Project: Mustang
Site: D Section 29
Well: Guttersen Y05-756
Wellbore: Guttersen Y05-756
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

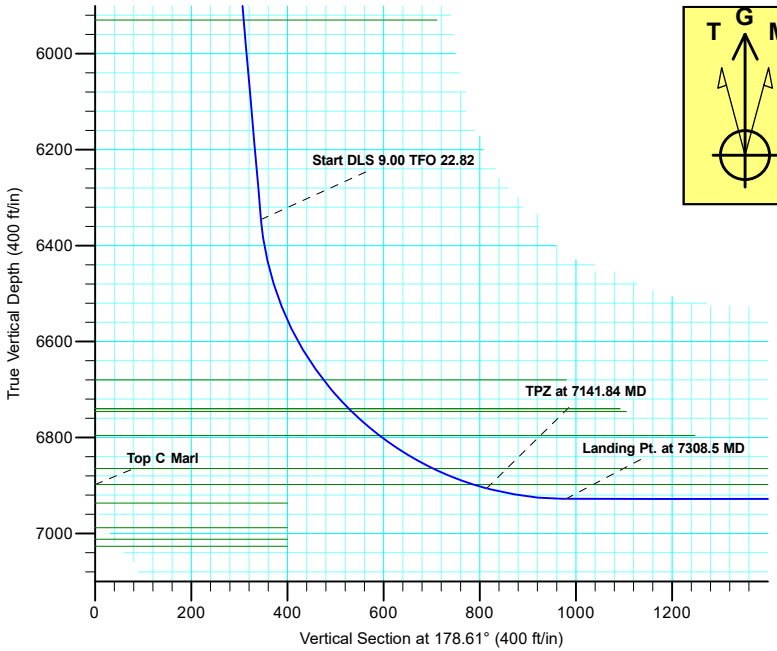
SECTION DETAILS

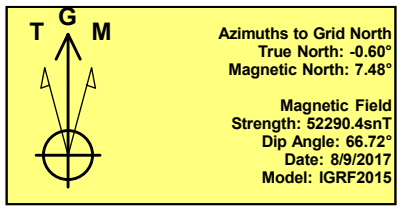
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	2200.00	0.00	0.00	2200.00	0.00	0.00	0.00	0.00	0.00
3	2463.95	5.28	157.09	2463.58	-11.19	4.73	2.00	157.09	11.30
4	6362.70	5.28	157.09	6345.79	-341.59	144.40	0.00	0.00	345.00
5	7141.84	75.00	179.27	6906.31	-810.97	165.93	9.00	22.82	814.77
6	7308.50	90.00	179.27	6928.00	-975.73	168.04	9.00	0.00	979.53
7	19860.11	90.00	179.27	6928.00	-13526.31	328.84	0.00	0.00	13530.30

WELL DETAILS: Guttersen Y05-756

Ground Level: 4782.00

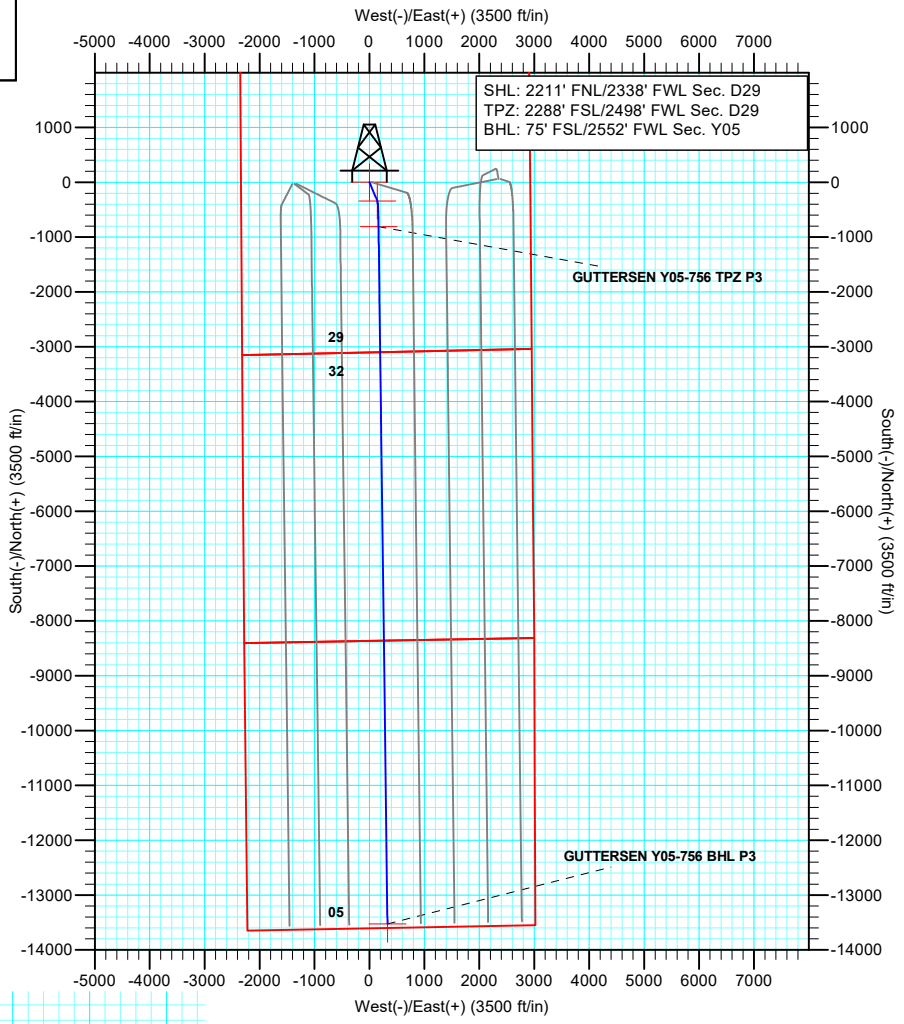
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.00	0.00	1316128.52	3258050.24	40.1974797	-104.5762055	

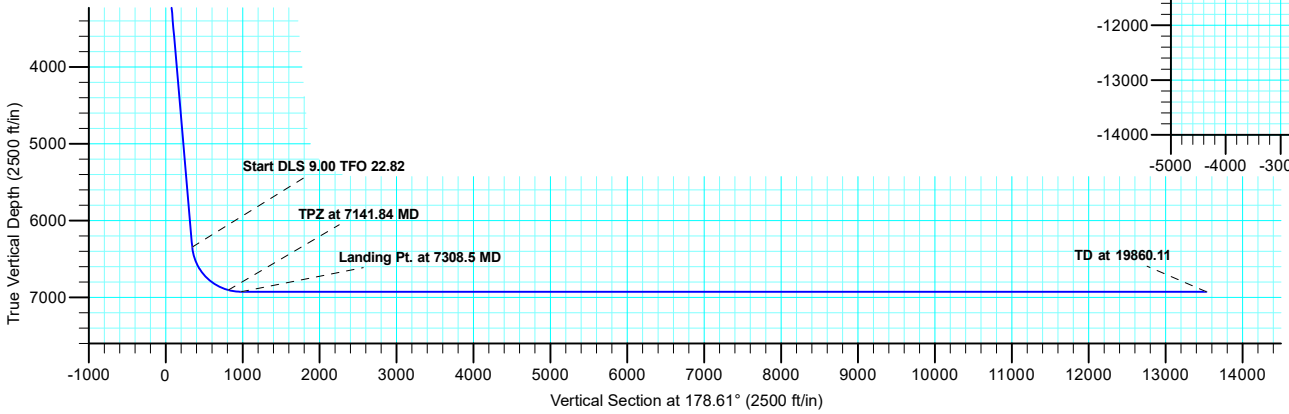




Azimuths to Grid North
True North: -0.60°
Magnetic North: 7.48°

Magnetic Field
Strength: 52290.4snT
Dip Angle: 66.72°
Date: 8/9/2017
Model: IGRF2015





Plan: Plan #3 (Guttersen Y05-756/Guttersen Y05-756)

Created By: Shelly C. Peterkin Date: 12:30, October 15 2019

Northern Region - DJ Basin

Mustang
D Section 29
Guttersen Y05-756

Guttersen Y05-756

Plan: Plan #3

Standard Planning Report

15 October, 2019

Database:	EDMP	**Local Co-ordinate Reference:**	Well Guttersen Y05-756
Company:	Northern Region - DJ Basin	**TVD Reference:**	Well @ 4812.00ft
Project:	Mustang	**MD Reference:**	Well @ 4812.00ft
Site:	D Section 29	**North Reference:**	Grid
Well:	Guttersen Y05-756	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Guttersen Y05-756		
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 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**	2,499.67 ft	**Northing:**	1,316,128.52 usft	**Latitude:**	40.1974797
	+E/-W	3,366.85 ft	**Easting:**	3,258,050.25 usft	**Longitude:**	-104.5762055
Position Uncertainty		0.00 ft	**Wellhead Elevation:**		**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 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	178.61

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	
2,200.00	0.00	0.00	2,200.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,463.95	5.28	157.09	2,463.58	-11.19	4.73	2.00	2.00	0.00	157.09	
6,362.70	5.28	157.09	6,345.79	-341.59	144.40	0.00	0.00	0.00	0.00	
7,141.84	75.00	179.27	6,906.31	-810.97	165.93	9.00	8.95	2.85	22.82	
7,308.50	90.00	179.27	6,928.00	-975.73	168.04	9.00	9.00	0.00	0.00	
19,860.11	90.00	179.27	6,928.00	-13,526.31	328.84	0.00	0.00	0.00	0.00	GUTTERSEN Y05-75

Database:	EDMP	**Local Co-ordinate Reference:**	Well Guttersen Y05-756
Company:	Northern Region - DJ Basin	**TVD Reference:**	Well @ 4812.00ft
Project:	Mustang	**MD Reference:**	Well @ 4812.00ft
Site:	D Section 29	**North Reference:**	Grid
Well:	Guttersen Y05-756	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Guttersen Y05-756		
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
570.00	0.00	0.00	570.00	0.00	0.00	0.00	0.00	0.00	0.00
Pierre									
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00
671.00	0.00	0.00	671.00	0.00	0.00	0.00	0.00	0.00	0.00
Upper Pierre Aquifer Top									
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
1,569.00	0.00	0.00	1,569.00	0.00	0.00	0.00	0.00	0.00	0.00
Upper Pierre Aquifer Base									
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
Start Build 2.00									
2,300.00	2.00	157.09	2,299.98	-1.61	0.68	1.62	2.00	2.00	0.00
2,400.00	4.00	157.09	2,399.84	-6.43	2.72	6.49	2.00	2.00	0.00
2,463.95	5.28	157.09	2,463.58	-11.19	4.73	11.30	2.00	2.00	0.00
Start 3898.75 hold at 2463.95 MD									
2,500.00	5.28	157.09	2,499.47	-14.25	6.02	14.39	0.00	0.00	0.00
2,600.00	5.28	157.09	2,599.05	-22.72	9.60	22.95	0.00	0.00	0.00
2,700.00	5.28	157.09	2,698.63	-31.20	13.19	31.51	0.00	0.00	0.00
2,800.00	5.28	157.09	2,798.20	-39.67	16.77	40.07	0.00	0.00	0.00
2,900.00	5.28	157.09	2,897.78	-48.15	20.35	48.63	0.00	0.00	0.00
3,000.00	5.28	157.09	2,997.35	-56.62	23.93	57.18	0.00	0.00	0.00
3,100.00	5.28	157.09	3,096.93	-65.09	27.52	65.74	0.00	0.00	0.00
3,200.00	5.28	157.09	3,196.50	-73.57	31.10	74.30	0.00	0.00	0.00
3,300.00	5.28	157.09	3,296.08	-82.04	34.68	82.86	0.00	0.00	0.00
3,400.00	5.28	157.09	3,395.66	-90.52	38.26	91.42	0.00	0.00	0.00
3,500.00	5.28	157.09	3,495.23	-98.99	41.85	99.98	0.00	0.00	0.00
3,600.00	5.28	157.09	3,594.81	-107.47	45.43	108.54	0.00	0.00	0.00
3,700.00	5.28	157.09	3,694.38	-115.94	49.01	117.10	0.00	0.00	0.00
3,771.92	5.28	157.09	3,766.00	-122.04	51.59	123.25	0.00	0.00	0.00
Parkman									
3,800.00	5.28	157.09	3,793.96	-124.42	52.59	125.66	0.00	0.00	0.00
3,900.00	5.28	157.09	3,893.54	-132.89	56.18	134.22	0.00	0.00	0.00
4,000.00	5.28	157.09	3,993.11	-141.37	59.76	142.78	0.00	0.00	0.00
4,100.00	5.28	157.09	4,092.69	-149.84	63.34	151.33	0.00	0.00	0.00

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Project:	Mustang	**MD Reference:**	Well @ 4812.00ft
Site:	D Section 29	**North Reference:**	Grid
Well:	Guttersen Y05-756	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Guttersen Y05-756		
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)
4,131.45	5.28	157.09	4,124.00	-152.50	64.47	154.03	0.00	0.00	0.00
Sussex									
4,200.00	5.28	157.09	4,192.26	-158.31	66.92	159.89	0.00	0.00	0.00
4,300.00	5.28	157.09	4,291.84	-166.79	70.51	168.45	0.00	0.00	0.00
4,400.00	5.28	157.09	4,391.41	-175.26	74.09	177.01	0.00	0.00	0.00
4,500.00	5.28	157.09	4,490.99	-183.74	77.67	185.57	0.00	0.00	0.00
4,600.00	5.28	157.09	4,590.57	-192.21	81.25	194.13	0.00	0.00	0.00
4,700.00	5.28	157.09	4,690.14	-200.69	84.83	202.69	0.00	0.00	0.00
4,800.00	5.28	157.09	4,789.72	-209.16	88.42	211.25	0.00	0.00	0.00
4,900.00	5.28	157.09	4,889.29	-217.64	92.00	219.81	0.00	0.00	0.00
4,910.75	5.28	157.09	4,900.00	-218.55	92.38	220.73	0.00	0.00	0.00
Shannon									
5,000.00	5.28	157.09	4,988.87	-226.11	95.58	228.37	0.00	0.00	0.00
5,100.00	5.28	157.09	5,088.45	-234.58	99.16	236.93	0.00	0.00	0.00
5,200.00	5.28	157.09	5,188.02	-243.06	102.75	245.48	0.00	0.00	0.00
5,300.00	5.28	157.09	5,287.60	-251.53	106.33	254.04	0.00	0.00	0.00
5,400.00	5.28	157.09	5,387.17	-260.01	109.91	262.60	0.00	0.00	0.00
5,500.00	5.28	157.09	5,486.75	-268.48	113.49	271.16	0.00	0.00	0.00
5,600.00	5.28	157.09	5,586.33	-276.96	117.08	279.72	0.00	0.00	0.00
5,700.00	5.28	157.09	5,685.90	-285.43	120.66	288.28	0.00	0.00	0.00
5,800.00	5.28	157.09	5,785.48	-293.91	124.24	296.84	0.00	0.00	0.00
5,900.00	5.28	157.09	5,885.05	-302.38	127.82	305.40	0.00	0.00	0.00
5,945.14	5.28	157.09	5,930.00	-306.21	129.44	309.26	0.00	0.00	0.00
Teepee Buttes									
6,000.00	5.28	157.09	5,984.63	-310.86	131.41	313.96	0.00	0.00	0.00
6,100.00	5.28	157.09	6,084.20	-319.33	134.99	322.52	0.00	0.00	0.00
6,200.00	5.28	157.09	6,183.78	-327.80	138.57	331.08	0.00	0.00	0.00
6,300.00	5.28	157.09	6,283.36	-336.28	142.15	339.63	0.00	0.00	0.00
6,362.70	5.28	157.09	6,345.79	-341.59	144.40	345.00	0.00	0.00	0.00
Start DLS 9.00 TFO 22.82									
6,400.00	8.47	165.95	6,382.82	-345.84	145.73	349.28	9.00	8.56	23.77
6,450.00	12.89	170.84	6,431.94	-354.92	147.52	358.40	9.00	8.82	9.77
6,500.00	17.34	173.25	6,480.20	-367.83	149.28	371.35	9.00	8.91	4.83
6,550.00	21.82	174.70	6,527.30	-384.49	151.02	388.05	9.00	8.95	2.90
6,600.00	26.30	175.67	6,572.94	-404.80	152.71	408.39	9.00	8.97	1.95
6,650.00	30.79	176.38	6,616.85	-428.63	154.36	432.25	9.00	8.97	1.41
6,700.00	35.28	176.92	6,658.76	-455.83	155.94	459.48	9.00	8.98	1.09
6,726.41	37.65	177.16	6,680.00	-471.50	156.75	475.17	9.00	8.98	0.91
Sharon Springs									
6,750.00	39.77	177.36	6,698.41	-486.24	157.46	489.92	9.00	8.99	0.82
6,800.00	44.26	177.71	6,735.55	-519.66	158.89	523.37	9.00	8.99	0.72
6,806.25	44.82	177.76	6,740.00	-524.04	159.06	527.75	9.00	8.99	0.65
Top A Chalk - Top A Marl									
6,814.76	45.59	177.81	6,746.00	-530.08	159.30	533.80	9.00	8.99	0.64
Top B Chalk									
6,850.00	48.76	178.02	6,769.95	-555.90	160.24	559.63	9.00	8.99	0.60
6,891.05	52.45	178.24	6,796.00	-587.60	161.27	591.35	9.00	8.99	0.54
Top B Marl									
6,900.00	53.25	178.29	6,801.40	-594.73	161.49	598.48	9.00	8.99	0.51
6,950.00	57.75	178.52	6,829.72	-635.91	162.63	639.68	9.00	8.99	0.47
7,000.00	62.24	178.74	6,854.71	-679.19	163.66	682.97	9.00	8.99	0.43
7,022.87	64.30	178.83	6,865.00	-699.61	164.10	703.39	9.00	8.99	0.40
Top C Chalk									

Database:	EDMP	**Local Co-ordinate Reference:**	Well Guttersen Y05-756
Company:	Northern Region - DJ Basin	**TVD Reference:**	Well @ 4812.00ft
Project:	Mustang	**MD Reference:**	Well @ 4812.00ft
Site:	D Section 29	**North Reference:**	Grid
Well:	Guttersen Y05-756	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Guttersen Y05-756		
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)
7,050.00	66.74	178.93	6,876.24	-724.29	164.58	728.08	9.00	8.99	0.39
7,100.00	71.24	179.12	6,894.16	-770.95	165.37	774.74	9.00	8.99	0.37
7,112.28	72.34	179.16	6,898.00	-782.61	165.54	786.41	9.00	8.99	0.36
Top C Marl									
7,141.84	75.00	179.27	6,906.31	-810.97	165.93	814.77	9.00	8.99	0.35
TPZ at 7141.84 MD									
7,150.00	75.73	179.27	6,908.37	-818.87	166.03	822.67	9.00	9.00	0.00
7,200.00	80.23	179.27	6,918.78	-867.76	166.66	871.55	9.00	9.00	0.00
7,250.00	84.73	179.27	6,925.32	-917.31	167.29	921.11	9.00	9.00	0.00
7,300.00	89.23	179.27	6,927.95	-967.23	167.93	971.02	9.00	9.00	0.00
7,308.50	90.00	179.27	6,928.00	-975.73	168.04	979.53	9.00	9.00	0.00
Landing Pt. at 7308.5 MD									
7,400.00	90.00	179.27	6,928.00	-1,067.22	169.22	1,071.02	0.00	0.00	0.00
7,500.00	90.00	179.27	6,928.00	-1,167.21	170.50	1,171.01	0.00	0.00	0.00
7,600.00	90.00	179.27	6,928.00	-1,267.20	171.78	1,271.00	0.00	0.00	0.00
7,700.00	90.00	179.27	6,928.00	-1,367.19	173.06	1,371.00	0.00	0.00	0.00
7,800.00	90.00	179.27	6,928.00	-1,467.19	174.34	1,470.99	0.00	0.00	0.00
7,900.00	90.00	179.27	6,928.00	-1,567.18	175.62	1,570.98	0.00	0.00	0.00
8,000.00	90.00	179.27	6,928.00	-1,667.17	176.90	1,670.98	0.00	0.00	0.00
8,100.00	90.00	179.27	6,928.00	-1,767.16	178.18	1,770.97	0.00	0.00	0.00
8,200.00	90.00	179.27	6,928.00	-1,867.15	179.46	1,870.96	0.00	0.00	0.00
8,300.00	90.00	179.27	6,928.00	-1,967.15	180.75	1,970.96	0.00	0.00	0.00
8,400.00	90.00	179.27	6,928.00	-2,067.14	182.03	2,070.95	0.00	0.00	0.00
8,500.00	90.00	179.27	6,928.00	-2,167.13	183.31	2,170.94	0.00	0.00	0.00
8,600.00	90.00	179.27	6,928.00	-2,267.12	184.59	2,270.94	0.00	0.00	0.00
8,700.00	90.00	179.27	6,928.00	-2,367.11	185.87	2,370.93	0.00	0.00	0.00
8,800.00	90.00	179.27	6,928.00	-2,467.10	187.15	2,470.92	0.00	0.00	0.00
8,900.00	90.00	179.27	6,928.00	-2,567.10	188.43	2,570.92	0.00	0.00	0.00
9,000.00	90.00	179.27	6,928.00	-2,667.09	189.71	2,670.91	0.00	0.00	0.00
9,100.00	90.00	179.27	6,928.00	-2,767.08	190.99	2,770.90	0.00	0.00	0.00
9,200.00	90.00	179.27	6,928.00	-2,867.07	192.27	2,870.90	0.00	0.00	0.00
9,300.00	90.00	179.27	6,928.00	-2,967.06	193.56	2,970.89	0.00	0.00	0.00
9,400.00	90.00	179.27	6,928.00	-3,067.05	194.84	3,070.88	0.00	0.00	0.00
9,500.00	90.00	179.27	6,928.00	-3,167.05	196.12	3,170.88	0.00	0.00	0.00
9,600.00	90.00	179.27	6,928.00	-3,267.04	197.40	3,270.87	0.00	0.00	0.00
9,700.00	90.00	179.27	6,928.00	-3,367.03	198.68	3,370.86	0.00	0.00	0.00
9,800.00	90.00	179.27	6,928.00	-3,467.02	199.96	3,470.86	0.00	0.00	0.00
9,900.00	90.00	179.27	6,928.00	-3,567.01	201.24	3,570.85	0.00	0.00	0.00
10,000.00	90.00	179.27	6,928.00	-3,667.01	202.52	3,670.84	0.00	0.00	0.00
10,100.00	90.00	179.27	6,928.00	-3,767.00	203.80	3,770.84	0.00	0.00	0.00
10,200.00	90.00	179.27	6,928.00	-3,866.99	205.09	3,870.83	0.00	0.00	0.00
10,300.00	90.00	179.27	6,928.00	-3,966.98	206.37	3,970.82	0.00	0.00	0.00
10,400.00	90.00	179.27	6,928.00	-4,066.97	207.65	4,070.82	0.00	0.00	0.00
10,500.00	90.00	179.27	6,928.00	-4,166.96	208.93	4,170.81	0.00	0.00	0.00
10,600.00	90.00	179.27	6,928.00	-4,266.96	210.21	4,270.80	0.00	0.00	0.00
10,700.00	90.00	179.27	6,928.00	-4,366.95	211.49	4,370.80	0.00	0.00	0.00
10,800.00	90.00	179.27	6,928.00	-4,466.94	212.77	4,470.79	0.00	0.00	0.00
10,900.00	90.00	179.27	6,928.00	-4,566.93	214.05	4,570.79	0.00	0.00	0.00
11,000.00	90.00	179.27	6,928.00	-4,666.92	215.33	4,670.78	0.00	0.00	0.00
11,100.00	90.00	179.27	6,928.00	-4,766.92	216.62	4,770.77	0.00	0.00	0.00
11,200.00	90.00	179.27	6,928.00	-4,866.91	217.90	4,870.77	0.00	0.00	0.00
11,300.00	90.00	179.27	6,928.00	-4,966.90	219.18	4,970.76	0.00	0.00	0.00
11,400.00	90.00	179.27	6,928.00	-5,066.89	220.46	5,070.75	0.00	0.00	0.00

Database:	EDMP	**Local Co-ordinate Reference:**	Well Guttersen Y05-756
Company:	Northern Region - DJ Basin	**TVD Reference:**	Well @ 4812.00ft
Project:	Mustang	**MD Reference:**	Well @ 4812.00ft
Site:	D Section 29	**North Reference:**	Grid
Well:	Guttersen Y05-756	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Guttersen Y05-756		
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)
11,500.00	90.00	179.27	6,928.00	-5,166.88	221.74	5,170.75	0.00	0.00	0.00
11,600.00	90.00	179.27	6,928.00	-5,266.87	223.02	5,270.74	0.00	0.00	0.00
11,700.00	90.00	179.27	6,928.00	-5,366.87	224.30	5,370.73	0.00	0.00	0.00
11,800.00	90.00	179.27	6,928.00	-5,466.86	225.58	5,470.73	0.00	0.00	0.00
11,900.00	90.00	179.27	6,928.00	-5,566.85	226.86	5,570.72	0.00	0.00	0.00
12,000.00	90.00	179.27	6,928.00	-5,666.84	228.15	5,670.71	0.00	0.00	0.00
12,100.00	90.00	179.27	6,928.00	-5,766.83	229.43	5,770.71	0.00	0.00	0.00
12,200.00	90.00	179.27	6,928.00	-5,866.83	230.71	5,870.70	0.00	0.00	0.00
12,300.00	90.00	179.27	6,928.00	-5,966.82	231.99	5,970.69	0.00	0.00	0.00
12,400.00	90.00	179.27	6,928.00	-6,066.81	233.27	6,070.69	0.00	0.00	0.00
12,500.00	90.00	179.27	6,928.00	-6,166.80	234.55	6,170.68	0.00	0.00	0.00
12,600.00	90.00	179.27	6,928.00	-6,266.79	235.83	6,270.67	0.00	0.00	0.00
12,700.00	90.00	179.27	6,928.00	-6,366.78	237.11	6,370.67	0.00	0.00	0.00
12,800.00	90.00	179.27	6,928.00	-6,466.78	238.39	6,470.66	0.00	0.00	0.00
12,900.00	90.00	179.27	6,928.00	-6,566.77	239.67	6,570.65	0.00	0.00	0.00
13,000.00	90.00	179.27	6,928.00	-6,666.76	240.96	6,670.65	0.00	0.00	0.00
13,100.00	90.00	179.27	6,928.00	-6,766.75	242.24	6,770.64	0.00	0.00	0.00
13,200.00	90.00	179.27	6,928.00	-6,866.74	243.52	6,870.63	0.00	0.00	0.00
13,300.00	90.00	179.27	6,928.00	-6,966.73	244.80	6,970.63	0.00	0.00	0.00
13,400.00	90.00	179.27	6,928.00	-7,066.73	246.08	7,070.62	0.00	0.00	0.00
13,500.00	90.00	179.27	6,928.00	-7,166.72	247.36	7,170.61	0.00	0.00	0.00
13,600.00	90.00	179.27	6,928.00	-7,266.71	248.64	7,270.61	0.00	0.00	0.00
13,700.00	90.00	179.27	6,928.00	-7,366.70	249.92	7,370.60	0.00	0.00	0.00
13,800.00	90.00	179.27	6,928.00	-7,466.69	251.20	7,470.59	0.00	0.00	0.00
13,900.00	90.00	179.27	6,928.00	-7,566.69	252.49	7,570.59	0.00	0.00	0.00
14,000.00	90.00	179.27	6,928.00	-7,666.68	253.77	7,670.58	0.00	0.00	0.00
14,100.00	90.00	179.27	6,928.00	-7,766.67	255.05	7,770.57	0.00	0.00	0.00
14,200.00	90.00	179.27	6,928.00	-7,866.66	256.33	7,870.57	0.00	0.00	0.00
14,300.00	90.00	179.27	6,928.00	-7,966.65	257.61	7,970.56	0.00	0.00	0.00
14,400.00	90.00	179.27	6,928.00	-8,066.64	258.89	8,070.55	0.00	0.00	0.00
14,500.00	90.00	179.27	6,928.00	-8,166.64	260.17	8,170.55	0.00	0.00	0.00
14,600.00	90.00	179.27	6,928.00	-8,266.63	261.45	8,270.54	0.00	0.00	0.00
14,700.00	90.00	179.27	6,928.00	-8,366.62	262.73	8,370.53	0.00	0.00	0.00
14,800.00	90.00	179.27	6,928.00	-8,466.61	264.02	8,470.53	0.00	0.00	0.00
14,900.00	90.00	179.27	6,928.00	-8,566.60	265.30	8,570.52	0.00	0.00	0.00
15,000.00	90.00	179.27	6,928.00	-8,666.60	266.58	8,670.51	0.00	0.00	0.00
15,100.00	90.00	179.27	6,928.00	-8,766.59	267.86	8,770.51	0.00	0.00	0.00
15,200.00	90.00	179.27	6,928.00	-8,866.58	269.14	8,870.50	0.00	0.00	0.00
15,300.00	90.00	179.27	6,928.00	-8,966.57	270.42	8,970.49	0.00	0.00	0.00
15,400.00	90.00	179.27	6,928.00	-9,066.56	271.70	9,070.49	0.00	0.00	0.00
15,500.00	90.00	179.27	6,928.00	-9,166.55	272.98	9,170.48	0.00	0.00	0.00
15,600.00	90.00	179.27	6,928.00	-9,266.55	274.26	9,270.47	0.00	0.00	0.00
15,700.00	90.00	179.27	6,928.00	-9,366.54	275.55	9,370.47	0.00	0.00	0.00
15,800.00	90.00	179.27	6,928.00	-9,466.53	276.83	9,470.46	0.00	0.00	0.00
15,900.00	90.00	179.27	6,928.00	-9,566.52	278.11	9,570.45	0.00	0.00	0.00
16,000.00	90.00	179.27	6,928.00	-9,666.51	279.39	9,670.45	0.00	0.00	0.00
16,100.00	90.00	179.27	6,928.00	-9,766.51	280.67	9,770.44	0.00	0.00	0.00
16,200.00	90.00	179.27	6,928.00	-9,866.50	281.95	9,870.44	0.00	0.00	0.00
16,300.00	90.00	179.27	6,928.00	-9,966.49	283.23	9,970.43	0.00	0.00	0.00
16,400.00	90.00	179.27	6,928.00	-10,066.48	284.51	10,070.42	0.00	0.00	0.00
16,500.00	90.00	179.27	6,928.00	-10,166.47	285.79	10,170.42	0.00	0.00	0.00
16,600.00	90.00	179.27	6,928.00	-10,266.46	287.07	10,270.41	0.00	0.00	0.00
16,700.00	90.00	179.27	6,928.00	-10,366.46	288.36	10,370.40	0.00	0.00	0.00
16,800.00	90.00	179.27	6,928.00	-10,466.45	289.64	10,470.40	0.00	0.00	0.00

Database:	EDMP	**Local Co-ordinate Reference:**	Well Guttersen Y05-756
Company:	Northern Region - DJ Basin	**TVD Reference:**	Well @ 4812.00ft
Project:	Mustang	**MD Reference:**	Well @ 4812.00ft
Site:	D Section 29	**North Reference:**	Grid
Well:	Guttersen Y05-756	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Guttersen Y05-756		
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)
16,900.00	90.00	179.27	6,928.00	-10,566.44	290.92	10,570.39	0.00	0.00	0.00
17,000.00	90.00	179.27	6,928.00	-10,666.43	292.20	10,670.38	0.00	0.00	0.00
17,100.00	90.00	179.27	6,928.00	-10,766.42	293.48	10,770.38	0.00	0.00	0.00
17,200.00	90.00	179.27	6,928.00	-10,866.41	294.76	10,870.37	0.00	0.00	0.00
17,300.00	90.00	179.27	6,928.00	-10,966.41	296.04	10,970.36	0.00	0.00	0.00
17,400.00	90.00	179.27	6,928.00	-11,066.40	297.32	11,070.36	0.00	0.00	0.00
17,500.00	90.00	179.27	6,928.00	-11,166.39	298.60	11,170.35	0.00	0.00	0.00
17,600.00	90.00	179.27	6,928.00	-11,266.38	299.89	11,270.34	0.00	0.00	0.00
17,700.00	90.00	179.27	6,928.00	-11,366.37	301.17	11,370.34	0.00	0.00	0.00
17,800.00	90.00	179.27	6,928.00	-11,466.37	302.45	11,470.33	0.00	0.00	0.00
17,900.00	90.00	179.27	6,928.00	-11,566.36	303.73	11,570.32	0.00	0.00	0.00
18,000.00	90.00	179.27	6,928.00	-11,666.35	305.01	11,670.32	0.00	0.00	0.00
18,100.00	90.00	179.27	6,928.00	-11,766.34	306.29	11,770.31	0.00	0.00	0.00
18,200.00	90.00	179.27	6,928.00	-11,866.33	307.57	11,870.30	0.00	0.00	0.00
18,300.00	90.00	179.27	6,928.00	-11,966.32	308.85	11,970.30	0.00	0.00	0.00
18,400.00	90.00	179.27	6,928.00	-12,066.32	310.13	12,070.29	0.00	0.00	0.00
18,500.00	90.00	179.27	6,928.00	-12,166.31	311.42	12,170.28	0.00	0.00	0.00
18,600.00	90.00	179.27	6,928.00	-12,266.30	312.70	12,270.28	0.00	0.00	0.00
18,700.00	90.00	179.27	6,928.00	-12,366.29	313.98	12,370.27	0.00	0.00	0.00
18,800.00	90.00	179.27	6,928.00	-12,466.28	315.26	12,470.26	0.00	0.00	0.00
18,900.00	90.00	179.27	6,928.00	-12,566.28	316.54	12,570.26	0.00	0.00	0.00
19,000.00	90.00	179.27	6,928.00	-12,666.27	317.82	12,670.25	0.00	0.00	0.00
19,100.00	90.00	179.27	6,928.00	-12,766.26	319.10	12,770.24	0.00	0.00	0.00
19,200.00	90.00	179.27	6,928.00	-12,866.25	320.38	12,870.24	0.00	0.00	0.00
19,300.00	90.00	179.27	6,928.00	-12,966.24	321.66	12,970.23	0.00	0.00	0.00
19,400.00	90.00	179.27	6,928.00	-13,066.23	322.95	13,070.22	0.00	0.00	0.00
19,500.00	90.00	179.27	6,928.00	-13,166.23	324.23	13,170.22	0.00	0.00	0.00
19,600.00	90.00	179.27	6,928.00	-13,266.22	325.51	13,270.21	0.00	0.00	0.00
19,700.00	90.00	179.27	6,928.00	-13,366.21	326.79	13,370.20	0.00	0.00	0.00
19,800.00	90.00	179.27	6,928.00	-13,466.20	328.07	13,470.20	0.00	0.00	0.00
19,860.11	90.00	179.27	6,928.00	-13,526.31	328.84	13,530.30	0.00	0.00	0.00
TD at 19860.11									

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 S - plan hits target center - Point	0.00	0.00	0.00	0.00	0.00	1,316,128.52	3,258,050.25	40.1974797	-104.5762055
GUTTERSEN Y05-756 I - plan hits target center - Point	0.00	0.00	6,345.79	-341.59	144.40	1,315,786.93	3,258,194.64	40.1965379	-104.5757014
GUTTERSEN Y05-756 T - plan hits target center - Point	0.00	0.00	6,906.31	-810.97	165.93	1,315,317.54	3,258,216.18	40.1952489	-104.5756418
GUTTERSEN Y05-756 E - plan hits target center - Point	0.00	0.00	6,928.00	-13,526.31	328.84	1,302,602.24	3,258,379.08	40.1603410	-104.5755332

Database:	EDMP	**Local Co-ordinate Reference:**	Well Guttersen Y05-756
Company:	Northern Region - DJ Basin	**TVD Reference:**	Well @ 4812.00ft
Project:	Mustang	**MD Reference:**	Well @ 4812.00ft
Site:	D Section 29	**North Reference:**	Grid
Well:	Guttersen Y05-756	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Guttersen Y05-756		
Design:	Plan #3		

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			
3,771.92	3,766.00	Parkman			
4,131.45	4,124.00	Sussex			
4,910.75	4,900.00	Shannon			
5,945.14	5,930.00	Teepee Buttes			
6,726.41	6,680.00	Sharon Springs			
6,806.25	6,740.00	Top A Chalk			
6,806.25	6,740.00	Top A Marl			
6,814.76	6,746.00	Top B Chalk			
6,891.05	6,796.00	Top B Marl			
7,022.87	6,865.00	Top C Chalk			
7,112.28	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
2,200.00	2,200.00	0.00	0.00	Start Build 2.00
2,463.95	2,463.58	-11.19	4.73	Start 3898.75 hold at 2463.95 MD
6,362.70	6,345.79	-341.59	144.40	Start DLS 9.00 TFO 22.82
7,141.84	6,906.31	-810.97	165.93	TPZ at 7141.84 MD
7,308.50	6,928.00	-975.73	168.04	Landing Pt. at 7308.5 MD
19,860.11	6,928.00	-13,526.31	328.84	TD at 19860.11

Northern Region - DJ Basin

Mustang
D Section 29
Guttersen Y05-756

Guttersen Y05-756
Plan #3

Anticollision Summary Report

15 October, 2019

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:	Plan #3	**Offset TVD Reference:**	Reference 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** 10/15/2019

From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.00	19,860.11	Plan #3 (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						
Diggen State D16-23 (SI) - Wellbore #1 - Gyro Surveys						Out of range
Diggin State D 16-07 (SI) - Wellbore #1 - No Surveys						Out of range
Diggin State D 16-19J (PR) - Wellbore #1 - As-Drilled						Out of range
Diggin State D16-13 (PR) - Wellbore #1 - Gyro Surveys	100.00	37.59	8,980.79	8,980.60	10,000.000	CC
Diggin State D16-13 (PR) - Wellbore #1 - Gyro Surveys	2,400.00	2,700.30	8,993.27	8,975.69	511.628	ES
Diggin State D16-13 (PR) - Wellbore #1 - Gyro Surveys	6,900.00	6,815.33	9,482.10	9,434.50	199.195	SF
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 Survey						Out of range
Guttersen ST D 16-33 (SI) - Wellbore #1 - Gyros	1,605.02	1,545.04	9,481.92	9,471.17	882.254	CC
Guttersen ST D 16-33 (SI) - Wellbore #1 - Gyros	1,800.00	1,676.24	9,482.64	9,470.73	796.616	ES
Guttersen ST D 16-33 (SI) - Wellbore #1 - Gyros	6,800.00	6,673.26	9,996.91	9,950.03	213.259	SF
Guttersen State D 15-31 (PR) - Wellbore #1 - Gyro Surve						Out of range
Guttersen State D 15-33 (SI) - Wellbore #1 - Gyro Survey						Out of range
Guttersen State D 16-15X (PR) - Wellbore #1 - Gyro Surv						Out of range
Guttersen State D 16-18 (SI) - Wellbore #1 - As-Drilled						Out of range
Guttersen State D 16-20 (SI) - Wellbore #1 - Gyro Survey						Out of range
Guttersen State D 16-24 (SI) - Wellbore #1 - Gyro Survey						Out of range
Guttersen State D 16-27 (PR) - Wellbore #1 - As-Drilled						Out of range
Guttersen State D 16-31 (PR) - Wellbore #1 - As-Drilled						Out of range
Guttersen State D 16-32D (SI) - Guttersen State D 16-32	553.09	493.10	9,542.07	9,538.77	2,892.011	CC
Guttersen State D 16-32D (SI) - Guttersen State D 16-32	1,000.00	904.99	9,542.85	9,536.52	1,505.974	ES
Guttersen State D 16-32D (SI) - Guttersen State D 16-32	3,900.00	1,700.00	9,986.16	9,967.29	529.145	SF
Guttersen State D 16-32D (SI) - Guttersen State D 16-32	553.09	506.10	9,542.04	9,538.74	2,892.005	CC
Guttersen State D 16-32D (SI) - Guttersen State D 16-32	1,000.00	917.99	9,542.83	9,536.49	1,505.970	ES
Guttersen State D 16-32D (SI) - Guttersen State D 16-32	3,900.00	1,713.00	9,986.14	9,967.26	529.139	SF
Guttersen State D16-63-1HN - Original Drilling - As-Drille	6,238.04	11,243.00	9,484.33	9,344.84	67.996	CC
Guttersen State D16-63-1HN - Original Drilling - As-Drille	6,300.00	11,243.00	9,484.53	9,344.76	67.859	ES
Guttersen State D16-63-1HN - Original Drilling - As-Drille	6,550.00	11,243.00	9,515.05	9,374.14	67.527	SF
Guttersen State D16-65-1HN - Original Drilling - As-Drille						Out of range
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 - As-Drilled						Out of range
Spike ST GWS D 16-04 (SI) - Wellbore #1 - As-Drilled						Out of range
Spike ST GWS D 16-05 (PR) - Wellbore #1 - Gyro Survey						Out of range
Spike ST GWS D 16-06 (SI) - Wellbore #1 - As-Drilled						Out of range
Spike ST GWS D 16-08 (PR) - Wellbore #1 - Gyro Survey						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:	Plan #3	**Offset TVD Reference:**	Reference 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 16						
Spike ST GWS D 16-12 (PA) - Wellbore #1 - Gyro Survey						Out of range
Spike ST GWS D 16-14 (SI) - Wellbore #1 - No Surveys	2,200.00	2,175.00	9,422.22	9,371.07	184.195	CC
Spike ST GWS D 16-14 (SI) - Wellbore #1 - No Surveys	2,300.00	2,274.98	9,423.24	9,369.75	176.155	ES
Spike ST GWS D 16-14 (SI) - Wellbore #1 - No Surveys	7,000.00	6,829.71	9,929.16	9,768.32	61.735	SF
Spike ST GWS D 16-16 (SI) - Wellbore #1 - As-Drilled						Out of range
Spike State D 16-10 (SI) - Wellbore #1 - Gyro Surveys						Out of range
Spike State D 16-11 (SI) - Wellbore #1 - Gyro Surveys						Out of range
Spike State D 16-9 (SI) - Wellbore #1 - Gyro Surveys						Out of range
Spike State D16-15 (P&A) - Wellbore #1 - Wellbore #1						Out of range
Spike State D16-99HZ - Original Drilling - As-Drilled						Out of range
Spike State GWS D 16-7J (PR) - Wellbore #1 - As-Drilled						Out of range
Spike State GWS D16-13J (PR) - Wellbore #1 - Gyro Sur	2,200.69	2,154.42	9,769.25	9,754.24	650.872	CC, ES
Spike State GWS D16-13J (PR) - Wellbore #1 - Gyro Sur	5,800.00	5,673.89	9,994.89	9,955.07	251.016	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:	Plan #3	**Offset TVD Reference:**	Reference 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	100.00	40.43	8,054.19	8,053.99	10,000.000	CC
Butterball D19-27D - Wellbore #1 - Gyro Surveys	800.00	700.00	8,055.02	8,050.11	1,641.942	ES
Butterball D19-27D - Wellbore #1 - Gyro Surveys	6,700.00	6,971.86	8,927.00	8,846.76	111.250	SF
Guttersen State D16-33 (SI) - Wellbore #1 - No Surveys	2,200.00	2,140.00	9,485.54	9,459.22	360.276	CC, ES
Guttersen State D16-33 (SI) - Wellbore #1 - No Surveys	6,850.00	6,709.95	9,971.54	9,889.18	121.065	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 - As-Dril	2,256.87	2,333.12	8,399.67	8,383.85	530.870	CC
HSR Mike Gutteresen 16-17X (SI) - Wellbore #1 - As-Dril	2,300.00	2,402.69	8,399.86	8,383.65	518.105	ES
HSR Mike Gutteresen 16-17X (SI) - Wellbore #1 - As-Dril	6,900.00	6,775.25	8,919.90	8,872.48	188.091	SF
HSR Mike Guttersen 16-17 (DA) - Wellbore #1 - As-Drille	1,700.00	1,655.13	8,398.40	8,344.32	155.302	CC
HSR Mike Guttersen 16-17 (DA) - Wellbore #1 - As-Drille	1,800.00	1,666.00	8,398.89	8,343.85	152.600	ES
HSR Mike Guttersen 16-17 (DA) - Wellbore #1 - As-Drille	3,600.00	1,666.00	8,697.30	8,637.54	145.541	SF
HSR Weeks 10-17 - Wellbore #1 - Gyro Surveys	100.00	32.92	9,541.25	9,541.06	10,000.000	CC
HSR Weeks 10-17 - Wellbore #1 - Gyro Surveys	2,000.00	1,870.87	9,548.14	9,534.84	717.884	ES
HSR Weeks 10-17 - Wellbore #1 - Gyro Surveys	6,700.00	6,731.10	9,977.40	9,930.71	213.681	SF
HSR Weeks 15-17 (SI) - Wellbore #1 - As-Drilled	2,267.68	2,380.80	8,243.38	8,227.36	514.411	CC
HSR Weeks 15-17 (SI) - Wellbore #1 - As-Drilled	2,300.00	2,418.94	8,243.53	8,227.26	506.739	ES
HSR Weeks 15-17 (SI) - Wellbore #1 - As-Drilled	6,850.00	6,666.92	8,797.25	8,750.37	187.651	SF
HSR Weeks 9-17 - Wellbore #1 - Gyro Surveys	1,969.30	1,905.31	9,797.66	9,784.35	736.268	CC
HSR Weeks 9-17 - Wellbore #1 - Gyro Surveys	2,200.00	2,100.00	9,798.04	9,783.23	661.472	ES
HSR Weeks 9-17 - Wellbore #1 - Gyro Surveys	5,300.00	5,268.73	9,998.40	9,961.79	273.113	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	2,314.43	2,587.57	8,152.00	8,135.08	481.708	CC, ES
LDS D17-13 - Wellbore #1 - Gyro Surveys	6,900.00	6,694.25	8,706.71	8,659.56	184.646	SF
LDS D17-18 (SI) - Wellbore #1 - No Surveys						Out of range
LDS D17-20 - Wellbore #1 - No Surveys						Out of range
LDS D17-21 - Wellbore #1 - No Surveys	2,200.00	2,140.00	9,946.56	9,920.23	377.786	CC, ES
LDS D17-21 - Wellbore #1 - No Surveys	2,900.00	2,837.78	9,994.59	9,959.84	287.635	SF
LDS D17-22 (SI) - Wellbore #1 - No Surveys						Out of range
LDS D17-24D - LDS D17-24D Gyros - As-Drilled	4,067.21	4,900.00	9,120.69	9,089.24	289.958	CC
LDS D17-24D - LDS D17-24D Gyros - As-Drilled	4,100.00	4,900.00	9,120.75	9,089.19	288.944	ES
LDS D17-24D - LDS D17-24D Gyros - As-Drilled	6,900.00	6,995.44	9,517.26	9,469.12	197.678	SF
LDS D17-24D - LDS D17-24D OH - As-Drilled	4,067.20	4,913.00	9,120.74	9,089.28	289.959	CC
LDS D17-24D - LDS D17-24D OH - As-Drilled	4,100.00	4,913.00	9,120.79	9,089.23	288.945	ES
LDS D17-24D - LDS D17-24D OH - As-Drilled	6,900.00	7,008.44	9,517.31	9,469.16	197.679	SF
LDS D17-25D - LDS D17-25D Gyros - As-Drilled	4,163.63	5,154.53	9,428.60	9,360.03	137.514	CC
LDS D17-25D - LDS D17-25D Gyros - As-Drilled	4,300.00	5,226.41	9,429.07	9,359.58	135.692	ES
LDS D17-25D - LDS D17-25D Gyros - As-Drilled	6,650.00	6,773.13	9,640.78	9,559.85	119.115	SF
LDS D17-25D - LDS D17-25D OH - LDS D17-25D - As D	4,163.64	5,167.53	9,428.59	9,360.02	137.514	CC
LDS D17-25D - LDS D17-25D OH - LDS D17-25D - As D	4,300.00	5,239.41	9,429.06	9,359.57	135.692	ES
LDS D17-25D - LDS D17-25D OH - LDS D17-25D - As D	6,650.00	6,786.13	9,640.77	9,559.83	119.115	SF
LDS D17-31D - LDS D17-31D - As-Drilled						Out of range
LDS D17-32D - LDS D17-32D - LDS D17-32D - As Drilled						Out of range
LDS D17-33 - LDS D17-33 - As-Drilled	714.70	662.75	9,160.38	9,155.90	2,044.445	CC
LDS D17-33 - LDS D17-33 - As-Drilled	2,200.00	2,136.66	9,164.40	9,149.28	605.957	ES
LDS D17-33 - LDS D17-33 - As-Drilled	6,950.00	6,893.52	9,831.29	9,782.98	203.540	SF
LDS D17-7 - Wellbore #1 - As-Drilled						Out of range
LDS D20-29D - Wellbore #1 - LDS D20-29D - As Drilled	3,086.31	3,882.59	7,576.52	7,546.34	251.081	CC
LDS D20-29D - Wellbore #1 - LDS D20-29D - As Drilled	3,200.00	3,936.00	7,576.90	7,546.06	245.689	ES
LDS D20-29D - Wellbore #1 - LDS D20-29D - As Drilled	6,850.00	6,883.67	7,983.48	7,931.09	152.388	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:	Plan #3	**Offset TVD Reference:**	Reference 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 D20-30D - Wellbore #1 - LDS D20-30D - As Drilled	3,924.95	4,655.00	7,982.53	7,952.19	263.146	CC, ES
LDS D20-30D - Wellbore #1 - LDS D20-30D - As Drilled	6,950.00	6,909.00	8,423.24	8,374.61	173.201	SF
LDS RED D17-11 (SI) - Wellbore #1 - As Drilled	494.38	430.53	9,490.38	9,487.47	3,261.130	CC
LDS RED D17-11 (SI) - Wellbore #1 - As Drilled	600.00	464.82	9,490.83	9,487.42	2,781.071	ES
LDS RED D17-11 (SI) - Wellbore #1 - As Drilled	6,700.00	6,449.20	9,977.32	9,931.62	218.322	SF
LDS Red D17-12 - Wellbore #1 - No Surveys	2,200.00	2,144.00	9,857.92	9,831.56	373.924	CC, ES
LDS Red D17-12 - Wellbore #1 - No Surveys	3,900.00	3,837.54	9,999.26	9,952.35	213.165	SF
LDS Red D17-14 (DA) - LDS Red D17-14 - No Surveys	2,200.00	2,156.00	8,135.69	8,044.02	88.747	CC
LDS Red D17-14 (DA) - LDS Red D17-14 - No Surveys	2,300.00	2,255.98	8,137.32	8,041.31	84.752	ES
LDS Red D17-14 (DA) - LDS Red D17-14 - No Surveys	6,800.00	6,708.45	8,661.57	8,371.83	29.894	SF
LDS Red D17-14X (SI) - Wellbore #1 - As-Drilled	777.96	722.96	8,320.65	8,315.74	1,694.303	CC
LDS Red D17-14X (SI) - Wellbore #1 - As-Drilled	1,900.00	1,787.40	8,324.51	8,311.87	658.375	ES
LDS Red D17-14X (SI) - Wellbore #1 - As-Drilled	6,850.00	6,635.80	8,890.45	8,843.68	190.096	SF
LDS Red D17-3J (PR) - Wellbore #1 - Gyro Surveys	606.34	557.36	8,569.68	8,565.97	2,305.321	CC
LDS Red D17-3J (PR) - Wellbore #1 - Gyro Surveys	1,200.00	1,108.76	8,572.93	8,565.16	1,103.844	ES
LDS Red D17-3J (PR) - Wellbore #1 - Gyro Surveys	6,850.00	6,700.00	9,224.03	9,177.04	196.280	SF
LDS White D17-1 - Wellbore #1 - Gyro Surveys						Out of range
LDS White D17-2 - Wellbore #1 - As-Drilled						Out of range
LDS White D17-8 - Wellbore #1 - As-Drilled						Out of range
Thomson D20-31D - Wellbore #1 - Gyro Surveys	5,751.52	6,621.96	6,925.70	6,874.99	136.580	CC
Thomson D20-31D - Wellbore #1 - Gyro Surveys	5,800.00	6,648.50	6,925.77	6,874.82	135.922	ES
Thomson D20-31D - Wellbore #1 - Gyro Surveys	6,700.00	7,200.00	7,030.69	6,975.13	126.551	SF
Weeks 20-17 (SI) - Wellbore #1 - Gyro Surveys	2,218.56	2,192.00	8,941.87	8,926.61	585.827	CC, ES
Weeks 20-17 (SI) - Wellbore #1 - Gyro Surveys	7,000.00	6,809.32	9,530.37	9,482.63	199.637	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:	Plan #3	**Offset TVD Reference:**	Reference 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 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	363.92	345.92	9,787.38	9,785.27	4,648.496	CC
Mick D18-14 - Mick D18-14 - Mick D18-14 - As Drilled	700.00	607.61	9,788.58	9,784.36	2,316.764	ES
Mick D18-14 - Mick D18-14 - Mick D18-14 - As Drilled	4,200.00	4,081.02	9,995.92	9,967.31	349.392	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						Out of range
Scooter D18-15 - Scooter D18-15 - Scooter D18-15 - As	2,217.66	2,240.90	9,151.87	9,136.51	595.641	CC, ES
Scooter D18-15 - Scooter D18-15 - Scooter D18-15 - As	6,900.00	7,178.52	9,726.65	9,677.83	199.228	SF
Scooter D18-16 - Scooter D18-16 - Scooter D18-16 - As	2,200.00	2,149.00	8,669.42	8,643.01	328.299	CC, ES
Scooter D18-16 - Scooter D18-16 - Scooter D18-16 - As	6,950.00	6,778.72	9,322.36	9,239.22	112.139	SF
Scooter D18-17 JI - Scooter D18-17 JI - Scooter D18-17						Out of range
Scooter D18-1JI - Scooter D18-1JI - Scooter D18-1JI - As						Out of range
Scooter D18-4J - Scooter D18-4J - Scooter D18-4J - As D	1,372.29	1,327.33	9,589.26	9,580.12	1,048.281	CC
Scooter D18-4J - Scooter D18-4J - Scooter D18-4J - As D	2,204.70	2,175.50	9,593.01	9,577.92	635.658	ES
Scooter D18-4J - Scooter D18-4J - Scooter D18-4J - As D	6,500.00	6,436.09	9,990.67	9,945.73	222.318	SF
Scooter D18-78-1HN - Original Drilling - Original Drilling -						Out of range
Scooter D18-78-1HN - Original Drilling - ST01 - Original D						Out of range
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 - As	467.69	372.69	9,686.94	9,684.37	3,767.844	CC
Scooter D18-8JI - Scooter D18-8JI - Scooter D18-8JI - As	700.00	546.87	9,687.55	9,683.54	2,414.763	ES
Scooter D18-8JI - Scooter D18-8JI - Scooter D18-8JI - As	3,200.00	1,368.59	9,987.28	9,971.63	638.059	SF
Scooter D18-9JI - Scooter D18-9JI - Scooter D18-9JI - As	610.56	514.58	9,602.11	9,598.53	2,679.709	CC
Scooter D18-9JI - Scooter D18-9JI - Scooter D18-9JI - As	800.00	651.46	9,602.71	9,597.97	2,026.721	ES
Scooter D18-9JI - Scooter D18-9JI - Scooter D18-9JI - As	4,200.00	2,880.00	9,984.10	9,958.87	395.856	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:	Plan #3	**Offset TVD Reference:**	Reference 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	0.00	0.00	7,950.21			
Butterball 13-19 - Butterball 13-19 - Butterball 13-19 - As	2,206.27	2,192.40	7,957.39	7,942.22	524.396	ES
Butterball 13-19 - Butterball 13-19 - Butterball 13-19 - As	7,050.00	6,857.89	8,441.13	8,392.89	174.977	SF
Butterball 14-19 - Butterball 14-19 - Butterball 14-19 - As	2,331.46	2,540.05	7,313.18	7,296.37	435.055	CC, ES
Butterball 14-19 - Butterball 14-19 - Butterball 14-19 - As	7,141.84	7,083.40	7,692.74	7,643.35	155.754	SF
Butterball 23-19 - Butterball 23-19 - Butterball 23-19 - As	634.96	600.00	6,901.79	6,897.82	1,737.000	CC
Butterball 23-19 - Butterball 23-19 - Butterball 23-19 - As	2,000.00	1,920.58	6,910.46	6,896.97	512.421	ES
Butterball 23-19 - Butterball 23-19 - Butterball 23-19 - As	7,050.00	6,859.36	7,499.68	7,451.50	155.661	SF
Butterball B04-19 - Butterball B04-19 - Butterball B04-19	1,277.72	1,248.73	8,000.14	7,991.60	937.593	CC
Butterball B04-19 - Butterball B04-19 - Butterball B04-19	2,200.00	2,158.90	8,001.46	7,986.44	532.858	ES
Butterball B04-19 - Butterball B04-19 - Butterball B04-19	7,200.00	6,989.86	8,526.16	8,477.06	173.647	SF
Butterball D18-75HN - Original Drilling - Original Drilling -	1,925.92	1,910.00	8,395.83	8,383.62	687.821	CC, ES
Butterball D18-75HN - Original Drilling - Original Drilling -	6,750.00	6,279.00	9,369.37	9,324.12	207.043	SF
Butterball D19-17D - Butterball D19-17D - Butterball D19	4,959.82	6,200.00	7,571.25	7,434.64	55.422	CC
Butterball D19-17D - Butterball D19-17D - Butterball D19	5,000.00	6,200.00	7,571.36	7,434.55	55.342	ES
Butterball D19-17D - Butterball D19-17D - Butterball D19	6,450.00	6,938.03	7,653.95	7,509.31	52.917	SF
Butterball D19-18D - Butterball D19-18D - Butterball D19	3,339.02	4,137.36	8,406.64	8,373.59	254.312	CC
Butterball D19-18D - Butterball D19-18D - Butterball D19	3,400.00	4,167.03	8,406.76	8,373.38	251.859	ES
Butterball D19-18D - Butterball D19-18D - Butterball D19	6,950.00	6,870.41	8,856.41	8,803.33	166.855	SF
Butterball D19-19D - Butterball D19-19D - Butterball D19	2,352.18	2,790.46	8,613.92	8,593.44	420.610	CC
Butterball D19-19D - Butterball D19-19D - Butterball D19	2,400.00	2,865.44	8,614.22	8,593.21	410.017	ES
Butterball D19-19D - Butterball D19-19D - Butterball D19	6,950.00	6,901.27	9,080.25	9,029.70	179.619	SF
Butterball D19-20D - Butterball D19-20D - Butterball D19	4,076.10	4,800.00	7,996.10	7,962.62	238.818	CC
Butterball D19-20D - Butterball D19-20D - Butterball D19	4,200.00	4,863.09	7,996.63	7,962.50	234.322	ES
Butterball D19-20D - Butterball D19-20D - Butterball D19	7,050.00	7,024.29	8,375.76	8,324.72	164.102	SF
Butterball D19-22D - Wellbore #1 - Wellbore #1 - As Drille	2,243.35	2,319.42	6,118.61	6,100.20	332.258	CC, ES
Butterball D19-22D - Wellbore #1 - Wellbore #1 - As Drille	6,800.00	6,759.90	6,641.45	6,588.34	125.062	SF
Butterball D19-75HN - Original Drilling - Original Drilling -	6,402.49	11,767.00	5,539.17	5,430.78	51.104	CC, ES
Butterball D19-75HN - Original Drilling - Original Drilling -	6,550.00	11,767.00	5,548.37	5,439.44	50.935	SF
Butterball D24-19 - Butterball D24-19 - Butterball D24-19	218.02	185.02	6,191.48	6,190.46	6,067.930	CC
Butterball D24-19 - Butterball D24-19 - Butterball D24-19	400.00	328.37	6,191.98	6,189.81	2,849.271	ES
Butterball D24-19 - Butterball D24-19 - Butterball D24-19	7,100.00	6,921.78	6,793.98	6,745.34	139.689	SF
Butterball H24-69HN - Original Drilling - Original Drilling -	0.00	0.00	8,427.43			
Butterball H24-69HN - Original Drilling - Original Drilling -	800.00	750.20	8,429.09	8,425.16	2,141.288	ES
Butterball H24-69HN - Original Drilling - Original Drilling -	6,700.00	6,279.00	9,103.82	9,059.17	203.889	SF
Champlin 366 Amoco F 1 - Wellbore #1 - Wellbore #1 - A	569.84	531.85	5,243.16	5,239.67	1,500.001	CC
Champlin 366 Amoco F 1 - Wellbore #1 - Wellbore #1 - A	700.00	633.50	5,243.50	5,239.18	1,214.824	ES
Champlin 366 Amoco F 1 - Wellbore #1 - Wellbore #1 - A	6,900.00	6,765.07	5,837.25	5,789.83	123.097	SF
Dechant D19-32D - Dechant D19-32D - Dechant D19-32D	505.01	482.05	8,731.06	8,727.97	2,820.694	CC
Dechant D19-32D - Dechant D19-32D - Dechant D19-32D	800.00	700.00	8,732.23	8,727.20	1,736.978	ES
Dechant D19-32D - Dechant D19-32D - Dechant D19-32D	6,850.00	7,383.79	9,333.62	9,216.80	79.896	SF
Graznak 01-19 - Graznak 01-19 - Graznak 01-19 - As Dri	2,200.00	2,171.00	7,284.65	7,258.06	273.869	CC, ES
Graznak 01-19 - Graznak 01-19 - Graznak 01-19 - As Dri	7,100.00	6,865.16	7,814.34	7,729.83	92.471	SF
Higgins D19-720 - Original Drilling - Original Drilling - As	937.86	921.88	7,588.11	7,582.26	1,298.132	CC
Higgins D19-720 - Original Drilling - Original Drilling - As	1,000.00	959.63	7,588.21	7,582.07	1,236.298	ES
Higgins D19-720 - Original Drilling - Original Drilling - As	6,750.00	6,712.44	8,480.04	8,437.02	197.144	SF
Higgins D19-720 - Sidetrack Curve/Horizontal - ST01 - A	6,477.54	11,660.02	4,521.53	4,464.79	79.685	CC, ES
Higgins D19-720 - Sidetrack Curve/Horizontal - ST01 - A	6,650.00	11,660.02	4,541.05	4,483.71	79.193	SF
Independence D18-717 - Independence D18-717 - Plan 1	2,200.00	2,188.00	7,802.33	7,787.07	511.168	CC, ES
Independence D18-717 - Independence D18-717 - Plan 1	6,650.00	6,300.00	8,105.72	8,060.38	178.779	SF
Independence D18-725 - Independence D18-725 - Plan 1	2,200.00	2,188.00	7,811.69	7,796.43	511.782	CC, ES
Independence D18-725 - Independence D18-725 - Plan 1	6,650.00	6,200.00	8,276.60	8,231.54	183.687	SF
Independence D18-732 - Independence D18-732 - Plan 1	2,200.00	2,188.00	7,821.53	7,806.27	512.427	CC, ES

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:	Plan #3	**Offset TVD Reference:**	Reference 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 D18-732 - Independence D18-732 - Plan 1	6,800.00	6,221.81	8,529.64	8,484.18	187.609	SF
Independence D18-739 - Independence D18-739 - Plan 1	2,200.00	2,187.00	7,831.00	7,815.74	513.167	CC, ES
Independence D18-739 - Independence D18-739 - Plan 1	6,950.00	6,175.91	8,768.01	8,722.08	190.909	SF
Independence D18-744 - Independence D18-744 - Plan 1	2,200.00	2,186.00	7,840.52	7,825.26	513.912	CC, ES
Independence D18-744 - Independence D18-744 - Plan 1	6,850.00	5,808.24	8,823.62	8,778.94	197.480	SF
Independence D18-759 - Independence D18-759 - Plan 1	2,406.51	3,037.88	9,042.63	9,023.75	478.871	CC, ES
Independence D18-759 - Independence D18-759 - Plan 1	6,750.00	6,350.00	9,288.43	9,242.59	202.615	SF
Independence D18-767 - Independence D18-767 - Plan 1	2,200.00	2,205.00	9,066.55	9,051.22	591.631	CC, ES
Independence D18-767 - Independence D18-767 - Plan 1	6,750.00	5,974.77	9,575.80	9,531.31	215.223	SF
Independence D30-711 - Independence D30-711 OH - As	7,391.18	15,770.39	2,524.55	2,425.39	25.458	CC
Independence D30-711 - Independence D30-711 OH - As	7,400.00	15,776.37	2,524.56	2,425.33	25.441	ES
Independence D30-711 - Independence D30-711 OH - As	9,500.00	17,754.00	2,575.64	2,451.14	20.687	SF
Independence D30-718 - Independence D30-718 OH - A	7,157.06	15,628.39	2,927.75	2,830.58	30.128	CC
Independence D30-718 - Independence D30-718 OH - A	7,200.00	15,644.44	2,927.80	2,830.40	30.061	ES
Independence D30-718 - Independence D30-718 OH - A	9,600.00	17,823.00	3,030.65	2,905.35	24.186	SF
Independence D30-724 - Independence D30-724 OH - A	6,936.48	15,415.59	3,418.20	3,323.82	36.215	CC
Independence D30-724 - Independence D30-724 OH - A	7,050.00	15,498.31	3,418.98	3,323.59	35.842	ES
Independence D30-724 - Independence D30-724 OH - A	9,600.00	17,803.00	3,470.80	3,345.90	27.788	SF
Independence D30-731 - Independence D30-731 OH - A	6,616.25	14,855.84	3,825.16	3,735.87	42.843	CC, ES
Independence D30-731 - Independence D30-731 OH - A	9,800.00	17,781.00	3,944.25	3,817.66	31.158	SF
Independence D30-737 - Independence D30-737 OH - A	7,171.82	15,716.00	4,238.17	4,140.96	43.598	CC
Independence D30-737 - Independence D30-737 OH - A	7,250.00	15,766.98	4,238.45	4,140.58	43.306	ES
Independence D30-737 - Independence D30-737 OH - A	9,900.00	17,920.00	4,329.20	4,201.75	33.968	SF
Independence D30-743 - Independence D30-743 OH - A	8,201.66	16,711.06	4,642.97	4,533.81	42.533	CC
Independence D30-743 - Independence D30-743 OH - A	8,300.00	16,762.00	4,643.40	4,533.34	42.189	ES
Independence D30-743 - Independence D30-743 OH - A	10,200.00	17,885.00	4,804.12	4,675.07	37.226	SF
Independence D30-758 - Independence D30-758 OH - A	8,666.12	17,155.69	5,433.59	5,318.71	47.301	CC
Independence D30-758 - Independence D30-758 OH - A	8,700.00	17,167.93	5,433.65	5,318.52	47.195	ES
Independence D30-758 - Independence D30-758 OH - A	10,200.00	17,863.00	5,533.06	5,405.04	43.219	SF
Independence D30-765 - Independence D30-765 OH - A	6,927.34	15,459.89	5,913.21	5,819.20	62.896	CC
Independence D30-765 - Independence D30-765 OH - A	8,800.00	17,319.00	5,925.98	5,809.76	50.990	ES
Independence D30-765 - Independence D30-765 OH - A	10,400.00	17,947.00	6,027.12	5,897.78	46.602	SF
Independence D30-770 - Independence D30-770 OH - A	6,581.38	14,912.80	6,229.04	6,139.71	69.730	CC
Independence D30-770 - Independence D30-770 OH - A	9,200.00	17,596.01	6,247.97	6,126.27	51.339	ES
Independence D30-770 - Independence D30-770 OH - A	10,500.00	17,813.00	6,353.71	6,223.70	48.872	SF
Independence D30-777 - Independence D30-777 - As-Dr	7,703.37	16,291.20	6,706.66	6,603.79	65.200	CC
Independence D30-777 - Independence D30-777 - As-Dr	7,900.00	16,431.02	6,707.56	6,602.82	64.040	ES
Independence D30-777 - Independence D30-777 - As-Dr	10,800.00	17,958.00	6,878.05	6,746.27	52.190	SF
Independence State D30-784 - Independence State D30-	6,897.64	15,570.54	7,171.10	7,076.30	75.642	CC
Independence State D30-784 - Independence State D30-	7,150.00	15,701.16	7,172.49	7,075.63	74.046	ES
Independence State D30-784 - Independence State D30-	11,100.00	17,958.00	7,482.02	7,348.01	55.832	SF
LDS White D19-10 - LDS White D19-10 - LDS White D19	404.12	367.13	6,130.49	6,128.16	2,635.133	CC
LDS White D19-10 - LDS White D19-10 - LDS White D19	2,200.00	2,123.25	6,139.18	6,124.28	411.990	ES
LDS White D19-10 - LDS White D19-10 - LDS White D19	6,950.00	6,817.22	6,739.75	6,691.98	141.102	SF
LDS White D19-15 - LDS White D19-15 - LDS White D19	1,690.56	1,655.58	5,203.22	5,191.79	455.040	CC
LDS White D19-15 - LDS White D19-15 - LDS White D19	2,000.00	1,925.19	5,204.06	5,190.58	385.945	ES
LDS White D19-15 - LDS White D19-15 - LDS White D19	6,950.00	6,757.12	5,748.43	5,700.84	120.810	SF
LDS White D19-16 - Wellbore #1 - Wellbore #1 - As Drille	100.00	49.96	4,234.52	4,234.30	10,000.000	CC
LDS White D19-16 - Wellbore #1 - Wellbore #1 - As Drille	2,219.73	2,212.56	4,239.68	4,224.40	277.499	ES
LDS White D19-16 - Wellbore #1 - Wellbore #1 - As Drille	6,800.00	6,703.17	4,720.71	4,673.79	100.605	SF
Mile High 02-19 - Wellbore #1 - Wellbore #1 - As Drilled	190.96	151.96	7,043.93	7,043.12	8,718.512	CC
Mile High 02-19 - Wellbore #1 - Wellbore #1 - As Drilled	2,100.00	2,015.78	7,049.33	7,035.16	497.629	ES
Mile High 02-19 - Wellbore #1 - Wellbore #1 - As Drilled	6,900.00	6,789.23	7,638.27	7,590.82	160.957	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:	Plan #3	**Offset TVD Reference:**	Reference 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						
Sean D19-09 - Wellbore #1 - Wellbore #1 - As Drilled	749.08	706.23	5,164.23	5,159.48	1,088.264	CC
Sean D19-09 - Wellbore #1 - Wellbore #1 - As Drilled	2,232.74	2,246.82	5,165.54	5,150.10	334.542	ES
Sean D19-09 - Wellbore #1 - Wellbore #1 - As Drilled	6,800.00	6,700.32	5,671.60	5,624.72	120.983	SF
Turk Blue D19-02J - Turk Blue D19-02J - Turk Blue D19-	2,046.11	2,021.16	8,773.39	8,759.40	627.254	CC
Turk Blue D19-02J - Turk Blue D19-02J - Turk Blue D19-	2,200.00	2,139.01	8,773.70	8,758.75	586.881	ES
Turk Blue D19-02J - Turk Blue D19-02J - Turk Blue D19-	7,200.00	7,061.59	9,590.72	9,541.79	195.985	SF
Turk Blue D19-04 - Turk Blue D19-04 - Turk Blue D19-04	2,221.12	2,282.01	9,765.17	9,749.63	628.699	CC, ES
Turk Blue D19-04 - Turk Blue D19-04 - Turk Blue D19-04	5,200.00	5,077.29	9,998.22	9,962.65	281.078	SF
Turk Blue D19-05 - Turk Blue D19-05 - Turk Blue D19-05	2,203.52	2,189.69	8,644.48	8,629.33	570.807	CC, ES
Turk Blue D19-05 - Turk Blue D19-05 - Turk Blue D19-05	7,100.00	6,934.05	9,241.05	9,192.42	190.049	SF
Turk Blue D19-06 - Turk Blue D19-06 - Turk Blue D19-06	612.60	575.61	7,735.44	7,731.63	2,033.962	CC
Turk Blue D19-06 - Turk Blue D19-06 - Turk Blue D19-06	2,208.21	2,191.57	7,738.38	7,723.22	510.502	ES
Turk Blue D19-06 - Turk Blue D19-06 - Turk Blue D19-06	6,900.00	6,814.14	8,258.73	8,211.13	173.504	SF
Turk White D19-01 - Wellbore #1 - Wellbore #1 - As Drille	100.00	48.99	7,373.01	7,372.80	10,000.000	CC
Turk White D19-01 - Wellbore #1 - Wellbore #1 - As Drille	2,200.00	2,150.06	7,378.11	7,363.12	492.100	ES
Turk White D19-01 - Wellbore #1 - Wellbore #1 - As Drille	6,900.00	6,817.60	8,025.19	7,977.66	168.816	SF
Turk White D19-02 - Wellbore #1 - Wellbore #1 - As Drille	633.68	584.74	8,182.53	8,178.61	2,085.319	CC
Turk White D19-02 - Wellbore #1 - Wellbore #1 - As Drille	1,800.00	1,701.83	8,186.76	8,174.74	681.512	ES
Turk White D19-02 - Wellbore #1 - Wellbore #1 - As Drille	6,950.00	6,811.90	8,792.39	8,744.75	184.548	SF
Turk White D19-08 - Wellbore #1 - Wellbore #1 - As Drille	100.00	52.43	6,123.01	6,122.80	10,000.000	CC
Turk White D19-08 - Wellbore #1 - Wellbore #1 - As Drille	2,209.56	2,188.97	6,124.39	6,109.23	404.038	ES
Turk White D19-08 - Wellbore #1 - Wellbore #1 - As Drille	6,850.00	6,685.41	6,690.73	6,643.81	142.585	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:	Plan #3	**Offset TVD Reference:**	Reference 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	2,200.00	2,156.00	6,001.82	5,975.35	226.756	CC, ES
Bohlender D20-2J - Wellbore #1 - No Surveys	6,800.00	6,691.55	6,544.20	6,462.19	79.796	SF
Bohlender D20-3 - Wellbore #1 - Gyro Surveys	2,001.34	1,963.59	6,863.62	6,849.98	503.160	CC
Bohlender D20-3 - Wellbore #1 - Gyro Surveys	2,200.75	2,164.71	6,863.65	6,848.60	455.884	ES
Bohlender D20-3 - Wellbore #1 - Gyro Surveys	6,900.00	6,784.27	7,487.64	7,440.24	157.976	SF
Bohlender D20-4 (P&A) - Wellbore #1 - No Surveys	2,200.00	2,158.00	7,210.44	7,159.63	141.900	CC
Bohlender D20-4 (P&A) - Wellbore #1 - No Surveys	2,300.00	2,257.98	7,212.17	7,159.01	135.684	ES
Bohlender D20-4 (P&A) - Wellbore #1 - No Surveys	6,850.00	6,727.95	7,788.81	7,630.50	49.201	SF
Bohlender D20-6 - Wellbore#1 - Gyro Surveys	2,245.87	2,282.84	5,540.37	5,524.76	355.017	CC, ES
Bohlender D20-6 - Wellbore#1 - Gyro Surveys	6,750.00	6,638.99	6,034.05	5,987.55	129.770	SF
Butterball D19-27D - Butterball D19-27D - Butterball D19	100.00	40.43	8,054.19	8,053.99	10,000.000	CC
Butterball D19-27D - Butterball D19-27D - Butterball D19	800.00	700.00	8,055.02	8,050.12	1,641.943	ES
Butterball D19-27D - Butterball D19-27D - Butterball D19	6,700.00	6,971.86	8,927.01	8,846.77	111.257	SF
Duncan D20-1 (P&A) - Wellbore #1 - No Surveys	2,200.00	2,157.00	7,366.87	7,316.08	145.036	CC
Duncan D20-1 (P&A) - Wellbore #1 - No Surveys	2,300.00	2,256.98	7,368.18	7,315.04	138.671	ES
Duncan D20-1 (P&A) - Wellbore #1 - No Surveys	6,900.00	6,758.40	7,886.59	7,727.49	49.569	SF
Duncan D20-10 - Wellbore #1 - Gyro Surveys	2,207.51	2,183.59	4,057.42	4,042.28	268.057	CC, ES
Duncan D20-10 - Wellbore #1 - Gyro Surveys	6,700.00	6,629.30	4,435.50	4,389.15	95.692	SF
Duncan D20-11 (SI) - Wellbore #1 - No Surveys	2,200.00	2,163.00	4,253.47	4,226.94	160.331	CC, ES
Duncan D20-11 (SI) - Wellbore #1 - No Surveys	6,700.00	6,621.76	4,721.48	4,640.37	58.206	SF
Duncan D20-12 (SI) - Wellbore #1 - No Surveys	2,200.00	2,161.00	4,513.19	4,486.68	170.233	CC, ES
Duncan D20-12 (SI) - Wellbore #1 - No Surveys	6,750.00	6,659.41	5,023.03	4,941.43	61.561	SF
Duncan D20-13 (SI) - Wellbore #1 - No Surveys	2,200.00	2,166.00	3,153.09	3,126.54	118.736	CC, ES
Duncan D20-13 (SI) - Wellbore #1 - No Surveys	6,650.00	6,582.85	3,598.06	3,517.43	44.629	SF
Duncan D20-14 (SI) - Wellbore #1 - Gyro Surveys	227.43	187.44	3,259.91	3,258.84	3,065.794	CC
Duncan D20-14 (SI) - Wellbore #1 - Gyro Surveys	2,000.00	1,947.10	3,265.03	3,251.46	240.683	ES
Duncan D20-14 (SI) - Wellbore #1 - Gyro Surveys	6,700.00	6,671.27	3,750.37	3,703.91	80.721	SF
Duncan D20-15 (P&A) - Wellbore #1 - Gyro Surveys	2,224.50	2,209.18	2,938.88	2,923.60	192.261	CC, ES
Duncan D20-15 (P&A) - Wellbore #1 - Gyro Surveys	6,600.00	6,529.78	3,316.78	3,271.12	72.643	SF
Duncan D20-16 (SI) - Wellbore #1 - Gyro Surveys	293.07	268.07	3,748.09	3,746.51	2,370.566	CC
Duncan D20-16 (SI) - Wellbore #1 - Gyro Surveys	2,200.00	2,173.94	3,751.74	3,736.66	248.896	ES
Duncan D20-16 (SI) - Wellbore #1 - Gyro Surveys	6,750.00	6,641.88	4,031.92	3,985.32	86.523	SF
Duncan D20-2 - Wellbore #1 - Gyro Surveys	1,961.42	1,910.42	6,895.20	6,881.91	518.685	CC
Duncan D20-2 - Wellbore #1 - Gyro Surveys	2,200.00	2,122.88	6,895.72	6,880.83	463.106	ES
Duncan D20-2 - Wellbore #1 - Gyro Surveys	7,100.00	7,100.00	7,682.73	7,633.87	157.250	SF
Duncan D20-7 - Wellbore #1 - Gyro Surveys	2,224.73	2,220.69	6,009.66	5,994.34	392.236	CC, ES
Duncan D20-7 - Wellbore #1 - Gyro Surveys	6,800.00	6,692.08	6,466.54	6,419.66	137.942	SF
Duncan D20-8 - Wellbore #1 - Gyro Surveys	1,225.18	1,201.21	5,912.49	5,904.31	722.482	CC
Duncan D20-8 - Wellbore #1 - Gyro Surveys	1,400.00	1,336.70	5,912.96	5,903.67	636.946	ES
Duncan D20-8 - Wellbore #1 - Gyro Surveys	6,900.00	6,807.64	6,441.28	6,393.73	135.458	SF
Duncan D20-9 (P&A) - Wellbore #1 - Gyro Surveys	2,217.78	2,195.12	4,828.60	4,813.38	317.203	CC, ES
Duncan D20-9 (P&A) - Wellbore #1 - Gyro Surveys	6,800.00	6,724.54	5,239.95	5,192.94	111.449	SF
E Ranches (P&A) - Wellbore #1 - No Surveys	2,200.00	2,158.00	3,106.68	3,055.86	61.139	CC
E Ranches (P&A) - Wellbore #1 - No Surveys	2,300.00	2,257.98	3,108.42	3,055.27	58.479	ES
E Ranches (P&A) - Wellbore #1 - No Surveys	6,650.00	6,574.85	3,561.59	3,406.93	23.028	SF
Guttersen 10-20 - Wellbore #1 - Gyro Surveys	2,210.48	2,176.22	4,453.32	4,438.20	294.604	CC, ES
Guttersen 10-20 - Wellbore #1 - Gyro Surveys	6,650.00	6,625.97	4,853.20	4,807.12	105.307	SF
LDS D20-30D - LDS D20-30D - LDS D20-30D - As Drilled	3,917.90	4,654.47	7,990.01	7,957.25	243.947	CC
LDS D20-30D - LDS D20-30D - LDS D20-30D - As Drilled	4,000.00	4,700.00	7,990.38	7,957.12	240.306	ES
LDS D20-30D - LDS D20-30D - LDS D20-30D - As Drilled	6,900.00	6,855.68	8,388.18	8,338.02	167.248	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:	Plan #3	**Offset TVD Reference:**	Reference 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	6,498.90	6,477.15	6,089.39	5,937.10	39.985	CC
O'SH D 28-7 (P&A) - Wellbore #1 - No Surveys	6,600.00	6,570.94	6,090.47	5,935.92	39.409	ES
O'SH D 28-7 (P&A) - Wellbore #1 - No Surveys	7,250.00	6,923.32	6,160.90	5,997.10	37.612	SF
Spike ST GWS D 28-12 (SI) - Wellbore #1 - Gyro Survey	7,409.93	6,935.00	3,299.21	3,249.54	66.422	CC, ES
Spike ST GWS D 28-12 (SI) - Wellbore #1 - Gyro Survey	8,300.00	6,941.89	3,417.16	3,364.21	64.535	SF
Guttersen D State 28-29D (PR) - Wellbore #1 - MWD Sur	941.20	915.22	4,074.51	4,069.41	800.230	CC
Guttersen D State 28-29D (PR) - Wellbore #1 - MWD Sur	1,000.00	943.60	4,074.72	4,069.33	754.648	ES
Guttersen D State 28-29D (PR) - Wellbore #1 - MWD Sur	7,000.00	6,881.93	5,118.33	5,070.46	106.918	SF
Guttersen D State 28-30D - Guttersen D State 28-30D OH	4,895.33	5,082.71	3,684.83	3,634.20	72.781	CC
Guttersen D State 28-30D - Guttersen D State 28-30D OH	5,200.00	5,367.20	3,686.06	3,633.46	70.078	ES
Guttersen D State 28-30D - Guttersen D State 28-30D OH	6,700.00	6,813.00	3,770.16	3,708.63	61.271	SF
Guttersen D State 28-30D - Gyros - As-Drilled	4,895.31	5,069.69	3,684.83	3,634.20	72.781	CC
Guttersen D State 28-30D - Gyros - As-Drilled	5,200.00	5,354.20	3,686.06	3,633.46	70.078	ES
Guttersen D State 28-30D - Gyros - As-Drilled	6,700.00	6,800.00	3,770.17	3,708.63	61.271	SF
Guttersen State D28-18D (PR) - Wellbore #1 - MWD Surv	0.00	0.00	5,323.81			
Guttersen State D28-18D (PR) - Wellbore #1 - MWD Surv	100.00	47.00	5,324.01	5,323.80	10,000.000	ES
Guttersen State D28-18D (PR) - Wellbore #1 - MWD Surv	7,200.00	6,974.73	5,591.28	5,538.44	105.817	SF
Guttersen State D28-21D (SI) - Wellbore #1 - As-Drilled	0.00	1.66	5,182.90			
Guttersen State D28-21D (SI) - Wellbore #1 - As-Drilled	1,000.00	950.34	5,185.29	5,178.88	808.331	ES
Guttersen State D28-21D (SI) - Wellbore #1 - As-Drilled	8,700.00	6,917.63	5,742.24	5,686.07	102.220	SF
Guttersen State D28-24D (SI) - Wellbore #1 - MWD Surv	666.01	653.02	5,195.09	5,190.87	1,233.307	CC
Guttersen State D28-24D (SI) - Wellbore #1 - MWD Surv	1,000.00	945.85	5,196.17	5,189.73	806.942	ES
Guttersen State D28-24D (SI) - Wellbore #1 - MWD Surv	10,300.00	7,131.73	5,733.15	5,663.96	82.863	SF
Guttersen State D28-28D (PR) - Wellbore #1 - MWD Surv	0.00	0.00	5,324.86			
Guttersen State D28-28D (PR) - Wellbore #1 - MWD Surv	300.00	235.74	5,325.84	5,324.36	3,586.954	ES
Guttersen State D28-28D (PR) - Wellbore #1 - MWD Surv	7,050.00	6,888.63	6,163.66	6,114.11	124.388	SF
Guttersen State D28-79HN - Wellbore #1 - As-Drilled	6,650.00	9,114.84	2,939.83	2,865.92	39.772	SF
Guttersen State D28-79HN - Wellbore #1 - As-Drilled	6,800.00	9,040.72	2,935.26	2,861.84	39.978	ES
Guttersen State D28-79HN - Wellbore #1 - As-Drilled	6,801.28	9,040.01	2,935.26	2,861.84	39.982	CC
HSR Guttersen State 10-28 (SI) - Wellbore #1 - Gyro Sur	7,334.84	6,989.26	5,764.47	5,714.75	115.947	CC, ES
HSR Guttersen State 10-28 (SI) - Wellbore #1 - Gyro Sur	10,200.00	6,907.98	6,436.74	6,374.68	103.714	SF
HSR Guttersen State 15-28 (SI) - Wellbore #1 - Gyro Sur	8,976.29	6,815.08	6,347.32	6,290.98	112.671	CC
HSR Guttersen State 15-28 (SI) - Wellbore #1 - Gyro Sur	9,100.00	9,100.00	6,348.56	6,283.45	97.507	ES
HSR Guttersen State 15-28 (SI) - Wellbore #1 - Gyro Sur	12,600.00	7,085.37	7,303.80	7,225.83	93.674	SF
HSR Guttersen State 7-28 (PR) - Wellbore #1 - Gyro Sur	6,413.47	6,294.99	5,870.40	5,826.16	132.688	CC
HSR Guttersen State 7-28 (PR) - Wellbore #1 - Gyro Sur	6,450.00	6,323.93	5,870.56	5,826.08	131.991	ES
HSR Guttersen State 7-28 (PR) - Wellbore #1 - Gyro Sur	9,200.00	6,600.00	6,652.27	6,597.04	120.465	SF
O'SH D 28-1 (SI) - Wellbore #1 - Gyro Surveys	6,404.80	6,402.71	7,236.42	7,191.83	162.287	CC, ES
O'SH D 28-1 (SI) - Wellbore #1 - Gyro Surveys	10,000.00	6,907.77	8,585.73	8,526.33	144.544	SF
O'SH D 28-2 (SI) - Wellbore #1 - Gyro Surveys	6,342.74	6,286.75	6,389.33	6,345.36	145.329	CC
O'SH D 28-2 (SI) - Wellbore #1 - Gyro Surveys	6,362.70	6,300.00	6,389.34	6,345.25	144.939	ES
O'SH D 28-2 (SI) - Wellbore #1 - Gyro Surveys	7,250.00	6,935.52	6,575.89	6,527.05	134.622	SF
O'SH D 28-8 (SI) - Wellbore #1 - Gyro Surveys	6,416.85	6,266.06	7,423.39	7,379.24	168.136	CC
O'SH D 28-8 (SI) - Wellbore #1 - Gyro Surveys	6,500.00	6,363.40	7,423.83	7,379.03	165.713	ES
O'SH D 28-8 (SI) - Wellbore #1 - Gyro Surveys	11,200.00	7,012.58	8,965.03	8,898.93	135.618	SF
Spike ST GWS D 28-03 (PR) - Wellbore #1 - Gyro Survey	6,055.92	6,027.47	5,281.75	5,227.28	96.970	CC
Spike ST GWS D 28-03 (PR) - Wellbore #1 - Gyro Survey	6,362.70	6,332.70	5,281.84	5,223.95	91.231	ES
Spike ST GWS D 28-03 (PR) - Wellbore #1 - Gyro Survey	7,100.00	6,877.91	5,452.84	5,388.25	84.429	SF
Spike ST GWS D 28-4 (SI) - Wellbore #1 - Gyro Surveys	2,373.23	2,365.31	4,004.06	3,987.75	245.392	CC
Spike ST GWS D 28-4 (SI) - Wellbore #1 - Gyro Surveys	2,400.00	2,382.83	4,004.10	3,987.64	243.185	ES
Spike ST GWS D 28-4 (SI) - Wellbore #1 - Gyro Surveys	6,950.00	6,777.61	4,230.33	4,182.54	88.507	SF
Spike State D 28-13 (SI) - Wellbore #1 - Gyro Surveys	8,853.17	6,931.01	3,369.64	3,313.74	60.285	CC, ES
Spike State D 28-13 (SI) - Wellbore #1 - Gyro Surveys	9,800.00	6,935.14	3,500.13	3,439.18	57.425	SF

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

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:	Plan #3	**Offset TVD Reference:**	Reference 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						
Spike State D28-05 (PR) - Wellbore #1 - Gyro Surveys	3,765.40	3,675.28	3,397.85	3,372.22	132.596	CC
Spike State D28-05 (PR) - Wellbore #1 - Gyro Surveys	6,362.70	6,282.94	3,400.87	3,356.85	77.266	ES
Spike State D28-05 (PR) - Wellbore #1 - Gyro Surveys	7,050.00	6,859.90	3,508.08	3,459.64	72.428	SF
Spike State D28-06 (SI) - Wellbore #1 - Gyro Surveys	6,420.45	6,354.24	5,057.97	5,013.49	113.703	CC
Spike State D28-06 (SI) - Wellbore #1 - Gyro Surveys	6,450.00	6,379.99	5,058.10	5,013.42	113.201	ES
Spike State D28-06 (SI) - Wellbore #1 - Gyro Surveys	7,600.00	6,853.97	5,267.07	5,217.01	105.221	SF
Spike State D28-11 (SI) - Wellbore #1 - Gyro Surveys	7,247.04	7,038.93	4,892.02	4,842.34	98.474	CC
Spike State D28-11 (SI) - Wellbore #1 - Gyro Surveys	7,250.00	7,039.41	4,892.02	4,842.34	98.454	ES
Spike State D28-11 (SI) - Wellbore #1 - Gyro Surveys	9,400.00	7,191.39	5,347.42	5,288.60	90.913	SF
Spike State GWS D 28-14 (P&A) - Wellbore #1 - Gyro Su	8,932.28	6,957.50	4,903.32	4,846.74	86.668	CC, ES
Spike State GWS D 28-14 (P&A) - Wellbore #1 - Gyro Su	10,900.00	7,071.83	5,282.18	5,214.80	78.396	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:	Plan #3	**Offset TVD Reference:**	Reference 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	6,650.00	6,772.11	3,496.70	3,447.29	70.783	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	6,750.00	6,757.13	2,705.24	2,658.13	57.431	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 -	8,400.00	7,154.98	2,353.49	2,292.33	38.485	SF
Guttersen D29-65HN - Guttersen D29-65HN OH - As-Dri	6,819.08	8,806.32	52.70	-12.04	0.814	Level 1, CC
Guttersen D29-65HN - Guttersen D29-65HN OH - As-Dri	6,850.00	8,805.90	61.74	-22.24	0.735	Level 1, ES, SF
Guttersen D29-67HN - Original Drilling - Original Drilling -	6,505.50	8,599.61	1,348.26	1,277.95	19.177	CC, ES
Guttersen D29-67HN - Original Drilling - Original Drilling -	6,600.00	8,601.61	1,358.51	1,286.68	18.911	SF
Guttersen D29-69HN - Original Drilling - Original Drilling -	1,029.20	1,018.22	2,176.76	2,171.22	393.206	CC
Guttersen D29-69HN - Original Drilling - Original Drilling -	1,100.00	1,070.78	2,177.05	2,171.08	364.197	ES
Guttersen D29-69HN - Original Drilling - Original Drilling -	6,550.00	8,791.23	2,568.37	2,494.85	34.935	SF
Guttersen D29-722 - Guttersen D29-722 OH - As-Drilled	6,881.69	6,881.69	2,095.71	2,052.38	48.364	CC
Guttersen D29-722 - Guttersen D29-722 OH - As-Drilled	6,918.14	6,918.14	2,095.77	2,052.26	48.177	ES
Guttersen D29-722 - Guttersen D29-722 OH - As-Drilled	6,950.00	6,950.00	2,095.99	2,052.33	48.014	SF
Guttersen D29-730 - Guttersen D29-730 OH - As-Drilled	6,719.50	6,806.34	1,495.02	1,452.43	35.108	CC, ES
Guttersen D29-730 - Guttersen D29-730 OH - As-Drilled	6,800.00	6,809.24	1,497.27	1,454.54	35.033	SF
Guttersen D29-738 - Guttersen D29-738 OH - As-Drilled	432.04	432.06	165.92	163.30	63.157	CC
Guttersen D29-738 - Guttersen D29-738 OH - As-Drilled	2,200.00	2,198.18	169.28	154.91	11.774	ES
Guttersen D29-738 - Guttersen D29-738 OH - As-Drilled	2,600.00	2,575.50	174.98	159.12	11.029	SF
Guttersen D29-746 - Guttersen D29-746 OH - As-Drilled	2,532.36	2,518.41	152.74	137.11	9.777	CC, ES
Guttersen D29-746 - Guttersen D29-746 OH - As-Drilled	6,700.00	6,742.29	249.62	207.51	5.927	SF
Guttersen D29-754 - Guttersen D29-754 OH - As-Drilled	2,496.81	2,484.64	144.76	129.26	9.340	CC
Guttersen D29-754 - Guttersen D29-754 OH - As-Drilled	2,500.00	2,487.47	144.76	129.25	9.334	ES
Guttersen D29-754 - Guttersen D29-754 OH - As-Drilled	6,945.40	6,916.14	367.12	323.48	8.413	SF
Guttersen D29-770 - Guttersen D29-770 OH - Guttersen	6,692.05	6,893.36	967.85	925.35	22.773	CC, ES
Guttersen D29-770 - Guttersen D29-770 OH - Guttersen	6,750.00	6,889.83	969.79	927.13	22.729	SF
Guttersen D29-778 - Guttersen D29-778 OH - As-Drilled	151.90	153.91	1,375.41	1,374.75	2,092.738	CC
Guttersen D29-778 - Guttersen D29-778 OH - As-Drilled	2,200.00	2,192.71	1,376.74	1,362.39	95.927	ES
Guttersen D29-778 - Guttersen D29-778 OH - As-Drilled	7,000.00	7,000.67	1,615.18	1,571.20	36.729	SF
Guttersen D29-786 - Guttersen D29-786 OH - As-Drilled	1,886.77	1,889.80	1,411.70	1,398.80	109.383	CC
Guttersen D29-786 - Guttersen D29-786 OH - As-Drilled	2,200.00	2,196.25	1,412.19	1,397.86	98.505	ES
Guttersen D29-786 - Guttersen D29-786 OH - As-Drilled	7,600.00	7,600.00	2,235.50	2,188.75	47.823	SF
Guttersen D29-99HZ - Guttersen D29-99HZ OH - As-Dril	8,100.00	8,673.13	44.01	-9.47	0.823	Level 1, ES, SF
Guttersen D29-99HZ - Guttersen D29-99HZ OH - As-Dril	8,123.88	8,672.82	36.97	2.82	1.082	Level 2, CC
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	6,550.00	6,262.45	2,894.95	2,851.79	67.073	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	6,500.00	6,360.33	3,437.09	3,391.63	75.602	SF
Guttersen State D29-714 - Guttersen State D29-714 OH	0.00	9.74	2,390.02			
Guttersen State D29-714 - Guttersen State D29-714 OH	800.00	798.93	2,393.86	2,388.62	456.883	ES
Guttersen State D29-714 - Guttersen State D29-714 OH	7,400.00	6,797.00	2,673.41	2,628.64	59.710	SF
Guttersen State Y05-719 - Guttersen State Y05-719 - Pla	4,892.71	4,830.79	2,313.32	2,279.30	67.994	CC
Guttersen State Y05-719 - Guttersen State Y05-719 - Pla	19,860.11	20,149.90	2,446.00	2,218.11	10.733	ES, SF
Guttersen Y05-726 - Guttersen Y05-726 - Plan #3	19,854.66	20,283.60	1,832.75	1,604.12	8.016	CC, ES, SF
Guttersen Y05-734 - Guttersen Y05-734 - Plan #3	19,856.15	20,158.22	1,219.36	991.26	5.346	CC, ES, SF
Guttersen Y05-749 - Guttersen Y05-749 - Plan #3	2,200.00	2,200.00	37.01	21.70	2.418	CC, ES
Guttersen Y05-749 - Guttersen Y05-749 - Plan #3	2,300.00	2,298.77	38.02	22.04	2.379	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:	Plan #3	**Offset TVD Reference:**	Reference 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 Y05-771 - Guttersen Y05-771 - Plan #3	19,860.11	19,890.44	698.02	470.07	3.062	CC, ES, SF
Guttersen Y05-779 - Guttersen Y05- 779 - Plan #3	7,256.32	7,379.87	1,225.15	1,174.42	24.149	CC
Guttersen Y05-779 - Guttersen Y05- 779 - Plan #3	19,860.11	19,983.55	1,226.50	998.37	5.376	ES, SF
Guttersen Y05-786 - Guttersen Y05-786 - Plan #3	2,200.00	2,202.00	1,403.18	1,387.87	91.628	CC
Guttersen Y05-786 - Guttersen Y05-786 - Plan #3	2,300.00	2,301.98	1,403.83	1,387.81	87.670	ES
Guttersen Y05-786 - Guttersen Y05-786 - Plan #3	19,860.11	19,819.63	1,784.04	1,555.80	7.816	SF
Jessie D29-1J - Wellbore #1 - Gyro Surveys	2,060.09	2,032.18	1,786.67	1,772.59	126.841	CC
Jessie D29-1J - Wellbore #1 - Gyro Surveys	2,200.00	2,165.50	1,787.02	1,771.97	118.731	ES
Jessie D29-1J - Wellbore #1 - Gyro Surveys	6,550.00	6,502.34	1,990.10	1,944.67	43.804	SF
Jessie D29-4J - Wellbore #1 - Gyro Surveys	7,757.85	6,886.85	1,175.89	1,125.07	23.139	CC, ES
Jessie D29-4J - Wellbore #1 - Gyro Surveys	7,900.00	6,893.66	1,184.44	1,133.04	23.044	SF
Kate Red D29-03J - Kate Red D29-03J - Kate Red D29-0	7,761.41	6,915.29	1,589.07	1,538.15	31.204	CC, ES
Kate Red D29-03J - Kate Red D29-03J - Kate Red D29-0	7,900.00	6,914.74	1,595.11	1,543.72	31.041	SF
Kate Red D29-11 - Wellbore #1 - Gyro Surveys	7,398.88	6,900.14	615.14	565.53	12.400	CC
Kate Red D29-11 - Wellbore #1 - Gyro Surveys	7,400.00	6,900.13	615.14	565.53	12.399	ES, SF
Kate Red D29-13 - Wellbore #1 - Gyro Surveys	8,836.10	6,938.01	1,943.75	1,887.89	34.798	CC, ES
Kate Red D29-13 - Wellbore #1 - Gyro Surveys	9,100.00	6,939.38	1,961.58	1,904.51	34.368	SF
Kate Red D29-14 - Wellbore #1 - Gyro Surveys	8,732.12	6,931.26	577.87	522.59	10.453	CC, ES, SF
Kate Red D29-2J - Wellbore #1 - Kate Red D29-2J	1,367.09	1,332.12	1,738.01	1,728.86	189.964	CC
Kate Red D29-2J - Wellbore #1 - Kate Red D29-2J	2,000.00	1,952.81	1,739.45	1,725.86	128.075	ES
Kate Red D29-2J - Wellbore #1 - Kate Red D29-2J	6,550.00	6,520.11	2,057.52	2,012.06	45.265	SF
Kate Red D29-3 - Wellbore #1 - Kate Red D29-3	100.00	61.98	1,603.45	1,603.22	6,847.330	CC
Kate Red D29-3 - Wellbore #1 - Kate Red D29-3	700.00	652.03	1,606.51	1,602.12	366.369	ES
Kate Red D29-3 - Wellbore #1 - Kate Red D29-3	6,500.00	6,452.09	1,995.90	1,950.90	44.348	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	6,750.00	6,690.85	1,979.13	1,932.32	42.279	SF
Kate Red D29-6 - Wellbore #1 - Gyro Surveys	1,896.59	1,860.61	422.62	409.73	32.779	CC
Kate Red D29-6 - Wellbore #1 - Gyro Surveys	2,000.00	1,961.87	422.90	409.29	31.059	ES
Kate Red D29-6 - Wellbore #1 - Gyro Surveys	6,400.00	6,345.82	731.98	687.71	16.535	SF
Kate White D29-1 - Wellbore #1 - Gyro Surveys	2,353.99	2,365.53	2,845.71	2,829.45	175.057	CC
Kate White D29-1 - Wellbore #1 - Gyro Surveys	2,400.00	2,407.04	2,845.83	2,829.27	171.946	ES
Kate White D29-1 - Wellbore #1 - Gyro Surveys	6,750.00	6,697.33	3,061.32	3,014.48	65.356	SF
Kate White D29-15 - Wellbore #1 - Gyro Surveys	8,628.58	6,897.86	675.21	620.47	12.336	CC, ES
Kate White D29-15 - Wellbore #1 - Gyro Surveys	8,700.00	6,897.50	678.97	623.88	12.323	SF
Kate White D29-16 - Wellbore #1 - Gyro Surveys	8,715.13	6,905.14	2,079.66	2,024.44	37.658	CC, ES
Kate White D29-16 - Wellbore #1 - Gyro Surveys	9,100.00	6,905.24	2,114.98	2,057.75	36.959	SF
Kate White D29-7 - Wellbore #1 - Gyro Surveys	5,872.11	5,841.25	1,161.49	1,120.77	28.524	CC
Kate White D29-7 - Wellbore #1 - Gyro Surveys	6,200.00	6,164.81	1,163.35	1,120.32	27.034	ES
Kate White D29-7 - Wellbore #1 - Gyro Surveys	6,600.00	6,555.77	1,192.10	1,146.25	25.998	SF
Kate White D29-8 - Wellbore #1 - Gyro Surveys	6,373.23	6,316.07	2,234.42	2,190.21	50.547	CC
Kate White D29-8 - Wellbore #1 - Gyro Surveys	6,400.00	6,343.66	2,234.57	2,190.17	50.331	ES
Kate White D29-8 - Wellbore #1 - Gyro Surveys	6,900.00	6,810.95	2,302.39	2,254.55	48.131	SF
Kate White D29-9 (SI) - Wellbore #1 - Gyro Surveys	7,488.71	6,877.05	2,105.83	2,055.96	42.226	CC
Kate White D29-9 (SI) - Wellbore #1 - Gyro Surveys	7,500.00	6,877.40	2,105.86	2,055.95	42.196	ES
Kate White D29-9 (SI) - Wellbore #1 - Gyro Surveys	7,800.00	6,886.62	2,128.69	2,077.70	41.750	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:	Plan #3	**Offset TVD Reference:**	Reference 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 30						
Adams D30-27D - Adams D30-27D - Adams D30-27D - A	2,387.53	2,624.77	4,571.31	4,551.60	232.006	CC
Adams D30-27D - Adams D30-27D - Adams D30-27D - A	2,400.00	2,635.66	4,571.33	4,551.53	230.877	ES
Adams D30-27D - Adams D30-27D - Adams D30-27D - A	6,850.00	6,902.67	4,902.32	4,850.58	94.750	SF
Adams D30-29D - Wellbore #1 - Wellbore #1 - As Drilled	0.00	0.00	5,685.59			
Adams D30-29D - Wellbore #1 - Wellbore #1 - As Drilled	300.00	242.63	5,686.29	5,684.86	3,975.708	ES
Adams D30-29D - Wellbore #1 - Wellbore #1 - As Drilled	7,200.00	6,971.18	6,963.20	6,913.03	138.808	SF
Adams D30-30D - Adams D30-30D Gyros - Gyros	392.81	362.82	5,663.20	5,660.92	2,478.007	CC
Adams D30-30D - Adams D30-30D Gyros - Gyros	500.00	421.80	5,663.65	5,660.76	1,960.100	ES
Adams D30-30D - Adams D30-30D Gyros - Gyros	11,000.00	3,800.00	9,991.42	9,926.62	154.177	SF
Adams D30-30D - Adams D30-30D OH - As Drilled	392.81	375.82	5,663.18	5,660.89	2,478.015	CC
Adams D30-30D - Adams D30-30D OH - As Drilled	500.00	434.80	5,663.63	5,660.74	1,960.100	ES
Adams D30-30D - Adams D30-30D OH - As Drilled	11,000.00	3,813.00	9,991.40	9,926.59	154.176	SF
Adams D30-31D - Adams D30-31D Gyros - Gyros	100.00	66.12	5,645.36	5,645.11	10,000.000	CC
Adams D30-31D - Adams D30-31D Gyros - Gyros	200.00	146.29	5,645.56	5,644.73	6,852.925	ES
Adams D30-31D - Adams D30-31D Gyros - Gyros	10,300.00	7,344.83	8,868.62	8,746.01	72.333	SF
Adams D30-31D - Adams D30-31D OH - As-drilled	0.00	0.00	5,645.36			
Adams D30-31D - Adams D30-31D OH - As-drilled	200.00	159.29	5,645.56	5,644.74	6,853.407	ES
Adams D30-31D - Adams D30-31D OH - As-drilled	10,300.00	7,357.83	8,868.62	8,746.01	72.333	SF
Corbin D30-23D - Corbin D30-23D - Corbin D30-23D - As	8,429.45	7,322.44	3,746.88	3,679.00	55.204	CC
Corbin D30-23D - Corbin D30-23D - Corbin D30-23D - As	8,500.00	7,323.17	3,747.54	3,678.38	54.189	ES
Corbin D30-23D - Corbin D30-23D - Corbin D30-23D - As	10,600.00	7,346.08	4,330.12	4,226.58	41.822	SF
Corbin Red D30-04J - Corbin Red D30-04J - Corbin Red	7,834.75	7,111.82	4,096.63	4,044.71	78.906	CC, ES
Corbin Red D30-04J - Corbin Red D30-04J - Corbin Red	9,400.00	7,273.60	4,382.48	4,322.98	73.662	SF
Corbin Red D30-09 - Corbin Red D30-09 - Corbin Red D3	7,445.36	7,034.07	3,105.28	3,055.00	61.761	CC, ES
Corbin Red D30-09 - Corbin Red D30-09 - Corbin Red D3	8,100.00	7,049.53	3,173.50	3,120.99	60.435	SF
Corbin Red D30-15 - Corbin Red D30-15 - Corbin Red D3	8,782.90	6,872.04	4,458.36	4,402.90	80.389	CC
Corbin Red D30-15 - Corbin Red D30-15 - Corbin Red D3	8,800.00	6,873.25	4,458.39	4,402.84	80.256	ES
Corbin Red D30-15 - Corbin Red D30-15 - Corbin Red D3	10,400.00	6,962.07	4,741.48	4,677.67	74.302	SF
Corbin Red D30-16 - Corbin Red D30-16 - Corbin Red D3	8,873.83	6,922.12	3,224.43	3,168.29	57.431	CC
Corbin Red D30-16 - Corbin Red D30-16 - Corbin Red D3	8,900.00	6,921.93	3,224.54	3,168.26	57.295	ES
Corbin Red D30-16 - Corbin Red D30-16 - Corbin Red D3	9,700.00	6,916.15	3,328.58	3,268.46	55.359	SF
Dechant D30-17D - Dechant D30-17D - Dechant D30-17D	5,736.24	6,359.94	3,955.11	3,887.79	58.752	CC
Dechant D30-17D - Dechant D30-17D - Dechant D30-17D	5,800.00	6,400.00	3,955.28	3,887.73	58.559	ES
Dechant D30-17D - Dechant D30-17D - Dechant D30-17D	6,500.00	6,941.78	3,983.77	3,913.89	57.012	SF
Dechant D30-20D - Dechant D30-20D - Dechant D30-20D	4,479.12	4,746.00	6,298.74	6,263.29	177.662	CC
Dechant D30-20D - Dechant D30-20D - Dechant D30-20D	4,500.00	4,746.00	6,298.78	6,263.25	177.299	ES
Dechant D30-20D - Dechant D30-20D - Dechant D30-20D	10,300.00	6,971.39	7,288.42	7,221.66	109.178	SF
Dechant D30-24D - Dechant D30-24D - Dechant D30-24D	8,157.02	7,192.76	5,186.71	5,129.24	90.254	CC
Dechant D30-24D - Dechant D30-24D - Dechant D30-24D	8,200.00	7,193.27	5,186.89	5,129.21	89.937	ES
Dechant D30-24D - Dechant D30-24D - Dechant D30-24D	10,200.00	7,213.00	5,574.50	5,507.02	82.606	SF
Dechant D30-25D - Dechant D30-25D - Dechant D30-25D	0.00	0.00	6,033.12			
Dechant D30-25D - Dechant D30-25D - Dechant D30-25D	300.00	257.68	6,033.88	6,032.31	3,825.851	ES
Dechant D30-25D - Dechant D30-25D - Dechant D30-25D	10,100.00	7,271.70	6,672.29	6,603.57	97.091	SF
Dechant D31-27D - Dechant D31-27D - Dechant D31-27D	9,327.02	7,267.48	3,821.59	3,758.94	61.000	CC, ES
Dechant D31-27D - Dechant D31-27D - Dechant D31-27D	11,900.00	7,251.20	4,607.01	4,520.84	53.462	SF
Dechant D31-28D - Dechant D31-28D - Dechant D31-28D	9,270.50	6,989.53	5,229.18	5,170.42	88.985	CC
Dechant D31-28D - Dechant D31-28D - Dechant D31-28D	9,300.00	6,989.81	5,229.26	5,170.34	88.739	ES
Dechant D31-28D - Dechant D31-28D - Dechant D31-28D	11,300.00	7,010.10	5,609.16	5,539.80	80.867	SF
Dechant D31-29D - Dechant D31-29D - Dechant D31-29D	0.00	0.00	6,054.20			
Dechant D31-29D - Dechant D31-29D - Dechant D31-29D	900.00	853.85	6,055.44	6,049.63	1,043.574	ES
Dechant D31-29D - Dechant D31-29D - Dechant D31-29D	12,900.00	12,900.00	7,316.81	7,216.54	72.973	SF
Dechant D31-77HN - Original Drilling - Original Drilling - A	9,550.68	6,540.00	5,812.61	5,756.12	102.899	CC
Dechant D31-77HN - Original Drilling - Original Drilling - A	9,600.00	6,540.00	5,812.82	5,756.03	102.357	ES

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:	Plan #3	**Offset TVD Reference:**	Reference 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 30						
Dechant D31-77HN - Original Drilling - Original Drilling - A	15,400.00	11,360.01	6,350.65	6,186.34	38.651	SF
Hanson D30-11 - Hanson D30-11 - Hanson D30-11 - As D	0.00	0.00	5,744.66			
Hanson D30-11 - Hanson D30-11 - Hanson D30-11 - As D	3,200.00	3,259.03	5,750.71	5,728.48	258.701	ES
Hanson D30-11 - Hanson D30-11 - Hanson D30-11 - As D	10,100.00	7,098.57	6,433.33	6,371.80	104.560	SF
Hanson D30-12 - Hanson D30-12 - Hanson D30-12 - As	0.00	0.00	6,928.62			
Hanson D30-12 - Hanson D30-12 - Hanson D30-12 - As	2,200.00	2,141.04	6,932.53	6,917.57	463.496	ES
Hanson D30-12 - Hanson D30-12 - Hanson D30-12 - As	11,200.00	6,900.99	8,030.56	7,964.40	121.395	SF
Hanson D30-13 - Hanson D30-13 - Hanson D30-13 - As	8,786.05	7,022.03	7,098.39	7,042.37	126.699	CC
Hanson D30-13 - Hanson D30-13 - Hanson D30-13 - As	8,800.00	7,022.09	7,098.41	7,042.31	126.535	ES
Hanson D30-13 - Hanson D30-13 - Hanson D30-13 - As	12,400.00	7,039.55	7,965.40	7,890.38	106.177	SF
Hanson D30-14 - Hanson D30-14 - Hanson D30-14 - As	8,727.48	7,235.00	5,599.43	5,542.95	99.154	CC, ES
Hanson D30-14 - Hanson D30-14 - Hanson D30-14 - As	11,100.00	7,235.00	6,081.32	6,012.76	88.711	SF
Hettinger C Unit 1 - Hettinger C Unit 1 - Hettinger C Unit	176.85	148.85	3,525.89	3,525.15	4,724.163	CC
Hettinger C Unit 1 - Hettinger C Unit 1 - Hettinger C Unit	600.00	543.32	3,526.64	3,522.99	968.692	ES
Hettinger C Unit 1 - Hettinger C Unit 1 - Hettinger C Unit	6,950.00	6,942.13	4,082.28	4,033.92	84.418	SF
Hettinger D30-02 - Hettinger D30-02 - Hettinger D30-02 -	2,200.00	2,167.00	4,626.86	4,600.29	174.177	CC
Hettinger D30-02 - Hettinger D30-02 - Hettinger D30-02 -	2,300.00	2,266.98	4,628.06	4,600.29	166.614	ES
Hettinger D30-02 - Hettinger D30-02 - Hettinger D30-02 -	7,000.00	6,821.71	5,054.17	4,970.26	60.232	SF
Hettinger D30-03 - Hettinger D30-03 - Hettinger D30-03 -	0.00	0.00	5,867.49			
Hettinger D30-03 - Hettinger D30-03 - Hettinger D30-03 -	2,200.00	2,164.77	5,872.43	5,857.39	390.408	ES
Hettinger D30-03 - Hettinger D30-03 - Hettinger D30-03 -	7,200.00	6,955.60	6,370.13	6,321.03	129.751	SF
Hettinger D30-04 - Hettinger D30-04 - Hettinger D30-04 -	1,771.97	1,743.98	7,044.91	7,032.87	585.403	CC
Hettinger D30-04 - Hettinger D30-04 - Hettinger D30-04 -	2,213.01	2,203.92	7,045.44	7,030.22	462.968	ES
Hettinger D30-04 - Hettinger D30-04 - Hettinger D30-04 -	7,250.00	7,024.28	7,480.38	7,430.88	151.136	SF
Hettinger D30-05 - Hettinger D30-05 - Hettinger D30-05 -	1,301.31	1,278.38	6,818.63	6,809.90	780.802	CC
Hettinger D30-05 - Hettinger D30-05 - Hettinger D30-05 -	2,000.00	1,932.23	6,820.08	6,806.57	504.593	ES
Hettinger D30-05 - Hettinger D30-05 - Hettinger D30-05 -	10,600.00	6,872.57	8,172.34	8,110.17	131.471	SF
Hettinger D30-06 - Hettinger D30-06 - Hettinger D30-06 -	0.00	0.00	5,627.26			
Hettinger D30-06 - Hettinger D30-06 - Hettinger D30-06 -	100.00	50.08	5,627.41	5,627.20	10,000.000	ES
Hettinger D30-06 - Hettinger D30-06 - Hettinger D30-06 -	9,100.00	6,937.30	6,422.38	6,366.74	115.439	SF
Hettinger D30-08 - Hettinger D30-08 - Hettinger D30-08 -	692.07	668.07	3,175.37	3,170.96	719.822	CC
Hettinger D30-08 - Hettinger D30-08 - Hettinger D30-08 -	1,600.00	1,554.73	3,177.87	3,167.12	295.473	ES
Hettinger D30-08 - Hettinger D30-08 - Hettinger D30-08 -	7,141.84	6,868.95	3,416.77	3,368.06	70.149	SF
Leslie E Hanson Gas Unit 1 - Leslie E Hanson Gas Unit 1	8,174.70	6,913.00	6,615.63	6,526.67	74.360	CC
Leslie E Hanson Gas Unit 1 - Leslie E Hanson Gas Unit 1	8,200.00	6,913.00	6,615.68	6,526.61	74.269	ES
Leslie E Hanson Gas Unit 1 - Leslie E Hanson Gas Unit 1	10,600.00	6,913.00	7,046.18	6,945.03	69.654	SF
McWilliams D29-32 - McWilliams D29-32 - McWilliams D	2,360.33	2,373.47	2,502.04	2,485.71	153.284	CC
McWilliams D29-32 - McWilliams D29-32 - McWilliams D	2,463.95	2,477.39	2,502.44	2,485.41	146.998	ES
McWilliams D29-32 - McWilliams D29-32 - McWilliams D	7,200.00	6,950.35	2,652.51	2,603.26	53.860	SF
McWilliams D30-07 - McWilliams D30-07 - McWilliams D	2,200.00	2,175.00	4,326.24	4,299.61	162.433	CC
McWilliams D30-07 - McWilliams D30-07 - McWilliams D	2,300.00	2,274.98	4,327.04	4,299.19	155.387	ES
McWilliams D30-07 - McWilliams D30-07 - McWilliams D	7,150.00	6,883.37	4,621.60	4,536.60	54.370	SF
McWilliams D30-18 - McWilliams D30-18 - McWilliams D	0.00	0.00	5,086.52			
McWilliams D30-18 - McWilliams D30-18 - McWilliams D	800.00	738.22	5,088.27	5,083.23	1,009.859	ES
McWilliams D30-18 - McWilliams D30-18 - McWilliams D	7,250.00	7,014.05	5,424.56	5,375.08	109.613	SF
McWilliams D30-19 - McWilliams D30-19 - McWilliams D	1,870.65	1,844.76	6,194.20	6,181.45	485.903	CC
McWilliams D30-19 - McWilliams D30-19 - McWilliams D	2,000.00	1,943.99	6,194.52	6,180.96	456.917	ES
McWilliams D30-19 - McWilliams D30-19 - McWilliams D	8,500.00	6,973.72	7,020.81	6,965.80	127.640	SF
McWilliams D30-21 - McWilliams D30-21 - McWilliams D	1,781.25	1,763.29	4,733.53	4,721.39	390.035	CC
McWilliams D30-21 - McWilliams D30-21 - McWilliams D	2,300.00	2,275.32	4,734.08	4,718.31	300.298	ES
McWilliams D30-21 - McWilliams D30-21 - McWilliams D	9,000.00	7,013.16	5,173.29	5,117.41	92.579	SF
McWilliams D30-22 - McWilliams D30-22 - McWilliams D	2,146.83	2,124.91	3,852.86	3,838.15	261.925	CC
McWilliams D30-22 - McWilliams D30-22 - McWilliams D	2,200.00	2,169.89	3,852.92	3,837.86	255.883	ES

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:	Plan #3	**Offset TVD Reference:**	Reference 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 30						
McWilliams D30-22 - McWilliams D30-22 - McWilliams D	7,700.00	6,941.40	4,078.94	4,028.37	80.655 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:	Plan #3	**Offset TVD Reference:**	Reference 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 31						
Dechant 1-31A (PR) - Wellbore #1 - Gyro Surveys	13,751.87	7,254.30	6,579.96	6,488.62	72.035	CC
Dechant 1-31A (PR) - Wellbore #1 - Gyro Surveys	13,800.00	7,255.21	6,580.14	6,488.43	71.751	ES
Dechant 1-31A (PR) - Wellbore #1 - Gyro Surveys	15,800.00	7,292.72	6,891.24	6,787.37	66.341	SF
Dechant D 31-22D (PR) - Wellbore #1 - Gyro Surveys	12,025.04	7,097.77	3,974.43	3,892.77	48.669	CC, ES
Dechant D 31-22D (PR) - Wellbore #1 - Gyro Surveys	12,700.00	7,100.79	4,031.33	3,946.55	47.547	SF
Dechant D31-18D (PR) - Wellbore #1 - As Drilled	10,795.52	7,430.88	5,260.38	5,176.01	62.354	CC
Dechant D31-18D (PR) - Wellbore #1 - As Drilled	10,800.00	7,431.03	5,260.38	5,175.99	62.338	ES
Dechant D31-18D (PR) - Wellbore #1 - As Drilled	11,900.00	7,467.10	5,374.96	5,286.03	60.439	SF
Dechant D31-21D(PR) - Wellbore #1 - As Drilled	11,946.50	7,059.08	5,004.94	4,925.57	63.063	CC
Dechant D31-21D(PR) - Wellbore #1 - As Drilled	12,000.00	7,059.82	5,005.22	4,925.51	62.794	ES
Dechant D31-21D(PR) - Wellbore #1 - As Drilled	13,200.00	7,076.05	5,159.49	5,073.31	59.867	SF
Dechant D31-24D (PR) - Wellbore #1 - Gyro Surveys	13,288.16	6,818.51	5,071.75	4,983.80	57.668	CC
Dechant D31-24D (PR) - Wellbore #1 - Gyro Surveys	13,300.00	6,818.96	5,071.77	4,983.74	57.615	ES
Dechant D31-24D (PR) - Wellbore #1 - Gyro Surveys	18,300.00	18,300.00	7,128.50	6,992.19	52.296	SF
Dechant D31-31D (SI) - Dechant D31-31D Gyros - As-Dr	10,886.19	7,000.00	7,541.21	7,458.72	91.418	CC
Dechant D31-31D (SI) - Dechant D31-31D Gyros - As-Dr	10,900.00	7,000.00	7,541.22	7,458.65	91.330	ES
Dechant D31-31D (SI) - Dechant D31-31D Gyros - As-Dr	13,300.00	7,000.00	7,918.10	7,823.94	84.096	SF
Dechant D31-31D (SI) - Dechant D31-31D OH - As-Drille	10,886.14	7,072.59	7,540.86	7,458.29	91.334	CC
Dechant D31-31D (SI) - Dechant D31-31D OH - As-Drille	10,900.00	7,072.62	7,540.87	7,458.23	91.245	ES
Dechant D31-31D (SI) - Dechant D31-31D OH - As-Drille	13,300.00	7,078.82	7,917.78	7,823.53	84.013	SF
Dechant State D31-32 (SI) - Wellbore #1 - As-Drilled	11,883.41	6,923.81	7,228.73	7,152.60	94.944	CC
Dechant State D31-32 (SI) - Wellbore #1 - As-Drilled	11,900.00	6,923.91	7,228.75	7,152.50	94.797	ES
Dechant State D31-32 (SI) - Wellbore #1 - As-Drilled	14,700.00	6,942.18	7,758.05	7,665.23	83.583	SF
Dechant Y 06-27D (PR) - Wellbore #1 - As Drilled	14,642.02	7,122.65	3,852.72	3,751.65	38.118	CC, ES
Dechant Y 06-27D (PR) - Wellbore #1 - As Drilled	15,200.00	7,134.59	3,892.90	3,789.09	37.500	SF
Dechant Y 06-28D (PR) - Wellbore #1 - As Drilled	14,695.29	7,037.95	5,064.03	4,962.84	50.049	CC
Dechant Y 06-28D (PR) - Wellbore #1 - As Drilled	14,700.00	7,038.21	5,064.03	4,962.81	50.029	ES
Dechant Y 06-28D (PR) - Wellbore #1 - As Drilled	18,900.00	18,900.00	6,579.21	6,428.46	43.642	SF
Riva Blue 31-15 (PR) - Wellbore #1 - Gyro Surveys	13,754.78	6,997.84	4,488.08	4,397.92	49.780	CC
Riva Blue 31-15 (PR) - Wellbore #1 - Gyro Surveys	13,800.00	6,997.83	4,488.31	4,397.82	49.600	ES
Riva Blue 31-15 (PR) - Wellbore #1 - Gyro Surveys	14,700.00	6,997.72	4,586.53	4,490.67	47.844	SF
Riva Blue 31-16 (PR) - Wellbore #1 - Gyro Surveys	13,992.05	6,956.06	3,453.24	3,361.28	37.553	CC
Riva Blue 31-16 (PR) - Wellbore #1 - Gyro Surveys	14,000.00	6,956.10	3,453.25	3,361.24	37.529	ES
Riva Blue 31-16 (PR) - Wellbore #1 - Gyro Surveys	14,600.00	6,958.87	3,506.35	3,410.83	36.710	SF
Riva Blue 31-9 (PR) - Wellbore #1 - Gyro Surveys	12,741.59	6,997.13	3,398.33	3,315.74	41.148	CC, ES
Riva Blue 31-9 (PR) - Wellbore #1 - Gyro Surveys	13,400.00	7,005.82	3,461.51	3,375.08	40.049	SF
Riva Blue D 31-04J (PR) - Wellbore #1 - Gyro Surveys	13,075.14	7,029.79	4,173.79	4,088.39	48.873	CC
Riva Blue D 31-04J (PR) - Wellbore #1 - Gyro Surveys	13,100.00	7,031.17	4,173.87	4,088.28	48.767	ES
Riva Blue D 31-04J (PR) - Wellbore #1 - Gyro Surveys	14,000.00	7,080.95	4,274.73	4,183.55	46.885	SF
Riva Blue D 31-11 (PR) - Wellbore #1 - Gyro Surveys	12,555.88	6,984.90	5,500.64	5,417.72	66.337	CC
Riva Blue D 31-11 (PR) - Wellbore #1 - Gyro Surveys	12,600.00	6,984.23	5,500.81	5,417.58	66.088	ES
Riva Blue D 31-11 (PR) - Wellbore #1 - Gyro Surveys	14,100.00	6,961.27	5,713.21	5,621.14	62.051	SF
Riva Blue D 31-12 (SI) - Wellbore #1 - Gyro Surveys	12,683.19	6,950.84	7,133.28	7,051.27	86.985	CC
Riva Blue D 31-12 (SI) - Wellbore #1 - Gyro Surveys	12,700.00	6,950.98	7,133.30	7,051.17	86.854	ES
Riva Blue D 31-12 (SI) - Wellbore #1 - Gyro Surveys	15,300.00	6,974.65	7,598.06	7,500.40	77.804	SF
Riva Blue D31-14 (PR) - Wellbore #1 - Gyro Surveys	14,355.93	7,021.89	5,676.43	5,581.43	59.747	CC
Riva Blue D31-14 (PR) - Wellbore #1 - Gyro Surveys	14,400.00	6,977.96	5,676.61	5,581.39	59.620	ES
Riva Blue D31-14 (PR) - Wellbore #1 - Gyro Surveys	15,800.00	6,952.24	5,857.18	5,753.64	56.570	SF
Riva D 31-10 (PR) - Wellbore #1 - As-Drilled	12,608.01	6,846.79	4,704.67	4,623.60	58.032	CC, ES
Riva D 31-10 (PR) - Wellbore #1 - As-Drilled	13,800.00	6,922.46	4,853.20	4,764.78	54.888	SF
Riva Red D 31-2J (PA) - Wellbore #1 - Gyro Surveys	10,827.23	7,017.71	6,519.51	6,450.70	94.737	CC
Riva Red D 31-2J (PA) - Wellbore #1 - Gyro Surveys	10,900.00	7,018.23	6,519.92	6,450.61	94.069	ES
Riva Red D 31-2J (PA) - Wellbore #1 - Gyro Surveys	13,400.00	7,035.60	7,008.76	6,925.05	83.727	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:	Plan #3	**Offset TVD Reference:**	Reference 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 31						
Riva Red D 31-3 (PA) - Wellbore #1 - Gyro Surveys	9,798.54	6,754.92	5,644.22	5,583.19	92.476	CC
Riva Red D 31-3 (PA) - Wellbore #1 - Gyro Surveys	9,800.00	6,754.95	5,644.22	5,583.18	92.462	ES
Riva Red D 31-3 (PA) - Wellbore #1 - Gyro Surveys	15,400.00	15,400.00	7,951.01	7,839.06	71.021	SF
Riva Red D 31-6 (PA) - Wellbore #1 - No Surveys	11,541.80	6,924.00	5,635.76	5,311.32	17.370	CC
Riva Red D 31-6 (PA) - Wellbore #1 - No Surveys	11,600.00	6,924.00	5,636.06	5,311.21	17.350	ES
Riva Red D 31-6 (PA) - Wellbore #1 - No Surveys	12,200.00	6,924.00	5,674.07	5,345.24	17.255	SF
Riva Red D31-06X (SI) - Wellbore #1 - Gyro Surveys	11,336.62	7,167.93	5,724.48	5,652.05	79.032	CC
Riva Red D31-06X (SI) - Wellbore #1 - Gyro Surveys	11,400.00	7,169.92	5,724.83	5,651.96	78.558	ES
Riva Red D31-06X (SI) - Wellbore #1 - Gyro Surveys	13,300.00	7,229.47	6,051.51	5,967.58	72.102	SF
Riva White D 31-1 (PR) - Wellbore #1 - Gyro Surveys	10,064.91	6,955.77	3,252.56	3,189.11	51.259	CC
Riva White D 31-1 (PR) - Wellbore #1 - Gyro Surveys	10,100.00	6,955.24	3,252.75	3,189.09	51.089	ES
Riva White D 31-1 (PR) - Wellbore #1 - Gyro Surveys	10,800.00	6,944.59	3,334.58	3,267.18	49.473	SF
Riva White D 31-7 (PR) - Wellbore #1 - Gyro Surveys	11,319.49	6,930.93	4,358.58	4,286.79	60.706	CC, ES
Riva White D 31-7 (PR) - Wellbore #1 - Gyro Surveys	12,500.00	6,959.44	4,515.53	4,436.97	57.476	SF
Riva White D 31-8 (PA) - Wellbore #1 - Gyro Surveys	11,505.50	6,770.34	3,323.80	3,251.17	45.763	CC, ES
Riva White D 31-8 (PA) - Wellbore #1 - Gyro Surveys	12,200.00	6,803.10	3,395.42	3,318.72	44.268	SF
River Red D 31-4 (PA) - Wellbore #1 - Gyro Surveys	9,909.34	6,284.21	7,443.19	7,339.75	71.956	CC, ES
River Red D 31-4 (PA) - Wellbore #1 - Gyro Surveys	12,300.00	6,233.08	7,817.53	7,701.29	67.253	SF
UPRR 53 Pan Am UT R 1 (PA) - Wellbore #1 - No Survey	10,759.18	6,917.00	3,853.70	3,535.05	12.094	CC
UPRR 53 Pan Am UT R 1 (PA) - Wellbore #1 - No Survey	10,800.00	6,917.00	3,853.92	3,535.00	12.084	ES
UPRR 53 Pan Am UT R 1 (PA) - Wellbore #1 - No Survey	11,000.00	6,917.00	3,861.22	3,541.02	12.059	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:	Plan #3	**Offset TVD Reference:**	Reference 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	12,012.92	7,078.74	191.44	110.89	2.377	CC, ES, SF
HP D32-23D - Wellbore #1 - MWD Surveys	13,094.88	7,018.20	1,361.54	1,274.76	15.689	CC
HP D32-23D - Wellbore #1 - MWD Surveys	13,100.00	7,018.19	1,361.55	1,274.72	15.680	ES
HP D32-23D - Wellbore #1 - MWD Surveys	13,200.00	7,018.13	1,365.60	1,277.88	15.568	SF
HP Farms D 32-22D - Wellbore #1 - MWD Surveys	11,943.23	7,239.55	1,469.28	1,380.98	16.639	CC, ES
HP Farms D 32-22D - Wellbore #1 - MWD Surveys	12,100.00	7,241.29	1,477.62	1,388.14	16.514	SF
HP Farms D32-03 - Wellbore #1 - Gyro Surveys	10,241.56	6,946.99	375.12	310.55	5.810	CC, ES, SF
HP Farms D32-18D - Wellbore #1 - MWD Surveys	10,760.96	7,147.97	231.21	160.93	3.290	CC, ES, SF
HP Farms D32-24D - Wellbore #1 - MWD Surveys	13,358.99	7,211.01	218.36	128.87	2.440	CC, ES, SF
Norris 14-32 - Wellbore #1 - Projection Survey	14,228.60	6,943.00	1,974.11	1,843.87	15.157	CC, ES
Norris 14-32 - Wellbore #1 - Projection Survey	14,400.00	6,943.00	1,981.54	1,850.31	15.099	SF
Norris A Unit 2 - Wellbore #1 - As-Drilled	13,500.08	7,034.59	1,304.82	1,216.25	14.732	CC, ES
Norris A Unit 2 - Wellbore #1 - As-Drilled	13,600.00	7,033.42	1,308.64	1,219.54	14.687	SF
Norris D32-1 (SI) - Wellbore #1 - Gyro Surveys	10,132.39	6,926.07	2,107.53	2,043.76	33.045	CC, ES
Norris D32-1 (SI) - Wellbore #1 - Gyro Surveys	10,500.00	6,920.23	2,139.35	2,073.38	32.429	SF
Norris D32-10 - Wellbore #1 - Gyro Surveys	12,810.45	6,750.00	788.60	706.94	9.658	CC, ES, SF
Norris D32-15 - Wellbore #1 - Gyro Surveys	14,096.38	6,800.00	771.14	679.22	8.389	CC
Norris D32-15 - Wellbore #1 - Gyro Surveys	14,100.00	6,800.00	771.14	679.20	8.387	ES, SF
Norris D32-1J - Wellbore #1 - Gyro Surveys	10,924.83	6,965.00	1,678.15	1,608.81	24.202	CC, ES
Norris D32-1J - Wellbore #1 - Gyro Surveys	11,100.00	6,959.60	1,687.26	1,616.78	23.939	SF
Norris D32-2 - Wellbore #1 - Gyro Surveys	10,053.40	6,957.93	794.97	731.63	12.552	CC, ES
Norris D32-2 - Wellbore #1 - Gyro Surveys	10,100.00	6,957.63	796.33	732.68	12.510	SF
Norris D32-2J - Wellbore #1 - Gyro Surveys	10,532.73	6,961.17	1,109.46	1,042.91	16.672	CC, ES
Norris D32-2J - Wellbore #1 - Gyro Surveys	10,600.00	6,962.14	1,111.49	1,044.60	16.616	SF
Norris D32-4 (P&A) - Wellbore #1 - No Surveys	10,093.87	6,926.00	1,871.16	1,693.14	10.511	CC
Norris D32-4 (P&A) - Wellbore #1 - No Surveys	10,100.00	6,926.00	1,871.17	1,693.11	10.509	ES
Norris D32-4 (P&A) - Wellbore #1 - No Surveys	10,200.00	6,926.00	1,874.17	1,695.55	10.492	SF
Norris D32-5 - Wellbore #1 - Gyro Surveys	11,438.22	6,928.54	1,844.55	1,771.80	25.355	CC, ES
Norris D32-5 - Wellbore #1 - Gyro Surveys	11,600.00	6,926.94	1,851.63	1,777.96	25.135	SF
Norris D32-6 - Wellbore #1 - Gyro Surveys	11,463.05	6,948.64	627.03	553.99	8.585	CC, ES
Norris D32-6 - Wellbore #1 - Gyro Surveys	11,500.00	6,948.76	628.12	554.94	8.584	SF
Norris D32-7 - Wellbore #1 - Gyro Surveys	11,431.84	6,909.79	717.93	645.23	9.876	CC, ES
Norris D32-7 - Wellbore #1 - Gyro Surveys	11,500.00	6,914.52	721.14	648.00	9.860	SF
Norris D32-9 (SI) - Wellbore #1 - Gyro Surveys	12,788.42	6,924.48	2,178.86	2,096.17	26.349	CC
Norris D32-9 (SI) - Wellbore #1 - Gyro Surveys	12,800.00	6,924.44	2,178.89	2,096.10	26.320	ES
Norris D32-9 (SI) - Wellbore #1 - Gyro Surveys	13,100.00	6,923.46	2,201.02	2,116.31	25.983	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:	Plan #3	**Offset TVD Reference:**	Reference 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 04						
HSR-Guttersen 01-04 - Original Drilling - Original Drilling	15,307.89	7,124.06	7,077.89	6,975.16	68.901	CC
HSR-Guttersen 01-04 - Original Drilling - Original Drilling	15,400.00	7,123.30	7,078.49	6,975.03	68.421	ES
HSR-Guttersen 01-04 - Original Drilling - Original Drilling	17,500.00	7,105.93	7,409.56	7,293.00	63.570	SF
HSR-Guttersen 02-04 - Original Drilling - Original Drilling	15,300.40	6,957.18	5,979.22	5,876.98	58.483	CC, ES
HSR-Guttersen 02-04 - Original Drilling - Original Drilling	16,900.00	6,961.42	6,189.48	6,077.04	55.043	SF
HSR-Guttersen 03-04 - Original Drilling - Original Drilling	15,373.95	6,950.07	4,539.01	4,436.34	44.209	CC
HSR-Guttersen 03-04 - Original Drilling - Original Drilling	15,400.00	6,949.88	4,539.09	4,436.21	44.120	ES
HSR-Guttersen 03-04 - Original Drilling - Original Drilling	16,300.00	6,943.11	4,632.51	4,523.87	42.640	SF
HSR-Guttersen 05-04 - Original Drilling - Original Drilling	16,731.75	6,800.00	3,410.53	3,297.65	30.212	CC, ES
HSR-Guttersen 05-04 - Original Drilling - Original Drilling	17,200.00	6,778.63	3,442.40	3,326.51	29.703	SF
HSR-Guttersen 07-04 - Original Drilling - Original Drilling	16,532.40	6,968.71	5,822.94	5,711.05	52.041	CC
HSR-Guttersen 07-04 - Original Drilling - Original Drilling	16,600.00	6,968.64	5,823.33	5,710.90	51.793	ES
HSR-Guttersen 07-04 - Original Drilling - Original Drilling	17,900.00	6,967.31	5,981.38	5,860.69	49.560	SF
Melvin Y04-04 - Original Drilling - Original Drilling - As Dr	15,581.10	6,869.86	3,721.09	3,617.05	35.767	CC
Melvin Y04-04 - Original Drilling - Original Drilling - As Dr	15,600.00	6,869.46	3,721.14	3,616.95	35.715	ES
Melvin Y04-04 - Original Drilling - Original Drilling - As Dr	16,200.00	6,856.42	3,772.17	3,664.14	34.917	SF
Y Section 05						
Olsen Red Y05-02D - Olsen Red Y05-02D - Olsen Red Y	15,655.22	6,963.25	911.23	806.33	8.687	CC, ES
Olsen Red Y05-02D - Olsen Red Y05-02D - Olsen Red Y	15,700.00	6,964.00	912.33	807.23	8.680	SF
Olsen Y5-05JI - Olsen Y5-05JI - Olsen Y5-05JI - As Drille	16,631.85	6,946.00	1,942.03	1,841.42	19.303	CC, ES
Olsen Y5-05JI - Olsen Y5-05JI - Olsen Y5-05JI - As Drille	16,800.00	6,946.00	1,949.30	1,847.77	19.199	SF
Perkins 32-05 - Perkins 32-05 - Perkins 32-05 - As Drilled	16,642.00	6,998.00	754.73	605.10	5.044	CC, ES, SF
Perkins 42-05 - Perkins 42-05 - Perkins 42-05 - As Drilled	16,648.67	7,015.00	2,059.79	1,909.96	13.747	CC, ES
Perkins 42-05 - Perkins 42-05 - Perkins 42-05 - As Drilled	16,800.00	7,015.00	2,065.35	1,914.43	13.686	SF
Perkins 43-05 - Perkins 43-05 - Perkins 43-05 - As Drilled	17,956.43	7,020.00	2,051.19	1,890.91	12.797	CC, ES
Perkins 43-05 - Perkins 43-05 - Perkins 43-05 - As Drilled	18,100.00	7,020.00	2,056.21	1,894.91	12.748	SF
Perkins USX Y05-16 - Perkins USX Y05-16 - Perkins US	18,880.15	6,990.15	1,512.86	1,382.18	11.576	CC
Perkins USX Y05-16 - Perkins USX Y05-16 - Perkins US	18,900.00	6,990.26	1,512.99	1,382.14	11.563	ES
Perkins USX Y05-16 - Perkins USX Y05-16 - Perkins US	19,000.00	6,990.85	1,517.60	1,386.16	11.546	SF
Pioneer Y17-715 - Pioneer Y17-715 - Plan #1	19,486.73	6,408.64	2,199.22	2,065.39	16.432	CC
Pioneer Y17-715 - Pioneer Y17-715 - Plan #1	19,500.00	6,408.46	2,199.26	2,065.32	16.420	ES
Pioneer Y17-715 - Pioneer Y17-715 - Plan #1	19,700.00	6,405.70	2,209.53	2,074.44	16.356	SF
Pioneer Y17-725 - Pioneer Y17-725 - Plan #1	19,527.51	6,728.91	1,636.92	1,501.24	12.064	CC, ES
Pioneer Y17-725 - Pioneer Y17-725 - Plan #1	19,700.00	6,806.36	1,644.62	1,507.35	11.981	SF
Pioneer Y17-735 - Pioneer Y17-735 - Plan #1	19,860.11	7,022.77	1,052.79	914.20	7.596	CC, ES, SF
Pioneer Y17-745 - Pioneer Y17-745 - Plan #1	19,860.11	7,076.71	408.93	271.86	2.983	CC, ES, SF
Pioneer Y17-755 - Pioneer Y17-755 - Plan #1	19,860.11	7,139.23	333.34	205.60	2.610	CC, ES, SF
Pioneer Y17-765 - Pioneer Y17-765 - Plan #1	19,860.11	7,150.00	913.73	775.16	6.594	CC, ES, SF
Pioneer Y17-775 - Pioneer Y17-775 - Plan #1	19,860.11	6,945.25	1,560.55	1,422.82	11.331	CC, ES, SF
Pioneer Y17-785 - Pioneer Y17-785 - Plan #1	19,566.00	6,701.84	2,168.60	2,033.38	16.038	CC
Pioneer Y17-785 - Pioneer Y17-785 - Plan #1	19,600.00	6,715.77	2,168.82	2,033.28	16.001	ES
Pioneer Y17-785 - Pioneer Y17-785 - Plan #1	19,860.11	6,892.69	2,183.32	2,045.34	15.823	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:	Plan #3	**Offset TVD Reference:**	Reference 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 06						
Gray 10-6 (PA) - Wellbore #1 - Gyro Surveys	17,940.58	6,947.14	4,440.31	4,317.30	36.096	CC
Gray 10-6 (PA) - Wellbore #1 - Gyro Surveys	18,000.00	6,944.51	4,440.71	4,317.25	35.971	ES
Gray 10-6 (PA) - Wellbore #1 - Gyro Surveys	18,600.00	6,917.16	4,488.93	4,361.98	35.361	SF
Norris 14-6 (PA) - Wellbore #1 - Gyro Surveys	18,961.82	7,053.72	6,635.14	6,503.59	50.439	CC
Norris 14-6 (PA) - Wellbore #1 - Gyro Surveys	19,000.00	7,055.73	6,635.25	6,503.40	50.324	ES
Norris 14-6 (PA) - Wellbore #1 - Gyro Surveys	19,860.11	7,098.55	6,695.55	6,557.74	48.585	SF
Norris 41-6 (PA) - Wellbore #1 - Gyro Surveys	15,702.63	7,010.98	3,440.85	3,335.65	32.708	CC, ES
Norris 41-6 (PA) - Wellbore #1 - Gyro Surveys	16,200.00	7,023.65	3,476.59	3,368.38	32.130	SF
Norris Y 6-5 (PA) - Wellbore #1 - Gyro Surveys	16,239.62	6,888.67	6,754.34	6,645.06	61.811	CC
Norris Y 6-5 (PA) - Wellbore #1 - Gyro Surveys	16,300.00	6,889.39	6,754.61	6,644.87	61.552	ES
Norris Y 6-5 (PA) - Wellbore #1 - Gyro Surveys	18,000.00	6,936.24	6,979.92	6,859.73	58.071	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:	Plan #3	**Offset TVD Reference:**	Reference 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 07						
Harkis 11-7 (PA) - Wellbore #1 - Gyro Surveys	19,860.11	6,946.52	7,057.77	6,919.90	51.194	CC, ES, SF
Harkis 1-7 (PA) - Wellbore #1 - Gyro Surveys	19,860.11	7,014.51	6,810.28	6,674.15	50.025	CC, ES, SF
HP Farms Y 7-15JI (PR) - Wellbore #1 - As-Drilled	19,860.11	7,174.06	6,760.67	6,649.47	60.797	CC, ES, SF
HP Y07-09 (PR) - Wellbore #1 - As-Drilled	19,860.11	6,891.66	4,638.20	4,531.72	43.557	CC, ES, SF
HP Y07-10D (SI) - Wellbore #1 - Gyro Surveys	19,860.11	7,251.22	5,732.17	5,590.12	40.354	CC, ES, SF
Perkins 31-7 (SI) - Wellbore #1 - As-Drilled	19,860.11	7,030.21	4,523.47	4,385.98	32.899	CC, ES, SF
Perkins USX Y 7-17 (SI) - Wellbore #1 - Gyro Surveys	19,860.11	6,975.12	4,074.94	3,942.28	30.718	CC, ES, SF
Pioneer 22-7 (SI) - Wellbore #1 - As-Drilled	19,860.11	6,944.85	6,078.16	5,947.00	46.341	CC, ES, SF
Pioneer D31-716 - Pioneer D31-716 - Plan #2	10,085.90	17,365.08	2,863.74	2,734.69	22.192	CC
Pioneer D31-716 - Pioneer D31-716 - Plan #2	10,100.00	17,365.08	2,863.77	2,734.60	22.170	ES
Pioneer D31-716 - Pioneer D31-716 - Plan #2	19,860.11	7,665.49	2,951.34	2,809.64	20.829	SF
Pioneer D31-725 - Pioneer D31-725 - Plan #3	10,085.39	17,186.24	3,490.74	3,361.93	27.101	CC
Pioneer D31-725 - Pioneer D31-725 - Plan #3	10,100.00	17,192.93	3,490.76	3,361.78	27.064	ES
Pioneer D31-725 - Pioneer D31-725 - Plan #3	19,860.11	7,643.46	3,570.28	3,429.57	25.374	SF
Pioneer D31-735 - Pioneer D31-735 - Plan #2	10,084.87	17,013.99	4,117.84	3,989.38	32.057	CC
Pioneer D31-735 - Pioneer D31-735 - Plan #2	10,100.00	17,013.99	4,117.87	3,989.31	32.031	ES
Pioneer D31-735 - Pioneer D31-735 - Plan #2	19,860.11	7,511.20	4,191.27	4,051.55	29.997	SF
Pioneer D31-744 - Pioneer D31-744 - Plan #3	10,084.36	17,095.39	4,743.74	4,615.16	36.894	CC
Pioneer D31-744 - Pioneer D31-744 - Plan #3	10,100.00	17,095.39	4,743.76	4,615.09	36.866	ES
Pioneer D31-744 - Pioneer D31-744 - Plan #3	19,860.11	7,548.92	4,813.44	4,673.46	34.387	SF
Pioneer D31-756 - Pioneer D31-756 - Plan #4	9,648.66	17,574.24	5,368.14	5,239.18	41.627	CC
Pioneer D31-756 - Pioneer D31-756 - Plan #4	9,700.00	17,574.24	5,368.39	5,239.10	41.524	ES
Pioneer D31-756 - Pioneer D31-756 - Plan #4	19,860.11	7,512.57	5,643.88	5,503.85	40.306	SF
Pioneer D31-775 - Pioneer D31-775 - Plan #4	19,860.11	6,102.03	6,397.18	6,261.97	47.313	CC, ES, SF
Pioneer D31-785 - Pioneer D31-785 - Plan #5	19,860.11	4,847.21	6,897.36	6,767.97	53.306	CC, ES, SF
Pioneer USX Y07-08D (PR) - Pioneer USX Y07-08D OH	19,860.11	7,163.24	3,916.51	3,789.86	30.923	CC, ES, SF
Pioneer Y07-07D (PR) - Wellbore #1 - Gyro Surveys	19,860.11	7,415.53	4,963.71	4,784.17	27.647	CC, ES, SF
Pioneer Y18-715 - Pioneer Y18-715 - Plan #1	19,860.11	7,750.00	2,913.81	2,772.76	20.658	CC, ES, SF
Pioneer Y18-725 - Pioneer Y18-725 - Plan #1	19,860.11	7,575.78	3,523.12	3,382.18	24.996	CC, ES, SF
Pioneer Y18-735 - Pioneer Y18-735 - Plan #2	19,860.11	7,385.52	4,151.61	4,011.93	29.722	CC, ES, SF
Pioneer Y18-744 - Pioneer Y18-744 - Plan #1	19,767.16	7,162.46	4,759.18	4,620.35	34.281	CC
Pioneer Y18-744 - Pioneer Y18-744 - Plan #1	19,860.11	7,218.78	4,759.66	4,620.03	34.086	ES, SF
Pioneer Y18-756 - Pioneer Y18-756 - Plan #1	19,789.90	7,081.49	5,377.47	5,238.86	38.795	CC
Pioneer Y18-756 - Pioneer Y18-756 - Plan #1	19,860.11	7,116.25	5,377.75	5,238.54	38.629	ES, SF
Pioneer Y18-766 - Pioneer Y18-766 - Plan #1	19,558.88	6,577.62	5,968.50	5,832.79	43.980	CC
Pioneer Y18-766 - Pioneer Y18-766 - Plan #1	19,600.00	6,575.34	5,968.64	5,832.62	43.882	ES
Pioneer Y18-766 - Pioneer Y18-766 - Plan #1	19,860.11	6,549.58	5,976.06	5,838.26	43.368	SF
Pioneer Y18-775 - Pioneer Y18-775 - Plan #2	19,805.03	5,712.92	6,439.21	6,305.36	48.109	CC
Pioneer Y18-775 - Pioneer Y18-775 - Plan #2	19,860.11	5,703.11	6,439.43	6,305.22	47.980	ES, SF
Pioneer Y18-785 - Pioneer Y18-785 - Plan #1	19,860.11	4,873.86	6,735.65	6,605.73	51.843	CC, ES, SF
UPRC 7-10Q (PR) - Wellbore #1 - As-Drilled	19,700.00	19,700.00	5,861.94	5,709.31	38.406	SF
UPRC 7-10Q (PR) - Wellbore #1 - As-Drilled	19,860.11	6,922.04	5,750.47	5,639.83	51.976	CC, ES
UPRR 53 PAN AM E 1 (PA) - Wellbore #1 - Gyro Surveys	19,860.11	7,072.20	7,751.14	7,626.94	62.407	CC, ES, SF

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:	Plan #3	**Offset TVD Reference:**	Reference 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 16						
Hullabaloo State Y21-716 - Original Drilling - Original Dril	19,860.11	6,047.00	9,200.73	9,090.29	83.311	CC, ES, SF
Hullabaloo State Y21-726 - Original Drilling - Original Dril	19,860.11	6,568.93	8,717.13	8,607.26	79.341	CC, ES, SF
Hullabaloo State Y21-736 - Original Drilling - Original Dril	19,860.11	6,523.00	8,353.84	8,250.11	80.534	CC, ES, SF
Hullabaloo State Y21-746 - Original Drilling - Original Dril	19,860.11	6,710.00	8,009.29	7,905.04	76.826	CC, ES, SF
Hullabaloo State Y21-756 - Original Drilling - Original Dril	19,860.11	6,425.00	7,352.41	7,254.52	75.108	CC, ES, SF
Hullabaloo State Y21-763 - Orignal Drilling - Orignal Drilli	19,860.11	6,752.32	6,949.84	6,853.36	72.035	CC, ES, SF
Hullabaloo State Y21-769 - Original Drilling - Original Dril	19,860.11	6,417.00	6,594.98	6,503.54	72.122	CC, ES, SF
Hullabaloo State Y21-775 - Original Drilling - Original Dril	19,860.11	6,371.28	6,437.91	6,351.00	74.068	CC, ES, SF
Hullabaloo State Y21-781 - Original Drilling - Original Dril	19,860.11	6,416.00	6,207.00	6,122.98	73.881	CC, ES, SF
Hullabaloo State Y21-787 - Original Drilling - Original Dril	19,860.11	6,416.00	6,005.02	5,924.92	74.974	CC, ES, SF
State 01 - Original Drilling - Original Drilling - As Drilled	19,860.11	6,917.65	9,390.60	9,278.20	83.543	CC, ES, SF
State 21 (PA) - Original Drilling - Original Drilling - As Dril						Out of range
State Y16-05D - Wellbore #1 - Wellbore #1 - As Drilled	19,860.11	7,180.36	7,989.05	7,908.37	99.015	CC, ES, SF