.32	6,635.03	7,857.05	7,733.40	63.541	SF
Spike D 14-09 (SI) - Wellbore #1 - Gyro Surveys	14,882.48	6,610.03	3,543.92	3,442.63	34.987	CC
Spike D 14-09 (SI) - Wellbore #1 - Gyro Surveys	14,900.00	6,610.26	3,543.97	3,442.51	34.930	ES
Spike D 14-09 (SI) - Wellbore #1 - Gyro Surveys	15,600.00	6,618.53	3,615.82	3,509.15	33.896	SF
Spike D 14-16 (SI) - Wellbore #1 - Gyro Surveys	13,250.60	6,710.16	3,602.00	3,513.09	40.515	CC
Spike D 14-16 (SI) - Wellbore #1 - Gyro Surveys	13,300.00	6,709.83	3,602.33	3,512.98	40.313	ES
Spike D 14-16 (SI) - Wellbore #1 - Gyro Surveys	14,100.00	6,704.76	3,700.79	3,605.60	38.880	SF
Spike State D 14-11 (PR) - Wellbore #1 - Gyro Surveys	14,892.73	6,705.86	6,161.68	6,060.03	60.617	CC
Spike State D 14-11 (PR) - Wellbore #1 - Gyro Surveys	14,900.00	6,705.80	6,161.69	6,059.97	60.579	ES
Spike State D 14-11 (PR) - Wellbore #1 - Gyro Surveys	16,700.00	6,692.57	6,421.24	6,306.99	56.202	SF
Spike State D 14-12 (PR) - Wellbore #1 - Gyro Surveys	14,856.21	6,687.74	7,691.76	7,590.42	75.899	CC
Spike State D 14-12 (PR) - Wellbore #1 - Gyro Surveys	14,900.00	6,687.52	7,691.89	7,590.17	75.622	ES
Spike State D 14-12 (PR) - Wellbore #1 - Gyro Surveys	17,500.00	6,673.97	8,133.43	8,014.08	68.147	SF
Spike State D 14-13 (SI) - Wellbore #1 - Gyro Surveys	13,279.10	6,753.90	7,696.31	7,606.98	86.151	CC
Spike State D 14-13 (SI) - Wellbore #1 - Gyro Surveys	13,300.00	6,753.83	7,696.34	7,606.83	85.983	ES
Spike State D 14-13 (SI) - Wellbore #1 - Gyro Surveys	16,300.00	6,743.68	8,267.95	8,158.33	75.425	SF
Spike State D 14-14 (SI) - Wellbore #1 - Gyro Surveys	13,197.73	6,683.85	6,199.43	6,110.89	70.023	CC
Spike State D 14-14 (SI) - Wellbore #1 - Gyro Surveys	13,300.00	6,684.18	6,200.27	6,110.87	69.353	ES
Spike State D 14-14 (SI) - Wellbore #1 - Gyro Surveys	15,300.00	6,690.80	6,546.17	6,443.17	63.557	SF
Spike State D 14-15 (SI) - Wellbore #1 - Gyro Surveys	13,302.49	6,878.42	4,875.37	4,785.83	54.451	CC, ES
Spike State D 14-15 (SI) - Wellbore #1 - Gyro Surveys	14,700.00	6,853.12	5,071.65	4,972.13	50.964	SF
Spike State D14-13J (SI) - Wellbore #1 - Gyro Surveys	14,067.15	6,694.56	7,239.26	7,143.94	75.946	CC
Spike State D14-13J (SI) - Wellbore #1 - Gyro Surveys	14,100.00	6,694.44	7,239.34	7,143.74	75.725	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 Gutteresen D25-743
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 D25-743	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 #3	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	16,600.00	6,686.27	7,669.56	7,556.97	68.121	SF
Spike State GWS D 14-10 (SI) - Wellbore #1 - Gyro Surv	14,547.81	6,700.00	4,984.71	4,885.81	50.402	CC
Spike State GWS D 14-10 (SI) - Wellbore #1 - Gyro Surv	14,600.00	6,700.00	4,984.98	4,885.62	50.169	ES
Spike State GWS D 14-10 (SI) - Wellbore #1 - Gyro Surv	15,800.00	6,678.19	5,139.51	5,031.61	47.635	SF

Noble Energy, Inc.
Anticollision Summary Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Guttersten D25-743
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 D25-743	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 #3	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 23						
Guttersten 23-20 (SI) - Wellbore #1 - Gyro Surveys	10,218.18	6,750.80	7,022.45	6,955.39	104.711	CC
Guttersten 23-20 (SI) - Wellbore #1 - Gyro Surveys	10,300.00	6,750.08	7,022.93	6,955.26	103.775	ES
Guttersten 23-20 (SI) - Wellbore #1 - Gyro Surveys	13,500.00	6,719.21	7,751.39	7,663.20	87.890	SF
Guttersten 23-32 (SI) - Wellbore #1 - Gyro Surveys	10,727.29	6,815.10	4,867.39	4,796.80	68.950	CC
Guttersten 23-32 (SI) - Wellbore #1 - Gyro Surveys	10,800.00	6,814.74	4,867.94	4,796.76	68.390	ES
Guttersten 23-32 (SI) - Wellbore #1 - Gyro Surveys	11,700.00	11,700.00	4,963.62	4,868.68	52.278	SF
Guttersten 31-23 (PR) - Wellbore #1 - Gyro Surveys	12,035.37	6,745.13	3,708.66	3,628.90	46.503	CC
Guttersten 23-41 (PR) - Wellbore #1 - Gyro Surveys	12,100.00	6,744.13	3,709.22	3,628.89	46.178	ES
Guttersten 23-41 (PR) - Wellbore #1 - Gyro Surveys	13,200.00	13,200.00	3,887.18	3,776.72	35.191	SF
Guttersten 31-23 (PR) - Wellbore #1 - Gyro Surveys	12,024.83	6,798.74	5,049.22	4,969.22	63.114	CC
Guttersten 31-23 (PR) - Wellbore #1 - Gyro Surveys	12,100.00	6,797.31	5,049.78	4,969.14	62.626	ES
Guttersten 31-23 (PR) - Wellbore #1 - Gyro Surveys	13,600.00	6,768.21	5,289.12	5,198.09	58.104	SF
Guttersten 42-23 (PR) - Wellbore #1 - Gyro Surveys	10,699.56	6,719.14	3,734.51	3,664.30	53.186	CC
Guttersten 42-23 (PR) - Wellbore #1 - Gyro Surveys	10,700.00	6,719.14	3,734.51	3,664.29	53.183	ES
Guttersten 42-23 (PR) - Wellbore #1 - Gyro Surveys	11,800.00	6,705.55	3,893.25	3,815.27	49.928	SF
Guttersten D23-711 - Wellbore #1 - Plan #1	17,800.11	17,723.12	3,080.45	2,890.90	16.251	CC
Guttersten D23-711 - Wellbore #1 - Plan #1	17,826.32	17,723.12	3,080.57	2,890.80	16.233	ES, SF
Guttersten D35-720 - Wellbore #1 - Plan #1	7,292.37	7,217.86	3,726.63	3,673.35	69.944	CC
Guttersten D35-720 - Wellbore #1 - Plan #1	7,300.00	7,213.90	3,726.63	3,673.33	69.920	ES
Guttersten D35-720 - Wellbore #1 - Plan #1	9,000.00	6,650.00	3,967.68	3,907.25	65.668	SF
Guttersten D35-730 - Wellbore #1 - Plan #1	7,283.78	7,169.73	4,386.83	4,334.16	83.295	CC
Guttersten D35-730 - Wellbore #1 - Plan #1	7,286.91	7,166.88	4,386.83	4,334.16	83.291	ES
Guttersten D35-730 - Wellbore #1 - Plan #1	9,500.00	6,400.00	4,711.35	4,649.54	76.227	SF
Guttersten D35-740 - Wellbore #1 - Plan #1	7,882.84	6,257.27	4,978.04	4,925.62	94.967	CC
Guttersten D35-740 - Wellbore #1 - Plan #1	7,900.00	6,255.08	4,978.07	4,925.57	94.823	ES
Guttersten D35-740 - Wellbore #1 - Plan #1	10,000.00	5,986.87	5,402.79	5,339.48	85.345	SF
Guttersten D35-750 - Wellbore #1 - Plan #1	7,277.43	7,250.00	5,681.03	5,628.13	107.382	CC, ES
Guttersten D35-750 - Wellbore #1 - Plan #1	10,600.00	6,473.14	6,363.32	6,294.80	92.869	SF
Guttersten D35-760 - Wellbore #1 - Plan #1	7,831.28	6,481.56	6,281.23	6,228.72	119.634	CC, ES
Guttersten D35-760 - Wellbore #1 - Plan #1	11,300.00	6,312.69	7,159.41	7,088.00	100.258	SF
Guttersten D35-770 - Wellbore #1 - Plan #1	7,975.28	5,502.70	6,906.81	6,856.54	137.396	CC
Guttersten D35-770 - Wellbore #1 - Plan #1	8,000.00	5,500.09	6,906.85	6,856.46	137.077	ES
Guttersten D35-770 - Wellbore #1 - Plan #1	11,800.00	5,101.20	7,884.76	7,814.61	112.399	SF
Guttersten D35-780 - Wellbore #1 - Plan #1	8,037.67	4,784.92	7,203.10	7,155.10	150.085	CC
Guttersten D35-780 - Wellbore #1 - Plan #1	8,100.00	4,778.16	7,203.36	7,155.07	149.161	ES
Guttersten D35-780 - Wellbore #1 - Plan #1	12,100.00	4,344.52	8,257.92	8,189.15	120.077	SF
Guttersten State D23-721 - Wellbore #1 - Plan #2	17,801.93	17,550.58	3,740.18	3,550.41	19.708	CC
Guttersten State D23-721 - Wellbore #1 - Plan #2	17,826.32	17,550.58	3,740.26	3,550.27	19.686	ES, SF
Guttersten State D23-731 - Wellbore #1 - Plan #2	17,802.73	17,527.71	4,400.58	4,210.62	23.166	CC
Guttersten State D23-731 - Wellbore #1 - Plan #2	17,826.32	17,527.71	4,400.64	4,210.47	23.140	ES, SF
Guttersten State D23-741 - Guttersten State D23-741 OH	7,176.55	6,094.95	5,009.78	4,960.34	101.313	CC
Guttersten State D23-741 - Guttersten State D23-741 OH	17,826.32	17,639.86	5,060.65	4,871.09	26.697	ES, SF
Guttersten State D23-751 - Wellbore #1 - BHI-Rev A.0	17,806.88	17,545.49	5,699.80	5,509.66	29.977	CC
Guttersten State D23-751 - Wellbore #1 - BHI-Rev A.0	17,826.32	17,545.49	5,699.84	5,509.53	29.950	ES, SF
Guttersten State D23-761 - Wellbore #1 - BHI-Rev A.0	17,806.47	17,501.89	6,360.56	6,170.53	33.471	CC
Guttersten State D23-761 - Wellbore #1 - BHI-Rev A.0	17,826.32	17,501.89	6,360.59	6,170.38	33.440	ES, SF
Guttersten State D23-771 - Wellbore #1 - BHI Rev-B.0	7,334.81	5,340.79	6,948.43	6,901.20	147.136	CC
Guttersten State D23-771 - Wellbore #1 - BHI Rev-B.0	17,826.32	17,632.35	7,019.45	6,829.89	37.030	ES, SF
Guttersten State D23-781 - Wellbore #1 - BHI Rev-A.0	7,534.05	4,728.87	7,251.66	7,205.92	158.552	CC, ES
Guttersten State D23-781 - Wellbore #1 - BHI Rev-A.0	17,826.32	17,595.72	7,627.87	7,438.35	40.247	SF
Guttersten State D35-790 - Wellbore #1 - Plan #1	7,319.52	7,365.78	3,066.42	3,011.89	56.234	CC, ES
Guttersten State D35-790 - Wellbore #1 - Plan #1	8,500.00	6,974.36	3,212.70	3,153.05	53.856	SF
Guttersten USX D 23-17 (PR) - Wellbore #1 - Gyro Survey	11,378.81	6,749.05	4,455.93	4,380.79	59.299	CC

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

Noble Energy, Inc.
Anticollision Summary Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Guttersen D25-743
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 D25-743	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 #3	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						
Guttersen USX D 23-17 (PR) - Wellbore #1 - Gyro Survey	11,400.00	6,748.95	4,455.99	4,380.66	59.160	ES
Guttersen USX D 23-17 (PR) - Wellbore #1 - Gyro Survey	12,800.00	6,742.39	4,677.08	4,592.02	54.986	SF
Parker Blue D 23-09 (SI) - Wellbore #1 - Gyro Surveys	9,062.69	6,649.77	3,473.06	3,413.73	58.543	CC
Parker Blue D 23-09 (SI) - Wellbore #1 - Gyro Surveys	9,100.00	6,649.11	3,473.26	3,413.67	58.285	ES
Parker Blue D 23-09 (SI) - Wellbore #1 - Gyro Surveys	10,200.00	6,629.66	3,654.47	3,587.72	54.748	SF
Parker Blue D 23-10 (SI) - Wellbore #1 - Gyro Surveys	9,233.52	6,674.18	4,735.89	4,675.43	78.330	CC
Parker Blue D 23-10 (SI) - Wellbore #1 - Gyro Surveys	9,300.00	6,673.77	4,736.35	4,675.42	77.737	ES
Parker Blue D 23-10 (SI) - Wellbore #1 - Gyro Surveys	11,100.00	6,663.06	5,090.40	5,017.96	70.267	SF
Parker Blue D 23-11 (SI) - Wellbore #1 - Gyro Surveys	9,647.39	6,739.42	6,207.20	6,143.92	98.096	CC
Parker Blue D 23-11 (SI) - Wellbore #1 - Gyro Surveys	9,700.00	6,739.01	6,207.42	6,143.77	97.519	ES
Parker Blue D 23-11 (SI) - Wellbore #1 - Gyro Surveys	12,500.00	6,720.38	6,831.26	6,749.80	83.860	SF
Parker Blue D 23-13 (SI) - Wellbore #1 - Gyro Surveys	8,459.58	8,459.58	7,742.46	7,680.19	124.322	CC
Parker Blue D 23-13 (SI) - Wellbore #1 - Gyro Surveys	8,500.00	8,500.00	7,742.57	7,679.91	123.574	ES
Parker Blue D 23-13 (SI) - Wellbore #1 - Gyro Surveys	12,200.00	12,200.00	8,598.57	8,500.34	87.536	SF
Parker Blue D 23-14 (SI) - Wellbore #1 - Gyro Surveys	8,364.31	6,725.93	6,246.04	6,190.43	112.320	CC
Parker Blue D 23-14 (SI) - Wellbore #1 - Gyro Surveys	8,400.00	6,725.69	6,246.14	6,190.33	111.905	ES
Parker Blue D 23-14 (SI) - Wellbore #1 - Gyro Surveys	11,500.00	6,703.07	6,988.93	6,914.64	94.086	SF
Parker Blue D 23-15 (SI) - Wellbore #1 - Gyro Surveys	7,932.47	6,663.97	4,959.94	4,906.67	93.121	CC, ES
Parker Blue D 23-15 (SI) - Wellbore #1 - Gyro Surveys	10,200.00	6,622.52	5,453.55	5,387.42	82.463	SF
Parker Blue D 23-3J (SI) - Wellbore #1 - Gyro Surveys	9,477.54	6,789.99	7,222.58	7,157.04	110.194	CC
Parker Blue D 23-3J (SI) - Wellbore #1 - Gyro Surveys	9,500.00	6,790.03	7,222.62	7,156.92	109.933	ES
Parker Blue D 23-3J (SI) - Wellbore #1 - Gyro Surveys	13,000.00	6,795.78	8,035.76	7,947.79	91.348	SF
Parker Red D 23-05 (PR) - Wellbore #1 - Gyro Surveys	10,691.54	6,611.72	7,664.40	7,594.45	109.563	CC
Parker Red D 23-05 (PR) - Wellbore #1 - Gyro Surveys	10,800.00	6,611.57	7,665.17	7,594.39	108.293	ES
Parker Red D 23-05 (PR) - Wellbore #1 - Gyro Surveys	14,300.00	6,607.21	8,471.36	8,378.00	90.733	SF
Parker Red D 23-2J (SI) - Wellbore #1 - Gyro Surveys	11,048.15	6,540.37	6,830.34	6,758.04	94.475	CC
Parker Red D 23-2J (SI) - Wellbore #1 - Gyro Surveys	11,100.00	6,540.86	6,830.54	6,757.83	93.948	ES
Parker Red D 23-2J (SI) - Wellbore #1 - Gyro Surveys	14,000.00	6,574.47	7,440.81	7,349.03	81.068	SF
Parker Red D 23-3 (PR) - Wellbore #1 - Gyro Surveys	12,043.26	6,554.55	6,352.92	6,273.39	79.873	CC
Parker Red D 23-3 (PR) - Wellbore #1 - Gyro Surveys	12,100.00	6,553.93	6,353.18	6,273.17	79.413	ES
Parker Red D 23-3 (PR) - Wellbore #1 - Gyro Surveys	14,400.00	6,529.84	6,775.90	6,680.46	70.998	SF
Parker Red D 23-4 (SI) - Wellbore #1 - Gyro Surveys	11,948.77	6,664.44	7,690.46	7,611.29	97.143	CC
Parker Red D 23-4 (SI) - Wellbore #1 - Gyro Surveys	12,000.00	6,664.61	7,690.63	7,611.05	96.640	ES
Parker Red D 23-4 (SI) - Wellbore #1 - Gyro Surveys	15,300.00	6,676.32	8,388.91	8,287.56	82.770	SF
Two E Ranch 1-23 (SI) - Wellbore #1 - Gyro Surveys	8,565.24	6,694.38	3,969.78	3,913.20	70.159	CC
Two E Ranch 1-23 (SI) - Wellbore #1 - Gyro Surveys	8,600.00	6,694.08	3,969.94	3,913.13	69.887	ES
Two E Ranch 1-23 (SI) - Wellbore #1 - Gyro Surveys	10,000.00	6,682.04	4,221.08	4,155.59	64.449	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 D25-743
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 D25-743	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 #3	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	9,095.32	6,622.05	580.10	520.71	9.768	CC, ES, SF
Dalbey D 24-15 (SI) - Wellbore #1 - Gyro Surveys	8,134.63	6,623.01	111.19	57.08	2.055	CC, ES, SF
Glazier 2-24 (PR) - Wellbore #1 - Gyro Surveys	11,308.51	6,611.43	1,224.93	1,150.69	16.499	CC, ES, SF
Guttersten 11-24 (SI) - Wellbore #1 - Gyro Surveys	12,085.73	6,660.16	2,455.72	2,375.71	30.693	CC
Guttersten 11-24 (SI) - Wellbore #1 - Gyro Surveys	12,100.00	6,660.14	2,455.76	2,375.61	30.641	ES
Guttersten 11-24 (SI) - Wellbore #1 - Gyro Surveys	12,500.00	6,659.70	2,490.41	2,407.01	29.861	SF
Guttersten 12-24 (SI) - Wellbore #1 - Gyro Surveys	10,789.00	6,647.15	2,469.98	2,399.36	34.973	CC
Guttersten 12-24 (SI) - Wellbore #1 - Gyro Surveys	10,800.00	6,647.11	2,470.01	2,399.28	34.924	ES
Guttersten 12-24 (SI) - Wellbore #1 - Gyro Surveys	11,300.00	6,645.28	2,522.29	2,447.69	33.813	SF
Guttersten 21-24 (SI) - Wellbore #1 - Gyro Surveys	12,099.66	6,611.02	1,135.87	1,055.81	14.188	CC
Guttersten 21-24 (SI) - Wellbore #1 - Gyro Surveys	12,100.00	6,611.02	1,135.87	1,055.81	14.187	ES
Guttersten 21-24 (SI) - Wellbore #1 - Gyro Surveys	12,200.00	6,610.88	1,140.29	1,059.18	14.057	SF
Guttersten 22-24 (PR) - Wellbore #1 - Gyro Surveys	10,870.96	6,614.34	1,084.89	1,013.76	15.251	CC, ES
Guttersten 22-24 (PR) - Wellbore #1 - Gyro Surveys	11,000.00	6,614.30	1,092.54	1,020.11	15.085	SF
Guttersten 24A (SI) - Wellbore #1 - Gyro Surveys	11,424.86	6,626.36	1,763.73	1,688.65	23.492	CC, ES
Guttersten 24A (SI) - Wellbore #1 - Gyro Surveys	11,700.00	6,627.78	1,785.06	1,707.61	23.048	SF
Guttersten 24J (PR) - Wellbore #1 - Gyro Surveys	12,725.72	6,613.34	1,674.79	1,590.08	19.770	CC, ES
Guttersten 24J (PR) - Wellbore #1 - Gyro Surveys	13,000.00	6,609.89	1,697.10	1,610.06	19.499	SF
Guttersten 24N (SI) - Wellbore #1 - MWD Surveys	11,464.34	6,606.22	534.22	459.87	7.185	CC, ES
Guttersten 24N (SI) - Wellbore #1 - MWD Surveys	11,500.00	6,605.92	535.41	460.54	7.151	SF
Guttersten 24S (PR) - Wellbore #1 - MWD Surveys	9,977.66	6,603.14	927.82	863.82	14.497	CC, ES
Guttersten 24S (PR) - Wellbore #1 - MWD Surveys	10,000.00	6,602.92	928.09	864.07	14.496	SF
Guttersten 43-24 (PR) - Wellbore #1 - Gyro Surveys	9,353.68	6,638.47	1,471.55	1,410.39	24.062	CC, ES
Guttersten 43-24 (PR) - Wellbore #1 - Gyro Surveys	9,400.00	6,638.19	1,472.28	1,410.98	24.018	SF
Guttersten 44-24 (PR) - Wellbore #1 - Gyro Surveys	8,115.57	6,615.04	1,544.57	1,490.65	28.649	CC, ES
Guttersten 44-24 (PR) - Wellbore #1 - Gyro Surveys	8,200.00	6,614.88	1,546.87	1,492.73	28.570	SF
Karch Blue D 24-12 (PA) - Wellbore #1 - Gyro Surveys	9,610.56	6,639.77	2,414.03	2,351.35	38.514	CC, ES
Karch Blue D 24-12 (PA) - Wellbore #1 - Gyro Surveys	10,200.00	6,638.77	2,484.95	2,417.99	37.114	SF
Karch Blue D 24-14 (PR) - Wellbore #1 - No Surveys	8,085.11	6,632.92	847.92	684.38	5.185	CC, ES
Karch Blue D 24-14 (PR) - Wellbore #1 - No Surveys	8,100.00	6,632.88	848.05	684.38	5.182	SF
Karch Blue D24-11 (PA) - Wellbore #1 - Gyro Surveys	9,609.06	6,604.48	996.82	927.79	14.442	CC, ES
Karch Blue D24-11 (PA) - Wellbore #1 - Gyro Surveys	9,700.00	6,605.14	1,000.96	931.03	14.314	SF
Koerner 31-24 (SI) - Wellbore #1 - Gyro Surveys	12,150.28	6,609.95	187.54	107.05	2.330	CC, ES, SF
Koerner 32-24 (SI) - Wellbore #1 - Gyro Surveys	10,716.67	6,604.75	197.07	127.33	2.826	CC, ES, SF
Koerner 42-24 (SI) - Wellbore #1 - Gyro Surveys	10,705.86	6,622.13	1,505.84	1,435.83	21.508	CC, ES
Koerner 42-24 (SI) - Wellbore #1 - Gyro Surveys	10,800.00	6,620.95	1,508.78	1,438.50	21.468	SF
LF Ranch 1-24 (SI) - Wellbore #1 - Gyro Surveys	8,503.03	6,713.90	2,073.30	2,017.16	36.930	CC, ES
LF Ranch 1-24 (SI) - Wellbore #1 - Gyro Surveys	9,000.00	6,715.70	2,132.04	2,072.51	35.813	SF

Noble Energy, Inc.
Anticollision Summary Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Guttersen D25-743
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 D25-743	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 #3	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	5,587.69	5,615.75	3,500.36	3,448.65	67.693	CC
Coors Energy 13-25D (PR) - Wellbore #1 - MWD Surveys	5,800.00	5,823.24	3,500.58	3,447.29	65.691	ES
Coors Energy 13-25D (PR) - Wellbore #1 - MWD Surveys	6,750.00	6,650.17	3,584.70	3,525.28	60.328	SF
Coors Energy 14-25D (PR) - Wellbore #1 - MWD Surveys	0.00	12.91	3,578.73			
Coors Energy 14-25D (PR) - Wellbore #1 - MWD Surveys	900.00	895.00	3,579.59	3,574.82	751.420	ES
Coors Energy 14-25D (PR) - Wellbore #1 - MWD Surveys	6,850.00	6,750.26	4,676.41	4,624.17	89.507	SF
Coors Energy 23-25D (PR) - Wellbore #1 - MWD Surveys	5,275.71	5,560.29	2,639.40	2,599.57	66.261	CC
Coors Energy 23-25D (PR) - Wellbore #1 - MWD Surveys	5,300.00	5,575.00	2,639.46	2,599.48	66.024	ES
Coors Energy 23-25D (PR) - Wellbore #1 - MWD Surveys	6,650.00	6,555.85	2,803.56	2,755.38	58.197	SF
Coors Energy 24-25 (PR) - Wellbore #1 - Gyro Surveys	2,167.24	2,238.15	3,469.04	3,453.86	228.503	CC
Coors Energy 24-25 (PR) - Wellbore #1 - Gyro Surveys	2,200.00	2,267.79	3,469.11	3,453.71	225.245	ES
Coors Energy 24-25 (PR) - Wellbore #1 - Gyro Surveys	6,700.00	6,448.69	4,280.27	4,232.34	89.317	SF
Coors Energy 25HD (PR) - Wellbore #1 - MWD Surveys	216.64	232.61	3,567.57	3,566.61	3,703.679	CC
Coors Energy 25HD (PR) - Wellbore #1 - MWD Surveys	300.00	280.05	3,568.04	3,566.56	2,417.667	ES
Coors Energy 25HD (PR) - Wellbore #1 - MWD Surveys	6,850.00	6,793.69	4,432.38	4,371.72	73.072	SF
Coors Energy 25LD (PR) - Wellbore #1 - MWD Surveys	0.00	12.62	3,586.59			
Coors Energy 25LD (PR) - Wellbore #1 - MWD Surveys	600.00	595.11	3,588.12	3,585.13	1,202.173	ES
Coors Energy 25LD (PR) - Wellbore #1 - MWD Surveys	6,850.00	6,777.77	4,823.61	4,774.78	98.796	SF
Coors Energy 25TD (PR) - Wellbore #1 - MWD Surveys	1,304.65	1,292.68	2,790.03	2,782.42	366.984	CC
Coors Energy 25TD (PR) - Wellbore #1 - MWD Surveys	1,400.00	1,356.88	2,790.56	2,782.40	342.081	ES
Coors Energy 25TD (PR) - Wellbore #1 - MWD Surveys	6,750.00	6,559.31	4,615.70	4,568.67	98.152	SF
Coors Energy 25XD (PR) - Wellbore #1 - MWD Surveys	2,465.69	2,867.66	2,589.10	2,569.11	129.495	CC
Coors Energy 25XD (PR) - Wellbore #1 - MWD Surveys	2,500.00	2,907.07	2,589.26	2,568.87	126.948	ES
Coors Energy 25XD (PR) - Wellbore #1 - MWD Surveys	6,500.00	6,516.92	3,732.24	3,675.13	65.356	SF
Coors Energy 25YD (PR) - Wellbore #1 - MWD Surveys	1,156.29	1,145.10	2,753.26	2,746.72	420.643	CC
Coors Energy 25YD (PR) - Wellbore #1 - MWD Surveys	1,200.00	1,181.00	2,753.39	2,746.55	402.944	ES
Coors Energy 25YD (PR) - Wellbore #1 - MWD Surveys	6,750.00	6,885.07	4,963.68	4,909.68	91.932	SF
Coors Energy 33-25D (PR) - Wellbore #1 - MWD Surveys	4,209.47	4,791.13	2,125.97	2,089.81	58.787	CC, ES
Coors Energy 33-25D (PR) - Wellbore #1 - MWD Surveys	6,500.00	6,473.81	2,518.06	2,468.10	50.398	SF
Coors Energy 34-25 (PR) - Wellbore #1 - Gyro Surveys	0.00	0.00	3,070.47			
Coors Energy 34-25 (PR) - Wellbore #1 - Gyro Surveys	6,650.00	6,388.99	4,149.34	4,102.00	87.645	SF
Coors Energy 43-25D (PR) - Wellbore #1 - MWD Surveys	2,864.47	3,529.33	2,238.86	2,215.26	94.844	CC, ES
Coors Energy 43-25D (PR) - Wellbore #1 - MWD Surveys	6,457.04	6,506.23	2,872.71	2,818.61	53.105	SF
Coors Energy 44-25D (PR) - Wellbore #1 - MWD Surveys	2,028.39	2,040.81	2,733.40	2,720.33	209.054	CC, ES
Coors Energy 44-25D (PR) - Wellbore #1 - MWD Surveys	6,600.00	6,420.07	4,120.61	4,071.72	84.273	SF
Dalbey D 25-03 (SI) - Wellbore #1 - Gyro Surveys	6,779.26	6,508.44	1,498.62	1,450.45	31.108	CC, ES
Dalbey D 25-03 (SI) - Wellbore #1 - Gyro Surveys	7,000.00	6,637.80	1,522.97	1,473.20	30.601	SF
Dalbey D 25-05 (SI) - Wellbore #1 - Gyro Surveys	6,612.09	6,410.94	2,931.94	2,884.66	62.019	CC, ES
Dalbey D 25-05 (SI) - Wellbore #1 - Gyro Surveys	7,000.00	6,629.43	2,999.79	2,949.88	60.104	SF
Guttersen 11-25 (PR) - Wellbore #1 - MWD Surveys	7,070.14	6,671.14	2,411.17	2,362.44	49.479	CC, ES
Guttersen 11-25 (PR) - Wellbore #1 - MWD Surveys	7,400.00	6,703.36	2,452.43	2,402.09	48.709	SF
Guttersen 22-25 (PA) - Wellbore #1 - MWD Surveys	6,286.40	6,062.44	1,506.30	1,462.53	34.417	CC, ES
Guttersen 22-25 (PA) - Wellbore #1 - MWD Surveys	6,600.00	6,316.65	1,526.21	1,480.19	33.168	SF
Guttersen 25E (PR) - Wellbore #1 - MWD Surveys	7,457.22	6,666.01	2,796.60	2,746.23	55.522	CC, ES
Guttersen 25E (PR) - Wellbore #1 - MWD Surveys	8,300.00	6,651.92	2,920.80	2,866.06	53.358	SF
Guttersen 25KD (PR) - Wellbore #1 - MWD Surveys	100.00	81.69	1,530.84	1,530.57	5,613.502	CC
Guttersen 25KD (PR) - Wellbore #1 - MWD Surveys	500.00	475.35	1,532.01	1,529.59	634.349	ES
Guttersen 25KD (PR) - Wellbore #1 - MWD Surveys	6,800.00	6,756.22	2,572.51	2,518.96	48.036	SF
Guttersen 25O (PR) - Wellbore #1 - MWD Surveys	3,880.07	3,764.77	1,436.96	1,411.22	55.825	CC
Guttersen 25O (PR) - Wellbore #1 - MWD Surveys	4,000.00	3,875.51	1,437.60	1,410.98	54.012	ES
Guttersen 25O (PR) - Wellbore #1 - MWD Surveys	6,550.00	6,275.93	1,700.51	1,654.66	37.091	SF
Guttersen D 25-17 (SI) - Wellbore #1 - Gyro Surveys	4,252.52	4,123.22	207.07	177.45	6.993	CC, ES
Guttersen D 25-17 (SI) - Wellbore #1 - Gyro Surveys	4,400.00	4,263.22	212.38	181.74	6.933	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 D25-743
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 D25-743	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 #3	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						
Guttersen D25-715 - Wellbore #1 - Plan #3	2,000.00	2,001.00	112.50	98.62	8.107	CC, ES
Guttersen D25-715 - Wellbore #1 - Plan #3	2,100.00	2,098.86	114.56	99.98	7.858	SF
Guttersen D25-724 - Wellbore #1 - Plan #3	2,000.00	2,000.00	75.01	61.13	5.407	CC, ES
Guttersen D25-724 - Wellbore #1 - Plan #3	2,100.00	2,099.60	76.38	61.80	5.237	SF
Guttersen D25-734 - Wellbore #1 - Plan #5	2,000.00	2,000.00	37.50	23.63	2.703	CC
Guttersen D25-734 - Wellbore #1 - Plan #5	2,100.00	2,100.39	38.10	23.51	2.612	ES
Guttersen D25-734 - Wellbore #1 - Plan #5	2,200.00	2,200.75	39.90	24.60	2.608	SF
Guttersen D25-753 - Wellbore #1 - Plan #3	17,824.13	17,753.96	605.19	406.46	3.045	CC
Guttersen D25-753 - Wellbore #1 - Plan #3	17,826.32	17,749.89	605.22	406.45	3.045	ES, SF
Guttersen D25-762 - Wellbore #1 - Plan #3	7,273.33	7,085.14	1,215.90	1,163.41	23.162	CC
Guttersen D25-762 - Wellbore #1 - Plan #3	17,826.32	17,634.09	1,218.81	1,019.56	6.117	ES, SF
Guttersen D25-772 - Wellbore #1 - Plan #3	17,814.04	17,794.59	1,842.84	1,644.40	9.286	CC
Guttersen D25-772 - Wellbore #1 - Plan #3	17,826.32	17,786.62	1,842.92	1,644.33	9.280	ES, SF
Guttersen D25-781 - Wellbore #1 - Plan #3	3,425.86	2,815.40	2,166.41	2,145.11	101.686	CC, ES
Guttersen D25-781 - Wellbore #1 - Plan #3	17,826.32	17,856.05	2,459.30	2,260.09	12.345	SF
Guttersen State D36-714 - Wellbore #1 - Plan #1	2,366.11	2,363.28	184.39	167.94	11.214	CC
Guttersen State D36-714 - Wellbore #1 - Plan #1	2,400.00	2,396.11	184.52	167.85	11.069	ES
Guttersen State D36-714 - Wellbore #1 - Plan #1	2,500.00	2,491.51	187.15	169.81	10.796	SF
Guttersen State D36-724 - Wellbore #1 - Plan #1	2,586.20	2,588.02	146.97	129.03	8.191	CC
Guttersen State D36-724 - Wellbore #1 - Plan #1	2,600.00	2,601.14	147.04	129.00	8.153	ES
Guttersen State D36-724 - Wellbore #1 - Plan #1	2,700.00	2,705.39	152.54	133.81	8.145	SF
Guttersen State D36-733 - Wellbore #1 - Plan #1	2,781.04	2,783.90	79.48	60.30	4.142	CC, ES
Guttersen State D36-733 - Wellbore #1 - Plan #1	2,800.00	2,801.68	79.78	60.46	4.128	SF
Guttersen State D36-743 - Wellbore #1 - Plan #1	2,897.67	2,893.60	18.42	-1.36	0.931	Level 1, CC
Guttersen State D36-743 - Wellbore #1 - Plan #1	2,900.00	2,895.79	18.44	-1.38	0.931	Level 1, ES, SF
Guttersen State D36-752 - Wellbore #1 - Plan #1	5,135.95	5,006.41	1,366.12	1,329.36	37.162	CC, ES
Guttersen State D36-752 - Wellbore #1 - Plan #1	6,100.00	5,802.65	1,473.12	1,429.51	33.779	SF
Guttersen State D36-762 - Wellbore #1 - Plan #1	4,925.19	4,657.91	1,650.42	1,616.12	48.123	CC
Guttersen State D36-762 - Wellbore #1 - Plan #1	5,000.00	4,721.57	1,650.89	1,616.04	47.383	ES
Guttersen State D36-762 - Wellbore #1 - Plan #1	6,500.00	5,997.39	1,846.99	1,801.38	40.497	SF
Guttersen State D36-771 - Wellbore #1 - Plan #1	4,290.86	3,866.16	1,891.71	1,863.14	66.202	CC
Guttersen State D36-771 - Wellbore #1 - Plan #1	4,300.00	3,874.05	1,891.72	1,863.08	66.052	ES
Guttersen State D36-771 - Wellbore #1 - Plan #1	6,550.00	5,812.94	2,212.15	2,167.24	49.252	SF
Guttersen State D36-781 - Wellbore #1 - Plan #1	3,600.47	3,048.65	2,038.90	2,016.17	89.670	CC, ES
Guttersen State D36-781 - Wellbore #1 - Plan #1	6,600.00	5,607.15	2,580.82	2,536.57	58.323	SF
Karch Blue D 25-02 (DA) - Wellbore #1 - No Surveys	6,638.02	6,337.88	172.61	20.71	1.136	Level 2, CC
Karch Blue D 25-02 (DA) - Wellbore #1 - No Surveys	6,650.00	6,347.72	172.70	20.58	1.135	Level 2, ES, SF
Karch Blue D 25-08 (SI) - Wellbore #1 - Gyro Surveys	2,015.93	1,983.11	558.59	544.84	40.632	CC, ES
Karch Blue D 25-08 (SI) - Wellbore #1 - Gyro Surveys	2,800.00	2,742.58	638.13	618.98	33.320	SF
Karch Blue D25-07 (SI) - Wellbore #1 - Gyro Surveys	3,749.58	3,652.18	629.03	603.07	24.238	CC
Karch Blue D25-07 (SI) - Wellbore #1 - Gyro Surveys	3,800.00	3,702.51	629.16	602.82	23.893	ES
Karch Blue D25-07 (SI) - Wellbore #1 - Gyro Surveys	4,700.00	4,535.35	716.33	683.43	21.774	SF
L F Ranch 2-25 (PR) - Wellbore #1 - Gyro Surveys	4,117.35	3,992.57	1,150.80	1,122.19	40.216	CC
L F Ranch 2-25 (PR) - Wellbore #1 - Gyro Surveys	4,200.00	4,068.61	1,151.21	1,122.00	39.413	ES
L F Ranch 2-25 (PR) - Wellbore #1 - Gyro Surveys	6,800.00	6,473.61	1,472.37	1,424.49	30.755	SF
LF Ranches 1 (PA) - Wellbore #1 - No Surveys	3,978.56	3,859.52	723.66	632.18	7.911	CC
LF Ranches 1 (PA) - Wellbore #1 - No Surveys	4,100.00	3,973.28	724.90	630.68	7.693	ES
LF Ranches 1 (PA) - Wellbore #1 - No Surveys	5,000.00	4,816.35	807.15	692.58	7.046	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 D25-743
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 D25-743	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 #3	Offset TVD Reference:	Offset Datum

Summary

Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Between Ellipses (ft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
D Section 26						
Adam Red D 26-11 (PR) - Wellbore #1 - Gyro Surveys	6,663.94	6,671.07	7,073.91	7,025.58	146.358	CC, ES
Adam Red D 26-11 (PR) - Wellbore #1 - Gyro Surveys	8,800.00	6,857.19	7,991.17	7,933.18	137.803	SF
Adam Red D 26-12 (PR) - Wellbore #1 - Gyro Surveys	6,670.49	6,432.54	8,193.23	8,139.60	152.762	CC, ES
Adam Red D 26-12 (PR) - Wellbore #1 - Gyro Surveys	9,900.00	6,708.38	9,605.53	9,535.88	137.902	SF
Adam Red D 26-13 (PR) - Wellbore #1 - Gyro Surveys	6,562.00	6,323.21	8,457.99	8,411.19	180.711	CC, ES
Adam Red D 26-13 (PR) - Wellbore #1 - Gyro Surveys	9,600.00	6,880.90	9,997.68	9,936.57	163.598	SF
Adam Red D 26-14 (PR) - Wellbore #1 - Gyro Surveys	6,529.68	6,362.45	7,263.85	7,213.19	143.382	CC
Adam Red D 26-14 (PR) - Wellbore #1 - Gyro Surveys	6,550.00	6,380.51	7,264.03	7,213.18	142.855	ES
Adam Red D 26-14 (PR) - Wellbore #1 - Gyro Surveys	7,200.00	6,737.14	7,455.26	7,399.61	133.976	SF
Coors Energy 14-25H (PR) - Wellbore #1 - MWD Surveys	5,874.54	9,979.28	3,211.48	3,097.19	28.099	CC
Coors Energy 14-25H (PR) - Wellbore #1 - MWD Surveys	5,900.00	9,977.33	3,211.58	3,097.02	28.034	ES
Coors Energy 14-25H (PR) - Wellbore #1 - MWD Surveys	6,200.00	9,939.44	3,227.57	3,110.70	27.615	SF
Heyde 1-26 (PR) - Wellbore #1 - Gyro Surveys	6,978.91	6,610.30	4,072.21	4,022.88	82.546	CC, ES
Heyde 1-26 (PR) - Wellbore #1 - Gyro Surveys	8,100.00	6,661.16	4,333.83	4,279.24	79.389	SF
Heyde 26ND (PR) - Wellbore #1 - MWD Surveys	6,945.59	6,865.38	5,674.08	5,621.18	107.253	CC
Heyde 26ND (PR) - Wellbore #1 - MWD Surveys	6,950.00	6,867.21	5,674.08	5,621.15	107.191	ES
Heyde 26ND (PR) - Wellbore #1 - MWD Surveys	9,500.00	6,952.84	6,529.33	6,461.61	96.414	SF
Heyde 26RD (PR) - Wellbore #1 - MWD Surveys	7,398.89	6,791.58	4,324.27	4,270.74	80.779	CC
Heyde 26RD (PR) - Wellbore #1 - MWD Surveys	7,400.00	6,791.57	4,324.27	4,270.74	80.771	ES
Heyde 26RD (PR) - Wellbore #1 - MWD Surveys	9,200.00	6,766.72	4,684.31	4,620.96	73.940	SF
Heyde 26VD (PR) - Wellbore #1 - MWD Surveys	6,790.91	6,635.55	3,224.60	3,172.18	61.514	CC
Heyde 26VD (PR) - Wellbore #1 - MWD Surveys	6,800.00	6,639.75	3,224.63	3,172.14	61.432	ES
Heyde 26VD (PR) - Wellbore #1 - MWD Surveys	7,286.91	6,747.00	3,314.45	3,258.56	59.297	SF
Heyde 31-26 (PR) - Wellbore #1 - No Surveys	7,117.80	6,703.46	5,300.22	5,250.06	105.665	CC, ES
Heyde 31-26 (PR) - Wellbore #1 - No Surveys	9,500.00	6,718.19	5,945.91	5,883.93	95.938	SF
Heyde 32-26 (SI) - Wellbore #1 - Gyro Surveys	6,765.31	6,559.27	5,342.94	5,294.61	110.542	CC, ES
Heyde 32-26 (SI) - Wellbore #1 - Gyro Surveys	8,100.00	6,805.01	5,753.19	5,698.21	104.648	SF
Heyde 41-26 (PR) - Wellbore #1 - Gyro Surveys	7,160.16	6,694.98	3,656.40	3,606.10	72.693	CC, ES
Heyde 41-26 (PR) - Wellbore #1 - Gyro Surveys	8,300.00	6,677.30	3,879.38	3,823.69	69.658	SF
Heyde 42-26 (PR) - Wellbore #1 - Gyro Surveys	6,674.44	6,402.99	3,977.90	3,930.44	83.807	CC, ES
Heyde 42-26 (PR) - Wellbore #1 - Gyro Surveys	7,200.00	6,684.52	4,078.52	4,027.66	80.191	SF
HSR-Waste Services 10-26 (SI) - Wellbore #1 - No Surve	6,538.05	6,336.59	5,610.47	5,458.91	37.017	CC
HSR-Waste Services 10-26 (SI) - Wellbore #1 - No Surve	6,550.00	6,347.25	5,610.54	5,458.71	36.953	ES
HSR-Waste Services 10-26 (SI) - Wellbore #1 - No Surve	7,050.00	6,674.25	5,724.70	5,564.04	35.633	SF
HSR-Waste Services 15-26 (SI) - Wellbore #1 - No Surve	6,485.66	6,304.88	6,357.13	6,206.35	42.161	CC
HSR-Waste Services 15-26 (SI) - Wellbore #1 - No Surve	6,500.00	6,318.08	6,357.24	6,206.13	42.070	ES
HSR-Waste Services 15-26 (SI) - Wellbore #1 - No Surve	7,000.00	6,670.94	6,486.10	6,325.68	40.432	SF
HSR-Waste Services 16-26 (SI) - Wellbore #1 - Gyro Sur	0.00	0.00	5,387.61			
HSR-Waste Services 16-26 (SI) - Wellbore #1 - Gyro Sur	6,300.00	6,159.14	5,396.63	5,351.24	118.892	ES
HSR-Waste Services 16-26 (SI) - Wellbore #1 - Gyro Sur	6,950.00	6,631.49	5,543.22	5,493.33	111.117	SF
HSR-Waste Services 9-26 (PA) - Wellbore #1 - Gyro Sur	6,515.99	6,371.50	4,478.48	4,431.57	95.461	CC, ES
HSR-Waste Services 9-26 (PA) - Wellbore #1 - Gyro Sur	7,000.00	6,658.74	4,595.61	4,545.47	91.665	SF
Waste Management 11-26 (PR) - Wellbore #1 - Gyro Sur	7,114.47	6,419.36	7,719.10	7,669.87	156.807	CC, ES
Waste Management 11-26 (PR) - Wellbore #1 - Gyro Sur	11,800.00	6,385.94	9,243.78	9,170.53	126.195	SF
Waste Management 12-26 (PR) - Wellbore #1 - Gyro Sur	6,830.28	6,432.23	7,933.64	7,885.49	164.777	CC
Waste Management 12-26 (PR) - Wellbore #1 - Gyro Sur	6,850.00	6,443.45	7,933.74	7,885.46	164.331	ES
Waste Management 12-26 (PR) - Wellbore #1 - Gyro Sur	11,100.00	6,446.29	9,632.82	9,564.30	140.591	SF
Waste Management 12-26A (PR) - Wellbore #1 - Gyro Su	6,918.19	6,431.77	7,207.36	7,158.85	148.584	CC, ES
Waste Management 12-26A (PR) - Wellbore #1 - Gyro Su	10,700.00	6,372.01	8,551.95	8,485.28	128.276	SF
Waste Management 21-26 (PR) - Wellbore #1 - Gyro Sur	7,175.03	6,792.13	6,248.69	6,198.13	123.594	CC, ES
Waste Management 21-26 (PR) - Wellbore #1 - Gyro Sur	10,500.00	6,750.33	7,204.36	7,136.83	106.673	SF
Waste Management 22-26 (PR) - Wellbore #1 - Gyro Sur	6,815.06	6,604.24	6,551.46	6,502.79	134.612	CC, ES
Waste Management 22-26 (PR) - Wellbore #1 - Gyro Sur	9,600.00	6,798.75	7,594.96	7,532.92	122.409	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 D25-743
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 D25-743	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 #3	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 26						
Waste Management 26FD (PR) - Wellbore #1 - MWD Su	1,031.92	1,085.00	8,181.63	8,174.74	1,186.296	CC, ES
Waste Management 26FD (PR) - Wellbore #1 - MWD Su	11,700.00	6,905.08	9,977.89	9,900.31	128.602	SF
Waste Management 26KD (PR) - Wellbore #1 - MWD Su	6,716.34	6,527.00	7,335.65	7,280.77	133.662	CC, ES
Waste Management 26KD (PR) - Wellbore #1 - MWD Su	9,200.00	6,622.00	8,262.22	8,196.78	126.256	SF
Waste Management D 26-25 (SI) - Wellbore #1 - Gyro Su	6,589.64	6,451.57	7,633.04	7,585.69	161.174	CC
Waste Management D 26-25 (SI) - Wellbore #1 - Gyro Su	6,600.00	6,457.53	7,633.09	7,585.66	160.943	ES
Waste Management D 26-25 (SI) - Wellbore #1 - Gyro Su	8,700.00	6,800.00	8,588.29	8,531.10	150.170	SF
Waste Management 26JD (PR) - Wellbore #1 - MWD Surv	7,378.88	6,742.37	6,993.03	6,938.55	128.360	CC
Waste Management 26JD (PR) - Wellbore #1 - MWD Surv	7,400.00	6,742.34	6,993.06	6,938.49	128.143	ES
Waste Management 26JD (PR) - Wellbore #1 - MWD Surv	11,300.00	6,735.78	8,017.33	7,940.96	104.982	SF
DD Section 06						
Guttersen DD18-715 - Guttersen DD18-715 - Plan #1	17,826.32	12,558.36	7,155.05	6,998.51	45.709	CC, ES, SF
Guttersen DD18-725 - Guttersen DD18-725 - Plan #1	17,826.32	12,401.97	6,494.10	6,338.35	41.694	CC, ES, SF
Guttersen DD18-730 - Guttersen DD18-730 - Plan #1	17,826.32	12,589.75	6,166.26	6,010.31	39.541	CC, ES, SF
Guttersen DD18-735 - Guttersen DD18-735 - Plan #1	17,826.32	12,515.49	5,833.87	5,677.84	37.390	CC, ES, SF
Guttersen DD18-746 - Guttersen DD18-746 - Plan #1	17,826.32	12,512.88	5,172.45	5,016.13	33.087	CC, ES, SF
Guttersen DD18-750 - Guttersen DD18-750 - Plan #1	17,826.32	12,776.06	4,845.81	4,688.36	30.778	CC, ES, SF
Guttersen DD18-754 - Guttersen DD18-754 - Plan #1	17,826.32	12,586.54	4,512.48	4,355.77	28.795	CC, ES, SF
Guttersen DD18-765 - Guttersen DD18-765 - Plan #1	17,826.32	12,409.19	3,850.89	3,694.92	24.689	CC, ES, SF
Guttersen DD18-770 - Guttersen DD18-770 - Plan #1	17,826.32	12,605.99	3,525.34	3,369.04	22.556	CC, ES, SF
Guttersen DD18-775 - Guttersen DD18-775 - Plan #1	17,826.32	12,489.17	3,191.27	3,035.14	20.440	CC, ES, SF
Guttersen DD18-785 - Guttersen DD18-785 - Plan #1	17,826.32	12,475.52	2,529.37	2,373.03	16.179	CC, ES, SF
DD Section 18						
Guttersen 18D - Wellbore #1 - Wellbore #1 - As Drilled	14,059.27	6,542.76	6,128.46	6,034.97	65.552	CC
Guttersen 18D - Wellbore #1 - Wellbore #1 - As Drilled	14,100.00	6,542.12	6,128.60	6,034.84	65.364	ES
Guttersen 18D - Wellbore #1 - Wellbore #1 - As Drilled	15,600.00	6,518.69	6,319.12	6,217.44	62.144	SF
Guttersen 24-18 - Wellbore #1 - Wellbore #1 - As Drilled	13,403.28	6,612.78	4,251.78	4,162.78	47.775	CC, ES
Guttersen 24-18 - Wellbore #1 - Wellbore #1 - As Drilled	14,200.00	6,611.70	4,325.78	4,232.82	46.535	SF
Guttersen 33-18 - Wellbore #1 - Wellbore #1 - As Drilled	14,820.52	6,633.71	5,532.29	5,431.46	54.866	CC, ES
Guttersen 33-18 - Wellbore #1 - Wellbore #1 - As Drilled	16,000.00	6,622.41	5,656.62	5,549.54	52.830	SF
Guttersen 34-18 - Wellbore #1 - Wellbore #1 - As Drilled	13,377.77	6,631.93	5,464.24	5,375.67	61.692	CC
Guttersen 34-18 - Wellbore #1 - Wellbore #1 - As Drilled	13,400.00	6,632.20	5,464.29	5,375.57	61.591	ES
Guttersen 34-18 - Wellbore #1 - Wellbore #1 - As Drilled	14,700.00	6,647.10	5,621.93	5,526.32	58.801	SF
Guttersen 43-18 - Wellbore #1 - Wellbore #1 - As Drilled	14,823.29	6,645.90	6,729.47	6,626.54	65.382	CC
Guttersen 43-18 - Wellbore #1 - Wellbore #1 - As Drilled	14,900.00	6,645.37	6,729.90	6,626.46	65.057	ES
Guttersen 43-18 - Wellbore #1 - Wellbore #1 - As Drilled	16,500.00	6,634.44	6,935.20	6,823.07	61.852	SF
Guttersen 44-18 - Wellbore #1 - Wellbore #1 - As Drilled	13,454.66	6,621.28	6,806.55	6,717.50	76.435	CC
Guttersen 44-18 - Wellbore #1 - Wellbore #1 - As Drilled	13,500.00	6,621.22	6,806.70	6,717.34	76.175	ES
Guttersen 44-18 - Wellbore #1 - Wellbore #1 - As Drilled	15,500.00	6,618.24	7,107.22	7,007.10	70.992	SF
Karch Blue DD18-03J - Wellbore #1 - Wellbore #1 - As D	14,457.68	6,694.87	3,852.70	3,754.37	39.181	CC
Karch Blue DD18-03J - Wellbore #1 - Wellbore #1 - As D	14,500.00	6,694.74	3,852.93	3,754.34	39.080	ES
Karch Blue DD18-03J - Wellbore #1 - Wellbore #1 - As D	15,000.00	6,693.30	3,890.68	3,789.62	38.498	SF
Karch Blue DD18-12 - Original Drilling - Original Drilling -	14,832.57	6,598.61	2,713.06	2,608.31	25.900	CC, ES
Karch Blue DD18-12 - Original Drilling - Original Drilling -	15,100.00	6,599.04	2,726.21	2,620.29	25.739	SF
Karch Blue DD18-13 - Wellbore #1 - Wellbore #1 - As Dri	13,342.13	6,599.83	2,668.64	2,579.44	29.919	CC, ES
Karch Blue DD18-13 - Wellbore #1 - Wellbore #1 - As Dri	13,600.00	6,603.26	2,681.07	2,590.71	29.672	SF
SPIKE STATE GWS DD #18-1J(PA) - SPIKE STATE GW	16,764.40	6,662.27	6,138.68	5,912.25	27.111	CC
SPIKE STATE GWS DD #18-1J(PA) - SPIKE STATE GW	16,800.00	6,662.18	6,138.78	5,912.11	27.082	ES
SPIKE STATE GWS DD #18-1J(PA) - SPIKE STATE GW	17,600.00	6,660.09	6,195.29	5,963.92	26.777	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 D25-743
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 D25-743	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 #3	Offset TVD Reference:	Offset Datum

Summary						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
DD Section 19						
Champlin 366 Amoco B1 (PR) - Wellbore #1 - Gyro Surv	11,097.35	6,557.96	6,471.48	6,399.05	89.350	CC
Champlin 366 Amoco B1 (PR) - Wellbore #1 - Gyro Surv	11,100.00	6,557.91	6,471.48	6,399.03	89.330	ES
Champlin 366 Amoco B1 (PR) - Wellbore #1 - Gyro Surv	14,000.00	14,000.00	7,092.26	6,979.88	63.112	SF
Champlin 366 Amoco D1 (PA) - Wellbore #1 - No Survey	8,479.11	6,651.89	3,858.50	3,692.54	23.250	CC
Champlin 366 Amoco D1 (PA) - Wellbore #1 - No Survey	8,500.00	6,651.83	3,858.56	3,692.51	23.237	ES
Champlin 366 Amoco D1 (PA) - Wellbore #1 - No Survey	8,900.00	6,650.79	3,881.39	3,713.59	23.131	SF
Guttersen 31-19 (PR) - Wellbore #1 - Gyro Surveys	12,086.51	6,614.11	5,546.51	5,466.60	69.407	CC
Guttersen 31-19 (PR) - Wellbore #1 - Gyro Surveys	12,200.00	12,200.00	5,547.67	5,447.62	55.447	ES, SF
Guttersen 44-19 (SI) - Wellbore #1 - No Surveys	2,000.00	2,028.00	6,437.72	6,390.22	135.541	CC
Guttersen 44-19 (SI) - Wellbore #1 - No Surveys	2,200.00	2,227.84	6,439.70	6,387.50	123.360	ES
Guttersen 44-19 (SI) - Wellbore #1 - No Surveys	9,600.00	6,693.96	7,026.35	6,854.14	40.801	SF

Noble Energy, Inc.
Anticollision Summary Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Guttersten D25-743
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 D25-743	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 #3	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	875.96	843.96	2,240.39	2,234.71	394.427	CC
Guttersten 11-30 (PR) - Wellbore #1 - Gyro Surveys	2,100.00	2,066.18	2,245.90	2,231.57	156.670	ES
Guttersten 11-30 (PR) - Wellbore #1 - Gyro Surveys	7,286.91	6,620.17	2,877.37	2,827.29	57.454	SF
Guttersten 12-30 (PR) - Wellbore #1 - Gyro Surveys	1,320.91	1,288.92	1,810.96	1,802.13	205.031	CC
Guttersten 12-30 (PR) - Wellbore #1 - Gyro Surveys	1,900.00	1,857.58	1,812.36	1,799.47	140.591	ES
Guttersten 12-30 (PR) - Wellbore #1 - Gyro Surveys	6,650.00	6,276.68	2,989.58	2,943.49	64.860	SF
Guttersten 22-30 (PR) - Wellbore #1 - Gyro Surveys	2,011.57	2,008.20	3,199.40	3,185.57	231.431	CC, ES
Guttersten 22-30 (PR) - Wellbore #1 - Gyro Surveys	6,900.00	6,500.00	4,377.10	4,329.07	91.148	SF
Guttersten 30 A (PR) - Wellbore #1 - Gyro Surveys	0.00	0.00	2,597.99			
Guttersten 30 A (PR) - Wellbore #1 - Gyro Surveys	2,000.00	1,963.66	2,605.83	2,592.20	191.190	ES
Guttersten 30 A (PR) - Wellbore #1 - Gyro Surveys	7,100.00	6,595.63	3,694.77	3,645.56	75.080	SF
Guttersten State DD30-715 - Guttersten State DD30-715 -	2,000.00	2,051.00	6,460.01	6,445.96	459.602	CC, ES
Guttersten State DD30-715 - Guttersten State DD30-715 -	13,900.00	17,403.77	7,315.29	7,158.48	46.651	SF
Guttersten State DD30-725 - Guttersten State DD30-725 -	5,257.55	11,058.01	6,390.04	6,328.70	104.182	CC
Guttersten State DD30-725 - Guttersten State DD30-725 -	5,300.00	11,069.37	6,390.17	6,328.57	103.729	ES
Guttersten State DD30-725 - Guttersten State DD30-725 -	13,600.00	17,269.51	6,635.38	6,480.47	42.835	SF
Guttersten State DD30-735 - Guttersten State DD30-735 -	5,530.55	11,302.68	5,775.48	5,711.32	90.023	CC
Guttersten State DD30-735 - Guttersten State DD30-735 -	5,600.00	11,321.28	5,775.86	5,711.32	89.488	ES
Guttersten State DD30-735 - Guttersten State DD30-735 -	13,300.00	17,436.50	5,942.76	5,789.72	38.831	SF
Guttersten State DD30-745 - Guttersten State DD30-745 -	5,694.03	11,502.95	5,133.48	5,067.14	77.385	CC
Guttersten State DD30-745 - Guttersten State DD30-745 -	5,700.00	11,504.55	5,133.48	5,067.12	77.353	ES
Guttersten State DD30-745 - Guttersten State DD30-745 -	13,100.00	17,588.29	5,264.85	5,113.48	34.782	SF
Guttersten State DD30-755 - Guttersten State DD30-755 -	5,928.83	11,354.73	4,415.63	4,349.73	67.012	CC, ES
Guttersten State DD30-755 - Guttersten State DD30-755 -	13,000.00	17,383.05	4,524.14	4,372.13	29.762	SF
Guttersten State DD30-766 - Guttersten State DD30-766 -	6,055.19	11,341.40	3,714.67	3,647.53	55.328	CC
Guttersten State DD30-766 - Guttersten State DD30-766 -	12,600.00	17,329.34	3,793.55	3,644.56	25.462	ES
Guttersten State DD30-766 - Guttersten State DD30-766 -	12,800.00	17,329.34	3,800.71	3,650.94	25.377	SF
Guttersten State DD30-775 - Guttersten State DD30-775 -	6,111.12	11,533.55	3,138.43	3,069.37	45.442	CC
Guttersten State DD30-775 - Guttersten State DD30-775 -	12,556.68	17,481.59	3,183.77	3,035.16	21.424	ES
Guttersten State DD30-775 - Guttersten State DD30-775 -	12,700.00	17,481.59	3,186.99	3,037.98	21.388	SF
Guttersten State DD30-785 - Guttersten State DD30-785 -	6,365.23	11,914.07	2,527.19	2,454.85	34.937	CC
Guttersten State DD30-785 - Guttersten State DD30-785 -	12,548.30	17,796.63	2,544.13	2,394.88	17.046	ES
Guttersten State DD30-785 - Guttersten State DD30-785 -	12,600.00	17,796.63	2,544.66	2,395.35	17.043	SF
Karch Blue DD 30-12 (PA) - Wellbore #1 - No Surveys	2,000.00	1,974.00	2,151.72	2,105.30	46.357	CC
Karch Blue DD 30-12 (PA) - Wellbore #1 - No Surveys	2,100.00	2,073.98	2,153.42	2,104.64	44.152	ES
Karch Blue DD 30-12 (PA) - Wellbore #1 - No Surveys	6,650.00	6,362.72	3,596.72	3,445.02	23.709	SF
Karch Blue DD 30-14 (PA) - Wellbore #1 - No Surveys	2,000.00	1,980.00	4,274.34	4,227.80	91.849	CC
Karch Blue DD 30-14 (PA) - Wellbore #1 - No Surveys	2,100.00	2,079.98	4,276.06	4,227.17	87.459	ES
Karch Blue DD 30-14 (PA) - Wellbore #1 - No Surveys	6,800.00	6,480.82	5,813.19	5,658.56	37.595	SF
Karch Blue DD 30-3 J (PA) - Wellbore #1 - No Surveys	2,000.00	1,979.00	3,428.73	3,382.21	73.710	CC
Karch Blue DD 30-3 J (PA) - Wellbore #1 - No Surveys	2,100.00	2,078.98	3,430.40	3,381.52	70.191	ES
Karch Blue DD 30-3 J (PA) - Wellbore #1 - No Surveys	6,750.00	6,444.92	4,899.89	4,746.17	31.876	SF
L F Ranch 2-30 (PR) - Wellbore #1 - Gyro Surveys	2,014.21	2,013.00	3,303.35	3,289.49	238.319	CC
L F Ranch 2-30 (PR) - Wellbore #1 - Gyro Surveys	2,100.00	2,097.07	3,303.89	3,289.43	228.492	ES
L F Ranch 2-30 (PR) - Wellbore #1 - Gyro Surveys	6,950.00	6,950.00	4,165.91	4,115.73	83.019	SF
State 19 (PA) - Wellbore #1 - NO Surveys	2,000.00	2,030.00	5,410.68	5,363.14	113.821	CC
State 19 (PA) - Wellbore #1 - NO Surveys	2,100.00	2,129.98	5,411.66	5,361.77	108.468	ES
State 19 (PA) - Wellbore #1 - NO Surveys	7,250.00	6,701.06	6,475.95	6,314.92	40.216	SF

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