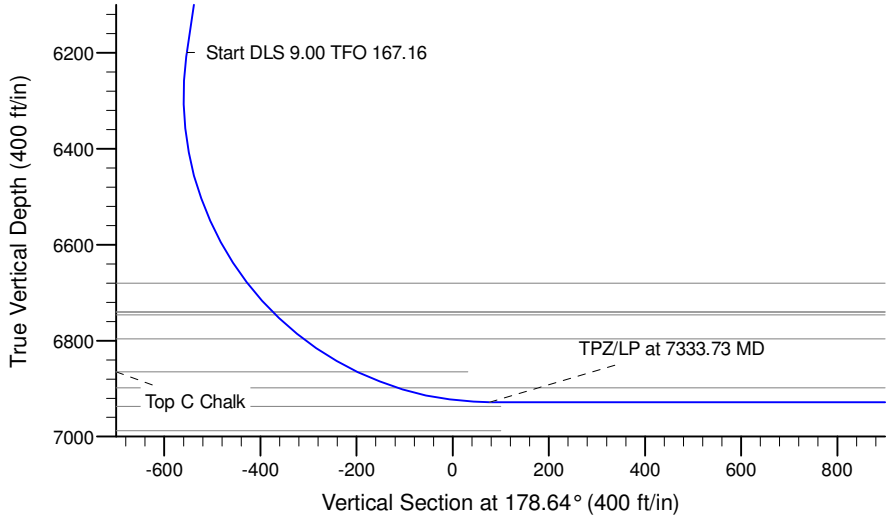
Project: Mustang
Site: D Section 29
Well: Guttersen Y05-756
Wellbore: Guttersen Y05-756
Design: Prelim - Rev 1

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

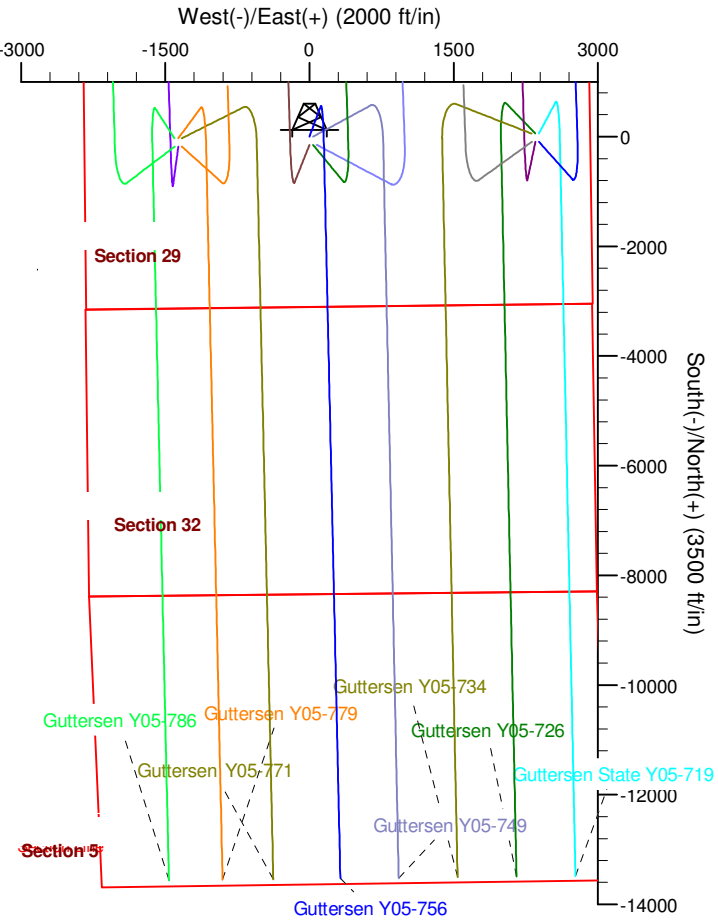
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	2200.00	0.00	0.00	2200.00	0.00	0.00	0.00	0.00	0.00	
3	2626.86	8.54	11.97	2625.28	31.05	6.58	2.00	11.97	-30.89	
4	6241.21	8.54	11.97	6199.58	555.95	117.83	0.00	0.00	-552.98	
5	7333.73	90.00	179.27	6928.00	-73.60	149.93	9.00	167.16	77.15	GUTTERSEN Y05-756 TPZ
6	20790.14	90.00	179.27	6928.00	-13528.91	322.32	0.00	0.00	13532.75	GUTTERSEN Y05-756 BHL

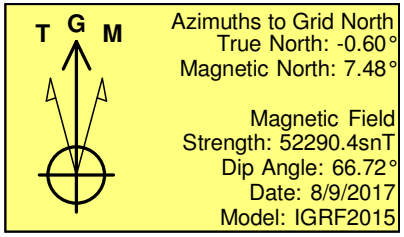


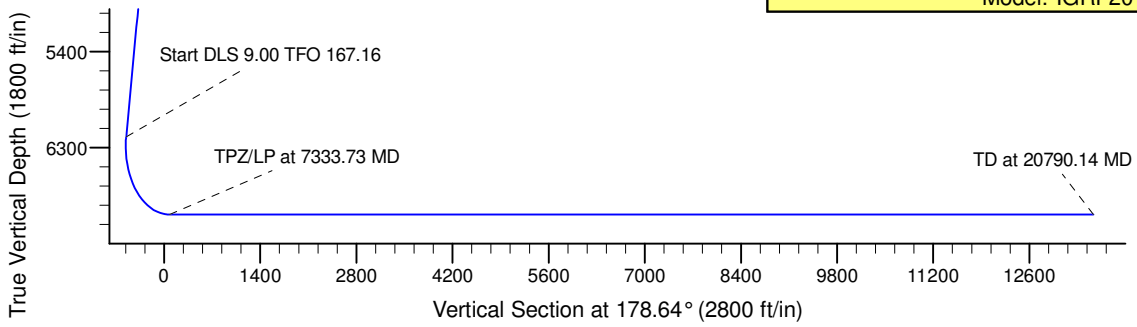
Surface: 2211' FNL,2338' FWL, Sec.29

TPZ: 2286' FNL, 2494' FWL, Sec.29

BHL: 75' FSL, 2552' FWL, Sec.05







WELL DETAILS: Guttersen Y05-756

	Northing	Easting	Latitude	Longitude
0.00	1316128.52	3258050.24	40.1974797	-104.5762055

4782.00

Plan: Prelim - Rev 1 (Guttersen Y05-756/Guttersen Y05-756)

Created By: Colby Baxter Date: 8:44, April 10 2018

Checked: _____ Date: _____

Reviewed: _____ Date: _____

Approved: _____ Date: _____

Northern Region - DJ Basin

Mustang
D Section 29
Guttersen Y05-756

Guttersen Y05-756

Plan: Prelim - Rev 1

Standard Survey Report

10 April, 2018

Noble Energy, Inc.

Survey Report

Company:	Northern Region - DJ Basin	**Local Co-ordinate Reference:**	Well Guttersen Y05-756
Project:	Mustang	**TVD Reference:**	Well @ 4812.00ft
Site:	D Section 29	**MD Reference:**	Well @ 4812.00ft
Well:	Guttersen Y05-756	**North Reference:**	Grid
Wellbore:	Guttersen Y05-756	**Survey Calculation Method:**	Minimum Curvature
Design:	Prelim - Rev 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 29

Site Position:		**Northing:**	1,313,628.85 usft	**Latitude:**	40.1907138
From:	Map	**Easting:**	3,254,683.41 usft	**Longitude:**	-104.5883496
Position Uncertainty:	0.00 ft	**Slot Radius:**	13.200 in	**Grid Convergence:**	0.59 °

Well Guttersen Y05-756

Well Position	**+N/-S**	0.00 ft	**Northing:**	1,316,128.52 usft	**Latitude:**	40.1974797
	+E/-W	0.00 ft	**Easting:**	3,258,050.25 usft	**Longitude:**	-104.5762055
Position Uncertainty		0.00 ft	**Wellhead Elevation:**	ft	**Ground Level:**	4,782.00 ft

Wellbore Guttersen Y05-756

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	8/9/2017	8.08	66.72	52,290.40219110

Design Prelim - Rev 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	178.64

Survey Tool Program **Date** 4/10/2018

From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.00	20,790.14	Prelim - Rev 1 (Guttersen Y05-756)	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 Y05-756
Project:	Mustang	**TVD Reference:**	Well @ 4812.00ft
Site:	D Section 29	**MD Reference:**	Well @ 4812.00ft
Well:	Guttersen Y05-756	**North Reference:**	Grid
Wellbore:	Guttersen Y05-756	**Survey Calculation Method:**	Minimum Curvature
Design:	Prelim - Rev 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	0.00	0.00	2,100.00	0.00	0.00	0.00	0.00	0.00	0.00
2,200.00	0.00	0.00	2,200.00	0.00	0.00	0.00	0.00	0.00	0.00
2,300.00	2.00	11.97	2,299.98	1.71	0.36	-1.70	2.00	2.00	0.00
2,400.00	4.00	11.97	2,399.84	6.83	1.45	-6.79	2.00	2.00	0.00
2,500.00	6.00	11.97	2,499.45	15.35	3.25	-15.27	2.00	2.00	0.00
2,600.00	8.00	11.97	2,598.70	27.27	5.78	-27.13	2.00	2.00	0.00
2,626.86	8.54	11.97	2,625.28	31.05	6.58	-30.89	2.00	2.00	0.00
2,700.00	8.54	11.97	2,697.61	41.67	8.83	-41.45	0.00	0.00	0.00
2,800.00	8.54	11.97	2,796.50	56.20	11.91	-55.90	0.00	0.00	0.00
2,900.00	8.54	11.97	2,895.40	70.72	14.99	-70.34	0.00	0.00	0.00
3,000.00	8.54	11.97	2,994.29	85.24	18.07	-84.79	0.00	0.00	0.00
3,100.00	8.54	11.97	3,093.18	99.76	21.14	-99.23	0.00	0.00	0.00
3,200.00	8.54	11.97	3,192.07	114.29	24.22	-113.68	0.00	0.00	0.00
3,300.00	8.54	11.97	3,290.96	128.81	27.30	-128.12	0.00	0.00	0.00
3,400.00	8.54	11.97	3,389.86	143.33	30.38	-142.57	0.00	0.00	0.00
3,500.00	8.54	11.97	3,488.75	157.85	33.46	-157.01	0.00	0.00	0.00
3,600.00	8.54	11.97	3,587.64	172.38	36.53	-171.46	0.00	0.00	0.00
3,700.00	8.54	11.97	3,686.53	186.90	39.61	-185.90	0.00	0.00	0.00
3,800.00	8.54	11.97	3,785.42	201.42	42.69	-200.35	0.00	0.00	0.00
3,900.00	8.54	11.97	3,884.32	215.94	45.77	-214.79	0.00	0.00	0.00
4,000.00	8.54	11.97	3,983.21	230.47	48.85	-229.24	0.00	0.00	0.00
4,100.00	8.54	11.97	4,082.10	244.99	51.92	-243.68	0.00	0.00	0.00
4,200.00	8.54	11.97	4,180.99	259.51	55.00	-258.13	0.00	0.00	0.00
4,300.00	8.54	11.97	4,279.88	274.03	58.08	-272.57	0.00	0.00	0.00
4,400.00	8.54	11.97	4,378.78	288.56	61.16	-287.02	0.00	0.00	0.00
4,500.00	8.54	11.97	4,477.67	303.08	64.23	-301.46	0.00	0.00	0.00
4,600.00	8.54	11.97	4,576.56	317.60	67.31	-315.91	0.00	0.00	0.00
4,700.00	8.54	11.97	4,675.45	332.12	70.39	-330.35	0.00	0.00	0.00
4,800.00	8.54	11.97	4,774.34	346.65	73.47	-344.80	0.00	0.00	0.00
4,900.00	8.54	11.97	4,873.24	361.17	76.55	-359.24	0.00	0.00	0.00
5,000.00	8.54	11.97	4,972.13	375.69	79.62	-373.69	0.00	0.00	0.00
5,100.00	8.54	11.97	5,071.02	390.21	82.70	-388.13	0.00	0.00	0.00
5,200.00	8.54	11.97	5,169.91	404.74	85.78	-402.58	0.00	0.00	0.00

Noble Energy, Inc.

Survey Report

Company:	Northern Region - DJ Basin	**Local Co-ordinate Reference:**	Well Guttersen Y05-756
Project:	Mustang	**TVD Reference:**	Well @ 4812.00ft
Site:	D Section 29	**MD Reference:**	Well @ 4812.00ft
Well:	Guttersen Y05-756	**North Reference:**	Grid
Wellbore:	Guttersen Y05-756	**Survey Calculation Method:**	Minimum Curvature
Design:	Prelim - Rev 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	8.54	11.97	5,268.80	419.26	88.86	-417.02	0.00	0.00	0.00
5,400.00	8.54	11.97	5,367.70	433.78	91.94	-431.47	0.00	0.00	0.00
5,500.00	8.54	11.97	5,466.59	448.30	95.01	-445.91	0.00	0.00	0.00
5,600.00	8.54	11.97	5,565.48	462.83	98.09	-460.36	0.00	0.00	0.00
5,700.00	8.54	11.97	5,664.37	477.35	101.17	-474.80	0.00	0.00	0.00
5,800.00	8.54	11.97	5,763.26	491.87	104.25	-489.25	0.00	0.00	0.00
5,900.00	8.54	11.97	5,862.16	506.39	107.33	-503.69	0.00	0.00	0.00
6,000.00	8.54	11.97	5,961.05	520.92	110.40	-518.14	0.00	0.00	0.00
6,100.00	8.54	11.97	6,059.94	535.44	113.48	-532.58	0.00	0.00	0.00
6,200.00	8.54	11.97	6,158.83	549.96	116.56	-547.03	0.00	0.00	0.00
6,241.21	8.54	11.97	6,199.58	555.95	117.83	-552.98	0.00	0.00	0.00
6,300.00	3.58	31.15	6,258.03	561.79	119.68	-558.78	9.00	-8.44	32.63
6,400.00	6.26	161.74	6,357.84	559.28	123.01	-556.19	9.00	2.68	130.60
6,500.00	15.08	172.23	6,456.03	541.18	126.48	-538.01	9.00	8.82	10.49
6,600.00	24.03	175.02	6,550.16	507.93	130.01	-504.69	9.00	8.95	2.79
6,700.00	33.01	176.35	6,637.94	460.36	133.52	-457.05	9.00	8.98	1.33
6,800.00	42.00	177.17	6,717.18	399.63	136.91	-396.26	9.00	8.99	0.81
6,900.00	50.99	177.73	6,785.96	327.25	140.11	-323.82	9.00	8.99	0.57
7,000.00	59.98	178.17	6,842.56	244.99	143.03	-241.51	9.00	8.99	0.44
7,100.00	68.98	178.54	6,885.60	154.87	145.61	-151.36	9.00	8.99	0.37
7,200.00	77.97	178.86	6,914.01	59.13	147.77	-55.59	9.00	8.99	0.32
7,300.00	86.97	179.17	6,927.11	-39.89	149.47	43.44	9.00	9.00	0.30
7,333.73	90.00	179.27	6,928.00	-73.60	149.93	77.15	9.00	9.00	0.30
7,400.00	90.00	179.27	6,928.00	-139.87	150.78	143.42	0.00	0.00	0.00
7,500.00	90.00	179.27	6,928.00	-239.86	152.06	243.42	0.00	0.00	0.00
7,600.00	90.00	179.27	6,928.00	-339.85	153.35	343.41	0.00	0.00	0.00
7,700.00	90.00	179.27	6,928.00	-439.85	154.63	443.40	0.00	0.00	0.00
7,800.00	90.00	179.27	6,928.00	-539.84	155.91	543.40	0.00	0.00	0.00
7,900.00	90.00	179.27	6,928.00	-639.83	157.19	643.39	0.00	0.00	0.00
8,000.00	90.00	179.27	6,928.00	-739.82	158.47	743.39	0.00	0.00	0.00
8,100.00	90.00	179.27	6,928.00	-839.81	159.75	843.38	0.00	0.00	0.00
8,200.00	90.00	179.27	6,928.00	-939.80	161.03	943.37	0.00	0.00	0.00
8,300.00	90.00	179.27	6,928.00	-1,039.80	162.31	1,043.37	0.00	0.00	0.00
8,400.00	90.00	179.27	6,928.00	-1,139.79	163.59	1,143.36	0.00	0.00	0.00
8,500.00	90.00	179.27	6,928.00	-1,239.78	164.88	1,243.36	0.00	0.00	0.00
8,600.00	90.00	179.27	6,928.00	-1,339.77	166.16	1,343.35	0.00	0.00	0.00
8,700.00	90.00	179.27	6,928.00	-1,439.76	167.44	1,443.34	0.00	0.00	0.00
8,800.00	90.00	179.27	6,928.00	-1,539.76	168.72	1,543.34	0.00	0.00	0.00
8,900.00	90.00	179.27	6,928.00	-1,639.75	170.00	1,643.33	0.00	0.00	0.00
9,000.00	90.00	179.27	6,928.00	-1,739.74	171.28	1,743.33	0.00	0.00	0.00
9,100.00	90.00	179.27	6,928.00	-1,839.73	172.56	1,843.32	0.00	0.00	0.00
9,200.00	90.00	179.27	6,928.00	-1,939.72	173.84	1,943.31	0.00	0.00	0.00
9,300.00	90.00	179.27	6,928.00	-2,039.71	175.12	2,043.31	0.00	0.00	0.00

Noble Energy, Inc.

Survey Report

Company:	Northern Region - DJ Basin	**Local Co-ordinate Reference:**	Well Guttersen Y05-756
Project:	Mustang	**TVD Reference:**	Well @ 4812.00ft
Site:	D Section 29	**MD Reference:**	Well @ 4812.00ft
Well:	Guttersen Y05-756	**North Reference:**	Grid
Wellbore:	Guttersen Y05-756	**Survey Calculation Method:**	Minimum Curvature
Design:	Prelim - Rev 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)
9,400.00	90.00	179.27	6,928.00	-2,139.71	176.41	2,143.30	0.00	0.00	0.00
9,500.00	90.00	179.27	6,928.00	-2,239.70	177.69	2,243.30	0.00	0.00	0.00
9,600.00	90.00	179.27	6,928.00	-2,339.69	178.97	2,343.29	0.00	0.00	0.00
9,700.00	90.00	179.27	6,928.00	-2,439.68	180.25	2,443.28	0.00	0.00	0.00
9,800.00	90.00	179.27	6,928.00	-2,539.67	181.53	2,543.28	0.00	0.00	0.00
9,900.00	90.00	179.27	6,928.00	-2,639.67	182.81	2,643.27	0.00	0.00	0.00
10,000.00	90.00	179.27	6,928.00	-2,739.66	184.09	2,743.26	0.00	0.00	0.00
10,100.00	90.00	179.27	6,928.00	-2,839.65	185.37	2,843.26	0.00	0.00	0.00
10,200.00	90.00	179.27	6,928.00	-2,939.64	186.65	2,943.25	0.00	0.00	0.00
10,300.00	90.00	179.27	6,928.00	-3,039.63	187.94	3,043.25	0.00	0.00	0.00
10,400.00	90.00	179.27	6,928.00	-3,139.62	189.22	3,143.24	0.00	0.00	0.00
10,500.00	90.00	179.27	6,928.00	-3,239.62	190.50	3,243.23	0.00	0.00	0.00
10,600.00	90.00	179.27	6,928.00	-3,339.61	191.78	3,343.23	0.00	0.00	0.00
10,700.00	90.00	179.27	6,928.00	-3,439.60	193.06	3,443.22	0.00	0.00	0.00
10,800.00	90.00	179.27	6,928.00	-3,539.59	194.34	3,543.22	0.00	0.00	0.00
10,900.00	90.00	179.27	6,928.00	-3,639.58	195.62	3,643.21	0.00	0.00	0.00
11,000.00	90.00	179.27	6,928.00	-3,739.58	196.90	3,743.20	0.00	0.00	0.00
11,100.00	90.00	179.27	6,928.00	-3,839.57	198.18	3,843.20	0.00	0.00	0.00
11,200.00	90.00	179.27	6,928.00	-3,939.56	199.46	3,943.19	0.00	0.00	0.00
11,300.00	90.00	179.27	6,928.00	-4,039.55	200.75	4,043.19	0.00	0.00	0.00
11,400.00	90.00	179.27	6,928.00	-4,139.54	202.03	4,143.18	0.00	0.00	0.00
11,500.00	90.00	179.27	6,928.00	-4,239.53	203.31	4,243.17	0.00	0.00	0.00
11,600.00	90.00	179.27	6,928.00	-4,339.53	204.59	4,343.17	0.00	0.00	0.00
11,700.00	90.00	179.27	6,928.00	-4,439.52	205.87	4,443.16	0.00	0.00	0.00
11,800.00	90.00	179.27	6,928.00	-4,539.51	207.15	4,543.16	0.00	0.00	0.00
11,900.00	90.00	179.27	6,928.00	-4,639.50	208.43	4,643.15	0.00	0.00	0.00
12,000.00	90.00	179.27	6,928.00	-4,739.49	209.71	4,743.14	0.00	0.00	0.00
12,100.00	90.00	179.27	6,928.00	-4,839.48	210.99	4,843.14	0.00	0.00	0.00
12,200.00	90.00	179.27	6,928.00	-4,939.48	212.28	4,943.13	0.00	0.00	0.00
12,300.00	90.00	179.27	6,928.00	-5,039.47	213.56	5,043.13	0.00	0.00	0.00
12,400.00	90.00	179.27	6,928.00	-5,139.46	214.84	5,143.12	0.00	0.00	0.00
12,500.00	90.00	179.27	6,928.00	-5,239.45	216.12	5,243.11	0.00	0.00	0.00
12,600.00	90.00	179.27	6,928.00	-5,339.44	217.40	5,343.11	0.00	0.00	0.00
12,700.00	90.00	179.27	6,928.00	-5,439.44	218.68	5,443.10	0.00	0.00	0.00
12,800.00	90.00	179.27	6,928.00	-5,539.43	219.96	5,543.10	0.00	0.00	0.00
12,900.00	90.00	179.27	6,928.00	-5,639.42	221.24	5,643.09	0.00	0.00	0.00
13,000.00	90.00	179.27	6,928.00	-5,739.41	222.52	5,743.08	0.00	0.00	0.00
13,100.00	90.00	179.27	6,928.00	-5,839.40	223.81	5,843.08	0.00	0.00	0.00
13,200.00	90.00	179.27	6,928.00	-5,939.39	225.09	5,943.07	0.00	0.00	0.00
13,300.00	90.00	179.27	6,928.00	-6,039.39	226.37	6,043.06	0.00	0.00	0.00
13,400.00	90.00	179.27	6,928.00	-6,139.38	227.65	6,143.06	0.00	0.00	0.00
13,500.00	90.00	179.27	6,928.00	-6,239.37	228.93	6,243.05	0.00	0.00	0.00
13,600.00	90.00	179.27	6,928.00	-6,339.36	230.21	6,343.05	0.00	0.00	0.00

Company:	Northern Region - DJ Basin	**Local Co-ordinate Reference:**	Well Guttersen Y05-756
Project:	Mustang	**TVD Reference:**	Well @ 4812.00ft
Site:	D Section 29	**MD Reference:**	Well @ 4812.00ft
Well:	Guttersen Y05-756	**North Reference:**	Grid
Wellbore:	Guttersen Y05-756	**Survey Calculation Method:**	Minimum Curvature
Design:	Prelim - Rev 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)
13,700.00	90.00	179.27	6,928.00	-6,439.35	231.49	6,443.04	0.00	0.00	0.00
13,800.00	90.00	179.27	6,928.00	-6,539.35	232.77	6,543.03	0.00	0.00	0.00
13,900.00	90.00	179.27	6,928.00	-6,639.34	234.05	6,643.03	0.00	0.00	0.00
14,000.00	90.00	179.27	6,928.00	-6,739.33	235.34	6,743.02	0.00	0.00	0.00
14,100.00	90.00	179.27	6,928.00	-6,839.32	236.62	6,843.02	0.00	0.00	0.00
14,200.00	90.00	179.27	6,928.00	-6,939.31	237.90	6,943.01	0.00	0.00	0.00
14,300.00	90.00	179.27	6,928.00	-7,039.30	239.18	7,043.00	0.00	0.00	0.00
14,400.00	90.00	179.27	6,928.00	-7,139.30	240.46	7,143.00	0.00	0.00	0.00
14,500.00	90.00	179.27	6,928.00	-7,239.29	241.74	7,242.99	0.00	0.00	0.00
14,600.00	90.00	179.27	6,928.00	-7,339.28	243.02	7,342.99	0.00	0.00	0.00
14,700.00	90.00	179.27	6,928.00	-7,439.27	244.30	7,442.98	0.00	0.00	0.00
14,800.00	90.00	179.27	6,928.00	-7,539.26	245.58	7,542.97	0.00	0.00	0.00
14,900.00	90.00	179.27	6,928.00	-7,639.26	246.86	7,642.97	0.00	0.00	0.00
15,000.00	90.00	179.27	6,928.00	-7,739.25	248.15	7,742.96	0.00	0.00	0.00
15,100.00	90.00	179.27	6,928.00	-7,839.24	249.43	7,842.96	0.00	0.00	0.00
15,200.00	90.00	179.27	6,928.00	-7,939.23	250.71	7,942.95	0.00	0.00	0.00
15,300.00	90.00	179.27	6,928.00	-8,039.22	251.99	8,042.94	0.00	0.00	0.00
15,400.00	90.00	179.27	6,928.00	-8,139.21	253.27	8,142.94	0.00	0.00	0.00
15,500.00	90.00	179.27	6,928.00	-8,239.21	254.55	8,242.93	0.00	0.00	0.00
15,600.00	90.00	179.27	6,928.00	-8,339.20	255.83	8,342.93	0.00	0.00	0.00
15,700.00	90.00	179.27	6,928.00	-8,439.19	257.11	8,442.92	0.00	0.00	0.00
15,800.00	90.00	179.27	6,928.00	-8,539.18	258.39	8,542.91	0.00	0.00	0.00
15,900.00	90.00	179.27	6,928.00	-8,639.17	259.68	8,642.91	0.00	0.00	0.00
16,000.00	90.00	179.27	6,928.00	-8,739.17	260.96	8,742.90	0.00	0.00	0.00
16,100.00	90.00	179.27	6,928.00	-8,839.16	262.24	8,842.90	0.00	0.00	0.00
16,200.00	90.00	179.27	6,928.00	-8,939.15	263.52	8,942.89	0.00	0.00	0.00
16,300.00	90.00	179.27	6,928.00	-9,039.14	264.80	9,042.88	0.00	0.00	0.00
16,400.00	90.00	179.27	6,928.00	-9,139.13	266.08	9,142.88	0.00	0.00	0.00
16,500.00	90.00	179.27	6,928.00	-9,239.12	267.36	9,242.87	0.00	0.00	0.00
16,600.00	90.00	179.27	6,928.00	-9,339.12	268.64	9,342.86	0.00	0.00	0.00
16,700.00	90.00	179.27	6,928.00	-9,439.11	269.92	9,442.86	0.00	0.00	0.00
16,800.00	90.00	179.27	6,928.00	-9,539.10	271.21	9,542.85	0.00	0.00	0.00
16,900.00	90.00	179.27	6,928.00	-9,639.09	272.49	9,642.85	0.00	0.00	0.00
17,000.00	90.00	179.27	6,928.00	-9,739.08	273.77	9,742.84	0.00	0.00	0.00
17,100.00	90.00	179.27	6,928.00	-9,839.07	275.05	9,842.83	0.00	0.00	0.00
17,200.00	90.00	179.27	6,928.00	-9,939.07	276.33	9,942.83	0.00	0.00	0.00
17,300.00	90.00	179.27	6,928.00	-10,039.06	277.61	10,042.82	0.00	0.00	0.00
17,400.00	90.00	179.27	6,928.00	-10,139.05	278.89	10,142.82	0.00	0.00	0.00
17,500.00	90.00	179.27	6,928.00	-10,239.04	280.17	10,242.81	0.00	0.00	0.00
17,600.00	90.00	179.27	6,928.00	-10,339.03	281.45	10,342.80	0.00	0.00	0.00
17,700.00	90.00	179.27	6,928.00	-10,439.03	282.74	10,442.80	0.00	0.00	0.00
17,800.00	90.00	179.27	6,928.00	-10,539.02	284.02	10,542.79	0.00	0.00	0.00
17,900.00	90.00	179.27	6,928.00	-10,639.01	285.30	10,642.79	0.00	0.00	0.00
18,000.00	90.00	179.27	6,928.00	-10,739.00	286.58	10,742.78	0.00	0.00	0.00

Noble Energy, Inc.

Survey Report

Company:	Northern Region - DJ Basin	**Local Co-ordinate Reference:**	Well Guttersen Y05-756
Project:	Mustang	**TVD Reference:**	Well @ 4812.00ft
Site:	D Section 29	**MD Reference:**	Well @ 4812.00ft
Well:	Guttersen Y05-756	**North Reference:**	Grid
Wellbore:	Guttersen Y05-756	**Survey Calculation Method:**	Minimum Curvature
Design:	Prelim - Rev 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)
18,100.00	90.00	179.27	6,928.00	-10,838.99	287.86	10,842.77	0.00	0.00	0.00
18,200.00	90.00	179.27	6,928.00	-10,938.98	289.14	10,942.77	0.00	0.00	0.00
18,300.00	90.00	179.27	6,928.00	-11,038.98	290.42	11,042.76	0.00	0.00	0.00
18,400.00	90.00	179.27	6,928.00	-11,138.97	291.70	11,142.76	0.00	0.00	0.00
18,500.00	90.00	179.27	6,928.00	-11,238.96	292.98	11,242.75	0.00	0.00	0.00
18,600.00	90.00	179.27	6,928.00	-11,338.95	294.26	11,342.74	0.00	0.00	0.00
18,700.00	90.00	179.27	6,928.00	-11,438.94	295.55	11,442.74	0.00	0.00	0.00
18,800.00	90.00	179.27	6,928.00	-11,538.94	296.83	11,542.73	0.00	0.00	0.00
18,900.00	90.00	179.27	6,928.00	-11,638.93	298.11	11,642.73	0.00	0.00	0.00
19,000.00	90.00	179.27	6,928.00	-11,738.92	299.39	11,742.72	0.00	0.00	0.00
19,100.00	90.00	179.27	6,928.00	-11,838.91	300.67	11,842.71	0.00	0.00	0.00
19,200.00	90.00	179.27	6,928.00	-11,938.90	301.95	11,942.71	0.00	0.00	0.00
19,300.00	90.00	179.27	6,928.00	-12,038.89	303.23	12,042.70	0.00	0.00	0.00
19,400.00	90.00	179.27	6,928.00	-12,138.89	304.51	12,142.70	0.00	0.00	0.00
19,500.00	90.00	179.27	6,928.00	-12,238.88	305.79	12,242.69	0.00	0.00	0.00
19,600.00	90.00	179.27	6,928.00	-12,338.87	307.08	12,342.68	0.00	0.00	0.00
19,700.00	90.00	179.27	6,928.00	-12,438.86	308.36	12,442.68	0.00	0.00	0.00
19,800.00	90.00	179.27	6,928.00	-12,538.85	309.64	12,542.67	0.00	0.00	0.00
19,900.00	90.00	179.27	6,928.00	-12,638.85	310.92	12,642.67	0.00	0.00	0.00
20,000.00	90.00	179.27	6,928.00	-12,738.84	312.20	12,742.66	0.00	0.00	0.00
20,100.00	90.00	179.27	6,928.00	-12,838.83	313.48	12,842.65	0.00	0.00	0.00
20,200.00	90.00	179.27	6,928.00	-12,938.82	314.76	12,942.65	0.00	0.00	0.00
20,300.00	90.00	179.27	6,928.00	-13,038.81	316.04	13,042.64	0.00	0.00	0.00
20,400.00	90.00	179.27	6,928.00	-13,138.80	317.32	13,142.63	0.00	0.00	0.00
20,500.00	90.00	179.27	6,928.00	-13,238.80	318.61	13,242.63	0.00	0.00	0.00
20,600.00	90.00	179.27	6,928.00	-13,338.79	319.89	13,342.62	0.00	0.00	0.00
20,700.00	90.00	179.27	6,928.00	-13,438.78	321.17	13,442.62	0.00	0.00	0.00
20,790.14	90.00	179.27	6,928.00	-13,528.91	322.32	13,532.75	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 Y05-756 E - plan hits target center - Point	0.00	0.00	6,928.00	-13,528.91	322.32	1,302,599.63	3,258,372.57	40.1603340	-104.5755566
GUTTERSEN Y05-756 T - plan hits target center - Point	0.00	0.00	6,928.00	-73.60	149.93	1,316,054.91	3,258,200.18	40.1972734	-104.5756715

Noble Energy, Inc.

Survey Report

Company:	Northern Region - DJ Basin	**Local Co-ordinate Reference:**	Well Guttersen Y05-756
Project:	Mustang	**TVD Reference:**	Well @ 4812.00ft
Site:	D Section 29	**MD Reference:**	Well @ 4812.00ft
Well:	Guttersen Y05-756	**North Reference:**	Grid
Wellbore:	Guttersen Y05-756	**Survey Calculation Method:**	Minimum Curvature
Design:	Prelim - Rev 1	**Database:**	EDMP

Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
570.00	570.00	Pierre			
671.00	671.00	Upper Pierre Aquifer Top			
1,569.00	1,569.00	Upper Pierre Aquifer Base			
3,780.36	3,766.00	Parkman			
4,142.37	4,124.00	Sussex			
4,927.06	4,900.00	Shannon			
5,968.60	5,930.00	Teepee Buttes			
6,751.57	6,680.00	Sharon Springs			
6,831.41	6,740.00	Top A Chalk			
6,831.41	6,740.00	Top A Marl			
6,839.93	6,746.00	Top B Chalk			
6,916.21	6,796.00	Top B Marl			
7,048.04	6,865.00	Top C Chalk			
7,137.46	6,898.00	Top C Marl			

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates +N/-S (ft)	Local Coordinates +E/-W (ft)	Comment
2200	2200	0	0	Start Build 2.00
6241	6200	31	7	Start DLS 9.00 TFO 167.16
7334	6928	556	118	TPZ/LP at 7333.73 MD
20,790	6928	-74	150	TD at 20790.14 MD

Checked By: _____ Approved By: _____ Date: _____

Northern Region - DJ Basin

Mustang
D Section 29
Guttersen Y05-756

Guttersen Y05-756
Prelim - Rev 1

Anticollision Summary Report

10 April, 2018

Noble Energy, Inc.

Anticollision Summary Report

Company:	Northern Region - DJ Basin	**Local Co-ordinate Reference:**	Well Guttersen Y05-756
Project:	Mustang	**TVD Reference:**	Well @ 4812.00ft
Reference Site:	D Section 29	**MD Reference:**	Well @ 4812.00ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Guttersen Y05-756	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Guttersen Y05-756	**Database:**	EDMP
Reference Design:	Prelim - Rev 1	**Offset TVD Reference:**	Offset Datum

Reference	Prelim - Rev 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** 4/10/2018

From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.00	20,790.14	Prelim - Rev 1 (Guttersen Y05-756)	2_MWD+IFR1+MS	A008Mb: IFR dec & multi-station analysis

Summary

Site Name / Offset Well - Wellbore - Design	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
D Section 16						
Diggin State D 16-07 (SI) - Wellbore #1 - No Surveys						Out of range
Diggin State D 16-19J (PR) - Wellbore #1 - No Surveys						Out of range
Guttersen ST D 15-32 (SI) - Wellbore #1 - Gyro Surveys						Out of range
Guttersen ST D 16-21 (SI) - Wellbore #1 - Gyro Surveys						Out of range
Guttersen ST D 16-22D (SI) - Wellbore #1 - MWD Surve						Out of range
Guttersen ST D 16-33 (SI) - Wellbore #1 - No Surveys	6,340.88	6,238.87	8,912.91	8,765.47	60.452	CC
Guttersen ST D 16-33 (SI) - Wellbore #1 - No Surveys	6,350.00	6,247.99	8,912.98	8,765.32	60.365	ES
Guttersen ST D 16-33 (SI) - Wellbore #1 - No Surveys	6,900.00	6,725.96	9,131.25	8,972.83	57.643	SF
Guttersen State D 15-31 (PR) - Wellbore #1 - Gyro Surve						Out of range
Guttersen State D 16-18 (SI) - Wellbore #1 - No Surveys						Out of range
Guttersen State D 16-20 (SI) - Wellbore #1 - Gyro Survey						Out of range
Guttersen State D 16-27 (PR) - Wellbore #1 - No Survey						Out of range
Guttersen State D 16-31 (PR) - Wellbore #1 - No Survey						Out of range
Guttersen State D 16-32D (SI) - Wellbore #1 - MWD Sur	100.00	50.66	9,504.27	9,504.06	10,000.000	CC
Guttersen State D 16-32D (SI) - Wellbore #1 - MWD Sur	1,100.00	985.00	9,506.69	9,500.73	1,595.961	ES
Guttersen State D 16-32D (SI) - Wellbore #1 - MWD Sur	6,000.00	6,000.00	9,918.70	9,874.56	224.732	SF
Guttersen State D16-63-1HN - Original Drilling - Original	6,384.06	11,243.02	8,654.11	8,523.69	66.355	CC, ES
Guttersen State D16-63-1HN - Original Drilling - Original	6,550.00	11,243.02	8,675.49	8,544.37	66.162	SF
Guttersen State D16-65-1HN - Original Drilling - Original	6,378.29	11,090.02	9,929.71	9,801.47	77.433	CC, ES
Guttersen State D16-65-1HN - Original Drilling - Original	6,550.00	11,090.02	9,952.68	9,823.77	77.208	SF
Spike ST GWS D 16-01 (SI) - Wellbore #1 - Gyro Survey						Out of range
Spike ST GWS D 16-02 (P&A) - Wellbore #1 - Gyro Surv						Out of range
Spike ST GWS D 16-03 (PR) - Wellbore #1 - No Surveys						Out of range
Spike ST GWS D 16-04 (SI) - Wellbore #1 - No Surveys						Out of range
Spike ST GWS D 16-05 (PR) - Wellbore #1 - Gyro Surve						Out of range
Spike ST GWS D 16-06 (SI) - Wellbore #1 - No Surveys						Out of range
Spike ST GWS D 16-08 (PR) - Wellbore #1 - Gyro Surve						Out of range
Spike ST GWS D 16-12 (PA) - Wellbore #1 - Gyro Surve	6,345.74	6,324.25	9,745.39	9,700.80	218.551	CC
Spike ST GWS D 16-12 (PA) - Wellbore #1 - Gyro Surve	6,350.00	6,327.45	9,745.41	9,700.79	218.425	ES
Spike ST GWS D 16-12 (PA) - Wellbore #1 - Gyro Surve	6,850.00	6,816.71	9,923.77	9,876.31	209.122	SF
Spike State D16-99HZ - Original Drilling - Original Drilling	6,378.15	11,150.02	9,123.28	8,994.55	70.867	CC, ES
Spike State D16-99HZ - Original Drilling - Original Drilling	6,550.00	11,150.02	9,146.23	9,016.79	70.659	SF
Spike State GWS D 16-7J (PR) - Wellbore #1 - No Surve						Out of range

Noble Energy, Inc.

Anticollision Summary Report

Company:	Northern Region - DJ Basin	**Local Co-ordinate Reference:**	Well Guttersen Y05-756
Project:	Mustang	**TVD Reference:**	Well @ 4812.00ft
Reference Site:	D Section 29	**MD Reference:**	Well @ 4812.00ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Guttersen Y05-756	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Guttersen Y05-756	**Database:**	EDMP
Reference Design:	Prelim - Rev 1	**Offset TVD Reference:**	Offset Datum

Summary

Site Name Offset Well - Wellbore - Design	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
D Section 17						
Butterball D19-27D - Wellbore #1 - Gyro Surveys	6,260.57	5,703.14	8,007.85	7,932.44	106.183	CC
Butterball D19-27D - Wellbore #1 - Gyro Surveys	6,331.31	6,579.28	8,008.28	7,930.22	102.597	ES
Butterball D19-27D - Wellbore #1 - Gyro Surveys	6,650.00	6,904.88	8,076.86	7,997.44	101.688	SF
Guttersen State D16-33 (SI) - Wellbore #1 - No Surveys	6,340.88	6,238.87	8,912.91	8,835.81	115.593	CC
Guttersen State D16-33 (SI) - Wellbore #1 - No Surveys	6,350.00	6,247.99	8,912.98	8,835.76	115.429	ES
Guttersen State D16-33 (SI) - Wellbore #1 - No Surveys	6,900.00	6,725.96	9,131.25	9,048.66	110.565	SF
HSR LDS 6-17 (SI) - Wellbore #1 - No Surveys						Out of range
HSR LDS B5-17 (SI) - Wellbore #1 - No Surveys						Out of range
HSR Mike Gutteresen 16-17X (SI) - Wellbore #1 - No Su	6,339.80	6,242.79	7,830.37	7,753.23	101.510	CC
HSR Mike Gutteresen 16-17X (SI) - Wellbore #1 - No Su	6,350.00	6,252.99	7,830.44	7,753.18	101.349	ES
HSR Mike Gutteresen 16-17X (SI) - Wellbore #1 - No Su	6,850.00	6,697.99	8,016.78	7,934.50	97.431	SF
HSR Weeks 10-17 - Wellbore #1 - Gyro Surveys	6,343.72	6,318.27	8,967.66	8,923.09	201.245	CC, ES
HSR Weeks 10-17 - Wellbore #1 - Gyro Surveys	6,750.00	6,700.00	9,094.05	9,047.15	193.919	SF
HSR Weeks 15-17 (SI) - Wellbore #1 - No Surveys	6,336.17	6,237.17	7,673.56	7,596.48	99.550	CC
HSR Weeks 15-17 (SI) - Wellbore #1 - No Surveys	6,350.00	6,250.99	7,673.71	7,596.46	99.336	ES
HSR Weeks 15-17 (SI) - Wellbore #1 - No Surveys	6,850.00	6,695.99	7,868.68	7,786.43	95.661	SF
HSR Weeks 9-17 - Wellbore #1 - Gyro Surveys	6,339.48	6,249.73	9,196.92	9,152.61	207.556	CC, ES
HSR Weeks 9-17 - Wellbore #1 - Gyro Surveys	6,800.00	6,666.54	9,352.81	9,305.99	199.775	SF
HSR-LDS 3-17 (SI) - Wellbore #1 - No Surveys						Out of range
HSR-LDS 4-17 (SI) - Wellbore #1 - No Surveys						Out of range
LDS 18-17 (SI) - Wellbore #1 - No Surveys						Out of range
LDS D17-13 - Wellbore #1 - Gyro Surveys	6,334.95	6,330.92	7,581.23	7,536.57	169.744	CC, ES
LDS D17-13 - Wellbore #1 - Gyro Surveys	6,750.00	6,600.00	7,709.73	7,663.07	165.252	SF
LDS D17-18 (SI) - Wellbore #1 - No Surveys						Out of range
LDS D17-20 - Wellbore #1 - No Surveys	6,331.33	6,233.33	9,498.55	9,421.52	123.312	CC, ES
LDS D17-20 - Wellbore #1 - No Surveys	6,900.00	6,729.96	9,734.56	9,651.97	117.855	SF
LDS D17-21 - Wellbore #1 - No Surveys	6,333.88	6,231.88	9,383.78	9,306.75	121.823	CC, ES
LDS D17-21 - Wellbore #1 - No Surveys	6,900.00	6,725.96	9,619.35	9,536.78	116.505	SF
LDS D17-22 (SI) - Wellbore #1 - No Surveys	6,336.91	6,229.91	9,870.45	9,793.43	128.153	CC
LDS D17-22 (SI) - Wellbore #1 - No Surveys	6,350.00	6,242.99	9,870.58	9,793.40	127.891	ES
LDS D17-22 (SI) - Wellbore #1 - No Surveys	6,750.00	6,613.75	9,998.43	9,917.03	122.832	SF
LDS D17-24D - Wellbore #1 - LDS D17-24D - As Drilled	6,335.24	6,394.64	8,355.38	8,309.86	183.539	CC, ES
LDS D17-24D - Wellbore #1 - LDS D17-24D - As Drilled	6,750.00	6,876.33	8,480.98	8,432.78	175.941	SF
LDS D17-25D - Wellbore #1 - LDS D17-25D - As Drilled	6,326.66	6,410.24	8,674.27	8,619.97	159.729	CC, ES
LDS D17-25D - Wellbore #1 - LDS D17-25D - As Drilled	6,800.00	6,893.44	8,840.54	8,783.95	156.239	SF
LDS D17-31D - LDS D17-31D - LDS D17-31D - As Drille						Out of range
LDS D17-32D - LDS D17-32D - LDS D17-32D - As Drille						Out of range
LDS D17-33 - LDS D17-33 - LDS D17-33 - As Drilled	6,311.26	6,000.00	8,655.84	8,612.43	199.427	CC, ES
LDS D17-33 - LDS D17-33 - LDS D17-33 - As Drilled	6,800.00	6,755.37	8,824.51	8,777.30	186.923	SF
LDS D17-7 - Wellbore #1 - No Surveys						Out of range
LDS D20-29D - Wellbore #1 - LDS D20-29D - As Drilled	6,327.75	6,390.01	6,873.13	6,823.32	137.997	CC, ES
LDS D20-29D - Wellbore #1 - LDS D20-29D - As Drilled	6,700.00	6,762.95	6,976.33	6,924.54	134.683	SF
LDS D20-30D - Wellbore #1 - LDS D20-30D - As Drilled	6,336.77	6,439.70	7,285.95	7,240.18	159.191	CC, ES
LDS D20-30D - Wellbore #1 - LDS D20-30D - As Drilled	6,800.00	6,760.81	7,439.92	7,391.97	155.144	SF
LDS RED D17-11 (SI) - Wellbore #1 - No Surveys	6,333.09	6,232.09	8,939.27	8,862.24	116.054	CC, ES
LDS RED D17-11 (SI) - Wellbore #1 - No Surveys	6,900.00	6,726.96	9,175.34	9,092.76	111.117	SF
LDS Red D17-12 - Wellbore #1 - No Surveys	6,329.30	6,231.30	9,332.34	9,255.34	121.201	CC, ES
LDS Red D17-12 - Wellbore #1 - No Surveys	6,900.00	6,729.96	9,566.38	9,483.78	115.821	SF
LDS Red D17-14X (SI) - Wellbore #1 - No Surveys	6,333.09	6,236.09	7,764.55	7,687.49	100.758	CC, ES
LDS Red D17-14X (SI) - Wellbore #1 - No Surveys	6,850.00	6,697.99	7,963.04	7,880.77	96.794	SF
LDS Red D17-3J - Wellbore #1 - Gyro Surveys	6,331.56	6,264.62	8,118.84	8,074.48	183.009	CC, ES
LDS Red D17-3J - Wellbore #1 - Gyro Surveys	6,750.00	6,645.95	8,249.05	8,202.32	176.509	SF
LDS White D17-1 - Wellbore #1 - Gyro Surveys						Out of range

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

Noble Energy, Inc.

Anticollision Summary Report

Company:	Northern Region - DJ Basin	**Local Co-ordinate Reference:**	Well Guttersen Y05-756
Project:	Mustang	**TVD Reference:**	Well @ 4812.00ft
Reference Site:	D Section 29	**MD Reference:**	Well @ 4812.00ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Guttersen Y05-756	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Guttersen Y05-756	**Database:**	EDMP
Reference Design:	Prelim - Rev 1	**Offset TVD Reference:**	Offset Datum

Summary

Site Name Offset Well - Wellbore - Design	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
D Section 17						
LDS White D17-2 - Wellbore #1 - No Surveys						Out of range
LDS White D17-8 - Wellbore #1 - No Surveys						Out of range
Thomson D20-31D - Wellbore #1 - Gyro Surveys	6,365.00	6,928.41	6,105.76	6,050.91	111.307	CC, ES
Thomson D20-31D - Wellbore #1 - Gyro Surveys	6,600.00	7,100.00	6,145.41	6,089.46	109.835	SF
Weeks 20-17 (SI) - Wellbore #1 - Gyro Surveys	6,337.54	6,224.09	8,308.13	8,263.87	187.723	CC, ES
Weeks 20-17 (SI) - Wellbore #1 - Gyro Surveys	6,750.00	6,625.22	8,434.79	8,388.11	180.696	SF
D Section 18						
Horton D18-20D - Horton D18-20D - Horton D18-20D - A						Out of range
Horton D18-22D - Horton D18-22D - Horton D18-22D - A						Out of range
LSWD 1 - LSWD 1 - LSWD 1 - As Drilled						Out of range
Mick D18-03 - Mick D18-03 - Mick D18-03 - As Drilled						Out of range
Mick D18-04 - Wellbore #1 - Wellbore #1- As Drilled						Out of range
Mick D18-05 - Wellbore #1 - Wellbore #1- As Drilled						Out of range
Mick D18-06 - Mick D18-06 - Mick D18-06 - As Drilled						Out of range
Mick D18-11 - Mick D18-11 - Mick D18-11 - As Drilled						Out of range
Mick D18-12 - Wellbore #1 - Wellbore #1- As Drilled						Out of range
Mick D18-13 - Wellbore #1 - Wellbore #1- As Drilled						Out of range
Mick D18-14 - Mick D18-14 - Mick D18-14 - As Drilled	6,316.69	6,243.19	9,429.29	9,385.08	213.303	CC, ES
Mick D18-14 - Mick D18-14 - Mick D18-14 - As Drilled	7,100.00	7,032.52	9,775.77	9,727.31	201.750	SF
Mick D18-19 - Mick D18-19 - Mick D18-19 - As Drilled						Out of range
Mick D18-25 - Mick D18-25 - Mick D18-25 - As Drilled						Out of range
Scooter D18-02 - Scooter D18-02 - Scooter D18-02 - As						Out of range
Scooter D18-07 - Scooter D18-07 - Scooter D18-07 - As						Out of range
Scooter D18-10 - Scooter D18-10 - Scooter D18-10 - As	6,312.75	6,095.57	9,755.24	9,711.57	223.363	CC, ES
Scooter D18-10 - Scooter D18-10 - Scooter D18-10 - As	6,850.00	6,850.00	9,942.96	9,895.41	209.098	SF
Scooter D18-15 - Scooter D18-15 - Scooter D18-15 - As	6,336.61	6,438.43	8,708.67	8,663.78	193.995	CC, ES
Scooter D18-15 - Scooter D18-15 - Scooter D18-15 - As	6,900.00	7,133.25	8,906.68	8,858.14	183.508	SF
Scooter D18-16 - Scooter D18-16 - Scooter D18-16 - As	6,325.30	6,232.31	8,190.08	8,113.10	106.391	CC, ES
Scooter D18-16 - Scooter D18-16 - Scooter D18-16 - As	6,850.00	6,701.99	8,379.88	8,297.58	101.823	SF
Scooter D18-17 JI - Scooter D18-17 JI - Scooter D18-17						Out of range
Scooter D18-1JI - Scooter D18-1JI - Scooter D18-1JI - A						Out of range
Scooter D18-4J - Scooter D18-4J - Scooter D18-4J - As	6,331.15	6,322.29	9,116.05	9,071.55	204.873	CC, ES
Scooter D18-4J - Scooter D18-4J - Scooter D18-4J - As	6,850.00	6,706.71	9,304.93	9,257.87	197.754	SF
Scooter D18-78-1HN - Original Drilling - Original Drilling -						Out of range
Scooter D18-78-1HN - Original Drilling - ST01 - Original D	6,367.87	11,297.00	9,914.15	9,838.09	130.338	CC, ES
Scooter D18-78-1HN - Original Drilling - ST01 - Original D	6,550.00	11,297.00	9,935.28	9,858.73	129.781	SF
Scooter D18-79-1HN - Original Drilling - Original Drilling -						Out of range
Scooter D18-79HN - Original Drilling - Original Drilling - A						Out of range
Scooter D18-8JI - Scooter D18-8JI - Scooter D18-8JI - A	467.69	372.69	9,686.94	9,684.37	3,767.844	CC
Scooter D18-8JI - Scooter D18-8JI - Scooter D18-8JI - A	700.00	546.87	9,687.55	9,683.54	2,414.763	ES
Scooter D18-8JI - Scooter D18-8JI - Scooter D18-8JI - A	4,900.00	1,944.74	9,996.95	9,972.59	410.422	SF
Scooter D18-9JI - Scooter D18-9JI - Scooter D18-9JI - A	6,324.71	6,220.23	9,512.06	9,465.45	204.108	CC, ES
Scooter D18-9JI - Scooter D18-9JI - Scooter D18-9JI - A	6,850.00	6,751.11	9,706.29	9,656.84	196.299	SF
Shianne D18-29D - Shianne D18-29D - Shianne D18-29D						Out of range

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

Noble Energy, Inc.

Anticollision Summary Report

Company:	Northern Region - DJ Basin	**Local Co-ordinate Reference:**	Well Guttersen Y05-756
Project:	Mustang	**TVD Reference:**	Well @ 4812.00ft
Reference Site:	D Section 29	**MD Reference:**	Well @ 4812.00ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Guttersen Y05-756	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Guttersen Y05-756	**Database:**	EDMP
Reference Design:	Prelim - Rev 1	**Offset TVD Reference:**	Offset Datum

Summary

Site Name Offset Well - Wellbore - Design	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
D Section 19						
Butterball 13-19 - Butterball 13-19 - Butterball 13-19 - As	6,331.59	6,476.39	7,741.97	7,697.00	172.149	CC, ES
Butterball 13-19 - Butterball 13-19 - Butterball 13-19 - As	6,950.00	6,833.77	7,882.52	7,834.82	165.243	SF
Butterball 14-19 - Butterball 14-19 - Butterball 14-19 - As	6,343.03	6,529.75	7,129.75	7,084.50	157.565	CC
Butterball 14-19 - Butterball 14-19 - Butterball 14-19 - As	6,350.00	6,536.54	7,129.76	7,084.46	157.400	ES
Butterball 14-19 - Butterball 14-19 - Butterball 14-19 - As	7,100.00	7,063.42	7,272.49	7,223.72	149.120	SF
Butterball 23-19 - Butterball 23-19 - Butterball 23-19 - As	6,305.37	6,256.02	6,710.99	6,666.86	152.053	CC, ES
Butterball 23-19 - Butterball 23-19 - Butterball 23-19 - As	6,950.00	6,796.09	6,874.98	6,827.43	144.592	SF
Butterball B04-19 - Butterball B04-19 - Butterball B04-19	6,333.36	6,501.75	7,869.96	7,824.92	174.731	CC
Butterball B04-19 - Butterball B04-19 - Butterball B04-19	6,350.00	6,523.22	7,870.04	7,824.87	174.226	ES
Butterball B04-19 - Butterball B04-19 - Butterball B04-19	7,150.00	6,955.91	8,059.26	8,010.91	166.692	SF
Butterball D18-75HN - Original Drilling - Original Drilling -	3,401.66	2,482.00	8,372.03	8,352.68	432.583	CC, ES
Butterball D18-75HN - Original Drilling - Original Drilling -	6,700.00	6,279.00	8,574.02	8,528.69	189.139	SF
Butterball D19-17D - Butterball D19-17D - Butterball D19	6,319.35	6,824.45	6,843.68	6,702.79	48.574	CC, ES
Butterball D19-17D - Butterball D19-17D - Butterball D19	6,450.00	6,930.86	6,855.27	6,713.86	48.477	SF
Butterball D19-18D - Butterball D19-18D - Butterball D19	6,310.71	6,290.04	7,907.59	7,858.28	160.350	CC, ES
Butterball D19-18D - Butterball D19-18D - Butterball D19	6,850.00	6,795.41	8,068.80	8,016.64	154.710	SF
Butterball D19-19D - Butterball D19-19D - Butterball D19	6,310.73	6,327.19	8,240.86	8,193.61	174.412	CC, ES
Butterball D19-19D - Butterball D19-19D - Butterball D19	6,900.00	6,862.18	8,406.54	8,356.24	167.134	SF
Butterball D19-20D - Butterball D19-20D - Butterball D19	6,313.23	6,418.21	7,551.50	7,505.24	163.240	CC, ES
Butterball D19-20D - Butterball D19-20D - Butterball D19	6,950.00	6,981.17	7,722.42	7,672.65	155.174	SF
Butterball D19-22D - Wellbore #1 - Wellbore #1 - As Drill	6,310.13	6,274.03	5,770.39	5,719.83	114.130	CC, ES
Butterball D19-22D - Wellbore #1 - Wellbore #1 - As Drill	6,700.00	6,686.71	5,856.38	5,803.63	111.039	SF
Butterball D19-75HN - Original Drilling - Original Drilling -	6,468.93	11,767.00	5,204.65	5,092.23	46.298	CC, ES
Butterball D19-75HN - Original Drilling - Original Drilling -	6,650.00	11,767.00	5,215.25	5,102.29	46.171	SF
Butterball D24-19 - Butterball D24-19 - Butterball D24-19	6,306.76	6,322.77	6,153.29	6,108.90	138.626	CC, ES
Butterball D24-19 - Butterball D24-19 - Butterball D24-19	7,000.00	6,875.99	6,291.44	6,243.50	131.234	SF
Butterball H24-69HN - Original Drilling - Original Drilling -	6,310.94	6,184.00	8,197.23	8,153.57	187.720	CC, ES
Butterball H24-69HN - Original Drilling - Original Drilling -	6,600.00	6,279.00	8,255.06	8,210.24	184.178	SF
Champlin 366 Amoco F 1 - Wellbore #1 - Wellbore #1 - A	6,306.04	6,210.52	4,999.43	4,955.42	113.604	CC, ES
Champlin 366 Amoco F 1 - Wellbore #1 - Wellbore #1 - A	6,800.00	6,680.03	5,118.30	5,071.38	109.087	SF
Dechant D19-32D - Dechant D19-32D - Dechant D19-32	6,294.84	6,766.78	8,719.19	8,606.58	77.428	CC
Dechant D19-32D - Dechant D19-32D - Dechant D19-32	6,300.00	6,774.63	8,719.20	8,606.56	77.412	ES
Dechant D19-32D - Dechant D19-32D - Dechant D19-32	6,750.00	7,255.47	8,794.19	8,679.61	76.754	SF
Graznak 01-19 - Graznak 01-19 - Graznak 01-19 - As Dr	6,286.97	6,216.04	7,149.46	7,072.84	93.307	CC
Graznak 01-19 - Graznak 01-19 - Graznak 01-19 - As Dr	6,300.00	6,229.03	7,149.52	7,072.73	93.113	ES
Graznak 01-19 - Graznak 01-19 - Graznak 01-19 - As Dr	7,050.00	6,836.85	7,322.65	7,238.86	87.392	SF
Higgins D19-720 - Original Drilling - Original Drilling - As	6,325.68	6,315.11	7,506.41	7,464.49	179.099	CC, ES
Higgins D19-720 - Original Drilling - Original Drilling - As	6,650.00	6,598.00	7,579.72	7,536.73	176.320	SF
Higgins D19-720 - Sidetrack Curve/Horizontal - ST01 - A	6,553.61	11,660.02	3,949.62	3,890.64	66.969	CC, ES
Higgins D19-720 - Sidetrack Curve/Horizontal - ST01 - A	6,700.00	11,660.02	3,962.24	3,902.87	66.727	SF
Independence D18-712 - Independence D18-712 - Plan 1	6,339.15	6,500.00	6,913.61	6,867.71	150.625	CC, ES
Independence D18-712 - Independence D18-712 - Plan 1	6,550.00	6,500.00	6,948.56	6,902.03	149.354	SF
Independence D18-717 - Independence D18-717 - Plan 1	6,319.54	6,250.00	7,052.65	7,008.08	158.232	CC, ES
Independence D18-717 - Independence D18-717 - Plan 1	6,550.00	6,300.00	7,092.57	7,047.15	156.144	SF
Independence D18-725 - Independence D18-725 - Plan 1	6,319.92	6,250.00	7,262.69	7,218.38	163.894	CC, ES
Independence D18-725 - Independence D18-725 - Plan 1	6,600.00	6,300.00	7,319.86	7,274.57	161.607	SF
Independence D18-732 - Independence D18-732 - Plan 1	6,305.96	6,121.33	7,445.47	7,401.37	168.812	CC, ES
Independence D18-732 - Independence D18-732 - Plan 1	6,700.00	6,224.01	7,551.79	7,506.25	165.839	SF
Independence D18-739 - Independence D18-739 - Plan 1	6,276.90	5,829.42	7,576.02	7,532.79	175.233	CC, ES
Independence D18-739 - Independence D18-739 - Plan 1	6,800.00	6,308.13	7,747.53	7,701.17	167.120	SF
Independence D18-744 - Independence D18-744 - Plan 1	6,116.27	5,356.06	7,712.58	7,671.31	186.871	CC
Independence D18-744 - Independence D18-744 - Plan 1	6,241.21	5,473.69	7,712.70	7,670.50	182.783	ES
Independence D18-744 - Independence D18-744 - Plan 1	6,850.00	6,013.25	7,938.34	7,892.47	173.063	SF

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

Noble Energy, Inc.

Anticollision Summary Report

Company:	Northern Region - DJ Basin	**Local Co-ordinate Reference:**	Well Guttersen Y05-756
Project:	Mustang	**TVD Reference:**	Well @ 4812.00ft
Reference Site:	D Section 29	**MD Reference:**	Well @ 4812.00ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Guttersen Y05-756	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Guttersen Y05-756	**Database:**	EDMP
Reference Design:	Prelim - Rev 1	**Offset TVD Reference:**	Offset Datum

Summary

Site Name Offset Well - Wellbore - Design	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
D Section 19						
Independence D18-759 - Independence D18-759 - Plan 1	6,317.52	6,324.91	8,330.70	8,285.90	185.949	CC, ES
Independence D18-759 - Independence D18-759 - Plan 1	6,650.00	6,350.00	8,401.09	8,355.29	183.440	SF
Independence D18-767 - Independence D18-767 - Plan 1	6,311.35	6,250.00	8,663.48	8,619.18	195.544	CC, ES
Independence D18-767 - Independence D18-767 - Plan 1	6,650.00	6,250.00	8,734.12	8,688.86	192.993	SF
Independence D30-711 - Independence D30-711 - Plan 1	7,130.80	14,876.16	2,542.00	2,451.30	28.027	CC
Independence D30-711 - Independence D30-711 - Plan 1	10,300.00	18,041.89	2,559.04	2,432.05	20.151	ES
Independence D30-711 - Independence D30-711 - Plan 1	10,400.00	18,060.85	2,560.87	2,433.36	20.083	SF
Independence D30-718 - Independence D30-718 - Plan 1	6,897.04	14,506.13	2,972.35	2,884.06	33.666	CC
Independence D30-718 - Independence D30-718 - Plan 1	6,950.00	14,536.18	2,972.57	2,884.01	33.566	ES
Independence D30-718 - Independence D30-718 - Plan 1	10,500.00	17,906.67	3,024.72	2,897.25	23.729	SF
Independence D30-724 - Independence D30-724 - Plan 1	6,790.19	14,301.98	3,412.53	3,325.38	39.155	CC
Independence D30-724 - Independence D30-724 - Plan 1	6,850.00	14,343.32	3,412.85	3,325.28	38.972	ES
Independence D30-724 - Independence D30-724 - Plan 1	10,600.00	17,790.74	3,470.46	3,342.51	27.122	SF
Independence D30-731 - Independence D30-731 - Plan 1	6,742.11	14,230.59	3,828.13	3,741.78	44.335	CC
Independence D30-731 - Independence D30-731 - Plan 1	6,800.00	14,267.25	3,828.46	3,741.69	44.124	ES
Independence D30-731 - Independence D30-731 - Plan 1	10,800.00	17,787.32	3,936.31	3,807.36	30.526	SF
Independence D30-737 - Independence D30-737 - Plan 1	6,763.25	14,323.85	4,233.64	4,146.76	48.731	CC
Independence D30-737 - Independence D30-737 - Plan 1	10,300.00	17,787.07	4,267.65	4,141.21	33.754	ES
Independence D30-737 - Independence D30-737 - Plan 1	10,900.00	17,823.24	4,309.64	4,179.78	33.186	SF
Independence D30-743 - Independence D30-743 - Plan 1	6,727.11	14,336.46	4,637.64	4,551.26	53.686	CC
Independence D30-743 - Independence D30-743 - Plan 1	6,800.00	14,381.97	4,638.06	4,551.08	53.323	ES
Independence D30-743 - Independence D30-743 - Plan 1	11,000.00	17,886.63	4,741.06	4,610.34	36.270	SF
Independence D30-758 - Independence D30-758 - Plan 1	6,720.66	14,318.02	5,439.56	5,352.81	62.707	CC
Independence D30-758 - Independence D30-758 - Plan 1	10,300.00	17,806.79	5,466.06	5,339.92	43.336	ES
Independence D30-758 - Independence D30-758 - Plan 1	11,100.00	17,840.49	5,524.22	5,394.19	42.483	SF
Independence D30-765 - Independence D30-765 - Plan 1	6,884.13	14,536.70	5,897.31	5,809.56	67.207	CC
Independence D30-765 - Independence D30-765 - Plan 1	10,300.00	17,915.91	5,930.19	5,804.07	47.019	ES
Independence D30-765 - Independence D30-765 - Plan 1	11,300.00	17,973.12	6,014.20	5,882.78	45.764	SF
Independence D30-770 - Independence D30-770 - Plan 1	6,677.51	14,251.35	6,249.90	6,163.59	72.417	CC
Independence D30-770 - Independence D30-770 - Plan 1	10,300.00	17,763.58	6,270.87	6,144.56	49.644	ES
Independence D30-770 - Independence D30-770 - Plan 1	11,500.00	17,787.74	6,384.88	6,252.36	48.178	SF
Independence D30-777 - Independence D30-777 - Plan 1	6,663.45	14,273.22	6,686.51	6,600.55	77.795	CC
Independence D30-777 - Independence D30-777 - Plan 1	10,400.00	17,842.76	6,721.25	6,594.10	52.863	ES
Independence D30-777 - Independence D30-777 - Plan 1	11,700.00	17,842.76	6,865.19	6,731.25	51.258	SF
Independence State D30-784 - Independence State D30	6,736.50	14,562.65	7,204.54	7,117.65	82.921	CC
Independence State D30-784 - Independence State D30	10,400.00	18,074.89	7,226.51	7,099.05	56.694	ES
Independence State D30-784 - Independence State D30	12,000.00	18,074.89	7,423.86	7,287.71	54.529	SF
LDS White D19-10 - LDS White D19-10 - LDS White D19	6,312.38	6,262.13	5,907.52	5,863.31	133.615	CC, ES
LDS White D19-10 - LDS White D19-10 - LDS White D19	6,850.00	6,739.90	6,043.66	5,996.44	128.002	SF
LDS White D19-15 - LDS White D19-15 - LDS White D19	6,284.87	6,183.43	5,084.17	5,040.37	116.083	CC
LDS White D19-15 - LDS White D19-15 - LDS White D19	6,300.00	6,196.50	5,084.25	5,040.35	115.820	ES
LDS White D19-15 - LDS White D19-15 - LDS White D19	6,900.00	6,721.86	5,212.11	5,164.88	110.359	SF
LDS White D19-16 - Wellbore #1 - Wellbore #1 - As Drill	6,304.00	6,227.90	3,993.68	3,949.65	90.695	CC, ES
LDS White D19-16 - Wellbore #1 - Wellbore #1 - As Drill	6,800.00	6,683.52	4,101.60	4,054.69	87.420	SF
Mile High 02-19 - Wellbore #1 - Wellbore #1 - As Drilled	6,318.56	6,248.14	6,676.65	6,632.45	151.082	CC, ES
Mile High 02-19 - Wellbore #1 - Wellbore #1 - As Drilled	6,800.00	6,705.74	6,814.16	6,767.17	145.017	SF
Sean D19-09 - Wellbore #1 - Wellbore #1 - As Drilled	6,317.44	6,236.45	4,781.07	4,633.80	32.466	CC
Sean D19-09 - Wellbore #1 - Wellbore #1 - As Drilled	6,350.00	6,268.99	4,781.72	4,633.70	32.303	ES
Sean D19-09 - Wellbore #1 - Wellbore #1 - As Drilled	6,800.00	6,678.18	4,919.62	4,762.31	31.274	SF
Turk Blue D19-02J - Turk Blue D19-02J - Turk Blue D19-	6,307.86	6,200.00	8,519.19	8,475.21	193.701	CC, ES
Turk Blue D19-02J - Turk Blue D19-02J - Turk Blue D19-	6,850.00	6,850.44	8,668.38	8,620.81	182.245	SF
Turk Blue D19-04 - Turk Blue D19-04 - Turk Blue D19-04	6,310.74	6,262.02	9,439.90	9,395.69	213.533	CC, ES
Turk Blue D19-04 - Turk Blue D19-04 - Turk Blue D19-04	6,900.00	6,749.45	9,614.98	9,567.67	203.229	SF

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

Noble Energy, Inc.

Anticollision Summary Report

Company:	Northern Region - DJ Basin	**Local Co-ordinate Reference:**	Well Guttersen Y05-756
Project:	Mustang	**TVD Reference:**	Well @ 4812.00ft
Reference Site:	D Section 29	**MD Reference:**	Well @ 4812.00ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Guttersen Y05-756	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Guttersen Y05-756	**Database:**	EDMP
Reference Design:	Prelim - Rev 1	**Offset TVD Reference:**	Offset Datum

Summary

Site Name Offset Well - Wellbore - Design	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
D Section 19						
Turk Blue D19-05 - Turk Blue D19-05 - Turk Blue D19-05	6,327.15	6,446.03	8,408.23	8,363.30	187.181	CC, ES
Turk Blue D19-05 - Turk Blue D19-05 - Turk Blue D19-05	7,000.00	6,908.26	8,598.58	8,550.51	178.906	SF
Turk Blue D19-06 - Turk Blue D19-06 - Turk Blue D19-06	6,316.12	6,291.44	7,444.38	7,400.08	168.053	CC, ES
Turk Blue D19-06 - Turk Blue D19-06 - Turk Blue D19-06	6,900.00	6,792.95	7,609.77	7,562.33	160.392	SF
Turk White D19-01 - Wellbore #1 - Wellbore #1 - As Drill	6,318.32	6,181.58	6,952.63	6,908.61	157.965	CC, ES
Turk White D19-01 - Wellbore #1 - Wellbore #1 - As Drill	6,900.00	6,801.36	7,172.78	7,125.32	151.143	SF
Turk White D19-02 - Wellbore #1 - Wellbore #1 - As Drill	6,340.71	6,420.56	7,769.28	7,724.44	173.267	CC, ES
Turk White D19-02 - Wellbore #1 - Wellbore #1 - As Drill	6,950.00	6,799.08	8,003.17	7,955.66	168.477	SF
Turk White D19-08 - Wellbore #1 - Wellbore #1 - As Drill	6,317.84	6,216.02	5,705.84	5,661.76	129.444	CC, ES
Turk White D19-08 - Wellbore #1 - Wellbore #1 - As Drill	6,750.00	6,605.33	5,825.60	5,779.05	125.133	SF

Noble Energy, Inc.

Anticollision Summary Report

Company:	Northern Region - DJ Basin	**Local Co-ordinate Reference:**	Well Guttersen Y05-756
Project:	Mustang	**TVD Reference:**	Well @ 4812.00ft
Reference Site:	D Section 29	**MD Reference:**	Well @ 4812.00ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Guttersen Y05-756	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Guttersen Y05-756	**Database:**	EDMP
Reference Design:	Prelim - Rev 1	**Offset TVD Reference:**	Offset Datum

Summary

Site Name Offset Well - Wellbore - Design	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
D Section 20						
Bohlender D20-2J - Wellbore #1 - No Surveys	6,328.04	6,242.04	5,487.61	5,410.53	71.189	CC, ES
Bohlender D20-2J - Wellbore #1 - No Surveys	6,750.00	6,634.75	5,617.77	5,536.20	68.870	SF
Bohlender D20-3 - Wellbore #1 - Gyro Surveys	6,331.16	6,243.43	6,329.82	6,285.54	142.956	CC, ES
Bohlender D20-3 - Wellbore #1 - Gyro Surveys	6,800.00	6,668.38	6,495.07	6,448.19	138.550	SF
Bohlender D20-4 (P&A) - Wellbore #1 - No Surveys	6,327.66	6,243.66	6,701.55	6,554.07	45.439	CC
Bohlender D20-4 (P&A) - Wellbore #1 - No Surveys	6,350.00	6,265.99	6,701.92	6,553.92	45.282	ES
Bohlender D20-4 (P&A) - Wellbore #1 - No Surveys	6,850.00	6,710.99	6,896.24	6,738.21	43.638	SF
Bohlender D20-6 - Wellbore#1 - Gyro Surveys	6,325.48	6,189.38	4,984.14	4,940.06	113.077	CC, ES
Bohlender D20-6 - Wellbore#1 - Gyro Surveys	6,700.00	6,583.36	5,089.89	5,043.48	109.654	SF
Butterball D19-27D - Butterball D19-27D - Butterball D19	6,260.57	5,703.14	8,007.85	7,932.44	106.189	CC
Butterball D19-27D - Butterball D19-27D - Butterball D19	6,331.31	6,579.28	8,008.28	7,930.22	102.603	ES
Butterball D19-27D - Butterball D19-27D - Butterball D19	6,650.00	6,904.88	8,076.86	7,997.44	101.694	SF
Duncan D20-1 (P&A) - Wellbore #1 - No Surveys	6,341.31	6,256.31	6,795.28	6,647.50	45.980	CC
Duncan D20-1 (P&A) - Wellbore #1 - No Surveys	6,350.00	6,264.99	6,795.34	6,647.35	45.917	ES
Duncan D20-1 (P&A) - Wellbore #1 - No Surveys	6,850.00	6,709.99	6,976.96	6,818.93	44.148	SF
Duncan D20-10 - Wellbore #1 - Gyro Surveys	6,344.08	6,285.62	3,468.68	3,424.24	78.041	CC
Duncan D20-10 - Wellbore #1 - Gyro Surveys	6,350.00	6,290.98	3,468.71	3,424.22	77.973	ES
Duncan D20-10 - Wellbore #1 - Gyro Surveys	6,600.00	6,533.49	3,516.44	3,470.41	76.395	SF
Duncan D20-11 (SI) - Wellbore #1 - No Surveys	6,331.44	6,252.44	3,705.36	3,628.16	47.999	CC, ES
Duncan D20-11 (SI) - Wellbore #1 - No Surveys	6,650.00	6,557.98	3,782.95	3,702.23	46.864	SF
Duncan D20-12 (SI) - Wellbore #1 - No Surveys	6,323.47	6,242.48	4,050.66	3,973.61	52.568	CC, ES
Duncan D20-12 (SI) - Wellbore #1 - No Surveys	6,700.00	6,598.94	4,147.99	4,066.82	51.107	SF
Duncan D20-13 (SI) - Wellbore #1 - No Surveys	6,315.63	6,239.64	2,777.31	2,700.33	36.081	CC, ES
Duncan D20-13 (SI) - Wellbore #1 - No Surveys	6,600.00	6,516.16	2,824.79	2,744.58	35.217	SF
Duncan D20-14 (SI) - Wellbore #1 - Gyro Surveys	6,332.54	6,272.41	2,762.99	2,718.65	62.312	CC, ES
Duncan D20-14 (SI) - Wellbore #1 - Gyro Surveys	6,550.00	6,498.27	2,797.27	2,751.52	61.140	SF
Duncan D20-15 (P&A) - Wellbore #1 - Gyro Surveys	6,335.25	6,242.12	2,381.04	2,336.75	53.768	CC, ES
Duncan D20-15 (P&A) - Wellbore #1 - Gyro Surveys	6,550.00	6,467.61	2,414.43	2,368.75	52.851	SF
Duncan D20-16 (SI) - Wellbore #1 - Gyro Surveys	6,359.00	6,305.64	3,239.37	3,194.86	72.776	CC, ES
Duncan D20-16 (SI) - Wellbore #1 - Gyro Surveys	6,700.00	6,577.57	3,306.18	3,259.79	71.266	SF
Duncan D20-2 - Wellbore #1 - Gyro Surveys	6,345.97	6,344.62	6,365.69	6,321.04	142.569	CC
Duncan D20-2 - Wellbore #1 - Gyro Surveys	6,350.00	6,348.70	6,365.70	6,321.02	142.481	ES
Duncan D20-2 - Wellbore #1 - Gyro Surveys	6,800.00	6,709.48	6,522.71	6,475.70	138.748	SF
Duncan D20-7 - Wellbore #1 - Gyro Surveys	6,338.03	6,242.53	5,408.97	5,364.65	122.055	CC, ES
Duncan D20-7 - Wellbore #1 - Gyro Surveys	6,750.00	6,633.41	5,534.94	5,488.23	118.514	SF
Duncan D20-8 - Wellbore #1 - Gyro Surveys	6,339.25	6,243.37	5,379.15	5,334.87	121.466	CC
Duncan D20-8 - Wellbore #1 - Gyro Surveys	6,350.00	6,256.53	5,379.23	5,334.86	121.244	ES
Duncan D20-8 - Wellbore #1 - Gyro Surveys	6,700.00	6,621.94	5,468.32	5,421.77	117.492	SF
Duncan D20-9 (P&A) - Wellbore #1 - Gyro Surveys	6,349.96	6,284.91	4,304.50	4,260.07	96.873	CC
Duncan D20-9 (P&A) - Wellbore #1 - Gyro Surveys	6,350.00	6,284.95	4,304.50	4,260.07	96.872	ES
Duncan D20-9 (P&A) - Wellbore #1 - Gyro Surveys	6,700.00	6,628.49	4,383.66	4,337.11	94.171	SF
E Ranches (P&A) - Wellbore #1 - No Surveys	6,321.83	6,237.83	2,657.25	2,509.92	18.037	CC
E Ranches (P&A) - Wellbore #1 - No Surveys	6,350.00	6,265.99	2,657.79	2,509.81	17.960	ES
E Ranches (P&A) - Wellbore #1 - No Surveys	6,600.00	6,508.16	2,709.36	2,555.84	17.648	SF
Guttersen 10-20 - Wellbore #1 - Gyro Surveys	6,342.10	6,281.68	3,877.58	3,833.15	87.279	CC
Guttersen 10-20 - Wellbore #1 - Gyro Surveys	6,350.00	6,289.49	3,877.63	3,833.15	87.174	ES
Guttersen 10-20 - Wellbore #1 - Gyro Surveys	6,650.00	6,649.41	3,950.13	3,903.73	85.124	SF
LDS D20-30D - LDS D20-30D - LDS D20-30D - As Drille	6,337.81	6,437.79	7,291.72	7,244.02	152.855	CC, ES
LDS D20-30D - LDS D20-30D - LDS D20-30D - As Drille	6,700.00	6,700.00	7,386.68	7,337.21	149.323	SF

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

Noble Energy, Inc.

Anticollision Summary Report

Company:	Northern Region - DJ Basin	**Local Co-ordinate Reference:**	Well Guttersen Y05-756
Project:	Mustang	**TVD Reference:**	Well @ 4812.00ft
Reference Site:	D Section 29	**MD Reference:**	Well @ 4812.00ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Guttersen Y05-756	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Guttersen Y05-756	**Database:**	EDMP
Reference Design:	Prelim - Rev 1	**Offset TVD Reference:**	Offset Datum

Summary

Site Name Offset Well - Wellbore - Design	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
D Section 28						
O'SH D 28-7 (P&A) - Wellbore #1 - No Surveys	7,066.44	6,870.74	6,053.42	5,891.79	37.451	CC
O'SH D 28-7 (P&A) - Wellbore #1 - No Surveys	7,100.00	6,883.60	6,053.54	5,891.60	37.382	ES
O'SH D 28-7 (P&A) - Wellbore #1 - No Surveys	7,300.00	6,925.11	6,059.16	5,896.19	37.178	SF
Spike ST GWS D 28-12 (SI) - Wellbore #1 - Gyro Surve	8,337.43	6,935.02	3,305.76	3,255.32	65.544	CC, ES
Spike ST GWS D 28-12 (SI) - Wellbore #1 - Gyro Surve	9,200.00	6,941.70	3,416.44	3,362.71	63.595	SF
Guttersen D State 28-29D (PR) - Wellbore #1 - MWD Su	941.20	915.22	4,074.51	4,069.41	800.230	CC
Guttersen D State 28-29D (PR) - Wellbore #1 - MWD Su	1,000.00	943.60	4,074.72	4,069.33	754.648	ES
Guttersen D State 28-29D (PR) - Wellbore #1 - MWD Su	6,900.00	6,811.77	4,605.16	4,557.84	97.319	SF
Guttersen D State 28-30D - Wellbore #1 - Guttersen D S	6,406.28	6,549.15	3,173.54	3,125.31	65.805	CC, ES
Guttersen D State 28-30D - Wellbore #1 - Guttersen D S	6,700.00	6,792.22	3,209.85	3,159.98	64.371	SF
Guttersen State D28-18D (PR) - Wellbore #1 - MWD Sur	6,548.31	6,591.75	5,285.11	5,235.70	106.969	CC
Guttersen State D28-18D (PR) - Wellbore #1 - MWD Sur	6,550.00	6,593.28	5,285.11	5,235.69	106.949	ES
Guttersen State D28-18D (PR) - Wellbore #1 - MWD Sur	7,200.00	6,977.28	5,342.40	5,290.51	102.954	SF
Guttersen State D28-28D (PR) - Wellbore #1 - MWD Sur	0.00	0.00	5,324.86			
Guttersen State D28-28D (PR) - Wellbore #1 - MWD Sur	300.00	235.74	5,325.84	5,324.36	3,586.954	ES
Guttersen State D28-28D (PR) - Wellbore #1 - MWD Sur	7,000.00	6,858.77	5,739.17	5,689.90	116.476	SF
Guttersen State D28-79HN - Wellbore #1 - Actual	6,650.00	9,978.55	2,900.60	2,812.34	32.864	SF
Guttersen State D28-79HN - Wellbore #1 - Actual	6,850.00	9,877.59	2,892.11	2,804.87	33.152	ES
Guttersen State D28-79HN - Wellbore #1 - Actual	6,884.83	9,844.00	2,891.99	2,805.23	33.334	CC
HSR Guttersen State 7-28 (PR) - Wellbore #1 - Gyro Sur	6,879.93	6,551.33	5,837.86	5,791.25	125.223	CC
HSR Guttersen State 7-28 (PR) - Wellbore #1 - Gyro Sur	6,900.00	6,558.64	5,837.89	5,791.21	125.059	ES
HSR Guttersen State 7-28 (PR) - Wellbore #1 - Gyro Sur	10,100.00	6,600.00	6,644.83	6,588.77	118.531	SF
O'SH D 28-1 (SI) - Wellbore #1 - Gyro Surveys	6,535.22	6,502.56	7,103.41	7,057.74	155.531	CC
O'SH D 28-1 (SI) - Wellbore #1 - Gyro Surveys	6,550.00	6,516.23	7,103.43	7,057.67	155.229	ES
O'SH D 28-1 (SI) - Wellbore #1 - Gyro Surveys	10,700.00	6,908.83	8,463.29	8,404.07	142.893	SF
O'SH D 28-2 (SI) - Wellbore #1 - Gyro Surveys	6,425.43	6,340.31	6,183.18	6,138.39	138.025	CC
O'SH D 28-2 (SI) - Wellbore #1 - Gyro Surveys	6,450.00	6,365.20	6,183.27	6,138.31	137.529	ES
O'SH D 28-2 (SI) - Wellbore #1 - Gyro Surveys	7,150.00	6,912.68	6,260.34	6,212.47	130.768	SF
O'SH D 28-8 (SI) - Wellbore #1 - Gyro Surveys	7,092.23	6,762.84	7,404.77	7,357.11	155.359	CC
O'SH D 28-8 (SI) - Wellbore #1 - Gyro Surveys	7,100.00	6,765.97	7,404.78	7,357.10	155.296	ES
O'SH D 28-8 (SI) - Wellbore #1 - Gyro Surveys	12,000.00	7,007.27	8,899.14	8,832.86	134.265	SF
Spike ST GWS D 28-4 (SI) - Wellbore #1 - Gyro Surveys	6,374.81	6,273.43	3,692.67	3,648.25	83.133	CC
Spike ST GWS D 28-4 (SI) - Wellbore #1 - Gyro Surveys	6,400.00	6,302.95	3,692.82	3,648.22	82.796	ES
Spike ST GWS D 28-4 (SI) - Wellbore #1 - Gyro Surveys	6,950.00	6,761.30	3,780.65	3,733.16	79.618	SF
Spike State D28-05 (PR) - Wellbore #1 - Gyro Surveys	6,726.07	6,550.76	3,309.69	3,263.38	71.469	CC
Spike State D28-05 (PR) - Wellbore #1 - Gyro Surveys	6,750.00	6,564.55	3,309.74	3,263.33	71.314	ES
Spike State D28-05 (PR) - Wellbore #1 - Gyro Surveys	7,100.00	6,861.60	3,321.91	3,273.91	69.209	SF
Spike State D28-06 (SI) - Wellbore #1 - Gyro Surveys	6,902.94	6,724.52	5,000.70	4,953.41	105.760	CC, ES
Spike State D28-06 (SI) - Wellbore #1 - Gyro Surveys	8,600.00	6,854.43	5,296.88	5,245.84	103.775	SF

Noble Energy, Inc.

Anticollision Summary Report

Company:	Northern Region - DJ Basin	**Local Co-ordinate Reference:**	Well Guttersen Y05-756
Project:	Mustang	**TVD Reference:**	Well @ 4812.00ft
Reference Site:	D Section 29	**MD Reference:**	Well @ 4812.00ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Guttersen Y05-756	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Guttersen Y05-756	**Database:**	EDMP
Reference Design:	Prelim - Rev 1	**Offset TVD Reference:**	Offset Datum

Summary

Site Name Offset Well - Wellbore - Design	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
D Section 29						
Guttersen D29-30D - Wellbore #1 - Design #1	803.33	803.33	2,184.35	2,179.04	411.818	CC
Guttersen D29-30D - Wellbore #1 - Design #1	900.00	883.46	2,184.54	2,178.60	367.910	ES
Guttersen D29-30D - Wellbore #1 - Design #1	6,600.00	6,705.42	2,875.70	2,825.09	56.825	SF
Guttersen D29-31D - Wellbore #1 - Guttersen D29-31D	100.00	70.15	1,726.64	1,726.39	6,865.209	CC
Guttersen D29-31D - Wellbore #1 - Guttersen D29-31D	400.00	362.44	1,727.63	1,725.78	933.261	ES
Guttersen D29-31D - Wellbore #1 - Guttersen D29-31D	6,800.00	6,777.55	2,374.08	2,325.76	49.130	SF
Guttersen D29-33D - Wellbore #1 - Guttersen D29-33D -	886.41	882.42	2,157.93	2,153.25	461.360	CC
Guttersen D29-33D - Wellbore #1 - Guttersen D29-33D -	1,000.00	978.62	2,158.30	2,152.88	398.889	ES
Guttersen D29-33D - Wellbore #1 - Guttersen D29-33D -	9,400.00	7,154.93	2,357.41	2,295.01	37.778	SF
Guttersen D29-65HN - Original Drilling - Original Drilling	7,760.54	8,802.26	141.07	108.14	4.284	CC
Guttersen D29-65HN - Original Drilling - Original Drilling	7,800.00	8,800.88	146.48	105.73	3.595	ES
Guttersen D29-65HN - Original Drilling - Original Drilling	7,900.00	8,797.38	198.31	131.42	2.965	SF
Guttersen D29-67HN - Original Drilling - Original Drilling	6,684.63	8,622.25	520.31	456.29	8.127	CC
Guttersen D29-67HN - Original Drilling - Original Drilling	6,700.00	8,622.44	520.73	455.67	8.004	ES
Guttersen D29-67HN - Original Drilling - Original Drilling	6,800.00	8,623.18	542.98	472.54	7.708	SF
Guttersen D29-69HN - Original Drilling - Original Drilling	6,503.96	8,788.67	1,675.43	1,604.20	23.521	CC, ES
Guttersen D29-69HN - Original Drilling - Original Drilling	6,650.00	8,791.51	1,698.29	1,625.03	23.184	SF
Guttersen D29-722 - Guttersen D29-722 - Prelim - Rev 1	7,100.00	7,725.18	2,085.93	2,036.34	42.062	SF
Guttersen D29-722 - Guttersen D29-722 - Prelim - Rev 1	7,234.56	7,595.43	2,085.13	2,035.62	42.114	CC, ES
Guttersen D29-730 - Guttersen D29-730 - Prelim - Rev 1	6,850.00	7,851.67	1,476.38	1,426.86	29.810	SF
Guttersen D29-730 - Guttersen D29-730 - Prelim - Rev 1	6,981.80	7,747.42	1,474.06	1,424.70	29.865	CC, ES
Guttersen D29-738 - Guttersen D29-738 - Prelim - Rev 1	2,200.00	2,206.00	166.42	151.09	10.857	CC, ES
Guttersen D29-738 - Guttersen D29-738 - Prelim - Rev 1	2,300.00	2,300.42	169.52	153.52	10.593	SF
Guttersen D29-746 - Guttersen D29-746 - Prelim - Rev 1	2,200.00	2,194.00	153.82	138.54	10.063	CC, ES
Guttersen D29-746 - Guttersen D29-746 - Prelim - Rev 1	6,923.83	7,730.80	255.21	205.95	5.181	SF
Guttersen D29-754 - Guttersen D29-754 - Prelim - Rev 1	2,200.00	2,194.00	150.03	134.74	9.815	CC, ES
Guttersen D29-754 - Guttersen D29-754 - Prelim - Rev 1	7,800.00	7,079.98	344.23	294.56	6.931	SF
Guttersen D29-770 - Guttersen D29-770 - Prelim - Rev 1	6,850.00	7,826.43	981.20	931.70	19.826	SF
Guttersen D29-770 - Guttersen D29-770 - Prelim - Rev 1	6,900.00	7,788.86	980.61	931.16	19.833	ES
Guttersen D29-770 - Guttersen D29-770 - Prelim - Rev 1	6,902.19	7,787.16	980.61	931.17	19.834	CC
Guttersen D29-778 - Guttersen D29-778 - Prelim - Rev 1	2,200.00	2,198.00	1,375.77	1,360.47	89.922	CC, ES
Guttersen D29-778 - Guttersen D29-778 - Prelim - Rev 1	7,050.00	7,804.58	1,595.88	1,546.23	32.143	SF
Guttersen D29-786 - Guttersen D29-786 - Prelim - Rev 1	2,200.00	2,198.00	1,413.57	1,398.27	92.393	CC, ES
Guttersen D29-786 - Guttersen D29-786 - Prelim - Rev 1	7,000.00	7,720.79	2,172.97	2,123.55	43.970	SF
Guttersen D29-99HZ - Wellbore #1 - MWD Surveys	9,050.86	8,660.31	36.61	-3.25	0.918	Level 1, CC
Guttersen D29-99HZ - Wellbore #1 - MWD Surveys	9,100.00	8,659.51	61.27	-12.13	0.835	Level 1, ES, SF
Guttersen D30-68-1HN - Original Drilling - Original Drillin	1,022.37	1,012.77	2,154.61	2,149.10	391.509	CC, ES
Guttersen D30-68-1HN - Original Drilling - Original Drillin	6,400.00	6,222.01	2,471.58	2,428.28	57.086	SF
Guttersen D30-69-1HN - Original Drilling - Original Drillin	1,192.00	1,180.01	2,162.68	2,156.00	323.438	CC
Guttersen D30-69-1HN - Original Drilling - Original Drillin	1,200.00	1,187.15	2,162.69	2,155.94	320.850	ES
Guttersen D30-69-1HN - Original Drilling - Original Drillin	6,450.00	6,347.58	2,885.62	2,838.58	61.345	SF
Guttersen State D29-714 - Guttersen D29-714 - Prelim -	2,109.35	2,127.35	2,390.02	2,375.30	162.350	CC
Guttersen State D29-714 - Guttersen D29-714 - Prelim -	2,300.00	2,283.84	2,390.56	2,374.62	149.893	ES
Guttersen State D29-714 - Guttersen D29-714 - Prelim -	8,400.00	6,680.12	2,651.31	2,600.78	52.463	SF
Guttersen State Y05-719 - Guttersen Y05-719 - Prelim -	2,200.00	2,208.00	2,387.57	2,372.23	155.690	CC
Guttersen State Y05-719 - Guttersen Y05-719 - Prelim -	20,790.14	20,810.66	2,445.60	2,214.21	10.569	ES, SF
Guttersen Y05-726 - Guttersen Y05-726 - Prelim - Rev 1	20,780.71	20,832.44	1,832.40	1,601.13	7.923	CC
Guttersen Y05-726 - Guttersen Y05-726 - Prelim - Rev 1	20,790.14	20,829.50	1,832.43	1,601.12	7.922	ES, SF
Guttersen Y05-734 - Guttersen Y05-734 - Prelim - Rev 1	20,790.14	20,907.12	1,219.35	987.93	5.269	CC, ES, SF
Guttersen Y05-749 - Guttersen Y05-749 - Prelim - Rev 1	2,200.00	2,200.00	37.01	21.70	2.418	CC, ES
Guttersen Y05-749 - Guttersen Y05-749 - Prelim - Rev 1	2,300.00	2,299.04	37.89	21.88	2.366	SF
Guttersen Y05-771 - Guttersen Y05-771 - Prelim - Rev 1	20,790.14	20,844.32	698.01	466.84	3.019	CC, ES, SF
Guttersen Y05-779 - Guttersen Y05- 779 - Prelim - Rev 1	7,328.94	7,411.59	1,228.32	1,178.96	24.885	CC

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

Noble Energy, Inc.

Anticollision Summary Report

Company:	Northern Region - DJ Basin	**Local Co-ordinate Reference:**	Well Guttersen Y05-756
Project:	Mustang	**TVD Reference:**	Well @ 4812.00ft
Reference Site:	D Section 29	**MD Reference:**	Well @ 4812.00ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Guttersen Y05-756	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Guttersen Y05-756	**Database:**	EDMP
Reference Design:	Prelim - Rev 1	**Offset TVD Reference:**	Offset Datum

Summary

Site Name Offset Well - Wellbore - Design	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
D Section 29						
Guttersen Y05-779 - Guttersen Y05- 779 - Prelim - Rev 1	20,790.14	20,873.07	1,229.24	997.83	5.312	ES, SF
Guttersen Y05-786 - Guttersen Y05-786 - Prelim - Rev 1	2,200.00	2,202.00	1,403.18	1,387.87	91.628	CC, ES
Guttersen Y05-786 - Guttersen Y05-786 - Prelim - Rev 1	20,790.14	20,775.00	1,784.03	1,552.98	7.721	SF
Jessie D29-1J - Wellbore #1 - Gyro Surveys	6,366.85	6,295.12	1,341.32	1,296.83	30.153	CC, ES
Jessie D29-1J - Wellbore #1 - Gyro Surveys	6,550.00	6,474.18	1,355.25	1,309.60	29.688	SF
Jessie D29-4J - Wellbore #1 - Gyro Surveys	8,685.35	6,886.67	1,182.44	1,130.76	22.877	CC, ES
Jessie D29-4J - Wellbore #1 - Gyro Surveys	8,800.00	6,892.15	1,187.98	1,135.79	22.765	SF
Kate Red D29-03J - Kate Red D29-03J - Kate Red D29-0	8,688.92	6,915.27	1,582.52	1,530.74	30.559	CC
Kate Red D29-03J - Kate Red D29-03J - Kate Red D29-0	8,700.00	6,915.22	1,582.56	1,530.74	30.536	ES
Kate Red D29-03J - Kate Red D29-03J - Kate Red D29-0	8,900.00	6,914.43	1,596.54	1,544.02	30.401	SF
Kate Red D29-11 - Wellbore #1 - Gyro Surveys	8,326.39	6,900.20	608.59	558.22	12.082	CC, ES, SF
Kate Red D29-13 - Wellbore #1 - Gyro Surveys	9,763.61	6,937.96	1,937.20	1,880.28	34.030	CC, ES
Kate Red D29-13 - Wellbore #1 - Gyro Surveys	10,000.00	6,939.18	1,951.57	1,893.51	33.614	SF
Kate Red D29-14 - Wellbore #1 - Gyro Surveys	9,659.63	6,931.23	571.32	514.99	10.141	CC, ES
Kate Red D29-14 - Wellbore #1 - Gyro Surveys	9,700.00	6,931.71	572.75	516.27	10.141	SF
Kate Red D29-2J - Wellbore #1 - Kate Red D29-2J	6,301.91	6,239.27	1,460.13	1,416.07	33.140	CC, ES
Kate Red D29-2J - Wellbore #1 - Kate Red D29-2J	6,600.00	6,533.03	1,489.16	1,443.19	32.393	SF
Kate Red D29-3 - Wellbore #1 - Kate Red D29-3	6,331.53	6,263.93	1,103.41	1,059.11	24.911	CC, ES
Kate Red D29-3 - Wellbore #1 - Kate Red D29-3	6,450.00	6,376.50	1,113.99	1,068.93	24.722	SF
Kate Red D29-5 - Wellbore #1 - Gyro Surveys	100.00	61.29	1,685.64	1,685.41	7,203.588	CC
Kate Red D29-5 - Wellbore #1 - Gyro Surveys	600.00	557.48	1,688.52	1,684.82	456.834	ES
Kate Red D29-5 - Wellbore #1 - Gyro Surveys	7,150.00	6,896.37	1,832.01	1,783.79	37.992	SF
Kate Red D29-6 - Wellbore #1 - Gyro Surveys	3,418.29	3,370.67	398.94	375.37	16.922	CC
Kate Red D29-6 - Wellbore #1 - Gyro Surveys	3,700.00	3,652.84	399.99	374.42	15.642	ES
Kate Red D29-6 - Wellbore #1 - Gyro Surveys	7,050.00	6,832.45	468.56	420.68	9.785	SF
Kate White D29-1 - Wellbore #1 - Gyro Surveys	6,379.22	6,318.20	2,479.20	2,434.61	55.599	CC, ES
Kate White D29-1 - Wellbore #1 - Gyro Surveys	6,750.00	6,671.10	2,526.49	2,479.69	53.990	SF
Kate White D29-15 - Wellbore #1 - Gyro Surveys	9,556.09	6,897.52	681.75	625.96	12.220	CC, ES
Kate White D29-15 - Wellbore #1 - Gyro Surveys	9,600.00	6,897.30	683.16	627.12	12.190	SF
Kate White D29-16 - Wellbore #1 - Gyro Surveys	9,642.64	6,905.06	2,086.21	2,029.93	37.070	CC, ES
Kate White D29-16 - Wellbore #1 - Gyro Surveys	10,000.00	6,905.15	2,116.60	2,058.45	36.402	SF
Kate White D29-7 - Wellbore #1 - Gyro Surveys	7,042.03	6,828.12	1,016.99	969.10	21.234	CC, ES
Kate White D29-7 - Wellbore #1 - Gyro Surveys	7,100.00	6,850.50	1,018.45	970.40	21.195	SF
Kate White D29-8 - Wellbore #1 - Gyro Surveys	7,051.01	6,859.86	2,150.83	2,102.83	44.804	CC, ES
Kate White D29-8 - Wellbore #1 - Gyro Surveys	7,150.00	6,899.25	2,153.12	2,104.86	44.607	SF
Kate White D29-9 (SI) - Wellbore #1 - Gyro Surveys	8,416.22	6,876.94	2,112.38	2,061.71	41.694	CC, ES
Kate White D29-9 (SI) - Wellbore #1 - Gyro Surveys	8,800.00	6,888.76	2,146.92	2,094.79	41.186	SF

Noble Energy, Inc.

Anticollision Summary Report

Company:	Northern Region - DJ Basin	**Local Co-ordinate Reference:**	Well Guttersen Y05-756
Project:	Mustang	**TVD Reference:**	Well @ 4812.00ft
Reference Site:	D Section 29	**MD Reference:**	Well @ 4812.00ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Guttersen Y05-756	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Guttersen Y05-756	**Database:**	EDMP
Reference Design:	Prelim - Rev 1	**Offset TVD Reference:**	Offset Datum

Summary

Site Name Offset Well - Wellbore - Design	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
D Section 32						
HP D32-21D - Wellbore #1 - MWD Surveys	12,940.42	7,078.61	197.99	116.18	2.420	CC, ES, SF
HP D32-23D - Wellbore #1 - MWD Surveys	14,022.38	7,018.10	1,368.09	1,280.04	15.537	CC, ES
HP D32-23D - Wellbore #1 - MWD Surveys	14,200.00	7,017.99	1,379.58	1,290.16	15.429	SF
HP Farms D 32-22D - Wellbore #1 - MWD Surveys	12,870.73	7,239.40	1,475.83	1,386.27	16.478	CC, ES
HP Farms D 32-22D - Wellbore #1 - MWD Surveys	13,000.00	7,240.83	1,481.48	1,390.93	16.361	SF
HP Farms D32-03 - Wellbore #1 - Gyro Surveys	11,169.07	6,946.88	368.57	302.81	5.604	CC, ES, SF
HP Farms D32-18D - Wellbore #1 - MWD Surveys	11,688.46	7,147.95	237.76	166.26	3.325	CC, ES
HP Farms D32-18D - Wellbore #1 - MWD Surveys	11,700.00	7,148.02	238.04	166.29	3.318	SF
HP Farms D32-24D - Wellbore #1 - MWD Surveys	14,286.49	7,210.95	224.91	134.15	2.478	CC, ES
HP Farms D32-24D - Wellbore #1 - MWD Surveys	14,300.00	7,210.99	225.32	134.26	2.475	SF
Norris 14-32 - Wellbore #1 - Projection Survey	15,156.10	6,943.00	1,967.56	1,836.04	14.960	CC, ES
Norris 14-32 - Wellbore #1 - Projection Survey	15,300.00	6,943.00	1,972.82	1,840.41	14.899	SF
Norris A Unit 2 - Wellbore #1 - Projection Survey	14,419.98	6,948.00	1,335.37	1,209.46	10.606	CC, ES
Norris A Unit 2 - Wellbore #1 - Projection Survey	14,500.00	6,948.00	1,337.76	1,211.39	10.586	SF
Norris D32-1 (SI) - Wellbore #1 - Gyro Surveys	11,059.89	6,926.00	2,114.08	2,049.12	32.541	CC, ES
Norris D32-1 (SI) - Wellbore #1 - Gyro Surveys	11,400.00	6,920.60	2,141.26	2,074.28	31.969	SF
Norris D32-10 - Wellbore #1 - Gyro Surveys	13,737.95	6,750.00	794.98	711.77	9.554	CC, ES
Norris D32-10 - Wellbore #1 - Gyro Surveys	13,800.00	6,750.00	797.40	713.75	9.533	SF
Norris D32-15 - Wellbore #1 - Gyro Surveys	15,023.89	6,800.00	777.58	684.19	8.326	CC, ES, SF
Norris D32-1J - Wellbore #1 - Gyro Surveys	11,852.34	6,965.02	1,684.70	1,614.14	23.875	CC, ES
Norris D32-1J - Wellbore #1 - Gyro Surveys	12,100.00	6,957.39	1,702.79	1,630.78	23.644	SF
Norris D32-2 - Wellbore #1 - Gyro Surveys	10,980.91	6,957.95	801.52	737.00	12.423	CC, ES
Norris D32-2 - Wellbore #1 - Gyro Surveys	11,000.00	6,957.83	801.75	737.10	12.401	SF
Norris D32-2J - Wellbore #1 - Gyro Surveys	11,460.24	6,961.07	1,102.91	1,035.15	16.277	CC, ES
Norris D32-2J - Wellbore #1 - Gyro Surveys	11,500.00	6,961.64	1,103.62	1,035.64	16.234	SF
Norris D32-4 (P&A) - Wellbore #1 - No Surveys	11,021.38	6,926.00	1,864.61	1,685.41	10.405	CC, ES
Norris D32-4 (P&A) - Wellbore #1 - No Surveys	11,100.00	6,926.00	1,866.27	1,686.60	10.387	SF
Norris D32-5 - Wellbore #1 - Gyro Surveys	12,365.72	6,928.57	1,838.00	1,764.01	24.841	CC, ES
Norris D32-5 - Wellbore #1 - Gyro Surveys	12,600.00	6,926.26	1,852.87	1,777.60	24.617	SF
Norris D32-6 - Wellbore #1 - Gyro Surveys	12,390.56	6,948.71	620.48	546.20	8.353	CC, ES
Norris D32-6 - Wellbore #1 - Gyro Surveys	12,400.00	6,948.74	620.55	546.22	8.348	SF
Norris D32-7 - Wellbore #1 - Gyro Surveys	12,359.34	6,909.72	724.48	650.54	9.799	CC, ES
Norris D32-7 - Wellbore #1 - Gyro Surveys	12,400.00	6,912.51	725.61	651.39	9.777	SF
Norris D32-9 (SI) - Wellbore #1 - Gyro Surveys	13,715.92	6,924.48	2,185.41	2,101.45	26.030	CC, ES
Norris D32-9 (SI) - Wellbore #1 - Gyro Surveys	14,000.00	6,923.55	2,203.79	2,118.02	25.693	SF
NOBLE_EN-31-22-DECHANT_D						
(m)NOBLE_EN-31-22-DECHANT_D - NOBLE_EN-31-22	12,923.79	7,094.85	3,825.95	2,980.32	4.524	CC, ES
(m)NOBLE_EN-31-22-DECHANT_D - NOBLE_EN-31-22	13,000.00	7,095.57	3,826.71	2,980.83	4.524	SF
NOBLE_EN-31-24-DECHANT_D						
(m)NOBLE_EN-31-24-DECHANT_D - NOBLE_EN-31-24	14,208.79	6,849.93	4,936.38	4,227.19	6.961	CC
(m)NOBLE_EN-31-24-DECHANT_D - NOBLE_EN-31-24	19,000.00	19,000.00	6,875.36	1,553.79	1.292	Level 3, ES, SF
NOBLE_EN-31-8-RIVA_WHITE_D						
(m)NOBLE_EN-31-8-RIVA_WHITE_D - NOBLE_EN-31-8	12,347.39	6,930.00	3,020.68	2,164.80	3.529	CC, ES
(m)NOBLE_EN-31-8-RIVA_WHITE_D - NOBLE_EN-31-8	12,400.00	6,930.00	3,021.14	2,164.90	3.528	SF

Noble Energy, Inc.

Anticollision Summary Report

Company:	Northern Region - DJ Basin	**Local Co-ordinate Reference:**	Well Guttersen Y05-756
Project:	Mustang	**TVD Reference:**	Well @ 4812.00ft
Reference Site:	D Section 29	**MD Reference:**	Well @ 4812.00ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Guttersen Y05-756	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Guttersen Y05-756	**Database:**	EDMP
Reference Design:	Prelim - Rev 1	**Offset TVD Reference:**	Offset Datum

Summary

Site Name Offset Well - Wellbore - Design	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Y Section 05						
Olsen Red Y05-02D - Olsen Red Y05-02D - Olsen Red Y	16,582.72	6,963.21	904.68	798.50	8.520	CC, ES
Olsen Red Y05-02D - Olsen Red Y05-02D - Olsen Red Y	16,600.00	6,963.50	904.85	798.56	8.513	SF
Olsen Y5-05JI - Olsen Y5-05JI - Olsen Y5-05JI - As Drille	17,559.35	6,946.00	1,935.48	1,833.59	18.995	CC, ES
Olsen Y5-05JI - Olsen Y5-05JI - Olsen Y5-05JI - As Drille	17,700.00	6,946.00	1,940.59	1,837.85	18.889	SF
Perkins 32-05 - Perkins 32-05 - Perkins 32-05 - As Drille	17,569.50	6,998.00	761.28	610.36	5.044	CC, ES
Perkins 32-05 - Perkins 32-05 - Perkins 32-05 - As Drille	17,600.00	6,998.00	761.89	610.76	5.041	SF
Perkins 42-05 - Perkins 42-05 - Perkins 42-05 - As Drille	17,576.18	7,015.00	2,066.34	1,915.22	13.673	CC
Perkins 42-05 - Perkins 42-05 - Perkins 42-05 - As Drille	17,600.00	7,015.00	2,066.48	1,915.17	13.657	ES
Perkins 42-05 - Perkins 42-05 - Perkins 42-05 - As Drille	17,700.00	7,015.00	2,070.05	1,918.05	13.618	SF
Perkins 43-05 - Perkins 43-05 - Perkins 43-05 - As Drille	18,883.94	7,020.00	2,057.74	1,896.17	12.736	CC
Perkins 43-05 - Perkins 43-05 - Perkins 43-05 - As Drille	18,900.00	7,020.00	2,057.81	1,896.10	12.726	ES
Perkins 43-05 - Perkins 43-05 - Perkins 43-05 - As Drille	19,000.00	7,020.00	2,061.01	1,898.62	12.691	SF
Perkins USX Y05-16 - Perkins USX Y05-16 - Perkins US	19,807.65	6,990.06	1,519.41	1,387.44	11.513	CC, ES
Perkins USX Y05-16 - Perkins USX Y05-16 - Perkins US	19,900.00	6,990.61	1,522.21	1,389.63	11.481	SF

Noble Energy, Inc.

Anticollision Summary Report

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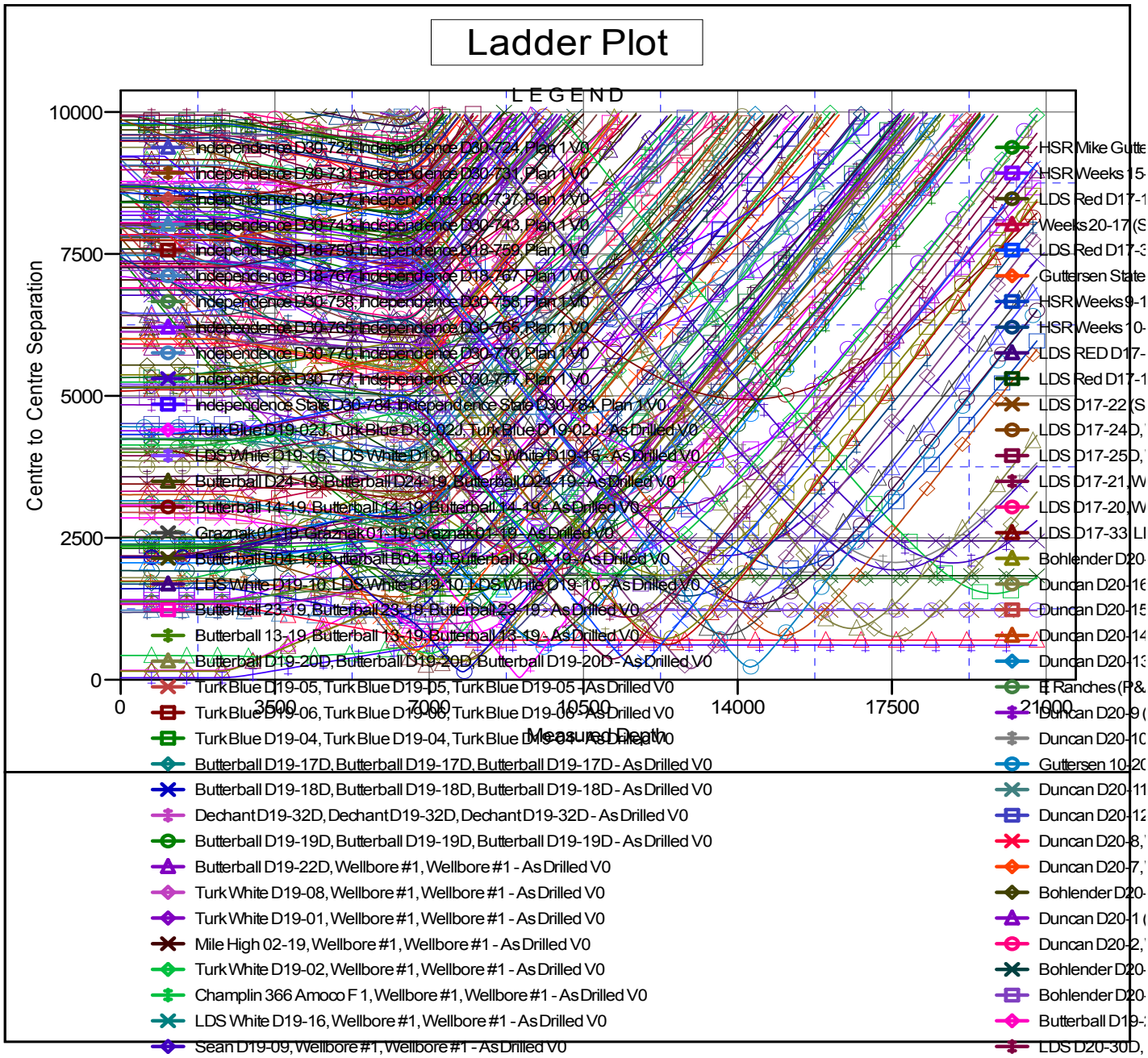
Reference Site:	D Section 29	**MD Reference:**	Well @ 4812.00ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Guttersen Y05-756	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Guttersen Y05-756	**Database:**	EDMP
Reference Design:	Prelim - Rev 1	**Offset TVD Reference:**	Offset Datum

Reference Depths are relative to Well @ 4812.00ft
Offset Depths are relative to Offset Datum
Central Meridian is -105.5000000

Coordinates are relative to: Guttersen Y05-756
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 0.60°



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

Noble Energy, Inc.

Anticollision Summary Report

Company:	Northern Region - DJ Basin	**Local Co-ordinate Reference:**	Well Guttersen Y05-756
Project:	Mustang	**TVD Reference:**	Well @ 4812.00ft
Reference Site:	D Section 29	**MD Reference:**	Well @ 4812.00ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Guttersen Y05-756	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Guttersen Y05-756	**Database:**	EDMP
Reference Design:	Prelim - Rev 1	**Offset TVD Reference:**	Offset Datum

Reference Depths are relative to Well @ 4812.00ft
Offset Depths are relative to Offset Datum
Central Meridian is -105.5000000

Coordinates are relative to: Guttersen Y05-756
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 0.60°