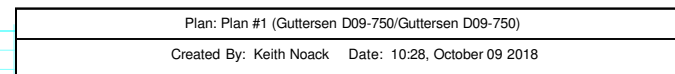


Geodetic System: US State Plane 1983  
Datum: North American Datum 1983  
Ellipsoid: GRS 1980  
Zone: Colorado Northern Zone  
System Datum: Mean Sea Level



# **Northern Region - DJ Basin**

**Mustang**

**C Section 33**

**Guttersen D09-750**

**Guttersen D09-750**

**Plan: Plan #1**

## **Standard Planning Report**

**09 October, 2018**

# Noble Energy, Inc.

## Planning Report

<b>Database:</b>	EDMP	<b>Local Co-ordinate Reference:</b>	Well Guttersen D09-750
<b>Company:</b>	Northern Region - DJ Basin	<b>TVD Reference:</b>	Well @ 4750.00ft
<b>Project:</b>	Mustang	<b>MD Reference:</b>	Well @ 4750.00ft
<b>Site:</b>	C Section 33	<b>North Reference:</b>	Grid
<b>Well:</b>	Guttersen D09-750	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Guttersen D09-750		
<b>Design:</b>	Plan #1		

<b>Project</b>	Mustang, Weld County Colorado		
<b>Map System:</b>	US State Plane 1983	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	North American Datum 1983		
<b>Map Zone:</b>	Colorado Northern Zone		

Site		C Section 33			
Site Position:		Northing:	1,339,901.69 usft	Latitude:	40.2626140
From:	Lat/Long	Easting:	3,262,275.97 usft	Longitude:	-104.5601770
Position Uncertainty:	0.00 ft	Slot Radius:	13.200 in	Grid Convergence:	0.61 °

Well	Guttersen D09-750					
Well Position	+N/-S	173.24 ft	Northing:	1,340,074.93 usft	Latitude:	40.2630300
	+E/-W	2,038.59 ft	Easting:	3,264,314.55 usft	Longitude:	-104.5528660
Position Uncertainty		0.00 ft	Wellhead Elevation:		Ground Level:	4,720.00 ft

<b>Wellbore</b>	Guttersen D09-750				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2015	10/8/2018	7.95	66.74	52,194.67633657

<b>Design</b>	Plan #1			
<b>Audit Notes:</b>				
<b>Version:</b>	<b>Phase:</b>	PLAN	<b>Tie On Depth:</b>	0.00
<b>Vertical Section:</b>	<b>Depth From (TVD) (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Direction (°)</b>
	0.00	0.00	0.00	184.18

<b>Plan Sections</b>										
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	
2,711.34	10.23	266.59	2,708.63	-2.71	-45.43	2.00	2.00	0.00	266.59	
6,375.88	10.23	266.59	6,314.95	-41.45	-694.90	0.00	0.00	0.00	0.00	
7,369.29	90.00	179.93	6,935.00	-678.17	-805.79	9.00	8.03	-8.72	-86.71	Guttersen D09-750
17,553.90	90.00	179.93	6,935.00	-10,862.77	-793.29	0.00	0.00	0.00	0.00	Guttersen D09-750

# Noble Energy, Inc.

## Planning Report

<b>Database:</b>	EDMP	<b>Local Co-ordinate Reference:</b>	Well Guttersen D09-750
<b>Company:</b>	Northern Region - DJ Basin	<b>TVD Reference:</b>	Well @ 4750.00ft
<b>Project:</b>	Mustang	<b>MD Reference:</b>	Well @ 4750.00ft
<b>Site:</b>	C Section 33	<b>North Reference:</b>	Grid
<b>Well:</b>	Guttersen D09-750	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Guttersen D09-750		
<b>Design:</b>	Plan #1		

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
456.00	0.00	0.00	456.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Pierre</b>									
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00
589.00	0.00	0.00	589.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Upper Pierre Aquifer Top</b>									
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	0.00
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00
1,100.00	0.00	0.00	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00
1,200.00	0.00	0.00	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00
1,300.00	0.00	0.00	1,300.00	0.00	0.00	0.00	0.00	0.00	0.00
1,400.00	0.00	0.00	1,400.00	0.00	0.00	0.00	0.00	0.00	0.00
1,500.00	0.00	0.00	1,500.00	0.00	0.00	0.00	0.00	0.00	0.00
1,509.00	0.00	0.00	1,509.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Upper Pierre Aquifer Base</b>									
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
<b>Build: 2°/100'</b>									
2,300.00	2.00	266.59	2,299.98	-0.10	-1.74	0.23	2.00	2.00	0.00
2,400.00	4.00	266.59	2,399.84	-0.42	-6.97	0.92	2.00	2.00	0.00
2,500.00	6.00	266.59	2,499.45	-0.93	-15.67	2.07	2.00	2.00	0.00
2,600.00	8.00	266.59	2,598.70	-1.66	-27.83	3.68	2.00	2.00	0.00
2,700.00	10.00	266.59	2,697.47	-2.59	-43.45	5.75	2.00	2.00	0.00
2,711.34	10.23	266.59	2,708.63	-2.71	-45.43	6.01	2.00	2.00	0.00
<b>Hold: 10.23° Inc, 266.59° Azm</b>									
2,800.00	10.23	266.59	2,795.88	-3.65	-61.15	8.09	0.00	0.00	0.00
2,900.00	10.23	266.59	2,894.29	-4.70	-78.87	10.44	0.00	0.00	0.00
3,000.00	10.23	266.59	2,992.70	-5.76	-96.59	12.78	0.00	0.00	0.00
3,100.00	10.23	266.59	3,091.11	-6.82	-114.32	15.13	0.00	0.00	0.00
3,200.00	10.23	266.59	3,189.53	-7.88	-132.04	17.47	0.00	0.00	0.00
3,300.00	10.23	266.59	3,287.94	-8.93	-149.76	19.82	0.00	0.00	0.00
3,400.00	10.23	266.59	3,386.35	-9.99	-167.48	22.16	0.00	0.00	0.00
3,500.00	10.23	266.59	3,484.76	-11.05	-185.21	24.51	0.00	0.00	0.00
3,600.00	10.23	266.59	3,583.17	-12.10	-202.93	26.85	0.00	0.00	0.00
3,604.91	10.23	266.59	3,588.00	-12.16	-203.80	26.97	0.00	0.00	0.00
<b>Parkman</b>									
3,700.00	10.23	266.59	3,681.58	-13.16	-220.65	29.20	0.00	0.00	0.00
3,800.00	10.23	266.59	3,779.99	-14.22	-238.38	31.54	0.00	0.00	0.00
3,900.00	10.23	266.59	3,878.40	-15.27	-256.10	33.89	0.00	0.00	0.00
4,000.00	10.23	266.59	3,976.82	-16.33	-273.82	36.23	0.00	0.00	0.00
4,016.45	10.23	266.59	3,993.00	-16.51	-276.74	36.62	0.00	0.00	0.00

# Noble Energy, Inc.

## Planning Report

<b>Database:</b>	EDMP	<b>Local Co-ordinate Reference:</b>	Well Guttersen D09-750
<b>Company:</b>	Northern Region - DJ Basin	<b>TVD Reference:</b>	Well @ 4750.00ft
<b>Project:</b>	Mustang	<b>MD Reference:</b>	Well @ 4750.00ft
<b>Site:</b>	C Section 33	<b>North Reference:</b>	Grid
<b>Well:</b>	Guttersen D09-750	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Guttersen D09-750		
<b>Design:</b>	Plan #1		

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)	
<b>Sussex</b>										
4,100.00	10.23	266.59	4,075.23	-17.39	-291.55	38.58	0.00	0.00	0.00	
4,200.00	10.23	266.59	4,173.64	-18.45	-309.27	40.92	0.00	0.00	0.00	
4,300.00	10.23	266.59	4,272.05	-19.50	-326.99	43.27	0.00	0.00	0.00	
4,400.00	10.23	266.59	4,370.46	-20.56	-344.71	45.61	0.00	0.00	0.00	
4,500.00	10.23	266.59	4,468.87	-21.62	-362.44	47.96	0.00	0.00	0.00	
4,577.36	10.23	266.59	4,545.00	-22.43	-376.15	49.77	0.00	0.00	0.00	
<b>Shannon</b>										
4,600.00	10.23	266.59	4,567.28	-22.67	-380.16	50.30	0.00	0.00	0.00	
4,700.00	10.23	266.59	4,665.69	-23.73	-397.88	52.65	0.00	0.00	0.00	
4,800.00	10.23	266.59	4,764.11	-24.79	-415.61	54.99	0.00	0.00	0.00	
4,900.00	10.23	266.59	4,862.52	-25.84	-433.33	57.34	0.00	0.00	0.00	
5,000.00	10.23	266.59	4,960.93	-26.90	-451.05	59.68	0.00	0.00	0.00	
5,100.00	10.23	266.59	5,059.34	-27.96	-468.78	62.03	0.00	0.00	0.00	
5,200.00	10.23	266.59	5,157.75	-29.02	-486.50	64.37	0.00	0.00	0.00	
5,300.00	10.23	266.59	5,256.16	-30.07	-504.22	66.72	0.00	0.00	0.00	
5,400.00	10.23	266.59	5,354.57	-31.13	-521.94	69.06	0.00	0.00	0.00	
5,500.00	10.23	266.59	5,452.99	-32.19	-539.67	71.41	0.00	0.00	0.00	
5,600.00	10.23	266.59	5,551.40	-33.24	-557.39	73.75	0.00	0.00	0.00	
5,700.00	10.23	266.59	5,649.81	-34.30	-575.11	76.10	0.00	0.00	0.00	
5,800.00	10.23	266.59	5,748.22	-35.36	-592.84	78.44	0.00	0.00	0.00	
5,900.00	10.23	266.59	5,846.63	-36.42	-610.56	80.79	0.00	0.00	0.00	
5,979.64	10.23	266.59	5,925.00	-37.26	-624.67	82.66	0.00	0.00	0.00	
<b>Teepee Buttes</b>										
6,000.00	10.23	266.59	5,945.04	-37.47	-628.28	83.13	0.00	0.00	0.00	
6,100.00	10.23	266.59	6,043.45	-38.53	-646.01	85.48	0.00	0.00	0.00	
6,200.00	10.23	266.59	6,141.86	-39.59	-663.73	87.82	0.00	0.00	0.00	
6,300.00	10.23	266.59	6,240.28	-40.64	-681.45	90.17	0.00	0.00	0.00	
6,375.88	10.23	266.59	6,314.95	-41.45	-694.90	91.95	0.00	0.00	0.00	
<b>KOP: Build 9°/100' @ 6375.88' MD</b>										
6,400.00	10.57	254.69	6,338.68	-42.16	-699.17	92.97	9.00	1.44	-49.31	
6,450.00	12.51	234.21	6,387.68	-46.54	-707.99	97.98	9.00	3.87	-40.97	
6,500.00	15.53	220.33	6,436.20	-54.81	-716.72	106.87	9.00	6.04	-27.76	
6,550.00	19.13	211.21	6,483.93	-66.92	-725.30	119.57	9.00	7.20	-18.24	
6,600.00	23.04	204.99	6,530.58	-82.81	-733.69	136.02	9.00	7.82	-12.45	
6,650.00	27.12	200.52	6,575.86	-102.36	-741.82	156.12	9.00	8.17	-8.94	
6,698.25	31.17	197.25	6,618.00	-124.60	-749.38	178.84	9.00	8.38	-6.76	
<b>Sharon Springs</b>										
6,700.00	31.31	197.15	6,619.50	-125.46	-749.65	179.73	9.00	8.46	-5.93	
6,730.28	33.89	195.48	6,645.00	-141.12	-754.22	195.67	9.00	8.50	-5.50	
<b>Top A Chalk</b>										
6,748.51	35.45	194.58	6,660.00	-151.14	-756.91	205.86	9.00	8.55	-4.93	
<b>Top A Marl</b>										
6,750.00	35.57	194.51	6,661.21	-151.97	-757.13	206.71	9.00	8.57	-4.73	
6,769.62	37.26	193.63	6,677.00	-163.27	-759.96	218.19	9.00	8.59	-4.53	
<b>Top B Chalk</b>										
6,800.00	39.88	192.38	6,700.75	-181.72	-764.21	236.90	9.00	8.63	-4.11	
6,821.47	41.74	191.58	6,717.00	-195.45	-767.12	250.80	9.00	8.66	-3.74	
<b>Top B Marl</b>										
6,850.00	44.22	190.60	6,737.87	-214.53	-770.86	270.11	9.00	8.69	-3.43	
6,900.00	48.58	189.07	6,772.34	-250.20	-777.02	306.13	9.00	8.73	-3.05	
6,901.00	48.67	189.04	6,773.00	-250.94	-777.14	306.88	9.00	8.75	-2.83	
<b>Top C Chalk</b>										

# Noble Energy, Inc.

## Planning Report

<b>Database:</b>	EDMP	<b>Local Co-ordinate Reference:</b>	Well Guttersen D09-750
<b>Company:</b>	Northern Region - DJ Basin	<b>TVD Reference:</b>	Well @ 4750.00ft
<b>Project:</b>	Mustang	<b>MD Reference:</b>	Well @ 4750.00ft
<b>Site:</b>	C Section 33	<b>North Reference:</b>	Grid
<b>Well:</b>	Guttersen D09-750	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Guttersen D09-750		
<b>Design:</b>	Plan #1		

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)
6,946.76	52.68	187.82	6,802.00	-285.96	-782.32	342.18	9.00	8.76	-2.67
<b>Top C Marl</b>									
6,950.00	52.96	187.74	6,803.96	-288.51	-782.67	344.75	9.00	8.77	-2.51
7,000.00	57.36	186.55	6,832.51	-329.22	-787.76	385.72	9.00	8.79	-2.37
7,025.81	59.63	185.99	6,846.00	-351.09	-790.16	407.71	9.00	8.80	-2.20
<b>Top D Chalk</b>									
7,050.00	61.76	185.48	6,857.84	-372.08	-792.27	428.79	9.00	8.81	-2.10
7,100.00	66.17	184.49	6,879.78	-416.82	-796.17	473.70	9.00	8.82	-1.98
7,115.83	67.57	184.19	6,886.00	-431.34	-797.27	488.26	9.00	8.83	-1.89
<b>Top Ft. Hayes</b>									
7,150.00	70.59	183.57	6,898.20	-463.18	-799.43	520.17	9.00	8.84	-1.83
7,188.83	74.02	182.89	6,910.00	-500.11	-801.51	557.16	9.00	8.84	-1.76
<b>Codell</b>									
7,200.00	75.01	182.69	6,912.98	-510.86	-802.03	567.92	9.00	8.85	-1.72
7,250.00	79.44	181.85	6,924.04	-559.57	-803.96	616.64	9.00	8.85	-1.68
7,255.37	79.91	181.77	6,925.00	-564.85	-804.13	621.92	9.00	8.85	-1.65
<b>Carlile</b>									
7,300.00	83.86	181.04	6,931.30	-609.01	-805.21	666.04	9.00	8.85	-1.63
7,350.00	88.29	180.24	6,934.72	-658.88	-805.76	715.82	9.00	8.86	-1.60
7,369.29	90.00	179.93	6,935.00	-678.17	-805.79	735.06	9.00	8.86	-1.60
<b>LP: 7369.29' MD, 90.00° Inc, 179.93° Azm</b>									
7,400.00	90.00	179.93	6,935.00	-708.88	-805.75	765.68	0.00	0.00	0.00
7,500.00	90.00	179.93	6,935.00	-808.88	-805.63	865.41	0.00	0.00	0.00
7,600.00	90.00	179.93	6,935.00	-908.88	-805.51	965.13	0.00	0.00	0.00
7,700.00	90.00	179.93	6,935.00	-1,008.88	-805.39	1,064.86	0.00	0.00	0.00
7,800.00	90.00	179.93	6,935.00	-1,108.88	-805.26	1,164.58	0.00	0.00	0.00
7,900.00	90.00	179.93	6,935.00	-1,208.88	-805.14	1,264.31	0.00	0.00	0.00
8,000.00	90.00	179.93	6,935.00	-1,308.88	-805.02	1,364.03	0.00	0.00	0.00
8,100.00	90.00	179.93	6,935.00	-1,408.88	-804.90	1,463.76	0.00	0.00	0.00
8,200.00	90.00	179.93	6,935.00	-1,508.88	-804.77	1,563.48	0.00	0.00	0.00
8,300.00	90.00	179.93	6,935.00	-1,608.88	-804.65	1,663.21	0.00	0.00	0.00
8,400.00	90.00	179.93	6,935.00	-1,708.88	-804.53	1,762.93	0.00	0.00	0.00
8,500.00	90.00	179.93	6,935.00	-1,808.88	-804.40	1,862.66	0.00	0.00	0.00
8,600.00	90.00	179.93	6,935.00	-1,908.88	-804.28	1,962.38	0.00	0.00	0.00
8,700.00	90.00	179.93	6,935.00	-2,008.88	-804.16	2,062.11	0.00	0.00	0.00
8,800.00	90.00	179.93	6,935.00	-2,108.88	-804.04	2,161.84	0.00	0.00	0.00
8,900.00	90.00	179.93	6,935.00	-2,208.88	-803.91	2,261.56	0.00	0.00	0.00
9,000.00	90.00	179.93	6,935.00	-2,308.88	-803.79	2,361.29	0.00	0.00	0.00
9,100.00	90.00	179.93	6,935.00	-2,408.88	-803.67	2,461.01	0.00	0.00	0.00
9,200.00	90.00	179.93	6,935.00	-2,508.88	-803.54	2,560.74	0.00	0.00	0.00
9,300.00	90.00	179.93	6,935.00	-2,608.87	-803.42	2,660.46	0.00	0.00	0.00
9,400.00	90.00	179.93	6,935.00	-2,708.87	-803.30	2,760.19	0.00	0.00	0.00
9,500.00	90.00	179.93	6,935.00	-2,808.87	-803.18	2,859.91	0.00	0.00	0.00
9,600.00	90.00	179.93	6,935.00	-2,908.87	-803.05	2,959.64	0.00	0.00	0.00
9,700.00	90.00	179.93	6,935.00	-3,008.87	-802.93	3,059.36	0.00	0.00	0.00
9,800.00	90.00	179.93	6,935.00	-3,108.87	-802.81	3,159.09	0.00	0.00	0.00
9,900.00	90.00	179.93	6,935.00	-3,208.87	-802.68	3,258.81	0.00	0.00	0.00
10,000.00	90.00	179.93	6,935.00	-3,308.87	-802.56	3,358.54	0.00	0.00	0.00
10,100.00	90.00	179.93	6,935.00	-3,408.87	-802.44	3,458.27	0.00	0.00	0.00
10,200.00	90.00	179.93	6,935.00	-3,508.87	-802.32	3,557.99	0.00	0.00	0.00
10,300.00	90.00	179.93	6,935.00	-3,608.87	-802.19	3,657.72	0.00	0.00	0.00
10,400.00	90.00	179.93	6,935.00	-3,708.87	-802.07	3,757.44	0.00	0.00	0.00
10,500.00	90.00	179.93	6,935.00	-3,808.87	-801.95	3,857.17	0.00	0.00	0.00

# Noble Energy, Inc.

## Planning Report

<b>Database:</b>	EDMP	<b>Local Co-ordinate Reference:</b>	Well Guttersen D09-750
<b>Company:</b>	Northern Region - DJ Basin	<b>TVD Reference:</b>	Well @ 4750.00ft
<b>Project:</b>	Mustang	<b>MD Reference:</b>	Well @ 4750.00ft
<b>Site:</b>	C Section 33	<b>North Reference:</b>	Grid
<b>Well:</b>	Guttersen D09-750	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Guttersen D09-750		
<b>Design:</b>	Plan #1		

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)
10,600.00	90.00	179.93	6,935.00	-3,908.87	-801.83	3,956.89	0.00	0.00	0.00
10,700.00	90.00	179.93	6,935.00	-4,008.87	-801.70	4,056.62	0.00	0.00	0.00
10,800.00	90.00	179.93	6,935.00	-4,108.87	-801.58	4,156.34	0.00	0.00	0.00
10,900.00	90.00	179.93	6,935.00	-4,208.87	-801.46	4,256.07	0.00	0.00	0.00
11,000.00	90.00	179.93	6,935.00	-4,308.87	-801.33	4,355.79	0.00	0.00	0.00
11,100.00	90.00	179.93	6,935.00	-4,408.87	-801.21	4,455.52	0.00	0.00	0.00
11,200.00	90.00	179.93	6,935.00	-4,508.87	-801.09	4,555.24	0.00	0.00	0.00
11,300.00	90.00	179.93	6,935.00	-4,608.87	-800.97	4,654.97	0.00	0.00	0.00
11,400.00	90.00	179.93	6,935.00	-4,708.87	-800.84	4,754.70	0.00	0.00	0.00
11,500.00	90.00	179.93	6,935.00	-4,808.87	-800.72	4,854.42	0.00	0.00	0.00
11,600.00	90.00	179.93	6,935.00	-4,908.87	-800.60	4,954.15	0.00	0.00	0.00
11,700.00	90.00	179.93	6,935.00	-5,008.87	-800.47	5,053.87	0.00	0.00	0.00
11,800.00	90.00	179.93	6,935.00	-5,108.87	-800.35	5,153.60	0.00	0.00	0.00
11,900.00	90.00	179.93	6,935.00	-5,208.87	-800.23	5,253.32	0.00	0.00	0.00
12,000.00	90.00	179.93	6,935.00	-5,308.87	-800.11	5,353.05	0.00	0.00	0.00
12,100.00	90.00	179.93	6,935.00	-5,408.87	-799.98	5,452.77	0.00	0.00	0.00
12,200.00	90.00	179.93	6,935.00	-5,508.87	-799.86	5,552.50	0.00	0.00	0.00
12,300.00	90.00	179.93	6,935.00	-5,608.87	-799.74	5,652.22	0.00	0.00	0.00
12,400.00	90.00	179.93	6,935.00	-5,708.87	-799.62	5,751.95	0.00	0.00	0.00
12,500.00	90.00	179.93	6,935.00	-5,808.87	-799.49	5,851.67	0.00	0.00	0.00
12,600.00	90.00	179.93	6,935.00	-5,908.87	-799.37	5,951.40	0.00	0.00	0.00
12,700.00	90.00	179.93	6,935.00	-6,008.87	-799.25	6,051.13	0.00	0.00	0.00
12,800.00	90.00	179.93	6,935.00	-6,108.87	-799.12	6,150.85	0.00	0.00	0.00
12,900.00	90.00	179.93	6,935.00	-6,208.87	-799.00	6,250.58	0.00	0.00	0.00
13,000.00	90.00	179.93	6,935.00	-6,308.87	-798.88	6,350.30	0.00	0.00	0.00
13,100.00	90.00	179.93	6,935.00	-6,408.87	-798.76	6,450.03	0.00	0.00	0.00
13,200.00	90.00	179.93	6,935.00	-6,508.87	-798.63	6,549.75	0.00	0.00	0.00
13,300.00	90.00	179.93	6,935.00	-6,608.87	-798.51	6,649.48	0.00	0.00	0.00
13,400.00	90.00	179.93	6,935.00	-6,708.87	-798.39	6,749.20	0.00	0.00	0.00
13,500.00	90.00	179.93	6,935.00	-6,808.87	-798.26	6,848.93	0.00	0.00	0.00
13,600.00	90.00	179.93	6,935.00	-6,908.87	-798.14	6,948.65	0.00	0.00	0.00
13,700.00	90.00	179.93	6,935.00	-7,008.87	-798.02	7,048.38	0.00	0.00	0.00
13,800.00	90.00	179.93	6,935.00	-7,108.87	-797.90	7,148.11	0.00	0.00	0.00
13,900.00	90.00	179.93	6,935.00	-7,208.87	-797.77	7,247.83	0.00	0.00	0.00
14,000.00	90.00	179.93	6,935.00	-7,308.87	-797.65	7,347.56	0.00	0.00	0.00
14,100.00	90.00	179.93	6,935.00	-7,408.87	-797.53	7,447.28	0.00	0.00	0.00
14,200.00	90.00	179.93	6,935.00	-7,508.87	-797.41	7,547.01	0.00	0.00	0.00
14,300.00	90.00	179.93	6,935.00	-7,608.87	-797.28	7,646.73	0.00	0.00	0.00
14,400.00	90.00	179.93	6,935.00	-7,708.87	-797.16	7,746.46	0.00	0.00	0.00
14,500.00	90.00	179.93	6,935.00	-7,808.87	-797.04	7,846.18	0.00	0.00	0.00
14,600.00	90.00	179.93	6,935.00	-7,908.87	-796.91	7,945.91	0.00	0.00	0.00
14,700.00	90.00	179.93	6,935.00	-8,008.87	-796.79	8,045.63	0.00	0.00	0.00
14,800.00	90.00	179.93	6,935.00	-8,108.87	-796.67	8,145.36	0.00	0.00	0.00
14,900.00	90.00	179.93	6,935.00	-8,208.87	-796.55	8,245.08	0.00	0.00	0.00
15,000.00	90.00	179.93	6,935.00	-8,308.87	-796.42	8,344.81	0.00	0.00	0.00
15,100.00	90.00	179.93	6,935.00	-8,408.87	-796.30	8,444.54	0.00	0.00	0.00
15,200.00	90.00	179.93	6,935.00	-8,508.87	-796.18	8,544.26	0.00	0.00	0.00
15,300.00	90.00	179.93	6,935.00	-8,608.87	-796.05	8,643.99	0.00	0.00	0.00
15,400.00	90.00	179.93	6,935.00	-8,708.87	-795.93	8,743.71	0.00	0.00	0.00
15,500.00	90.00	179.93	6,935.00	-8,808.87	-795.81	8,843.44	0.00	0.00	0.00
15,600.00	90.00	179.93	6,935.00	-8,908.87	-795.69	8,943.16	0.00	0.00	0.00
15,700.00	90.00	179.93	6,935.00	-9,008.87	-795.56	9,042.89	0.00	0.00	0.00
15,800.00	90.00	179.93	6,935.00	-9,108.87	-795.44	9,142.61	0.00	0.00	0.00
15,900.00	90.00	179.93	6,935.00	-9,208.87	-795.32	9,242.34	0.00	0.00	0.00

# Noble Energy, Inc.

## Planning Report

<b>Database:</b>	EDMP	<b>Local Co-ordinate Reference:</b>	Well Guttersen D09-750
<b>Company:</b>	Northern Region - DJ Basin	<b>TVD Reference:</b>	Well @ 4750.00ft
<b>Project:</b>	Mustang	<b>MD Reference:</b>	Well @ 4750.00ft
<b>Site:</b>	C Section 33	<b>North Reference:</b>	Grid
<b>Well:</b>	Guttersen D09-750	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Guttersen D09-750		
<b>Design:</b>	Plan #1		

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)
16,000.00	90.00	179.93	6,935.00	-9,308.87	-795.20	9,342.06	0.00	0.00	0.00
16,100.00	90.00	179.93	6,935.00	-9,408.87	-795.07	9,441.79	0.00	0.00	0.00
16,200.00	90.00	179.93	6,935.00	-9,508.87	-794.95	9,541.51	0.00	0.00	0.00
16,300.00	90.00	179.93	6,935.00	-9,608.87	-794.83	9,641.24	0.00	0.00	0.00
16,400.00	90.00	179.93	6,935.00	-9,708.87	-794.70	9,740.97	0.00	0.00	0.00
16,500.00	90.00	179.93	6,935.00	-9,808.87	-794.58	9,840.69	0.00	0.00	0.00
16,600.00	90.00	179.93	6,935.00	-9,908.87	-794.46	9,940.42	0.00	0.00	0.00
16,700.00	90.00	179.93	6,935.00	-10,008.87	-794.34	10,040.14	0.00	0.00	0.00
16,800.00	90.00	179.93	6,935.00	-10,108.87	-794.21	10,139.87	0.00	0.00	0.00
16,900.00	90.00	179.93	6,935.00	-10,208.87	-794.09	10,239.59	0.00	0.00	0.00
17,000.00	90.00	179.93	6,935.00	-10,308.87	-793.97	10,339.32	0.00	0.00	0.00
17,100.00	90.00	179.93	6,935.00	-10,408.87	-793.84	10,439.04	0.00	0.00	0.00
17,200.00	90.00	179.93	6,935.00	-10,508.87	-793.72	10,538.77	0.00	0.00	0.00
17,300.00	90.00	179.93	6,935.00	-10,608.87	-793.60	10,638.49	0.00	0.00	0.00
17,400.00	90.00	179.93	6,935.00	-10,708.87	-793.48	10,738.22	0.00	0.00	0.00
17,500.00	90.00	179.93	6,935.00	-10,808.87	-793.35	10,837.94	0.00	0.00	0.00
17,553.90	90.00	179.93	6,935.00	-10,862.77	-793.29	10,891.70	0.00	0.00	0.00
TD @ 17553.90' MD/6935.00' TVD									

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 D09-750-SI - plan hits target center - Point	0.00	0.00	0.00	0.00	0.00	1,340,074.93	3,264,314.55	40.2630300	-104.5528660
Guttersen D09-750-KI - plan hits target center - Point	0.00	0.00	6,314.95	-41.45	-694.90	1,340,033.48	3,263,619.66	40.2629366	-104.5553574
Guttersen D09-750-TI - plan hits target center - Point	0.00	0.00	6,935.00	-678.17	-805.79	1,339,396.76	3,263,508.76	40.2611921	-104.5557791
Guttersen D09-750-BI - plan hits target center - Point	0.00	0.00	6,935.00	-10,862.77	-793.29	1,329,212.18	3,263,521.27	40.2332357	-104.5561227



# Noble Energy, Inc.

## Planning Report

<b>Database:</b>	EDMP	<b>Local Co-ordinate Reference:</b>	Well Guttersen D09-750
<b>Company:</b>	Northern Region - DJ Basin	<b>TVD Reference:</b>	Well @ 4750.00ft
<b>Project:</b>	Mustang	<b>MD Reference:</b>	Well @ 4750.00ft
<b>Site:</b>	C Section 33	<b>North Reference:</b>	Grid
<b>Well:</b>	Guttersen D09-750	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Guttersen D09-750		
<b>Design:</b>	Plan #1		

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
456.00	456.00	Pierre				
589.00	589.00	Upper Pierre Aquifer Top				
1,509.00	1,509.00	Upper Pierre Aquifer Base				
3,604.91	3,588.00	Parkman				
4,016.45	3,993.00	Sussex				
4,577.36	4,545.00	Shannon				
5,979.64	5,925.00	Teepee Buttes				
6,698.25	6,618.00	Sharon Springs				
6,730.28	6,645.00	Top A Chalk				
6,748.51	6,660.00	Top A Marl				
6,769.62	6,677.00	Top B Chalk				
6,821.47	6,717.00	Top B Marl				
6,901.00	6,773.00	Top C Chalk				
6,946.76	6,802.00	Top C Marl				
7,025.81	6,846.00	Top D Chalk				
7,115.83	6,886.00	Top Ft. Hayes				
7,188.83	6,910.00	Codell				
7,255.37	6,925.00	Carlile				

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates			
		+N/-S (ft)	+E/-W (ft)	Comment	
2,200.00	2,200.00	0.00	0.00	Build: 2°/100'	
2,711.34	2,708.63	-2.71	-45.43	Hold: 10.23° Inc, 266.59° Azm	
6,375.88	6,314.95	-41.45	-694.90	KOP: Build 9°/100' @ 6375.88' MD	
7,369.29	6,935.00	-678.17	-805.79	LP: 7369.29' MD, 90.00° Inc, 179.93° Azm	
17,553.90	6,935.00	-10,862.77	-793.29	TD @ 17553.90' MD/6935.00' TVD	

# **Northern Region - DJ Basin**

**Mustang**

**C Section 33**

**Guttersen D09-750**

**Guttersen D09-750**

**Plan #1**

## **Anticollision Summary Report**

**08 October, 2018**

# Noble Energy, Inc.

## Anticollision Summary Report

<b>Company:</b>	Northern Region - DJ Basin	<b>Local Co-ordinate Reference:</b>	Well Guttersen D09-750
<b>Project:</b>	Mustang	<b>TVD Reference:</b>	Well @ 4750.00ft
<b>Reference Site:</b>	C Section 33	<b>MD Reference:</b>	Well @ 4750.00ft
<b>Site Error:</b>	0.00 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Guttersen D09-750	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Guttersen D09-750	<b>Database:</b>	EDMP
<b>Reference Design:</b>	Plan #1	<b>Offset TVD Reference:</b>	Offset Datum

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

Survey Tool Program		Date	10/8/2018		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
0.00	17,553.90	Plan #1 (Guttersen D09-750)	2_MWD+IFR1+MS	A008Mb: IFR dec & multi-station analysis	

Summary						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
C Section 32						
HENNINGTON C #32-10(PR) - Wellbore #1 - No Surveys	6,680.14	6,622.38	4,972.41	4,890.81	60.938	CC
HENNINGTON C #32-10(PR) - Wellbore #1 - No Surveys	6,700.00	6,639.50	4,972.53	4,890.72	60.778	ES
HENNINGTON C #32-10(PR) - Wellbore #1 - No Surveys	7,150.00	6,918.20	5,043.69	4,958.14	58.955	SF
HENNINGTON C #32-2(PR) - Wellbore #1 - No Surveys	6,494.27	6,451.67	6,432.50	6,352.87	80.785	CC
HENNINGTON C #32-2(PR) - Wellbore #1 - No Surveys	6,500.00	6,457.20	6,432.52	6,352.82	80.715	ES
HENNINGTON C #32-2(PR) - Wellbore #1 - No Surveys	7,050.00	6,878.84	6,593.19	6,508.13	77.505	SF
HENNINGTON C #32-7(PA) - Wellbore #1 - Gyro Survey	6,519.50	6,300.00	5,732.92	5,687.70	126.788	CC, ES
HENNINGTON C #32-7(PA) - Wellbore #1 - Gyro Survey	7,050.00	6,600.00	5,853.74	5,805.81	122.112	SF
HOWELL #1(SI) - Wellbore #1 - No Surveys	6,991.22	6,877.73	6,829.90	6,745.23	80.665	CC
HOWELL #1(SI) - Wellbore #1 - No Surveys	7,000.00	6,882.51	6,829.92	6,745.18	80.603	ES
HOWELL #1(SI) - Wellbore #1 - No Surveys	8,600.00	6,985.00	7,174.96	7,084.38	79.211	SF
HOWELL #32-1(SI) - Wellbore #1 - No Surveys	6,619.59	6,582.51	6,615.95	6,534.88	81.598	CC
HOWELL #32-1(SI) - Wellbore #1 - No Surveys	6,650.00	6,609.86	6,616.28	6,534.85	81.258	ES
HOWELL #32-1(SI) - Wellbore #1 - No Surveys	7,200.00	6,946.98	6,733.59	6,647.64	78.345	SF
HOWELL #32-2(SI) - Wellbore #1 - No Surveys	6,537.28	6,499.88	7,232.82	7,152.67	90.249	CC
HOWELL #32-2(SI) - Wellbore #1 - No Surveys	6,550.00	6,511.93	7,232.89	7,152.59	90.080	ES
HOWELL #32-2(SI) - Wellbore #1 - No Surveys	7,100.00	6,907.78	7,372.81	7,287.39	86.318	SF
HOWELL #32-23(PR) - Wellbore #1 - No Surveys	6,635.79	6,624.15	7,813.65	7,732.16	95.887	CC
HOWELL #32-23(PR) - Wellbore #1 - No Surveys	6,650.00	6,636.86	7,813.72	7,732.07	95.700	ES
HOWELL #32-23(PR) - Wellbore #1 - No Surveys	7,250.00	6,985.04	7,937.66	7,851.28	91.888	SF
HOWELL #C 32-12(SI) - Wellbore #1 - No Surveys	6,830.60	6,798.77	7,520.29	7,436.73	89.997	CC
HOWELL #C 32-12(SI) - Wellbore #1 - No Surveys	6,850.00	6,812.87	7,520.38	7,436.63	89.802	ES
HOWELL #C 32-12(SI) - Wellbore #1 - No Surveys	7,350.00	7,009.72	7,586.54	7,499.81	87.473	SF
MCGUIRK-HOWELL C #32-11(SI) - Wellbore #1 - No Su	6,739.69	6,685.78	6,281.68	6,199.36	76.307	CC
MCGUIRK-HOWELL C #32-11(SI) - Wellbore #1 - No Su	6,750.00	6,694.21	6,281.71	6,199.28	76.208	ES
MCGUIRK-HOWELL C #32-11(SI) - Wellbore #1 - No Su	7,250.00	6,957.04	6,355.39	6,269.29	73.819	SF
MCGUIRK-HOWELL C #32-14(TA) - Wellbore #1 - No Si	7,085.83	6,912.92	6,147.23	6,062.03	72.152	CC
MCGUIRK-HOWELL C #32-14(TA) - Wellbore #1 - No Si	7,100.00	6,918.78	6,147.27	6,061.99	72.079	ES
MCGUIRK-HOWELL C #32-14(TA) - Wellbore #1 - No Si	8,500.00	6,974.00	6,409.63	6,319.56	71.167	SF
MCGUIRK-HOWELL C #32-4(SI) - Wellbore #1 - No Sur	6,557.93	6,567.41	8,466.66	8,385.88	104.807	CC, ES
MCGUIRK-HOWELL C #32-4(SI) - Wellbore #1 - No Sur	7,200.00	6,988.98	8,632.94	8,546.59	99.983	SF
NELSON #32-25(PR) - Wellbore #1 - No Surveys	6,580.83	6,577.84	7,595.11	7,514.18	93.844	CC
NELSON #32-25(PR) - Wellbore #1 - No Surveys	6,600.00	6,595.58	7,595.26	7,514.10	93.588	ES
NELSON #32-25(PR) - Wellbore #1 - No Surveys	7,200.00	6,977.98	7,740.90	7,654.66	89.763	SF
PLUSS #32-43(PA) - Wellbore #1 - Gyro Surveys	7,053.38	6,648.25	4,986.11	4,938.11	103.877	CC, ES
PLUSS #32-43(PA) - Wellbore #1 - Gyro Surveys	9,000.00	6,652.52	5,464.02	5,409.39	100.014	SF
PTF #C 32-1(SI) - Wellbore #1 - No Surveys	6,466.89	6,417.14	5,303.67	5,224.41	66.910	CC, ES

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

**Noble Energy, Inc.**  
Anticollision Summary Report

<b>Company:</b>	Northern Region - DJ Basin	<b>Local Co-ordinate Reference:</b>	Well Guttersen D09-750
<b>Project:</b>	Mustang	<b>TVD Reference:</b>	Well @ 4750.00ft
<b>Reference Site:</b>	C Section 33	<b>MD Reference:</b>	Well @ 4750.00ft
<b>Site Error:</b>	0.00 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Guttersen D09-750	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Guttersen D09-750	<b>Database:</b>	EDMP
<b>Reference Design:</b>	Plan #1	<b>Offset TVD Reference:</b>	Offset Datum

**Summary**

Site Name Offset Well - Wellbore - Design	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
C Section 32						
PTF #C 32-1(SI) - Wellbore #1 - No Surveys	6,950.00	6,816.96	5,441.03	5,356.73	64.544	SF
PTF #C 32-16(SI) - Wellbore #1 - No Surveys	6,988.93	6,840.46	3,403.31	3,318.97	40.353	CC
PTF #C 32-16(SI) - Wellbore #1 - No Surveys	7,000.00	6,846.51	3,403.34	3,318.92	40.313	ES
PTF #C 32-16(SI) - Wellbore #1 - No Surveys	7,250.00	6,938.04	3,422.96	3,337.11	39.870	SF
PTF #C 32-8(SI) - Wellbore #1 - No Surveys	6,514.88	6,453.50	4,347.10	4,267.42	54.553	CC, ES
PTF #C 32-8(SI) - Wellbore #1 - No Surveys	6,950.00	6,806.96	4,441.60	4,357.43	52.768	SF
PTF #C 32-9(SI) - Wellbore #1 - No Surveys	6,643.56	6,575.11	3,649.17	3,568.09	45.006	CC
PTF #C 32-9(SI) - Wellbore #1 - No Surveys	6,650.00	6,580.86	3,649.19	3,568.03	44.966	ES
PTF #C 32-9(SI) - Wellbore #1 - No Surveys	7,050.00	6,862.84	3,708.88	3,624.04	43.717	SF

# Noble Energy, Inc.

## Anticollision Summary Report

<b>Company:</b>	Northern Region - DJ Basin	<b>Local Co-ordinate Reference:</b>	Well Guttersen D09-750
<b>Project:</b>	Mustang	<b>TVD Reference:</b>	Well @ 4750.00ft
<b>Reference Site:</b>	C Section 33	<b>MD Reference:</b>	Well @ 4750.00ft
<b>Site Error:</b>	0.00 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Guttersen D09-750	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Guttersen D09-750	<b>Database:</b>	EDMP
<b>Reference Design:</b>	Plan #1	<b>Offset TVD Reference:</b>	Offset Datum

Summary						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
C Section 33						
GUTTERSEN C #33-31D - GUTTERSEN C #33-31D OH	700.00	751.34	3,826.57	3,822.97	1,063.447	CC, ES
GUTTERSEN C #33-31D - GUTTERSEN C #33-31D OH	6,750.00	6,885.10	4,601.41	4,550.61	90.574	SF
GUTTERSEN C #33-32 - Wellbore #1 - No Surveys	6,509.58	6,459.42	3,286.97	3,007.55	11.764	CC
GUTTERSEN C #33-32 - Wellbore #1 - No Surveys	6,550.00	6,502.07	3,287.80	3,006.54	11.689	ES
GUTTERSEN C #33-32 - Wellbore #1 - No Surveys	6,850.00	6,751.87	3,347.13	3,054.87	11.453	SF
GUTTERSEN C #33-33D - GUTTERSEN C #33-33D OH	6,684.68	6,796.85	2,997.50	2,942.79	54.785	CC
GUTTERSEN C #33-33D - GUTTERSEN C #33-33D OH	6,700.00	6,810.14	2,997.58	2,942.78	54.700	ES
GUTTERSEN C #33-33D - GUTTERSEN C #33-33D OH	7,000.00	7,041.72	3,031.74	2,975.48	53.887	SF
Guttersen C28-715 - Guttersen C28-715 - Plan #1	2,200.00	2,198.00	175.16	159.86	11.449	CC, ES
Guttersen C28-715 - Guttersen C28-715 - Plan #1	2,400.00	2,386.88	184.43	167.83	11.106	SF
Guttersen C28-725 - Guttersen C28-725 - Plan #1	2,200.00	2,196.00	164.68	149.39	10.769	CC, ES
Guttersen C28-725 - Guttersen C28-725 - Plan #1	2,300.00	2,290.80	166.81	150.85	10.451	SF
Guttersen C28-735 - Guttersen C28-735 - Plan #1	2,200.00	2,195.00	156.62	141.33	10.244	CC, ES
Guttersen C28-735 - Guttersen C28-735 - Plan #1	2,400.00	2,384.69	164.47	147.88	9.916	SF
Guttersen C28-745 - Guttersen C28-745 - Plan #1	2,200.00	2,194.00	151.90	136.61	9.938	CC, ES
Guttersen C28-745 - Guttersen C28-745 - Plan #1	6,800.00	7,300.38	231.97	183.16	4.753	SF
Guttersen C28-750 - Guttersen C28-750 - Plan #1	7,136.12	7,245.57	55.49	4.98	1.099	Level 2, CC, ES, SF
Guttersen C28-755 - Guttersen C28-755 - Plan #1	7,050.00	7,332.26	392.50	342.88	7.910	SF
Guttersen C28-755 - Guttersen C28-755 - Plan #1	7,094.58	7,299.30	391.51	342.08	7.920	CC, ES
Guttersen C28-765 - Guttersen C28-765 - Plan #1	7,087.00	7,087.31	1,048.36	999.51	21.461	CC, ES
Guttersen C28-765 - Guttersen C28-765 - Plan #1	7,100.00	7,078.91	1,048.40	999.55	21.461	SF
Guttersen C28-770 - Guttersen C28-770 - Plan #1	7,307.55	7,039.70	1,351.64	1,301.79	27.114	CC, ES
Guttersen C28-770 - Guttersen C28-770 - Plan #1	7,350.00	7,007.58	1,352.04	1,302.14	27.098	SF
Guttersen C28-775 - Guttersen C28-775 - Plan #1	7,330.82	6,934.10	1,678.19	1,628.38	33.695	CC, ES
Guttersen C28-775 - Guttersen C28-775 - Plan #1	7,400.00	6,881.89	1,678.88	1,629.03	33.679	SF
Guttersen C28-785 - Guttersen C28-785 - Plan #1	3,170.80	2,813.94	2,004.58	1,984.09	97.822	CC
Guttersen C28-785 - Guttersen C28-785 - Plan #1	3,200.00	2,832.22	2,004.66	1,984.02	97.113	ES
Guttersen C28-785 - Guttersen C28-785 - Plan #1	8,000.00	6,463.55	2,325.93	2,274.66	45.368	SF
GUTTERSEN D #03-30D - Wellbore #1 - No Surveys	6,660.09	6,548.81	817.52	533.82	2.882	CC
GUTTERSEN D #03-30D - Wellbore #1 - No Surveys	6,700.00	6,583.50	818.23	533.00	2.869	ES
GUTTERSEN D #03-30D - Wellbore #1 - No Surveys	6,750.00	6,625.21	821.27	534.19	2.861	SF
Guttersen D09-721 - Guttersen D09-721 - Plan #1	2,200.00	2,202.00	45.21	29.90	2.952	CC, ES, SF
Guttersen D09-745 - Guttersen D09-745 - Plan #1	2,200.00	2,200.00	22.61	7.30	1.477	Level 3, CC, ES, SF
Guttersen D09-755 - Guttersen D09-755 - Plan #1	7,865.15	7,646.74	377.32	331.86	8.300	CC
Guttersen D09-755 - Guttersen D09-755 - Plan #1	17,553.90	17,334.89	392.78	212.55	2.179	ES, SF
Guttersen D09-765 - Guttersen D09-765 - Plan #1	7,334.92	7,137.59	983.00	933.47	19.847	CC
Guttersen D09-765 - Guttersen D09-765 - Plan #1	17,553.90	17,359.22	986.68	802.25	5.350	ES, SF
Guttersen D09-770 - Guttersen D09-770 - Plan #1	7,359.72	7,271.89	1,299.94	1,249.91	25.987	CC
Guttersen D09-770 - Guttersen D09-770 - Plan #1	17,553.90	17,468.83	1,304.31	1,120.14	7.082	ES, SF
Guttersen D09-775 - Guttersen D09-775 - Plan #1	6,831.95	6,508.77	1,597.46	1,550.55	34.051	CC
Guttersen D09-775 - Guttersen D09-775 - Plan #1	17,553.90	17,302.80	1,642.01	1,457.05	8.877	ES, SF
Guttersen D09-785 - Guttersen D09-785 - Plan #1	3,074.14	2,714.87	2,007.23	1,987.37	101.057	CC
Guttersen D09-785 - Guttersen D09-785 - Plan #1	3,100.00	2,730.09	2,007.34	1,987.35	100.409	ES
Guttersen D09-785 - Guttersen D09-785 - Plan #1	17,553.90	17,480.92	2,284.87	2,099.74	12.342	SF
LINDSAY #33-1 - LINDSAY #33-1 OH - As-Drilled	3,745.09	3,695.94	193.65	167.76	7.478	CC
LINDSAY #33-1 - LINDSAY #33-1 OH - As-Drilled	3,800.00	3,750.19	193.86	167.57	7.375	ES
LINDSAY #33-1 - LINDSAY #33-1 OH - As-Drilled	4,100.00	4,046.36	202.37	173.98	7.126	SF
LINDSAY #33-3 - Wellbore #1 - No Surveys	6,402.63	6,312.26	2,983.64	2,710.05	10.906	CC
LINDSAY #33-3 - Wellbore #1 - No Surveys	6,450.00	6,358.68	2,985.34	2,709.72	10.831	ES
LINDSAY #33-3 - Wellbore #1 - No Surveys	6,700.00	6,609.50	3,049.97	2,763.45	10.645	SF
LINDSAY #33-4 - Wellbore #1 - No Surveys	2,730.89	2,701.13	2,847.24	2,731.70	24.643	CC
LINDSAY #33-4 - Wellbore #1 - No Surveys	6,375.88	6,285.95	2,919.86	2,647.50	10.721	ES
LINDSAY #33-4 - Wellbore #1 - No Surveys	6,700.00	6,609.50	3,011.95	2,725.54	10.516	SF

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

# Noble Energy, Inc.

## Anticollision Summary Report

<b>Company:</b>	Northern Region - DJ Basin	<b>Local Co-ordinate Reference:</b>	Well Guttersen D09-750
<b>Project:</b>	Mustang	<b>TVD Reference:</b>	Well @ 4750.00ft
<b>Reference Site:</b>	C Section 33	<b>MD Reference:</b>	Well @ 4750.00ft
<b>Site Error:</b>	0.00 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Guttersen D09-750	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Guttersen D09-750	<b>Database:</b>	EDMP
<b>Reference Design:</b>	Plan #1	<b>Offset TVD Reference:</b>	Offset Datum

### Summary

Site Name Offset Well - Wellbore - Design	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Between Ellipses (ft)	Separation Factor	Warning
C Section 33						
LINDSAY #33-5 - Wellbore #1 - No Surveys	3,111.64	3,058.57	1,522.95	1,391.76	11.609	CC
LINDSAY #33-5 - Wellbore #1 - No Surveys	5,300.00	5,212.16	1,571.73	1,346.36	6.974	ES
LINDSAY #33-5 - Wellbore #1 - No Surveys	6,500.00	6,407.80	1,648.86	1,371.23	5.939	SF
LINDSAY #33-6 - Wellbore #1 - No Surveys	6,429.48	5,946.61	1,751.58	1,492.53	6.762	CC
LINDSAY #33-6 - Wellbore #1 - No Surveys	6,450.00	5,966.68	1,751.88	1,491.95	6.740	ES
LINDSAY #33-6 - Wellbore #1 - No Surveys	6,600.00	6,109.58	1,772.23	1,506.05	6.658	SF
LINDSAY #33-7 - Wellbore #1 - No Surveys	6,392.51	6,310.31	4,266.99	3,993.52	15.603	CC
LINDSAY #33-7 - Wellbore #1 - No Surveys	6,400.00	6,317.68	4,267.03	3,993.24	15.585	ES
LINDSAY #33-7 - Wellbore #1 - No Surveys	6,750.00	6,640.21	4,363.55	4,075.67	15.157	SF
LINDSAY #33-8 - Wellbore #1 - No Surveys	2,301.08	2,283.06	4,154.28	4,056.95	42.683	CC
LINDSAY #33-8 - Wellbore #1 - No Surveys	6,375.88	6,303.05	4,211.91	3,938.85	15.425	ES
LINDSAY #33-8 - Wellbore #1 - No Surveys	6,750.00	6,643.21	4,328.69	4,040.77	15.034	SF
LINDSAY #C33-10 - Wellbore #1 - No Surveys	6,428.53	6,361.68	4,756.68	4,481.04	17.257	CC
LINDSAY #C33-10 - Wellbore #1 - No Surveys	6,450.00	6,382.68	4,757.01	4,480.44	17.200	ES
LINDSAY #C33-10 - Wellbore #1 - No Surveys	6,800.00	6,704.25	4,851.71	4,561.12	16.696	SF
LINDSAY #C33-11 - LINDSAY #C33-11 OH - As-Drilled	6,464.61	6,437.66	3,685.73	3,640.16	80.881	CC, ES
LINDSAY #C33-11 - LINDSAY #C33-11 OH - As-Drilled	6,800.00	6,667.35	3,760.42	3,712.89	79.107	SF
LINDSAY #C33-12 - Wellbore #1 - No Surveys	6,520.75	6,438.12	2,628.21	2,349.30	9.423	CC
LINDSAY #C33-12 - Wellbore #1 - No Surveys	6,550.00	6,465.93	2,628.63	2,348.51	9.384	ES
LINDSAY #C33-12 - Wellbore #1 - No Surveys	6,800.00	6,682.75	2,667.72	2,378.08	9.210	SF
LINDSAY #C33-13 - LINDSAY #C33-13 OH - As-Drilled	6,845.51	6,706.72	2,139.38	2,091.80	44.962	CC
LINDSAY #C33-13 - LINDSAY #C33-13 OH - As-Drilled	6,850.00	6,709.94	2,139.39	2,091.78	44.939	ES
LINDSAY #C33-13 - LINDSAY #C33-13 OH - As-Drilled	7,100.00	6,849.50	2,161.61	2,112.79	44.281	SF
LINDSAY #C33-14 - Wellbore #1 - No Surveys	2,200.00	2,181.00	4,286.03	4,193.13	46.139	CC
LINDSAY #C33-14 - Wellbore #1 - No Surveys	2,600.00	2,579.70	4,294.65	4,184.43	38.963	ES
LINDSAY #C33-14 - Wellbore #1 - No Surveys	6,750.00	6,642.21	4,673.96	4,386.18	16.242	SF
LINDSAY #C33-15 - Wellbore #1 - No Surveys	2,200.00	2,167.00	3,036.28	2,944.15	32.955	CC
LINDSAY #C33-15 - Wellbore #1 - No Surveys	2,500.00	2,466.45	3,042.78	2,937.64	28.938	ES
LINDSAY #C33-15 - Wellbore #1 - No Surveys	6,650.00	6,542.86	3,459.63	3,176.39	12.214	SF
LINDSAY #C33-16 - Wellbore #1 - No Surveys	2,200.00	2,154.00	1,131.09	1,039.28	12.319	CC
LINDSAY #C33-16 - Wellbore #1 - No Surveys	2,300.00	2,253.98	1,132.81	1,036.65	11.780	ES
LINDSAY #C33-16 - Wellbore #1 - No Surveys	6,700.00	6,573.50	1,890.54	1,605.87	6.641	SF
LINDSAY #C33-9 - Wellbore #1 - No Surveys	2,200.00	2,149.00	1,907.72	1,816.11	20.824	CC
LINDSAY #C33-9 - Wellbore #1 - No Surveys	2,400.00	2,348.84	1,912.06	1,811.76	19.064	ES
LINDSAY #C33-9 - Wellbore #1 - No Surveys	6,600.00	6,479.58	2,459.10	2,178.46	8.762	SF
LINDSAY C #33-17 - Wellbore #1 - No Surveys	2,200.00	2,180.00	3,497.48	3,404.63	37.667	CC
LINDSAY C #33-17 - Wellbore #1 - No Surveys	4,700.00	4,645.69	3,572.22	3,371.74	17.818	ES
LINDSAY C #33-17 - Wellbore #1 - No Surveys	6,700.00	6,600.50	3,750.94	3,464.93	13.114	SF
LINDSAY C #33-18 - Wellbore #1 - As-Drilled	1,100.72	1,091.75	2,893.09	2,878.88	203.597	CC
LINDSAY C #33-18 - Wellbore #1 - As-Drilled	1,200.00	1,147.00	2,893.90	2,878.60	189.186	ES
LINDSAY C #33-18 - Wellbore #1 - As-Drilled	6,700.00	6,687.44	3,612.82	3,497.81	31.411	SF
LINDSAY C #33-19 - Wellbore #1 - No Surveys	6,421.33	6,347.62	3,811.69	3,536.63	13.858	CC
LINDSAY C #33-19 - Wellbore #1 - No Surveys	6,450.00	6,375.68	3,812.29	3,535.99	13.798	ES
LINDSAY C #33-19 - Wellbore #1 - No Surveys	6,750.00	6,649.21	3,888.42	3,600.17	13.490	SF
LINDSAY C #33-20 - Wellbore #1 - No Surveys	6,451.94	6,373.58	2,499.61	2,223.43	9.051	CC
LINDSAY C #33-20 - Wellbore #1 - No Surveys	6,500.00	6,420.20	2,501.11	2,222.89	8.990	ES
LINDSAY C #33-20 - Wellbore #1 - No Surveys	6,700.00	6,603.50	2,539.61	2,253.37	8.872	SF
LINDSAY C #33-21 - Wellbore #1 - No Surveys	6,379.20	6,285.22	2,044.99	1,772.58	7.507	CC
LINDSAY C #33-21 - Wellbore #1 - No Surveys	6,400.00	6,305.68	2,045.33	1,772.03	7.484	ES
LINDSAY C #33-21 - Wellbore #1 - No Surveys	6,600.00	6,502.42	2,083.17	1,801.29	7.390	SF
LINDSAY C #33-22 - Wellbore #1 - No Surveys	2,200.00	2,164.00	2,061.92	1,969.71	22.360	CC
LINDSAY C #33-22 - Wellbore #1 - No Surveys	2,600.00	2,562.70	2,069.47	1,959.93	18.892	ES
LINDSAY C #33-22 - Wellbore #1 - No Surveys	6,600.00	6,505.42	2,399.25	2,117.44	8.514	SF

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

**Noble Energy, Inc.**  
Anticollision Summary Report

<b>Company:</b>	Northern Region - DJ Basin	<b>Local Co-ordinate Reference:</b>	Well Guttersen D09-750
<b>Project:</b>	Mustang	<b>TVD Reference:</b>	Well @ 4750.00ft
<b>Reference Site:</b>	C Section 33	<b>MD Reference:</b>	Well @ 4750.00ft
<b>Site Error:</b>	0.00 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Guttersen D09-750	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Guttersen D09-750	<b>Database:</b>	EDMP
<b>Reference Design:</b>	Plan #1	<b>Offset TVD Reference:</b>	Offset Datum

**Summary**

Site Name Offset Well - Wellbore - Design	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
C Section 33						
LINDSAY C #33-23 - Wellbore #1 - No Surveys	2,200.00	2,153.00	937.34	845.57	10.214	CC
LINDSAY C #33-23 - Wellbore #1 - No Surveys	2,400.00	2,352.84	940.79	840.33	9.365	ES
LINDSAY C #33-23 - Wellbore #1 - No Surveys	6,400.00	6,308.32	1,419.64	1,146.57	5.199	SF
LINDSAY C #33-24 - Wellbore #1 - No Surveys	6,394.80	6,302.43	887.66	614.50	3.250	CC
LINDSAY C #33-24 - Wellbore #1 - No Surveys	6,400.00	6,302.68	887.68	614.49	3.249	ES
LINDSAY C #33-24 - Wellbore #1 - No Surveys	6,500.00	6,400.20	896.37	618.91	3.231	SF
LINDSAY C #33-25 - Wellbore #1 - No Surveys	6,557.96	6,467.44	1,622.22	1,342.05	5.790	CC
LINDSAY C #33-25 - Wellbore #1 - No Surveys	6,600.00	6,506.58	1,623.02	1,341.13	5.758	ES
LINDSAY C #33-25 - Wellbore #1 - No Surveys	6,750.00	6,637.21	1,639.61	1,351.98	5.700	SF



# Noble Energy, Inc.

## Anticollision Summary Report

<b>Company:</b>	Northern Region - DJ Basin	<b>Local Co-ordinate Reference:</b>	Well Guttersen D09-750
<b>Project:</b>	Mustang	<b>TVD Reference:</b>	Well @ 4750.00ft
<b>Reference Site:</b>	C Section 33	<b>MD Reference:</b>	Well @ 4750.00ft
<b>Site Error:</b>	0.00 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Guttersen D09-750	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Guttersen D09-750	<b>Database:</b>	EDMP
<b>Reference Design:</b>	Plan #1	<b>Offset TVD Reference:</b>	Offset Datum

### Summary

Site Name Offset Well - Wellbore - Design	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Between Ellipses (ft)	Separation Factor	Warning
C Section 34						
ALOYSIOUS #C34-11(PA) - Wellbore #1 - Gyro Surveys	166.20	110.96	4,028.49	4,027.94	7,213.700	CC
ALOYSIOUS #C34-11(PA) - Wellbore #1 - Gyro Surveys	2,200.00	2,125.15	4,029.66	4,014.76	270.460	ES
ALOYSIOUS #C34-11(PA) - Wellbore #1 - Gyro Surveys	7,000.00	6,834.42	4,839.08	4,790.83	100.289	SF
ALOYSIOUS #C34-8(PR) - Wellbore #1 - No Surveys	2,200.00	2,143.00	3,722.82	3,696.46	141.258	CC
ALOYSIOUS #C34-8(PR) - Wellbore #1 - No Surveys	2,300.00	2,242.98	3,724.02	3,696.44	135.043	ES
ALOYSIOUS #C34-8(PR) - Wellbore #1 - No Surveys	6,750.00	6,604.21	4,353.18	4,271.62	53.374	SF
ALOYSIOUS #C34-9(SI) - Wellbore #1 - Gyro Surveys	2,264.60	2,348.96	6,539.81	6,523.88	410.617	CC, ES
ALOYSIOUS #C34-9(SI) - Wellbore #1 - Gyro Surveys	7,250.00	6,850.43	7,445.72	7,397.00	152.825	SF
ALOYSIOUS #C34-1(PR) - Wellbore #1 - No Surveys	2,200.00	2,173.00	4,807.82	4,781.20	180.633	CC
ALOYSIOUS #C34-1(PR) - Wellbore #1 - No Surveys	2,300.00	2,272.98	4,808.78	4,780.94	172.739	ES
ALOYSIOUS #C34-1(PR) - Wellbore #1 - No Surveys	6,800.00	6,673.75	5,376.04	5,293.67	65.273	SF
ALOYSIOUS #C34-2(PR) - Wellbore #1 - No Surveys	2,200.00	2,142.00	6,306.09	6,279.74	239.357	CC, ES
ALOYSIOUS #C34-2(PR) - Wellbore #1 - No Surveys	7,350.00	6,876.72	7,165.75	7,080.49	84.045	SF
ALOYSIOUS #C34-3(PR) - Wellbore #1 - No Surveys	2,200.00	2,147.00	5,590.62	5,564.23	211.849	CC, ES
ALOYSIOUS #C34-3(PR) - Wellbore #1 - No Surveys	6,900.00	6,719.34	6,307.13	6,224.19	76.045	SF
ALOYSIOUS #C34-4(SI) - Wellbore #1 - No Surveys	2,200.00	2,140.00	4,653.46	4,627.13	176.746	CC, ES
ALOYSIOUS #C34-4(SI) - Wellbore #1 - No Surveys	6,900.00	6,712.34	5,427.47	5,344.62	65.512	SF
ALOYSIOUS #C34-5(PA) - Wellbore #1 - Gyro Surveys	2,215.57	2,184.46	5,282.27	5,267.11	348.406	CC, ES
ALOYSIOUS #C34-5(PA) - Wellbore #1 - Gyro Surveys	7,150.00	6,825.67	6,213.29	6,164.83	128.234	SF
ALOYSIOUS #C34-6(PR) - Wellbore #1 - Gyro Surveys	1,061.61	1,010.00	3,748.73	3,741.81	541.280	CC
ALOYSIOUS #C34-6(PR) - Wellbore #1 - Gyro Surveys	2,201.91	2,151.47	3,751.27	3,736.27	250.103	ES
ALOYSIOUS #C34-6(PR) - Wellbore #1 - Gyro Surveys	7,300.00	6,885.53	4,560.43	4,511.35	92.929	SF
ALOYSIOUS #C34-7(PR) - Wellbore #1 - Gyro Surveys	2,219.29	2,183.65	2,424.26	2,409.08	159.658	CC, ES
ALOYSIOUS #C34-7(PR) - Wellbore #1 - Gyro Surveys	7,100.00	6,843.34	3,243.73	3,195.19	66.828	SF
ALOYSIOUS #C34-15(PR) - Wellbore #1 - No Surveys	2,200.00	2,143.00	5,059.10	5,032.74	191.962	CC, ES
ALOYSIOUS #C34-15(PR) - Wellbore #1 - No Surveys	7,300.00	6,874.30	5,920.57	5,835.43	69.532	SF
Aloysius C #34-18(PA) - Wellbore #1 - Gyro Surveys	1,996.60	1,936.71	5,480.57	5,467.05	405.278	CC
Aloysius C #34-18(PA) - Wellbore #1 - Gyro Surveys	2,000.00	1,937.88	5,480.57	5,467.03	404.791	ES
Aloysius C #34-18(PA) - Wellbore #1 - Gyro Surveys	6,850.00	6,850.00	6,228.97	6,181.06	130.005	SF
ALOYSIOUS C #34-19(PR) - Wellbore #1 - No Surveys	2,200.00	2,150.00	4,660.91	4,634.50	176.444	CC
ALOYSIOUS C #34-19(PR) - Wellbore #1 - No Surveys	2,300.00	2,249.98	4,662.13	4,634.50	168.688	ES
ALOYSIOUS C #34-19(PR) - Wellbore #1 - No Surveys	6,850.00	6,687.87	5,346.57	5,264.02	64.767	SF
Aloysius C #34-20D(PR) - Wellbore #1 - MWD Surveys	2,615.04	3,130.00	3,846.77	3,825.42	180.184	CC, ES
Aloysius C #34-20D(PR) - Wellbore #1 - MWD Surveys	6,900.00	6,931.02	4,439.02	4,388.36	87.621	SF
Aloysius C #34-21D(SI) - Wellbore #1 - MWD Surveys	2,588.65	3,277.25	5,057.72	5,034.33	216.260	CC
Aloysius C #34-21D(SI) - Wellbore #1 - MWD Surveys	2,600.00	3,301.00	5,057.83	5,034.27	214.635	ES
Aloysius C #34-21D(SI) - Wellbore #1 - MWD Surveys	7,000.00	6,966.02	5,688.38	5,635.45	107.453	SF
ALOYSIOUS C #34-22D(PR) - Wellbore #1 - MWD Survey	2,506.43	3,200.29	6,387.02	6,364.39	282.180	CC, ES
ALOYSIOUS C #34-22D(PR) - Wellbore #1 - MWD Survey	7,050.00	6,952.86	7,100.81	7,048.67	136.187	SF
ALOYSIOUS C #34-23(PR) - Wellbore #1 - Gyro Surveys	2,226.13	2,228.65	5,754.79	5,739.41	374.236	CC, ES
ALOYSIOUS C #34-23(PR) - Wellbore #1 - Gyro Surveys	7,300.00	6,896.34	6,606.63	6,557.58	134.709	SF
Aloysius C #34-24(SI) - Wellbore #1 - No Surveys	2,200.00	2,145.00	4,622.49	4,596.12	175.279	CC, ES
Aloysius C #34-24(SI) - Wellbore #1 - No Surveys	7,150.00	6,843.20	5,503.97	5,419.41	65.093	SF
ALOYSIOUS C #34-27D(PR) - Wellbore #1 - MWD Survey	2,484.09	3,110.04	7,569.68	7,548.68	360.542	CC
ALOYSIOUS C #34-27D(PR) - Wellbore #1 - MWD Survey	2,500.00	3,119.24	7,569.72	7,548.62	358.752	ES
ALOYSIOUS C #34-27D(PR) - Wellbore #1 - MWD Survey	6,950.00	6,829.53	8,212.37	8,161.65	161.931	SF
ALOYSIOUS C #34-28D(PA) - Wellbore #1 - Gyro Surveys	764.92	713.18	5,623.70	5,618.87	1,164.740	CC
ALOYSIOUS C #34-28D(PA) - Wellbore #1 - Gyro Surveys	800.00	735.14	5,623.75	5,618.72	1,117.903	ES
ALOYSIOUS C #34-28D(PA) - Wellbore #1 - Gyro Surveys	7,050.00	6,916.56	7,408.16	7,358.75	149.941	SF
Aloysius C #34-31(PA) - Wellbore #1 - Gyro Surveys	2,180.67	2,150.78	4,015.92	4,000.99	269.064	CC
Aloysius C #34-31(PA) - Wellbore #1 - Gyro Surveys	2,200.00	2,167.48	4,015.92	4,000.87	266.785	ES
Aloysius C #34-31(PA) - Wellbore #1 - Gyro Surveys	6,700.00	6,649.63	4,525.10	4,478.19	96.464	SF
Aloysius C #34-32D(PR) - Wellbore #1 - MWD Surveys	2,539.61	2,862.56	2,892.56	2,872.16	141.817	CC, ES

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



**Noble Energy, Inc.**  
Anticollision Summary Report

<b>Company:</b>	Northern Region - DJ Basin	<b>Local Co-ordinate Reference:</b>	Well Guttersten D09-750
<b>Project:</b>	Mustang	<b>TVD Reference:</b>	Well @ 4750.00ft
<b>Reference Site:</b>	C Section 33	<b>MD Reference:</b>	Well @ 4750.00ft
<b>Site Error:</b>	0.00 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Guttersten D09-750	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Guttersten D09-750	<b>Database:</b>	EDMP
<b>Reference Design:</b>	Plan #1	<b>Offset TVD Reference:</b>	Offset Datum

**Summary**

Site Name Offset Well - Wellbore - Design	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
C Section 34						
Aloysius C #34-32D(PR) - Wellbore #1 - MWD Surveys	6,600.00	6,700.41	3,341.36	3,287.44	61.963	SF
Aloysius C34-33D(PR) - Wellbore #1 - MWD Surveys	2,564.20	2,852.69	2,200.44	2,180.46	110.092	CC
Aloysius C34-33D(PR) - Wellbore #1 - MWD Surveys	2,600.00	2,881.84	2,200.71	2,180.44	108.526	ES
Aloysius C34-33D(PR) - Wellbore #1 - MWD Surveys	6,750.00	6,723.22	2,776.65	2,726.67	55.553	SF
Aloysius C34-99HZ - Original Drilling - Original Drilling - A	6,204.73	10,570.00	3,111.21	3,061.71	62.853	CC, ES
Aloysius C34-99HZ - Original Drilling - Original Drilling - A	8,900.00	10,570.00	4,275.18	4,189.64	49.980	SF
DONOVAN D #02-30(PR) - Wellbore #1 - No Surveys	2,200.00	2,146.00	6,854.07	6,827.68	259.812	CC, ES
DONOVAN D #02-30(PR) - Wellbore #1 - No Surveys	9,900.00	6,881.00	8,212.90	8,119.33	87.779	SF
Gittlein C22-770 - Wellbore #1 - Plan #1	6,292.67	7,669.63	3,835.31	3,785.12	76.414	CC
Gittlein C22-770 - Wellbore #1 - Plan #1	6,300.00	7,669.56	3,835.32	3,785.10	76.370	ES
Gittlein C22-770 - Wellbore #1 - Plan #1	6,700.00	7,585.05	3,855.62	3,804.36	75.224	SF
Gittlein C22-775 - Wellbore #1 - Plan #1	6,239.52	7,678.75	3,490.49	3,440.14	69.320	CC, ES
Gittlein C22-775 - Wellbore #1 - Plan #1	6,550.00	7,652.91	3,504.50	3,453.31	68.461	SF
Gittlein C22-785 - Wellbore #1 - Plan #1	6,272.67	7,735.26	2,953.31	2,901.86	57.403	CC, ES
Gittlein C22-785 - Wellbore #1 - Plan #1	6,450.00	7,729.28	2,958.64	2,906.82	57.101	SF
GUTTERSEN D #03-27(PR) - Wellbore #1 - No Surveys	2,200.00	2,146.00	5,717.36	5,690.98	216.723	CC, ES
GUTTERSEN D #03-27(PR) - Wellbore #1 - No Surveys	8,600.00	6,881.00	6,723.54	6,635.12	76.047	SF
LANE #34-214(PR) - Wellbore #1 - No Surveys	2,200.00	2,139.00	6,595.53	6,569.21	250.592	CC, ES
LANE #34-214(PR) - Wellbore #1 - No Surveys	7,000.00	6,771.51	7,423.92	7,340.36	88.836	SF
LANE #34-814(PR) - Wellbore #1 - No Surveys	2,200.00	2,139.00	7,066.16	7,039.84	268.473	CC, ES
LANE #34-814(PR) - Wellbore #1 - No Surveys	7,100.00	6,818.78	7,964.48	7,880.30	94.621	SF
LANE C #34-17(PR) - Wellbore #1 - No Surveys	2,200.00	2,137.00	6,780.57	6,754.26	257.793	CC, ES
LANE C #34-17(PR) - Wellbore #1 - No Surveys	7,050.00	6,794.84	7,650.79	7,566.92	91.229	SF
POLLOCK-HADDIX #2(PA) - Wellbore #1 - Gyro Surveys	2,218.90	2,198.44	7,635.24	7,620.01	501.535	CC, ES
POLLOCK-HADDIX #2(PA) - Wellbore #1 - Gyro Surveys	7,050.00	6,707.28	8,538.26	8,490.48	178.709	SF
POLLOCK-HADDIX #34-1(SI) - Wellbore #1 - No Survey	2,200.00	2,140.00	5,863.55	5,837.22	222.707	CC, ES
POLLOCK-HADDIX #34-1(SI) - Wellbore #1 - No Survey	7,050.00	6,797.84	6,736.75	6,652.86	80.300	SF
TWO E RANCHES #1(PR) - Wellbore #1 - Gyro Surveys	2,208.05	2,161.05	3,004.34	2,989.26	199.229	CC, ES
TWO E RANCHES #1(PR) - Wellbore #1 - Gyro Surveys	6,900.00	6,680.23	3,834.40	3,787.01	80.914	SF
D Section 03						
Becca D03-32D - Wellbore #1 - Wellbore #1- As Drilled	9,804.19	7,043.80	2,513.06	2,452.48	41.485	CC, ES
Becca D03-32D - Wellbore #1 - Wellbore #1- As Drilled	10,900.00	7,037.26	2,741.57	2,670.69	38.678	SF

# Noble Energy, Inc.

## Anticollision Summary Report

<b>Company:</b>	Northern Region - DJ Basin	<b>Local Co-ordinate Reference:</b>	Well Guttersen D09-750
<b>Project:</b>	Mustang	<b>TVD Reference:</b>	Well @ 4750.00ft
<b>Reference Site:</b>	C Section 33	<b>MD Reference:</b>	Well @ 4750.00ft
<b>Site Error:</b>	0.00 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Guttersen D09-750	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Guttersen D09-750	<b>Database:</b>	EDMP
<b>Reference Design:</b>	Plan #1	<b>Offset TVD Reference:</b>	Offset Datum

Summary						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
D Section 04						
Burghart D04-22 - Wellbore #1 - Wellbore #1- As Drilled	9,651.00	6,898.62	1,280.55	1,222.07	21.897	CC, ES
Burghart D04-22 - Wellbore #1 - Wellbore #1- As Drilled	9,700.00	6,897.99	1,281.49	1,222.88	21.865	SF
Gittlein Blue D04-08 - Wellbore #1 - Wellbore #1- As Drill	9,203.45	6,880.72	1,867.74	1,811.80	33.389	CC, ES
Gittlein Blue D04-08 - Wellbore #1 - Wellbore #1- As Drill	9,400.00	6,879.06	1,878.06	1,821.50	33.209	SF
GITTLEIN D #04-24(PR) - GITTLEIN D #04-24 - No Surv	11,195.43	6,904.00	137.55	-44.86	0.754	Level 1, CC
GITTLEIN D #04-24(PR) - GITTLEIN D #04-24 - No Surv	11,200.00	6,904.00	137.63	-44.94	0.754	Level 1, ES, SF
Gittlein D #04-33(PR) - Gittlein D #04-33 - No Surveys	11,185.24	6,908.00	2,431.87	2,249.45	13.331	CC
Gittlein D #04-33(PR) - Gittlein D #04-33 - No Surveys	11,200.00	6,908.00	2,431.91	2,249.36	13.322	ES
Gittlein D #04-33(PR) - Gittlein D #04-33 - No Surveys	11,400.00	6,908.00	2,441.33	2,257.18	13.257	SF
GUTTERSEN D #04-32(PR) - GUTTERSEN D #04-32 -	9,677.97	6,930.00	2,494.48	2,321.17	14.393	CC
GUTTERSEN D #04-32(PR) - GUTTERSEN D #04-32 -	9,700.00	6,930.00	2,494.58	2,321.11	14.380	ES
GUTTERSEN D #04-32(PR) - GUTTERSEN D #04-32 -	9,900.00	6,930.00	2,504.35	2,329.48	14.322	SF
Guttersen D 04-18(PR) - Guttersen D 04-18 - Wellbore #	8,497.87	6,800.01	345.86	304.28	8.318	CC
Guttersen D 04-18(PR) - Guttersen D 04-18 - Wellbore #	8,500.00	6,800.01	345.87	304.27	8.314	ES, SF
Guttersen D 04-21(SI) - Guttersen D 04-21 - Wellbore #1	9,963.39	6,800.01	173.08	131.25	4.138	CC, ES, SF
Guttersen D03-33D - Wellbore #1 - Wellbore #1- As Drill	10,998.13	6,984.10	2,398.25	2,327.71	33.999	CC
Guttersen D03-33D - Wellbore #1 - Wellbore #1- As Drill	11,000.00	6,984.12	2,398.25	2,327.70	33.996	ES
Guttersen D03-33D - Wellbore #1 - Wellbore #1- As Drill	11,200.00	6,985.63	2,406.73	2,335.60	33.835	SF
Guttersen D04-30D - Plan B - Plan B	7,234.00	6,971.55	2,756.14	2,707.27	56.398	CC, ES
Guttersen D04-30D - Plan B - Plan B	7,400.00	6,985.18	2,764.79	2,715.59	56.194	SF
Guttersen D04-31D - Plan B - Plan B	8,531.55	7,174.01	2,741.19	2,682.60	46.785	CC, ES
Guttersen D04-31D - Plan B - Plan B	9,200.00	7,156.35	2,821.45	2,758.75	45.000	SF
Guttersen D04-69HN - Original Drilling - Original Drilling	7,000.00	8,899.14	93.59	15.80	1.203	Level 3, ES, SF
Guttersen D04-69HN - Original Drilling - Original Drilling	7,057.50	8,893.26	76.68	29.71	1.632	CC
Karch Blue D04-02 - Wellbore #1 - Wellbore #1- As Drille	7,927.95	6,871.68	734.61	684.16	14.563	CC, ES, SF
Karch Blue D04-07 - Wellbore #1 - Wellbore #1- As Drille	9,258.35	6,886.51	582.10	525.90	10.358	CC, ES, SF
Karch D04-17 - Wellbore #1 - Wellbore #1- As Drilled	8,522.41	6,900.91	1,264.32	1,211.46	23.921	CC, ES
Karch D04-17 - Wellbore #1 - Wellbore #1- As Drilled	8,600.00	6,900.28	1,266.69	1,213.69	23.898	SF
MARIE #D4-11(PR) - MARIE #D4-11 - No Surveys	10,458.16	6,898.00	493.40	315.98	2.781	CC, ES, SF
MARIE D #04-20(PR) - MARIE D #04-20 - No Surveys	9,787.12	6,908.00	1,347.96	1,174.45	7.769	CC
MARIE D #04-20(PR) - MARIE D #04-20 - No Surveys	9,800.00	6,908.00	1,348.02	1,174.40	7.764	ES
MARIE D #04-20(PR) - MARIE D #04-20 - No Surveys	9,900.00	6,908.00	1,352.68	1,178.26	7.756	SF
MARIE D #4-12(PR) - MARIE D #4-12 - No Surveys	10,484.69	6,910.00	1,924.80	1,746.97	10.824	CC
MARIE D #4-12(PR) - MARIE D #4-12 - No Surveys	10,500.00	6,910.00	1,924.86	1,746.91	10.816	ES
MARIE D #4-12(PR) - MARIE D #4-12 - No Surveys	10,600.00	6,910.00	1,928.25	1,749.48	10.786	SF
MARIE D #4-13 (PR) - MARIE D #4-13 - No Surveys	11,822.03	6,904.00	1,806.24	1,619.47	9.671	CC, ES
MARIE D #4-13 (PR) - MARIE D #4-13 - No Surveys	12,000.00	6,904.00	1,814.98	1,626.69	9.639	SF
MARIE D #4-14(PR) - MARIE D #4-14 - No Surveys	11,809.82	6,902.00	659.07	472.43	3.531	CC, ES, SF
MARIE D #4-19 (SI) - MARIE D #4-19 - No Surveys	8,469.77	6,918.00	1,111.89	944.86	6.657	CC, ES
MARIE D #4-19 (SI) - MARIE D #4-19 - No Surveys	8,500.00	6,918.00	1,112.30	945.08	6.652	SF
MARIE D #4-25(PR) - MARIE D #4-25 - No Surveys	11,021.32	6,903.00	1,263.82	1,082.61	6.974	CC, ES
MARIE D #4-25(PR) - MARIE D #4-25 - No Surveys	11,100.00	6,903.00	1,266.27	1,084.32	6.959	SF
MARIE D #4-3(SI) - MARIE D #4-3 - No Surveys	7,857.35	6,900.00	682.24	517.72	4.147	CC, ES, SF
MARIE D #4-4(SI) - MARIE D #4-4 - No Surveys	7,870.15	6,920.00	2,049.70	1,884.74	12.426	CC, ES
MARIE D #4-4(SI) - MARIE D #4-4 - No Surveys	8,000.00	6,920.00	2,053.81	1,888.35	12.413	SF
MARIE D #4-5(SI) - MARIE D #4-5 - No Surveys	9,169.76	6,915.00	2,024.73	1,854.49	11.894	CC, ES
MARIE D #4-5(SI) - MARIE D #4-5 - No Surveys	9,300.00	6,915.00	2,028.91	1,857.81	11.858	SF
MARIE D #4-6(SI) - MARIE D #4-6 - No Surveys	9,274.57	6,899.00	691.26	520.79	4.055	CC, ES
MARIE D #4-6(SI) - MARIE D #4-6 - No Surveys	9,300.00	6,899.00	691.72	521.01	4.052	SF
Marie D04-09 - Wellbore #1 - Wellbore #1- As Drilled	10,425.92	6,916.40	1,913.13	1,849.83	30.227	CC, ES
Marie D04-09 - Wellbore #1 - Wellbore #1- As Drilled	10,600.00	6,917.00	1,921.03	1,857.08	30.039	SF
Marie D04-10 - Wellbore #1 - Wellbore #1- As Drilled	10,595.37	6,898.48	682.22	618.00	10.623	CC, ES
Marie D04-10 - Wellbore #1 - Wellbore #1- As Drilled	10,600.00	6,898.48	682.23	618.01	10.623	SF

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

**Noble Energy, Inc.**  
Anticollision Summary Report

<b>Company:</b>	Northern Region - DJ Basin	<b>Local Co-ordinate Reference:</b>	Well Gutttersen D09-750
<b>Project:</b>	Mustang	<b>TVD Reference:</b>	Well @ 4750.00ft
<b>Reference Site:</b>	C Section 33	<b>MD Reference:</b>	Well @ 4750.00ft
<b>Site Error:</b>	0.00 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Gutttersen D09-750	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Gutttersen D09-750	<b>Database:</b>	EDMP
<b>Reference Design:</b>	Plan #1	<b>Offset TVD Reference:</b>	Offset Datum

**Summary**

Site Name Offset Well - Wellbore - Design	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
D Section 04						
Marie D04-15 - Wellbore #1 - Wellbore #1- As Drilled	11,786.47	6,897.30	640.92	568.61	8.863	CC, ES, SF
Marie D04-16 - Wellbore #1 - Wellbore #1- As Drilled	11,706.11	6,879.36	1,899.71	1,828.05	26.511	CC, ES
Marie D04-16 - Wellbore #1 - Wellbore #1- As Drilled	11,900.00	6,880.70	1,909.58	1,837.18	26.376	SF
Marie D04-23 - Wellbore #1 - Wellbore #1-As Drilled	11,112.49	6,894.88	1,286.75	1,219.11	19.024	CC, ES
Marie D04-23 - Wellbore #1 - Wellbore #1-As Drilled	11,200.00	6,894.69	1,289.72	1,221.85	19.002	SF
Marie D04-72-1HN - Original Drilling - Original Drilling - A	7,500.00	11,395.00	2,257.74	2,145.75	20.160	SF
Marie D04-72-1HN - Original Drilling - Original Drilling - A	7,680.79	11,395.00	2,250.49	2,139.31	20.241	ES
Marie D04-72-1HN - Original Drilling - Original Drilling - A	12,208.42	6,791.28	2,226.75	2,152.77	30.098	CC
Marie D04-73-1HN - Original Drilling - Original Drilling - A	7,687.60	11,120.00	1,456.56	1,347.49	13.354	ES, SF
Marie D04-73-1HN - Original Drilling - Original Drilling - A	9,547.83	9,259.02	1,447.56	1,362.97	17.113	CC
Marie D04-74-1HN - Original Drilling - Original Drilling - P	12,359.83	6,942.61	955.84	881.46	12.852	CC, ES
Marie D04-74-1HN - Original Drilling - Original Drilling - P	12,400.00	6,942.71	956.68	882.24	12.852	SF
Marie D04-74-1HN - Original Drilling - ST01 - ST-01- As	7,700.00	11,187.59	939.77	874.08	14.305	SF
Marie D04-74-1HN - Original Drilling - ST01 - ST-01- As	8,073.61	10,836.00	931.05	866.72	14.471	CC, ES
Two E Ranch 01-04 - Wellbore #1 - Wellbore #1- As Drill	2,224.36	2,184.44	1,462.13	1,446.92	96.127	CC
Two E Ranch 01-04 - Wellbore #1 - Wellbore #1- As Drill	2,300.00	2,259.61	1,462.63	1,446.89	92.941	ES
Two E Ranch 01-04 - Wellbore #1 - Wellbore #1- As Drill	8,000.00	6,905.61	1,607.17	1,556.42	31.669	SF

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

# Noble Energy, Inc.

## Anticollision Summary Report

<b>Company:</b>	Northern Region - DJ Basin	<b>Local Co-ordinate Reference:</b>	Well Guttersen D09-750
<b>Project:</b>	Mustang	<b>TVD Reference:</b>	Well @ 4750.00ft
<b>Reference Site:</b>	C Section 33	<b>MD Reference:</b>	Well @ 4750.00ft
<b>Site Error:</b>	0.00 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Guttersen D09-750	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Guttersen D09-750	<b>Database:</b>	EDMP
<b>Reference Design:</b>	Plan #1	<b>Offset TVD Reference:</b>	Offset Datum

### Summary

Site Name Offset Well - Wellbore - Design	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Between Ellipses (ft)	Separation Factor	Warning
D Section 05						
BECKER #15-9I(PR) - Wellbore #1 - Gyro Surveys	11,058.47	6,909.21	5,393.28	5,325.88	80.016	CC
BECKER #15-9I(PR) - Wellbore #1 - Gyro Surveys	11,100.00	6,908.73	5,393.44	5,325.73	79.652	ES
BECKER #15-9I(PR) - Wellbore #1 - Gyro Surveys	13,100.00	6,885.33	5,766.70	5,686.13	71.577	SF
BECKER #5-13(PA) - Wellbore #1 - No Surveys	10,592.29	6,953.00	5,951.91	5,850.91	58.930	CC
BECKER #5-13(PA) - Wellbore #1 - No Surveys	10,600.00	6,953.00	5,951.91	5,850.86	58.898	ES
BECKER #5-13(PA) - Wellbore #1 - No Surveys	12,500.00	6,953.00	6,250.17	6,136.49	54.980	SF
BECKER #5-14(PA) - Wellbore #1 - Gyro Surveys	11,750.29	6,800.00	7,218.79	7,146.92	100.438	CC
BECKER #5-14(PA) - Wellbore #1 - Gyro Surveys	11,800.00	6,800.00	7,218.96	7,146.71	99.912	ES
BECKER #5-14(PA) - Wellbore #1 - Gyro Surveys	14,800.00	6,688.93	7,835.82	7,744.46	85.762	SF
BECKER #5-16(PA) - Wellbore #1 - Gyro Surveys	10,458.03	6,998.15	3,492.80	3,429.15	54.876	CC
BECKER #5-16(PA) - Wellbore #1 - Gyro Surveys	10,500.00	6,998.72	3,493.05	3,429.09	54.610	ES
BECKER #5-16(PA) - Wellbore #1 - Gyro Surveys	11,500.00	7,012.33	3,644.88	3,574.35	51.679	SF
BECKER #5-2(PA) - Wellbore #1 - Gyro Surveys	11,631.62	7,021.40	6,230.10	6,158.48	86.987	CC
BECKER #5-2(PA) - Wellbore #1 - Gyro Surveys	11,700.00	7,020.88	6,230.48	6,158.33	86.360	ES
BECKER #5-2(PA) - Wellbore #1 - Gyro Surveys	14,100.00	7,002.57	6,701.25	6,613.56	76.422	SF
BECKER #5-5(PA) - Wellbore #1 - Gyro Surveys	11,725.28	6,924.17	3,479.42	3,407.44	48.343	CC, ES
BECKER #5-5(PA) - Wellbore #1 - Gyro Surveys	12,600.00	6,914.79	3,587.68	3,509.57	45.933	SF
BECKER #5-8(PR) - Wellbore #1 - Gyro Surveys	10,907.79	6,900.00	7,096.43	7,030.00	106.833	CC
BECKER #5-8(PR) - Wellbore #1 - Gyro Surveys	11,000.00	6,900.00	7,097.02	7,029.93	105.779	ES
BECKER #5-8(PR) - Wellbore #1 - Gyro Surveys	14,200.00	6,900.00	7,822.91	7,735.72	89.722	SF
BECKER #6(SI) - Wellbore #1 - Gyro Surveys	11,032.98	6,745.71	4,080.62	4,013.68	60.961	CC, ES
BECKER #6(SI) - Wellbore #1 - Gyro Surveys	12,300.00	6,733.88	4,272.78	4,197.44	56.716	SF
Becker 5-1(PA) - Wellbore #1 - Gyro Surveys	10,501.85	6,922.74	4,699.19	4,635.37	73.634	CC, ES
Becker 5-1(PA) - Wellbore #1 - Gyro Surveys	12,200.00	6,906.16	4,996.58	4,921.89	66.901	SF
Becker 5-15(PA) - Wellbore #1 - Gyro Surveys	12,020.11	6,744.40	4,923.63	4,847.60	64.761	CC, ES
Becker 5-15(PA) - Wellbore #1 - Gyro Surveys	13,500.00	6,657.57	5,140.49	5,055.37	60.393	SF
Becker Ranch #5E-223 - Wellbore #1 - As Drilled	11,585.13	10,937.00	7,418.49	7,297.21	61.166	CC
Becker Ranch #5E-223 - Wellbore #1 - As Drilled	11,900.00	11,128.00	7,420.09	7,293.29	58.519	ES
Becker Ranch #5E-223 - Wellbore #1 - As Drilled	13,900.00	11,398.00	7,654.56	7,510.01	52.955	SF
Becker Ranch #5E-403 - As Drilled - As Drilled	10,834.12	10,386.14	7,688.85	7,580.76	71.135	CC
Becker Ranch #5E-403 - As Drilled - As Drilled	12,100.00	11,599.00	7,713.00	7,575.90	56.257	ES
Becker Ranch #5E-403 - As Drilled - As Drilled	14,100.00	11,599.00	7,981.54	7,830.82	52.957	SF
Becker Ranch #5J-103 - Wellbore #1 - As Drilled	8,459.21	7,709.41	6,727.64	6,668.45	113.678	CC
Becker Ranch #5J-103 - Wellbore #1 - As Drilled	8,700.00	8,700.00	6,730.61	6,658.91	93.866	ES
Becker Ranch #5J-103 - Wellbore #1 - As Drilled	11,700.00	8,438.00	7,202.65	7,118.14	85.230	SF
Becker Ranch #5J-203 - Wellbore #1 - Plan #1	12,038.30	11,568.80	6,429.63	6,333.35	66.780	CC
Becker Ranch #5J-203 - Wellbore #1 - Plan #1	12,100.00	11,568.80	6,429.92	6,333.13	66.428	ES
Becker Ranch #5J-203 - Wellbore #1 - Plan #1	14,000.00	11,568.80	6,722.23	6,612.71	61.379	SF
Becker Ranch #5J-303 - Wellbore #1 - As Drilled	12,044.90	11,473.00	6,760.26	6,623.02	49.260	CC
Becker Ranch #5J-303 - Wellbore #1 - As Drilled	12,100.00	11,473.00	6,760.48	6,622.85	49.118	ES
Becker Ranch #5J-303 - Wellbore #1 - As Drilled	13,400.00	11,473.00	6,894.74	6,749.76	47.559	SF
Becker Ranch #5J-323 - Wellbore #1 - As Drilled	11,022.65	10,417.00	6,112.05	5,999.99	54.540	CC
Becker Ranch #5J-323 - Wellbore #1 - As Drilled	12,100.00	11,430.00	6,112.91	5,976.23	44.723	ES
Becker Ranch #5J-323 - Wellbore #1 - As Drilled	13,300.00	11,430.00	6,242.23	6,097.54	43.143	SF
Becker Ranch #5J-323R - Wellbore #1 - Plan #1	11,438.93	10,833.21	6,033.06	5,945.87	69.190	CC
Becker Ranch #5J-323R - Wellbore #1 - Plan #1	11,500.00	10,852.72	6,033.47	5,945.68	68.730	ES
Becker Ranch #5J-323R - Wellbore #1 - Plan #1	13,800.00	11,454.00	6,352.52	6,245.43	59.317	SF
Becker Ranch #5J-343 - Wellbore #1 - As Drilled	12,021.07	11,500.00	7,079.94	6,943.99	52.078	CC
Becker Ranch #5J-343 - Wellbore #1 - As Drilled	12,100.00	11,500.00	7,080.38	6,943.82	51.845	ES
Becker Ranch #5J-343 - Wellbore #1 - As Drilled	13,600.00	11,500.00	7,253.87	7,108.15	49.781	SF
Becker Ranch #5M-203 - Wellbore #1 - Plan #1	12,019.44	11,268.00	5,161.29	5,065.45	53.853	CC
Becker Ranch #5M-203 - Wellbore #1 - Plan #1	12,100.00	11,268.00	5,161.92	5,065.39	53.476	ES
Becker Ranch #5M-203 - Wellbore #1 - Plan #1	13,400.00	11,268.00	5,342.74	5,237.49	50.764	SF

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



# Noble Energy, Inc.

## Anticollision Summary Report

<b>Company:</b>	Northern Region - DJ Basin	<b>Local Co-ordinate Reference:</b>	Well Guttersen D09-750
<b>Project:</b>	Mustang	<b>TVD Reference:</b>	Well @ 4750.00ft
<b>Reference Site:</b>	C Section 33	<b>MD Reference:</b>	Well @ 4750.00ft
<b>Site Error:</b>	0.00 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Guttersen D09-750	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Guttersen D09-750	<b>Database:</b>	EDMP
<b>Reference Design:</b>	Plan #1	<b>Offset TVD Reference:</b>	Offset Datum

### Summary

Site Name Offset Well - Wellbore - Design	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Between Ellipses (ft)	Separation Factor	Warning
D Section 05						
Becker Ranch #5M-243 - Wellbore #1 - Plan #1	12,028.79	11,282.50	5,772.22	5,677.26	60.783	CC
Becker Ranch #5M-243 - Wellbore #1 - Plan #1	12,100.00	11,282.50	5,772.66	5,677.13	60.430	ES
Becker Ranch #5M-243 - Wellbore #1 - Plan #1	13,600.00	11,282.50	5,982.24	5,877.28	56.996	SF
Becker Ranch #5M-303 - Wellbore #1 - Plan #1	12,025.59	11,462.20	5,440.34	5,345.17	57.162	CC
Becker Ranch #5M-303 - Wellbore #1 - Plan #1	12,100.00	11,462.20	5,440.85	5,345.11	56.827	ES
Becker Ranch #5M-303 - Wellbore #1 - Plan #1	13,400.00	11,462.20	5,611.27	5,507.58	54.116	SF
Becker Ranch #5M-323 - Wellbore #1 - Plan #1	12,015.69	11,315.70	4,745.60	4,650.34	49.815	CC, ES
Becker Ranch #5M-323 - Wellbore #1 - Plan #1	13,100.00	11,315.70	4,867.90	4,765.31	47.448	SF
Becker Ranch #5M-423 - Wellbore #1 - Plan #1	12,017.46	11,437.50	4,950.50	4,855.09	51.888	CC
Becker Ranch #5M-423 - Wellbore #1 - Plan #1	12,100.00	11,437.50	4,951.19	4,855.09	51.520	ES
Becker Ranch #5M-423 - Wellbore #1 - Plan #1	13,300.00	11,437.50	5,113.94	5,009.91	49.157	SF
Becker Ranch #5R-203 - Wellbore #1 - Plan #1	12,003.41	11,257.60	3,818.05	3,722.57	39.990	CC, ES
Becker Ranch #5R-203 - Wellbore #1 - Plan #1	12,800.00	11,257.60	3,900.26	3,799.26	38.616	SF
Becker Ranch #5R-243 - Wellbore #1 - Plan #1	12,013.50	11,231.80	4,511.56	4,416.57	47.495	CC, ES
Becker Ranch #5R-243 - Wellbore #1 - Plan #1	13,000.00	11,231.80	4,618.15	4,516.69	45.516	SF
Becker Ranch #5R-303 - Wellbore #1 - Plan #1	12,006.15	11,308.90	4,095.94	4,000.76	43.033	CC, ES
Becker Ranch #5R-303 - Wellbore #1 - Plan #1	12,800.00	11,308.90	4,172.16	4,072.02	41.661	SF
Becker Ranch #5R-323 - Wellbore #1 - Plan #1	12,001.42	11,332.80	3,604.70	3,509.59	37.900	CC, ES
Becker Ranch #5R-323 - Wellbore #1 - Plan #1	12,700.00	11,332.80	3,671.77	3,571.91	36.770	SF
Becker Ranch #5R-443 - Wellbore #1 - Plan #1	12,012.86	11,417.20	4,447.96	4,352.95	46.817	CC, ES
Becker Ranch #5R-443 - Wellbore #1 - Plan #1	13,000.00	11,417.20	4,556.18	4,454.79	44.940	SF
Becker Ranch #5U-243 - Wellbore #1 - Plan #1	11,994.11	11,243.60	3,244.01	3,149.04	34.157	CC
Becker Ranch #5U-243 - Wellbore #1 - Plan #1	12,000.00	11,243.60	3,244.02	3,148.99	34.140	ES
Becker Ranch #5U-243 - Wellbore #1 - Plan #1	12,500.00	11,243.60	3,283.22	3,184.90	33.395	SF
Becker Ranch #5U-303 - Wellbore #1 - Plan #1	11,990.57	11,348.00	2,826.91	2,731.67	29.683	CC
Becker Ranch #5U-303 - Wellbore #1 - Plan #1	12,000.00	11,348.00	2,826.93	2,731.61	29.660	ES
Becker Ranch #5U-303 - Wellbore #1 - Plan #1	12,400.00	11,348.00	2,856.41	2,758.67	29.227	SF
Becker Ranch #5U-443 - Wellbore #1 - Plan #1	11,992.43	11,407.70	3,029.82	2,934.79	31.885	CC
Becker Ranch #5U-443 - Wellbore #1 - Plan #1	12,000.00	11,407.70	3,029.82	2,934.74	31.865	ES
Becker Ranch #5U-443 - Wellbore #1 - Plan #1	12,400.00	11,407.70	3,057.11	2,959.39	31.285	SF
LDS #D08-18D(PR) - Wellbore #1 - MWD Surveys	13,830.69	7,422.62	5,189.14	5,087.99	51.303	CC, ES
LDS #D08-18D(PR) - Wellbore #1 - MWD Surveys	14,700.00	7,416.77	5,261.45	5,156.38	50.077	SF
LDS #D08-29(SI) - Wellbore #1 - Gyro Surveys	12,253.76	6,908.59	6,493.80	6,418.02	85.692	CC
LDS #D08-29(SI) - Wellbore #1 - Gyro Surveys	12,300.00	6,908.24	6,493.96	6,417.82	85.285	ES
LDS #D08-29(SI) - Wellbore #1 - Gyro Surveys	14,800.00	6,889.05	6,975.13	6,882.70	75.469	SF
LDS D08-28D(PR) - Wellbore #1 - MWD Surveys	12,332.79	7,125.41	5,488.76	5,410.93	70.528	CC
LDS D08-28D(PR) - Wellbore #1 - MWD Surveys	12,400.00	7,122.77	5,489.17	5,410.82	70.058	ES
LDS D08-28D(PR) - Wellbore #1 - MWD Surveys	13,100.00	13,100.00	5,542.05	5,438.83	53.694	SF
LDS D08-30D(SI) - Wellbore #1 - MWD Surveys	12,441.07	7,112.32	8,022.58	7,943.63	101.622	CC
LDS D08-30D(SI) - Wellbore #1 - MWD Surveys	12,500.00	7,112.85	8,022.79	7,943.37	101.018	ES
LDS D08-30D(SI) - Wellbore #1 - MWD Surveys	16,400.00	7,140.97	8,946.09	8,839.42	83.863	SF

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

# Noble Energy, Inc.

## Anticollision Summary Report

<b>Company:</b>	Northern Region - DJ Basin	<b>Local Co-ordinate Reference:</b>	Well Guttersten D09-750
<b>Project:</b>	Mustang	<b>TVD Reference:</b>	Well @ 4750.00ft
<b>Reference Site:</b>	C Section 33	<b>MD Reference:</b>	Well @ 4750.00ft
<b>Site Error:</b>	0.00 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Guttersten D09-750	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Guttersten D09-750	<b>Database:</b>	EDMP
<b>Reference Design:</b>	Plan #1	<b>Offset TVD Reference:</b>	Offset Datum

### Summary

Site Name Offset Well - Wellbore - Design	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Between Ellipses (ft)	Separation Factor	Warning
D Section 08						
Becker D17-715 - Wellbore #1 - Plan #1	17,553.90	12,436.62	2,983.27	2,829.02	19.340	CC, ES, SF
Becker D17-725 - Wellbore #1 - Plan #1	17,553.90	12,263.38	3,634.97	3,480.95	23.601	CC, ES, SF
Becker D17-730 - Wellbore #1 - Plan #1	12,513.98	7,394.59	3,967.80	3,885.68	48.314	CC
Becker D17-730 - Wellbore #1 - Plan #1	17,553.90	12,478.32	3,973.85	3,819.69	25.777	ES, SF
Becker D17-735 - Wellbore #1 - Plan #1	17,553.90	12,380.42	4,279.09	4,125.25	27.814	CC, ES, SF
Becker D17-745 - Wellbore #1 - Plan #1	11,925.28	6,179.28	4,855.73	4,781.97	65.834	CC
Becker D17-745 - Wellbore #1 - Plan #1	17,553.90	12,331.94	4,929.85	4,776.01	32.044	ES, SF
Becker D17-750 - Wellbore #1 - Plan #1	11,674.64	5,754.20	5,022.81	4,952.88	71.828	CC
Becker D17-750 - Wellbore #1 - Plan #1	11,700.00	5,763.49	5,022.86	4,952.69	71.580	ES
Becker D17-750 - Wellbore #1 - Plan #1	17,553.90	12,601.66	5,250.35	5,096.77	34.185	SF
Becker D17-755 - Wellbore #1 - Plan #1	17,553.90	12,570.18	5,575.01	5,422.18	36.479	CC, ES, SF
Becker D17-765 - Wellbore #1 - Plan #1	17,553.90	12,303.72	6,224.89	6,056.38	36.941	CC, ES, SF
Becker D17-770 - Wellbore #1 - Plan #1	17,553.90	12,436.37	6,546.44	6,377.96	38.854	CC, ES, SF
Becker D17-775 - Wellbore #1 - Plan #1	17,553.90	12,289.40	6,870.99	6,702.71	40.832	CC, ES, SF
Becker D17-785 - Wellbore #1 - Plan #1	12,246.92	6,806.25	7,513.63	7,436.08	96.880	CC
Becker D17-785 - Wellbore #1 - Plan #1	17,553.90	12,189.57	7,519.84	7,367.55	49.378	ES, SF
HSR-ALVIN DECHANT #12-8 (SI) - Wellbore #1 - No Su	15,727.51	6,947.00	7,107.79	6,969.13	51.261	CC
HSR-ALVIN DECHANT #12-8 (SI) - Wellbore #1 - No Su	15,800.00	6,947.00	7,108.16	6,968.89	51.039	ES
HSR-ALVIN DECHANT #12-8 (SI) - Wellbore #1 - No Su	17,553.90	6,947.00	7,338.69	7,187.03	48.389	SF
HSR-ALVIN DECHANT #13-8(SI) - Wellbore #1 - No Sur	17,312.90	6,936.00	7,182.66	7,031.65	47.564	CC
HSR-ALVIN DECHANT #13-8(SI) - Wellbore #1 - No Sur	17,400.00	6,936.00	7,183.19	7,031.43	47.334	ES
HSR-ALVIN DECHANT #13-8(SI) - Wellbore #1 - No Sur	17,553.90	6,936.00	7,186.70	7,033.66	46.960	SF
HSR-LDS #14-8(SI) - Wellbore #1 - No Surveys	16,785.19	6,927.00	6,045.55	5,898.78	41.191	CC
HSR-LDS #14-8(SI) - Wellbore #1 - No Surveys	16,800.00	6,927.00	6,045.57	5,898.67	41.155	ES
HSR-LDS #14-8(SI) - Wellbore #1 - No Surveys	17,553.90	6,927.00	6,094.23	5,941.42	39.881	SF
HSR-LDS #15-8(SI) - Wellbore #1 - No Surveys	17,056.14	6,924.00	4,610.76	4,461.88	30.970	CC
HSR-LDS #15-8(SI) - Wellbore #1 - No Surveys	17,100.00	6,924.00	4,610.97	4,461.70	30.890	ES
HSR-LDS #15-8(SI) - Wellbore #1 - No Surveys	17,553.90	6,924.00	4,637.55	4,484.68	30.336	SF
HSR-LDS #16-8(SI) - Wellbore #1 - No Surveys	17,167.43	6,923.00	3,252.81	3,103.06	21.722	CC
HSR-LDS #16-8(SI) - Wellbore #1 - No Surveys	17,200.00	6,923.00	3,252.97	3,102.92	21.679	ES
HSR-LDS #16-8(SI) - Wellbore #1 - No Surveys	17,553.90	6,923.00	3,275.69	3,122.87	21.435	SF
HSR-LDS #3-8(SI) - Wellbore #1 - No Surveys	13,280.54	6,925.00	6,038.62	5,918.87	50.429	CC
HSR-LDS #3-8(SI) - Wellbore #1 - No Surveys	13,300.00	6,925.00	6,038.65	5,918.75	50.362	ES
HSR-LDS #3-8(SI) - Wellbore #1 - No Surveys	15,000.00	6,925.00	6,278.65	6,146.85	47.638	SF
HSR-LDS #4-8(SI) - Wellbore 1 - No Surveys	13,436.67	6,950.00	7,176.16	7,055.03	59.243	CC
HSR-LDS #4-8(SI) - Wellbore 1 - No Surveys	13,500.00	6,950.00	7,176.44	7,054.80	58.995	ES
HSR-LDS #4-8(SI) - Wellbore 1 - No Surveys	15,700.00	6,950.00	7,524.62	7,387.80	54.994	SF
HSR-LDS #5-8(SI) - Wellbore #1 - No Surveys	14,589.32	6,943.00	7,335.94	7,206.12	56.510	CC
HSR-LDS #5-8(SI) - Wellbore #1 - No Surveys	14,700.00	6,943.00	7,336.77	7,206.04	56.120	ES
HSR-LDS #5-8(SI) - Wellbore #1 - No Surveys	16,800.00	6,943.00	7,661.79	7,516.58	52.764	SF
HSR-LDS #6-8(SI) - Wellbore #1 - No Surveys	14,525.50	6,923.00	5,935.07	5,805.92	45.954	CC
HSR-LDS #6-8(SI) - Wellbore #1 - No Surveys	14,600.00	6,923.00	5,935.54	5,805.76	45.735	ES
HSR-LDS #6-8(SI) - Wellbore #1 - No Surveys	16,000.00	6,923.00	6,115.49	5,975.79	43.775	SF
HSR-LDS #9-8(SI) - Wellbore #1 - No Surveys	15,608.64	6,918.00	3,297.99	3,160.51	23.989	CC, ES
HSR-LDS #9-8(SI) - Wellbore #1 - No Surveys	16,100.00	6,918.00	3,334.40	3,193.13	23.603	SF
HSR-LDS A #10-8(SI) - Wellbore #1 - No Surveys	15,889.62	6,922.00	4,529.40	4,389.69	32.421	CC
HSR-LDS A #10-8(SI) - Wellbore #1 - No Surveys	15,900.00	6,922.00	4,529.41	4,389.61	32.400	ES
HSR-LDS A #10-8(SI) - Wellbore #1 - No Surveys	16,700.00	6,922.00	4,601.32	4,455.57	31.570	SF
HSR-LDS A #11-8(SI) - Wellbore #1 - No Surveys	15,746.40	6,924.00	5,988.08	5,849.47	43.203	CC
HSR-LDS A #11-8(SI) - Wellbore #1 - No Surveys	15,800.00	6,924.00	5,988.32	5,849.25	43.062	ES
HSR-LDS A #11-8(SI) - Wellbore #1 - No Surveys	17,200.00	6,924.00	6,161.98	6,013.04	41.372	SF
LDS #18-8(SI) - Wellbore #1 - No Surveys	13,977.65	6,945.00	6,576.60	6,451.43	52.543	CC
LDS #18-8(SI) - Wellbore #1 - No Surveys	14,000.00	6,945.00	6,576.64	6,451.28	52.465	ES

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

**Noble Energy, Inc.**  
Anticollision Summary Report

<b>Company:</b>	Northern Region - DJ Basin	<b>Local Co-ordinate Reference:</b>	Well Guttersten D09-750
<b>Project:</b>	Mustang	<b>TVD Reference:</b>	Well @ 4750.00ft
<b>Reference Site:</b>	C Section 33	<b>MD Reference:</b>	Well @ 4750.00ft
<b>Site Error:</b>	0.00 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Guttersten D09-750	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Guttersten D09-750	<b>Database:</b>	EDMP
<b>Reference Design:</b>	Plan #1	<b>Offset TVD Reference:</b>	Offset Datum

Summary						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
D Section 08						
LDS #18-8(SI) - Wellbore #1 - No Surveys	15,800.00	6,945.00	6,824.41	6,686.37	49.437	SF
LDS #20-8(SI) - Wellbore #1 - No Surveys	16,514.55	6,921.00	3,954.07	3,809.48	27.347	CC, ES
LDS #20-8(SI) - Wellbore #1 - No Surveys	17,100.00	6,921.00	3,997.18	3,848.10	26.812	SF
LDS D #09-30(SI) - Wellbore #1 - No Surveys	12,680.02	6,912.00	2,828.57	2,713.38	24.556	CC
LDS D #09-30(SI) - Wellbore #1 - No Surveys	12,700.00	6,912.00	2,828.64	2,713.28	24.519	ES
LDS D #09-30(SI) - Wellbore #1 - No Surveys	13,100.00	6,912.00	2,859.58	2,741.10	24.136	SF
LDS D #09-31D(SI) - Wellbore #1 - No Surveys	12,704.45	6,912.00	2,830.58	2,715.21	24.536	CC, ES
LDS D #09-31D(SI) - Wellbore #1 - No Surveys	13,200.00	6,912.00	2,873.63	2,754.49	24.120	SF
RUBY RED #D #8-1D(PA) - Wellbore #1 - Gyro Surveys	13,506.58	6,850.00	3,677.32	3,592.49	43.350	CC, ES
RUBY RED #D #8-1D(PA) - Wellbore #1 - Gyro Surveys	14,400.00	6,850.00	3,784.29	3,693.16	41.526	SF
RUBY RED #D 8-7(PR) - Wellbore #1 - Gyro Surveys	14,567.47	6,935.65	4,766.66	4,673.56	51.196	CC
RUBY RED #D 8-7(PR) - Wellbore #1 - Gyro Surveys	14,600.00	6,935.33	4,766.78	4,673.39	51.043	ES
RUBY RED #D 8-7(PR) - Wellbore #1 - Gyro Surveys	15,800.00	6,923.37	4,923.42	4,821.74	48.419	SF
RUBY RED #D 8-8(PR) - Wellbore #1 - Gyro Surveys	14,567.80	6,850.00	3,119.81	3,026.87	33.569	CC
RUBY RED #D 8-8(PR) - Wellbore #1 - Gyro Surveys	14,600.00	6,850.00	3,119.98	3,026.75	33.465	ES
RUBY RED #D 8-8(PR) - Wellbore #1 - Gyro Surveys	15,100.00	6,850.00	3,164.88	3,067.92	32.641	SF
RUBY RED D8-2(PA) - Wellbore #1 - Gyro Surveys	13,024.61	6,850.00	4,855.80	4,774.56	59.767	CC
RUBY RED D8-2(PA) - Wellbore #1 - Gyro Surveys	13,100.00	6,850.00	4,856.39	4,774.52	59.318	ES
RUBY RED D8-2(PA) - Wellbore #1 - Gyro Surveys	14,500.00	6,850.00	5,075.00	4,983.71	55.593	SF
TWO E RANCHES #1(PA) - Wellbore #1 - Gyro Surveys	16,181.81	6,800.00	6,895.83	6,790.57	65.509	CC
TWO E RANCHES #1(PA) - Wellbore #1 - Gyro Surveys	16,200.00	6,800.00	6,895.86	6,790.44	65.413	ES
TWO E RANCHES #1(PA) - Wellbore #1 - Gyro Surveys	17,553.90	6,800.00	7,031.01	6,915.56	60.898	SF

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

# Noble Energy, Inc.

## Anticollision Summary Report

<b>Company:</b>	Northern Region - DJ Basin	<b>Local Co-ordinate Reference:</b>	Well Guttersten D09-750
<b>Project:</b>	Mustang	<b>TVD Reference:</b>	Well @ 4750.00ft
<b>Reference Site:</b>	C Section 33	<b>MD Reference:</b>	Well @ 4750.00ft
<b>Site Error:</b>	0.00 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Guttersten D09-750	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Guttersten D09-750	<b>Database:</b>	EDMP
<b>Reference Design:</b>	Plan #1	<b>Offset TVD Reference:</b>	Offset Datum

Summary						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
D Section 09						
Offset Well - Wellbore - Design						
ART RED #D 9-14(PR) - ART RED #D 9-14 - No Surveys	17,175.03	6,926.00	555.63	327.72	2.438	CC, ES
ART RED #D 9-14(PR) - ART RED #D 9-14 - No Surveys	17,200.00	6,926.00	556.19	327.94	2.437	SF
ART RED #D 9-3J(PA) - ART RED #D 9-3J - No Surveys	16,710.44	6,918.00	1,672.60	1,448.51	7.464	CC, ES
ART RED #D 9-3J(PA) - ART RED #D 9-3J - No Surveys	16,800.00	6,918.00	1,675.00	1,450.04	7.446	SF
ART RED #D 9-4J(PR) - ART RED #D 9-4J - No Surveys	16,024.32	6,916.00	1,554.85	1,336.18	7.110	CC, ES
ART RED #D 9-4J(PR) - ART RED #D 9-4J - No Surveys	16,100.00	6,916.00	1,556.70	1,337.76	7.110	SF
ART RED #D 9-10(PR) - ART RED #D 9-10 - No Surveys	15,673.17	6,922.00	703.35	487.30	3.256	CC, ES, SF
ART RED #D 9-11(PR) - ART RED #D 9-11 - No Surveys	15,740.75	6,914.00	669.61	453.19	3.094	CC, ES, SF
Art Red D 9-16 (PR) - Wellbore #1 - Gyro Surveys	17,127.03	6,930.86	2,165.46	2,052.80	19.221	CC, ES
Art Red D 9-16 (PR) - Wellbore #1 - Gyro Surveys	17,300.00	6,932.64	2,172.36	2,058.98	19.160	SF
FRONT RANGE #D09-20D(PR) - FRONT RANGE #D09	15,178.78	7,285.90	1,302.99	1,194.77	12.041	CC
FRONT RANGE #D09-20D(PR) - FRONT RANGE #D09	15,200.00	7,285.98	1,303.16	1,194.52	11.995	ES
FRONT RANGE #D09-20D(PR) - FRONT RANGE #D09	15,400.00	7,286.81	1,321.63	1,209.94	11.833	SF
FRONT RANGE #D09-25D(PR) - FRONT RANGE #D09	16,289.70	7,148.89	1,145.73	1,037.28	10.565	CC
FRONT RANGE #D09-25D(PR) - FRONT RANGE #D09	16,300.00	7,148.87	1,145.78	1,037.18	10.550	ES
FRONT RANGE #D09-25D(PR) - FRONT RANGE #D09	16,400.00	7,148.61	1,151.03	1,041.16	10.476	SF
FRONT RANGE #D09-32D(PR) - FRONT RANGE #D09	15,159.80	7,160.45	2,545.63	2,438.77	23.822	CC
FRONT RANGE #D09-32D(PR) - FRONT RANGE #D09	15,200.00	7,160.55	2,545.95	2,438.72	23.744	ES
FRONT RANGE #D09-32D(PR) - FRONT RANGE #D09	15,500.00	7,161.28	2,568.26	2,458.93	23.491	SF
FRONT RANGE D #09-28(SI) - FRONT RANGE D #09-2	12,653.27	6,907.00	10.21	-182.60	0.053	Level 1, CC, ES, SF
FRONT RANGE D #09-33(PR) - FRONT RANGE D #09-	16,456.94	6,923.00	2,458.12	2,235.92	11.063	CC
FRONT RANGE D #09-33(PR) - FRONT RANGE D #09-	16,500.00	6,923.00	2,458.49	2,235.88	11.044	ES
FRONT RANGE D #09-33(PR) - FRONT RANGE D #09-	16,700.00	6,923.00	2,470.10	2,245.87	11.016	SF
FRONT RANGE D #16-29(SI) - FRONT RANGE D #16-2	17,553.90	6,800.01	1,419.20	1,312.89	13.351	CC, ES, SF
FRONT RANGE D #16-30(SI) - FRONT RANGE D #16-3	17,337.53	6,924.00	2,387.65	2,158.49	10.419	CC, ES
FRONT RANGE D #16-30(SI) - FRONT RANGE D #16-3	17,500.00	6,924.00	2,393.17	2,162.57	10.378	SF
GITTLEIN #18-9(PR) - GITTLEIN #18-9 - No Surveys	13,994.28	7,029.25	1,566.70	1,477.86	17.634	CC
GITTLEIN #18-9(PR) - GITTLEIN #18-9 - No Surveys	14,000.00	7,029.25	1,566.71	1,477.80	17.622	ES
GITTLEIN #18-9(PR) - GITTLEIN #18-9 - No Surveys	14,200.00	7,029.25	1,580.15	1,489.49	17.429	SF
GITTLEIN #D 9-7(PR) - GITTLEIN #D 9-7 - No Survey	14,545.14	6,870.00	487.23	280.94	2.362	CC, ES, SF
GITTLEIN WHITE #D 9-2(SI) - GITTLEIN WHITE #D 9-2	13,093.24	6,904.00	773.90	577.90	3.949	CC, ES
GITTLEIN WHITE #D 9-2(SI) - GITTLEIN WHITE #D 9-2	13,100.00	6,904.00	773.93	577.92	3.949	SF
GITTLEIN-UPRC #9-12(PA) - GITTLEIN-UPRC #9-12 - V	15,767.56	6,883.01	1,795.96	1,704.98	19.741	CC
GITTLEIN-UPRC #9-12(PA) - GITTLEIN-UPRC #9-12 - V	15,800.00	6,883.01	1,796.25	1,704.95	19.673	ES
GITTLEIN-UPRC #9-12(PA) - GITTLEIN-UPRC #9-12 - V	16,000.00	6,883.01	1,810.94	1,718.10	19.506	SF
GUTTERSEN #9-15(PR) - GUTTERSEN #9-15 - No Sur	17,046.99	6,917.00	660.49	433.77	2.913	CC, ES, SF
GUTTERSEN D #09-09(PR) - GUTTERSEN D #09-09 -	15,573.61	6,910.00	2,099.18	1,884.15	9.762	CC, ES
GUTTERSEN D #09-09(PR) - GUTTERSEN D #09-09 -	15,700.00	6,910.00	2,102.99	1,887.38	9.754	SF
GUTTERSEN D #09-21(PR) - GUTTERSEN D #09-21 -	15,192.69	6,914.00	43.58	-168.58	0.205	Level 1, CC, ES, SF
GUTTERSEN D #09-22(SI) - GUTTERSEN D #09-22 - N	15,104.35	6,917.00	1,295.99	1,084.45	6.127	CC, ES, SF
GUTTERSEN D #09-24(PR) - GUTTERSEN D #09-24 -	16,361.16	6,926.00	143.09	-78.42	0.646	Level 1, CC, ES, SF
GUTTERSEN D #16-28(PR) - GUTTERSEN D #16-28 -	17,553.90	6,921.00	147.00	-44.07	0.769	Level 1, CC, ES, SF
Guttersten D09-27D - Wellbore #1 - Wellbore #1- As Drill	12,338.38	7,023.78	1,299.01	1,217.31	15.899	CC, ES
Guttersten D09-27D - Wellbore #1 - Wellbore #1- As Drill	12,500.00	7,023.84	1,309.03	1,226.06	15.778	SF
Guttersten D10-30D - Wellbore #1 - Wellbore #1- As Drill	12,500.12	6,960.71	2,550.87	2,470.90	31.899	CC, ES
Guttersten D10-30D - Wellbore #1 - Wellbore #1- As Drill	12,700.00	6,960.77	2,558.69	2,478.07	31.738	SF
HSR TIM GITTLEIN #3-9(SI) - HSR TIM GITTLEIN #3-9	13,110.53	6,907.00	674.77	478.58	3.439	CC, ES, SF
HSR TIM GITTLEIN #4-9(SI) - HSR TIM GITTLEIN #4-9	13,267.22	6,909.00	1,845.77	1,648.38	9.351	CC
HSR TIM GITTLEIN #4-9(SI) - HSR TIM GITTLEIN #4-9	13,300.00	6,909.00	1,846.06	1,648.35	9.337	ES
HSR TIM GITTLEIN #4-9(SI) - HSR TIM GITTLEIN #4-9	13,400.00	6,909.00	1,850.54	1,651.94	9.318	SF
HSR TIM GITTLEIN #5-9(SI) - HSR TIM GITTLEIN #5-9	14,303.62	6,911.00	1,841.39	1,636.13	8.971	CC, ES
HSR TIM GITTLEIN #5-9(SI) - HSR TIM GITTLEIN #5-9	14,400.00	6,911.00	1,843.91	1,637.74	8.944	SF
HSR TIM GITTLEIN #6-9(SI) - HSR TIM GITTLEIN #6-9	14,208.79	6,910.00	662.50	457.98	3.239	CC, ES, SF

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



# Noble Energy, Inc.

## Anticollision Summary Report

<b>Company:</b>	Northern Region - DJ Basin	<b>Local Co-ordinate Reference:</b>	Well Guttersen D09-750
<b>Project:</b>	Mustang	<b>TVD Reference:</b>	Well @ 4750.00ft
<b>Reference Site:</b>	C Section 33	<b>MD Reference:</b>	Well @ 4750.00ft
<b>Site Error:</b>	0.00 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Guttersen D09-750	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Guttersen D09-750	<b>Database:</b>	EDMP
<b>Reference Design:</b>	Plan #1	<b>Offset TVD Reference:</b>	Offset Datum

Summary						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
D Section 09						
KARCH WHITE #D 9-1(SI) - KARCH WHITE #D 9-1 - No	13,089.61	6,902.00	1,926.79	1,730.86	9.834	CC
KARCH WHITE #D 9-1(SI) - KARCH WHITE #D 9-1 - No	13,100.00	6,902.00	1,926.82	1,730.83	9.832	ES
KARCH WHITE #D 9-1(SI) - KARCH WHITE #D 9-1 - No	13,200.00	6,902.00	1,929.95	1,733.54	9.826	SF
KARCH WHITE #D 9-8(PR) - KARCH WHITE #D 9-8 - N	14,622.32	6,905.00	1,878.53	1,670.95	9.050	CC, ES
KARCH WHITE #D 9-8(PR) - KARCH WHITE #D 9-8 - N	14,700.00	6,905.00	1,880.13	1,672.21	9.042	SF
ROADHOUSE D #9-17(SI) - ROADHOUSE D #9-17 - No	13,750.91	6,906.00	1,340.68	1,139.71	6.671	CC, ES
ROADHOUSE D #9-17(SI) - ROADHOUSE D #9-17 - No	13,800.00	6,906.00	1,341.58	1,140.45	6.670	SF
D Section 10						
Guttersen State D15-27 - Wellbore #1 - Wellbore #1 - As	17,489.94	6,939.16	6,657.70	6,541.73	57.412	CC
Guttersen State D15-27 - Wellbore #1 - Wellbore #1 - As	17,553.90	6,939.86	6,658.00	6,541.58	57.190	ES, SF
Karch Blue D 10-07 (SI) - Wellbore #1 - Gyro Surveys	14,462.96	6,953.28	5,793.67	5,701.29	62.713	CC
Karch Blue D 10-07 (SI) - Wellbore #1 - Gyro Surveys	14,500.00	6,953.10	5,793.79	5,701.16	62.544	ES
Karch Blue D 10-07 (SI) - Wellbore #1 - Gyro Surveys	15,900.00	6,946.29	5,969.23	5,868.97	59.539	SF
Karch State D 10-22 (SI) - Wellbore #1 - No Surveys	15,024.05	6,959.00	6,487.43	6,138.75	18.606	CC
Karch State D 10-22 (SI) - Wellbore #1 - No Surveys	15,100.00	6,959.00	6,487.87	6,138.67	18.579	ES
Karch State D 10-22 (SI) - Wellbore #1 - No Surveys	15,700.00	6,959.00	6,522.55	6,169.50	18.475	SF
Spike ST GWS D 10-14 (PR) - Wellbore #1 - Gyro Surveys	17,213.34	6,970.37	4,603.11	4,489.82	40.632	CC, ES
Spike ST GWS D 10-14 (PR) - Wellbore #1 - Gyro Surveys	17,553.90	6,972.55	4,615.69	4,500.30	40.003	SF
Spike ST GWS D 10-16 (PA) - Wellbore #1 - No Surveys	17,042.72	6,963.00	7,193.81	6,966.20	31.606	CC
Spike ST GWS D 10-16 (PA) - Wellbore #1 - No Surveys	17,100.00	6,963.00	7,194.04	6,966.02	31.550	ES
Spike ST GWS D 10-16 (PA) - Wellbore #1 - No Surveys	17,553.90	6,963.00	7,211.95	6,980.86	31.209	SF
Spike State D 10-21D (SI) - Wellbore #1 - Wellbore #1	15,260.43	7,081.78	5,336.67	5,237.48	53.800	CC
Spike State D 10-21D (SI) - Wellbore #1 - Wellbore #1	15,300.00	7,081.71	5,336.82	5,237.38	53.671	ES
Spike State D 10-21D (SI) - Wellbore #1 - Wellbore #1	16,400.00	7,079.80	5,456.98	5,352.04	52.001	SF
Spike State GWS D 10-15 (PA) - Wellbore #1 - No Surveys	16,907.11	7,106.00	6,384.70	6,166.52	29.263	CC, ES
Spike State GWS D 10-15 (PA) - Wellbore #1 - No Surveys	17,553.90	7,106.00	6,417.38	6,194.93	28.848	SF
Two E Ranch 4-10 (SI) - Wellbore #1 - No Surveys	14,465.51	6,931.00	3,387.93	3,044.63	9.869	CC
Two E Ranch 4-10 (SI) - Wellbore #1 - No Surveys	14,500.00	6,931.00	3,388.11	3,044.59	9.863	ES
Two E Ranch 4-10 (SI) - Wellbore #1 - No Surveys	14,600.00	6,931.00	3,390.60	3,046.51	9.854	SF
Volley State D 10-13 (PR) - Wellbore #1 - Gyro Surveys	17,163.04	6,864.65	3,181.37	3,068.53	28.192	CC
Volley State D 10-13 (PR) - Wellbore #1 - Gyro Surveys	17,200.00	6,864.98	3,181.59	3,068.51	28.137	ES
Volley State D 10-13 (PR) - Wellbore #1 - Gyro Surveys	17,500.00	6,867.72	3,199.17	3,084.64	27.933	SF

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<b>Company:</b>	Northern Region - DJ Basin	<b>Local Co-ordinate Reference:</b>	Well Guttersen D09-750
<b>Project:</b>	Mustang	<b>TVD Reference:</b>	Well @ 4750.00ft
<b>Reference Site:</b>	C Section 33	<b>MD Reference:</b>	Well @ 4750.00ft
<b>Site Error:</b>	0.00 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Guttersen D09-750	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Guttersen D09-750	<b>Database:</b>	EDMP
<b>Reference Design:</b>	Plan #1	<b>Offset TVD Reference:</b>	Offset Datum

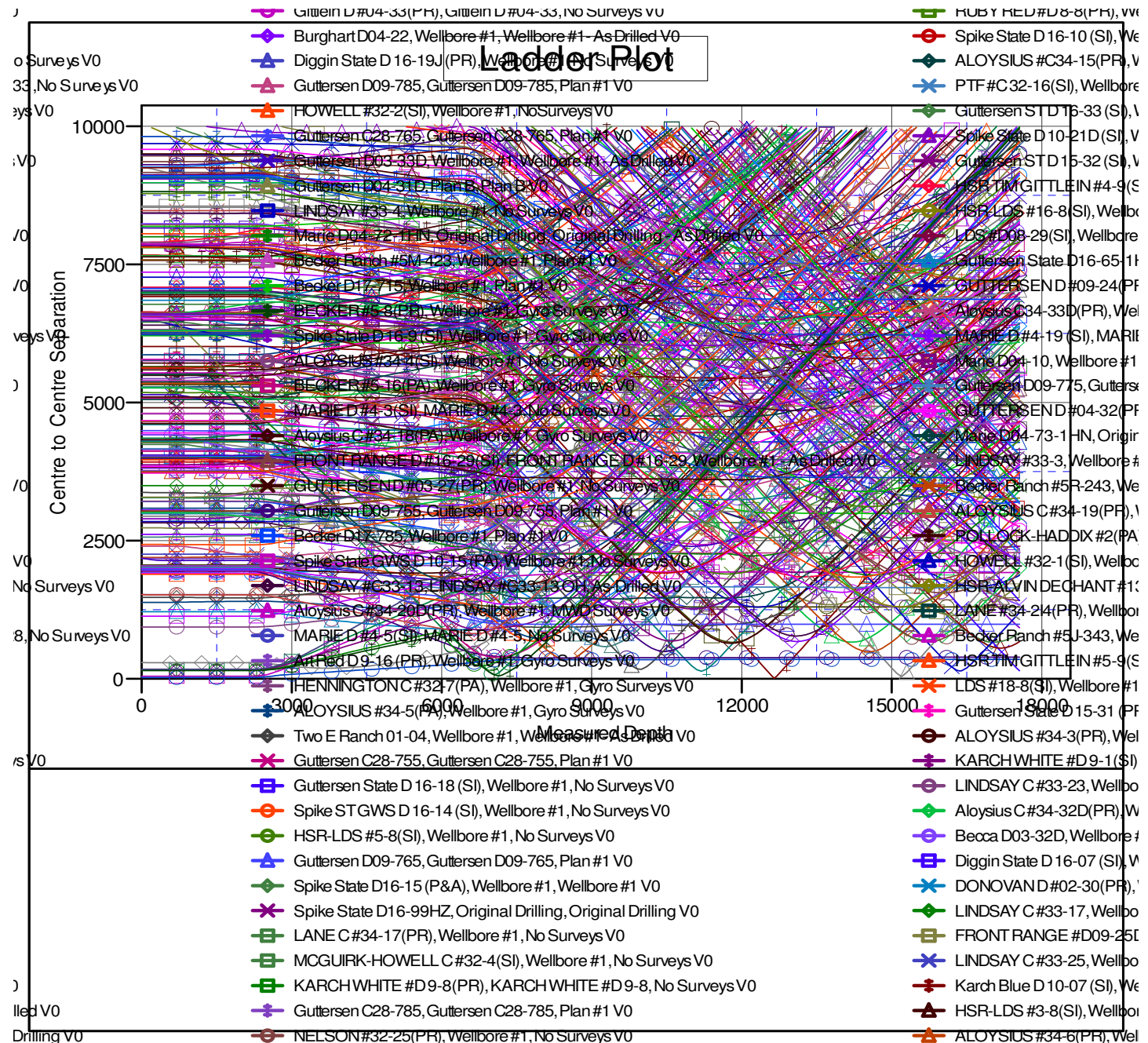
Summary						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
D Section 16						
Diggin State D16-23 (SI) - Wellbore #1 - Gyro Surveys	17,553.90	6,955.79	4,350.38	4,283.35	64.900	CC, ES, SF
Diggin State D 16-07 (SI) - Wellbore #1 - No Surveys	17,553.90	6,963.00	2,334.83	2,155.74	13.037	CC, ES, SF
Diggin State D 16-19J (PR) - Wellbore #1 - No Surveys	17,553.90	6,922.00	2,072.57	1,873.61	10.417	CC, ES, SF
Diggin State D16-13 (PR) - Wellbore #1 - Gyro Surveys	17,553.90	6,962.68	5,193.85	5,128.22	79.139	CC, ES, SF
Guttersen ST D 15-32 (SI) - Wellbore #1 - Gyro Surveys	17,553.90	6,952.10	3,870.06	3,777.78	41.940	CC, ES, SF
Guttersen ST D 16-21 (SI) - Wellbore #1 - Gyro Surveys	17,553.90	6,963.77	2,942.31	2,887.62	53.796	CC, ES, SF
Guttersen ST D 16-22D (SI) - Wellbore #1 - MWD Surve	17,553.90	7,080.79	3,038.52	2,960.02	38.707	CC, ES, SF
Guttersen ST D 16-33 (SI) - Wellbore #1 - No Surveys	17,553.90	6,937.00	4,802.94	4,612.15	25.173	CC, ES, SF
Guttersen State D 15-31 (PR) - Wellbore #1 - Gyro Surve	17,553.90	6,960.46	2,750.51	2,640.61	25.028	CC, ES, SF
Guttersen State D 15-33 (SI) - Wellbore #1 - Gyro Survey	17,553.90	6,922.43	4,906.02	4,822.76	58.924	CC, ES, SF
Guttersen State D 16-15X (PR) - Wellbore #1 - Gyro Sur	17,553.90	6,964.51	4,733.19	4,674.78	81.042	CC, ES, SF
Guttersen State D 16-18 (SI) - Wellbore #1 - No Surveys	17,553.90	6,937.00	1,415.81	1,246.99	8.386	CC, ES, SF
Guttersen State D 16-20 (SI) - Wellbore #1 - Gyro Survey	17,553.90	6,944.39	3,168.63	3,101.37	47.114	CC, ES, SF
Guttersen State D 16-24 (SI) - Wellbore #1 - Gyro Survey	17,553.90	6,958.95	4,056.64	4,002.05	74.305	CC, ES, SF
Guttersen State D 16-27 (PR) - Wellbore #1 - No Survey	17,553.90	6,933.00	1,339.77	1,111.07	5.858	CC, ES, SF
Guttersen State D 16-31 (PR) - Wellbore #1 - No Survey	17,553.90	6,933.00	2,884.66	2,669.00	13.376	CC, ES, SF
Guttersen State D 16-32D (SI) - Wellbore #1 - MWD Sur	17,553.90	7,132.17	3,727.98	3,636.87	40.917	CC, ES, SF
Guttersen State D16-63-1HN - Original Drilling - Original	17,553.90	9,239.10	4,526.96	4,431.10	47.227	CC, ES, SF
Guttersen State D16-65-1HN - Original Drilling - Original	17,553.90	9,113.70	3,199.46	3,106.21	34.311	CC, ES, SF
Spike ST GWS D 16-01 (SI) - Wellbore #1 - Gyro Survey	17,553.90	6,958.60	2,135.88	2,022.62	18.858	CC, ES, SF
Spike ST GWS D 16-02 (P&A) - Wellbore #1 - Gyro Surv	17,553.90	6,950.58	924.71	821.69	8.976	CC, ES, SF
Spike ST GWS D 16-03 (PR) - Wellbore #1 - No Surveys	17,553.90	6,931.00	1,073.99	877.45	5.465	CC, ES, SF
Spike ST GWS D 16-04 (SI) - Wellbore #1 - No Surveys	17,553.90	6,926.00	2,148.51	1,926.52	9.678	CC, ES, SF
Spike ST GWS D 16-05 (PR) - Wellbore #1 - Gyro Survey	17,553.90	6,931.93	2,994.12	2,908.22	34.857	CC, ES, SF
Spike ST GWS D 16-06 (SI) - Wellbore #1 - No Surveys	17,553.90	6,939.00	2,263.50	2,088.86	12.961	CC, ES, SF
Spike ST GWS D 16-08 (PR) - Wellbore #1 - Gyro Survey	17,553.90	6,961.42	3,091.47	2,996.19	32.446	CC, ES, SF
Spike ST GWS D 16-12 (PA) - Wellbore #1 - Gyro Survey	17,553.90	6,933.46	3,944.07	3,868.48	52.180	CC, ES, SF
Spike ST GWS D 16-14 (SI) - Wellbore #1 - No Surveys	17,553.90	6,972.00	5,070.78	4,901.21	29.904	CC, ES, SF
Spike ST GWS D 16-16 (SI) - Wellbore #1 - No Surveys	17,553.90	6,971.00	5,224.03	5,035.87	27.764	CC, ES, SF
Spike State D 16-10 (SI) - Wellbore #1 - Gyro Surveys	17,553.90	6,923.14	3,522.65	3,462.38	58.450	CC, ES, SF
Spike State D 16-11 (SI) - Wellbore #1 - Gyro Surveys	17,553.90	6,952.06	3,448.81	3,393.62	62.489	CC, ES, SF
Spike State D 16-9 (SI) - Wellbore #1 - Gyro Surveys	17,553.90	6,946.08	4,055.95	3,975.44	50.377	CC, ES, SF
Spike State D16-15 (P&A) - Wellbore #1 - Wellbore #1	17,553.90	7,081.95	4,809.18	4,738.67	68.204	CC, ES, SF
Spike State D16-99HZ - Original Drilling - Original Drilling	17,553.90	8,818.28	3,913.09	3,824.64	44.240	CC, ES, SF
Spike State GWS D 16-7J (PR) - Wellbore #1 - No Surve	17,553.90	6,956.00	1,929.31	1,720.16	9.224	CC, ES, SF
Spike State GWS D16-13J (PR) - Wellbore #1 - Gyro Su	17,553.90	6,981.77	4,428.73	4,367.52	72.355	CC, ES, SF

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<b>Reference Wellbore</b>	Guttersen D09-750	<b>Database:</b>	EDMP
<b>Reference Design:</b>	Plan #1	<b>Offset TVD Reference:</b>	Offset Datum

Reference Depths are relative to Well @ 4750.00ft  
Offset Depths are relative to Offset Datum  
Central Meridian is -105.5000000

Coordinates are relative to: Guttersen D09-750  
Coordinate System is US State Plane 1983, Colorado Northern Zone  
Grid Convergence at Surface is: 0.61°



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

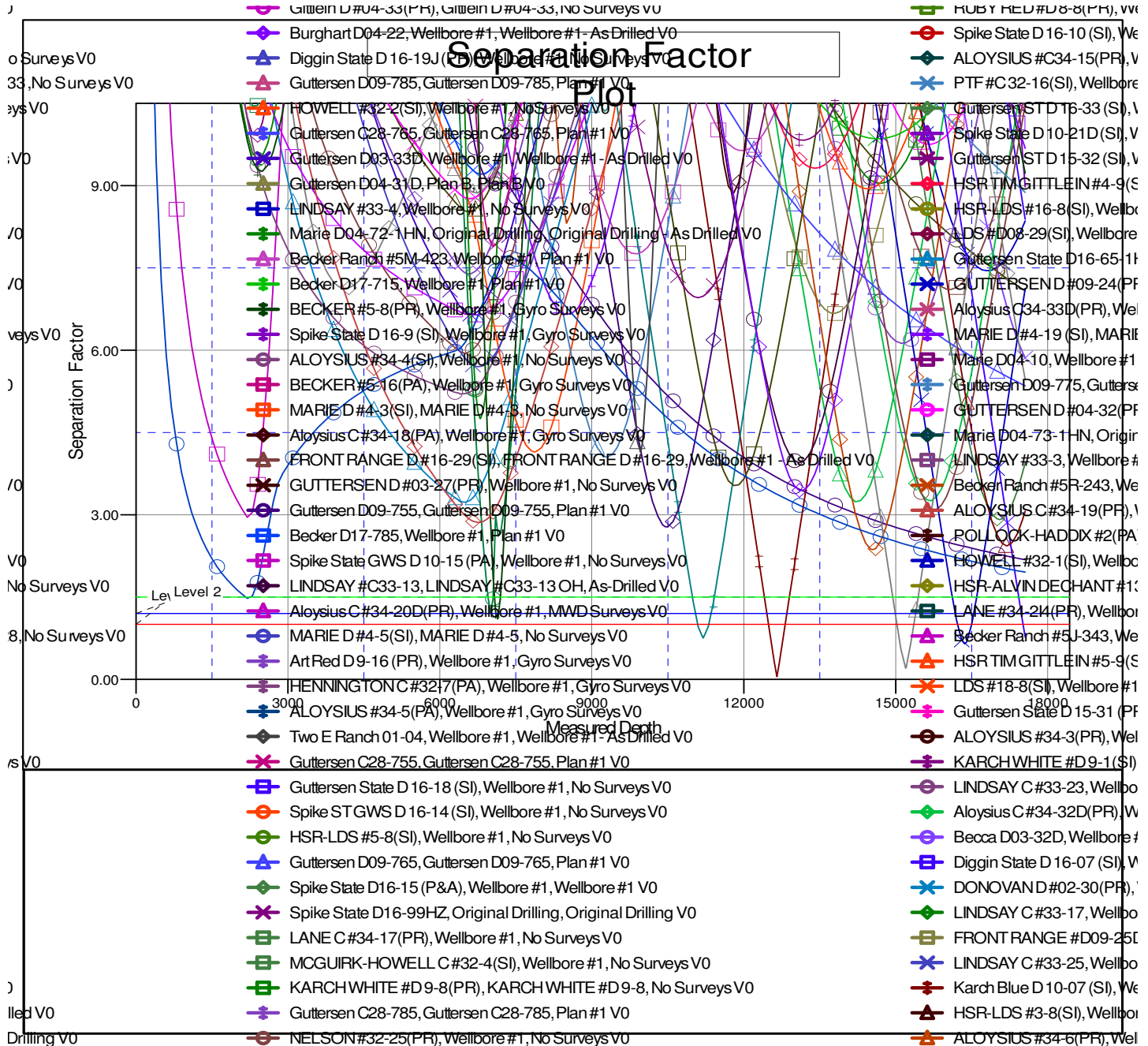


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