

Project: Mustang  
Site: C Section 22  
Well: Borys C22-775  
Wellbore: Wellbore #1  
Design: APD-Rev 0

# Northern Region - DJ Basin

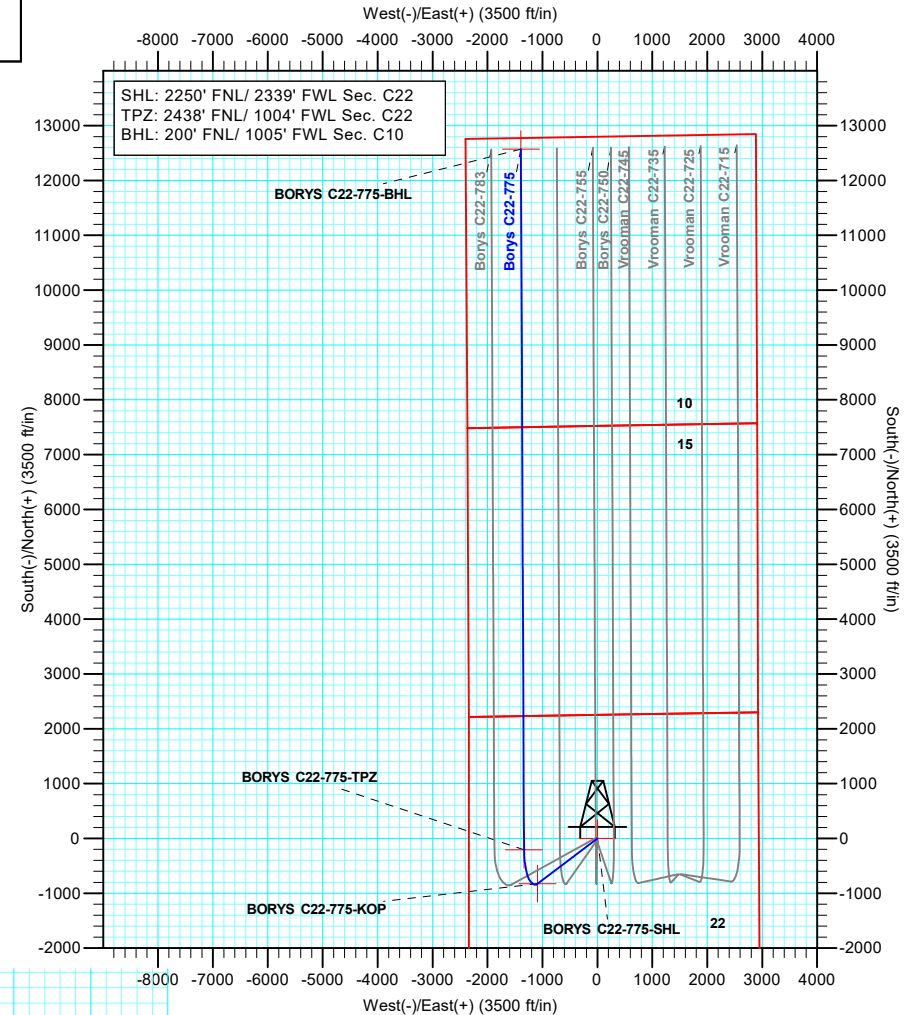
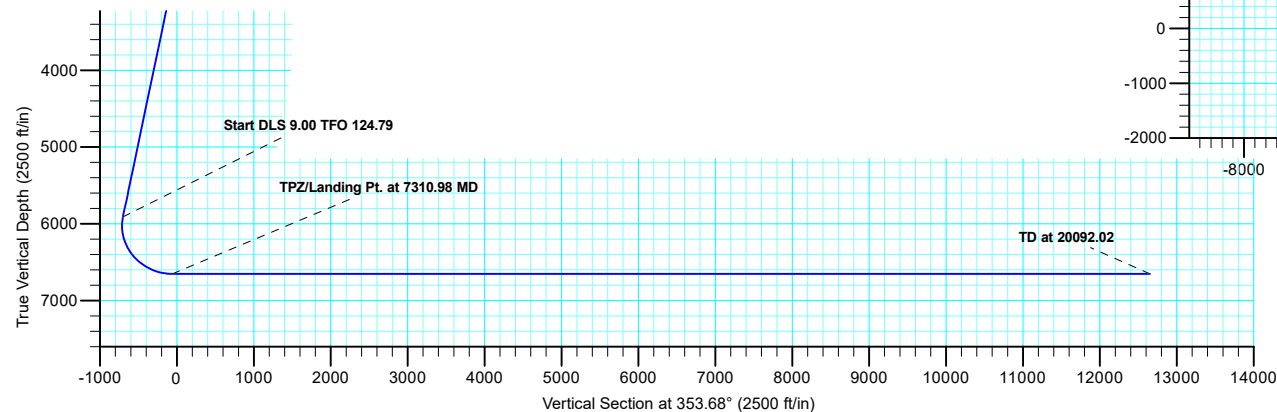
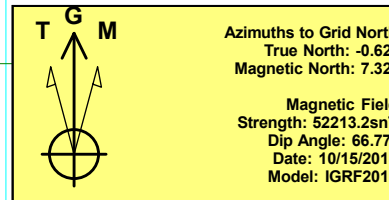
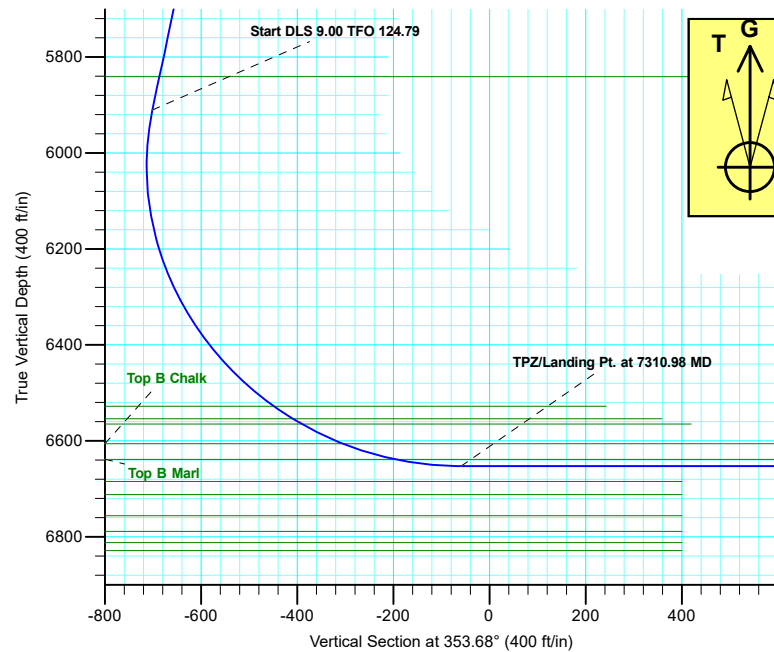
Geodetic System: US State Plane 1983  
Datum: North American Datum 1983  
Ellipsoid: GRS 1980  
Zone: Colorado Northern Zone  
System Datum: Mean Sea Level

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSec
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	2000.00	0.00	0.00	2000.00	0.00	0.00	0.00	0.00	0.00
3	3111.54	22.23	232.86	3083.86	-128.57	-169.75	2.00	232.86	-109.11
4	6165.12	22.23	232.86	5910.46	-826.12	-1090.68	0.00	0.00	-701.08
5	7310.98	90.00	359.75	6653.00	-207.21	-1336.12	9.00	124.79	-58.91
6	20092.02	90.00	359.75	6653.00	12573.72	-1392.12	0.00	0.00	12650.55

WELL DETAILS: Borys C22-775

+N/-S	+E/-W	Northing	Ground Level: Easting	4662.00 Latitude	Longitude	Slot
0.00	0.00	1353222.47	3268340.38	40.2990000	-104.5379300	



Plan: APD-Rev 0 (Borys C22-775/Wellbore #1)

Created By: Shelly C. Peterkin Date: 8:57, October 16 2018

# **Northern Region - DJ Basin**

**Mustang**

**C Section 22**

**Borys C22-775**

**Wellbore #1**

**Plan: APD-Rev 0**

## **Standard Planning Report**

**16 October, 2018**

# Noble Energy, Inc.

## Planning Report

<b>Database:</b>	EDMP	<b>Local Co-ordinate Reference:</b>	Well Borys C22-775
<b>Company:</b>	Northern Region - DJ Basin	<b>TVD Reference:</b>	KB @ 4692.00ft
<b>Project:</b>	Mustang	<b>MD Reference:</b>	KB @ 4692.00ft
<b>Site:</b>	C Section 22	<b>North Reference:</b>	Grid
<b>Well:</b>	Borys C22-775	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	APD-Rev 0		

<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 22				
Site Position:		Northing:	1,354,832.90 usft	Latitude:	40.3033470
From:	Lat/Long	Easting:	3,270,796.13 usft	Longitude:	-104.5290630
Position Uncertainty:	0.00 ft	Slot Radius:	13.200 in	Grid Convergence:	0.63 °

Well	Borys C22-775					
Well Position	+N/-S	-1,610.43 ft	Northing:	1,353,222.47 usft	Latitude:	40.2990000
	+E/-W	-2,455.75 ft	Easting:	3,268,340.39 usft	Longitude:	-104.5379300
Position Uncertainty		0.00 ft	Wellhead Elevation:		Ground Level:	4,662.00 ft

<b>Wellbore</b>	Wellbore #1				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2015	10/15/2018	7.94	66.77	52,213.15329959

<b>Design</b>	APD-Rev 0			
<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)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Direction (°)</b>
	0.00	0.00	0.00	353.68

<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	
2,000.00	0.00	0.00	2,000.00	0.00	0.00	0.00	0.00	0.00	0.00	
3,111.54	22.23	232.86	3,083.86	-128.57	-169.75	2.00	2.00	0.00	232.86	
6,165.12	22.23	232.86	5,910.46	-826.12	-1,090.68	0.00	0.00	0.00	0.00	
7,310.98	90.00	359.75	6,653.00	-207.21	-1,336.12	9.00	5.91	11.07	124.79	BORYS C22-775-TPZ
20,092.02	90.00	359.75	6,653.00	12,573.72	-1,392.12	0.00	0.00	0.00	0.00	BORYS C22-775-BHL

# Noble Energy, Inc.

## Planning Report

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<b>Company:</b>	Northern Region - DJ Basin	<b>TVD Reference:</b>	KB @ 4692.00ft
<b>Project:</b>	Mustang	<b>MD Reference:</b>	KB @ 4692.00ft
<b>Site:</b>	C Section 22	<b>North Reference:</b>	Grid
<b>Well:</b>	Borys C22-775	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	APD-Rev 0		

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
438.00	0.00	0.00	438.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Pierre</b>									
448.00	0.00	0.00	448.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Upper Pierre Aquifer Top</b>									
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	0.00
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
1,413.00	0.00	0.00	1,413.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Upper Pierre Aquifer Base</b>									
1,500.00	0.00	0.00	1,500.00	0.00	0.00	0.00	0.00	0.00	0.00
1,600.00	0.00	0.00	1,600.00	0.00	0.00	0.00	0.00	0.00	0.00
1,700.00	0.00	0.00	1,700.00	0.00	0.00	0.00	0.00	0.00	0.00
1,800.00	0.00	0.00	1,800.00	0.00	0.00	0.00	0.00	0.00	0.00
1,900.00	0.00	0.00	1,900.00	0.00	0.00	0.00	0.00	0.00	0.00
2,000.00	0.00	0.00	2,000.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Start Build 2.00</b>									
2,100.00	2.00	232.86	2,099.98	-1.05	-1.39	-0.89	2.00	2.00	0.00
2,200.00	4.00	232.86	2,199.84	-4.21	-5.56	-3.58	2.00	2.00	0.00
2,300.00	6.00	232.86	2,299.45	-9.48	-12.51	-8.04	2.00	2.00	0.00
2,400.00	8.00	232.86	2,398.70	-16.83	-22.22	-14.29	2.00	2.00	0.00
2,500.00	10.00	232.86	2,497.47	-26.28	-34.69	-22.30	2.00	2.00	0.00
2,600.00	12.00	232.86	2,595.62	-37.80	-49.90	-32.08	2.00	2.00	0.00
2,700.00	14.00	232.86	2,693.06	-51.38	-67.83	-43.60	2.00	2.00	0.00
2,800.00	16.00	232.86	2,789.64	-67.01	-88.46	-56.86	2.00	2.00	0.00
2,900.00	18.00	232.86	2,885.27	-84.66	-111.77	-71.84	2.00	2.00	0.00
3,000.00	20.00	232.86	2,979.82	-104.32	-137.72	-88.53	2.00	2.00	0.00
3,100.00	22.00	232.86	3,073.17	-125.95	-166.29	-106.89	2.00	2.00	0.00
3,111.54	22.23	232.86	3,083.86	-128.57	-169.75	-109.11	2.00	2.00	0.00
<b>Start 3053.59 hold at 3111.54 MD</b>									
3,200.00	22.23	232.86	3,165.74	-148.78	-196.43	-126.26	0.00	0.00	0.00
3,300.00	22.23	232.86	3,258.31	-171.63	-226.59	-145.65	0.00	0.00	0.00
3,400.00	22.23	232.86	3,350.88	-194.47	-256.75	-165.03	0.00	0.00	0.00
3,500.00	22.23	232.86	3,443.44	-217.31	-286.91	-184.42	0.00	0.00	0.00
3,534.09	22.23	232.86	3,475.00	-225.10	-297.19	-191.03	0.00	0.00	0.00
<b>Parkman</b>									
3,600.00	22.23	232.86	3,536.01	-240.16	-317.06	-203.81	0.00	0.00	0.00
3,700.00	22.23	232.86	3,628.58	-263.00	-347.22	-223.19	0.00	0.00	0.00
3,800.00	22.23	232.86	3,721.15	-285.84	-377.38	-242.58	0.00	0.00	0.00
3,900.00	22.23	232.86	3,813.71	-308.69	-407.54	-261.96	0.00	0.00	0.00
4,000.00	22.23	232.86	3,906.28	-331.53	-437.70	-281.35	0.00	0.00	0.00
4,100.00	22.23	232.86	3,998.85	-354.37	-467.86	-300.74	0.00	0.00	0.00

# Noble Energy, Inc.

## Planning Report

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<b>Company:</b>	Northern Region - DJ Basin	<b>TVD Reference:</b>	KB @ 4692.00ft
<b>Project:</b>	Mustang	<b>MD Reference:</b>	KB @ 4692.00ft
<b>Site:</b>	C Section 22	<b>North Reference:</b>	Grid
<b>Well:</b>	Borys C22-775	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	APD-Rev 0		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
4,200.00	22.23	232.86	4,091.41	-377.22	-498.02	-320.12	0.00	0.00	0.00
4,274.10	22.23	232.86	4,160.00	-394.14	-520.36	-334.49	0.00	0.00	0.00
<b>Sussex</b>									
4,300.00	22.23	232.86	4,183.98	-400.06	-528.18	-339.51	0.00	0.00	0.00
4,400.00	22.23	232.86	4,276.55	-422.90	-558.34	-358.89	0.00	0.00	0.00
4,500.00	22.23	232.86	4,369.11	-445.75	-588.50	-378.28	0.00	0.00	0.00
4,600.00	22.23	232.86	4,461.68	-468.59	-618.65	-397.67	0.00	0.00	0.00
4,700.00	22.23	232.86	4,554.25	-491.44	-648.81	-417.05	0.00	0.00	0.00
4,800.00	22.23	232.86	4,646.81	-514.28	-678.97	-436.44	0.00	0.00	0.00
4,900.00	22.23	232.86	4,739.38	-537.12	-709.13	-455.82	0.00	0.00	0.00
4,906.07	22.23	232.86	4,745.00	-538.51	-710.96	-457.00	0.00	0.00	0.00
<b>Shannon</b>									
5,000.00	22.23	232.86	4,831.95	-559.97	-739.29	-475.21	0.00	0.00	0.00
5,100.00	22.23	232.86	4,924.51	-582.81	-769.45	-494.60	0.00	0.00	0.00
5,200.00	22.23	232.86	5,017.08	-605.65	-799.61	-513.98	0.00	0.00	0.00
5,300.00	22.23	232.86	5,109.65	-628.50	-829.77	-533.37	0.00	0.00	0.00
5,400.00	22.23	232.86	5,202.21	-651.34	-859.93	-552.75	0.00	0.00	0.00
5,500.00	22.23	232.86	5,294.78	-674.18	-890.08	-572.14	0.00	0.00	0.00
5,600.00	22.23	232.86	5,387.35	-697.03	-920.24	-591.53	0.00	0.00	0.00
5,700.00	22.23	232.86	5,479.91	-719.87	-950.40	-610.91	0.00	0.00	0.00
5,800.00	22.23	232.86	5,572.48	-742.71	-980.56	-630.30	0.00	0.00	0.00
5,900.00	22.23	232.86	5,665.05	-765.56	-1,010.72	-649.68	0.00	0.00	0.00
6,000.00	22.23	232.86	5,757.61	-788.40	-1,040.88	-669.07	0.00	0.00	0.00
6,090.08	22.23	232.86	5,841.00	-808.98	-1,068.05	-686.53	0.00	0.00	0.00
<b>Teepee Buttes</b>									
6,100.00	22.23	232.86	5,850.18	-811.24	-1,071.04	-688.46	0.00	0.00	0.00
6,165.12	22.23	232.86	5,910.46	-826.12	-1,090.68	-701.08	0.00	0.00	0.00
<b>Start DLS 9.00 TFO 124.79</b>									
6,200.00	20.59	240.20	5,942.94	-833.15	-1,101.26	-706.91	9.00	-4.69	21.06
6,250.00	18.89	252.57	5,990.02	-839.95	-1,116.62	-711.97	9.00	-3.41	24.72
6,300.00	18.13	266.57	6,037.46	-842.84	-1,132.12	-713.14	9.00	-1.52	28.01
6,350.00	18.43	280.92	6,084.96	-841.81	-1,147.65	-710.40	9.00	0.60	28.70
6,400.00	19.74	294.12	6,132.23	-836.86	-1,163.13	-703.78	9.00	2.63	26.40
6,450.00	21.89	305.28	6,178.98	-828.02	-1,178.45	-693.31	9.00	4.29	22.33
6,500.00	24.64	314.31	6,224.93	-815.35	-1,193.52	-679.06	9.00	5.52	18.05
6,550.00	27.84	321.50	6,269.78	-798.92	-1,208.26	-661.11	9.00	6.38	14.39
6,600.00	31.33	327.26	6,313.27	-778.85	-1,222.56	-639.58	9.00	6.98	11.53
6,650.00	35.03	331.95	6,355.12	-755.24	-1,236.34	-614.60	9.00	7.40	9.37
6,700.00	38.88	335.83	6,395.07	-728.24	-1,249.52	-586.32	9.00	7.70	7.76
6,750.00	42.84	339.10	6,432.89	-698.03	-1,262.01	-554.91	9.00	7.92	6.55
6,800.00	46.87	341.92	6,468.33	-664.79	-1,273.75	-520.58	9.00	8.08	5.63
6,850.00	50.97	344.38	6,501.17	-628.72	-1,284.64	-483.53	9.00	8.20	4.93
6,894.39	54.65	346.34	6,528.00	-594.51	-1,293.56	-448.55	9.00	8.29	4.41
<b>Sharon Springs</b>									
6,900.00	55.12	346.58	6,531.23	-590.05	-1,294.63	-444.00	9.00	8.33	4.18
6,941.66	58.60	348.24	6,554.00	-556.01	-1,302.23	-409.33	9.00	8.36	3.99
<b>Top A Chalk</b>									
6,950.00	59.30	348.56	6,558.30	-549.01	-1,303.66	-402.21	9.00	8.39	3.81
6,963.34	60.42	349.06	6,565.00	-537.69	-1,305.90	-390.72	9.00	8.40	3.74
<b>Top A Marl</b>									
7,000.00	63.51	350.37	6,582.23	-505.86	-1,311.68	-358.44	9.00	8.42	3.59
7,050.00	67.74	352.06	6,602.86	-460.86	-1,318.62	-312.95	9.00	8.46	3.37
7,058.41	68.45	352.33	6,606.00	-453.13	-1,319.68	-305.16	9.00	8.48	3.25

# Noble Energy, Inc.

## Planning Report

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<b>Company:</b>	Northern Region - DJ Basin	<b>TVD Reference:</b>	KB @ 4692.00ft
<b>Project:</b>	Mustang	<b>MD Reference:</b>	KB @ 4692.00ft
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<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	APD-Rev 0		

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>Top B Chalk</b>									
7,100.00	71.99	353.65	6,620.07	-414.29	-1,324.45	-266.03	9.00	8.49	3.16
7,150.00	76.24	355.16	6,633.76	-366.44	-1,329.13	-217.95	9.00	8.52	3.02
7,173.77	78.27	355.86	6,639.00	-343.33	-1,330.95	-194.79	9.00	8.53	2.94
<b>Top B Marl</b>									
7,200.00	80.51	356.62	6,643.83	-317.61	-1,332.64	-169.03	9.00	8.54	2.89
7,250.00	84.78	358.04	6,650.23	-268.09	-1,334.94	-119.55	9.00	8.55	2.84
7,300.00	89.06	359.44	6,652.91	-218.18	-1,336.04	-69.83	9.00	8.55	2.81
7,310.98	90.00	359.75	6,653.00	-207.21	-1,336.12	-58.91	9.00	8.55	2.80
<b>TPZ/Landing Pt. at 7310.98 MD</b>									
7,400.00	90.00	359.75	6,653.00	-118.18	-1,336.51	29.61	0.00	0.00	0.00
7,500.00	90.00	359.75	6,653.00	-18.18	-1,336.95	129.05	0.00	0.00	0.00
7,600.00	90.00	359.75	6,653.00	81.81	-1,337.38	228.49	0.00	0.00	0.00
7,700.00	90.00	359.75	6,653.00	181.81	-1,337.82	327.93	0.00	0.00	0.00
7,800.00	90.00	359.75	6,653.00	281.81	-1,338.26	427.37	0.00	0.00	0.00
7,900.00	90.00	359.75	6,653.00	381.81	-1,338.70	526.81	0.00	0.00	0.00
8,000.00	90.00	359.75	6,653.00	481.81	-1,339.14	626.25	0.00	0.00	0.00
8,100.00	90.00	359.75	6,653.00	581.81	-1,339.58	725.69	0.00	0.00	0.00
8,200.00	90.00	359.75	6,653.00	681.81	-1,340.01	825.13	0.00	0.00	0.00
8,300.00	90.00	359.75	6,653.00	781.81	-1,340.45	924.57	0.00	0.00	0.00
8,400.00	90.00	359.75	6,653.00	881.81	-1,340.89	1,024.01	0.00	0.00	0.00
8,500.00	90.00	359.75	6,653.00	981.81	-1,341.33	1,123.45	0.00	0.00	0.00
8,600.00	90.00	359.75	6,653.00	1,081.80	-1,341.77	1,222.89	0.00	0.00	0.00
8,700.00	90.00	359.75	6,653.00	1,181.80	-1,342.20	1,322.33	0.00	0.00	0.00
8,800.00	90.00	359.75	6,653.00	1,281.80	-1,342.64	1,421.77	0.00	0.00	0.00
8,900.00	90.00	359.75	6,653.00	1,381.80	-1,343.08	1,521.21	0.00	0.00	0.00
9,000.00	90.00	359.75	6,653.00	1,481.80	-1,343.52	1,620.65	0.00	0.00	0.00
9,100.00	90.00	359.75	6,653.00	1,581.80	-1,343.96	1,720.09	0.00	0.00	0.00
9,200.00	90.00	359.75	6,653.00	1,681.80	-1,344.40	1,819.53	0.00	0.00	0.00
9,300.00	90.00	359.75	6,653.00	1,781.80	-1,344.83	1,918.97	0.00	0.00	0.00
9,400.00	90.00	359.75	6,653.00	1,881.80	-1,345.27	2,018.41	0.00	0.00	0.00
9,500.00	90.00	359.75	6,653.00	1,981.80	-1,345.71	2,117.85	0.00	0.00	0.00
9,600.00	90.00	359.75	6,653.00	2,081.80	-1,346.15	2,217.29	0.00	0.00	0.00
9,700.00	90.00	359.75	6,653.00	2,181.79	-1,346.59	2,316.73	0.00	0.00	0.00
9,800.00	90.00	359.75	6,653.00	2,281.79	-1,347.02	2,416.17	0.00	0.00	0.00
9,900.00	90.00	359.75	6,653.00	2,381.79	-1,347.46	2,515.61	0.00	0.00	0.00
10,000.00	90.00	359.75	6,653.00	2,481.79	-1,347.90	2,615.05	0.00	0.00	0.00
10,100.00	90.00	359.75	6,653.00	2,581.79	-1,348.34	2,714.49	0.00	0.00	0.00
10,200.00	90.00	359.75	6,653.00	2,681.79	-1,348.78	2,813.93	0.00	0.00	0.00
10,300.00	90.00	359.75	6,653.00	2,781.79	-1,349.22	2,913.37	0.00	0.00	0.00
10,400.00	90.00	359.75	6,653.00	2,881.79	-1,349.65	3,012.81	0.00	0.00	0.00
10,500.00	90.00	359.75	6,653.00	2,981.79	-1,350.09	3,112.25	0.00	0.00	0.00
10,600.00	90.00	359.75	6,653.00	3,081.79	-1,350.53	3,211.69	0.00	0.00	0.00
10,700.00	90.00	359.75	6,653.00	3,181.78	-1,350.97	3,311.13	0.00	0.00	0.00
10,800.00	90.00	359.75	6,653.00	3,281.78	-1,351.41	3,410.57	0.00	0.00	0.00
10,900.00	90.00	359.75	6,653.00	3,381.78	-1,351.84	3,510.01	0.00	0.00	0.00
11,000.00	90.00	359.75	6,653.00	3,481.78	-1,352.28	3,609.45	0.00	0.00	0.00
11,100.00	90.00	359.75	6,653.00	3,581.78	-1,352.72	3,708.89	0.00	0.00	0.00
11,200.00	90.00	359.75	6,653.00	3,681.78	-1,353.16	3,808.33	0.00	0.00	0.00
11,300.00	90.00	359.75	6,653.00	3,781.78	-1,353.60	3,907.77	0.00	0.00	0.00
11,400.00	90.00	359.75	6,653.00	3,881.78	-1,354.04	4,007.21	0.00	0.00	0.00
11,500.00	90.00	359.75	6,653.00	3,981.78	-1,354.47	4,106.65	0.00	0.00	0.00
11,600.00	90.00	359.75	6,653.00	4,081.78	-1,354.91	4,206.09	0.00	0.00	0.00

# Noble Energy, Inc.

## Planning Report

<b>Database:</b>	EDMP	<b>Local Co-ordinate Reference:</b>	Well Borys C22-775
<b>Company:</b>	Northern Region - DJ Basin	<b>TVD Reference:</b>	KB @ 4692.00ft
<b>Project:</b>	Mustang	<b>MD Reference:</b>	KB @ 4692.00ft
<b>Site:</b>	C Section 22	<b>North Reference:</b>	Grid
<b>Well:</b>	Borys C22-775	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	APD-Rev 0		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
11,700.00	90.00	359.75	6,653.00	4,181.77	-1,355.35	4,305.53	0.00	0.00	0.00
11,800.00	90.00	359.75	6,653.00	4,281.77	-1,355.79	4,404.97	0.00	0.00	0.00
11,900.00	90.00	359.75	6,653.00	4,381.77	-1,356.23	4,504.41	0.00	0.00	0.00
12,000.00	90.00	359.75	6,653.00	4,481.77	-1,356.67	4,603.85	0.00	0.00	0.00
12,100.00	90.00	359.75	6,653.00	4,581.77	-1,357.10	4,703.29	0.00	0.00	0.00
12,200.00	90.00	359.75	6,653.00	4,681.77	-1,357.54	4,802.73	0.00	0.00	0.00
12,300.00	90.00	359.75	6,653.00	4,781.77	-1,357.98	4,902.17	0.00	0.00	0.00
12,400.00	90.00	359.75	6,653.00	4,881.77	-1,358.42	5,001.61	0.00	0.00	0.00
12,500.00	90.00	359.75	6,653.00	4,981.77	-1,358.86	5,101.05	0.00	0.00	0.00
12,600.00	90.00	359.75	6,653.00	5,081.77	-1,359.29	5,200.49	0.00	0.00	0.00
12,700.00	90.00	359.75	6,653.00	5,181.77	-1,359.73	5,299.93	0.00	0.00	0.00
12,800.00	90.00	359.75	6,653.00	5,281.76	-1,360.17	5,399.37	0.00	0.00	0.00
12,900.00	90.00	359.75	6,653.00	5,381.76	-1,360.61	5,498.81	0.00	0.00	0.00
13,000.00	90.00	359.75	6,653.00	5,481.76	-1,361.05	5,598.25	0.00	0.00	0.00
13,100.00	90.00	359.75	6,653.00	5,581.76	-1,361.49	5,697.69	0.00	0.00	0.00
13,200.00	90.00	359.75	6,653.00	5,681.76	-1,361.92	5,797.13	0.00	0.00	0.00
13,300.00	90.00	359.75	6,653.00	5,781.76	-1,362.36	5,896.57	0.00	0.00	0.00
13,400.00	90.00	359.75	6,653.00	5,881.76	-1,362.80	5,996.01	0.00	0.00	0.00
13,500.00	90.00	359.75	6,653.00	5,981.76	-1,363.24	6,095.45	0.00	0.00	0.00
13,600.00	90.00	359.75	6,653.00	6,081.76	-1,363.68	6,194.89	0.00	0.00	0.00
13,700.00	90.00	359.75	6,653.00	6,181.76	-1,364.11	6,294.33	0.00	0.00	0.00
13,800.00	90.00	359.75	6,653.00	6,281.75	-1,364.55	6,393.77	0.00	0.00	0.00
13,900.00	90.00	359.75	6,653.00	6,381.75	-1,364.99	6,493.21	0.00	0.00	0.00
14,000.00	90.00	359.75	6,653.00	6,481.75	-1,365.43	6,592.64	0.00	0.00	0.00
14,100.00	90.00	359.75	6,653.00	6,581.75	-1,365.87	6,692.08	0.00	0.00	0.00
14,200.00	90.00	359.75	6,653.00	6,681.75	-1,366.31	6,791.52	0.00	0.00	0.00
14,300.00	90.00	359.75	6,653.00	6,781.75	-1,366.74	6,890.96	0.00	0.00	0.00
14,400.00	90.00	359.75	6,653.00	6,881.75	-1,367.18	6,990.40	0.00	0.00	0.00
14,500.00	90.00	359.75	6,653.00	6,981.75	-1,367.62	7,089.84	0.00	0.00	0.00
14,600.00	90.00	359.75	6,653.00	7,081.75	-1,368.06	7,189.28	0.00	0.00	0.00
14,700.00	90.00	359.75	6,653.00	7,181.75	-1,368.50	7,288.72	0.00	0.00	0.00
14,800.00	90.00	359.75	6,653.00	7,281.75	-1,368.93	7,388.16	0.00	0.00	0.00
14,900.00	90.00	359.75	6,653.00	7,381.74	-1,369.37	7,487.60	0.00	0.00	0.00
15,000.00	90.00	359.75	6,653.00	7,481.74	-1,369.81	7,587.04	0.00	0.00	0.00
15,100.00	90.00	359.75	6,653.00	7,581.74	-1,370.25	7,686.48	0.00	0.00	0.00
15,200.00	90.00	359.75	6,653.00	7,681.74	-1,370.69	7,785.92	0.00	0.00	0.00
15,300.00	90.00	359.75	6,653.00	7,781.74	-1,371.13	7,885.36	0.00	0.00	0.00
15,400.00	90.00	359.75	6,653.00	7,881.74	-1,371.56	7,984.80	0.00	0.00	0.00
15,500.00	90.00	359.75	6,653.00	7,981.74	-1,372.00	8,084.24	0.00	0.00	0.00
15,600.00	90.00	359.75	6,653.00	8,081.74	-1,372.44	8,183.68	0.00	0.00	0.00
15,700.00	90.00	359.75	6,653.00	8,181.74	-1,372.88	8,283.12	0.00	0.00	0.00
15,800.00	90.00	359.75	6,653.00	8,281.74	-1,373.32	8,382.56	0.00	0.00	0.00
15,900.00	90.00	359.75	6,653.00	8,381.73	-1,373.75	8,482.00	0.00	0.00	0.00
16,000.00	90.00	359.75	6,653.00	8,481.73	-1,374.19	8,581.44	0.00	0.00	0.00
16,100.00	90.00	359.75	6,653.00	8,581.73	-1,374.63	8,680.88	0.00	0.00	0.00
16,200.00	90.00	359.75	6,653.00	8,681.73	-1,375.07	8,780.32	0.00	0.00	0.00
16,300.00	90.00	359.75	6,653.00	8,781.73	-1,375.51	8,879.76	0.00	0.00	0.00
16,400.00	90.00	359.75	6,653.00	8,881.73	-1,375.95	8,979.20	0.00	0.00	0.00
16,500.00	90.00	359.75	6,653.00	8,981.73	-1,376.38	9,078.64	0.00	0.00	0.00
16,600.00	90.00	359.75	6,653.00	9,081.73	-1,376.82	9,178.08	0.00	0.00	0.00
16,700.00	90.00	359.75	6,653.00	9,181.73	-1,377.26	9,277.52	0.00	0.00	0.00
16,800.00	90.00	359.75	6,653.00	9,281.73	-1,377.70	9,376.96	0.00	0.00	0.00
16,900.00	90.00	359.75	6,653.00	9,381.73	-1,378.14	9,476.40	0.00	0.00	0.00
17,000.00	90.00	359.75	6,653.00	9,481.72	-1,378.57	9,575.84	0.00	0.00	0.00

# Noble Energy, Inc.

## Planning Report

<b>Database:</b>	EDMP	<b>Local Co-ordinate Reference:</b>	Well Borys C22-775
<b>Company:</b>	Northern Region - DJ Basin	<b>TVD Reference:</b>	KB @ 4692.00ft
<b>Project:</b>	Mustang	<b>MD Reference:</b>	KB @ 4692.00ft
<b>Site:</b>	C Section 22	<b>North Reference:</b>	Grid
<b>Well:</b>	Borys C22-775	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	APD-Rev 0		

Planned Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
17,100.00	90.00	359.75	6,653.00	9,581.72	-1,379.01	9,675.28	0.00	0.00	0.00	
17,200.00	90.00	359.75	6,653.00	9,681.72	-1,379.45	9,774.72	0.00	0.00	0.00	
17,300.00	90.00	359.75	6,653.00	9,781.72	-1,379.89	9,874.16	0.00	0.00	0.00	
17,400.00	90.00	359.75	6,653.00	9,881.72	-1,380.33	9,973.60	0.00	0.00	0.00	
17,500.00	90.00	359.75	6,653.00	9,981.72	-1,380.77	10,073.04	0.00	0.00	0.00	
17,600.00	90.00	359.75	6,653.00	10,081.72	-1,381.20	10,172.48	0.00	0.00	0.00	
17,700.00	90.00	359.75	6,653.00	10,181.72	-1,381.64	10,271.92	0.00	0.00	0.00	
17,800.00	90.00	359.75	6,653.00	10,281.72	-1,382.08	10,371.36	0.00	0.00	0.00	
17,900.00	90.00	359.75	6,653.00	10,381.72	-1,382.52	10,470.80	0.00	0.00	0.00	
18,000.00	90.00	359.75	6,653.00	10,481.71	-1,382.96	10,570.24	0.00	0.00	0.00	
18,100.00	90.00	359.75	6,653.00	10,581.71	-1,383.39	10,669.68	0.00	0.00	0.00	
18,200.00	90.00	359.75	6,653.00	10,681.71	-1,383.83	10,769.12	0.00	0.00	0.00	
18,300.00	90.00	359.75	6,653.00	10,781.71	-1,384.27	10,868.56	0.00	0.00	0.00	
18,400.00	90.00	359.75	6,653.00	10,881.71	-1,384.71	10,968.00	0.00	0.00	0.00	
18,500.00	90.00	359.75	6,653.00	10,981.71	-1,385.15	11,067.44	0.00	0.00	0.00	
18,600.00	90.00	359.75	6,653.00	11,081.71	-1,385.59	11,166.88	0.00	0.00	0.00	
18,700.00	90.00	359.75	6,653.00	11,181.71	-1,386.02	11,266.32	0.00	0.00	0.00	
18,800.00	90.00	359.75	6,653.00	11,281.71	-1,386.46	11,365.76	0.00	0.00	0.00	
18,900.00	90.00	359.75	6,653.00	11,381.71	-1,386.90	11,465.20	0.00	0.00	0.00	
19,000.00	90.00	359.75	6,653.00	11,481.70	-1,387.34	11,564.64	0.00	0.00	0.00	
19,100.00	90.00	359.75	6,653.00	11,581.70	-1,387.78	11,664.08	0.00	0.00	0.00	
19,200.00	90.00	359.75	6,653.00	11,681.70	-1,388.22	11,763.52	0.00	0.00	0.00	
19,300.00	90.00	359.75	6,653.00	11,781.70	-1,388.65	11,862.96	0.00	0.00	0.00	
19,400.00	90.00	359.75	6,653.00	11,881.70	-1,389.09	11,962.40	0.00	0.00	0.00	
19,500.00	90.00	359.75	6,653.00	11,981.70	-1,389.53	12,061.84	0.00	0.00	0.00	
19,600.00	90.00	359.75	6,653.00	12,081.70	-1,389.97	12,161.28	0.00	0.00	0.00	
19,700.00	90.00	359.75	6,653.00	12,181.70	-1,390.41	12,260.72	0.00	0.00	0.00	
19,800.00	90.00	359.75	6,653.00	12,281.70	-1,390.84	12,360.16	0.00	0.00	0.00	
19,900.00	90.00	359.75	6,653.00	12,381.70	-1,391.28	12,459.60	0.00	0.00	0.00	
20,000.00	90.00	359.75	6,653.00	12,481.70	-1,391.72	12,559.04	0.00	0.00	0.00	
20,092.02	90.00	359.75	6,653.00	12,573.72	-1,392.12	12,650.55	0.00	0.00	0.00	
TD at 20092.02										

Design Targets										
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude	
- hit/miss target										
- Shape										
BORYS C22-775-SHL	0.00	0.00	0.00	0.00	0.00	1,353,222.47	3,268,340.39	40.2990000	-104.5379300	
- plan hits target center										
- Point										
BORYS C22-775-KOP	0.00	0.00	5,910.46	-826.12	-1,090.68	1,352,396.36	3,267,249.71	40.2967648	-104.5418720	
- plan hits target center										
- Point										
BORYS C22-775-TPZ	0.00	0.00	6,653.00	-207.21	-1,336.12	1,353,015.27	3,267,004.27	40.2984709	-104.5427279	
- plan hits target center										
- Point										
BORYS C22-775-BHL	0.00	0.00	6,653.00	12,573.72	-1,392.12	1,365,796.16	3,266,948.26	40.3335549	-104.5424339	
- plan hits target center										
- Point										

# Noble Energy, Inc.

## Planning Report

<b>Database:</b>	EDMP	<b>Local Co-ordinate Reference:</b>	Well Borys C22-775
<b>Company:</b>	Northern Region - DJ Basin	<b>TVD Reference:</b>	KB @ 4692.00ft
<b>Project:</b>	Mustang	<b>MD Reference:</b>	KB @ 4692.00ft
<b>Site:</b>	C Section 22	<b>North Reference:</b>	Grid
<b>Well:</b>	Borys C22-775	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	APD-Rev 0		

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
438.00	438.00	Pierre				
448.00	448.00	Upper Pierre Aquifer Top				
1,413.00	1,413.00	Upper Pierre Aquifer Base				
3,534.09	3,475.00	Parkman				
4,274.10	4,160.00	Sussex				
4,906.07	4,745.00	Shannon				
6,090.08	5,841.00	Teepee Buttes				
6,894.39	6,528.00	Sharon Springs				
6,941.66	6,554.00	Top A Chalk				
6,963.34	6,565.00	Top A Marl				
7,058.41	6,606.00	Top B Chalk				
7,173.77	6,639.00	Top B Marl				

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates			
		+N/-S (ft)	+E/-W (ft)	Comment	
2,000.00	2,000.00	0.00	0.00	Start Build 2.00	
3,111.54	3,083.86	-128.57	-169.75	Start 3053.59 hold at 3111.54 MD	
6,165.12	5,910.46	-826.12	-1,090.68	Start DLS 9.00 TFO 124.79	
7,310.98	6,653.00	-207.21	-1,336.12	TPZ/Landing Pt. at 7310.98 MD	
20,092.02	6,653.00	12,573.72	-1,392.12	TD at 20092.02	

# **Northern Region - DJ Basin**

**Mustang**

**C Section 22**

**Borys C22-775**

**Wellbore #1**

**APD-Rev 0**

## **Anticollision Summary Report**

**15 October, 2018**

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

<b>Company:</b>	Northern Region - DJ Basin	<b>Local Co-ordinate Reference:</b>	Well Borys C22-775
<b>Project:</b>	Mustang	<b>TVD Reference:</b>	KB @ 4692.00ft
<b>Reference Site:</b>	C Section 22	<b>MD Reference:</b>	KB @ 4692.00ft
<b>Site Error:</b>	0.00 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Borys C22-775	<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>	Wellbore #1	<b>Database:</b>	EDMP
<b>Reference Design:</b>	APD-Rev 0	<b>Offset TVD Reference:</b>	Offset Datum

<b>Reference</b>	APD-Rev 0		
<b>Filter type:</b>	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
<b>Interpolation Method:</b>	Stations	<b>Error Model:</b>	ISCWSA
<b>Depth Range:</b>	Unlimited	<b>Scan Method:</b>	Closest Approach 3D
<b>Results Limited by:</b>	Maximum center-center distance of 10,000.00 ft	<b>Error Surface:</b>	Pedal Curve
<b>Warning Levels Evaluated at:</b>	2.00 Sigma	<b>Casing Method:</b>	Not applied

<b>Survey Tool Program</b>	<b>Date</b>	10/15/2018		
<b>From (ft)</b>	<b>To (ft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>
0.00	20,092.02	APD-Rev 0 (Wellbore #1)	2_MWD+IFR1+MS	A008Mb: IFR dec & multi-station analysis

Summary						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
C Section 10						
Adler 44-10 (PA) - Wellbore #1 - No Surveys	16,056.87	6,602.00	3,283.79	2,944.02	9.665	CC, ES
Adler 44-10 (PA) - Wellbore #1 - No Surveys	16,200.00	6,602.00	3,286.91	2,946.31	9.650	SF
Barton C10-24D (PR) - Barton C10-24D OH - As-Drilled	16,371.68	6,756.18	1,512.54	1,408.50	14.539	CC, ES
Barton C10-24D (PR) - Barton C10-24D OH - As-Drilled	16,500.00	6,755.22	1,517.97	1,413.27	14.498	SF
Barton C15-28D (PR) - Barton C15-28D OH - As-Drilled	15,360.37	6,741.09	1,334.99	1,237.49	13.693	CC, ES, SF
Barton C15-29 (PR) - Wellbore #1 - No Surveys	15,325.61	6,601.00	290.45	-43.61	0.869	Level 1, CC, ES, SF
Embree 01 (PA) - Wellbore #1 - No Surveys	18,329.58	6,620.00	963.15	604.79	2.688	CC, ES, SF
Embree 10-03 (PA) - Wellbore #1 - No Surveys	19,788.07	6,622.00	1,163.67	793.60	3.145	CC, ES
Embree 10-03 (PA) - Wellbore #1 - No Surveys	19,800.00	6,622.00	1,163.73	793.63	3.144	SF
Embree C10-18 (SI) - Wellbore #1 - No Surveys	19,070.44	6,616.00	1,507.61	1,143.51	4.141	CC, ES
Embree C10-18 (SI) - Wellbore #1 - No Surveys	19,100.00	6,616.00	1,507.90	1,143.69	4.140	SF
Embree C10-20D (SI) - Embree C10-20D OH - As-Drilled	17,803.87	6,718.61	388.06	279.65	3.580	CC, ES, SF
Embrick C10-19 (SI) - Wellbore #1 - No Surveys	18,921.91	6,631.00	167.53	-195.98	0.461	Level 1, CC, ES, SF
Hoff 31-10 (PA) - Wellbore #1 - No Surveys	19,664.27	6,606.00	2,295.54	1,927.10	6.231	CC, ES
Hoff 31-10 (PA) - Wellbore #1 - No Surveys	19,700.00	6,606.00	2,295.81	1,927.19	6.228	SF
Lockman 10-1014 (PR) - Wellbore #1 - No Surveys	16,853.23	6,606.00	2,503.44	2,157.29	7.232	CC, ES
Lockman 10-1014 (PR) - Wellbore #1 - No Surveys	16,900.00	6,606.00	2,503.87	2,157.46	7.228	SF
Lockman 10-1514 (PR) - Wellbore #1 - No Surveys	15,796.60	6,609.00	2,479.65	2,141.63	7.336	CC
Lockman 10-1514 (PR) - Wellbore #1 - No Surveys	15,800.00	6,609.00	2,479.65	2,141.61	7.335	ES
Lockman 10-1514 (PR) - Wellbore #1 - No Surveys	15,900.00	6,609.00	2,481.81	2,143.24	7.330	SF
Lockman 10-914 (PR) - Wellbore #1 - No Surveys	17,019.58	6,854.00	3,430.84	3,073.46	9.600	CC, ES
Lockman 10-914 (PR) - Wellbore #1 - No Surveys	17,200.00	6,854.00	3,435.58	3,077.16	9.585	SF
Lockman C10-21 (PR) - Wellbore #1 - No Surveys	17,451.72	6,607.00	1,822.84	1,471.94	5.195	CC, ES
Lockman C10-21 (PR) - Wellbore #1 - No Surveys	17,500.00	6,607.00	1,823.48	1,472.36	5.193	SF
Lockman C11-33 (PR) - Wellbore #1 - No Surveys	16,393.95	6,604.00	4,076.53	3,734.06	11.903	CC
Lockman C11-33 (PR) - Wellbore #1 - No Surveys	16,400.00	6,604.00	4,076.54	3,734.02	11.902	ES
Lockman C11-33 (PR) - Wellbore #1 - No Surveys	16,700.00	6,604.00	4,088.00	3,743.72	11.874	SF
Lockman C14-30 (PR) - Wellbore #1 - No Surveys	15,417.31	6,603.00	4,028.86	3,694.01	12.032	CC, ES
Lockman C14-30 (PR) - Wellbore #1 - No Surveys	15,700.00	6,603.00	4,038.77	3,702.24	12.001	SF
Lockman C15-27 (PR) - Lockman C15-27 OH - As-Drilled	15,261.39	6,648.31	3,192.86	3,093.69	32.194	CC
Lockman C15-27 (PR) - Lockman C15-27 OH - As-Drilled	15,300.00	6,648.51	3,193.10	3,093.68	32.118	ES
Lockman C15-27 (PR) - Lockman C15-27 OH - As-Drilled	15,600.00	6,650.06	3,210.77	3,109.83	31.808	SF
Reinick 10-05 (SI) - Wellbore #1 - No Surveys	18,169.52	6,629.00	475.04	117.59	1.329	Level 3, CC, ES, SF
Reinick 1-10-4-64 (SI) - Wellbore #1 - No Surveys	19,673.21	6,637.00	382.34	12.60	1.034	Level 2, CC, ES, SF
Richardson 10-11 (PR) - Wellbore #1 - No Surveys	16,875.64	6,610.00	789.90	443.42	2.280	CC, ES, SF
Richardson 10-12 (PR) - Wellbore #1 - No Surveys	16,797.82	6,624.00	150.36	-196.08	0.434	Level 1, CC
Richardson 10-12 (PR) - Wellbore #1 - No Surveys	16,800.00	6,624.00	150.37	-196.15	0.434	Level 1, 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 Borys C22-775
<b>Project:</b>	Mustang	<b>TVD Reference:</b>	KB @ 4692.00ft
<b>Reference Site:</b>	C Section 22	<b>MD Reference:</b>	KB @ 4692.00ft
<b>Site Error:</b>	0.00 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Borys C22-775	<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>	Wellbore #1	<b>Database:</b>	EDMP
<b>Reference Design:</b>	APD-Rev 0	<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 10						
Richardson 10-13 (PR) - Wellbore #1 - No Surveys	15,859.06	6,606.00	258.94	-79.45	0.765	Level 1, CC, ES, SF
Richardson 24-10 (PR) - Wellbore #1 - No Surveys	16,014.24	6,600.00	646.28	306.93	1.904	CC, ES, SF
Roskop 10-01 (SI) - Wellbore #1 - No Surveys	19,680.21	6,588.00	3,619.71	3,251.87	9.840	CC
Roskop 10-01 (SI) - Wellbore #1 - No Surveys	19,700.00	6,588.00	3,619.76	3,251.79	9.837	ES
Roskop 10-01 (SI) - Wellbore #1 - No Surveys	19,900.00	6,588.00	3,626.37	3,257.27	9.825	SF
Roskop 10-07 (SI) - Wellbore #1 - No Surveys	18,165.90	6,603.00	2,295.53	1,939.15	6.441	CC, ES
Roskop 10-07 (SI) - Wellbore #1 - No Surveys	18,200.00	6,603.00	2,295.78	1,939.22	6.439	SF
Roskop 10-08 (SI) - Wellbore #1 - No Surveys	18,550.82	6,589.00	3,610.39	3,251.51	10.060	CC, ES
Roskop 10-08 (SI) - Wellbore #1 - No Surveys	18,700.00	6,589.00	3,613.47	3,253.70	10.044	SF
Roskop C10-17 (SI) - Wellbore #1 - No Surveys	18,931.99	6,610.00	2,960.23	2,597.48	8.160	CC, ES
Roskop C10-17 (SI) - Wellbore #1 - No Surveys	19,100.00	6,610.00	2,964.99	2,601.35	8.153	SF
Roskop C11-31D (SI) - Roskop C11-31D OH - As-Drilled	19,059.62	6,778.86	4,208.25	4,081.49	33.198	CC
Roskop C11-31D (SI) - Roskop C11-31D OH - As-Drilled	19,100.00	6,779.53	4,208.44	4,081.45	33.138	ES
Roskop C11-31D (SI) - Roskop C11-31D OH - As-Drilled	19,500.00	6,786.10	4,231.22	4,102.38	32.841	SF

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

<b>Company:</b>	Northern Region - DJ Basin	<b>Local Co-ordinate Reference:</b>	Well Borys C22-775
<b>Project:</b>	Mustang	<b>TVD Reference:</b>	KB @ 4692.00ft
<b>Reference Site:</b>	C Section 22	<b>MD Reference:</b>	KB @ 4692.00ft
<b>Site Error:</b>	0.00 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Borys C22-775	<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>	Wellbore #1	<b>Database:</b>	EDMP
<b>Reference Design:</b>	APD-Rev 0	<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 15						
Bockius 15-01 (PR) - Wellbore #1 - No Surveys	14,537.83	6,602.00	3,797.90	3,469.83	11.576	CC, ES
Bockius 15-01 (PR) - Wellbore #1 - No Surveys	14,800.00	6,602.00	3,806.94	3,477.34	11.550	SF
Bockius 15-07 (PR) - Wellbore #1 - No Surveys	12,887.08	6,604.00	2,108.19	1,792.33	6.674	CC
Bockius 15-07 (PR) - Wellbore #1 - No Surveys	12,900.00	6,604.00	2,108.23	1,792.30	6.673	ES
Bockius 15-07 (PR) - Wellbore #1 - No Surveys	13,000.00	6,604.00	2,111.21	1,794.83	6.673	SF
Bockius 15-08 (PR) - Wellbore #1 - No Surveys	13,269.60	6,601.00	3,781.69	3,463.16	11.872	CC
Bockius 15-08 (PR) - Wellbore #1 - No Surveys	13,300.00	6,601.00	3,781.82	3,463.09	11.866	ES
Bockius 15-08 (PR) - Wellbore #1 - No Surveys	13,500.00	6,601.00	3,788.71	3,468.83	11.844	SF
Clemons 13-15 (PA) - Wellbore #1 - No Surveys	11,771.04	6,627.00	349.89	41.01	1.133	Level 2, CC, ES, SF
Eckas 15-1014 (PR) - Wellbore #1 - No Surveys	12,171.71	6,610.00	1,900.89	1,589.91	6.112	CC, ES
Eckas 15-1014 (PR) - Wellbore #1 - No Surveys	12,200.00	6,610.00	1,901.10	1,589.99	6.111	SF
Eckas 15-1614 (PR) - Wellbore #1 - No Surveys	2,000.00	1,951.00	3,640.34	3,557.36	43.872	CC
Eckas 15-1614 (PR) - Wellbore #1 - No Surveys	2,100.00	2,050.98	3,642.07	3,554.75	41.710	ES
Eckas 15-1614 (PR) - Wellbore #1 - No Surveys	10,300.00	6,604.00	3,950.17	3,651.92	13.244	SF
Eckas 2 - Original Drilling - Original Drilling - As Drilled	11,749.83	6,439.25	3,633.15	3,565.70	53.865	CC, ES
Eckas 2 - Original Drilling - Original Drilling - As Drilled	12,500.00	6,427.58	3,709.77	3,638.71	52.206	SF
Eckas C15-23 (PR) - Wellbore #1 - No Surveys	11,478.91	6,611.00	2,923.33	2,617.07	9.545	CC
Eckas C15-23 (PR) - Wellbore #1 - No Surveys	11,500.00	6,611.00	2,923.40	2,617.03	9.542	ES
Eckas C15-23 (PR) - Wellbore #1 - No Surveys	11,600.00	6,611.00	2,925.83	2,618.95	9.534	SF
Hagen 31-15 (PR) - Wellbore #1 - No Surveys	14,393.20	6,600.00	2,349.37	2,022.47	7.187	CC
Hagen 31-15 (PR) - Wellbore #1 - No Surveys	14,400.00	6,600.00	2,349.38	2,022.45	7.186	ES
Hagen 31-15 (PR) - Wellbore #1 - No Surveys	14,500.00	6,600.00	2,351.79	2,024.36	7.183	SF
Lang 1 (PA) - Wellbore #1 - No Surveys	11,743.05	6,611.00	963.83	655.79	3.129	CC, ES, SF
Lang 15-14 (SI) - Wellbore #1 - No Surveys	10,460.18	6,615.00	880.08	580.19	2.935	CC, ES, SF
Millage C14-33 (PR) - Wellbore #1 - No Surveys	11,115.35	6,608.00	4,090.63	3,786.90	13.468	CC, ES
Millage C14-33 (PR) - Wellbore #1 - No Surveys	11,400.00	6,608.00	4,100.52	3,795.25	13.432	SF
Millage C15-24 (SI) - Wellbore #1 - No Surveys	11,093.04	6,613.00	1,791.60	1,487.81	5.898	CC
Millage C15-24 (SI) - Wellbore #1 - No Surveys	11,100.00	6,613.00	1,791.61	1,487.80	5.897	ES, SF
PFann C15-17 (PR) - Wellbore #1 - No Surveys	13,742.63	6,601.00	3,139.99	2,817.95	9.750	CC, ES
PFann C15-17 (PR) - Wellbore #1 - No Surveys	13,900.00	6,601.00	3,143.93	2,821.01	9.736	SF
PFannebecker C14-32D (PR) - PFannebecker C14-32D O	12,539.00	6,625.17	4,179.44	4,102.64	54.419	CC, ES
PFannebecker C14-32D (PR) - PFannebecker C14-32D O	13,300.00	6,619.15	4,248.15	4,167.89	52.930	SF
PFannebecker C15-18 (PR) - Wellbore #1 - No Surveys	13,812.92	6,603.00	1,795.70	1,473.06	5.566	CC, ES, SF
PFannebecker C15-23 (PR) - Wellbore #1 - No Surveys	12,660.37	6,616.00	3,096.04	2,781.34	9.838	CC, ES
PFannebecker C15-23 (PR) - Wellbore #1 - No Surveys	12,800.00	6,616.00	3,099.19	2,783.72	9.824	SF
Rohr 1 (SI) - Wellbore #1 - No Surveys	14,362.52	6,602.00	988.76	662.02	3.026	CC, ES, SF
Rohr 15-06 (SI) - Wellbore #1 - No Surveys	13,064.36	6,606.00	793.56	476.33	2.502	CC, ES, SF
Rohr 15-414 (PR) - Wellbore #1 - No Surveys	14,540.01	6,603.00	303.47	-24.66	0.925	Level 1, CC, ES, SF
Rohr C15-19 (PR) - Wellbore #1 - No Surveys	13,770.11	6,605.00	186.67	-135.73	0.579	Level 1, CC, ES, SF
Sater C15-20 (SI) - Wellbore #1 - No Surveys	12,221.52	6,612.00	363.67	52.25	1.168	Level 2, CC, ES, SF
Stockley C15-25 (SI) - Wellbore #1 - No Surveys	11,079.55	6,621.00	323.88	19.86	1.065	Level 2, CC, ES, SF
Stockley C15-79HN (PR) - Original Drilling - Original Drill	10,438.30	6,705.65	722.84	662.18	11.915	CC, ES
Stockley C15-79HN (PR) - Original Drilling - Original Drill	17,500.00	13,738.40	932.44	712.74	4.244	SF
Stockley C22-79HN (PR) - Wellbore #1 - Original Drilling	7,100.00	9,090.21	919.18	838.20	11.350	SF
Stockley C22-79HN (PR) - Wellbore #1 - Original Drilling	7,250.00	8,970.88	907.91	828.59	11.447	ES
Stockley C22-79HN (PR) - Wellbore #1 - Original Drilling	7,269.90	8,955.95	907.75	828.68	11.480	CC

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 Borys C22-775
<b>Project:</b>	Mustang	<b>TVD Reference:</b>	KB @ 4692.00ft
<b>Reference Site:</b>	C Section 22	<b>MD Reference:</b>	KB @ 4692.00ft
<b>Site Error:</b>	0.00 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Borys C22-775	<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>	Wellbore #1	<b>Database:</b>	EDMP
<b>Reference Design:</b>	APD-Rev 0	<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 22						
BORYS C #22-20(PR) - Wellbore #1 - No Surveys	4,714.39	4,541.57	321.18	264.13	5.630	CC, ES
BORYS C #22-20(PR) - Wellbore #1 - No Surveys	4,900.00	4,713.38	328.76	269.45	5.543	SF
Borys C22-750 - Wellbore #1 - APD-Rev 0	2,000.00	2,001.00	65.63	51.75	4.730	CC
Borys C22-750 - Wellbore #1 - APD-Rev 0	2,100.00	2,098.84	66.19	51.65	4.550	ES
Borys C22-750 - Wellbore #1 - APD-Rev 0	2,200.00	2,196.46	68.14	52.97	4.490	SF
Borys C22-755 - Wellbore #1 - APD-Rev 0	2,000.00	2,000.00	43.71	29.84	3.151	CC, ES
Borys C22-755 - Wellbore #1 - APD-Rev 0	2,100.00	2,098.48	44.41	29.87	3.053	SF
Borys C22-765 - Wellbore #1 - APD-Rev 0	2,000.00	2,000.00	21.86	7.98	1.576	CC
Borys C22-765 - Wellbore #1 - APD-Rev 0	2,100.00	2,099.38	22.23	7.68	1.528	ES, SF
Borys C22-783 - Wellbore #1 - APD-Rev 0	2,065.08	2,065.42	25.50	11.18	1.780	CC
Borys C22-783 - Wellbore #1 - APD-Rev 0	2,300.00	2,301.36	25.90	10.00	1.629	ES
Borys C22-783 - Wellbore #1 - APD-Rev 0	2,400.00	2,401.57	26.78	10.21	1.616	SF
CANTRELL #1(PR) - Wellbore #1 - No Surveys	5,078.87	4,875.96	664.63	603.07	10.796	CC
CANTRELL #1(PR) - Wellbore #1 - No Surveys	5,100.00	4,895.51	664.68	602.85	10.750	ES
CANTRELL #1(PR) - Wellbore #1 - No Surveys	5,700.00	5,450.91	704.95	635.72	10.183	SF
CANTRELL #22-10(SI) - Wellbore #1 - No Surveys	2,000.00	1,965.00	1,475.51	1,451.42	61.264	CC
CANTRELL #22-10(SI) - Wellbore #1 - No Surveys	2,200.00	2,164.84	1,476.59	1,450.08	55.713	ES
CANTRELL #22-10(SI) - Wellbore #1 - No Surveys	6,450.00	6,143.98	2,247.22	2,169.44	28.892	SF
CANTRELL #22-12(SI) - Wellbore #1 - No Surveys	6,662.36	6,342.18	296.75	217.40	3.740	CC, ES, SF
COLEMAN #22-114(PR) - Wellbore #1 - No Surveys	2,000.00	1,958.00	2,942.48	2,918.45	122.484	CC, ES
COLEMAN #22-114(PR) - Wellbore #1 - No Surveys	9,800.00	6,611.00	3,846.61	3,756.10	42.502	SF
COLEMAN #22-714(PA) - Wellbore #1 - Gyro Surveys	555.74	518.75	1,108.03	1,104.63	326.062	CC
COLEMAN #22-714(PA) - Wellbore #1 - Gyro Surveys	2,012.35	1,979.85	1,113.40	1,099.68	81.159	ES
COLEMAN #22-714(PA) - Wellbore #1 - Gyro Surveys	8,100.00	6,598.77	2,463.58	2,414.32	50.009	SF
COLEMAN #22-814(PR) - Wellbore #1 - No Surveys	2,000.00	1,964.00	2,330.96	2,306.89	96.818	CC, ES
COLEMAN #22-814(PR) - Wellbore #1 - No Surveys	8,400.00	6,617.00	3,637.03	3,552.06	42.807	SF
Coleman #C22-18D(PR) - Wellbore #1 - MWD Surveys	2,846.81	3,262.45	1,382.61	1,361.09	64.230	CC, ES
Coleman #C22-18D(PR) - Wellbore #1 - MWD Surveys	8,600.00	6,763.13	1,572.97	1,517.65	28.435	SF
Coleman #C22-27 (PR) - Wellbore #1 - No Surveys	2,000.00	1,960.00	2,656.90	2,632.86	110.516	CC, ES
Coleman #C22-27 (PR) - Wellbore #1 - No Surveys	10,000.00	6,613.00	3,015.85	2,924.08	32.865	SF
Coleman C #22-17(PR) - Wellbore #1 - No Surveys	2,000.00	1,964.00	1,875.48	1,851.40	77.899	CC, ES
Coleman C #22-17(PR) - Wellbore #1 - No Surveys	8,800.00	6,617.00	2,921.77	2,835.42	33.839	SF
COLEMAN C #23-32(PR) - Wellbore #1 - No Surveys	2,000.00	1,965.00	2,743.67	2,719.59	113.919	CC, ES
COLEMAN C #23-32(PR) - Wellbore #1 - No Surveys	7,500.00	6,618.00	4,078.04	3,994.81	48.996	SF
Coleman C22-21D(SI) - Wellbore #1 - MWD Surveys	3,864.50	4,041.71	699.76	667.05	21.395	CC
Coleman C22-21D(SI) - Wellbore #1 - MWD Surveys	3,900.00	4,071.55	700.06	666.88	21.100	ES
Coleman C22-21D(SI) - Wellbore #1 - MWD Surveys	4,200.00	4,301.47	729.19	692.45	19.849	SF
CONRAD #1(PR) - Wellbore #1 - No Surveys	9,105.68	6,617.00	986.43	898.63	11.235	CC, ES, SF
DARLENE DINNEL #1(PR) - Wellbore #1 - No Surveys	6,218.16	5,932.98	1,714.47	1,638.68	22.620	CC, ES
DARLENE DINNEL #1(PR) - Wellbore #1 - No Surveys	6,400.00	6,105.23	1,738.80	1,660.74	22.277	SF
DINNEL #22-15(SI) - Wellbore #1 - No Surveys	3,961.03	3,843.20	2,305.94	2,258.21	48.313	CC
DINNEL #22-15(SI) - Wellbore #1 - No Surveys	4,200.00	4,064.41	2,307.71	2,257.05	45.548	ES
DINNEL #22-15(SI) - Wellbore #1 - No Surveys	6,450.00	6,151.98	2,525.17	2,446.64	32.159	SF
DINNEL #C27-28D(SI) - Wellbore #1 - MWD Surveys	785.53	794.56	2,454.30	2,450.32	616.341	CC, ES
DINNEL #C27-28D(SI) - Wellbore #1 - MWD Surveys	6,450.00	6,271.92	2,611.40	2,564.29	55.438	SF
DINNEL #C27-29D(PA) - Wellbore #1 - Gyro Surveys	6,300.84	6,119.78	2,074.87	2,024.72	41.378	CC, ES
DINNEL #C27-29D(PA) - Wellbore #1 - Gyro Surveys	6,450.00	6,257.47	2,092.92	2,041.94	41.055	SF
HERBST #1(SI) - Wellbore #1 - Gyro Surveys	6,381.13	6,099.60	1,632.09	1,587.38	36.507	CC, ES
HERBST #1(SI) - Wellbore #1 - Gyro Surveys	6,550.00	6,248.15	1,654.77	1,608.92	36.090	SF
HERBST #1-22-4-64(SI) - Wellbore #1 - No Surveys	2,000.00	1,966.00	2,479.24	2,455.14	102.902	CC
HERBST #1-22-4-64(SI) - Wellbore #1 - No Surveys	2,100.00	2,065.98	2,480.11	2,454.80	97.992	ES
HERBST #1-22-4-64(SI) - Wellbore #1 - No Surveys	6,950.00	6,524.30	3,610.99	3,528.84	43.956	SF
HERBST #22-16(PR) - Wellbore #1 - No Surveys	2,000.00	1,973.00	3,273.42	3,249.26	135.521	CC

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 Borys C22-775
<b>Project:</b>	Mustang	<b>TVD Reference:</b>	KB @ 4692.00ft
<b>Reference Site:</b>	C Section 22	<b>MD Reference:</b>	KB @ 4692.00ft
<b>Site Error:</b>	0.00 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Borys C22-775	<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>	Wellbore #1	<b>Database:</b>	EDMP
<b>Reference Design:</b>	APD-Rev 0	<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 22						
HERBST #22-16(PR) - Wellbore #1 - No Surveys	2,300.00	2,272.45	3,275.46	3,247.68	117.922	ES
HERBST #22-16(PR) - Wellbore #1 - No Surveys	6,650.00	6,328.12	3,867.41	3,786.98	48.087	SF
HERBST #22-614(PR) - Wellbore #1 - No Surveys	8,123.52	6,621.00	532.27	493.83	13.849	CC, ES, SF
Herbst #C22-22D(PR) - Wellbore #1 - MWD Surveys	2,633.91	3,045.61	2,040.20	2,019.45	98.299	CC, ES
Herbst #C22-22D(PR) - Wellbore #1 - MWD Surveys	7,700.00	6,720.91	3,058.22	3,006.07	58.636	SF
HERBST C #22-24(SI) - Wellbore #1 - No Surveys	4,653.31	4,487.03	1,406.69	1,350.38	24.983	CC
HERBST C #22-24(SI) - Wellbore #1 - No Surveys	4,800.00	4,622.81	1,407.78	1,349.65	24.218	ES
HERBST C #22-24(SI) - Wellbore #1 - No Surveys	6,300.00	6,013.46	1,546.01	1,469.28	20.148	SF
HERBST C #22-25(SI0) - Wellbore #1 - No Surveys	6,296.45	6,014.08	1,052.35	975.95	13.774	CC
HERBST C #22-25(SI0) - Wellbore #1 - No Surveys	6,300.00	6,017.46	1,052.36	975.92	13.766	ES
HERBST C #22-25(SI0) - Wellbore #1 - No Surveys	6,400.00	6,112.23	1,061.21	983.50	13.657	SF
JOHNSTON #22-4(SI) - Wellbore #1 - Gyro Surveys	8,887.86	6,622.14	246.20	194.07	4.723	CC, ES
JOHNSTON #22-4(SI) - Wellbore #1 - Gyro Surveys	8,900.00	6,622.04	246.50	194.24	4.717	SF
Lang #C22-28D(PR) - Wellbore #1 - MWD Surveys	9,834.63	6,753.98	1,532.87	1,473.27	25.716	CC, ES, SF
LYMAN #1(SI) - Wellbore #1 - Gyro Surveys	7,743.19	6,621.84	379.87	331.03	7.778	CC, ES, SF
VOLKENS #31-22(PR) - Wellbore #1 - No Surveys	2,000.00	1,961.00	1,891.54	1,867.49	78.652	CC, ES
VOLKENS #31-22(PR) - Wellbore #1 - No Surveys	9,300.00	6,614.00	2,331.65	2,243.18	26.355	SF
VROOMAN C #22-23(SI) - Wellbore #1 - No Surveys	2,000.00	1,973.00	2,393.28	2,369.12	99.083	CC
VROOMAN C #22-23(SI) - Wellbore #1 - No Surveys	2,300.00	2,272.45	2,395.23	2,367.45	86.232	ES
VROOMAN C #22-23(SI) - Wellbore #1 - No Surveys	6,550.00	6,242.78	3,017.44	2,938.16	38.058	SF
Vrooman C22-715 - Wellbore #1 - APD-Rev 0	2,000.00	2,000.00	1,658.83	1,644.96	119.574	CC, ES
Vrooman C22-715 - Wellbore #1 - APD-Rev 0	20,092.02	19,883.74	3,928.77	3,707.58	17.762	SF
Vrooman C22-725 - Wellbore #1 - APD-Rev 0	2,000.00	2,000.00	1,638.45	1,624.57	118.105	CC, ES
Vrooman C22-725 - Wellbore #1 - APD-Rev 0	20,092.02	19,881.46	3,275.27	3,053.95	14.799	SF
Vrooman C22-735 - Wellbore #1 - APD-Rev 0	2,000.00	2,000.00	1,618.11	1,604.24	116.639	CC, ES
Vrooman C22-735 - Wellbore #1 - APD-Rev 0	20,092.02	19,783.72	2,619.18	2,398.14	11.849	SF
Vrooman C22-745 - Wellbore #1 - APD-Rev 0	2,866.36	3,101.90	1,553.87	1,533.37	75.797	CC
Vrooman C22-745 - Wellbore #1 - APD-Rev 0	2,900.00	3,135.12	1,553.98	1,533.24	74.933	ES
Vrooman C22-745 - Wellbore #1 - APD-Rev 0	20,092.02	19,946.16	1,966.54	1,744.38	8.852	SF

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

<b>Company:</b>	Northern Region - DJ Basin	<b>Local Co-ordinate Reference:</b>	Well Borys C22-775
<b>Project:</b>	Mustang	<b>TVD Reference:</b>	KB @ 4692.00ft
<b>Reference Site:</b>	C Section 22	<b>MD Reference:</b>	KB @ 4692.00ft
<b>Site Error:</b>	0.00 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Borys C22-775	<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>	Wellbore #1	<b>Database:</b>	EDMP
<b>Reference Design:</b>	APD-Rev 0	<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 23						
BOOTH #23-1214(PR) - Wellbore #1 - No Surveys	2,000.00	1,964.00	3,479.35	3,455.27	144.517	CC
BOOTH #23-1214(PR) - Wellbore #1 - No Surveys	2,100.00	2,063.98	3,480.54	3,455.25	137.615	ES
BOOTH #23-1214(PR) - Wellbore #1 - No Surveys	7,200.00	6,607.83	4,769.48	4,686.48	57.470	SF
BOOTH C #23-20(PR) - Wellbore #1 - No Surveys	2,000.00	1,966.00	4,267.92	4,243.82	177.142	CC, ES
BOOTH C #23-20(PR) - Wellbore #1 - No Surveys	7,300.00	6,618.91	5,581.95	5,498.82	67.152	SF
COLEMAN #23-614(PR) - Wellbore #1 - No Surveys	2,000.00	1,963.00	4,887.57	4,863.50	203.082	CC, ES
COLEMAN #23-614(PR) - Wellbore #1 - No Surveys	9,700.00	6,616.00	6,465.52	6,376.07	72.280	SF
COLEMAN #C23-31D(PR) - Wellbore #1 - MWD	2,436.68	2,930.81	3,418.16	3,398.68	175.442	CC, ES
COLEMAN #C23-31D(PR) - Wellbore #1 - MWD	9,400.00	6,724.78	4,430.87	4,375.24	79.647	SF
Coleman C #23-04(PR) - Wellbore #1 - No Surveys	2,000.00	1,960.00	3,946.97	3,922.93	164.178	CC, ES
Coleman C #23-04(PR) - Wellbore #1 - No Surveys	10,300.00	6,613.00	5,063.27	4,970.43	54.539	SF
COLEMAN C #23-19(PR) - Wellbore #1 - No Surveys	2,000.00	1,962.00	4,456.29	4,432.23	185.229	CC, ES
COLEMAN C #23-19(PR) - Wellbore #1 - No Surveys	10,100.00	6,615.00	5,874.22	5,782.68	64.176	SF
COLEMAN C #23-21(PR) - Wellbore #1 - No Surveys	2,000.00	1,965.00	5,401.25	5,377.17	224.263	CC, ES
COLEMAN C #23-21(PR) - Wellbore #1 - No Surveys	9,200.00	6,618.00	6,992.54	6,905.20	80.058	SF
Coleman C #23-29D(SI) - Wellbore #1 - MWD Surveys	1,252.72	1,225.76	3,966.02	3,958.46	524.975	CC
Coleman C #23-29D(SI) - Wellbore #1 - MWD Surveys	1,300.00	1,251.62	3,966.14	3,958.33	507.534	ES
Coleman C #23-29D(SI) - Wellbore #1 - MWD Surveys	12,000.00	6,697.43	6,021.24	5,951.92	86.873	SF
KISSLER #1(SI) - Wellbore #1 - Gyro	3,960.31	0.00	4,576.42	4,562.38	326.136	CC
KISSLER #1(SI) - Wellbore #1 - Gyro	4,000.00	0.00	4,576.59	4,562.38	322.125	ES
KISSLER #1(SI) - Wellbore #1 - Gyro	6,800.00	1,800.00	5,137.96	5,106.48	163.200	SF
KISSLER #2(PR) - Wellbore #1 - No Surveys	2,000.00	1,970.00	5,016.90	4,992.77	207.928	CC
KISSLER #2(PR) - Wellbore #1 - No Surveys	2,100.00	2,069.98	5,018.05	4,992.71	197.996	ES
KISSLER #2(PR) - Wellbore #1 - No Surveys	7,200.00	6,613.83	6,285.42	6,202.32	75.635	SF
KISSLER #3(DA) - Wellbore #1 - No Surveys	2,000.00	1,973.00	5,437.46	5,413.31	225.114	CC
KISSLER #3(DA) - Wellbore #1 - No Surveys	2,100.00	2,072.98	5,438.27	5,412.90	214.355	ES
KISSLER #3(DA) - Wellbore #1 - No Surveys	7,000.00	6,555.23	6,487.06	6,404.36	78.443	SF
KISSLER #3X(SI) - Wellbore #1 - Gyro	1,454.71	1,437.72	5,495.10	5,485.27	558.963	CC
KISSLER #3X(SI) - Wellbore #1 - Gyro	2,000.00	1,962.22	5,495.87	5,482.25	403.717	ES
KISSLER #3X(SI) - Wellbore #1 - Gyro	6,900.00	6,530.21	6,439.33	6,391.26	133.940	SF
SATER C #23-15(PA) - Wellbore #1 - Gyro	0.00	0.00	6,692.60			
SATER C #23-15(PA) - Wellbore #1 - Gyro	2,100.00	2,177.06	6,698.86	6,683.85	446.418	ES
SATER C #23-15(PA) - Wellbore #1 - Gyro	7,000.00	6,798.14	7,666.49	7,617.21	155.560	SF
SATER C #23-17(PR) - Wellbore #1 - No Surveys	2,000.00	1,960.00	7,044.46	7,020.42	293.021	CC, ES
SATER C #23-17(PR) - Wellbore #1 - No Surveys	12,000.00	6,613.00	9,054.78	8,953.92	89.769	SF
SATER C #23-22(PR) - Wellbore #1 - No Surveys	2,000.00	1,968.00	6,805.41	6,781.30	282.258	CC, ES
SATER C #23-22(PR) - Wellbore #1 - No Surveys	10,700.00	6,621.00	8,841.95	8,748.42	94.539	SF
SATER C #23-24(PR) - Wellbore #1 - Gyro	0.00	0.00	6,025.70			
SATER C #23-24(PR) - Wellbore #1 - Gyro	700.00	625.51	6,027.47	6,023.18	1,404.784	ES
SATER C #23-24(PR) - Wellbore #1 - Gyro	7,150.00	6,738.98	7,179.55	7,130.63	146.755	SF
SATER C #23-28D(PR) - Wellbore #1 - MWD Surveys	2,468.83	3,518.05	6,379.08	6,354.80	262.808	CC
SATER C #23-28D(PR) - Wellbore #1 - MWD Surveys	2,500.00	3,540.73	6,379.26	6,354.76	260.378	ES
SATER C #23-28D(PR) - Wellbore #1 - MWD Surveys	9,800.00	9,800.00	6,949.56	6,879.48	99.158	SF
Sater C24-79HN - Original Drilling - Original Drilling	0.00	6.49	8,482.63			
Sater C24-79HN - Original Drilling - Original Drilling	800.00	805.98	8,485.29	8,481.07	2,009.826	ES
Sater C24-79HN - Original Drilling - Original Drilling	12,600.00	11,256.02	9,971.34	9,836.37	73.876	SF
Sater C25-69HN - Original Drilling - Original Drilling	206.92	1,068.00	8,479.23	8,478.01	6,971.312	CC
Sater C25-69HN - Original Drilling - Original Drilling	300.00	1,127.59	8,479.47	8,477.70	4,804.723	ES
Sater C25-69HN - Original Drilling - Original Drilling	6,550.00	5,958.01	9,904.13	9,861.86	234.324	SF
Sater C25-79HN - Original Drilling - Original Drilling	2,275.71	2,784.11	8,420.16	8,403.07	492.589	CC
Sater C25-79HN - Original Drilling - Original Drilling	2,300.00	2,802.21	8,420.24	8,402.98	487.986	ES
Sater C25-79HN - Original Drilling - Original Drilling	6,600.00	6,600.00	9,391.25	9,344.31	200.076	SF
Sater C26-69HN - Original Drilling - Original Drilling	6,163.16	11,535.02	4,524.77	4,431.70	48.614	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 Borys C22-775
<b>Project:</b>	Mustang	<b>TVD Reference:</b>	KB @ 4692.00ft
<b>Reference Site:</b>	C Section 22	<b>MD Reference:</b>	KB @ 4692.00ft
<b>Site Error:</b>	0.00 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Borys C22-775	<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>	Wellbore #1	<b>Database:</b>	EDMP
<b>Reference Design:</b>	APD-Rev 0	<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 23						
Sater C26-69HN - Original Drilling	8,000.00	11,535.02	5,389.82	5,275.11	46.986	SF
UPRC #23-214(PR) - Wellbore #1 - No Surveys	2,000.00	1,957.00	6,616.30	6,592.28	275.511	CC, ES
UPRC #23-214(PR) - Wellbore #1 - No Surveys	12,100.00	6,610.00	8,365.05	8,263.14	82.079	SF
UPV #23-1014(PR) - Wellbore #1 - No Surveys	2,000.00	1,968.00	6,110.82	6,086.71	253.449	CC, ES
UPV #23-1014(PR) - Wellbore #1 - No Surveys	7,250.00	6,618.23	7,410.93	7,327.80	89.155	SF
UPV #23-1514(PA) - Wellbore #1 - Gyro	0.00	0.00	7,065.62			
UPV #23-1514(PA) - Wellbore #1 - Gyro	2,040.10	2,071.94	7,075.85	7,061.70	500.027	ES
UPV #23-1514(PA) - Wellbore #1 - Gyro	11,000.00	7,143.74	9,713.28	9,653.32	161.995	SF
UPV #23-1614(PR) - Wellbore #1 - Gyro	2,192.35	2,478.91	8,074.05	8,057.93	500.877	CC
UPV #23-1614(PR) - Wellbore #1 - Gyro	2,200.00	2,483.82	8,074.06	8,057.90	499.557	ES
UPV #23-1614(PR) - Wellbore #1 - Gyro	7,200.00	7,200.00	9,242.59	9,192.24	183.591	SF
UPV #23-114(SI) - Wellbore #1 - Gyro Surveys	2,022.36	2,036.12	7,787.00	7,773.05	558.305	CC, ES
UPV #23-114(SI) - Wellbore #1 - Gyro Surveys	13,700.00	6,555.96	9,958.78	9,883.27	131.879	SF
UPV #23-714(PR) - Wellbore #1 - No Surveys	2,000.00	1,964.00	6,055.86	6,031.79	251.534	CC, ES
UPV #23-714(PR) - Wellbore #1 - No Surveys	10,500.00	6,617.00	7,883.83	7,790.93	84.863	SF
UPV #23-814(PR) - Wellbore #1 - Gyro Surveys	1,329.93	1,300.00	7,591.66	7,582.75	852.114	CC
UPV #23-814(PR) - Wellbore #1 - Gyro Surveys	1,700.00	1,621.09	7,592.28	7,580.92	668.750	ES
UPV #23-814(PR) - Wellbore #1 - Gyro Surveys	12,300.00	6,796.78	9,955.00	9,887.34	147.142	SF
UPV #23-914(PR) - Wellbore #1 - Gyro Surveys	0.00	0.00	7,822.52			
UPV #23-914(PR) - Wellbore #1 - Gyro Surveys	1,700.00	1,653.00	7,833.42	7,821.94	682.719	ES
UPV #23-914(PR) - Wellbore #1 - Gyro Surveys	10,700.00	6,881.82	9,979.50	9,919.87	167.365	SF
VOLKENS #1(SI) - Wellbore #1 - No Surveys	2,000.00	1,963.00	3,615.24	3,591.17	150.216	CC, ES
VOLKENS #1(SI) - Wellbore #1 - No Surveys	8,600.00	6,616.00	5,008.17	4,922.69	58.588	SF
VOLKENS #2(SI) - Wellbore #1 - No Surveys	2,000.00	1,961.00	5,175.42	5,151.37	215.199	CC, ES
VOLKENS #2(SI) - Wellbore #1 - No Surveys	12,100.00	4,650.00	7,193.76	7,113.20	89.296	SF