

Project: Mustang
Site: CC Section 31
Well: Booth DD06-775
Wellbore: Wellbore #1
Design: APD-Rev 0

Northern Region - DJ Basin

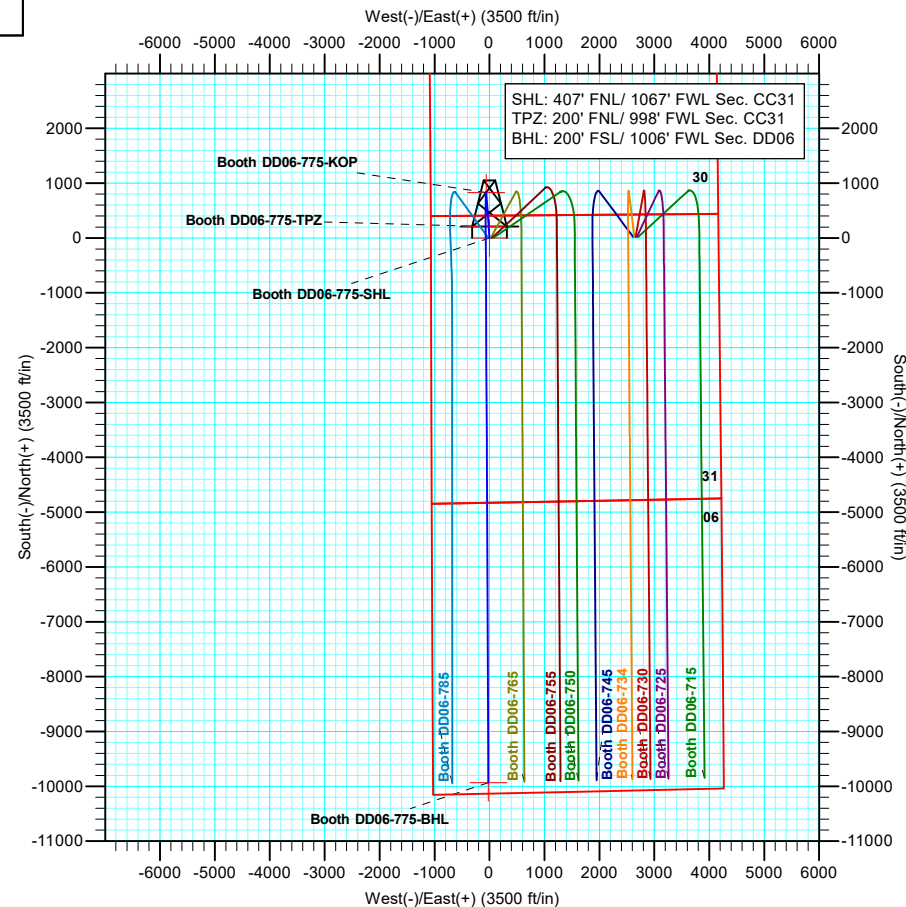
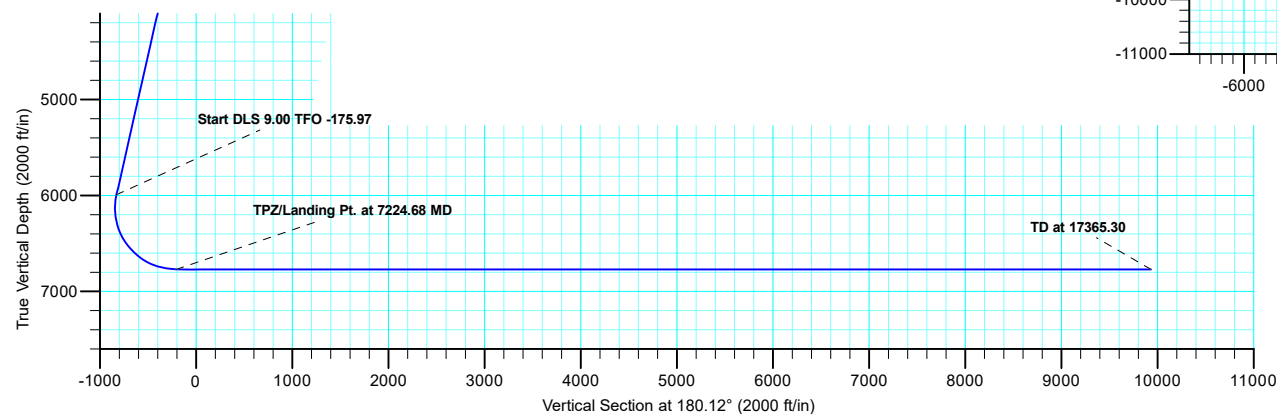
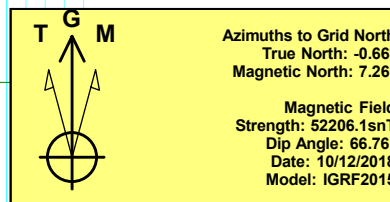
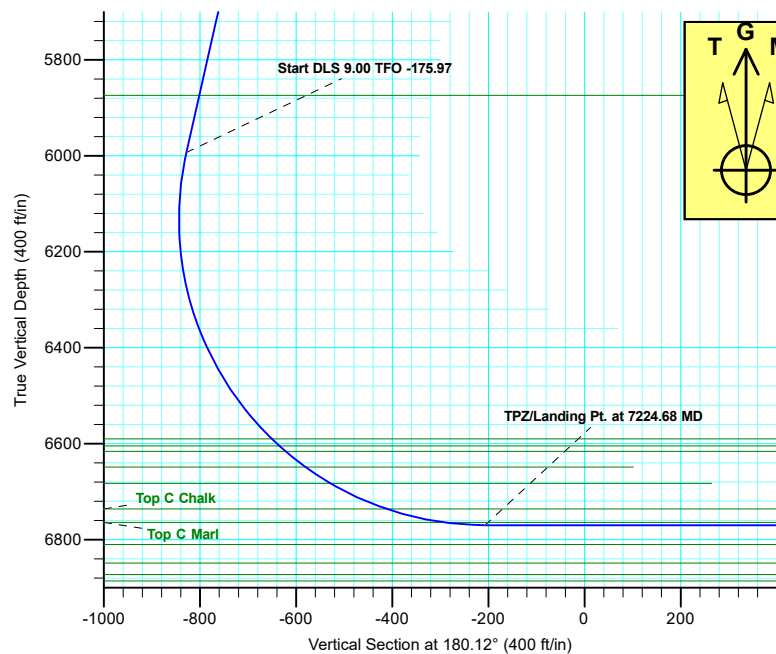
Geodetic System: US State Plane 1983
Datum: North American Datum 1983
Ellipsoid: GRS 1980
Zone: Colorado Northern Zone
System Datum: Mean Sea Level

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	2000.00	0.00	0.00	2000.00	0.00	0.00	0.00	0.00	0.00
3	2636.88	12.74	355.79	2631.65	70.31	-5.18	2.00	355.79	-70.30
4	6083.49	12.74	355.79	5993.44	828.19	-60.99	0.00	0.00	-828.06
5	7224.68	90.00	179.72	6770.00	207.11	-69.99	9.00	-175.97	-206.97
6	17365.30	90.00	179.72	6770.00	-9933.39	-20.40	0.00	0.00	9933.41

WELL DETAILS: Booth DD06-775

+N/-S	+E/-W	Northing	Ground Level: Easting	4777.00 Latitude	Longitude	Slot
0.00	0.00	1344634.20	3282924.13	40.2749799	-104.4860000	



Plan: APD-Rev 0 (Booth DD06-775/Wellbore #1)

Created By: Shelly C. Peterkin Date: 9:57, October 15 2018

Northern Region - DJ Basin

Mustang

CC Section 31

Booth DD06-775

Wellbore #1

Plan: APD-Rev 0

Standard Planning Report

15 October, 2018

Noble Energy, Inc.

Planning Report

Database:	EDMP	Local Co-ordinate Reference:	Well Booth DD06-775
Company:	Northern Region - DJ Basin	TVD Reference:	KB @ 4807.00ft
Project:	Mustang	MD Reference:	KB @ 4807.00ft
Site:	CC Section 31	North Reference:	Grid
Well:	Booth DD06-775	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	APD-Rev 0		

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

Site		CC Section 31			
Site Position:		Northing:	1,340,296.58 usft	Latitude:	40.2630390
From:	Map	Easting:	3,284,024.52 usft	Longitude:	-104.4822350
Position Uncertainty:	0.00 ft	Slot Radius:	13.200 in	Grid Convergence:	0.66 °

Well	Booth DD06-775					
Well Position	+N/-S	4,337.63 ft	Northing:	1,344,634.20 usft	Latitude:	40.2749800
	+E/-W	-1,100.38 ft	Easting:	3,282,924.13 usft	Longitude:	-104.4860000
Position Uncertainty		0.00 ft	Wellhead Elevation:		Ground Level:	4,777.00 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	10/12/2018	7.91	66.76	52,206.06835869

Design	APD-Rev 0				
Audit Notes:					
Version:	Phase:	PLAN	Tie On Depth:	0.00	
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W	Direction	
	(ft)	(ft)	(ft)	(°)	
	0.00	0.00	0.00	180.12	

Plan Sections										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,000.00	0.00	0.00	2,000.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,636.88	12.74	355.79	2,631.65	70.31	-5.18	2.00	2.00	0.00	355.79	
6,083.49	12.74	355.79	5,993.44	828.19	-60.99	0.00	0.00	0.00	0.00	
7,224.68	90.00	179.72	6,770.00	207.11	-69.99	9.00	6.77	-15.43	-175.97	Booth DD06-775-TPZ
17,365.30	90.00	179.72	6,770.00	-9,933.39	-20.40	0.00	0.00	0.00	0.00	Booth DD06-775-BHL

Noble Energy, Inc.

Planning Report

Database:	EDMP	Local Co-ordinate Reference:	Well Booth DD06-775
Company:	Northern Region - DJ Basin	TVD Reference:	KB @ 4807.00ft
Project:	Mustang	MD Reference:	KB @ 4807.00ft
Site:	CC Section 31	North Reference:	Grid
Well:	Booth DD06-775	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	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
444.00	0.00	0.00	444.00	0.00	0.00	0.00	0.00	0.00	0.00
Pierre									
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
710.00	0.00	0.00	710.00	0.00	0.00	0.00	0.00	0.00	0.00
Upper Pierre Aquifer Top									
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	0.00
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00
1,100.00	0.00	0.00	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00
1,200.00	0.00	0.00	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00
1,300.00	0.00	0.00	1,300.00	0.00	0.00	0.00	0.00	0.00	0.00
1,400.00	0.00	0.00	1,400.00	0.00	0.00	0.00	0.00	0.00	0.00
1,500.00	0.00	0.00	1,500.00	0.00	0.00	0.00	0.00	0.00	0.00
1,600.00	0.00	0.00	1,600.00	0.00	0.00	0.00	0.00	0.00	0.00
1,630.00	0.00	0.00	1,630.00	0.00	0.00	0.00	0.00	0.00	0.00
Upper Pierre Aquifer Base									
1,700.00	0.00	0.00	1,700.00	0.00	0.00	0.00	0.00	0.00	0.00
1,800.00	0.00	0.00	1,800.00	0.00	0.00	0.00	0.00	0.00	0.00
1,900.00	0.00	0.00	1,900.00	0.00	0.00	0.00	0.00	0.00	0.00
2,000.00	0.00	0.00	2,000.00	0.00	0.00	0.00	0.00	0.00	0.00
Start Build 2.00									
2,100.00	2.00	355.79	2,099.98	1.74	-0.13	-1.74	2.00	2.00	0.00
2,200.00	4.00	355.79	2,199.84	6.96	-0.51	-6.96	2.00	2.00	0.00
2,300.00	6.00	355.79	2,299.45	15.65	-1.15	-15.65	2.00	2.00	0.00
2,400.00	8.00	355.79	2,398.70	27.80	-2.05	-27.80	2.00	2.00	0.00
2,500.00	10.00	355.79	2,497.47	43.41	-3.20	-43.40	2.00	2.00	0.00
2,600.00	12.00	355.79	2,595.62	62.43	-4.60	-62.42	2.00	2.00	0.00
2,636.88	12.74	355.79	2,631.65	70.31	-5.18	-70.30	2.00	2.00	0.00
Start 3446.61 hold at 2636.88 MD									
2,700.00	12.74	355.79	2,693.21	84.19	-6.20	-84.18	0.00	0.00	0.00
2,800.00	12.74	355.79	2,790.75	106.18	-7.82	-106.16	0.00	0.00	0.00
2,900.00	12.74	355.79	2,888.29	128.17	-9.44	-128.15	0.00	0.00	0.00
3,000.00	12.74	355.79	2,985.83	150.16	-11.06	-150.14	0.00	0.00	0.00
3,100.00	12.74	355.79	3,083.37	172.15	-12.68	-172.12	0.00	0.00	0.00
3,200.00	12.74	355.79	3,180.91	194.14	-14.30	-194.11	0.00	0.00	0.00
3,300.00	12.74	355.79	3,278.45	216.13	-15.92	-216.09	0.00	0.00	0.00
3,400.00	12.74	355.79	3,375.99	238.12	-17.54	-238.08	0.00	0.00	0.00
3,500.00	12.74	355.79	3,473.53	260.10	-19.16	-260.06	0.00	0.00	0.00
3,600.00	12.74	355.79	3,571.06	282.09	-20.78	-282.05	0.00	0.00	0.00
3,700.00	12.74	355.79	3,668.60	304.08	-22.39	-304.04	0.00	0.00	0.00
3,734.24	12.74	355.79	3,702.00	311.61	-22.95	-311.56	0.00	0.00	0.00
Parkman									
3,800.00	12.74	355.79	3,766.14	326.07	-24.01	-326.02	0.00	0.00	0.00
3,900.00	12.74	355.79	3,863.68	348.06	-25.63	-348.01	0.00	0.00	0.00
4,000.00	12.74	355.79	3,961.22	370.05	-27.25	-369.99	0.00	0.00	0.00
4,100.00	12.74	355.79	4,058.76	392.04	-28.87	-391.98	0.00	0.00	0.00

Noble Energy, Inc.

Planning Report

Database:	EDMP	Local Co-ordinate Reference:	Well Booth DD06-775
Company:	Northern Region - DJ Basin	TVD Reference:	KB @ 4807.00ft
Project:	Mustang	MD Reference:	KB @ 4807.00ft
Site:	CC Section 31	North Reference:	Grid
Well:	Booth DD06-775	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	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	12.74	355.79	4,156.30	414.03	-30.49	-413.96	0.00	0.00	0.00
4,300.00	12.74	355.79	4,253.84	436.02	-32.11	-435.95	0.00	0.00	0.00
4,362.71	12.74	355.79	4,315.00	449.81	-33.13	-449.74	0.00	0.00	0.00
Sussex									
4,400.00	12.74	355.79	4,351.38	458.01	-33.73	-457.94	0.00	0.00	0.00
4,500.00	12.74	355.79	4,448.92	480.00	-35.35	-479.92	0.00	0.00	0.00
4,600.00	12.74	355.79	4,546.45	501.98	-36.97	-501.91	0.00	0.00	0.00
4,700.00	12.74	355.79	4,643.99	523.97	-38.59	-523.89	0.00	0.00	0.00
4,800.00	12.74	355.79	4,741.53	545.96	-40.21	-545.88	0.00	0.00	0.00
4,900.00	12.74	355.79	4,839.07	567.95	-41.83	-567.86	0.00	0.00	0.00
5,000.00	12.74	355.79	4,936.61	589.94	-43.45	-589.85	0.00	0.00	0.00
5,004.50	12.74	355.79	4,941.00	590.93	-43.52	-590.84	0.00	0.00	0.00
Shannon									
5,100.00	12.74	355.79	5,034.15	611.93	-45.07	-611.84	0.00	0.00	0.00
5,200.00	12.74	355.79	5,131.69	633.92	-46.69	-633.82	0.00	0.00	0.00
5,300.00	12.74	355.79	5,229.23	655.91	-48.31	-655.81	0.00	0.00	0.00
5,400.00	12.74	355.79	5,326.77	677.90	-49.92	-677.79	0.00	0.00	0.00
5,500.00	12.74	355.79	5,424.31	699.89	-51.54	-699.78	0.00	0.00	0.00
5,600.00	12.74	355.79	5,521.84	721.88	-53.16	-721.76	0.00	0.00	0.00
5,700.00	12.74	355.79	5,619.38	743.86	-54.78	-743.75	0.00	0.00	0.00
5,800.00	12.74	355.79	5,716.92	765.85	-56.40	-765.74	0.00	0.00	0.00
5,900.00	12.74	355.79	5,814.46	787.84	-58.02	-787.72	0.00	0.00	0.00
5,961.04	12.74	355.79	5,874.00	801.26	-59.01	-801.14	0.00	0.00	0.00
Teepee Buttes									
6,000.00	12.74	355.79	5,912.00	809.83	-59.64	-809.71	0.00	0.00	0.00
6,083.49	12.74	355.79	5,993.44	828.19	-60.99	-828.06	0.00	0.00	0.00
Start DLS 9.00 TFO -175.97									
6,100.00	11.26	355.25	6,009.58	831.61	-61.26	-831.48	9.00	-8.97	-3.24
6,150.00	6.78	352.23	6,058.95	839.40	-62.06	-839.27	9.00	-8.95	-6.05
6,200.00	2.39	337.94	6,108.78	843.30	-62.86	-843.16	9.00	-8.77	-28.57
6,250.00	2.45	201.00	6,158.76	843.27	-63.63	-843.13	9.00	0.11	-273.88
6,300.00	6.84	187.15	6,208.59	839.32	-64.38	-839.18	9.00	8.78	-27.70
6,350.00	11.31	184.16	6,257.95	831.47	-65.11	-831.33	9.00	8.95	-5.97
6,400.00	15.80	182.86	6,306.55	819.77	-65.81	-819.63	9.00	8.98	-2.61
6,450.00	20.30	182.12	6,354.07	804.30	-66.47	-804.16	9.00	8.99	-1.48
6,500.00	24.79	181.64	6,400.24	785.14	-67.09	-785.00	9.00	8.99	-0.96
6,550.00	29.29	181.30	6,444.76	762.42	-67.67	-762.28	9.00	8.99	-0.68
6,600.00	33.79	181.05	6,487.37	736.28	-68.20	-736.14	9.00	9.00	-0.51
6,650.00	38.29	180.84	6,527.79	706.88	-68.68	-706.73	9.00	9.00	-0.40
6,700.00	42.79	180.68	6,565.78	674.39	-69.11	-674.25	9.00	9.00	-0.33
6,733.86	45.83	180.58	6,590.00	650.74	-69.37	-650.60	9.00	9.00	-0.29
Sharon Springs									
6,750.00	47.28	180.54	6,601.10	639.02	-69.49	-638.88	9.00	9.00	-0.26
6,755.78	47.80	180.52	6,605.00	634.76	-69.53	-634.62	9.00	9.00	-0.26
Top A Chalk									
6,772.40	49.30	180.48	6,616.00	622.31	-69.64	-622.16	9.00	9.00	-0.25
Top A Marl									
6,800.00	51.78	180.42	6,633.54	601.00	-69.80	-600.85	9.00	9.00	-0.23
6,825.65	54.09	180.36	6,649.00	580.53	-69.94	-580.38	9.00	9.00	-0.22
Top B Chalk									
6,850.00	56.28	180.31	6,662.90	560.54	-70.06	-560.39	9.00	9.00	-0.21
6,887.93	59.70	180.24	6,683.00	528.38	-70.22	-528.24	9.00	9.00	-0.19
Top B Marl									

Noble Energy, Inc.

Planning Report

Database:	EDMP	Local Co-ordinate Reference:	Well Booth DD06-775
Company:	Northern Region - DJ Basin	TVD Reference:	KB @ 4807.00ft
Project:	Mustang	MD Reference:	KB @ 4807.00ft
Site:	CC Section 31	North Reference:	Grid
Well:	Booth DD06-775	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	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)
6,900.00	60.78	180.22	6,688.99	517.90	-70.26	-517.76	9.00	9.00	-0.19
6,950.00	65.28	180.13	6,711.66	473.35	-70.39	-473.21	9.00	9.00	-0.18
7,000.00	69.78	180.05	6,730.77	427.16	-70.46	-427.01	9.00	9.00	-0.16
7,015.67	71.19	180.02	6,736.00	412.39	-70.47	-412.24	9.00	9.00	-0.16
Top C Chalk									
7,050.00	74.28	179.97	6,746.19	379.61	-70.47	-379.46	9.00	9.00	-0.15
7,100.00	78.78	179.90	6,757.83	331.00	-70.41	-330.85	9.00	9.00	-0.15
7,137.20	82.13	179.84	6,764.00	294.31	-70.33	-294.17	9.00	9.00	-0.14
Top C Marl									
7,150.00	83.28	179.82	6,765.63	281.62	-70.29	-281.48	9.00	9.00	-0.14
7,200.00	87.78	179.75	6,769.52	231.79	-70.11	-231.64	9.00	9.00	-0.14
7,224.68	90.00	179.72	6,770.00	207.11	-69.99	-206.97	9.00	9.00	-0.14
TPZ/Landing Pt. at 7224.68 MD									
7,300.00	90.00	179.72	6,770.00	131.80	-69.62	-131.65	0.00	0.00	0.00
7,400.00	90.00	179.72	6,770.00	31.80	-69.14	-31.65	0.00	0.00	0.00
7,500.00	90.00	179.72	6,770.00	-68.20	-68.65	68.34	0.00	0.00	0.00
7,600.00	90.00	179.72	6,770.00	-168.20	-68.16	168.34	0.00	0.00	0.00
7,700.00	90.00	179.72	6,770.00	-268.20	-67.67	268.34	0.00	0.00	0.00
7,800.00	90.00	179.72	6,770.00	-368.20	-67.18	368.34	0.00	0.00	0.00
7,900.00	90.00	179.72	6,770.00	-468.20	-66.69	468.33	0.00	0.00	0.00
8,000.00	90.00	179.72	6,770.00	-568.20	-66.20	568.33	0.00	0.00	0.00
8,100.00	90.00	179.72	6,770.00	-668.20	-65.71	668.33	0.00	0.00	0.00
8,200.00	90.00	179.72	6,770.00	-768.19	-65.22	768.33	0.00	0.00	0.00
8,300.00	90.00	179.72	6,770.00	-868.19	-64.73	868.32	0.00	0.00	0.00
8,400.00	90.00	179.72	6,770.00	-968.19	-64.25	968.32	0.00	0.00	0.00
8,500.00	90.00	179.72	6,770.00	-1,068.19	-63.76	1,068.32	0.00	0.00	0.00
8,600.00	90.00	179.72	6,770.00	-1,168.19	-63.27	1,168.32	0.00	0.00	0.00
8,700.00	90.00	179.72	6,770.00	-1,268.19	-62.78	1,268.31	0.00	0.00	0.00
8,800.00	90.00	179.72	6,770.00	-1,368.19	-62.29	1,368.31	0.00	0.00	0.00
8,900.00	90.00	179.72	6,770.00	-1,468.19	-61.80	1,468.31	0.00	0.00	0.00
9,000.00	90.00	179.72	6,770.00	-1,568.18	-61.31	1,568.31	0.00	0.00	0.00
9,100.00	90.00	179.72	6,770.00	-1,668.18	-60.82	1,668.30	0.00	0.00	0.00
9,200.00	90.00	179.72	6,770.00	-1,768.18	-60.33	1,768.30	0.00	0.00	0.00
9,300.00	90.00	179.72	6,770.00	-1,868.18	-59.84	1,868.30	0.00	0.00	0.00
9,400.00	90.00	179.72	6,770.00	-1,968.18	-59.36	1,968.30	0.00	0.00	0.00
9,500.00	90.00	179.72	6,770.00	-2,068.18	-58.87	2,068.30	0.00	0.00	0.00
9,600.00	90.00	179.72	6,770.00	-2,168.18	-58.38	2,168.29	0.00	0.00	0.00
9,700.00	90.00	179.72	6,770.00	-2,268.18	-57.89	2,268.29	0.00	0.00	0.00
9,800.00	90.00	179.72	6,770.00	-2,368.18	-57.40	2,368.29	0.00	0.00	0.00
9,900.00	90.00	179.72	6,770.00	-2,468.17	-56.91	2,468.29	0.00	0.00	0.00
10,000.00	90.00	179.72	6,770.00	-2,568.17	-56.42	2,568.28	0.00	0.00	0.00
10,100.00	90.00	179.72	6,770.00	-2,668.17	-55.93	2,668.28	0.00	0.00	0.00
10,200.00	90.00	179.72	6,770.00	-2,768.17	-55.44	2,768.28	0.00	0.00	0.00
10,300.00	90.00	179.72	6,770.00	-2,868.17	-54.95	2,868.28	0.00	0.00	0.00
10,400.00	90.00	179.72	6,770.00	-2,968.17	-54.47	2,968.27	0.00	0.00	0.00
10,500.00	90.00	179.72	6,770.00	-3,068.17	-53.98	3,068.27	0.00	0.00	0.00
10,600.00	90.00	179.72	6,770.00	-3,168.17	-53.49	3,168.27	0.00	0.00	0.00
10,700.00	90.00	179.72	6,770.00	-3,268.16	-53.00	3,268.27	0.00	0.00	0.00
10,800.00	90.00	179.72	6,770.00	-3,368.16	-52.51	3,368.26	0.00	0.00	0.00
10,900.00	90.00	179.72	6,770.00	-3,468.16	-52.02	3,468.26	0.00	0.00	0.00
11,000.00	90.00	179.72	6,770.00	-3,568.16	-51.53	3,568.26	0.00	0.00	0.00
11,100.00	90.00	179.72	6,770.00	-3,668.16	-51.04	3,668.26	0.00	0.00	0.00
11,200.00	90.00	179.72	6,770.00	-3,768.16	-50.55	3,768.25	0.00	0.00	0.00

Noble Energy, Inc.

Planning Report

Database:	EDMP	Local Co-ordinate Reference:	Well Booth DD06-775
Company:	Northern Region - DJ Basin	TVD Reference:	KB @ 4807.00ft
Project:	Mustang	MD Reference:	KB @ 4807.00ft
Site:	CC Section 31	North Reference:	Grid
Well:	Booth DD06-775	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	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)
11,300.00	90.00	179.72	6,770.00	-3,868.16	-50.06	3,868.25	0.00	0.00	0.00
11,400.00	90.00	179.72	6,770.00	-3,968.16	-49.58	3,968.25	0.00	0.00	0.00
11,500.00	90.00	179.72	6,770.00	-4,068.15	-49.09	4,068.25	0.00	0.00	0.00
11,600.00	90.00	179.72	6,770.00	-4,168.15	-48.60	4,168.24	0.00	0.00	0.00
11,700.00	90.00	179.72	6,770.00	-4,268.15	-48.11	4,268.24	0.00	0.00	0.00
11,800.00	90.00	179.72	6,770.00	-4,368.15	-47.62	4,368.24	0.00	0.00	0.00
11,900.00	90.00	179.72	6,770.00	-4,468.15	-47.13	4,468.24	0.00	0.00	0.00
12,000.00	90.00	179.72	6,770.00	-4,568.15	-46.64	4,568.24	0.00	0.00	0.00
12,100.00	90.00	179.72	6,770.00	-4,668.15	-46.15	4,668.23	0.00	0.00	0.00
12,200.00	90.00	179.72	6,770.00	-4,768.15	-45.66	4,768.23	0.00	0.00	0.00
12,300.00	90.00	179.72	6,770.00	-4,868.15	-45.17	4,868.23	0.00	0.00	0.00
12,400.00	90.00	179.72	6,770.00	-4,968.14	-44.68	4,968.23	0.00	0.00	0.00
12,500.00	90.00	179.72	6,770.00	-5,068.14	-44.20	5,068.22	0.00	0.00	0.00
12,600.00	90.00	179.72	6,770.00	-5,168.14	-43.71	5,168.22	0.00	0.00	0.00
12,700.00	90.00	179.72	6,770.00	-5,268.14	-43.22	5,268.22	0.00	0.00	0.00
12,800.00	90.00	179.72	6,770.00	-5,368.14	-42.73	5,368.22	0.00	0.00	0.00
12,900.00	90.00	179.72	6,770.00	-5,468.14	-42.24	5,468.21	0.00	0.00	0.00
13,000.00	90.00	179.72	6,770.00	-5,568.14	-41.75	5,568.21	0.00	0.00	0.00
13,100.00	90.00	179.72	6,770.00	-5,668.14	-41.26	5,668.21	0.00	0.00	0.00
13,200.00	90.00	179.72	6,770.00	-5,768.13	-40.77	5,768.21	0.00	0.00	0.00
13,300.00	90.00	179.72	6,770.00	-5,868.13	-40.28	5,868.20	0.00	0.00	0.00
13,400.00	90.00	179.72	6,770.00	-5,968.13	-39.79	5,968.20	0.00	0.00	0.00
13,500.00	90.00	179.72	6,770.00	-6,068.13	-39.31	6,068.20	0.00	0.00	0.00
13,600.00	90.00	179.72	6,770.00	-6,168.13	-38.82	6,168.20	0.00	0.00	0.00
13,700.00	90.00	179.72	6,770.00	-6,268.13	-38.33	6,268.19	0.00	0.00	0.00
13,800.00	90.00	179.72	6,770.00	-6,368.13	-37.84	6,368.19	0.00	0.00	0.00
13,900.00	90.00	179.72	6,770.00	-6,468.13	-37.35	6,468.19	0.00	0.00	0.00
14,000.00	90.00	179.72	6,770.00	-6,568.13	-36.86	6,568.19	0.00	0.00	0.00
14,100.00	90.00	179.72	6,770.00	-6,668.12	-36.37	6,668.18	0.00	0.00	0.00
14,200.00	90.00	179.72	6,770.00	-6,768.12	-35.88	6,768.18	0.00	0.00	0.00
14,300.00	90.00	179.72	6,770.00	-6,868.12	-35.39	6,868.18	0.00	0.00	0.00
14,400.00	90.00	179.72	6,770.00	-6,968.12	-34.90	6,968.18	0.00	0.00	0.00
14,500.00	90.00	179.72	6,770.00	-7,068.12	-34.42	7,068.17	0.00	0.00	0.00
14,600.00	90.00	179.72	6,770.00	-7,168.12	-33.93	7,168.17	0.00	0.00	0.00
14,700.00	90.00	179.72	6,770.00	-7,268.12	-33.44	7,268.17	0.00	0.00	0.00
14,800.00	90.00	179.72	6,770.00	-7,368.12	-32.95	7,368.17	0.00	0.00	0.00
14,900.00	90.00	179.72	6,770.00	-7,468.11	-32.46	7,468.17	0.00	0.00	0.00
15,000.00	90.00	179.72	6,770.00	-7,568.11	-31.97	7,568.16	0.00	0.00	0.00
15,100.00	90.00	179.72	6,770.00	-7,668.11	-31.48	7,668.16	0.00	0.00	0.00
15,200.00	90.00	179.72	6,770.00	-7,768.11	-30.99	7,768.16	0.00	0.00	0.00
15,300.00	90.00	179.72	6,770.00	-7,868.11	-30.50	7,868.16	0.00	0.00	0.00
15,400.00	90.00	179.72	6,770.00	-7,968.11	-30.01	7,968.15	0.00	0.00	0.00
15,500.00	90.00	179.72	6,770.00	-8,068.11	-29.53	8,068.15	0.00	0.00	0.00
15,600.00	90.00	179.72	6,770.00	-8,168.11	-29.04	8,168.15	0.00	0.00	0.00
15,700.00	90.00	179.72	6,770.00	-8,268.10	-28.55	8,268.15	0.00	0.00	0.00
15,800.00	90.00	179.72	6,770.00	-8,368.10	-28.06	8,368.14	0.00	0.00	0.00
15,900.00	90.00	179.72	6,770.00	-8,468.10	-27.57	8,468.14	0.00	0.00	0.00
16,000.00	90.00	179.72	6,770.00	-8,568.10	-27.08	8,568.14	0.00	0.00	0.00
16,100.00	90.00	179.72	6,770.00	-8,668.10	-26.59	8,668.14	0.00	0.00	0.00
16,200.00	90.00	179.72	6,770.00	-8,768.10	-26.10	8,768.13	0.00	0.00	0.00
16,300.00	90.00	179.72	6,770.00	-8,868.10	-25.61	8,868.13	0.00	0.00	0.00
16,400.00	90.00	179.72	6,770.00	-8,968.10	-25.12	8,968.13	0.00	0.00	0.00
16,500.00	90.00	179.72	6,770.00	-9,068.10	-24.64	9,068.13	0.00	0.00	0.00
16,600.00	90.00	179.72	6,770.00	-9,168.09	-24.15	9,168.12	0.00	0.00	0.00

Noble Energy, Inc.

Planning Report

Database:	EDMP	Local Co-ordinate Reference:	Well Booth DD06-775
Company:	Northern Region - DJ Basin	TVD Reference:	KB @ 4807.00ft
Project:	Mustang	MD Reference:	KB @ 4807.00ft
Site:	CC Section 31	North Reference:	Grid
Well:	Booth DD06-775	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	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)
16,700.00	90.00	179.72	6,770.00	-9,268.09	-23.66	9,268.12	0.00	0.00	0.00
16,800.00	90.00	179.72	6,770.00	-9,368.09	-23.17	9,368.12	0.00	0.00	0.00
16,900.00	90.00	179.72	6,770.00	-9,468.09	-22.68	9,468.12	0.00	0.00	0.00
17,000.00	90.00	179.72	6,770.00	-9,568.09	-22.19	9,568.11	0.00	0.00	0.00
17,100.00	90.00	179.72	6,770.00	-9,668.09	-21.70	9,668.11	0.00	0.00	0.00
17,200.00	90.00	179.72	6,770.00	-9,768.09	-21.21	9,768.11	0.00	0.00	0.00
17,300.00	90.00	179.72	6,770.00	-9,868.09	-20.72	9,868.11	0.00	0.00	0.00
17,365.30	90.00	179.72	6,770.00	-9,933.39	-20.40	9,933.41	0.00	0.00	0.00
TD at 17365.30									

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
Booth DD06-775-SHL - plan hits target center - Point	0.00	0.01	0.00	0.00	0.00	1,344,634.20	3,282,924.13	40.2749800	-104.4860000
Booth DD06-775-KOP - plan hits target center - Point	0.00	0.00	5,993.44	828.19	-60.99	1,345,462.39	3,282,863.14	40.2772552	-104.4861846
Booth DD06-775-BHL - plan hits target center - Point	0.00	0.01	6,770.00	-9,933.39	-20.40	1,334,700.83	3,282,903.73	40.2477144	-104.4864800
Booth DD06-775-TPZ - plan hits target center - Point	0.00	0.00	6,770.00	207.11	-69.99	1,344,841.31	3,282,854.14	40.2755507	-104.4862423

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
444.00	444.00	Pierre				
710.00	710.00	Upper Pierre Aquifer Top				
1,630.00	1,630.00	Upper Pierre Aquifer Base				
3,734.24	3,702.00	Parkman				
4,362.71	4,315.00	Sussex				
5,004.50	4,941.00	Shannon				
5,961.04	5,874.00	Teepee Buttes				
6,733.86	6,590.00	Sharon Springs				
6,755.78	6,605.00	Top A Chalk				
6,772.40	6,616.00	Top A Marl				
6,825.65	6,649.00	Top B Chalk				
6,887.93	6,683.00	Top B Marl				
7,015.67	6,736.00	Top C Chalk				
7,137.20	6,764.00	Top C Marl				

Noble Energy, Inc.

Planning Report

Database:	EDMP	Local Co-ordinate Reference:	Well Booth DD06-775
Company:	Northern Region - DJ Basin	TVD Reference:	KB @ 4807.00ft
Project:	Mustang	MD Reference:	KB @ 4807.00ft
Site:	CC Section 31	North Reference:	Grid
Well:	Booth DD06-775	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	APD-Rev 0		

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment	
		+N/-S (ft)	+E/-W (ft)		
2,000.00	2,000.00	0.00	0.00	Start Build 2.00	
2,636.88	2,631.65	70.31	-5.18	Start 3446.61 hold at 2636.88 MD	
6,083.49	5,993.44	828.19	-60.99	Start DLS 9.00 TFO -175.97	
7,224.68	6,770.00	207.11	-69.99	TPZ/Landing Pt. at 7224.68 MD	
17,365.30	6,770.00	-9,933.39	-20.40	TD at 17365.30	

Northern Region - DJ Basin

Mustang

CC Section 31

Booth DD06-775

Wellbore #1

APD-Rev 0

Anticollision Summary Report

15 October, 2018

Noble Energy, Inc.
Anticollision Summary Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Booth DD06-775
Project:	Mustang	TVD Reference:	KB @ 4807.00ft
Reference Site:	CC Section 31	MD Reference:	KB @ 4807.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Booth DD06-775	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDMP
Reference Design:	APD-Rev 0	Offset TVD Reference:	Offset Datum

Reference	APD-Rev 0		
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	10/15/2018		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.00	17,365.30	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 36						
Ava State C36-18 (SI) - Wellbore #1 - No Surveys	8,298.35	6,701.00	3,580.50	3,288.38	12.257	CC
Ava State C36-18 (SI) - Wellbore #1 - No Surveys	8,300.00	6,701.00	3,580.50	3,288.38	12.257	ES
Ava State C36-18 (SI) - Wellbore #1 - No Surveys	8,400.00	6,701.00	3,581.94	3,289.49	12.248	SF
Ava State C36-20 (PR) - Wellbore #1 - No Surveys	9,849.59	6,689.00	4,963.63	4,664.94	16.618	CC
Ava State C36-20 (PR) - Wellbore #1 - No Surveys	9,900.00	6,689.00	4,963.88	4,664.91	16.603	ES
Ava State C36-20 (PR) - Wellbore #1 - No Surveys	10,300.00	6,689.00	4,984.02	4,682.75	16.543	SF
Ava State C36-21 (SI) - Wellbore #1 - No Surveys	9,544.88	6,706.00	3,736.88	3,439.18	12.552	CC, ES
Ava State C36-21 (SI) - Wellbore #1 - No Surveys	9,800.00	6,706.00	3,745.58	3,446.52	12.524	SF
Ava State C36-22 (SI) - Wellbore #1 - No Surveys	9,703.19	6,715.00	2,405.61	2,106.70	8.048	CC, ES
Ava State C36-22 (SI) - Wellbore #1 - No Surveys	9,800.00	6,715.00	2,407.56	2,108.12	8.040	SF
Ava State C36-24 (PR) - Wellbore #1 - No Surveys	11,009.85	6,704.00	3,587.15	3,280.70	11.706	CC, ES
Ava State C36-24 (PR) - Wellbore #1 - No Surveys	11,300.00	6,704.00	3,598.87	3,290.56	11.673	SF
Ava State C36-31 (PR) - Wellbore #1 - No Surveys	8,417.50	6,679.00	6,109.52	5,817.89	20.950	CC, ES
Ava State C36-31 (PR) - Wellbore #1 - No Surveys	9,000.00	6,679.00	6,137.22	5,843.31	20.881	SF
Booth CC31-68-1HN (PR) - Original Drilling - Original Dri	8,078.05	7,587.27	56.34	28.26	2.006	CC
Booth CC31-68-1HN (PR) - Original Drilling - Original Dri	8,100.00	7,586.74	60.46	26.22	1.766	ES, SF
Booth State C36-69HN (PR) - Original Drilling - Original D	4,698.57	4,644.22	1,236.87	1,205.97	40.026	CC
Booth State C36-69HN (PR) - Original Drilling - Original D	4,700.00	4,645.37	1,236.87	1,205.96	40.014	ES
Booth State C36-69HN (PR) - Original Drilling - Original D	6,250.00	6,034.00	1,306.98	1,265.69	31.654	SF
Booth State CC30-79HN (PR) - Original Drilling - Original	6,622.07	6,588.62	923.98	877.39	19.832	CC, ES
Booth State CC30-79HN (PR) - Original Drilling - Original	6,650.00	6,593.21	924.40	877.70	19.796	SF
Booth State CC31-69HN (PR) - Original Drilling - Original	7,000.00	7,264.65	71.24	19.21	1.369	Level 3, SF
Booth State CC31-69HN (PR) - Original Drilling - Original	7,050.00	7,264.35	43.38	13.24	1.439	Level 3, ES
Booth State CC31-69HN (PR) - Original Drilling - Original	7,059.24	7,264.29	42.45	18.06	1.741	CC
State 36-0414 (PR) - Wellbore #1 - No Surveys	8,245.60	6,687.00	5,193.96	4,902.57	17.825	CC, ES
State 36-0414 (PR) - Wellbore #1 - No Surveys	8,600.00	6,687.00	5,206.03	4,913.44	17.793	SF
State 36-0714 (SI) - Wellbore #1 - No Surveys	9,026.55	6,707.00	3,121.27	2,826.08	10.574	CC, ES
State 36-0714 (SI) - Wellbore #1 - No Surveys	9,200.00	6,707.00	3,126.08	2,830.10	10.562	SF
State 36-1014 (SI) - Wellbore #1 - No Surveys	10,312.89	6,703.00	3,179.99	2,878.02	10.531	CC, ES
State 36-1014 (SI) - Wellbore #1 - No Surveys	10,500.00	6,703.00	3,185.49	2,882.39	10.510	SF
State 36-1114 (PR) - Wellbore #1 - No Surveys	10,503.63	6,708.00	4,294.47	3,991.12	14.157	CC, ES
State 36-1114 (PR) - Wellbore #1 - No Surveys	10,900.00	6,708.00	4,312.72	4,006.92	14.103	SF
State 36-1214 (PR) - Wellbore #1 - No Surveys	10,358.21	6,707.00	5,780.57	5,478.37	19.129	CC
State 36-1214 (PR) - Wellbore #1 - No Surveys	10,400.00	6,707.00	5,780.72	5,478.27	19.113	ES
State 36-1214 (PR) - Wellbore #1 - No Surveys	11,000.00	6,707.00	5,816.08	5,509.94	18.998	SF
State 36-1414 (PR) - Wellbore #1 - No Surveys	11,814.68	6,706.00	4,288.63	3,976.63	13.745	CC, ES
State 36-1414 (PR) - Wellbore #1 - No Surveys	12,200.00	6,706.00	4,305.91	3,991.30	13.687	SF

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

Noble Energy, Inc.
Anticollision Summary Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Booth DD06-775
Project:	Mustang	TVD Reference:	KB @ 4807.00ft
Reference Site:	CC Section 31	MD Reference:	KB @ 4807.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Booth DD06-775	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDMP
Reference Design:	APD-Rev 0	Offset TVD Reference:	Offset Datum

Summary						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
C Section 36						
State 36-1514 (PR) - Wellbore #1 - No Surveys	11,271.30	6,706.00	2,660.35	2,352.08	8.630	CC
State 36-1514 (PR) - Wellbore #1 - No Surveys	11,300.00	6,706.00	2,660.50	2,352.04	8.625	ES
State 36-1514 (PR) - Wellbore #1 - No Surveys	11,400.00	6,706.00	2,663.46	2,354.34	8.616	SF
State 36-1614 (PR) - Wellbore #1 - No Surveys	11,801.84	6,737.00	1,889.47	1,576.31	6.034	CC, ES
State 36-1614 (PR) - Wellbore #1 - No Surveys	11,900.00	6,737.00	1,892.02	1,578.21	6.029	SF
State 36-214 (SI) - Wellbore #1 - No Surveys	7,812.51	6,705.00	2,975.59	2,684.57	10.225	CC, ES
State 36-214 (SI) - Wellbore #1 - No Surveys	7,900.00	6,705.00	2,976.87	2,685.67	10.223	SF
State 36-314 (SI) - Wellbore #1 - No Surveys	7,785.12	6,685.00	4,273.27	3,983.11	14.727	CC
State 36-314 (SI) - Wellbore #1 - No Surveys	7,800.00	6,685.00	4,273.30	3,983.10	14.726	ES
State 36-314 (SI) - Wellbore #1 - No Surveys	7,900.00	6,685.00	4,274.82	3,984.41	14.720	SF
State 36-614 (PR) - Wellbore #1 - No Surveys	8,793.53	6,681.00	4,280.80	3,987.67	14.604	CC
State 36-614 (PR) - Wellbore #1 - No Surveys	8,800.00	6,681.00	4,280.81	3,987.65	14.603	ES
State 36-614 (PR) - Wellbore #1 - No Surveys	9,100.00	6,681.00	4,291.76	3,997.29	14.575	SF
State 36-814 (SI) - Wellbore #1 - No Surveys	8,787.21	6,726.00	1,651.96	1,357.05	5.602	CC
State 36-814 (SI) - Wellbore #1 - No Surveys	8,800.00	6,726.00	1,652.01	1,357.05	5.601	ES, SF
State 36-914 (PR) - Wellbore #1 - No Surveys	10,497.13	6,734.00	1,864.97	1,560.62	6.128	CC
State 36-914 (PR) - Wellbore #1 - No Surveys	10,500.00	6,734.00	1,864.97	1,560.61	6.127	ES
State 36-914 (PR) - Wellbore #1 - No Surveys	10,600.00	6,734.00	1,867.81	1,562.83	6.124	SF
State B14-36 (PA) - Wellbore #1 - No Surveys	11,241.10	6,701.00	5,350.81	5,042.94	17.380	CC
State B14-36 (PA) - Wellbore #1 - No Surveys	11,300.00	6,701.00	5,351.13	5,042.87	17.359	ES
State B14-36 (PA) - Wellbore #1 - No Surveys	11,800.00	6,701.00	5,379.92	5,068.37	17.268	SF
State B41-36 (SI) - Wellbore #1 - No Surveys	8,052.33	6,717.00	1,974.82	1,682.77	6.762	CC, ES
State B41-36 (SI) - Wellbore #1 - No Surveys	8,100.00	6,717.00	1,975.39	1,683.22	6.761	SF
State C36-01 (SI) - Wellbore #1 - No Surveys	7,489.51	6,717.00	1,470.90	1,179.90	5.055	CC, ES
State C36-01 (SI) - Wellbore #1 - No Surveys	7,500.00	6,717.00	1,470.93	1,179.93	5.055	SF
State C36-04 (PR) - Wellbore #1 - No Surveys	7,648.34	6,688.00	5,800.45	5,510.40	19.998	CC, ES
State C36-04 (PR) - Wellbore #1 - No Surveys	7,900.00	6,688.00	5,805.91	5,515.39	19.985	SF
State C36-13 (SI) - Wellbore #1 - No Surveys	11,808.64	6,716.00	5,807.70	5,495.34	18.593	CC, ES
State C36-13 (SI) - Wellbore #1 - No Surveys	12,500.00	6,716.00	5,848.70	5,531.66	18.448	SF
State C36-15 (PR) - Wellbore #1 - No Surveys	11,813.75	6,715.00	3,173.16	2,860.80	10.159	CC, ES
State C36-15 (PR) - Wellbore #1 - No Surveys	12,000.00	6,715.00	3,178.62	2,865.00	10.135	SF
State C36-32D (SI) - Wellbore #1 - As Drilled	9,728.31	6,900.85	6,211.73	6,151.35	102.870	CC, ES
State C36-32D (SI) - Wellbore #1 - As Drilled	12,200.00	6,884.61	6,685.40	6,613.51	92.990	SF
State C36-33D (SI) - Wellbore #1 - Original Drilling	10,988.68	6,822.64	6,191.81	6,128.20	97.351	CC
State C36-33D (SI) - Wellbore #1 - Original Drilling	11,000.00	6,822.68	6,191.82	6,128.14	97.233	ES
State C36-33D (SI) - Wellbore #1 - Original Drilling	13,600.00	6,830.26	6,719.92	6,640.54	84.649	SF
State C36-99HZ (PR) - Wellbore #1 - As Drilled	10,800.00	10,537.02	1,474.64	1,411.40	23.320	ES
State C36-99HZ (PR) - Wellbore #1 - As Drilled	10,850.91	10,537.02	1,473.76	1,411.42	23.641	CC
State C36-99HZ (PR) - Wellbore #1 - As Drilled	12,000.00	10,537.02	1,868.79	1,760.50	17.257	SF
State D01-30D (SI) - Wellbore #1 - Original Drilling	12,381.14	7,160.69	6,333.19	6,245.98	72.619	CC
State D01-30D (SI) - Wellbore #1 - Original Drilling	12,400.00	7,160.63	6,333.22	6,245.84	72.486	ES
State D01-30D (SI) - Wellbore #1 - Original Drilling	14,500.00	7,153.78	6,678.23	6,576.40	65.582	SF

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

Noble Energy, Inc.
Anticollision Summary Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Booth DD06-775
Project:	Mustang	TVD Reference:	KB @ 4807.00ft
Reference Site:	CC Section 31	MD Reference:	KB @ 4807.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Booth DD06-775	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDMP
Reference Design:	APD-Rev 0	Offset TVD Reference:	Offset Datum

Summary

Site Name Offset Well - Wellbore - Design	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Between Ellipses (ft)	Separation Factor	Warning
CC Section 30						
JIGGER STATE CC #30-01(PR) - JIGGER STATE CC #3	6,216.23	6,039.00	5,709.65	5,566.42	39.864	CC
JIGGER STATE CC #30-01(PR) - JIGGER STATE CC #3	6,250.00	6,072.76	5,710.33	5,566.32	39.651	ES
JIGGER STATE CC #30-01(PR) - JIGGER STATE CC #3	6,750.00	6,515.10	5,871.23	5,717.34	38.152	SF
SPIKE ST GWS #CC 30-03(PA) - SPIKE ST GWS #CC 3	6,222.65	6,081.43	4,274.32	4,130.22	29.662	CC
SPIKE ST GWS #CC 30-03(PA) - SPIKE ST GWS #CC 3	6,250.00	6,108.76	4,274.90	4,130.16	29.536	ES
SPIKE ST GWS #CC 30-03(PA) - SPIKE ST GWS #CC 3	6,600.00	6,437.37	4,380.72	4,228.64	28.804	SF
SPIKE ST GWS #CC 30-04(PA) - SPIKE ST GWS #CC 3	6,237.95	6,174.13	4,298.98	4,262.76	118.712	CC, ES
SPIKE ST GWS #CC 30-04(PA) - SPIKE ST GWS #CC 3	6,450.00	6,370.81	4,334.15	4,297.33	117.693	SF
SPIKE ST GWS #CC 30-05(PA) - SPIKE ST GWS #CC 3	6,226.06	6,092.84	2,873.53	2,729.21	19.911	CC
SPIKE ST GWS #CC 30-05(PA) - SPIKE ST GWS #CC 3	6,250.00	6,116.76	2,873.97	2,729.10	19.838	ES
SPIKE ST GWS #CC 30-05(PA) - SPIKE ST GWS #CC 3	6,500.00	6,358.24	2,931.03	2,780.71	19.499	SF
SPIKE ST GWS #CC 30-06(SI) - SPIKE ST GWS #CC 30	6,221.58	6,077.36	3,008.90	2,864.88	20.892	CC
SPIKE ST GWS #CC 30-06(SI) - SPIKE ST GWS #CC 30	6,250.00	6,105.76	3,009.51	2,864.83	20.801	ES
SPIKE ST GWS #CC 30-06(SI) - SPIKE ST GWS #CC 30	6,500.00	6,347.24	3,066.10	2,915.97	20.423	SF
SPIKE ST GWS #CC 30-08(PR) - SPIKE ST GWS #CC 3	6,212.65	6,059.42	4,571.08	4,427.46	31.828	CC
SPIKE ST GWS #CC 30-08(PR) - SPIKE ST GWS #CC 3	6,250.00	6,096.76	4,571.77	4,427.29	31.642	ES
SPIKE ST GWS #CC 30-08(PR) - SPIKE ST GWS #CC 3	6,700.00	6,503.78	4,685.40	4,531.77	30.498	SF
SPIKE ST GWS #CC 30-09(SI) - SPIKE ST GWS #CC 30	6,202.37	6,079.15	3,841.24	3,697.29	26.684	CC
SPIKE ST GWS #CC 30-09(SI) - SPIKE ST GWS #CC 30	6,250.00	6,126.76	3,841.96	3,696.90	26.485	ES
SPIKE ST GWS #CC 30-09(SI) - SPIKE ST GWS #CC 30	6,800.00	6,601.54	3,952.66	3,796.91	25.378	SF
SPIKE ST GWS #CC 30-10(SI) - SPIKE ST GWS #CC 30	6,210.59	6,110.36	2,685.64	2,541.02	18.570	CC
SPIKE ST GWS #CC 30-10(SI) - SPIKE ST GWS #CC 30	6,250.00	6,149.76	2,686.34	2,540.80	18.458	ES
SPIKE ST GWS #CC 30-10(SI) - SPIKE ST GWS #CC 30	6,600.00	6,478.37	2,753.15	2,600.17	17.998	SF
SPIKE ST GWS #CC 30-12(PR) - SPIKE ST GWS #CC 3	6,227.97	6,118.74	1,602.17	1,457.34	11.063	CC
SPIKE ST GWS #CC 30-12(PR) - SPIKE ST GWS #CC 3	6,250.00	6,140.76	1,602.53	1,457.19	11.026	ES
SPIKE ST GWS #CC 30-12(PR) - SPIKE ST GWS #CC 3	6,400.00	6,288.55	1,624.12	1,475.42	10.922	SF
SPIKE ST GWS #CC 30-14(PR) - SPIKE ST GWS #CC 3	6,183.40	6,062.21	974.02	830.49	6.786	CC
SPIKE ST GWS #CC 30-14(PR) - SPIKE ST GWS #CC 3	6,250.00	6,128.76	974.83	829.74	6.719	ES
SPIKE ST GWS #CC 30-14(PR) - SPIKE ST GWS #CC 3	6,500.00	6,370.24	993.46	842.86	6.597	SF
SPIKE ST GWS #CC 30-15(SI) - SPIKE ST GWS #CC 30	6,136.22	6,030.29	2,172.74	2,030.02	15.225	CC
SPIKE ST GWS #CC 30-15(SI) - SPIKE ST GWS #CC 30	6,250.00	6,143.76	2,173.87	2,028.50	14.954	ES
SPIKE ST GWS #CC 30-15(SI) - SPIKE ST GWS #CC 30	6,800.00	6,618.54	2,220.24	2,064.13	14.222	SF
SPIKE ST GWS #CC 30-16(SI) - SPIKE ST GWS #CC 30	6,084.69	5,978.61	3,499.47	3,357.99	24.734	CC
SPIKE ST GWS #CC 30-16(SI) - SPIKE ST GWS #CC 30	6,300.00	6,192.59	3,502.05	3,355.55	23.905	ES
SPIKE ST GWS #CC 30-16(SI) - SPIKE ST GWS #CC 30	7,000.00	6,714.77	3,561.09	3,402.82	22.501	SF
SPIKE ST GWS CC #30-07(SI) - SPIKE ST GWS CC #30	6,216.74	6,088.51	3,696.04	3,551.81	25.627	CC
SPIKE ST GWS CC #30-07(SI) - SPIKE ST GWS CC #30	6,250.00	6,121.76	3,696.71	3,551.72	25.495	ES
SPIKE ST GWS CC #30-07(SI) - SPIKE ST GWS CC #30	6,600.00	6,450.37	3,783.74	3,631.35	24.829	SF
Spike State #CC30-19(SI) - Spike State #CC30-19 - No S	6,223.69	6,071.46	3,507.01	3,363.11	24.371	CC
Spike State #CC30-19(SI) - Spike State #CC30-19 - No S	6,250.00	6,097.76	3,507.55	3,363.04	24.272	ES
Spike State #CC30-19(SI) - Spike State #CC30-19 - No S	6,550.00	6,383.76	3,588.42	3,437.48	23.775	SF
Spike State #CC30-24(PR) - Spike State #CC30-24 - We	6,147.90	5,979.59	3,035.13	3,002.47	92.942	CC
Spike State #CC30-24(PR) - Spike State #CC30-24 - We	6,150.00	5,981.50	3,035.13	3,002.46	92.909	ES
Spike State #CC30-24(PR) - Spike State #CC30-24 - We	6,700.00	6,456.60	3,106.97	3,071.91	88.620	SF
Spike State #CC30-24(SI) - Spike State #CC30-24 - No S	6,209.57	6,104.35	1,772.15	1,627.65	12.264	CC
Spike State #CC30-24(SI) - Spike State #CC30-24 - No S	6,250.00	6,144.76	1,772.85	1,627.41	12.190	ES
Spike State #CC30-24(SI) - Spike State #CC30-24 - No S	6,500.00	6,386.24	1,808.35	1,657.42	11.981	SF
SPIKE STATE CC #30-11J(PA) - SPIKE STATE CC #30-1	6,219.69	6,103.47	1,334.83	1,190.29	9.235	CC
SPIKE STATE CC #30-11J(PA) - SPIKE STATE CC #30-1	6,250.00	6,133.76	1,335.48	1,190.23	9.195	ES
SPIKE STATE CC #30-11J(PA) - SPIKE STATE CC #30-1	6,350.00	6,232.95	1,346.70	1,199.19	9.130	SF
SPIKE STATE CC #30-13(PR) - SPIKE STATE CC #30-1	6,243.80	6,121.57	418.00	273.12	2.885	CC
SPIKE STATE CC #30-13(PR) - SPIKE STATE CC #30-1	6,300.00	6,177.59	419.16	272.98	2.868	ES
SPIKE STATE CC #30-13(PR) - SPIKE STATE CC #30-1	6,350.00	6,226.95	422.21	274.91	2.866	SF

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

Noble Energy, Inc.
Anticollision Summary Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Booth DD06-775
Project:	Mustang	TVD Reference:	KB @ 4807.00ft
Reference Site:	CC Section 31	MD Reference:	KB @ 4807.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Booth DD06-775	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDMP
Reference Design:	APD-Rev 0	Offset TVD Reference:	Offset Datum

Summary						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
CC Section 30						
Spike State CC #30-18(SI) - Spike State CC #30-18 - No	6,220.23	6,076.01	3,850.35	3,706.36	26.741	CC
Spike State CC #30-18(SI) - Spike State CC #30-18 - No	6,250.00	6,105.76	3,850.99	3,706.31	26.617	ES
Spike State CC #30-18(SI) - Spike State CC #30-18 - No	6,600.00	6,434.37	3,950.78	3,798.73	25.984	SF
SPIKE STATE CC #30-20(PR) - SPIKE STATE CC #30-2	6,222.63	6,089.40	2,152.36	2,008.10	14.920	CC
SPIKE STATE CC #30-20(PR) - SPIKE STATE CC #30-2	6,250.00	6,116.76	2,152.93	2,008.04	14.859	ES
SPIKE STATE CC #30-20(PR) - SPIKE STATE CC #30-2	6,450.00	6,312.07	2,191.69	2,042.38	14.678	SF
SPIKE STATE CC #30-21(PR) - SPIKE STATE CC #30-2	6,217.88	6,096.66	2,267.10	2,122.70	15.701	CC
SPIKE STATE CC #30-21(PR) - SPIKE STATE CC #30-2	6,250.00	6,128.76	2,267.76	2,122.62	15.625	ES
SPIKE STATE CC #30-21(PR) - SPIKE STATE CC #30-2	6,450.00	6,324.07	2,301.64	2,152.06	15.388	SF
SPIKE STATE CC #30-22(SI) - SPIKE STATE CC #30-22	6,181.16	5,940.31	3,735.93	3,702.07	110.345	CC, ES
SPIKE STATE CC #30-22(SI) - SPIKE STATE CC #30-22	6,550.00	6,245.81	3,801.04	3,765.74	107.657	SF
SPIKE STATE CC #30-IJ(PR) - SPIKE STATE CC #30-IJ	6,208.07	5,999.68	4,626.76	4,593.88	140.678	CC, ES
SPIKE STATE CC #30-IJ(PR) - SPIKE STATE CC #30-IJ	6,550.00	6,294.05	4,699.49	4,665.24	137.231	SF
SPIKE STATE GWS CC #30-02(PR) - SPIKE STATE GW	6,219.23	6,063.00	4,713.56	4,569.83	32.795	CC
SPIKE STATE GWS CC #30-02(PR) - SPIKE STATE GW	6,250.00	6,093.76	4,714.21	4,569.77	32.638	ES
SPIKE STATE GWS CC #30-02(PR) - SPIKE STATE GW	6,650.00	6,462.79	4,836.71	4,684.01	31.676	SF

Noble Energy, Inc.
Anticollision Summary Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Booth DD06-775
Project:	Mustang	TVD Reference:	KB @ 4807.00ft
Reference Site:	CC Section 31	MD Reference:	KB @ 4807.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Booth DD06-775	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDMP
Reference Design:	APD-Rev 0	Offset TVD Reference:	Offset Datum

Summary						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
CC Section 31						
BOOTH 11-31U (SI) - BOOTH #11-31U - No Surveys	7,678.88	6,733.00	339.58	180.35	2.133	CC, ES, SF
Booth 12-31U (SI) - Wellbore #1 - No Surveys	8,964.64	6,847.00	308.87	8.36	1.028	Level 2, CC, ES, SF
BOOTH 21-31U (SI) - BOOTH #21-31U - No Surveys	2,000.00	1,993.00	917.57	870.77	19.608	CC
BOOTH 21-31U (SI) - BOOTH #21-31U - No Surveys	7,670.39	6,763.00	955.07	795.25	5.976	ES, SF
Booth 22-31U (SI) - Wellbore #1 - No Surveys	8,905.26	6,847.00	968.78	668.54	3.227	CC, ES, SF
BOOTH 31-31 (SI) - BOOTH #31-31 - No Surveys	2,000.00	1,978.00	2,215.41	2,168.91	47.647	CC
BOOTH 31-31 (SI) - BOOTH #31-31 - No Surveys	7,665.33	6,748.00	2,272.08	2,112.56	14.244	ES
BOOTH 31-31 (SI) - BOOTH #31-31 - No Surveys	7,700.00	6,748.00	2,272.34	2,112.77	14.240	SF
BOOTH 31-AU (SI) - BOOTH #31-AU - No Surveys	8,374.30	6,743.00	276.06	114.87	1.713	CC, ES, SF
Booth 31DU (SI) - Wellbore #1 - No Surveys	10,928.65	6,827.00	2,935.59	2,624.76	9.444	CC, ES
Booth 31DU (SI) - Wellbore #1 - No Surveys	11,100.00	6,827.00	2,940.59	2,628.68	9.428	SF
Booth 32-31 (SI) - Wellbore #1 - No Surveys	8,797.18	6,758.00	2,055.23	1,759.01	6.938	CC
Booth 32-31 (SI) - Wellbore #1 - No Surveys	8,800.00	6,758.00	2,055.24	1,759.00	6.938	ES
Booth 32-31 (SI) - Wellbore #1 - No Surveys	8,900.00	6,758.00	2,057.80	1,761.16	6.937	SF
Booth 33-31U (SI) - Wellbore #1 - No Surveys	10,273.62	6,827.00	2,281.01	1,974.31	7.437	CC
Booth 33-31U (SI) - Wellbore #1 - No Surveys	10,300.00	6,827.00	2,281.16	1,974.31	7.434	ES
Booth 33-31U (SI) - Wellbore #1 - No Surveys	10,400.00	6,827.00	2,284.51	1,977.08	7.431	SF
Booth 34-31U (SI) - Wellbore #1 - No Surveys	11,611.51	6,807.00	2,141.97	1,827.34	6.808	CC, ES
Booth 34-31U (SI) - Wellbore #1 - No Surveys	11,700.00	6,807.00	2,143.80	1,828.59	6.801	SF
BOOTH 41-31 (SI) - BOOTH #41-31 - No Surveys	2,000.00	1,984.00	3,428.83	3,382.21	73.554	CC
BOOTH 41-31 (SI) - BOOTH #41-31 - No Surveys	7,735.22	6,754.00	3,484.39	3,324.63	21.811	ES
BOOTH 41-31 (SI) - BOOTH #41-31 - No Surveys	7,900.00	6,754.00	3,488.28	3,328.21	21.791	SF
Booth 42-31 (PA) - Wellbore #1 - No Surveys	8,886.44	6,758.00	3,585.28	3,288.68	12.088	CC
Booth 42-31 (PA) - Wellbore #1 - No Surveys	8,900.00	6,758.00	3,585.31	3,288.65	12.086	ES
Booth 42-31 (PA) - Wellbore #1 - No Surveys	9,100.00	6,758.00	3,591.64	3,294.10	12.071	SF
Booth 43-31U (SI) - Wellbore #1 - No Surveys	10,264.80	6,827.00	3,606.50	3,299.86	11.761	CC
Booth 43-31U (SI) - Wellbore #1 - No Surveys	10,300.00	6,827.00	3,606.67	3,299.82	11.754	ES
Booth 43-31U (SI) - Wellbore #1 - No Surveys	10,500.00	6,827.00	3,614.16	3,306.13	11.733	SF
Booth 44-31U (SI) - Wellbore #1 - No Surveys	11,569.01	6,817.00	3,601.27	3,286.53	11.442	CC
Booth 44-31U (SI) - Wellbore #1 - No Surveys	11,600.00	6,817.00	3,601.40	3,286.45	11.435	ES
Booth 44-31U (SI) - Wellbore #1 - No Surveys	11,800.00	6,817.00	3,608.67	3,292.41	11.411	SF
Booth CC31-13 (PR) - Wellbore #1 - No Surveys	11,579.77	6,819.00	230.39	-84.50	0.732	Level 1, CC, ES, SF
Booth CC31-17D (SI) - Booth #CC31-17D - Wellbore #1 -	100.00	75.86	2,256.32	2,256.10	9,973.144	CC
Booth CC31-17D (SI) - Booth #CC31-17D - Wellbore #1 -	200.00	163.70	2,256.59	2,255.81	2,927.572	ES
Booth CC31-17D (SI) - Booth #CC31-17D - Wellbore #1 -	9,100.00	6,800.01	3,052.79	3,006.04	65.297	SF
Booth DD06-715 - Wellbore #1 - APD-Rev 0	1,911.69	1,924.69	2,706.56	2,693.27	203.711	CC
Booth DD06-715 - Wellbore #1 - APD-Rev 0	2,000.00	2,000.00	2,706.59	2,692.72	195.102	ES
Booth DD06-715 - Wellbore #1 - APD-Rev 0	17,365.30	17,396.06	3,936.37	3,760.70	22.407	SF
Booth DD06-725 - Wellbore #1 - APD-Rev 0	1,912.12	1,924.12	2,681.45	2,668.16	201.828	CC
Booth DD06-725 - Wellbore #1 - APD-Rev 0	2,000.00	2,008.53	2,681.46	2,667.55	192.865	ES
Booth DD06-725 - Wellbore #1 - APD-Rev 0	17,365.30	17,222.12	3,282.78	3,107.16	18.693	SF
Booth DD06-730 - Wellbore #1 - APD-Rev 0	1,912.12	1,924.12	2,659.13	2,645.84	200.148	CC
Booth DD06-730 - Wellbore #1 - APD-Rev 0	2,100.00	2,095.72	2,659.58	2,645.01	182.508	ES
Booth DD06-730 - Wellbore #1 - APD-Rev 0	17,365.30	17,391.85	2,952.40	2,776.82	16.815	SF
Booth DD06-734 - Wellbore #1 - APD-Rev 0	6,921.53	6,945.35	2,590.77	2,542.99	54.220	CC
Booth DD06-734 - Wellbore #1 - APD-Rev 0	17,365.30	17,315.22	2,624.36	2,448.79	14.947	ES, SF
Booth DD06-745 - Wellbore #1 - APD-Rev 0	7,196.10	7,158.78	1,947.34	1,899.36	40.582	CC
Booth DD06-745 - Wellbore #1 - APD-Rev 0	17,365.30	17,287.37	1,971.89	1,796.67	11.254	ES, SF
Booth DD06-750 - Wellbore #1 - APD-Rev 0	2,000.00	1,999.00	66.97	53.10	4.828	CC, ES
Booth DD06-750 - Wellbore #1 - APD-Rev 0	2,100.00	2,097.09	68.47	53.90	4.700	SF
Booth DD06-755 - Wellbore #1 - APD-Rev 0	2,000.00	1,999.00	44.64	30.77	3.219	CC, ES
Booth DD06-755 - Wellbore #1 - APD-Rev 0	2,100.00	2,097.86	46.00	31.43	3.156	SF
Booth DD06-765 - Wellbore #1 - APD-Rev 0	2,000.00	2,000.00	22.32	8.45	1.609	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

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Booth DD06-775
Project:	Mustang	TVD Reference:	KB @ 4807.00ft
Reference Site:	CC Section 31	MD Reference:	KB @ 4807.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Booth DD06-775	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDMP
Reference Design:	APD-Rev 0	Offset TVD Reference:	Offset Datum

Summary						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
CC Section 31						
Booth DD06-765 - Wellbore #1 - APD-Rev 0	2,100.00	2,099.61	23.28	8.69	1.596	SF
Booth DD06-785 - Wellbore #1 - APD-Rev 0	2,000.00	1,999.00	22.32	8.45	1.609	CC, ES
Booth DD06-785 - Wellbore #1 - APD-Rev 0	2,100.00	2,098.55	23.19	8.61	1.591	SF
Sadie CC31-11 (PR) - Wellbore #1 - No Surveys	10,187.38	6,825.00	1,055.36	749.26	3.448	CC, ES
Sadie CC31-11 (PR) - Wellbore #1 - No Surveys	10,200.00	6,825.00	1,055.43	749.26	3.447	SF
Sadie CC31-12 (PR) - Wellbore #1 - No Surveys	10,363.64	6,807.00	157.69	-148.76	0.515	Level 1, CC, ES, SF
Sadie CC31-14 (PR) - Wellbore #1 - Wellbore #1 - As Dri	11,741.71	6,771.93	1,142.44	1,073.77	16.637	CC, ES
Sadie CC31-14 (PR) - Wellbore #1 - Wellbore #1 - As Dri	11,800.00	6,772.16	1,143.92	1,074.89	16.570	SF
UPV 31-13I3 (PR) - Wellbore #1 - No Surveys	11,260.04	6,830.00	196.17	-116.98	0.626	Level 1, CC, ES, SF
DD Section 06						
Guttersen 06D - Wellbore #1 - Wellbore #1 - As Drilled	16,213.63	6,610.75	2,902.97	2,801.32	28.558	CC, ES
Guttersen 06D - Wellbore #1 - Wellbore #1 - As Drilled	16,600.00	6,615.94	2,928.57	2,824.48	28.137	SF
Guttersen 23-06 - Wellbore #1 - Wellbore #1 - As Drilled	15,603.50	6,774.02	850.94	753.41	8.725	CC, ES, SF
Guttersen 24-06 - Wellbore #1 - Wellbore #1 - As Drilled	16,931.50	6,780.72	937.20	829.14	8.673	CC, ES
Guttersen 24-06 - Wellbore #1 - Wellbore #1 - As Drilled	17,000.00	6,784.55	939.69	831.30	8.670	SF
Guttersen 33-06 - Wellbore #1 - Wellbore #1 - As Drilled	15,524.43	6,810.82	2,246.13	2,149.02	23.131	CC, ES
Guttersen 33-06 - Wellbore #1 - Wellbore #1 - As Drilled	15,800.00	6,820.64	2,262.95	2,164.20	22.915	SF
Guttersen 34-06 - Wellbore #1 - Wellbore #1 - As Drilled	16,920.82	6,766.20	2,330.04	2,222.19	21.605	CC, ES
Guttersen 34-06 - Wellbore #1 - Wellbore #1 - As Drilled	17,200.00	6,771.47	2,346.69	2,237.20	21.432	SF
Guttersen 43-06 - Wellbore #1 - Wellbore #1 - As Drilled	15,597.19	6,641.17	3,620.07	3,523.07	37.321	CC
Guttersen 43-06 - Wellbore #1 - Wellbore #1 - As Drilled	15,600.00	6,641.19	3,620.07	3,523.05	37.313	ES
Guttersen 43-06 - Wellbore #1 - Wellbore #1 - As Drilled	16,200.00	6,644.18	3,669.91	3,569.13	36.416	SF
Guttersen 44-06 - Wellbore #1 - Wellbore #1 - As Drilled	16,903.88	6,816.65	3,568.47	3,460.57	33.073	CC, ES
Guttersen 44-06 - Wellbore #1 - Wellbore #1 - As Drilled	17,365.30	6,782.97	3,598.18	3,487.44	32.493	SF

Noble Energy, Inc.
Anticollision Summary Report

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Project:	Mustang	TVD Reference:	KB @ 4807.00ft
Reference Site:	CC Section 31	MD Reference:	KB @ 4807.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Booth DD06-775	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDMP
Reference Design:	APD-Rev 0	Offset TVD Reference:	Offset Datum

Reference Depths are relative to KB @ 4807.00ft

Offset Depths are relative to Offset Datum

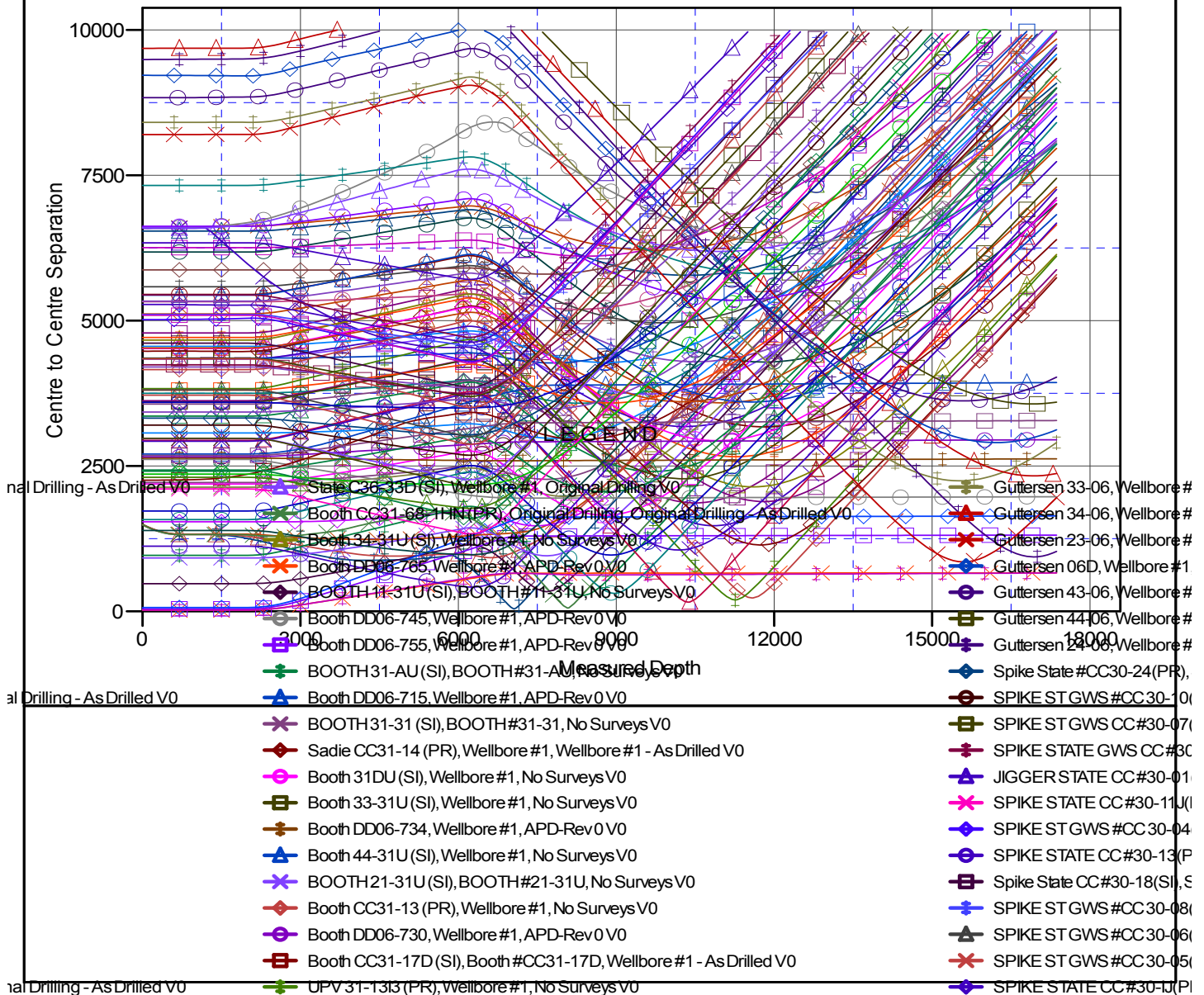
Central Meridian is -105.5000000

Coordinates are relative to: Booth DD06-775

Coordinate System is US State Plane 1983, Colorado Northern Zone

Grid Convergence at Surface is: 0.66°

Ladder Plot

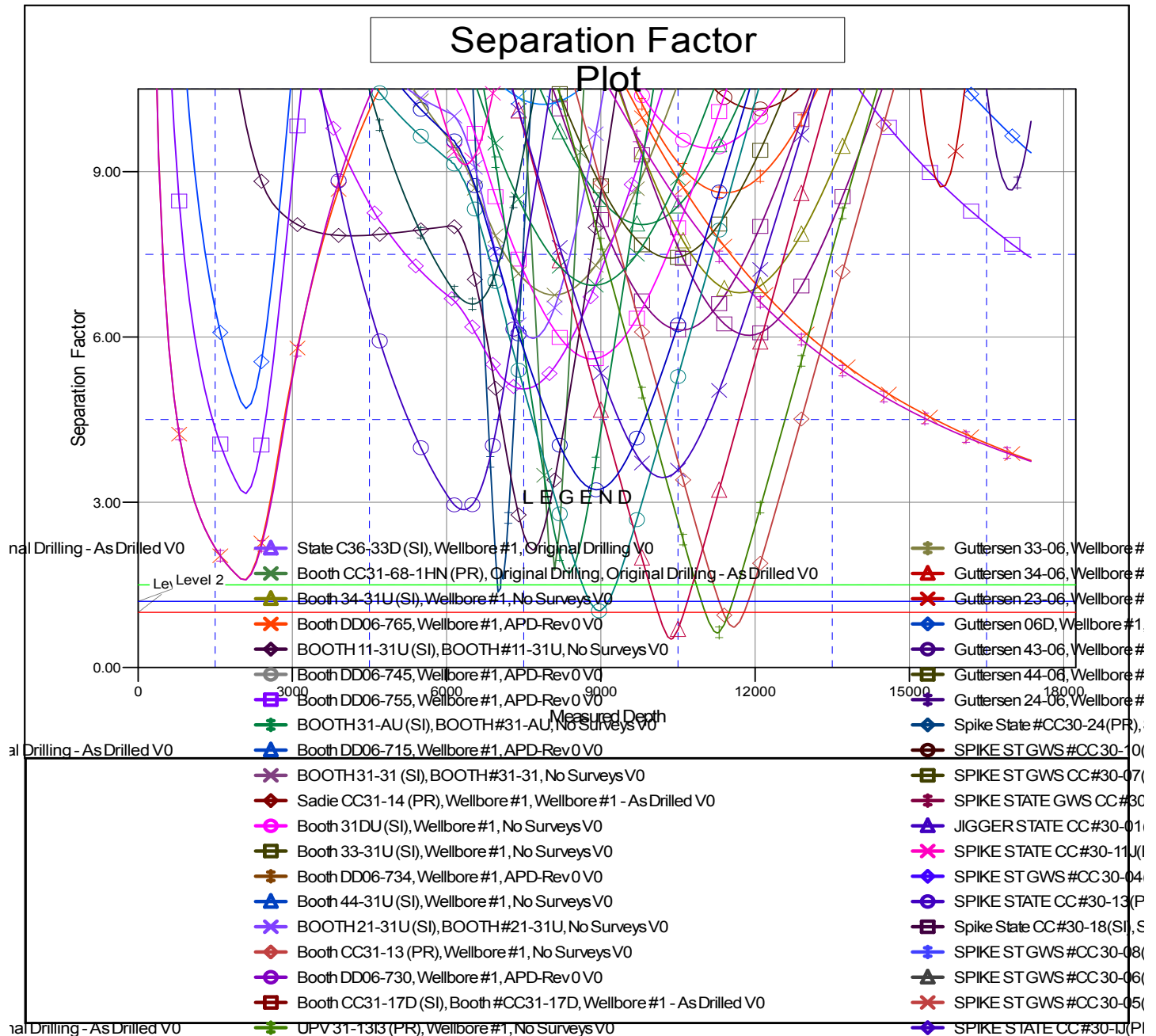


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Anticollision Summary Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Booth DD06-775
Project:	Mustang	TVD Reference:	KB @ 4807.00ft
Reference Site:	CC Section 31	MD Reference:	KB @ 4807.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Booth DD06-775	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDMP
Reference Design:	APD-Rev 0	Offset TVD Reference:	Offset Datum

Grid Convergence at Surface is: 0.66°



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