

Project: Mustang
 Site: CC Section 31
 Well: Booth CC30-725
 Wellbore: Booth CC30-725
 Design: Plan #1

Northern Region - DJ Basin

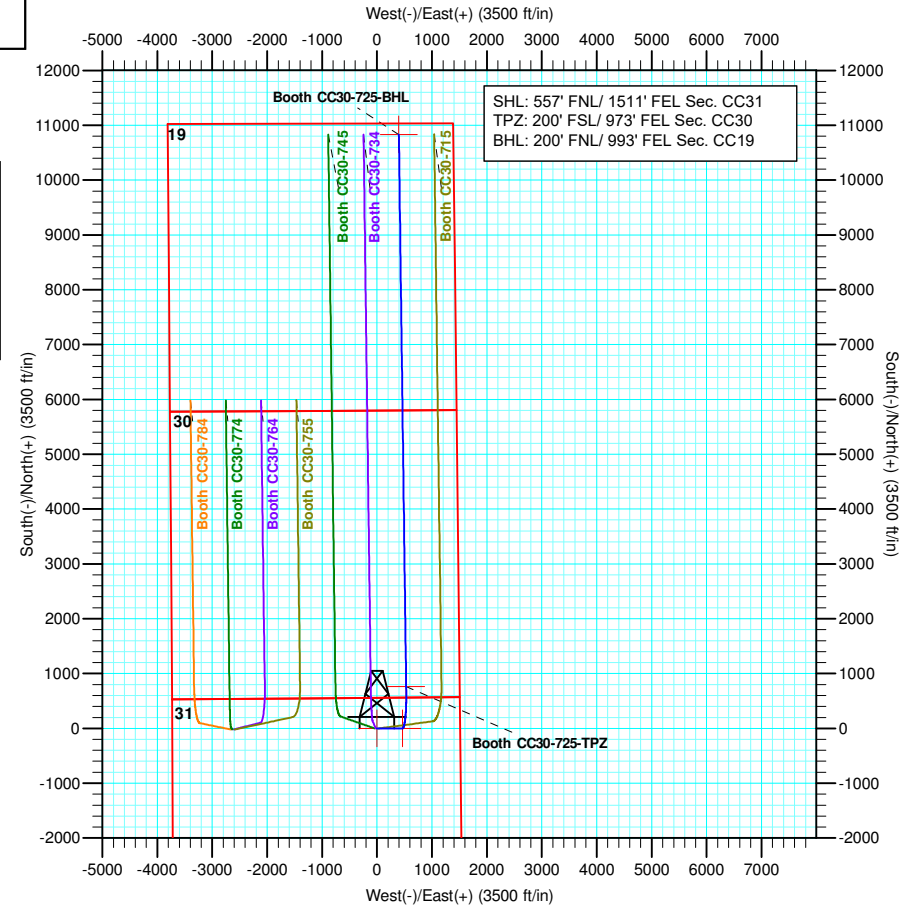
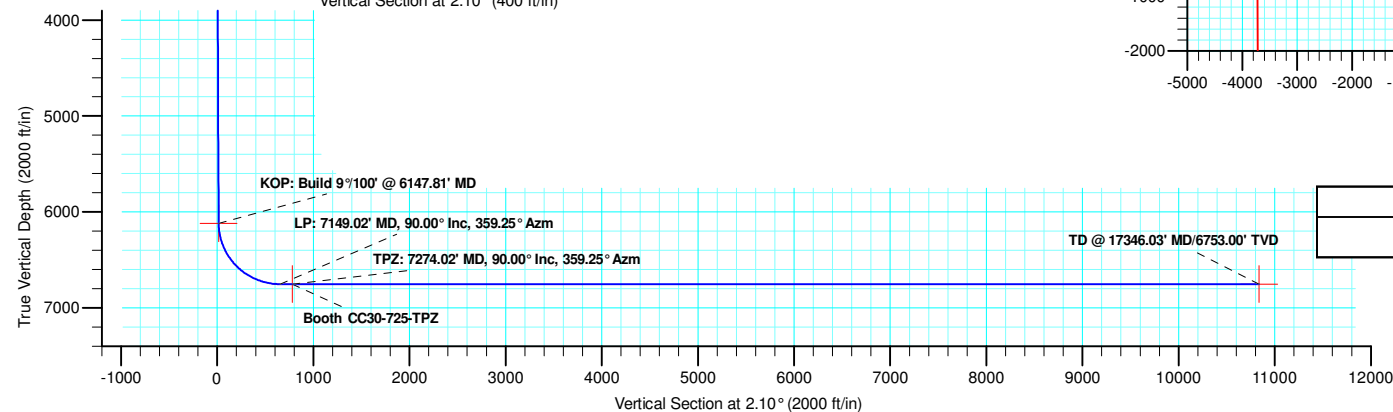
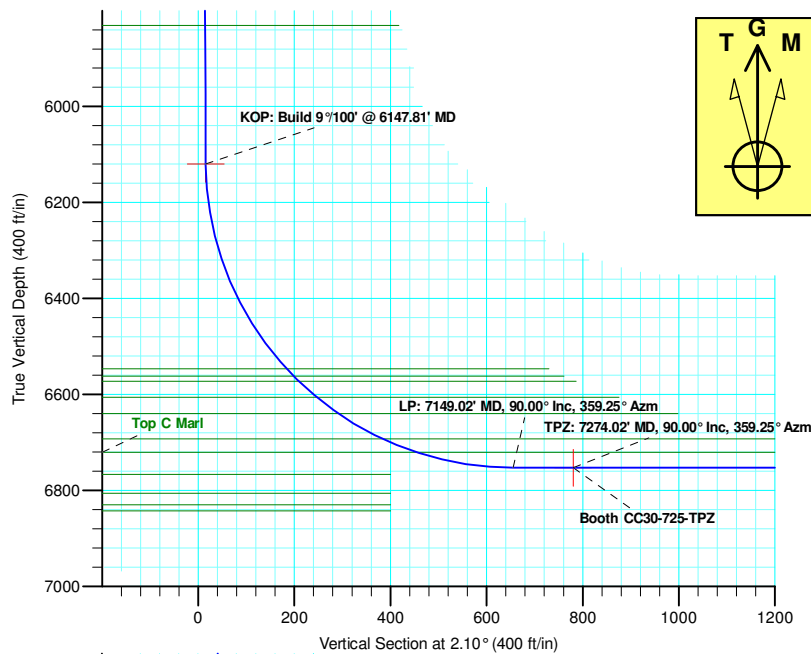
Geodetic System: US State Plane 1983
 Datum: North American Datum 1983
 Ellipsoid: GRS 1980
 Zone: Colorado Northern Zone
 System Datum: Mean Sea Level

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	2200.00	0.00	0.00	2200.00	0.00	0.00	0.00	0.00	0.00	
3	2551.05	7.02	90.13	2550.18	-0.05	21.48	2.00	90.13	0.74	
4	6147.81	7.02	90.13	6119.97	-1.05	461.13	0.00	0.00	15.82	
5	7149.02	90.00	359.25	6753.00	636.53	530.71	9.00	-90.88	655.53	
6	7274.02	90.00	359.25	6753.00	761.52	529.07	0.00	0.00	780.38	Booth CC30-725-TPZ
7	17346.03	90.00	359.25	6753.00	10832.67	396.77	0.00	0.00	10839.93	Booth CC30-725-BHL

WELL DETAILS: Booth CC30-725

+N/-S	+E/-W	Northing	Ground Level: Easting	4787.00 Latitude	Longitude	Slot
0.00	0.00	1344504.85	3285584.06	40.2745410	-104.4764730	



Plan: Plan #1 (Booth CC30-725/Booth CC30-725)

Created By: Keith Noack Date: 11:20, October 12 2018

Northern Region - DJ Basin

Mustang

CC Section 31

Booth CC30-725

Booth CC30-725

Plan: Plan #1

Standard Planning Report

12 October, 2018

Noble Energy, Inc.

Planning Report

Database:	EDMP	Local Co-ordinate Reference:	Well Booth CC30-725
Company:	Northern Region - DJ Basin	TVD Reference:	Well @ 4817.00ft
Project:	Mustang	MD Reference:	Well @ 4817.00ft
Site:	CC Section 31	North Reference:	Grid
Well:	Booth CC30-725	Survey Calculation Method:	Minimum Curvature
Wellbore:	Booth CC30-725		
Design:	Plan #1		

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 CC30-725					
Well Position	+N/-S	4,208.28 ft	Northing:	1,344,504.85 usft	Latitude:	40.2745410
	+E/-W	1,559.55 ft	Easting:	3,285,584.07 usft	Longitude:	-104.4764730
Position Uncertainty		0.00 ft	Wellhead Elevation:		Ground Level:	4,787.00 ft

Wellbore	Booth CC30-725				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	10/11/2018	7.91	66.76	52,207.05144257

Design	Plan #1			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.00	0.00	0.00	2.10

Plan Sections										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,200.00	0.00	0.00	2,200.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,551.05	7.02	90.13	2,550.18	-0.05	21.48	2.00	2.00	0.00	90.13	
6,147.82	7.02	90.13	6,119.97	-1.05	461.13	0.00	0.00	0.00	0.00	
7,149.02	90.00	359.25	6,753.00	636.53	530.71	9.00	8.29	-9.08	-90.88	
7,274.02	90.00	359.25	6,753.00	761.52	529.07	0.00	0.00	0.00	0.00	Booth CC30-725-TI
17,346.03	90.00	359.25	6,753.00	10,832.67	396.77	0.00	0.00	0.00	0.00	Booth CC30-725-BI

Noble Energy, Inc.

Planning Report

Database:	EDMP	Local Co-ordinate Reference:	Well Booth CC30-725
Company:	Northern Region - DJ Basin	TVD Reference:	Well @ 4817.00ft
Project:	Mustang	MD Reference:	Well @ 4817.00ft
Site:	CC Section 31	North Reference:	Grid
Well:	Booth CC30-725	Survey Calculation Method:	Minimum Curvature
Wellbore:	Booth CC30-725		
Design:	Plan #1		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00
401.00	0.00	0.00	401.00	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
667.00	0.00	0.00	667.00	0.00	0.00	0.00	0.00	0.00	0.00
Upper Pierre Aquifer Top									
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	0.00
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00
1,100.00	0.00	0.00	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00
1,200.00	0.00	0.00	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00
1,300.00	0.00	0.00	1,300.00	0.00	0.00	0.00	0.00	0.00	0.00
1,400.00	0.00	0.00	1,400.00	0.00	0.00	0.00	0.00	0.00	0.00
1,500.00	0.00	0.00	1,500.00	0.00	0.00	0.00	0.00	0.00	0.00
1,587.00	0.00	0.00	1,587.00	0.00	0.00	0.00	0.00	0.00	0.00
Upper Pierre Aquifer Base									
1,600.00	0.00	0.00	1,600.00	0.00	0.00	0.00	0.00	0.00	0.00
1,700.00	0.00	0.00	1,700.00	0.00	0.00	0.00	0.00	0.00	0.00
1,800.00	0.00	0.00	1,800.00	0.00	0.00	0.00	0.00	0.00	0.00
1,900.00	0.00	0.00	1,900.00	0.00	0.00	0.00	0.00	0.00	0.00
2,000.00	0.00	0.00	2,000.00	0.00	0.00	0.00	0.00	0.00	0.00
2,100.00	0.00	0.00	2,100.00	0.00	0.00	0.00	0.00	0.00	0.00
2,200.00	0.00	0.00	2,200.00	0.00	0.00	0.00	0.00	0.00	0.00
Build: 2°/100'									
2,300.00	2.00	90.13	2,299.98	0.00	1.75	0.06	2.00	2.00	0.00
2,400.00	4.00	90.13	2,399.84	-0.02	6.98	0.24	2.00	2.00	0.00
2,500.00	6.00	90.13	2,499.45	-0.04	15.69	0.54	2.00	2.00	0.00
2,551.05	7.02	90.13	2,550.18	-0.05	21.48	0.74	2.00	2.00	0.00
Hold: 7.02° Inc, 90.13° Azm									
2,600.00	7.02	90.13	2,598.76	-0.06	27.47	0.94	0.00	0.00	0.00
2,700.00	7.02	90.13	2,698.01	-0.09	39.69	1.36	0.00	0.00	0.00
2,800.00	7.02	90.13	2,797.26	-0.12	51.91	1.78	0.00	0.00	0.00
2,900.00	7.02	90.13	2,896.51	-0.15	64.14	2.20	0.00	0.00	0.00
3,000.00	7.02	90.13	2,995.76	-0.17	76.36	2.62	0.00	0.00	0.00
3,100.00	7.02	90.13	3,095.01	-0.20	88.58	3.04	0.00	0.00	0.00
3,200.00	7.02	90.13	3,194.26	-0.23	100.81	3.46	0.00	0.00	0.00
3,300.00	7.02	90.13	3,293.51	-0.26	113.03	3.88	0.00	0.00	0.00
3,400.00	7.02	90.13	3,392.76	-0.29	125.25	4.30	0.00	0.00	0.00
3,500.00	7.02	90.13	3,492.01	-0.31	137.48	4.72	0.00	0.00	0.00
3,600.00	7.02	90.13	3,591.26	-0.34	149.70	5.14	0.00	0.00	0.00
3,668.26	7.02	90.13	3,659.00	-0.36	158.04	5.42	0.00	0.00	0.00
Parkman									
3,700.00	7.02	90.13	3,690.51	-0.37	161.92	5.56	0.00	0.00	0.00
3,800.00	7.02	90.13	3,789.76	-0.40	174.15	5.98	0.00	0.00	0.00
3,900.00	7.02	90.13	3,889.01	-0.43	186.37	6.40	0.00	0.00	0.00
4,000.00	7.02	90.13	3,988.26	-0.45	198.59	6.81	0.00	0.00	0.00
4,100.00	7.02	90.13	4,087.51	-0.48	210.82	7.23	0.00	0.00	0.00

Noble Energy, Inc.

Planning Report

Database:	EDMP	Local Co-ordinate Reference:	Well Booth CC30-725
Company:	Northern Region - DJ Basin	TVD Reference:	Well @ 4817.00ft
Project:	Mustang	MD Reference:	Well @ 4817.00ft
Site:	CC Section 31	North Reference:	Grid
Well:	Booth CC30-725	Survey Calculation Method:	Minimum Curvature
Wellbore:	Booth CC30-725		
Design:	Plan #1		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
4,200.00	7.02	90.13	4,186.76	-0.51	223.04	7.65	0.00	0.00	0.00
4,285.89	7.02	90.13	4,272.00	-0.53	233.54	8.01	0.00	0.00	0.00
Sussex									
4,300.00	7.02	90.13	4,286.01	-0.54	235.26	8.07	0.00	0.00	0.00
4,400.00	7.02	90.13	4,385.26	-0.57	247.49	8.49	0.00	0.00	0.00
4,500.00	7.02	90.13	4,484.51	-0.59	259.71	8.91	0.00	0.00	0.00
4,600.00	7.02	90.13	4,583.76	-0.62	271.93	9.33	0.00	0.00	0.00
4,700.00	7.02	90.13	4,683.01	-0.65	284.16	9.75	0.00	0.00	0.00
4,800.00	7.02	90.13	4,782.26	-0.68	296.38	10.17	0.00	0.00	0.00
4,900.00	7.02	90.13	4,881.51	-0.71	308.60	10.59	0.00	0.00	0.00
4,916.62	7.02	90.13	4,898.00	-0.71	310.63	10.66	0.00	0.00	0.00
Shannon									
5,000.00	7.02	90.13	4,980.76	-0.73	320.83	11.01	0.00	0.00	0.00
5,100.00	7.02	90.13	5,080.01	-0.76	333.05	11.43	0.00	0.00	0.00
5,200.00	7.02	90.13	5,179.26	-0.79	345.27	11.85	0.00	0.00	0.00
5,300.00	7.02	90.13	5,278.51	-0.82	357.50	12.27	0.00	0.00	0.00
5,400.00	7.02	90.13	5,377.76	-0.85	369.72	12.69	0.00	0.00	0.00
5,500.00	7.02	90.13	5,477.01	-0.87	381.94	13.11	0.00	0.00	0.00
5,600.00	7.02	90.13	5,576.26	-0.90	394.17	13.53	0.00	0.00	0.00
5,700.00	7.02	90.13	5,675.51	-0.93	406.39	13.95	0.00	0.00	0.00
5,800.00	7.02	90.13	5,774.76	-0.96	418.61	14.37	0.00	0.00	0.00
5,856.67	7.02	90.13	5,831.00	-0.97	425.54	14.60	0.00	0.00	0.00
Teepee Buttes									
5,900.00	7.02	90.13	5,874.01	-0.99	430.84	14.78	0.00	0.00	0.00
6,000.00	7.02	90.13	5,973.26	-1.01	443.06	15.20	0.00	0.00	0.00
6,100.00	7.02	90.13	6,072.51	-1.04	455.28	15.62	0.00	0.00	0.00
6,147.82	7.02	90.13	6,119.97	-1.05	461.13	15.82	0.00	0.00	0.00
KOP: Build 9°/100' @ 6147.81' MD									
6,150.00	7.02	88.52	6,122.13	-1.05	461.40	15.84	9.00	-0.01	-73.63
6,200.00	8.38	55.96	6,171.71	1.07	467.47	18.18	9.00	2.72	-65.13
6,250.00	11.47	36.63	6,220.97	7.10	473.46	24.42	9.00	6.17	-38.66
6,300.00	15.26	26.07	6,269.61	17.00	479.32	34.54	9.00	7.60	-21.12
6,350.00	19.36	19.76	6,317.34	30.72	485.02	48.46	9.00	8.19	-12.62
6,400.00	23.60	15.62	6,363.86	48.17	490.52	66.09	9.00	8.48	-8.29
6,450.00	27.92	12.69	6,408.88	69.24	495.79	87.34	9.00	8.63	-5.87
6,500.00	32.28	10.49	6,452.13	93.80	500.79	112.07	9.00	8.73	-4.40
6,550.00	36.67	8.77	6,493.34	121.70	505.50	140.12	9.00	8.79	-3.45
6,600.00	41.09	7.37	6,532.25	152.77	509.88	171.33	9.00	8.83	-2.80
6,619.84	42.84	6.88	6,547.00	165.93	511.53	184.54	9.00	8.85	-2.46
Sharon Springs									
6,640.61	44.68	6.40	6,562.00	180.20	513.19	198.86	9.00	8.86	-2.30
Top A Chalk									
6,650.00	45.52	6.19	6,568.63	186.81	513.92	205.50	9.00	8.87	-2.19
6,656.27	46.07	6.06	6,573.00	191.28	514.40	209.98	9.00	8.87	-2.14
Top A Marl									
6,700.00	49.95	5.19	6,602.25	223.62	517.57	242.42	9.00	8.88	-1.99
6,705.86	50.47	5.08	6,606.00	228.11	517.98	246.91	9.00	8.89	-1.86
Top B Chalk									
6,750.00	54.40	4.31	6,632.91	262.97	520.83	281.86	9.00	8.89	-1.75
6,762.35	55.50	4.10	6,640.00	273.06	521.57	291.97	9.00	8.90	-1.64
Top B Marl									
6,800.00	58.85	3.52	6,660.41	304.62	523.67	323.58	9.00	8.90	-1.56
6,850.00	63.31	2.80	6,684.58	348.31	526.07	367.33	9.00	8.91	-1.44

Noble Energy, Inc.

Planning Report

Database:	EDMP	Local Co-ordinate Reference:	Well Booth CC30-725
Company:	Northern Region - DJ Basin	TVD Reference:	Well @ 4817.00ft
Project:	Mustang	MD Reference:	Well @ 4817.00ft
Site:	CC Section 31	North Reference:	Grid
Well:	Booth CC30-725	Survey Calculation Method:	Minimum Curvature
Wellbore:	Booth CC30-725		
Design:	Plan #1		

Planned Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
6,869.32	65.03	2.53	6,693.00	365.68	526.88	384.72	9.00	8.92	-1.36	
Top C Chalk										
6,900.00	67.77	2.13	6,705.28	393.76	528.03	412.83	9.00	8.92	-1.31	
6,945.53	71.83	1.56	6,721.00	436.46	529.40	455.54	9.00	8.92	-1.25	
Top C Marl										
6,950.00	72.23	1.51	6,722.38	440.71	529.52	459.80	9.00	8.93	-1.22	
7,000.00	76.69	0.92	6,735.77	488.86	530.53	507.95	9.00	8.93	-1.19	
7,050.00	81.16	0.35	6,745.38	537.91	531.07	556.99	9.00	8.93	-1.14	
7,100.00	85.62	359.79	6,751.13	587.57	531.13	606.61	9.00	8.93	-1.12	
7,149.02	90.00	359.25	6,753.00	636.53	530.71	655.53	9.00	8.93	-1.10	
LP: 7149.02' MD, 90.00° Inc, 359.25° Azm										
7,200.00	90.00	359.25	6,753.00	687.51	530.05	706.45	0.00	0.00	0.00	
7,274.02	90.00	359.25	6,753.00	761.52	529.07	780.38	0.00	0.00	0.00	
TPZ: 7274.02' MD, 90.00° Inc, 359.25° Azm										
7,300.00	90.00	359.25	6,753.00	787.50	528.73	806.33	0.00	0.00	0.00	
7,400.00	90.00	359.25	6,753.00	887.50	527.42	906.21	0.00	0.00	0.00	
7,500.00	90.00	359.25	6,753.00	987.49	526.10	1,006.08	0.00	0.00	0.00	
7,600.00	90.00	359.25	6,753.00	1,087.48	524.79	1,105.96	0.00	0.00	0.00	
7,700.00	90.00	359.25	6,753.00	1,187.47	523.48	1,205.84	0.00	0.00	0.00	
7,800.00	90.00	359.25	6,753.00	1,287.46	522.16	1,305.71	0.00	0.00	0.00	
7,900.00	90.00	359.25	6,753.00	1,387.45	520.85	1,405.59	0.00	0.00	0.00	
8,000.00	90.00	359.25	6,753.00	1,487.44	519.54	1,505.46	0.00	0.00	0.00	
8,100.00	90.00	359.25	6,753.00	1,587.44	518.22	1,605.34	0.00	0.00	0.00	
8,200.00	90.00	359.25	6,753.00	1,687.43	516.91	1,705.22	0.00	0.00	0.00	
8,300.00	90.00	359.25	6,753.00	1,787.42	515.60	1,805.09	0.00	0.00	0.00	
8,400.00	90.00	359.25	6,753.00	1,887.41	514.28	1,904.97	0.00	0.00	0.00	
8,500.00	90.00	359.25	6,753.00	1,987.40	512.97	2,004.85	0.00	0.00	0.00	
8,600.00	90.00	359.25	6,753.00	2,087.39	511.66	2,104.72	0.00	0.00	0.00	
8,700.00	90.00	359.25	6,753.00	2,187.38	510.34	2,204.60	0.00	0.00	0.00	
8,800.00	90.00	359.25	6,753.00	2,287.38	509.03	2,304.47	0.00	0.00	0.00	
8,900.00	90.00	359.25	6,753.00	2,387.37	507.71	2,404.35	0.00	0.00	0.00	
9,000.00	90.00	359.25	6,753.00	2,487.36	506.40	2,504.23	0.00	0.00	0.00	
9,100.00	90.00	359.25	6,753.00	2,587.35	505.09	2,604.10	0.00	0.00	0.00	
9,200.00	90.00	359.25	6,753.00	2,687.34	503.77	2,703.98	0.00	0.00	0.00	
9,300.00	90.00	359.25	6,753.00	2,787.33	502.46	2,803.86	0.00	0.00	0.00	
9,400.00	90.00	359.25	6,753.00	2,887.32	501.15	2,903.73	0.00	0.00	0.00	
9,500.00	90.00	359.25	6,753.00	2,987.31	499.83	3,003.61	0.00	0.00	0.00	
9,600.00	90.00	359.25	6,753.00	3,087.31	498.52	3,103.48	0.00	0.00	0.00	
9,700.00	90.00	359.25	6,753.00	3,187.30	497.21	3,203.36	0.00	0.00	0.00	
9,800.00	90.00	359.25	6,753.00	3,287.29	495.89	3,303.24	0.00	0.00	0.00	
9,900.00	90.00	359.25	6,753.00	3,387.28	494.58	3,403.11	0.00	0.00	0.00	
10,000.00	90.00	359.25	6,753.00	3,487.27	493.27	3,502.99	0.00	0.00	0.00	
10,100.00	90.00	359.25	6,753.00	3,587.26	491.95	3,602.87	0.00	0.00	0.00	
10,200.00	90.00	359.25	6,753.00	3,687.25	490.64	3,702.74	0.00	0.00	0.00	
10,300.00	90.00	359.25	6,753.00	3,787.25	489.32	3,802.62	0.00	0.00	0.00	
10,400.00	90.00	359.25	6,753.00	3,887.24	488.01	3,902.49	0.00	0.00	0.00	
10,500.00	90.00	359.25	6,753.00	3,987.23	486.70	4,002.37	0.00	0.00	0.00	
10,600.00	90.00	359.25	6,753.00	4,087.22	485.38	4,102.25	0.00	0.00	0.00	
10,700.00	90.00	359.25	6,753.00	4,187.21	484.07	4,202.12	0.00	0.00	0.00	
10,800.00	90.00	359.25	6,753.00	4,287.20	482.76	4,302.00	0.00	0.00	0.00	
10,900.00	90.00	359.25	6,753.00	4,387.19	481.44	4,401.88	0.00	0.00	0.00	
11,000.00	90.00	359.25	6,753.00	4,487.19	480.13	4,501.75	0.00	0.00	0.00	
11,100.00	90.00	359.25	6,753.00	4,587.18	478.82	4,601.63	0.00	0.00	0.00	

Noble Energy, Inc.

Planning Report

Database:	EDMP	Local Co-ordinate Reference:	Well Booth CC30-725
Company:	Northern Region - DJ Basin	TVD Reference:	Well @ 4817.00ft
Project:	Mustang	MD Reference:	Well @ 4817.00ft
Site:	CC Section 31	North Reference:	Grid
Well:	Booth CC30-725	Survey Calculation Method:	Minimum Curvature
Wellbore:	Booth CC30-725		
Design:	Plan #1		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
11,200.00	90.00	359.25	6,753.00	4,687.17	477.50	4,701.51	0.00	0.00	0.00
11,300.00	90.00	359.25	6,753.00	4,787.16	476.19	4,801.38	0.00	0.00	0.00
11,400.00	90.00	359.25	6,753.00	4,887.15	474.88	4,901.26	0.00	0.00	0.00
11,500.00	90.00	359.25	6,753.00	4,987.14	473.56	5,001.13	0.00	0.00	0.00
11,600.00	90.00	359.25	6,753.00	5,087.13	472.25	5,101.01	0.00	0.00	0.00
11,700.00	90.00	359.25	6,753.00	5,187.13	470.93	5,200.89	0.00	0.00	0.00
11,800.00	90.00	359.25	6,753.00	5,287.12	469.62	5,300.76	0.00	0.00	0.00
11,900.00	90.00	359.25	6,753.00	5,387.11	468.31	5,400.64	0.00	0.00	0.00
12,000.00	90.00	359.25	6,753.00	5,487.10	466.99	5,500.52	0.00	0.00	0.00
12,100.00	90.00	359.25	6,753.00	5,587.09	465.68	5,600.39	0.00	0.00	0.00
12,200.00	90.00	359.25	6,753.00	5,687.08	464.37	5,700.27	0.00	0.00	0.00
12,300.00	90.00	359.25	6,753.00	5,787.07	463.05	5,800.14	0.00	0.00	0.00
12,400.00	90.00	359.25	6,753.00	5,887.06	461.74	5,900.02	0.00	0.00	0.00
12,500.00	90.00	359.25	6,753.00	5,987.06	460.43	5,999.90	0.00	0.00	0.00
12,600.00	90.00	359.25	6,753.00	6,087.05	459.11	6,099.77	0.00	0.00	0.00
12,700.00	90.00	359.25	6,753.00	6,187.04	457.80	6,199.65	0.00	0.00	0.00
12,800.00	90.00	359.25	6,753.00	6,287.03	456.49	6,299.53	0.00	0.00	0.00
12,900.00	90.00	359.25	6,753.00	6,387.02	455.17	6,399.40	0.00	0.00	0.00
13,000.00	90.00	359.25	6,753.00	6,487.01	453.86	6,499.28	0.00	0.00	0.00
13,100.00	90.00	359.25	6,753.00	6,587.00	452.55	6,599.15	0.00	0.00	0.00
13,200.00	90.00	359.25	6,753.00	6,687.00	451.23	6,699.03	0.00	0.00	0.00
13,300.00	90.00	359.25	6,753.00	6,786.99	449.92	6,798.91	0.00	0.00	0.00
13,400.00	90.00	359.25	6,753.00	6,886.98	448.60	6,898.78	0.00	0.00	0.00
13,500.00	90.00	359.25	6,753.00	6,986.97	447.29	6,998.66	0.00	0.00	0.00
13,600.00	90.00	359.25	6,753.00	7,086.96	445.98	7,098.54	0.00	0.00	0.00
13,700.00	90.00	359.25	6,753.00	7,186.95	444.66	7,198.41	0.00	0.00	0.00
13,800.00	90.00	359.25	6,753.00	7,286.94	443.35	7,298.29	0.00	0.00	0.00
13,900.00	90.00	359.25	6,753.00	7,386.94	442.04	7,398.17	0.00	0.00	0.00
14,000.00	90.00	359.25	6,753.00	7,486.93	440.72	7,498.04	0.00	0.00	0.00
14,100.00	90.00	359.25	6,753.00	7,586.92	439.41	7,597.92	0.00	0.00	0.00
14,200.00	90.00	359.25	6,753.00	7,686.91	438.10	7,697.79	0.00	0.00	0.00
14,300.00	90.00	359.25	6,753.00	7,786.90	436.78	7,797.67	0.00	0.00	0.00
14,400.00	90.00	359.25	6,753.00	7,886.89	435.47	7,897.55	0.00	0.00	0.00
14,500.00	90.00	359.25	6,753.00	7,986.88	434.16	7,997.42	0.00	0.00	0.00
14,600.00	90.00	359.25	6,753.00	8,086.87	432.84	8,097.30	0.00	0.00	0.00
14,700.00	90.00	359.25	6,753.00	8,186.87	431.53	8,197.18	0.00	0.00	0.00
14,800.00	90.00	359.25	6,753.00	8,286.86	430.21	8,297.05	0.00	0.00	0.00
14,900.00	90.00	359.25	6,753.00	8,386.85	428.90	8,396.93	0.00	0.00	0.00
15,000.00	90.00	359.25	6,753.00	8,486.84	427.59	8,496.80	0.00	0.00	0.00
15,100.00	90.00	359.25	6,753.00	8,586.83	426.27	8,596.68	0.00	0.00	0.00
15,200.00	90.00	359.25	6,753.00	8,686.82	424.96	8,696.56	0.00	0.00	0.00
15,300.00	90.00	359.25	6,753.00	8,786.81	423.65	8,796.43	0.00	0.00	0.00
15,400.00	90.00	359.25	6,753.00	8,886.81	422.33	8,896.31	0.00	0.00	0.00
15,500.00	90.00	359.25	6,753.00	8,986.80	421.02	8,996.19	0.00	0.00	0.00
15,600.00	90.00	359.25	6,753.00	9,086.79	419.71	9,096.06	0.00	0.00	0.00
15,700.00	90.00	359.25	6,753.00	9,186.78	418.39	9,195.94	0.00	0.00	0.00
15,800.00	90.00	359.25	6,753.00	9,286.77	417.08	9,295.81	0.00	0.00	0.00
15,900.00	90.00	359.25	6,753.00	9,386.76	415.77	9,395.69	0.00	0.00	0.00
16,000.00	90.00	359.25	6,753.00	9,486.75	414.45	9,495.57	0.00	0.00	0.00
16,100.00	90.00	359.25	6,753.00	9,586.75	413.14	9,595.44	0.00	0.00	0.00
16,200.00	90.00	359.25	6,753.00	9,686.74	411.82	9,695.32	0.00	0.00	0.00
16,300.00	90.00	359.25	6,753.00	9,786.73	410.51	9,795.20	0.00	0.00	0.00
16,400.00	90.00	359.25	6,753.00	9,886.72	409.20	9,895.07	0.00	0.00	0.00
16,500.00	90.00	359.25	6,753.00	9,986.71	407.88	9,994.95	0.00	0.00	0.00

Noble Energy, Inc.

Planning Report

Database:	EDMP	Local Co-ordinate Reference:	Well Booth CC30-725
Company:	Northern Region - DJ Basin	TVD Reference:	Well @ 4817.00ft
Project:	Mustang	MD Reference:	Well @ 4817.00ft
Site:	CC Section 31	North Reference:	Grid
Well:	Booth CC30-725	Survey Calculation Method:	Minimum Curvature
Wellbore:	Booth CC30-725		
Design:	Plan #1		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
16,600.00	90.00	359.25	6,753.00	10,086.70	406.57	10,094.82	0.00	0.00	0.00
16,700.00	90.00	359.25	6,753.00	10,186.69	405.26	10,194.70	0.00	0.00	0.00
16,800.00	90.00	359.25	6,753.00	10,286.69	403.94	10,294.58	0.00	0.00	0.00
16,900.00	90.00	359.25	6,753.00	10,386.68	402.63	10,394.45	0.00	0.00	0.00
17,000.00	90.00	359.25	6,753.00	10,486.67	401.32	10,494.33	0.00	0.00	0.00
17,100.00	90.00	359.25	6,753.00	10,586.66	400.00	10,594.21	0.00	0.00	0.00
17,200.00	90.00	359.25	6,753.00	10,686.65	398.69	10,694.08	0.00	0.00	0.00
17,300.00	90.00	359.25	6,753.00	10,786.64	397.38	10,793.96	0.00	0.00	0.00
17,346.03	90.00	359.25	6,753.00	10,832.67	396.77	10,839.93	0.00	0.00	0.00
TD @ 17346.03' MD/6753.00' TVD									

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
Booth CC30-725-SHL - hit/miss target - Shape - Point	0.00	0.00	0.00	0.00	0.00	1,344,504.85	3,285,584.07	40.2745410	-104.4764730
Booth CC30-725-KOF - plan hits target center - Point	0.00	0.01	6,119.96	-1.05	461.13	1,344,503.80	3,286,045.19	40.2745235	-104.4748205
Booth CC30-725-TPZ - plan hits target center - Point	0.00	0.00	6,753.00	761.52	529.07	1,345,266.37	3,286,113.14	40.2766145	-104.4745454
Booth CC30-725-BHL - plan hits target center - Point	0.00	0.00	6,753.00	10,832.67	396.77	1,355,337.50	3,285,980.84	40.3042629	-104.4746022

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
401.00	401.00	Pierre				
667.00	667.00	Upper Pierre Aquifer Top				
1,587.00	1,587.00	Upper Pierre Aquifer Base				
3,668.26	3,659.00	Parkman				
4,285.89	4,272.00	Sussex				
4,916.62	4,898.00	Shannon				
5,856.67	5,831.00	Teepee Buttes				
6,619.84	6,547.00	Sharon Springs				
6,640.61	6,562.00	Top A Chalk				
6,656.27	6,573.00	Top A Marl				
6,705.86	6,606.00	Top B Chalk				
6,762.35	6,640.00	Top B Marl				
6,869.32	6,693.00	Top C Chalk				
6,945.53	6,721.00	Top C Marl				

Noble Energy, Inc.

Planning Report

Database:	EDMP	Local Co-ordinate Reference:	Well Booth CC30-725
Company:	Northern Region - DJ Basin	TVD Reference:	Well @ 4817.00ft
Project:	Mustang	MD Reference:	Well @ 4817.00ft
Site:	CC Section 31	North Reference:	Grid
Well:	Booth CC30-725	Survey Calculation Method:	Minimum Curvature
Wellbore:	Booth CC30-725		
Design:	Plan #1		

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment	
		+N/-S (ft)	+E/-W (ft)		
2,200.00	2,200.00	0.00	0.00	Build: 2°/100'	
2,551.05	2,550.18	-0.05	21.48	Hold: 7.02° Inc, 90.13° Azm	
6,147.82	6,119.97	-1.05	461.13	KOP: Build 9°/100' @ 6147.81' MD	
7,149.02	6,753.00	636.53	530.71	LP: 7149.02' MD, 90.00° Inc, 359.25° Azm	
7,274.02	6,753.00	761.52	529.07	TPZ: 7274.02' MD, 90.00° Inc, 359.25° Azm	
17,346.03	6,753.00	10,832.67	396.77	TD @ 17346.03' MD/6753.00' TVD	

Northern Region - DJ Basin

Mustang

CC Section 31

Booth CC30-725

Booth CC30-725

Plan #1

Anticollision Summary Report

12 October, 2018

Noble Energy, Inc.

Anticollision Summary Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Booth CC30-725
Project:	Mustang	TVD Reference:	Well @ 4817.00ft
Reference Site:	CC Section 31	MD Reference:	Well @ 4817.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Booth CC30-725	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Booth CC30-725	Database:	EDMP
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

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

Survey Tool Program		Date	10/12/2018		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
0.00	17,346.03	Plan #1 (Booth CC30-725)	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 24						
Elise State C24-08 (TA) - Wellbore #1 - No Surveys	15,454.87	6,633.00	4,705.06	4,364.81	13.828	CC
Elise State C24-08 (TA) - Wellbore #1 - No Surveys	15,500.00	6,633.00	4,705.27	4,364.70	13.816	ES
Elise State C24-08 (TA) - Wellbore #1 - No Surveys	15,900.00	6,633.00	4,726.06	4,382.83	13.769	SF
Elise State C24-11 (PR) - Wellbore #1 - No Surveys	14,486.97	6,629.00	7,325.98	6,993.43	22.030	CC
Elise State C24-11 (PR) - Wellbore #1 - No Surveys	14,500.00	6,629.00	7,325.99	6,993.34	22.023	ES
Elise State C24-11 (PR) - Wellbore #1 - No Surveys	15,500.00	6,629.00	7,395.69	7,056.16	21.782	SF
Elise State C24-18 (SI) - Wellbore #1 - No Surveys	16,462.11	6,613.00	6,910.05	6,562.68	19.892	CC
Elise State C24-18 (SI) - Wellbore #1 - No Surveys	16,500.00	6,613.00	6,910.16	6,562.50	19.876	ES
Elise State C24-18 (SI) - Wellbore #1 - No Surveys	17,300.00	6,613.00	6,960.67	6,607.50	19.709	SF
Elise State C24-19 (SI) - Wellbore #1 - Gyro Surveys	16,322.13	16,322.13	8,095.42	7,954.84	57.586	CC
Elise State C24-19 (SI) - Wellbore #1 - Gyro Surveys	16,400.00	16,400.00	8,095.79	7,954.35	57.238	ES, SF
Elise State C24-20 (PR) - Wellbore #1 - No Surveys	15,102.75	6,649.00	8,167.20	7,829.32	24.172	CC
Elise State C24-20 (PR) - Wellbore #1 - No Surveys	15,200.00	6,649.00	8,167.78	7,829.17	24.122	ES
Elise State C24-20 (PR) - Wellbore #1 - No Surveys	16,300.00	6,649.00	8,254.49	7,908.29	23.844	SF
Elise State C24-21 (SI) - Wellbore #1 - No Surveys	15,078.91	6,626.00	6,718.48	6,381.71	19.950	CC
Elise State C24-21 (SI) - Wellbore #1 - No Surveys	15,100.00	6,626.00	6,718.51	6,381.59	19.941	ES
Elise State C24-21 (SI) - Wellbore #1 - No Surveys	15,900.00	6,626.00	6,768.47	6,426.04	19.766	SF
Elise State C24-22 (PR) - Wellbore #1 - No Surveys	15,060.25	6,644.00	5,469.18	5,131.58	16.200	CC
Elise State C24-22 (PR) - Wellbore #1 - No Surveys	15,100.00	6,644.00	5,469.33	5,131.43	16.186	ES
Elise State C24-22 (PR) - Wellbore #1 - No Surveys	15,600.00	6,644.00	5,495.75	5,154.46	16.103	SF
Elise State C24-23 (PR) - Wellbore #1 - No Surveys	13,685.91	6,654.00	5,545.01	5,217.61	16.937	CC
Elise State C24-23 (PR) - Wellbore #1 - No Surveys	13,700.00	6,654.00	5,545.03	5,217.53	16.931	ES
Elise State C24-23 (PR) - Wellbore #1 - No Surveys	14,300.00	6,654.00	5,578.91	5,247.37	16.827	SF
Elise State C24-24 (SI) - Wellbore #1 - No Surveys	13,684.89	6,646.00	6,977.96	6,651.15	21.352	CC
Elise State C24-24 (SI) - Wellbore #1 - No Surveys	13,700.00	6,646.00	6,977.98	6,651.06	21.345	ES
Elise State C24-24 (SI) - Wellbore #1 - No Surveys	14,600.00	6,646.00	7,037.71	6,704.63	21.129	SF
Spike ST GWS C24-05 (PR) - Wellbore #1 - Gyro Survey	15,701.68	6,612.19	8,747.13	8,645.36	85.956	CC
Spike ST GWS C24-05 (PR) - Wellbore #1 - Gyro Survey	15,800.00	6,612.34	8,747.68	8,645.17	85.336	ES
Spike ST GWS C24-05 (PR) - Wellbore #1 - Gyro Survey	17,346.03	6,614.65	8,900.34	8,787.37	78.785	SF
Spike ST GWS C24-07 (SI) - Wellbore #1 - Gyro Surveys	15,616.57	6,530.44	6,029.68	5,928.93	59.846	CC
Spike ST GWS C24-07 (SI) - Wellbore #1 - Gyro Surveys	15,700.00	6,530.05	6,030.26	5,928.88	59.487	ES
Spike ST GWS C24-07 (SI) - Wellbore #1 - Gyro Survey	17,100.00	6,523.91	6,209.47	6,099.85	56.644	SF
Spike ST GWS C24-13 (PA) - Wellbore #1 - Gyro Survey	13,101.72	6,545.30	8,823.70	8,742.22	108.295	CC
Spike ST GWS C24-13 (PA) - Wellbore #1 - Gyro Survey	13,200.00	6,546.53	8,824.25	8,742.05	107.352	ES
Spike ST GWS C24-13 (PA) - Wellbore #1 - Gyro Survey	16,800.00	6,594.32	9,567.27	9,463.72	92.398	SF
Spike ST GWS C24-14 (SI) - Wellbore #1 - Gyro Surveys	13,043.97	6,496.02	7,591.86	7,511.06	93.963	CC
Spike ST GWS C24-14 (SI) - Wellbore #1 - Gyro Surveys	13,100.00	6,496.69	7,592.07	7,510.86	93.493	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 CC30-725
Project:	Mustang	TVD Reference:	Well @ 4817.00ft
Reference Site:	CC Section 31	MD Reference:	Well @ 4817.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Booth CC30-725	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Booth CC30-725	Database:	EDMP
Reference Design:	Plan #1	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 24						
Spike ST GWS C24-14 (SI) - Wellbore #1 - Gyro Surveys	16,200.00	16,200.00	8,221.34	8,088.52	61.899	SF
Spike ST GWS C24-15 (PR) - Wellbore #1 - Gyro Survey	13,165.05	6,615.88	6,316.63	6,234.41	76.826	CC
Spike ST GWS C24-15 (PR) - Wellbore #1 - Gyro Survey	13,200.00	6,616.84	6,316.72	6,234.25	76.589	ES
Spike ST GWS C24-15 (PR) - Wellbore #1 - Gyro Survey	15,200.00	6,646.57	6,636.25	6,541.99	70.397	SF
Spike ST GWS C24-16 (SI) - Wellbore #1 - Gyro Surveys	13,062.39	6,762.43	4,922.06	4,840.02	59.999	CC
Spike ST GWS C24-16 (SI) - Wellbore #1 - Gyro Surveys	13,100.00	6,763.99	4,922.20	4,839.89	59.801	ES
Spike ST GWS C24-16 (SI) - Wellbore #1 - Gyro Surveys	14,400.00	6,830.17	5,100.13	5,010.14	56.671	SF
Spike State GWS C24-01 (PA) - Wellbore #1 - No Survey	16,941.47	6,633.00	4,872.57	4,520.60	13.844	CC
Spike State GWS C24-01 (PA) - Wellbore #1 - No Survey	17,000.00	6,633.00	4,872.92	4,520.52	13.828	ES
Spike State GWS C24-01 (PA) - Wellbore #1 - No Survey	17,346.03	6,633.00	4,889.34	4,534.61	13.783	SF
Spike State GWS C24-02 (SI) - Wellbore #1 - No Survey	16,954.69	6,623.00	6,147.16	5,795.49	17.480	CC
Spike State GWS C24-02 (SI) - Wellbore #1 - No Survey	17,000.00	6,623.00	6,147.33	5,795.31	17.463	ES
Spike State GWS C24-02 (SI) - Wellbore #1 - No Survey	17,346.03	6,623.00	6,159.61	5,805.12	17.376	SF
Spike State GWS C24-03 (SI) - Wellbore #1 - No Survey	16,968.05	6,605.00	7,460.80	7,109.74	21.252	CC
Spike State GWS C24-03 (SI) - Wellbore #1 - No Survey	17,000.00	6,605.00	7,460.87	7,109.57	21.238	ES
Spike State GWS C24-03 (SI) - Wellbore #1 - No Survey	17,346.03	6,605.00	7,470.37	7,116.52	21.112	SF
Spike State GWS C24-04 (SI) - Wellbore #1 - No Survey	16,974.14	6,607.00	8,752.14	8,400.95	24.922	CC
Spike State GWS C24-04 (SI) - Wellbore #1 - No Survey	17,000.00	6,607.00	8,752.17	8,400.79	24.908	ES
Spike State GWS C24-04 (SI) - Wellbore #1 - No Survey	17,346.03	6,607.00	8,760.03	8,406.06	24.747	SF
Spike State GWS C24-06 (PA) - Wellbore #1 - No Survey	15,674.79	6,617.00	7,449.28	7,107.95	21.824	CC
Spike State GWS C24-06 (PA) - Wellbore #1 - No Survey	15,700.00	6,617.00	7,449.32	7,107.80	21.812	ES
Spike State GWS C24-06 (PA) - Wellbore #1 - No Survey	16,700.00	6,617.00	7,519.49	7,171.08	21.582	SF
Spike State GWS C24-09 (SI) - Wellbore #1 - No Survey	14,250.40	6,651.00	5,047.21	4,715.60	15.221	CC
Spike State GWS C24-09 (SI) - Wellbore #1 - No Survey	14,300.00	6,651.00	5,047.45	4,715.48	15.205	ES
Spike State GWS C24-09 (SI) - Wellbore #1 - No Survey	14,700.00	6,651.00	5,067.19	4,732.53	15.141	SF
Spike State GWS C24-10 (PR) - Wellbore #1 - No Survey	14,353.72	6,636.00	6,182.58	5,850.78	18.633	CC
Spike State GWS C24-10 (PR) - Wellbore #1 - No Survey	14,400.00	6,636.00	6,182.75	5,850.61	18.615	ES
Spike State GWS C24-10 (PR) - Wellbore #1 - No Survey	15,100.00	6,636.00	6,227.46	5,890.57	18.485	SF
Spike State GWS C24-11J (PA) - Wellbore #1 - No Survey	13,723.52	6,658.00	8,153.09	7,825.24	24.869	CC
Spike State GWS C24-11J (PA) - Wellbore #1 - No Survey	13,800.00	6,658.00	8,153.44	7,825.04	24.827	ES
Spike State GWS C24-11J (PA) - Wellbore #1 - No Survey	15,000.00	6,658.00	8,252.41	7,915.78	24.515	SF
Spike State GWS C24-12 (SI) - Wellbore #1 - No Survey	14,398.53	6,641.00	8,712.47	8,380.12	26.215	CC
Spike State GWS C24-12 (SI) - Wellbore #1 - No Survey	14,500.00	6,641.00	8,713.06	8,379.95	26.157	ES
Spike State GWS C24-12 (SI) - Wellbore #1 - No Survey	15,800.00	6,641.00	8,824.47	8,482.40	25.798	SF
Spike State GWS C24-8J (PA) - Wellbore #1 - No Survey	16,290.60	6,613.00	5,551.49	5,205.47	16.044	CC
Spike State GWS C24-8J (PA) - Wellbore #1 - No Survey	16,300.00	6,613.00	5,551.50	5,205.41	16.041	ES
Spike State GWS C24-8J (PA) - Wellbore #1 - No Survey	16,800.00	6,613.00	5,574.81	5,225.28	15.949	SF
State C24-28 (PR) - Wellbore #1 - No Surveys	17,346.03	6,606.00	6,775.07	6,420.94	19.132	CC, ES, SF
State C24-99HZ - Wellbore #1 - Original Drilling	15,972.83	10,838.02	4,710.08	4,605.67	45.110	CC
State C24-99HZ - Wellbore #1 - Original Drilling	16,000.00	10,838.02	4,710.16	4,605.39	44.957	ES
State C24-99HZ - Wellbore #1 - Original Drilling	17,346.03	10,838.02	4,906.18	4,773.38	36.945	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 CC30-725
Project:	Mustang	TVD Reference:	Well @ 4817.00ft
Reference Site:	CC Section 31	MD Reference:	Well @ 4817.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Booth CC30-725	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Booth CC30-725	Database:	EDMP
Reference Design:	Plan #1	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 25						
Booth 14-25 (SI) - Wellbore #1 - No Surveys	2,200.00	2,125.00	7,201.74	7,111.33	79.654	CC
Booth 14-25 (SI) - Wellbore #1 - No Surveys	2,300.00	2,224.98	7,203.47	7,108.70	76.016	ES
Booth 14-25 (SI) - Wellbore #1 - No Surveys	8,600.00	6,678.00	7,678.84	7,384.99	26.131	SF
Booth 9-25 (SI) - Wellbore #1 - No Surveys	9,079.80	6,702.00	4,913.54	4,616.14	16.522	CC
Booth 9-25 (SI) - Wellbore #1 - No Surveys	9,100.00	6,702.00	4,913.58	4,616.08	16.516	ES
Booth 9-25 (SI) - Wellbore #1 - No Surveys	9,500.00	6,702.00	4,931.48	4,631.89	16.461	SF
Booth C 25-19 (PR) - Wellbore #1 - No Surveys	11,181.51	6,649.00	8,157.64	7,849.14	26.443	CC
Booth C 25-19 (PR) - Wellbore #1 - No Surveys	11,200.00	6,649.00	8,157.66	7,849.03	26.432	ES
Booth C 25-19 (PR) - Wellbore #1 - No Surveys	12,500.00	6,649.00	8,263.51	7,946.34	26.054	SF
UNI UPR C 25-5 (SI) - Wellbore #1 - Gyro Surveys	10,398.67	6,556.23	8,911.76	8,849.49	143.104	CC
UNI UPR C 25-5 (SI) - Wellbore #1 - Gyro Surveys	10,500.00	6,557.02	8,912.34	8,849.41	141.632	ES
UNI UPR C 25-5 (SI) - Wellbore #1 - Gyro Surveys	14,900.00	6,623.41	9,983.82	9,895.75	113.358	SF
UNI UPR C 25-6 (PR) - Wellbore #1 - No Surveys	10,516.62	6,651.00	7,542.63	7,479.31	119.118	CC
UNI UPR C 25-6 (PR) - Wellbore #1 - No Surveys	10,600.00	6,651.00	7,543.10	7,479.24	118.126	ES
UNI UPR C 25-6 (PR) - Wellbore #1 - No Surveys	14,000.00	6,651.00	8,308.15	8,225.29	100.272	SF
UNI-UPR C 25-3 (PR) - Wellbore #1 - Gyro Surveys	11,785.00	6,592.13	7,617.80	7,545.84	105.855	CC
UNI-UPR C 25-3 (PR) - Wellbore #1 - Gyro Surveys	11,800.00	6,591.42	7,617.81	7,545.75	105.706	ES
UNI-UPR C 25-3 (PR) - Wellbore #1 - Gyro Surveys	14,900.00	6,442.92	8,229.03	8,139.51	91.933	SF
UNI-UPRR 4-25 (PR) - Wellbore #1 - Gyro Surveys	11,684.70	6,604.50	8,944.43	8,873.16	125.508	CC
UNI-UPRR 4-25 (PR) - Wellbore #1 - Gyro Surveys	11,700.00	6,604.62	8,944.44	8,873.07	125.320	ES
UNI-UPRR 4-25 (PR) - Wellbore #1 - Gyro Surveys	15,900.00	6,619.32	9,887.94	9,792.13	103.209	SF
UPRR 66 Amoco 1 (SI) - Wellbore #1 - No Surveys	2,200.00	2,132.00	4,967.16	4,876.46	54.769	CC
UPRR 66 Amoco 1 (SI) - Wellbore #1 - No Surveys	2,300.00	2,231.98	4,968.82	4,873.78	52.280	ES
UPRR 66 Amoco 1 (SI) - Wellbore #1 - No Surveys	8,500.00	6,685.00	5,264.41	4,970.67	17.922	SF
UPV 25-114 (PA) - Wellbore #1 - Gyro Surveys	11,728.99	6,638.32	4,921.50	4,849.87	68.709	CC, ES
UPV 25-114 (PA) - Wellbore #1 - Gyro Surveys	13,200.00	6,630.02	5,136.62	5,056.73	64.291	SF
UPV 25-214 (PR) - Wellbore #1 - Gyro Surveys	11,958.57	6,557.48	6,344.80	6,271.76	86.873	CC
UPV 25-214 (PR) - Wellbore #1 - Gyro Surveys	12,000.00	6,559.61	6,344.93	6,271.60	86.524	ES
UPV 25-214 (PR) - Wellbore #1 - Gyro Surveys	14,200.00	6,625.85	6,728.69	6,642.41	77.989	SF
UPV 25-714 (PR) - Wellbore #1 - No Surveys	10,731.79	6,703.00	5,695.39	5,387.75	18.513	CC
UPV 25-714 (PR) - Wellbore #1 - No Surveys	10,800.00	6,703.00	5,695.80	5,387.72	18.488	ES
UPV 25-714 (PR) - Wellbore #1 - No Surveys	11,400.00	6,703.00	5,734.45	5,422.62	18.390	SF
UPV 25-814 (PA) - Wellbore #1 - Gyro Surveys	10,411.32	6,870.96	4,633.94	4,570.40	72.926	CC, ES
UPV 25-814 (PA) - Wellbore #1 - Gyro Surveys	11,800.00	6,862.20	4,837.54	4,766.44	68.035	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 CC30-725
Project:	Mustang	TVD Reference:	Well @ 4817.00ft
Reference Site:	CC Section 31	MD Reference:	Well @ 4817.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Booth CC30-725	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Booth CC30-725	Database:	EDMP
Reference Design:	Plan #1	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						
Ava State C36-18 (SI) - Wellbore #1 - No Surveys	2,200.00	2,119.00	6,350.14	6,259.73	70.235	CC
Ava State C36-18 (SI) - Wellbore #1 - No Surveys	2,300.00	2,218.98	6,351.87	6,257.11	67.030	ES
Ava State C36-18 (SI) - Wellbore #1 - No Surveys	7,050.00	6,664.38	6,957.34	6,668.55	24.092	SF
Ava State C36-20 (PR) - Wellbore #1 - No Surveys	2,200.00	2,109.00	8,021.29	7,931.27	89.112	CC
Ava State C36-20 (PR) - Wellbore #1 - No Surveys	2,300.00	2,208.98	8,022.96	7,928.60	85.023	ES
Ava State C36-20 (PR) - Wellbore #1 - No Surveys	7,000.00	6,644.77	8,675.96	8,388.06	30.135	SF
Ava State C36-21 (SI) - Wellbore #1 - No Surveys	2,200.00	2,114.00	6,758.73	6,668.52	74.919	CC
Ava State C36-21 (SI) - Wellbore #1 - No Surveys	2,300.00	2,213.98	6,760.39	6,665.83	71.492	ES
Ava State C36-21 (SI) - Wellbore #1 - No Surveys	6,950.00	6,636.38	7,399.74	7,112.25	25.739	SF
Ava State C36-22 (SI) - Wellbore #1 - No Surveys	2,200.00	2,135.00	5,557.69	5,466.64	61.038	CC
Ava State C36-22 (SI) - Wellbore #1 - No Surveys	2,300.00	2,234.98	5,559.30	5,463.89	58.272	ES
Ava State C36-22 (SI) - Wellbore #1 - No Surveys	6,800.00	6,604.59	6,158.98	5,873.06	21.541	SF
Ava State C36-24 (PR) - Wellbore #1 - No Surveys	2,200.00	2,124.00	7,189.30	7,098.68	79.340	CC
Ava State C36-24 (PR) - Wellbore #1 - No Surveys	2,300.00	2,223.98	7,190.82	7,095.86	75.723	ES
Ava State C36-24 (PR) - Wellbore #1 - No Surveys	6,900.00	6,629.28	7,842.27	7,555.16	27.315	SF
Ava State C36-31 (PR) - Wellbore #1 - No Surveys	2,200.00	2,101.00	8,877.88	8,788.19	98.980	CC
Ava State C36-31 (PR) - Wellbore #1 - No Surveys	2,300.00	2,201.02	8,879.62	8,785.58	94.420	ES
Ava State C36-31 (PR) - Wellbore #1 - No Surveys	7,100.00	6,650.13	9,479.93	9,191.63	32.882	SF
Booth CC31-68-1HN (PR) - Original Drilling - Original Dri	6,461.90	10,802.70	584.55	465.84	4.925	CC
Booth CC31-68-1HN (PR) - Original Drilling - Original Dri	6,500.00	10,805.76	586.91	464.56	4.797	ES
Booth CC31-68-1HN (PR) - Original Drilling - Original Dri	6,550.00	10,809.63	597.07	470.72	4.725	SF
Booth State C36-69HN (PR) - Original Drilling - Original I	2,330.67	2,466.58	3,978.88	3,964.55	277.595	CC, ES
Booth State C36-69HN (PR) - Original Drilling - Original I	8,700.00	6,034.00	4,806.05	4,759.31	102.832	SF
Booth State CC30-79HN (PR) - Original Drilling - Original	2,722.64	3,184.00	3,876.66	3,857.34	200.662	CC
Booth State CC30-79HN (PR) - Original Drilling - Original	3,100.00	3,522.96	3,878.19	3,855.90	174.018	ES
Booth State CC30-79HN (PR) - Original Drilling - Original	11,500.00	11,500.00	4,170.33	4,027.79	29.257	SF
Booth State CC31-69HN (PR) - Original Drilling - Original	6,950.00	10,525.39	50.01	-72.80	0.407	Level 1, ES, SF
Booth State CC31-69HN (PR) - Original Drilling - Original	6,990.74	10,525.73	30.35	-20.93	0.592	Level 1, CC
State 36-0414 (PR) - Wellbore #1 - No Surveys	2,200.00	2,107.00	7,950.58	7,860.65	88.405	CC
State 36-0414 (PR) - Wellbore #1 - No Surveys	2,300.00	2,206.98	7,952.32	7,858.04	84.346	ES
State 36-0414 (PR) - Wellbore #1 - No Surveys	7,100.00	6,658.13	8,548.98	8,260.36	29.620	SF
State 36-0714 (SI) - Wellbore #1 - No Surveys	2,200.00	2,127.00	6,027.05	5,936.32	66.426	CC
State 36-0714 (SI) - Wellbore #1 - No Surveys	2,300.00	2,226.98	6,028.74	5,933.66	63.406	ES
State 36-0714 (SI) - Wellbore #1 - No Surveys	6,950.00	6,649.38	6,655.24	6,367.24	23.108	SF
State 36-1014 (SI) - Wellbore #1 - No Surveys	2,200.00	2,123.00	6,512.00	6,421.43	71.898	CC
State 36-1014 (SI) - Wellbore #1 - No Surveys	2,300.00	2,222.98	6,513.58	6,418.66	68.620	ES
State 36-1014 (SI) - Wellbore #1 - No Surveys	6,900.00	6,628.28	7,158.53	6,871.46	24.937	SF
State 36-1114 (PR) - Wellbore #1 - No Surveys	2,200.00	2,112.00	7,609.10	7,518.97	84.420	CC
State 36-1114 (PR) - Wellbore #1 - No Surveys	2,300.00	2,211.98	7,610.71	7,516.22	80.552	ES
State 36-1114 (PR) - Wellbore #1 - No Surveys	6,950.00	6,634.38	8,270.86	7,983.46	28.778	SF
State 36-1214 (PR) - Wellbore #1 - No Surveys	2,200.00	2,127.00	8,952.60	8,862.09	98.909	CC
State 36-1214 (PR) - Wellbore #1 - No Surveys	2,300.00	2,226.98	8,954.26	8,859.39	94.392	ES
State 36-1214 (PR) - Wellbore #1 - No Surveys	7,000.00	6,662.77	9,614.87	9,326.47	33.338	SF
State 36-1414 (PR) - Wellbore #1 - No Surveys	2,200.00	2,114.00	8,198.53	8,108.31	90.879	CC
State 36-1414 (PR) - Wellbore #1 - No Surveys	2,300.00	2,213.98	8,200.01	8,105.45	86.716	ES
State 36-1414 (PR) - Wellbore #1 - No Surveys	6,850.00	6,601.42	8,829.07	8,543.16	30.881	SF
State 36-1514 (PR) - Wellbore #1 - No Surveys	2,200.00	2,114.00	6,534.78	6,444.57	72.437	CC
State 36-1514 (PR) - Wellbore #1 - No Surveys	2,400.00	2,313.84	6,540.51	6,441.61	66.133	ES
State 36-1514 (PR) - Wellbore #1 - No Surveys	6,850.00	6,601.42	7,165.58	6,879.68	25.063	SF
State 36-1614 (PR) - Wellbore #1 - No Surveys	2,200.00	2,157.00	6,260.49	6,168.56	68.098	CC
State 36-1614 (PR) - Wellbore #1 - No Surveys	2,400.00	2,356.84	6,265.61	6,164.99	62.271	ES
State 36-1614 (PR) - Wellbore #1 - No Surveys	6,750.00	6,589.91	6,823.34	6,538.09	23.921	SF
State 36-214 (SI) - Wellbore #1 - No Surveys	2,200.00	2,115.00	5,708.80	5,618.55	63.253	CC

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 CC30-725
Project:	Mustang	TVD Reference:	Well @ 4817.00ft
Reference Site:	CC Section 31	MD Reference:	Well @ 4817.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Booth CC30-725	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Booth CC30-725	Database:	EDMP
Reference Design:	Plan #1	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
C Section 36						
State 36-214 (SI) - Wellbore #1 - No Surveys	2,300.00	2,214.98	5,710.55	5,615.95	60.364	ES
State 36-214 (SI) - Wellbore #1 - No Surveys	7,100.00	6,666.13	6,291.89	6,002.95	21.776	SF
State 36-314 (SI) - Wellbore #1 - No Surveys	2,200.00	2,105.00	7,004.69	6,914.84	77.957	CC
State 36-314 (SI) - Wellbore #1 - No Surveys	2,300.00	2,204.98	7,006.44	6,912.23	74.377	ES
State 36-314 (SI) - Wellbore #1 - No Surveys	7,100.00	6,656.13	7,577.40	7,288.86	26.261	SF
State 36-614 (PR) - Wellbore #1 - No Surveys	2,200.00	2,101.00	7,114.27	7,024.58	79.318	CC
State 36-614 (PR) - Wellbore #1 - No Surveys	2,300.00	2,200.98	7,115.99	7,021.95	75.668	ES
State 36-614 (PR) - Wellbore #1 - No Surveys	7,050.00	6,646.38	7,744.08	7,456.02	26.884	SF
State 36-814 (SI) - Wellbore #1 - No Surveys	2,200.00	2,146.00	4,544.99	4,453.49	49.676	CC
State 36-814 (SI) - Wellbore #1 - No Surveys	2,300.00	2,245.98	4,546.67	4,450.82	47.439	ES
State 36-814 (SI) - Wellbore #1 - No Surveys	6,900.00	6,651.28	5,165.47	4,877.48	17.936	SF
State 36-914 (PR) - Wellbore #1 - No Surveys	2,200.00	2,154.00	5,444.22	5,352.41	59.297	CC
State 36-914 (PR) - Wellbore #1 - No Surveys	2,300.00	2,253.98	5,445.69	5,349.52	56.630	ES
State 36-914 (PR) - Wellbore #1 - No Surveys	6,800.00	6,614.41	6,049.50	5,763.18	21.128	SF
State B14-36 (PA) - Wellbore #1 - No Surveys	2,200.00	2,121.00	8,872.16	8,781.67	98.042	CC
State B14-36 (PA) - Wellbore #1 - No Surveys	2,300.00	2,220.98	8,873.74	8,778.90	93.563	ES
State B14-36 (PA) - Wellbore #1 - No Surveys	6,950.00	6,643.38	9,539.04	9,251.28	33.149	SF
State B41-36 (SI) - Wellbore #1 - No Surveys	2,200.00	2,137.00	4,727.28	4,636.15	51.872	CC
State B41-36 (SI) - Wellbore #1 - No Surveys	2,300.00	2,236.98	4,729.02	4,633.53	49.528	ES
State B41-36 (SI) - Wellbore #1 - No Surveys	7,149.02	6,710.00	5,353.60	5,062.85	18.413	SF
State C36-01 (SI) - Wellbore #1 - No Surveys	2,200.00	2,137.00	4,200.01	4,108.87	46.086	CC
State C36-01 (SI) - Wellbore #1 - No Surveys	2,300.00	2,236.98	4,201.75	4,106.27	44.006	ES
State C36-01 (SI) - Wellbore #1 - No Surveys	7,149.02	6,710.00	4,764.70	4,473.93	16.387	SF
State C36-04 (PR) - Wellbore #1 - No Surveys	2,200.00	2,108.00	8,529.02	8,439.05	94.795	CC
State C36-04 (PR) - Wellbore #1 - No Surveys	2,300.00	2,207.98	8,530.77	8,436.44	90.443	ES
State C36-04 (PR) - Wellbore #1 - No Surveys	7,149.02	6,661.00	9,090.12	8,801.30	31.474	SF
State C36-13 (SI) - Wellbore #1 - No Surveys	2,200.00	2,136.00	9,528.40	9,437.31	104.600	CC
State C36-13 (SI) - Wellbore #1 - No Surveys	2,300.00	2,235.98	9,529.96	9,434.52	99.851	ES
State C36-13 (SI) - Wellbore #1 - No Surveys	6,400.00	6,300.14	9,989.95	9,717.30	36.641	SF
State C36-15 (PR) - Wellbore #1 - No Surveys	2,200.00	2,135.00	7,266.22	7,175.16	79.802	CC
State C36-15 (PR) - Wellbore #1 - No Surveys	2,400.00	2,334.84	7,271.86	7,172.12	72.909	ES
State C36-15 (PR) - Wellbore #1 - No Surveys	6,800.00	6,604.59	7,869.19	7,583.26	27.521	SF
State C36-32D (SI) - Wellbore #1 - As Drilled	100.00	39.54	8,953.24	8,953.05	10,000.000	CC
State C36-32D (SI) - Wellbore #1 - As Drilled	500.00	398.92	8,954.35	8,952.10	3,976.505	ES
State C36-32D (SI) - Wellbore #1 - As Drilled	7,500.00	6,909.00	9,977.55	9,923.57	184.832	SF
State C36-33D (SI) - Wellbore #1 - Original Drilling	969.13	913.00	8,949.95	8,944.78	1,733.728	CC
State C36-33D (SI) - Wellbore #1 - Original Drilling	1,000.00	913.00	8,950.00	8,944.73	1,697.344	ES
State C36-33D (SI) - Wellbore #1 - Original Drilling	6,200.00	6,223.07	9,992.76	9,949.81	232.693	SF
State C36-99HZ (PR) - Wellbore #1 - As Drilled	6,119.02	10,537.02	5,718.95	5,624.88	60.794	CC
State C36-99HZ (PR) - Wellbore #1 - As Drilled	6,147.82	10,537.02	5,719.03	5,624.85	60.728	ES
State C36-99HZ (PR) - Wellbore #1 - As Drilled	7,100.00	10,537.02	6,107.62	6,005.11	59.584	SF
State D01-30D (SI) - Wellbore #1 - Original Drilling	100.00	39.25	8,952.52	8,952.33	10,000.000	CC
State D01-30D (SI) - Wellbore #1 - Original Drilling	500.00	395.98	8,953.70	8,951.46	3,988.897	ES
State D01-30D (SI) - Wellbore #1 - Original Drilling	4,900.00	4,900.00	9,884.00	9,843.20	242.250	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 CC30-725
Project:	Mustang	TVD Reference:	Well @ 4817.00ft
Reference Site:	CC Section 31	MD Reference:	Well @ 4817.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Booth CC30-725	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Booth CC30-725	Database:	EDMP
Reference Design:	Plan #1	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 19						
CAPITAL #31-19(PR) - CAPITAL #31-19 - No Surveys	16,897.36	6,608.00	972.93	752.47	4.413	CC
CAPITAL #31-19(PR) - CAPITAL #31-19 - No Surveys	16,900.00	6,608.00	972.94	752.46	4.413	ES, SF
Sater #19E-203(PR) - Sater #19E-203 - Wellbore #1 - As	12,842.52	11,029.02	4,175.78	4,035.34	29.733	CC
Sater #19E-203(PR) - Sater #19E-203 - Wellbore #1 - As	14,400.00	14,400.00	4,199.59	3,988.76	19.919	ES, SF
Sater #19E-223(PR) - Sater #19E-223 - Wellbore #1 - As	15,500.00	15,500.00	3,716.19	3,487.72	16.265	SF
Sater #19E-223(PR) - Sater #19E-223 - Wellbore #1 - As	16,006.12	16,006.12	3,711.55	3,485.10	16.390	ES
Sater #19E-223(PR) - Sater #19E-223 - Wellbore #1 - As	16,292.56	7,451.02	3,710.18	3,595.76	32.426	CC
Sater #19E-323(PR) - Sater #19E-323 - Wellbore #1 - As	12,839.00	10,978.02	3,965.15	3,822.64	27.824	CC
Sater #19E-323(PR) - Sater #19E-323 - Wellbore #1 - As	16,200.00	16,200.00	3,968.30	3,743.31	17.638	ES, SF
Sater #19J-203(PR) - Sater #19J-203 - Wellbore #1 - As	12,900.00	11,073.02	2,910.76	2,768.62	20.478	SF
Sater #19J-203(PR) - Sater #19J-203 - Wellbore #1 - As	16,858.68	7,045.01	2,839.71	2,733.19	26.661	CC, ES
Sater #19J-323(PR) - Sater #19J-323 - Wellbore #1 - As	17,000.00	17,000.00	2,594.35	2,397.79	13.199	ES, SF
Sater #19J-323(PR) - Sater #19J-323 - Wellbore #1 - As	17,138.01	6,705.35	2,593.30	2,487.88	24.599	CC
Sater #19J-443(PR) - Sater #19J-443 - Wellbore #1 - As	16,000.00	16,000.00	3,354.46	3,116.14	14.075	ES, SF
Sater #19J-443(PR) - Sater #19J-443 - Wellbore #1 - As	17,222.30	6,751.01	3,345.78	3,240.37	31.740	CC
Sater #19M-243ST(PR) - Sater #19M-243OH - Wellbore	12,800.00	11,087.62	1,872.04	1,731.78	13.347	SF
Sater #19M-243ST(PR) - Sater #19M-243OH - Wellbore	17,346.03	6,402.01	1,734.64	1,621.92	15.389	CC, ES
Sater #19M-243ST(PR) - Sater #19M-243ST - Wellbore ;	12,826.35	10,809.02	1,861.84	1,719.89	13.116	ES
Sater #19M-243ST(PR) - Sater #19M-243ST - Wellbore ;	12,900.00	10,809.02	1,863.30	1,720.96	13.091	SF
Sater #19M-243ST(PR) - Sater #19M-243ST - Wellbore ;	14,459.59	9,175.31	1,851.69	1,724.68	14.579	CC
Sater #19M-443(PR) - Sater #19M-443 - Wellbore #1 - A	12,828.30	11,075.02	2,135.35	1,993.02	15.003	ES, SF
Sater #19M-443(PR) - Sater #19M-443 - Wellbore #1 - A	15,743.34	8,158.65	2,132.59	2,015.12	18.155	CC
Sater #19-NU(PR) - Sater #19-NU - No Surveys	16,163.83	6,606.00	1,738.91	1,524.29	8.102	CC, ES
Sater #19-NU(PR) - Sater #19-NU - No Surveys	16,200.00	6,606.00	1,739.28	1,524.44	8.096	SF
Sater #19-PU(SI) - Sater #19-PU - No Surveys	13,529.93	6,646.00	1,690.23	1,495.26	8.669	CC, ES
Sater #19-PU(SI) - Sater #19-PU - No Surveys	13,600.00	6,646.00	1,691.69	1,496.31	8.659	SF
SATER #24-19U(PR) - SATER #24-19U - No Surveys	12,944.43	6,666.00	2,302.10	2,111.16	12.056	CC, ES
SATER #24-19U(PR) - SATER #24-19U - No Surveys	13,100.00	6,666.00	2,307.35	2,115.47	12.025	SF
Sater USX CC #19-01(PR) - Sater USX CC #19-01 - No	16,787.09	6,618.00	334.42	114.64	1.522	CC, ES, SF
Sater USX CC #19-07(PR) - Sater USX CC #19-07 - No	15,681.91	6,620.00	1,089.81	878.70	5.162	CC, ES
Sater USX CC #19-07(PR) - Sater USX CC #19-07 - No	15,700.00	6,620.00	1,089.96	878.75	5.161	SF
Sater USX CC #19-08(PR) - Sater USX CC #19-08 - No	15,468.37	6,644.00	329.58	119.67	1.570	CC, ES, SF
SATER USX CC #19-09(PR) - SATER USX CC #19-09 -	14,186.08	6,634.00	322.00	122.25	1.612	CC, ES, SF
Sater USX CC #19-10(PR) - Sater USX CC #19-10 - No	14,403.10	6,628.00	997.04	795.73	4.953	CC, ES, SF
SATER USX CC #19-15(PR) - SATER USX CC #19-15 -	13,088.02	6,669.00	999.16	807.07	5.202	CC, ES
SATER USX CC #19-15(PR) - SATER USX CC #19-15 -	13,100.00	6,669.00	999.23	807.08	5.200	SF
Sater USX CC #19-16(PR) - Sater USX CC #19-16 - No	12,870.99	6,653.00	322.74	132.60	1.697	CC, ES, SF
Sater USX CC #19-17(PR) - Sater USX CC #19-17 - No	16,227.14	6,617.00	335.85	120.51	1.560	CC, ES, SF
Sater USX CC #19-23(PR) - Sater USX CC #19-23 - No	13,644.33	6,640.00	339.95	144.23	1.737	CC, ES, SF

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

Noble Energy, Inc.
Anticollision Summary Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Booth CC30-725
Project:	Mustang	TVD Reference:	Well @ 4817.00ft
Reference Site:	CC Section 31	MD Reference:	Well @ 4817.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Booth CC30-725	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Booth CC30-725	Database:	EDMP
Reference Design:	Plan #1	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 20						
GUTTERSEN STATE CC #20-03(SI) - Wellbore #1 - No	16,688.21	6,691.00	3,106.66	2,961.62	21.421	CC
GUTTERSEN STATE CC #20-03(SI) - Wellbore #1 - No	16,700.00	6,691.00	3,106.68	2,961.55	21.406	ES
GUTTERSEN STATE CC #20-03(SI) - Wellbore #1 - No	17,100.00	6,691.00	3,133.83	2,985.96	21.193	SF
GUTTERSEN STATE CC #20-05(SI) - Wellbore #1 - Gyr	15,694.56	6,616.55	1,534.11	1,432.26	15.062	CC
GUTTERSEN STATE CC #20-05(SI) - Wellbore #1 - Gyr	15,700.00	6,616.63	1,534.12	1,432.22	15.055	ES
GUTTERSEN STATE CC #20-05(SI) - Wellbore #1 - Gyr	15,800.00	6,618.07	1,537.73	1,435.07	14.980	SF
GUTTERSEN STATE CC #20-06(SI) - Wellbore #1 - Gyr	15,566.31	6,680.94	2,925.80	2,824.87	28.988	CC
GUTTERSEN STATE CC #20-06(SI) - Wellbore #1 - Gyr	15,600.00	6,680.53	2,926.00	2,824.79	28.910	ES
GUTTERSEN STATE CC #20-06(SI) - Wellbore #1 - Gyr	16,000.00	6,675.72	2,957.77	2,853.92	28.481	SF
GUTTERSEN STATE CC #20-13(PR) - Wellbore #1 - Gy	12,985.66	6,600.14	1,457.09	1,376.12	17.997	CC
GUTTERSEN STATE CC #20-13(PR) - Wellbore #1 - Gy	13,000.00	6,600.52	1,457.16	1,376.07	17.970	ES
GUTTERSEN STATE CC #20-13(PR) - Wellbore #1 - Gy	13,100.00	6,603.16	1,461.56	1,379.72	17.859	SF
Guttersen State CC #20-14(SI) - Wellbore #1 - Gyro	12,936.00	6,656.72	2,969.42	2,888.71	36.790	CC, ES
Guttersen State CC #20-14(SI) - Wellbore #1 - Gyro	13,500.00	6,660.04	3,022.51	2,938.06	35.791	SF
GUTTERSEN STATE CC #20-30D(SI) - Wellbore #1 - Gy	17,346.03	6,735.82	944.40	826.40	8.003	CC, ES, SF
GUTTERSEN STATE CC #20-31D(SI) - Wellbore #1 - Gy	16,242.91	6,730.44	937.55	825.94	8.400	CC, ES
GUTTERSEN STATE CC #20-31D(SI) - Wellbore #1 - Gy	16,300.00	6,730.24	939.28	826.87	8.356	SF
GUTTERSEN STATE CC #20-32D(PR) - Wellbore #1 - C	14,769.51	6,761.71	874.37	777.56	9.032	CC, ES
GUTTERSEN STATE CC #20-32D(PR) - Wellbore #1 - C	14,800.00	6,761.88	874.90	778.02	9.031	SF
GUTTERSEN STATE CC #20-33D(PR) - Wellbore #1 - C	13,540.53	6,760.74	934.25	842.91	10.228	CC, ES
GUTTERSEN STATE CC #20-33D(PR) - Wellbore #1 - C	13,600.00	6,760.88	936.14	843.94	10.154	SF
GUTTERSEN STATE CC #20-4(SI) - Wellbore #1 - Gyro	16,966.91	6,581.96	1,502.59	1,390.81	13.442	CC, ES
GUTTERSEN STATE CC #20-4(SI) - Wellbore #1 - Gyro	17,100.00	6,583.39	1,508.47	1,395.76	13.384	SF
Guttersen State CC 20-11(SI) - Wellbore #1 - Gyro	14,204.36	6,627.20	2,972.99	2,882.73	32.938	CC, ES
Guttersen State CC 20-11(SI) - Wellbore #1 - Gyro	14,700.00	6,641.93	3,013.98	2,920.35	32.193	SF
Guttersen State CC 20-12(PR) - Wellbore #1 - Gyro	14,360.73	6,673.99	1,513.88	1,422.42	16.551	CC, ES
Guttersen State CC 20-12(PR) - Wellbore #1 - Gyro	14,500.00	6,675.56	1,520.27	1,427.80	16.440	SF
Guttersen State CC20-30D - Wellbore #1 - Wellbore #1-	17,346.03	6,736.15	953.88	836.32	8.114	CC, ES, SF
STATE #11(SI) - Wellbore #1 - Gyro	13,390.93	6,699.53	2,266.80	2,182.56	26.909	CC
STATE #11(SI) - Wellbore #1 - Gyro	13,400.00	6,699.53	2,266.82	2,182.50	26.885	ES
STATE #11(SI) - Wellbore #1 - Gyro	13,700.00	6,699.53	2,287.77	2,201.40	26.488	SF

Noble Energy, Inc.
Anticollision Summary Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Booth CC30-725
Project:	Mustang	TVD Reference:	Well @ 4817.00ft
Reference Site:	CC Section 31	MD Reference:	Well @ 4817.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Booth CC30-725	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Booth CC30-725	Database:	EDMP
Reference Design:	Plan #1	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 29						
GUTTERSEN #13-29U(PA) - Wellbore #1 - Gyro	9,041.97	6,609.50	1,636.07	1,581.66	30.066	CC, ES
GUTTERSEN #13-29U(PA) - Wellbore #1 - Gyro	9,300.00	6,609.33	1,656.30	1,600.46	29.665	SF
GUTTERSEN #14-29U(PR) - Wellbore #1 - Gyro	7,764.39	6,725.92	1,664.03	1,614.90	33.870	CC, ES
GUTTERSEN #14-29U(PR) - Wellbore #1 - Gyro	8,000.00	6,727.03	1,680.62	1,630.66	33.641	SF
GUTTERSEN #23-29U(PR) - Wellbore #1 - Gyro	9,038.13	6,668.52	2,872.59	2,818.09	52.705	CC, ES
GUTTERSEN #23-29U(PR) - Wellbore #1 - Gyro	9,800.00	6,678.64	2,971.89	2,913.26	50.693	SF
GUTTERSEN #24-29U(PR) - Wellbore #1 - Gyro	7,698.18	6,712.61	2,872.02	2,823.08	58.686	CC
GUTTERSEN #24-29U(PR) - Wellbore #1 - Gyro	7,700.00	6,712.59	2,872.02	2,823.08	58.679	ES
GUTTERSEN #24-29U(PR) - Wellbore #1 - Gyro	8,400.00	6,704.52	2,956.52	2,905.04	57.439	SF
GUTTERSEN #29-BU(PR) - Wellbore #1 - Gyro	8,414.55	6,610.70	2,238.32	2,186.99	43.611	CC, ES
GUTTERSEN #29-BU(PR) - Wellbore #1 - Gyro	8,900.00	6,609.23	2,290.35	2,236.74	42.720	SF
GUTTERSEN #29PU(PR) - Wellbore #1 - Gyro	8,435.87	6,688.48	3,482.27	3,430.67	67.493	CC, ES
GUTTERSEN #29PU(PR) - Wellbore #1 - Gyro	9,500.00	6,700.00	3,641.21	3,584.38	64.071	SF
GUTTERSEN #33-29U(PR) - Wellbore #1 - Gyro	9,082.22	6,717.18	4,171.59	4,116.72	76.025	CC
GUTTERSEN #33-29U(PR) - Wellbore #1 - Gyro	9,100.00	6,717.23	4,171.63	4,116.66	75.888	ES
GUTTERSEN #33-29U(PR) - Wellbore #1 - Gyro	10,600.00	6,720.96	4,439.12	4,375.98	70.305	SF
GUTTERSEN #43-29U(PR) - Wellbore #1 - Gyro	9,012.07	6,584.81	5,469.23	5,415.13	101.087	CC, ES
GUTTERSEN #43-29U(PR) - Wellbore #1 - Gyro	11,500.00	6,589.42	6,008.51	5,940.82	88.762	SF
GUTTERSEN #44-29U(PR) - Wellbore #1 - Gyro	7,759.58	6,877.04	5,548.39	5,498.82	111.933	CC, ES
GUTTERSEN #44-29U(PR) - Wellbore #1 - Gyro	10,500.00	6,918.13	6,188.12	6,125.94	99.521	SF
KILLEYBEGS #1(PR) - Wellbore #1 - No Surveys	8,023.34	6,710.00	4,556.13	4,470.86	53.433	CC, ES
KILLEYBEGS #1(PR) - Wellbore #1 - No Surveys	9,200.00	6,710.00	4,705.62	4,614.99	51.922	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 CC30-725
Project:	Mustang	TVD Reference:	Well @ 4817.00ft
Reference Site:	CC Section 31	MD Reference:	Well @ 4817.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Booth CC30-725	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Booth CC30-725	Database:	EDMP
Reference Design:	Plan #1	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						
JIGGER STATE CC #30-01(PR) - JIGGER STATE CC #	11,832.48	6,657.00	502.45	319.87	2.752	CC, ES, SF
SPIKE ST GWS #CC 30-03(PA) - SPIKE ST GWS #CC	11,707.76	6,693.00	2,353.54	2,171.14	12.903	CC, ES
SPIKE ST GWS #CC 30-03(PA) - SPIKE ST GWS #CC	11,900.00	6,693.00	2,361.38	2,177.86	12.867	SF
SPIKE ST GWS #CC 30-04(PA) - SPIKE ST GWS #CC	11,805.54	6,693.81	3,575.38	3,512.10	56.508	CC, ES
SPIKE ST GWS #CC 30-04(PA) - SPIKE ST GWS #CC	12,600.00	6,687.27	3,662.57	3,594.93	54.145	SF
SPIKE ST GWS #CC 30-05(PA) - SPIKE ST GWS #CC	10,377.33	6,701.00	3,623.74	3,450.34	20.898	CC
SPIKE ST GWS #CC 30-05(PA) - SPIKE ST GWS #CC	10,400.00	6,701.00	3,623.81	3,450.27	20.882	ES
SPIKE ST GWS #CC 30-05(PA) - SPIKE ST GWS #CC	10,800.00	6,701.00	3,648.30	3,472.46	20.747	SF
SPIKE ST GWS #CC 30-06(SI) - SPIKE ST GWS #CC 3	10,391.53	6,690.00	2,324.21	2,150.94	13.414	CC
SPIKE ST GWS #CC 30-06(SI) - SPIKE ST GWS #CC 3	10,400.00	6,690.00	2,324.23	2,150.90	13.410	ES
SPIKE ST GWS #CC 30-06(SI) - SPIKE ST GWS #CC 3	10,600.00	6,690.00	2,333.54	2,159.14	13.380	SF
SPIKE ST GWS #CC 30-08(PR) - SPIKE ST GWS #CC	10,396.75	6,681.00	309.96	136.83	1.790	CC
SPIKE ST GWS #CC 30-08(PR) - SPIKE ST GWS #CC	10,400.00	6,681.00	309.97	136.81	1.790	ES, SF
SPIKE ST GWS #CC 30-09(SI) - SPIKE ST GWS #CC 3	9,051.85	6,711.00	277.17	111.53	1.673	CC, ES, SF
SPIKE ST GWS #CC 30-10(SI) - SPIKE ST GWS #CC 3	9,049.92	6,734.00	1,036.08	869.99	6.238	CC, ES
SPIKE ST GWS #CC 30-10(SI) - SPIKE ST GWS #CC 3	9,100.00	6,734.00	1,037.29	871.01	6.238	SF
SPIKE ST GWS #CC 30-12(PR) - SPIKE ST GWS #CC	9,052.62	6,725.00	3,742.64	3,576.72	22.557	CC, ES
SPIKE ST GWS #CC 30-12(PR) - SPIKE ST GWS #CC	9,500.00	6,725.00	3,769.28	3,601.13	22.416	SF
SPIKE ST GWS #CC 30-14(PR) - SPIKE ST GWS #CC	2,200.00	2,160.00	2,145.03	2,094.18	42.181	CC
SPIKE ST GWS #CC 30-14(PR) - SPIKE ST GWS #CC	2,300.00	2,259.98	2,146.48	2,093.28	40.345	ES
SPIKE ST GWS #CC 30-14(PR) - SPIKE ST GWS #CC	7,800.00	6,713.00	2,299.97	2,139.78	14.358	SF
SPIKE ST GWS #CC 30-15(SI) - SPIKE ST GWS #CC 3	7,743.66	6,728.00	1,086.46	926.12	6.776	CC, ES, SF
SPIKE ST GWS #CC 30-16(SI) - SPIKE ST GWS #CC 3	7,726.25	6,727.00	245.80	85.55	1.534	CC, ES, SF
SPIKE ST GWS CC #30-07(SI) - SPIKE ST GWS CC #3	10,387.75	6,706.00	907.26	733.69	5.227	CC, ES
SPIKE ST GWS CC #30-07(SI) - SPIKE ST GWS CC #3	10,400.00	6,706.00	907.34	733.72	5.226	SF
Spike State #CC30-19(SI) - Spike State #CC30-19 - No	11,014.65	6,682.00	2,868.85	2,691.54	16.180	CC, ES
Spike State #CC30-19(SI) - Spike State #CC30-19 - No	11,300.00	6,682.00	2,883.01	2,704.04	16.109	SF
Spike State #CC30-24(PR) - Spike State #CC30-24 - We	8,396.77	6,741.36	319.04	278.65	7.899	CC, ES
Spike State #CC30-24(PR) - Spike State #CC30-24 - We	8,400.00	6,741.42	319.06	278.66	7.898	SF
Spike State #CC30-24(SI) - Spike State #CC30-24 - No	8,484.63	6,729.00	1,757.10	1,593.91	10.767	CC, ES
Spike State #CC30-24(SI) - Spike State #CC30-24 - No	8,600.00	6,729.00	1,760.89	1,597.25	10.761	SF
SPIKE STATE CC #30-11J(PA) - SPIKE STATE CC #30	8,714.50	6,718.00	2,636.98	2,472.93	16.074	CC, ES
SPIKE STATE CC #30-11J(PA) - SPIKE STATE CC #30	8,900.00	6,718.00	2,643.49	2,478.62	16.034	SF
SPIKE STATE CC #30-13(PR) - SPIKE STATE CC #30-	2,200.00	2,159.00	3,307.01	3,256.17	65.056	CC
SPIKE STATE CC #30-13(PR) - SPIKE STATE CC #30-	2,300.00	2,258.98	3,308.64	3,255.46	62.213	ES
SPIKE STATE CC #30-13(PR) - SPIKE STATE CC #30-	8,000.00	6,712.00	3,629.97	3,469.17	22.574	SF
Spike State CC #30-18(SI) - Spike State CC #30-18 - No	11,024.99	6,690.00	1,637.15	1,459.62	9.221	CC, ES
Spike State CC #30-18(SI) - Spike State CC #30-18 - No	11,100.00	6,690.00	1,638.87	1,460.92	9.210	SF
SPIKE STATE CC #30-20(PR) - SPIKE STATE CC #30-	9,631.68	6,701.00	2,792.51	2,623.79	16.551	CC, ES
SPIKE STATE CC #30-20(PR) - SPIKE STATE CC #30-	9,900.00	6,701.00	2,805.37	2,635.24	16.490	SF
SPIKE STATE CC #30-21(PR) - SPIKE STATE CC #30-	9,384.37	6,713.00	1,947.29	1,779.78	11.625	CC
SPIKE STATE CC #30-21(PR) - SPIKE STATE CC #30-	9,400.00	6,713.00	1,947.36	1,779.76	11.620	ES
SPIKE STATE CC #30-21(PR) - SPIKE STATE CC #30-	9,500.00	6,713.00	1,950.72	1,782.65	11.606	SF
SPIKE STATE CC #30-22(SI) - SPIKE STATE CC #30-2	9,783.45	6,707.36	230.53	182.10	4.759	CC, ES, SF
SPIKE STATE CC #30-1J(PR) - SPIKE STATE CC #30-L	11,131.85	6,677.73	323.19	267.10	5.762	CC, ES, SF
SPIKE STATE GWS CC #30-02(PR) - SPIKE STATE GV	11,634.76	6,678.00	935.10	753.52	5.150	CC, ES, SF

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

Noble Energy, Inc.
Anticollision Summary Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Booth CC30-725
Project:	Mustang	TVD Reference:	Well @ 4817.00ft
Reference Site:	CC Section 31	MD Reference:	Well @ 4817.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Booth CC30-725	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Booth CC30-725	Database:	EDMP
Reference Design:	Plan #1	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	2,200.00	2,153.00	3,069.61	3,018.90	60.528	CC
BOOTH 11-31U (SI) - BOOTH#11-31U - No Surveys	2,300.00	2,252.98	3,071.36	3,018.29	57.882	ES
BOOTH 11-31U (SI) - BOOTH#11-31U - No Surveys	6,950.00	6,675.38	3,640.15	3,482.61	23.106	SF
BOOTH 21-31U (SI) - BOOTH#21-31U - No Surveys	2,200.00	2,183.00	1,775.77	1,724.46	34.606	CC
BOOTH 21-31U (SI) - BOOTH#21-31U - No Surveys	2,300.00	2,282.98	1,777.51	1,723.85	33.124	ES
BOOTH 21-31U (SI) - BOOTH#21-31U - No Surveys	6,800.00	6,643.41	2,332.53	2,175.95	14.896	SF
BOOTH 31-31 (SI) - BOOTH#31-31 - No Surveys	2,200.00	2,168.00	465.13	414.12	9.118	CC
BOOTH 31-31 (SI) - BOOTH#31-31 - No Surveys	2,300.00	2,267.98	466.84	413.48	8.748	ES
BOOTH 31-31 (SI) - BOOTH#31-31 - No Surveys	6,300.00	6,237.61	941.50	794.52	6.405	SF
BOOTH 31-AU (SI) - BOOTH#31-AU - No Surveys	2,200.00	2,163.00	2,579.33	2,528.42	50.661	CC
BOOTH 31-AU (SI) - BOOTH#31-AU - No Surveys	2,300.00	2,262.98	2,580.99	2,527.72	48.458	ES
BOOTH 31-AU (SI) - BOOTH#31-AU - No Surveys	6,700.00	6,565.25	3,141.37	2,986.57	20.293	SF
BOOTH 41-31 (SI) - BOOTH#41-31 - No Surveys	6,273.41	6,217.83	327.27	180.82	2.235	CC
BOOTH 41-31 (SI) - BOOTH#41-31 - No Surveys	6,300.00	6,243.61	327.63	180.57	2.228	ES, SF
Booth CC30-715 - Booth CC30-715 - Plan #1	2,551.20	2,548.46	22.42	4.80	1.273	Level 3, CC, ES, SF
Booth CC30-734 - Booth CC30-734 - Plan #1	2,200.00	2,200.00	22.33	7.02	1.459	Level 3, CC, ES, SF
Booth CC30-745 - Booth CC30-745 - Plan #1	2,200.00	2,199.00	44.93	29.63	2.936	CC, ES, SF
Booth CC30-755 - Booth CC30-755 - Plan #1	12,526.16	12,415.46	1,928.93	1,820.30	17.757	CC, ES
Booth CC30-755 - Booth CC30-755 - Plan #1	12,600.00	12,414.24	1,930.38	1,821.54	17.736	SF
Booth CC30-764 - Booth CC30-764 - Plan #1	5,897.25	6,209.27	2,556.04	2,513.27	59.761	CC
Booth CC30-764 - Booth CC30-764 - Plan #1	12,528.98	12,319.26	2,572.77	2,464.53	23.769	ES
Booth CC30-764 - Booth CC30-764 - Plan #1	12,700.00	12,320.10	2,578.36	2,469.31	23.643	SF
Booth CC30-774 - Booth CC30-774 - Plan #1	2,200.00	2,188.00	2,637.38	2,622.11	172.787	CC, ES
Booth CC30-774 - Booth CC30-774 - Plan #1	12,900.00	12,451.54	3,235.57	3,125.16	29.304	SF
Booth CC30-784 - Booth CC30-784 - Plan #1	2,200.00	2,186.00	2,658.30	2,643.05	174.240	CC, ES
Booth CC30-784 - Booth CC30-784 - Plan #1	13,100.00	12,349.89	3,898.51	3,786.33	34.754	SF
Booth CC31-17D (SI) - Booth#CC31-17D - Wellbore #1	1,965.30	1,949.53	381.29	369.34	31.905	CC
Booth CC31-17D (SI) - Booth#CC31-17D - Wellbore #1	2,000.00	1,981.79	381.45	369.28	31.327	ES
Booth CC31-17D (SI) - Booth#CC31-17D - Wellbore #1	6,200.00	6,245.30	794.45	755.62	20.459	SF
Sadie CC31-14 (PR) - Wellbore #1 - Wellbore #1 - As Dr	1,809.58	1,848.63	4,483.82	4,471.31	358.393	CC
Sadie CC31-14 (PR) - Wellbore #1 - Wellbore #1 - As Dr	1,900.00	1,906.21	4,484.17	4,471.13	343.999	ES
Sadie CC31-14 (PR) - Wellbore #1 - Wellbore #1 - As Dr	6,800.00	6,800.00	4,943.43	4,896.15	104.578	SF
CC Section 32						
Guttersen State CC32-13 - Wellbore #1 - Wellbore #1 - A	6,187.63	6,223.81	4,347.07	4,303.62	100.036	CC, ES
Guttersen State CC32-13 - Wellbore #1 - Wellbore #1 - A	6,500.00	6,478.85	4,418.30	4,372.90	97.327	SF
Guttersen State CC32-14 - Wellbore #1 - Wellbore #1 - A	6,184.61	6,050.70	4,966.25	4,923.45	116.047	CC, ES
Guttersen State CC32-14 - Wellbore #1 - Wellbore #1 - A	6,750.00	6,580.61	5,162.44	5,116.12	111.455	SF

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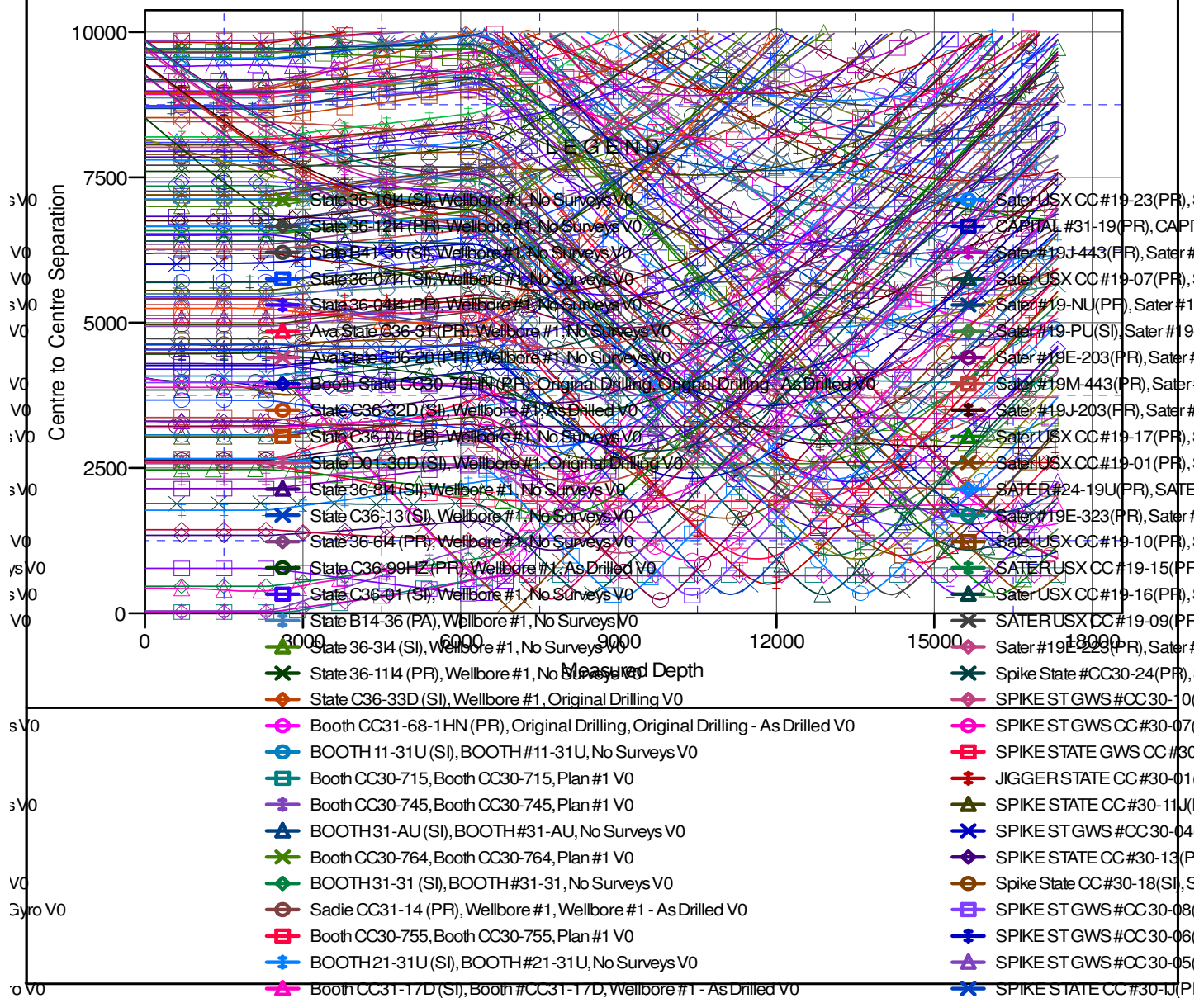
Noble Energy, Inc.
Anticollision Summary Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Booth CC30-725
Project:	Mustang	TVD Reference:	Well @ 4817.00ft
Reference Site:	CC Section 31	MD Reference:	Well @ 4817.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Booth CC30-725	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Booth CC30-725	Database:	EDMP
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Reference Depths are relative to Well @ 4817.00ft
Offset Depths are relative to Offset Datum
Central Meridian is -105.5000000

Coordinates are relative to: Booth CC30-725
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 0.66°

Ladder Plot



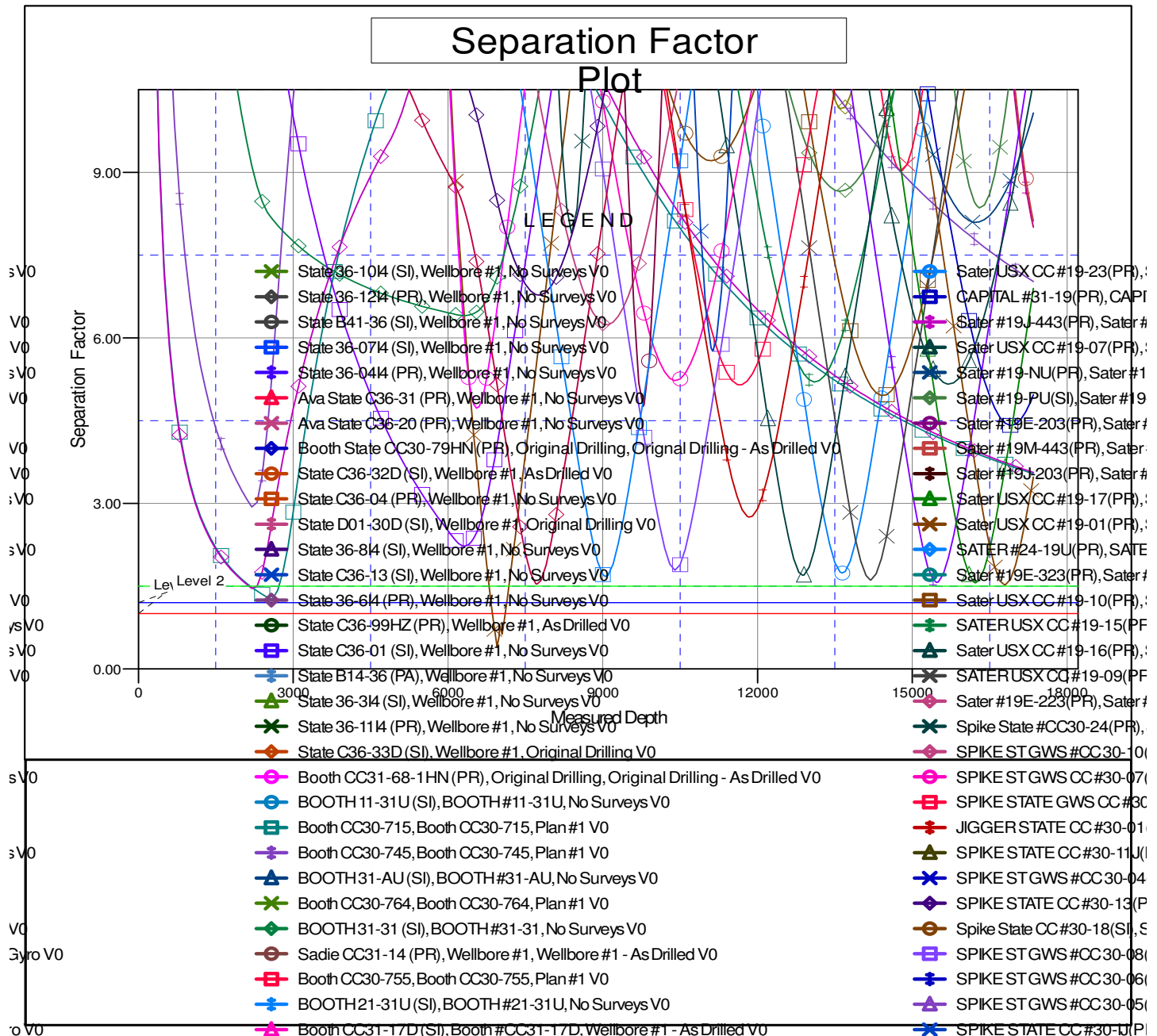
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Noble Energy, Inc.
Anticollision Summary Report

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