

Project: Mustang
Site: D Section 21
Well: Vogler State D21-720
Wellbore: Wellbore #1
Design: Plan 1

Northern Region - DJ Basin

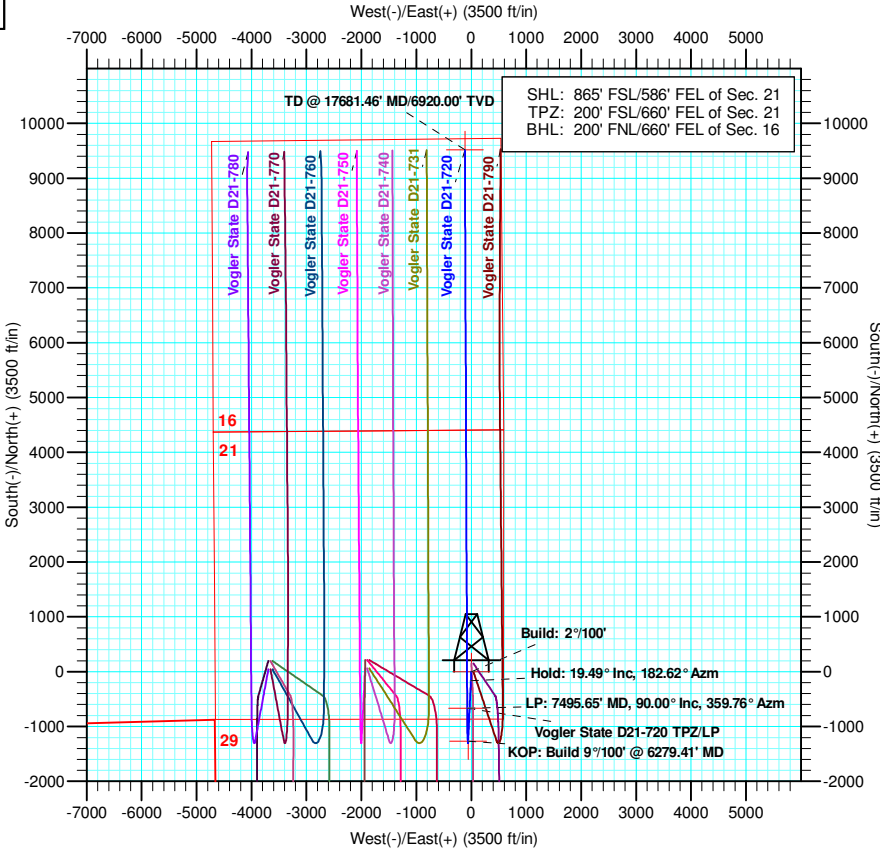
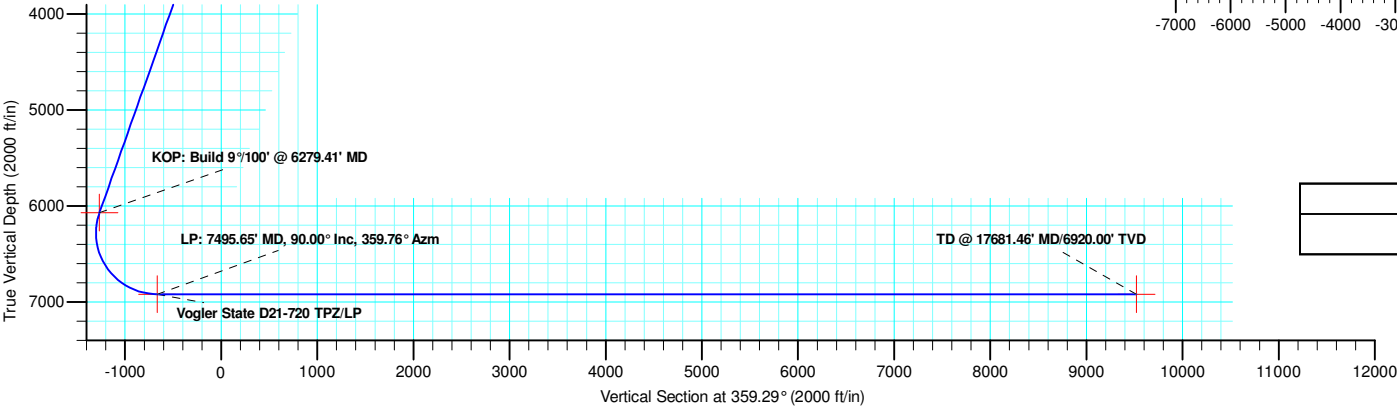
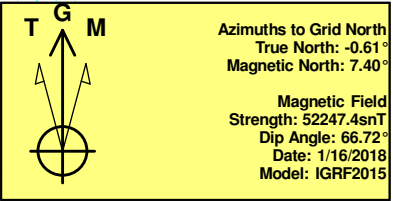
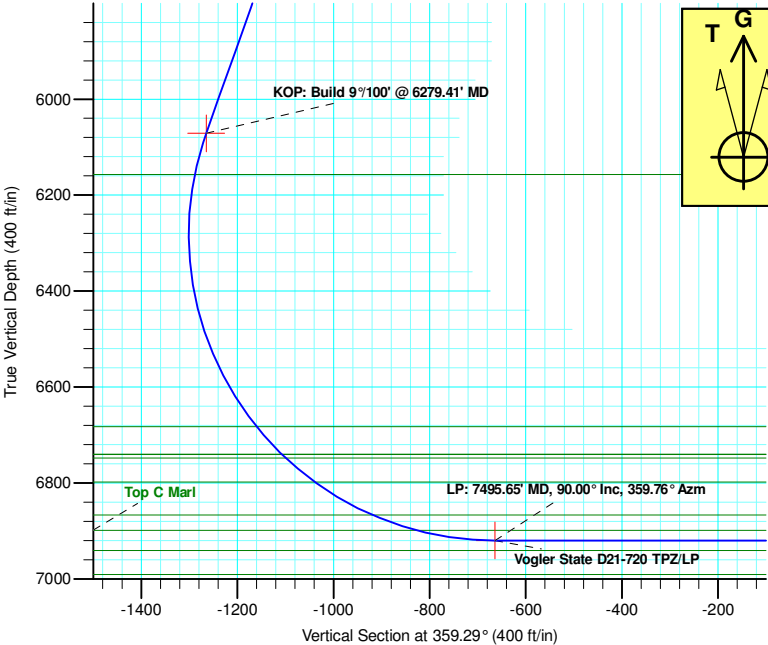
Geodetic System: US State Plane 1983
Datum: North American Datum 1983
Ellipsoid: GRS 1980
Zone: Colorado Northern Zone
System Datum: Mean Sea Level

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect
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	2974.35	19.49	182.62	2955.67	-163.93	-7.51	2.00	182.62	-163.83
4	6279.41	19.49	182.62	6071.41	-1265.32	-57.98	0.00	0.00	-1264.50
5	7495.65	90.00	359.76	6920.00	-665.14	-75.47	9.00	176.96	-664.16
6	17681.46	90.00	359.76	6920.00	9520.59	-117.82	0.00	0.00	9521.31

WELL DETAILS: Vogler State D21-720

+N/-S	+E/-W	Northing	Ground Level: Easting	4820.00	Latitude	Longitude
0.00	0.00	1319313.99	3265615.01	40.2060041	-104.5490042	



Plan: Plan 1 (Vogler State D21-720/Wellbore #1)

Created By: Keith Noack Date: 13:42, August 07 2018

Northern Region - DJ Basin

Mustang

D Section 21

Vogler State D21-720

Wellbore #1

Plan: Plan 1

Standard Planning Report

07 August, 2018

Noble Energy, Inc.

Planning Report

Database:	EDMP	Local Co-ordinate Reference:	Well Vogler State D21-720
Company:	Northern Region - DJ Basin	TVD Reference:	Well @ 4850.00ft
Project:	Mustang	MD Reference:	Well @ 4850.00ft
Site:	D Section 21	North Reference:	Grid
Well:	Vogler State D21-720	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
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		D Section 21			
Site Position:		Northing:	1,323,041.88 usft	Latitude:	40.2163540
From:	Lat/Long	Easting:	3,261,613.48 usft	Longitude:	-104.5631890
Position Uncertainty:	0.00 ft	Slot Radius:	13.200 in	Grid Convergence:	0.61 °

Well	Vogler State D21-720					
Well Position	+N/-S	-3,727.90 ft	Northing:	1,319,313.99 usft	Latitude:	40.2060042
	+E/-W	4,001.54 ft	Easting:	3,265,615.01 usft	Longitude:	-104.5490041
Position Uncertainty		0.00 ft	Wellhead Elevation:		Ground Level:	4,820.00 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	1/16/2018	8.02	66.72	52,247.40321292

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	359.29

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	
2,974.35	19.49	182.62	2,955.67	-163.93	-7.51	2.00	2.00	0.00	182.62	
6,279.41	19.49	182.62	6,071.41	-1,265.32	-57.98	0.00	0.00	0.00	0.00	
7,495.65	90.00	359.76	6,920.00	-665.14	-75.47	9.00	5.80	14.56	176.96	Vogler State D21-7:
17,681.46	90.00	359.76	6,920.00	9,520.59	-117.82	0.00	0.00	0.00	0.00	Vogler State D21-7:

Noble Energy, Inc.

Planning Report

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Company:	Northern Region - DJ Basin	TVD Reference:	Well @ 4850.00ft
Project:	Mustang	MD Reference:	Well @ 4850.00ft
Site:	D Section 21	North Reference:	Grid
Well:	Vogler State D21-720	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
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
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
630.00	0.00	0.00	630.00	0.00	0.00	0.00	0.00	0.00	0.00
Pierre									
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00
765.00	0.00	0.00	765.00	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
1,632.00	0.00	0.00	1,632.00	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
Build: 2°/100'									
2,100.00	2.00	182.62	2,099.98	-1.74	-0.08	-1.74	2.00	2.00	0.00
2,200.00	4.00	182.62	2,199.84	-6.97	-0.32	-6.97	2.00	2.00	0.00
2,300.00	6.00	182.62	2,299.45	-15.68	-0.72	-15.67	2.00	2.00	0.00
2,400.00	8.00	182.62	2,398.70	-27.85	-1.28	-27.83	2.00	2.00	0.00
2,500.00	10.00	182.62	2,497.47	-43.48	-1.99	-43.45	2.00	2.00	0.00
2,600.00	12.00	182.62	2,595.62	-62.54	-2.87	-62.50	2.00	2.00	0.00
2,700.00	14.00	182.62	2,693.06	-85.01	-3.90	-84.95	2.00	2.00	0.00
2,800.00	16.00	182.62	2,789.64	-110.86	-5.08	-110.79	2.00	2.00	0.00
2,900.00	18.00	182.62	2,885.27	-140.07	-6.42	-139.98	2.00	2.00	0.00
2,974.35	19.49	182.62	2,955.67	-163.93	-7.51	-163.83	2.00	2.00	0.00
Hold: 19.49° Inc, 182.62° Azm									
3,000.00	19.49	182.62	2,979.85	-172.48	-7.90	-172.37	0.00	0.00	0.00
3,100.00	19.49	182.62	3,074.13	-205.80	-9.43	-205.67	0.00	0.00	0.00
3,200.00	19.49	182.62	3,168.40	-239.13	-10.96	-238.97	0.00	0.00	0.00
3,300.00	19.49	182.62	3,262.67	-272.45	-12.49	-272.28	0.00	0.00	0.00
3,400.00	19.49	182.62	3,356.94	-305.78	-14.01	-305.58	0.00	0.00	0.00
3,500.00	19.49	182.62	3,451.21	-339.10	-15.54	-338.88	0.00	0.00	0.00
3,600.00	19.49	182.62	3,545.48	-372.42	-17.07	-372.19	0.00	0.00	0.00
3,700.00	19.49	182.62	3,639.76	-405.75	-18.59	-405.49	0.00	0.00	0.00
3,800.00	19.49	182.62	3,734.03	-439.07	-20.12	-438.79	0.00	0.00	0.00
3,900.00	19.49	182.62	3,828.30	-472.40	-21.65	-472.09	0.00	0.00	0.00
3,926.20	19.49	182.62	3,853.00	-481.13	-22.05	-480.82	0.00	0.00	0.00
Parkman									
4,000.00	19.49	182.62	3,922.57	-505.72	-23.18	-505.40	0.00	0.00	0.00
4,100.00	19.49	182.62	4,016.84	-539.05	-24.70	-538.70	0.00	0.00	0.00

Noble Energy, Inc.

Planning Report

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Company:	Northern Region - DJ Basin	TVD Reference:	Well @ 4850.00ft
Project:	Mustang	MD Reference:	Well @ 4850.00ft
Site:	D Section 21	North Reference:	Grid
Well:	Vogler State D21-720	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
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)
4,173.36	19.49	182.62	4,086.00	-563.49	-25.82	-563.13	0.00	0.00	0.00
Sussex									
4,200.00	19.49	182.62	4,111.11	-572.37	-26.23	-572.00	0.00	0.00	0.00
4,300.00	19.49	182.62	4,205.39	-605.70	-27.76	-605.31	0.00	0.00	0.00
4,400.00	19.49	182.62	4,299.66	-639.02	-29.28	-638.61	0.00	0.00	0.00
4,500.00	19.49	182.62	4,393.93	-672.34	-30.81	-671.91	0.00	0.00	0.00
4,600.00	19.49	182.62	4,488.20	-705.67	-32.34	-705.21	0.00	0.00	0.00
4,700.00	19.49	182.62	4,582.47	-738.99	-33.86	-738.52	0.00	0.00	0.00
4,800.00	19.49	182.62	4,676.75	-772.32	-35.39	-771.82	0.00	0.00	0.00
4,900.00	19.49	182.62	4,771.02	-805.64	-36.92	-805.12	0.00	0.00	0.00
5,000.00	19.49	182.62	4,865.29	-838.97	-38.45	-838.43	0.00	0.00	0.00
5,100.00	19.49	182.62	4,959.56	-872.29	-39.97	-871.73	0.00	0.00	0.00
5,181.08	19.49	182.62	5,036.00	-899.31	-41.21	-898.73	0.00	0.00	0.00
Shannon									
5,200.00	19.49	182.62	5,053.83	-905.61	-41.50	-905.03	0.00	0.00	0.00
5,300.00	19.49	182.62	5,148.10	-938.94	-43.03	-938.33	0.00	0.00	0.00
5,400.00	19.49	182.62	5,242.38	-972.26	-44.55	-971.64	0.00	0.00	0.00
5,500.00	19.49	182.62	5,336.65	-1,005.59	-46.08	-1,004.94	0.00	0.00	0.00
5,600.00	19.49	182.62	5,430.92	-1,038.91	-47.61	-1,038.24	0.00	0.00	0.00
5,700.00	19.49	182.62	5,525.19	-1,072.24	-49.14	-1,071.55	0.00	0.00	0.00
5,800.00	19.49	182.62	5,619.46	-1,105.56	-50.66	-1,104.85	0.00	0.00	0.00
5,900.00	19.49	182.62	5,713.73	-1,138.88	-52.19	-1,138.15	0.00	0.00	0.00
6,000.00	19.49	182.62	5,808.01	-1,172.21	-53.72	-1,171.45	0.00	0.00	0.00
6,100.00	19.49	182.62	5,902.28	-1,205.53	-55.24	-1,204.76	0.00	0.00	0.00
6,200.00	19.49	182.62	5,996.55	-1,238.86	-56.77	-1,238.06	0.00	0.00	0.00
6,279.41	19.49	182.62	6,071.41	-1,265.32	-57.98	-1,264.50	0.00	0.00	0.00
KOP: Build 9°/100' @ 6279.41' MD									
6,300.00	17.64	182.95	6,090.93	-1,271.87	-58.30	-1,271.05	9.00	-8.99	1.57
6,350.00	13.15	184.10	6,139.12	-1,285.11	-59.10	-1,284.28	9.00	-8.98	2.31
6,368.30	11.51	184.74	6,157.00	-1,289.00	-59.40	-1,288.17	9.00	-8.97	3.50
Teepee Buttes									
6,400.00	8.67	186.42	6,188.21	-1,294.53	-59.93	-1,293.69	9.00	-8.95	5.29
6,450.00	4.23	193.58	6,237.88	-1,300.07	-60.78	-1,299.22	9.00	-8.87	14.32
6,500.00	1.09	290.92	6,287.83	-1,301.69	-61.66	-1,300.83	9.00	-6.29	194.69
6,550.00	5.00	348.10	6,337.76	-1,299.39	-62.55	-1,298.52	9.00	7.82	114.35
6,600.00	9.45	353.67	6,387.35	-1,293.18	-63.45	-1,292.30	9.00	8.90	11.13
6,650.00	13.93	355.68	6,436.30	-1,283.10	-64.36	-1,282.20	9.00	8.96	4.02
6,700.00	18.42	356.72	6,484.31	-1,269.21	-65.26	-1,268.30	9.00	8.98	2.09
6,750.00	22.91	357.37	6,531.08	-1,251.59	-66.16	-1,250.67	9.00	8.99	1.29
6,800.00	27.41	357.81	6,576.33	-1,230.35	-67.05	-1,229.43	9.00	8.99	0.89
6,850.00	31.91	358.14	6,619.76	-1,205.63	-67.92	-1,204.70	9.00	8.99	0.65
6,900.00	36.40	358.39	6,661.13	-1,177.58	-68.77	-1,176.64	9.00	9.00	0.51
6,927.62	38.89	358.51	6,683.00	-1,160.72	-69.23	-1,159.77	9.00	9.00	0.43
Sharon Springs									
6,950.00	40.90	358.59	6,700.17	-1,146.37	-69.59	-1,145.42	9.00	9.00	0.39
7,000.00	45.40	358.76	6,736.64	-1,112.19	-70.37	-1,111.24	9.00	9.00	0.34
7,004.81	45.83	358.78	6,740.00	-1,108.75	-70.45	-1,107.80	9.00	9.00	0.31
Top A Chalk									
7,006.25	45.96	358.78	6,741.00	-1,107.72	-70.47	-1,106.77	9.00	9.00	0.31
Top A Marl									
7,016.40	46.88	358.81	6,748.00	-1,100.37	-70.62	-1,099.41	9.00	9.00	0.30
Top B Chalk									
7,050.00	49.90	358.91	6,770.31	-1,075.26	-71.12	-1,074.29	9.00	9.00	0.28

Noble Energy, Inc.

Planning Report

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Project:	Mustang	MD Reference:	Well @ 4850.00ft
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Well:	Vogler State D21-720	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
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Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
7,094.91	53.94	359.02	6,798.00	-1,039.92	-71.76	-1,038.95	9.00	9.00	0.26
Top B Marl									
7,100.00	54.40	359.04	6,800.98	-1,035.79	-71.83	-1,034.83	9.00	9.00	0.24
7,150.00	58.90	359.15	6,828.46	-994.04	-72.49	-993.07	9.00	9.00	0.23
7,200.00	63.40	359.25	6,852.59	-950.27	-73.10	-949.29	9.00	9.00	0.21
7,234.02	66.46	359.32	6,867.00	-919.46	-73.48	-918.48	9.00	9.00	0.19
Top C Chalk									
7,250.00	67.90	359.35	6,873.20	-904.73	-73.65	-903.75	9.00	9.00	0.19
7,300.00	72.39	359.44	6,890.18	-857.72	-74.15	-856.73	9.00	9.00	0.18
7,331.66	75.24	359.50	6,899.00	-827.31	-74.43	-826.33	9.00	9.00	0.17
Top C Marl									
7,350.00	76.89	359.53	6,903.41	-809.52	-74.58	-808.53	9.00	9.00	0.17
7,400.00	81.39	359.61	6,912.83	-760.43	-74.95	-759.44	9.00	9.00	0.16
7,450.00	85.89	359.69	6,918.36	-710.75	-75.25	-709.76	9.00	9.00	0.16
7,495.65	90.00	359.76	6,920.00	-665.14	-75.47	-664.16	9.00	9.00	0.16
LP: 7495.65' MD, 90.00° Inc, 359.76° Azm									
7,500.00	90.00	359.76	6,920.00	-660.79	-75.49	-659.80	0.00	0.00	0.00
7,600.00	90.00	359.76	6,920.00	-560.79	-75.91	-559.81	0.00	0.00	0.00
7,700.00	90.00	359.76	6,920.00	-460.79	-76.32	-459.81	0.00	0.00	0.00
7,800.00	90.00	359.76	6,920.00	-360.79	-76.74	-359.81	0.00	0.00	0.00
7,900.00	90.00	359.76	6,920.00	-260.79	-77.15	-259.82	0.00	0.00	0.00
8,000.00	90.00	359.76	6,920.00	-160.79	-77.57	-159.82	0.00	0.00	0.00
8,100.00	90.00	359.76	6,920.00	-60.79	-77.99	-59.82	0.00	0.00	0.00
8,200.00	90.00	359.76	6,920.00	39.21	-78.40	40.17	0.00	0.00	0.00
8,300.00	90.00	359.76	6,920.00	139.21	-78.82	140.17	0.00	0.00	0.00
8,400.00	90.00	359.76	6,920.00	239.21	-79.23	240.17	0.00	0.00	0.00
8,500.00	90.00	359.76	6,920.00	339.20	-79.65	340.16	0.00	0.00	0.00
8,600.00	90.00	359.76	6,920.00	439.20	-80.06	440.16	0.00	0.00	0.00
8,700.00	90.00	359.76	6,920.00	539.20	-80.48	540.16	0.00	0.00	0.00
8,800.00	90.00	359.76	6,920.00	639.20	-80.90	640.15	0.00	0.00	0.00
8,900.00	90.00	359.76	6,920.00	739.20	-81.31	740.15	0.00	0.00	0.00
9,000.00	90.00	359.76	6,920.00	839.20	-81.73	840.15	0.00	0.00	0.00
9,100.00	90.00	359.76	6,920.00	939.20	-82.14	940.14	0.00	0.00	0.00
9,200.00	90.00	359.76	6,920.00	1,039.20	-82.56	1,040.14	0.00	0.00	0.00
9,300.00	90.00	359.76	6,920.00	1,139.20	-82.97	1,140.14	0.00	0.00	0.00
9,400.00	90.00	359.76	6,920.00	1,239.20	-83.39	1,240.13	0.00	0.00	0.00
9,500.00	90.00	359.76	6,920.00	1,339.20	-83.81	1,340.13	0.00	0.00	0.00
9,600.00	90.00	359.76	6,920.00	1,439.20	-84.22	1,440.13	0.00	0.00	0.00
9,700.00	90.00	359.76	6,920.00	1,539.19	-84.64	1,540.12	0.00	0.00	0.00
9,800.00	90.00	359.76	6,920.00	1,639.19	-85.05	1,640.12	0.00	0.00	0.00
9,900.00	90.00	359.76	6,920.00	1,739.19	-85.47	1,740.12	0.00	0.00	0.00
10,000.00	90.00	359.76	6,920.00	1,839.19	-85.88	1,840.11	0.00	0.00	0.00
10,100.00	90.00	359.76	6,920.00	1,939.19	-86.30	1,940.11	0.00	0.00	0.00
10,200.00	90.00	359.76	6,920.00	2,039.19	-86.72	2,040.11	0.00	0.00	0.00
10,300.00	90.00	359.76	6,920.00	2,139.19	-87.13	2,140.10	0.00	0.00	0.00
10,400.00	90.00	359.76	6,920.00	2,239.19	-87.55	2,240.10	0.00	0.00	0.00
10,500.00	90.00	359.76	6,920.00	2,339.19	-87.96	2,340.10	0.00	0.00	0.00
10,600.00	90.00	359.76	6,920.00	2,439.19	-88.38	2,440.09	0.00	0.00	0.00
10,700.00	90.00	359.76	6,920.00	2,539.19	-88.80	2,540.09	0.00	0.00	0.00
10,800.00	90.00	359.76	6,920.00	2,639.18	-89.21	2,640.09	0.00	0.00	0.00
10,900.00	90.00	359.76	6,920.00	2,739.18	-89.63	2,740.08	0.00	0.00	0.00
11,000.00	90.00	359.76	6,920.00	2,839.18	-90.04	2,840.08	0.00	0.00	0.00
11,100.00	90.00	359.76	6,920.00	2,939.18	-90.46	2,940.08	0.00	0.00	0.00

Noble Energy, Inc.

Planning Report

Database:	EDMP	Local Co-ordinate Reference:	Well Vogler State D21-720
Company:	Northern Region - DJ Basin	TVD Reference:	Well @ 4850.00ft
Project:	Mustang	MD Reference:	Well @ 4850.00ft
Site:	D Section 21	North Reference:	Grid
Well:	Vogler State D21-720	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
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	359.76	6,920.00	3,039.18	-90.87	3,040.07	0.00	0.00	0.00
11,300.00	90.00	359.76	6,920.00	3,139.18	-91.29	3,140.07	0.00	0.00	0.00
11,400.00	90.00	359.76	6,920.00	3,239.18	-91.71	3,240.07	0.00	0.00	0.00
11,500.00	90.00	359.76	6,920.00	3,339.18	-92.12	3,340.06	0.00	0.00	0.00
11,600.00	90.00	359.76	6,920.00	3,439.18	-92.54	3,440.06	0.00	0.00	0.00
11,700.00	90.00	359.76	6,920.00	3,539.18	-92.95	3,540.06	0.00	0.00	0.00
11,800.00	90.00	359.76	6,920.00	3,639.18	-93.37	3,640.05	0.00	0.00	0.00
11,900.00	90.00	359.76	6,920.00	3,739.18	-93.78	3,740.05	0.00	0.00	0.00
12,000.00	90.00	359.76	6,920.00	3,839.17	-94.20	3,840.05	0.00	0.00	0.00
12,100.00	90.00	359.76	6,920.00	3,939.17	-94.62	3,940.04	0.00	0.00	0.00
12,200.00	90.00	359.76	6,920.00	4,039.17	-95.03	4,040.04	0.00	0.00	0.00
12,300.00	90.00	359.76	6,920.00	4,139.17	-95.45	4,140.04	0.00	0.00	0.00
12,400.00	90.00	359.76	6,920.00	4,239.17	-95.86	4,240.03	0.00	0.00	0.00
12,500.00	90.00	359.76	6,920.00	4,339.17	-96.28	4,340.03	0.00	0.00	0.00
12,600.00	90.00	359.76	6,920.00	4,439.17	-96.69	4,440.03	0.00	0.00	0.00
12,700.00	90.00	359.76	6,920.00	4,539.17	-97.11	4,540.02	0.00	0.00	0.00
12,800.00	90.00	359.76	6,920.00	4,639.17	-97.53	4,640.02	0.00	0.00	0.00
12,900.00	90.00	359.76	6,920.00	4,739.17	-97.94	4,740.02	0.00	0.00	0.00
13,000.00	90.00	359.76	6,920.00	4,839.17	-98.36	4,840.01	0.00	0.00	0.00
13,100.00	90.00	359.76	6,920.00	4,939.16	-98.77	4,940.01	0.00	0.00	0.00
13,200.00	90.00	359.76	6,920.00	5,039.16	-99.19	5,040.01	0.00	0.00	0.00
13,300.00	90.00	359.76	6,920.00	5,139.16	-99.60	5,140.00	0.00	0.00	0.00
13,400.00	90.00	359.76	6,920.00	5,239.16	-100.02	5,240.00	0.00	0.00	0.00
13,500.00	90.00	359.76	6,920.00	5,339.16	-100.44	5,340.00	0.00	0.00	0.00
13,600.00	90.00	359.76	6,920.00	5,439.16	-100.85	5,439.99	0.00	0.00	0.00
13,700.00	90.00	359.76	6,920.00	5,539.16	-101.27	5,539.99	0.00	0.00	0.00
13,800.00	90.00	359.76	6,920.00	5,639.16	-101.68	5,639.99	0.00	0.00	0.00
13,900.00	90.00	359.76	6,920.00	5,739.16	-102.10	5,739.98	0.00	0.00	0.00
14,000.00	90.00	359.76	6,920.00	5,839.16	-102.51	5,839.98	0.00	0.00	0.00
14,100.00	90.00	359.76	6,920.00	5,939.16	-102.93	5,939.98	0.00	0.00	0.00
14,200.00	90.00	359.76	6,920.00	6,039.16	-103.35	6,039.97	0.00	0.00	0.00
14,300.00	90.00	359.76	6,920.00	6,139.15	-103.76	6,139.97	0.00	0.00	0.00
14,400.00	90.00	359.76	6,920.00	6,239.15	-104.18	6,239.97	0.00	0.00	0.00
14,500.00	90.00	359.76	6,920.00	6,339.15	-104.59	6,339.96	0.00	0.00	0.00
14,600.00	90.00	359.76	6,920.00	6,439.15	-105.01	6,439.96	0.00	0.00	0.00
14,700.00	90.00	359.76	6,920.00	6,539.15	-105.42	6,539.95	0.00	0.00	0.00
14,800.00	90.00	359.76	6,920.00	6,639.15	-105.84	6,639.95	0.00	0.00	0.00
14,900.00	90.00	359.76	6,920.00	6,739.15	-106.26	6,739.95	0.00	0.00	0.00
15,000.00	90.00	359.76	6,920.00	6,839.15	-106.67	6,839.94	0.00	0.00	0.00
15,100.00	90.00	359.76	6,920.00	6,939.15	-107.09	6,939.94	0.00	0.00	0.00
15,200.00	90.00	359.76	6,920.00	7,039.15	-107.50	7,039.94	0.00	0.00	0.00
15,300.00	90.00	359.76	6,920.00	7,139.15	-107.92	7,139.93	0.00	0.00	0.00
15,400.00	90.00	359.76	6,920.00	7,239.15	-108.34	7,239.93	0.00	0.00	0.00
15,500.00	90.00	359.76	6,920.00	7,339.14	-108.75	7,339.93	0.00	0.00	0.00
15,600.00	90.00	359.76	6,920.00	7,439.14	-109.17	7,439.92	0.00	0.00	0.00
15,700.00	90.00	359.76	6,920.00	7,539.14	-109.58	7,539.92	0.00	0.00	0.00
15,800.00	90.00	359.76	6,920.00	7,639.14	-110.00	7,639.92	0.00	0.00	0.00
15,900.00	90.00	359.76	6,920.00	7,739.14	-110.41	7,739.91	0.00	0.00	0.00
16,000.00	90.00	359.76	6,920.00	7,839.14	-110.83	7,839.91	0.00	0.00	0.00
16,100.00	90.00	359.76	6,920.00	7,939.14	-111.25	7,939.91	0.00	0.00	0.00
16,200.00	90.00	359.76	6,920.00	8,039.14	-111.66	8,039.90	0.00	0.00	0.00
16,300.00	90.00	359.76	6,920.00	8,139.14	-112.08	8,139.90	0.00	0.00	0.00
16,400.00	90.00	359.76	6,920.00	8,239.14	-112.49	8,239.90	0.00	0.00	0.00
16,500.00	90.00	359.76	6,920.00	8,339.14	-112.91	8,339.89	0.00	0.00	0.00

Noble Energy, Inc.

Planning Report

Database:	EDMP	Local Co-ordinate Reference:	Well Vogler State D21-720
Company:	Northern Region - DJ Basin	TVD Reference:	Well @ 4850.00ft
Project:	Mustang	MD Reference:	Well @ 4850.00ft
Site:	D Section 21	North Reference:	Grid
Well:	Vogler State D21-720	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
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	359.76	6,920.00	8,439.13	-113.32	8,439.89	0.00	0.00	0.00
16,700.00	90.00	359.76	6,920.00	8,539.13	-113.74	8,539.89	0.00	0.00	0.00
16,800.00	90.00	359.76	6,920.00	8,639.13	-114.16	8,639.88	0.00	0.00	0.00
16,900.00	90.00	359.76	6,920.00	8,739.13	-114.57	8,739.88	0.00	0.00	0.00
17,000.00	90.00	359.76	6,920.00	8,839.13	-114.99	8,839.88	0.00	0.00	0.00
17,100.00	90.00	359.76	6,920.00	8,939.13	-115.40	8,939.87	0.00	0.00	0.00
17,200.00	90.00	359.76	6,920.00	9,039.13	-115.82	9,039.87	0.00	0.00	0.00
17,300.00	90.00	359.76	6,920.00	9,139.13	-116.23	9,139.87	0.00	0.00	0.00
17,400.00	90.00	359.76	6,920.00	9,239.13	-116.65	9,239.86	0.00	0.00	0.00
17,500.00	90.00	359.76	6,920.00	9,339.13	-117.07	9,339.86	0.00	0.00	0.00
17,600.00	90.00	359.76	6,920.00	9,439.13	-117.48	9,439.86	0.00	0.00	0.00
17,681.46	90.00	359.76	6,920.00	9,520.59	-117.82	9,521.31	0.00	0.00	0.00
TD @ 17681.46' MD/6920.00' TVD									

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
- hit/miss target									
- Shape									
Vogler State D21-720	0.00	0.00	0.00	0.00	0.00	1,319,313.99	3,265,615.01	40.2060042	-104.5490041
- plan hits target center									
- Point									
Vogler State D21-720	0.00	0.00	6,071.66	-1,265.41	-57.97	1,318,048.58	3,265,557.04	40.2025324	-104.5492603
- plan misses target center by 0.02ft at 6279.67ft MD (6071.66 TVD, -1265.41 N, -57.99 E)									
- Point									
Vogler State D21-720	0.00	0.01	6,920.00	9,520.59	-117.82	1,328,834.55	3,265,497.19	40.2321411	-104.5490604
- plan hits target center									
- Point									
Vogler State D21-720	0.00	0.00	6,920.00	-665.14	-75.47	1,318,648.85	3,265,539.54	40.2041806	-104.5492999
- plan hits target center									
- Point									

Noble Energy, Inc.
Planning Report

Database:	EDMP	Local Co-ordinate Reference:	Well Vogler State D21-720
Company:	Northern Region - DJ Basin	TVD Reference:	Well @ 4850.00ft
Project:	Mustang	MD Reference:	Well @ 4850.00ft
Site:	D Section 21	North Reference:	Grid
Well:	Vogler State D21-720	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan 1		

Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
630.00	630.00	Pierre			
765.00	765.00	Upper Pierre Aquifer Top			
1,632.00	1,632.00	Upper Pierre Aquifer Base			
3,926.20	3,853.00	Parkman			
4,173.36	4,086.00	Sussex			
5,181.08	5,036.00	Shannon			
6,368.30	6,157.00	Teepee Buttes			
6,927.62	6,683.00	Sharon Springs			
7,004.81	6,740.00	Top A Chalk			
7,006.25	6,741.00	Top A Marl			
7,016.40	6,748.00	Top B Chalk			
7,094.91	6,798.00	Top B Marl			
7,234.02	6,867.00	Top C Chalk			
7,331.66	6,899.00	Top C Marl			

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	Build: 2°/100'
2,974.35	2,955.67	-163.93	-7.51	Hold: 19.49° Inc, 182.62° Azm
6,279.41	6,071.41	-1,265.32	-57.98	KOP: Build 9°/100' @ 6279.41' MD
7,495.65	6,920.00	-665.14	-75.47	LP: 7495.65' MD, 90.00° Inc, 359.76° Azm
17,681.46	6,920.00	9,520.59	-117.82	TD @ 17681.46' MD/6920.00' TVD

Northern Region - DJ Basin

Mustang

D Section 21

Vogler State D21-720

Wellbore #1

Plan 1

Anticollision Summary Report

07 August, 2018

Noble Energy, Inc.

Anticollision Summary Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Vogler State D21-720
Project:	Mustang	TVD Reference:	Well @ 4850.00ft
Reference Site:	D Section 21	MD Reference:	Well @ 4850.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Vogler State D21-720	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:	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	8/7/2018		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
0.00	17,680.97	Plan 1 (Wellbore #1)	2_MWD+IFR1+MS	A008Mb: IFR dec & multi-station analysis	

Summary						
Site Name Offset Well - Wellbore - Design	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
D Section 09						
Art Red D 9-16 (PR) - Wellbore #1 - Gyro Surveys	17,681.46	6,828.40	829.98	771.74	14.250	CC, ES, SF
Guttersen D09-27D - Wellbore #1 - Wellbore #1- As Drill	17,681.46	6,937.67	5,636.53	5,579.00	97.969	CC, ES, SF
Guttersen D10-30D - Wellbore #1 - Wellbore #1- As Drill	17,681.46	6,853.73	5,463.99	5,408.39	98.268	CC, ES, SF
D Section 15						
Cally Blue D 15-12 (PR) - Wellbore #1 - Gyro Surveys	14,724.33	6,846.51	1,204.19	1,114.48	13.423	CC, ES
Cally Blue D 15-12 (PR) - Wellbore #1 - Gyro Surveys	14,800.00	6,845.94	1,206.57	1,116.41	13.383	SF
Cally Blue D 15-14 (PR) - Wellbore #1 - Gyro Surveys	13,141.49	6,882.93	2,742.94	2,664.89	35.143	CC, ES
Cally Blue D 15-14 (PR) - Wellbore #1 - Gyro Surveys	13,600.00	6,883.97	2,781.00	2,700.26	34.445	SF
Cally Blue D15-04J - Wellbore #1 - Wellbore #1- As Drill	13,632.93	6,827.72	4,971.97	4,890.48	61.009	CC
Cally Blue D15-04J - Wellbore #1 - Wellbore #1- As Drill	13,700.00	6,826.82	4,972.42	4,890.44	60.653	ES
Cally Blue D15-04J - Wellbore #1 - Wellbore #1- As Drill	15,000.00	6,810.96	5,156.47	5,066.87	57.549	SF
Cally Blue D15-09 - Wellbore #1 - Wellbore #1- As Drill	14,511.50	6,785.64	5,178.49	5,090.61	58.926	CC, ES
Cally Blue D15-09 - Wellbore #1 - Wellbore #1- As Drill	15,900.00	6,776.25	5,361.40	5,265.18	55.718	SF
Cally Blue D15-10 - Wellbore #1 - Wellbore #1- As Drill	14,630.62	6,849.30	3,932.16	3,843.15	44.176	CC, ES
Cally Blue D15-10 - Wellbore #1 - Wellbore #1- As Drill	15,400.00	6,851.71	4,006.73	3,913.01	42.753	SF
Cally Blue D15-11 (PA) - Wellbore #1 - Gyro Surveys	14,769.40	6,847.53	2,720.83	2,630.78	30.214	CC
Cally Blue D15-11 (PA) - Wellbore #1 - Gyro Surveys	14,800.00	6,847.38	2,721.00	2,630.72	30.140	ES
Cally Blue D15-11 (PA) - Wellbore #1 - Gyro Surveys	15,100.00	6,845.96	2,740.84	2,648.72	29.753	SF
Cally Blue D15-15 - Wellbore #1 - Wellbore #1- As Drill	13,327.75	6,919.61	3,971.52	3,891.91	49.889	CC, ES
Cally Blue D15-15 - Wellbore #1 - Wellbore #1- As Drill	14,200.00	6,929.66	4,066.16	3,981.34	47.936	SF
Cally D15-02 - Wellbore #1 - Wellbore #1-As Drilled	17,263.79	6,853.42	4,004.12	3,894.80	36.630	CC
Cally D15-02 - Wellbore #1 - Wellbore #1-As Drilled	17,300.00	6,853.62	4,004.28	3,894.69	36.538	ES
Cally D15-02 - Wellbore #1 - Wellbore #1-As Drilled	17,681.46	6,855.85	4,025.84	3,913.69	35.896	SF
Cally White D15-01 - Wellbore #1 - Wellbore #1- As Drill	17,207.41	6,817.13	5,308.02	5,199.27	48.809	CC, ES
Cally White D15-01 - Wellbore #1 - Wellbore #1- As Drill	17,681.46	6,813.98	5,329.15	5,217.01	47.523	SF
Cally White D15-07 - Wellbore #1 - Wellbore #1- As Drill	15,953.39	6,831.09	3,861.60	3,762.56	38.990	CC
Cally White D15-07 - Wellbore #1 - Wellbore #1- As Drill	16,000.00	6,830.70	3,861.88	3,762.48	38.854	ES
Cally White D15-07 - Wellbore #1 - Wellbore #1- As Drill	16,600.00	6,825.24	3,915.35	3,812.30	37.994	SF
Cally White D15-08 - Wellbore #1 - Wellbore #1- As Drill	15,927.53	6,804.04	5,336.06	5,237.29	54.022	CC
Cally White D15-08 - Wellbore #1 - Wellbore #1- As Drill	16,000.00	6,804.33	5,336.56	5,237.22	53.725	ES
Cally White D15-08 - Wellbore #1 - Wellbore #1- As Drill	17,100.00	6,808.64	5,463.35	5,357.20	51.466	SF
Chandler State D15-72-1HN - Original Drilling - Original I	16,874.54	7,464.37	5,577.15	5,472.28	53.181	CC
Chandler State D15-72-1HN - Original Drilling - Original I	17,000.00	7,379.90	5,577.68	5,471.95	52.758	ES
Chandler State D15-72-1HN - Original Drilling - Original I	17,681.46	6,766.00	5,589.71	5,479.77	50.840	SF
Chandler State D15-73-1HN - Original Drilling - Original I	17,451.72	6,850.00	4,950.24	4,841.63	45.579	CC
Chandler State D15-73-1HN - Original Drilling - Original I	17,500.00	6,850.00	4,950.47	4,841.48	45.422	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 Vogler State D21-720
Project:	Mustang	TVD Reference:	Well @ 4850.00ft
Reference Site:	D Section 21	MD Reference:	Well @ 4850.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Vogler State D21-720	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:	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
D Section 15						
Chandler State D15-73-1HN - Original Drilling - Original I	17,681.46	6,850.00	4,955.56	4,845.22	44.911	SF
Chandler State D15-74-1HN - Original Drilling - Original I	15,700.00	15,700.00	4,288.32	4,077.30	20.323	ES, SF
Chandler State D15-74-1HN - Original Drilling - Original I	16,573.95	7,891.00	4,262.18	4,152.86	38.989	CC
Chandler State D23-79HN - Original Drilling - Original Dr	11,594.49	8,494.39	5,995.13	5,917.50	77.232	CC
Chandler State D23-79HN - Original Drilling - Original Dr	11,800.00	11,800.00	5,998.06	5,876.68	49.416	ES, SF
Duff D15-5 (PR) - Wellbore #1 - Gyro Surveys	15,919.50	6,833.83	1,272.45	1,173.87	12.907	CC, ES
Duff D15-5 (PR) - Wellbore #1 - Gyro Surveys	16,000.00	6,831.53	1,275.00	1,175.92	12.869	SF
Guttersen D 15-21 (PR) - Wellbore #1 - Gyro Surveys	15,180.81	6,845.57	3,386.81	3,293.72	36.384	CC
Guttersen D 15-21 (PR) - Wellbore #1 - Gyro Surveys	15,200.00	6,845.68	3,386.86	3,293.63	36.328	ES
Guttersen D 15-21 (PR) - Wellbore #1 - Gyro Surveys	15,700.00	6,848.44	3,426.37	3,330.05	35.574	SF
Guttersen D 15-24 (PR) - Wellbore #1 - Gyro Surveys	13,961.40	6,866.56	3,283.91	3,199.96	39.115	CC
Guttersen D 15-24 (PR) - Wellbore #1 - Gyro Surveys	14,000.00	6,866.66	3,284.14	3,199.90	38.987	ES
Guttersen D 15-24 (PR) - Wellbore #1 - Gyro Surveys	14,500.00	6,868.00	3,327.79	3,240.54	38.141	SF
Guttersen D 15-29 (SI) - Wellbore #1 - Gyro Surveys	17,681.46	6,846.92	1,991.25	1,878.91	17.725	CC, ES, SF
Guttersen D 22-28 (PR) - Wellbore #1 - Gyro Surveys	12,746.99	6,870.12	3,191.48	3,116.23	42.415	CC, ES
Guttersen D 22-28 (PR) - Wellbore #1 - Gyro Surveys	13,400.00	6,869.01	3,257.60	3,178.58	41.224	SF
Guttersen D14-32 - Wellbore #1 - Wellbore #1- As Drillec	15,374.25	6,793.47	5,791.32	5,696.87	61.317	CC
Guttersen D14-32 - Wellbore #1 - Wellbore #1- As Drillec	15,400.00	6,793.89	5,791.38	5,696.73	61.190	ES
Guttersen D14-32 - Wellbore #1 - Wellbore #1- As Drillec	16,900.00	6,819.52	5,988.88	5,884.97	57.634	SF
Guttersen D15-17 - Wellbore #1 - Wellbore #1- As Drillec	16,655.28	6,795.72	4,627.47	4,523.09	44.335	CC
Guttersen D15-17 - Wellbore #1 - Wellbore #1- As Drillec	16,700.00	6,796.34	4,627.69	4,522.96	44.190	ES
Guttersen D15-17 - Wellbore #1 - Wellbore #1- As Drillec	17,600.00	6,811.02	4,722.90	4,612.69	42.853	SF
Guttersen D15-18 (SI) - Wellbore #1 - Gyro Surveys	16,794.33	6,850.92	3,473.24	3,367.59	32.876	CC
Guttersen D15-18 (SI) - Wellbore #1 - Gyro Surveys	16,800.00	6,850.95	3,473.24	3,367.55	32.862	ES
Guttersen D15-18 (SI) - Wellbore #1 - Gyro Surveys	17,300.00	6,853.53	3,509.85	3,401.05	32.260	SF
Guttersen D15-20 (PR) - Wellbore #1 - Gyro Surveys	15,346.62	6,849.93	1,915.74	1,821.30	20.285	CC, ES
Guttersen D15-20 (PR) - Wellbore #1 - Gyro Surveys	15,500.00	6,849.92	1,921.87	1,826.46	20.143	SF
Guttersen D15-22 - Wellbore #1 - Wellbore #1- As Drillec	15,061.69	6,823.97	4,615.00	4,522.81	50.058	CC
Guttersen D15-22 - Wellbore #1 - Wellbore #1- As Drillec	15,100.00	6,824.16	4,615.16	4,522.67	49.903	ES
Guttersen D15-22 - Wellbore #1 - Wellbore #1- As Drillec	16,100.00	6,828.87	4,730.36	4,631.81	48.003	SF
Guttersen D15-28 (SI) - Wellbore #1 - Gyro Surveys	17,681.46	6,838.61	3,293.10	3,180.61	29.277	CC, ES, SF
Guttersen D15-30 (SI) - Wellbore #1 - Gyro Surveys	17,538.13	6,825.24	950.77	839.43	8.540	CC, ES
Guttersen D15-30 (SI) - Wellbore #1 - Gyro Surveys	17,600.00	6,825.57	952.78	841.13	8.534	SF
Guttersen D22-27 - Wellbore #1 - Wellbore #1- As Drillec	12,834.51	6,855.97	4,579.55	4,503.72	60.390	CC, ES
Guttersen D22-27 - Wellbore #1 - Wellbore #1- As Drillec	14,100.00	6,850.30	4,751.18	4,667.95	57.083	SF
Guttersen D23-69HN - Plan A - Plan A	12,542.75	6,207.01	5,849.91	5,777.38	80.662	CC
Guttersen D23-69HN - Plan A - Plan A	12,600.00	6,207.01	5,850.19	5,777.27	80.233	ES
Guttersen D23-69HN - Plan A - Plan A	14,500.00	6,207.01	6,168.65	6,085.03	73.771	SF
HSR Guttersen 03-15 (SI) - Wellbore #1 - Gyro Surveys	17,245.27	6,864.90	2,633.68	2,524.55	24.134	CC, ES
HSR Guttersen 03-15 (SI) - Wellbore #1 - Gyro Surveys	17,500.00	6,866.57	2,645.97	2,535.22	23.891	SF
HSR Guttersen 6-15 (SI) - Wellbore #1 - Gyro Surveys	15,790.59	6,860.52	2,804.80	2,706.93	28.661	CC
HSR Guttersen 6-15 (SI) - Wellbore #1 - Gyro Surveys	15,800.00	6,860.50	2,804.81	2,706.88	28.640	ES
HSR Guttersen 6-15 (SI) - Wellbore #1 - Gyro Surveys	16,200.00	6,859.64	2,834.52	2,734.21	28.259	SF
Mills UPRC D 15-04 (SI) - Wellbore #1 - Gyro Surveys	16,944.53	6,833.57	1,662.63	1,555.88	15.575	CC, ES
Mills UPRC D 15-04 (SI) - Wellbore #1 - Gyro Surveys	17,100.00	6,833.97	1,669.88	1,562.25	15.515	SF
Two E Ranch 1-15B (SI) - Wellbore #1 - Gyro Surveys	13,589.83	6,866.76	1,650.11	1,569.09	20.366	CC
Two E Ranch 1-15B (SI) - Wellbore #1 - Gyro Surveys	13,600.00	6,866.75	1,650.14	1,569.05	20.348	ES
Two E Ranch 1-15B (SI) - Wellbore #1 - Gyro Surveys	13,700.00	6,866.70	1,653.78	1,572.06	20.237	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 Vogler State D21-720
Project:	Mustang	TVD Reference:	Well @ 4850.00ft
Reference Site:	D Section 21	MD Reference:	Well @ 4850.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Vogler State D21-720	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:	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						
D Section 16						
Diggin State D16-23 (SI) - Wellbore #1 - Gyro Surveys	13,923.06	6,858.23	652.23	568.92	7.829	CC, ES, SF
Diggin State D16-07 (SI) - Wellbore #1 - No Surveys	15,801.17	6,848.00	1,412.15	1,200.99	6.688	CC, ES
Diggin State D16-07 (SI) - Wellbore #1 - No Surveys	15,900.00	6,848.00	1,415.60	1,203.83	6.685	SF
Diggin State D16-19J (PR) - Wellbore #1 - No Surveys	16,493.70	6,807.00	3,323.17	3,107.47	15.407	CC
Diggin State D16-19J (PR) - Wellbore #1 - No Surveys	16,500.00	6,807.00	3,323.17	3,107.43	15.403	ES
Diggin State D16-19J (PR) - Wellbore #1 - No Surveys	16,800.00	6,807.00	3,337.25	3,119.47	15.323	SF
Diggin State D16-13 (PR) - Wellbore #1 - Gyro Surveys	13,283.34	6,837.55	3,996.06	3,917.07	50.592	CC
Diggin State D16-13 (PR) - Wellbore #1 - Gyro Surveys	13,300.00	6,837.42	3,996.09	3,916.99	50.516	ES
Diggin State D16-13 (PR) - Wellbore #1 - Gyro Surveys	14,200.00	6,829.98	4,099.84	4,015.39	48.548	SF
Guttersen ST D15-32 (SI) - Wellbore #1 - Gyro Surveys	15,149.79	6,860.68	567.50	474.52	6.103	CC, ES, SF
Guttersen ST D16-21 (SI) - Wellbore #1 - Gyro Surveys	15,125.29	6,846.07	1,911.35	1,818.60	20.607	CC, ES
Guttersen ST D16-21 (SI) - Wellbore #1 - Gyro Surveys	15,300.00	6,846.47	1,919.32	1,825.48	20.452	SF
Guttersen ST D16-22D (SI) - Wellbore #1 - MWD Surve	15,296.59	6,947.78	725.70	629.47	7.541	CC, ES
Guttersen ST D16-22D (SI) - Wellbore #1 - MWD Surve	15,300.00	6,947.79	725.71	629.47	7.541	SF
Guttersen ST D16-33 (SI) - Wellbore #1 - No Surveys	14,030.34	6,822.00	4,576.50	4,379.29	23.206	CC, ES
Guttersen ST D16-33 (SI) - Wellbore #1 - No Surveys	14,700.00	6,822.00	4,625.24	4,423.57	22.935	SF
Guttersen State D15-31 (PR) - Wellbore #1 - Gyro Surve	16,852.01	6,843.99	493.21	387.14	4.650	CC, ES, SF
Guttersen State D15-33 (SI) - Wellbore #1 - Gyro Survey	13,920.14	6,848.47	644.98	561.28	7.706	CC, ES, SF
Guttersen State D16-15X (PR) - Wellbore #1 - Gyro Sur	13,374.17	6,869.01	1,360.25	1,280.52	17.060	CC, ES
Guttersen State D16-15X (PR) - Wellbore #1 - Gyro Sur	13,500.00	6,869.19	1,366.06	1,285.59	16.976	SF
Guttersen State D16-18 (SI) - Wellbore #1 - No Surveys	16,651.65	6,822.00	1,995.11	1,777.88	9.184	CC, ES
Guttersen State D16-18 (SI) - Wellbore #1 - No Surveys	16,800.00	6,822.00	2,000.62	1,782.42	9.169	SF
Guttersen State D16-20 (SI) - Wellbore #1 - Gyro Survey	15,185.07	6,777.41	3,289.54	3,196.55	35.375	CC
Guttersen State D16-20 (SI) - Wellbore #1 - Gyro Survey	15,200.00	6,777.38	3,289.57	3,196.47	35.331	ES
Guttersen State D16-20 (SI) - Wellbore #1 - Gyro Survey	15,700.00	6,776.49	3,329.60	3,233.38	34.606	SF
Guttersen State D16-24 (SI) - Wellbore #1 - Gyro Survey	14,011.15	6,873.67	1,947.14	1,862.65	23.048	CC, ES
Guttersen State D16-24 (SI) - Wellbore #1 - Gyro Survey	14,200.00	6,872.90	1,956.27	1,870.61	22.838	SF
Guttersen State D16-27 (PR) - Wellbore #1 - No Survey	17,658.98	6,818.00	698.30	473.28	3.103	CC, ES
Guttersen State D16-27 (PR) - Wellbore #1 - No Survey	17,681.46	6,818.00	698.67	473.50	3.103	SF
Guttersen State D16-31 (PR) - Wellbore #1 - No Survey	16,528.97	6,818.00	4,414.58	4,198.39	20.420	CC, ES
Guttersen State D16-31 (PR) - Wellbore #1 - No Survey	17,100.00	6,818.00	4,451.36	4,231.32	20.229	SF
Guttersen State D16-32D (SI) - Wellbore #1 - MWD Sur	15,332.95	7,015.27	4,508.38	4,406.16	44.102	CC
Guttersen State D16-32D (SI) - Wellbore #1 - MWD Sur	15,400.00	7,015.29	4,508.88	4,406.15	43.891	ES
Guttersen State D16-32D (SI) - Wellbore #1 - MWD Sur	16,200.00	7,015.55	4,591.00	4,483.58	42.737	SF
Guttersen State D16-63-1HN - Original Drilling - Original	13,542.48	7,179.03	30.22	-37.68	0.445	Level 1, CC, ES, SF
Guttersen State D16-65-1HN - Original Drilling - Original	14,867.54	7,177.48	34.26	-43.60	0.440	Level 1, CC, ES, SF
Spike ST GWS D16-01 (SI) - Wellbore #1 - Gyro Survey	17,347.76	6,838.55	36.98	-72.90	0.337	Level 1, CC, ES, SF
Spike ST GWS D16-02 (P&A) - Wellbore #1 - Gyro Surv	17,296.38	6,822.15	1,461.69	1,334.73	11.513	CC
Spike ST GWS D16-02 (P&A) - Wellbore #1 - Gyro Surv	17,300.00	6,822.18	1,461.70	1,334.71	11.510	ES
Spike ST GWS D16-02 (P&A) - Wellbore #1 - Gyro Surv	17,400.00	6,823.02	1,465.36	1,337.76	11.484	SF
Spike ST GWS D16-03 (PR) - Wellbore #1 - No Surveys	17,223.07	6,816.00	2,638.21	2,416.64	11.907	CC, ES
Spike ST GWS D16-03 (PR) - Wellbore #1 - No Surveys	17,400.00	6,816.00	2,644.13	2,421.34	11.868	SF
Spike ST GWS D16-04 (SI) - Wellbore #1 - No Surveys	17,211.02	6,811.00	3,944.84	3,723.47	17.820	CC, ES
Spike ST GWS D16-04 (SI) - Wellbore #1 - No Surveys	17,600.00	6,811.00	3,963.97	3,739.91	17.692	SF
Spike ST GWS D16-05 (PR) - Wellbore #1 - Gyro Surve	15,854.06	6,814.88	3,990.39	3,892.21	40.642	CC
Spike ST GWS D16-05 (PR) - Wellbore #1 - Gyro Surve	15,900.00	6,814.82	3,990.66	3,892.12	40.500	ES
Spike ST GWS D16-05 (PR) - Wellbore #1 - Gyro Surve	16,600.00	6,813.93	4,059.51	3,956.73	39.495	SF
Spike ST GWS D16-06 (SI) - Wellbore #1 - No Surveys	15,900.74	6,824.00	2,629.67	2,418.22	12.437	CC, ES
Spike ST GWS D16-06 (SI) - Wellbore #1 - No Surveys	16,100.00	6,824.00	2,637.20	2,424.40	12.393	SF
Spike ST GWS D16-08 (PR) - Wellbore #1 - Gyro Surve	15,860.98	6,859.27	190.54	92.15	1.937	CC, ES, SF
Spike ST GWS D16-12 (PA) - Wellbore #1 - Gyro Survey	14,739.48	6,843.63	4,090.03	4,000.21	45.536	CC
Spike ST GWS D16-12 (PA) - Wellbore #1 - Gyro Survey	14,800.00	6,842.95	4,090.48	4,000.21	45.313	ES
Spike ST GWS D16-12 (PA) - Wellbore #1 - Gyro Survey	15,600.00	6,833.63	4,179.56	4,084.53	43.978	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 Vogler State D21-720
Project:	Mustang	TVD Reference:	Well @ 4850.00ft
Reference Site:	D Section 21	MD Reference:	Well @ 4850.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Vogler State D21-720	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:	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						
D Section 16						
Spike ST GWS D 16-14 (SI) - Wellbore #1 - No Surveys	13,030.55	6,857.00	2,560.86	2,370.27	13.436	CC, ES
Spike ST GWS D 16-14 (SI) - Wellbore #1 - No Surveys	13,200.00	6,857.00	2,566.46	2,374.73	13.386	SF
Spike ST GWS D 16-16 (SI) - Wellbore #1 - No Surveys	13,240.47	6,856.00	23.70	-168.39	0.123	Level 1, CC, ES, SF
Spike State D 16-10 (SI) - Wellbore #1 - Gyro Surveys	14,600.63	6,841.66	1,353.73	1,264.96	15.250	CC, ES
Spike State D 16-10 (SI) - Wellbore #1 - Gyro Surveys	14,700.00	6,841.01	1,357.37	1,267.99	15.186	SF
Spike State D 16-11 (SI) - Wellbore #1 - Gyro Surveys	14,670.09	6,865.39	2,568.27	2,478.91	28.742	CC
Spike State D 16-11 (SI) - Wellbore #1 - Gyro Surveys	14,700.00	6,865.30	2,568.44	2,478.86	28.673	ES
Spike State D 16-11 (SI) - Wellbore #1 - Gyro Surveys	15,000.00	6,864.43	2,589.37	2,497.98	28.334	SF
Spike State D 16-9 (SI) - Wellbore #1 - Gyro Surveys	14,542.39	6,845.65	31.42	-56.91	0.356	Level 1, CC, ES, SF
Spike State D16-15 (P&A) - Wellbore #1 - Wellbore #1	13,293.84	6,867.25	1,361.20	1,271.17	15.119	CC
Spike State D16-15 (P&A) - Wellbore #1 - Wellbore #1	13,300.00	6,867.38	1,361.21	1,271.13	15.111	ES
Spike State D16-15 (P&A) - Wellbore #1 - Wellbore #1	13,400.00	6,869.57	1,365.33	1,274.64	15.054	SF
Spike State D16-99HZ - Original Drilling - Original Drilling	14,291.33	7,147.84	120.01	46.73	1.638	CC
Spike State D16-99HZ - Original Drilling - Original Drilling	14,300.00	7,147.61	120.32	46.54	1.631	ES, SF
Spike State GWS D 16-7J (PR) - Wellbore #1 - No Surveys	16,649.37	6,841.00	666.02	448.43	3.061	CC, ES, SF
Spike State GWS D16-13J (PR) - Wellbore #1 - Gyro Surveys	13,861.43	6,851.33	3,361.18	3,277.92	40.370	CC
Spike State GWS D16-13J (PR) - Wellbore #1 - Gyro Surveys	13,900.00	6,851.08	3,361.40	3,277.86	40.236	ES
Spike State GWS D16-13J (PR) - Wellbore #1 - Gyro Surveys	14,500.00	6,847.05	3,421.30	3,334.21	39.286	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 Vogler State D21-720
Project:	Mustang	TVD Reference:	Well @ 4850.00ft
Reference Site:	D Section 21	MD Reference:	Well @ 4850.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Vogler State D21-720	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:	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						
D Section 17						
Butterball D19-27D - Wellbore #1 - Gyro Surveys						Out of range
Guttersen State D16-33 (SI) - Wellbore #1 - No Surveys	14,030.35	6,822.00	4,576.50	4,456.20	38.042	CC, ES
Guttersen State D16-33 (SI) - Wellbore #1 - No Surveys	14,900.00	6,822.00	4,658.40	4,532.54	37.012	SF
HSR LDS 6-17 (SI) - Wellbore #1 - No Surveys	15,824.27	6,820.00	8,074.37	7,940.48	60.305	CC
HSR LDS 6-17 (SI) - Wellbore #1 - No Surveys	15,900.00	6,820.00	8,074.73	7,940.25	60.047	ES
HSR LDS 6-17 (SI) - Wellbore #1 - No Surveys	17,681.46	6,820.00	8,285.21	8,138.84	56.606	SF
HSR LDS B5-17 (SI) - Wellbore #1 - No Surveys	15,972.22	6,821.00	9,180.74	9,045.70	67.985	CC
HSR LDS B5-17 (SI) - Wellbore #1 - No Surveys	16,000.00	6,821.00	9,180.79	9,045.53	67.877	ES
HSR LDS B5-17 (SI) - Wellbore #1 - No Surveys	17,681.46	6,821.00	9,338.50	9,191.45	63.506	SF
HSR Mike Guttersen 16-17X (SI) - Wellbore #1 - No Su	13,109.39	6,827.00	5,266.54	5,152.94	46.363	CC, ES
HSR Mike Guttersen 16-17X (SI) - Wellbore #1 - No Su	14,400.00	6,827.00	5,422.37	5,300.75	44.584	SF
HSR Weeks 10-17 - Wellbore #1 - Gyro Surveys	14,498.42	6,700.00	6,593.25	6,505.76	75.357	CC
HSR Weeks 10-17 - Wellbore #1 - Gyro Surveys	14,500.00	6,700.00	6,593.25	6,505.75	75.347	ES
HSR Weeks 10-17 - Wellbore #1 - Gyro Surveys	16,600.00	6,700.00	6,920.09	6,819.73	68.953	SF
HSR Weeks 15-17 (SI) - Wellbore #1 - No Surveys	13,198.14	6,825.00	6,555.31	6,441.09	57.393	CC
HSR Weeks 15-17 (SI) - Wellbore #1 - No Surveys	13,200.00	6,825.00	6,555.31	6,441.08	57.386	ES
HSR Weeks 15-17 (SI) - Wellbore #1 - No Surveys	15,100.00	6,825.00	6,825.62	6,699.52	54.127	SF
HSR Weeks 9-17 - Wellbore #1 - Gyro Surveys	14,565.40	6,797.61	5,472.20	5,384.27	62.236	CC
HSR Weeks 9-17 - Wellbore #1 - Gyro Surveys	14,600.00	6,797.59	5,472.31	5,384.12	62.053	ES
HSR Weeks 9-17 - Wellbore #1 - Gyro Surveys	16,100.00	6,796.70	5,683.30	5,586.08	58.457	SF
HSR-LDS 3-17 (SI) - Wellbore #1 - No Surveys	17,148.48	6,815.00	8,073.98	7,929.84	56.016	CC
HSR-LDS 3-17 (SI) - Wellbore #1 - No Surveys	17,200.00	6,815.00	8,074.14	7,929.60	55.861	ES
HSR-LDS 3-17 (SI) - Wellbore #1 - No Surveys	17,681.46	6,815.00	8,091.55	7,943.40	54.616	SF
HSR-LDS 4-17 (SI) - Wellbore #1 - No Surveys	16,966.61	6,817.00	9,200.87	9,058.13	64.463	CC
HSR-LDS 4-17 (SI) - Wellbore #1 - No Surveys	17,000.00	6,817.00	9,200.93	9,057.93	64.345	ES
HSR-LDS 4-17 (SI) - Wellbore #1 - No Surveys	17,681.46	6,817.00	9,228.59	9,080.49	62.310	SF
LDS 18-17 (SI) - Wellbore #1 - No Surveys	16,476.88	6,820.00	8,398.43	8,259.49	60.446	CC
LDS 18-17 (SI) - Wellbore #1 - No Surveys	16,500.00	6,820.00	8,398.46	8,259.34	60.368	ES
LDS 18-17 (SI) - Wellbore #1 - No Surveys	17,681.46	6,820.00	8,484.37	8,336.80	57.492	SF
LDS D17-13 - Wellbore #1 - Gyro Surveys	12,849.99	6,900.00	9,492.16	9,416.04	124.700	CC
LDS D17-13 - Wellbore #1 - Gyro Surveys	12,900.00	6,900.00	9,492.29	9,415.81	124.121	ES
LDS D17-13 - Wellbore #1 - Gyro Surveys	15,900.00	6,900.00	9,970.14	9,874.32	104.058	SF
LDS D17-18 (SI) - Wellbore #1 - No Surveys	16,542.61	6,818.00	7,092.93	6,953.50	50.869	CC
LDS D17-18 (SI) - Wellbore #1 - No Surveys	16,600.00	6,818.00	7,093.17	6,953.29	50.709	ES
LDS D17-18 (SI) - Wellbore #1 - No Surveys	17,681.46	6,818.00	7,183.78	7,036.42	48.750	SF
LDS D17-20 - Wellbore #1 - No Surveys	14,996.28	6,826.00	8,535.25	8,407.64	66.888	CC
LDS D17-20 - Wellbore #1 - No Surveys	15,100.00	6,826.00	8,535.88	8,407.49	66.483	ES
LDS D17-20 - Wellbore #1 - No Surveys	17,681.46	6,826.00	8,947.66	8,802.88	61.799	SF
LDS D17-21 - Wellbore #1 - No Surveys	14,952.43	6,822.00	7,390.11	7,262.87	58.082	CC
LDS D17-21 - Wellbore #1 - No Surveys	15,000.00	6,822.00	7,390.26	7,262.66	57.918	ES
LDS D17-21 - Wellbore #1 - No Surveys	17,000.00	6,822.00	7,668.52	7,528.14	54.626	SF
LDS D17-22 (SI) - Wellbore #1 - No Surveys	15,340.15	6,817.00	5,982.42	5,852.27	45.966	CC
LDS D17-22 (SI) - Wellbore #1 - No Surveys	15,400.00	6,817.00	5,982.72	5,852.11	45.808	ES
LDS D17-22 (SI) - Wellbore #1 - No Surveys	16,700.00	6,817.00	6,135.02	5,996.12	44.169	SF
LDS D17-24D - Wellbore #1 - LDS D17-24D - As Drilled	13,916.02	7,028.08	7,295.47	7,205.64	81.219	CC
LDS D17-24D - Wellbore #1 - LDS D17-24D - As Drilled	14,000.00	7,026.91	7,295.95	7,205.50	80.663	ES
LDS D17-24D - Wellbore #1 - LDS D17-24D - As Drilled	16,400.00	6,999.31	7,706.71	7,601.95	73.569	SF
LDS D17-25D - Wellbore #1 - LDS D17-25D - As Drilled	14,166.62	7,091.79	8,542.05	8,451.38	94.204	CC
LDS D17-25D - Wellbore #1 - LDS D17-25D - As Drilled	14,200.00	7,091.74	8,542.12	8,451.23	93.984	ES
LDS D17-25D - Wellbore #1 - LDS D17-25D - As Drilled	17,300.00	7,093.37	9,098.61	8,991.16	84.681	SF
LDS D17-31D - LDS D17-31D - LDS D17-31D - As Drille	16,456.00	7,125.44	9,919.60	9,806.52	87.718	CC
LDS D17-31D - LDS D17-31D - LDS D17-31D - As Drille	16,500.00	7,125.44	9,919.70	9,806.25	87.441	ES
LDS D17-31D - LDS D17-31D - LDS D17-31D - As Drille	17,681.46	7,125.45	9,995.01	9,872.56	81.625	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 Vogler State D21-720
Project:	Mustang	TVD Reference:	Well @ 4850.00ft
Reference Site:	D Section 21	MD Reference:	Well @ 4850.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Vogler State D21-720	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:	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
D Section 17						
LDS D17-32D - LDS D17-32D - LDS D17-32D - As Drille	15,324.29	6,886.08	9,936.38	9,842.62	105.976	CC
LDS D17-32D - LDS D17-32D - LDS D17-32D - As Drille	15,400.00	6,886.04	9,936.67	9,842.32	105.314	ES
LDS D17-32D - LDS D17-32D - LDS D17-32D - As Drille	16,400.00	6,885.50	9,994.44	9,892.57	98.108	SF
LDS D17-33 - LDS D17-33 - LDS D17-33 - As Drilled	13,915.68	6,909.74	9,689.43	9,605.56	115.527	CC
LDS D17-33 - LDS D17-33 - LDS D17-33 - As Drilled	14,000.00	6,910.64	9,689.79	9,605.30	114.674	ES
LDS D17-33 - LDS D17-33 - LDS D17-33 - As Drilled	16,300.00	6,872.24	9,978.46	9,878.55	99.877	SF
LDS D17-7 - Wellbore #1 - No Surveys	15,846.73	6,816.00	6,699.04	6,565.01	49.982	CC
LDS D17-7 - Wellbore #1 - No Surveys	15,900.00	6,816.00	6,699.26	6,564.82	49.831	ES
LDS D17-7 - Wellbore #1 - No Surveys	17,500.00	6,816.00	6,900.03	6,755.38	47.699	SF
LDS D20-29D - Wellbore #1 - LDS D20-29D - As Drilled	12,341.85	7,064.43	8,547.39	8,473.56	115.772	CC
LDS D20-29D - Wellbore #1 - LDS D20-29D - As Drilled	12,400.00	7,064.46	8,547.59	8,473.32	115.092	ES
LDS D20-29D - Wellbore #1 - LDS D20-29D - As Drilled	16,500.00	7,067.45	9,505.16	9,404.51	94.437	SF
LDS D20-30D - Wellbore #1 - LDS D20-30D - As Drilled	12,367.45	6,864.33	9,983.98	9,911.18	137.150	CC
LDS D20-30D - Wellbore #1 - LDS D20-30D - As Drilled	12,400.00	6,864.11	9,984.03	9,911.02	136.737	ES
LDS D20-30D - Wellbore #1 - LDS D20-30D - As Drilled	12,900.00	6,860.84	9,998.17	9,921.78	130.878	SF
LDS RED D17-11 (SI) - Wellbore #1 - No Surveys	14,501.16	6,823.00	7,724.32	7,600.49	62.377	CC
LDS RED D17-11 (SI) - Wellbore #1 - No Surveys	14,600.00	6,823.00	7,724.96	7,600.38	62.010	ES
LDS RED D17-11 (SI) - Wellbore #1 - No Surveys	16,800.00	6,823.00	8,059.15	7,920.63	58.183	SF
LDS Red D17-12 - Wellbore #1 - No Surveys	14,683.20	6,826.00	9,381.07	9,255.84	74.909	CC
LDS Red D17-12 - Wellbore #1 - No Surveys	14,800.00	6,826.00	9,381.80	9,255.69	74.392	ES
LDS Red D17-12 - Wellbore #1 - No Surveys	17,681.46	6,826.00	9,848.56	9,703.88	68.072	SF
LDS Red D17-14X (SI) - Wellbore #1 - No Surveys	13,327.33	6,827.00	7,678.45	7,563.27	66.669	CC
LDS Red D17-14X (SI) - Wellbore #1 - No Surveys	13,400.00	6,827.00	7,678.79	7,563.09	66.367	ES
LDS Red D17-14X (SI) - Wellbore #1 - No Surveys	15,800.00	6,827.00	8,066.76	7,936.05	61.713	SF
LDS Red D17-3J - Wellbore #1 - Gyro Surveys	13,534.96	6,747.55	8,938.45	8,857.92	110.985	CC
LDS Red D17-3J - Wellbore #1 - Gyro Surveys	13,600.00	6,747.73	8,938.69	8,857.68	110.333	ES
LDS Red D17-3J - Wellbore #1 - Gyro Surveys	17,500.00	6,758.88	9,778.41	9,674.14	93.777	SF
LDS White D17-1 - Wellbore #1 - Gyro Surveys	17,188.51	6,870.74	5,291.64	5,183.04	48.726	CC
LDS White D17-1 - Wellbore #1 - Gyro Surveys	17,200.00	6,870.74	5,291.65	5,182.96	48.686	ES
LDS White D17-1 - Wellbore #1 - Gyro Surveys	17,681.46	6,870.74	5,314.55	5,202.42	47.398	SF
LDS White D17-2 - Wellbore #1 - No Surveys	17,168.32	6,813.00	6,593.72	6,449.45	45.703	CC
LDS White D17-2 - Wellbore #1 - No Surveys	17,200.00	6,813.00	6,593.80	6,449.28	45.625	ES
LDS White D17-2 - Wellbore #1 - No Surveys	17,681.46	6,813.00	6,613.66	6,465.59	44.665	SF
LDS White D17-8 - Wellbore #1 - No Surveys	15,834.85	6,811.00	5,352.82	5,218.92	39.978	CC
LDS White D17-8 - Wellbore #1 - No Surveys	15,900.00	6,811.00	5,353.21	5,218.82	39.832	ES
LDS White D17-8 - Wellbore #1 - No Surveys	16,900.00	6,811.00	5,457.77	5,316.99	38.769	SF
Thomson D20-31D - Wellbore #1 - Gyro Surveys						Out of range
Weeks 20-17 (SI) - Wellbore #1 - Gyro Surveys	13,769.55	6,782.03	6,050.85	5,968.45	73.431	CC
Weeks 20-17 (SI) - Wellbore #1 - Gyro Surveys	13,800.00	6,782.00	6,050.93	5,968.30	73.232	ES
Weeks 20-17 (SI) - Wellbore #1 - Gyro Surveys	15,700.00	6,780.18	6,351.33	6,257.30	67.544	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 Vogler State D21-720
Project:	Mustang	TVD Reference:	Well @ 4850.00ft
Reference Site:	D Section 21	MD Reference:	Well @ 4850.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Vogler State D21-720	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:	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						
D Section 20						
Bohlender D20-2J - Wellbore #1 - No Surveys	10,852.63	6,838.00	8,857.74	8,759.29	89.976	CC
Bohlender D20-2J - Wellbore #1 - No Surveys	10,900.00	6,838.00	8,857.86	8,759.13	89.713	ES
Bohlender D20-2J - Wellbore #1 - No Surveys	14,600.00	6,838.00	9,617.81	9,497.34	79.833	SF
Bohlender D20-3 - Wellbore #1 - Gyro Surveys	11,874.78	6,855.24	7,935.89	7,866.73	114.751	CC
Bohlender D20-3 - Wellbore #1 - Gyro Surveys	11,900.00	6,855.19	7,935.93	7,866.60	114.471	ES
Bohlender D20-3 - Wellbore #1 - Gyro Surveys	15,500.00	6,847.80	8,724.71	8,634.59	96.812	SF
Bohlender D20-4 (P&A) - Wellbore #1 - No Surveys	11,990.15	6,840.00	9,293.75	9,110.80	50.798	CC
Bohlender D20-4 (P&A) - Wellbore #1 - No Surveys	12,100.00	6,840.00	9,294.40	9,110.70	50.594	ES
Bohlender D20-4 (P&A) - Wellbore #1 - No Surveys	14,700.00	6,840.00	9,680.76	9,480.34	48.303	SF
Bohlender D20-6 - Wellbore#1 - Gyro Surveys	10,529.60	6,922.78	7,897.21	7,836.41	129.884	CC
Bohlender D20-6 - Wellbore#1 - Gyro Surveys	10,600.00	6,922.01	7,897.52	7,836.31	129.019	ES
Bohlender D20-6 - Wellbore#1 - Gyro Surveys	14,500.00	6,920.44	8,839.01	8,756.44	107.048	SF
Butterball D19-27D - Butterball D19-27D - Butterball D19						Out of range
Duncan D20-1 (P&A) - Wellbore #1 - No Surveys	11,979.53	6,839.00	5,123.35	4,940.49	28.017	CC
Duncan D20-1 (P&A) - Wellbore #1 - No Surveys	12,000.00	6,839.00	5,123.39	4,940.39	27.996	ES
Duncan D20-1 (P&A) - Wellbore #1 - No Surveys	12,800.00	6,839.00	5,188.63	5,000.53	27.584	SF
Duncan D20-10 - Wellbore #1 - Gyro Surveys	8,848.57	6,851.60	6,253.85	6,201.34	119.099	CC, ES
Duncan D20-10 - Wellbore #1 - Gyro Surveys	11,900.00	6,839.92	6,958.57	6,892.42	105.191	SF
Duncan D20-11 (SI) - Wellbore #1 - No Surveys	9,248.63	6,845.00	7,809.62	7,719.61	86.767	CC
Duncan D20-11 (SI) - Wellbore #1 - No Surveys	9,300.00	6,845.00	7,809.79	7,719.56	86.559	ES
Duncan D20-11 (SI) - Wellbore #1 - No Surveys	12,500.00	6,845.00	8,459.41	8,352.78	79.334	SF
Duncan D20-12 (SI) - Wellbore #1 - No Surveys	9,192.70	6,843.00	9,186.23	9,096.47	102.351	CC
Duncan D20-12 (SI) - Wellbore #1 - No Surveys	9,200.00	6,843.00	9,186.23	9,096.45	102.317	ES
Duncan D20-12 (SI) - Wellbore #1 - No Surveys	13,100.00	6,843.00	9,982.67	9,872.29	90.440	SF
Duncan D20-13 (SI) - Wellbore #1 - No Surveys	7,656.35	6,848.00	9,208.55	9,122.76	107.335	CC, ES
Duncan D20-13 (SI) - Wellbore #1 - No Surveys	11,500.00	6,848.00	9,978.53	9,878.05	99.307	SF
Duncan D20-14 (SI) - Wellbore #1 - Gyro Surveys	8,196.33	7,100.00	8,187.95	8,136.53	159.250	CC
Duncan D20-14 (SI) - Wellbore #1 - Gyro Surveys	8,200.00	7,100.00	8,187.95	8,136.53	159.227	ES
Duncan D20-14 (SI) - Wellbore #1 - Gyro Surveys	13,300.00	7,045.89	9,648.12	9,574.88	131.739	SF
Duncan D20-15 (P&A) - Wellbore #1 - Gyro Surveys	7,859.20	6,918.44	6,715.68	6,665.45	133.694	CC, ES
Duncan D20-15 (P&A) - Wellbore #1 - Gyro Surveys	11,600.00	6,901.44	7,687.23	7,623.42	120.453	SF
Duncan D20-16 (SI) - Wellbore #1 - Gyro Surveys	7,851.17	6,880.84	5,072.22	5,022.14	101.264	CC, ES
Duncan D20-16 (SI) - Wellbore #1 - Gyro Surveys	9,800.00	6,875.22	5,433.72	5,378.04	97.571	SF
Duncan D20-2 - Wellbore #1 - Gyro Surveys	11,877.33	6,835.54	6,550.41	6,481.33	94.817	CC
Duncan D20-2 - Wellbore #1 - Gyro Surveys	11,900.00	6,835.49	6,550.45	6,481.21	94.609	ES
Duncan D20-2 - Wellbore #1 - Gyro Surveys	14,500.00	6,831.27	7,055.94	6,971.76	83.819	SF
Duncan D20-7 - Wellbore #1 - Gyro Surveys	10,861.28	6,820.63	6,260.01	6,197.54	100.204	CC
Duncan D20-7 - Wellbore #1 - Gyro Surveys	10,900.00	6,820.65	6,260.13	6,197.42	99.827	ES
Duncan D20-7 - Wellbore #1 - Gyro Surveys	13,500.00	6,822.09	6,793.42	6,716.39	88.187	SF
Duncan D20-8 - Wellbore #1 - Gyro Surveys	10,477.85	6,869.13	5,177.07	5,116.72	85.781	CC
Duncan D20-8 - Wellbore #1 - Gyro Surveys	10,500.00	6,869.06	5,177.12	5,116.64	85.601	ES
Duncan D20-8 - Wellbore #1 - Gyro Surveys	12,400.00	6,862.53	5,522.38	5,451.83	78.277	SF
Duncan D20-9 (P&A) - Wellbore #1 - Gyro Surveys	9,230.94	6,819.66	5,120.94	5,067.08	95.072	CC, ES
Duncan D20-9 (P&A) - Wellbore #1 - Gyro Surveys	11,300.00	6,810.90	5,523.13	5,459.82	87.242	SF
E Ranches (P&A) - Wellbore #1 - No Surveys	7,868.93	6,840.00	8,707.10	8,544.04	53.397	CC, ES
E Ranches (P&A) - Wellbore #1 - No Surveys	10,100.00	6,840.00	8,988.40	8,817.71	52.660	SF
Guttersen 10-20 - Wellbore #1 - Gyro Surveys	9,392.85	6,876.12	6,746.68	6,692.74	125.070	CC
Guttersen 10-20 - Wellbore #1 - Gyro Surveys	9,400.00	6,876.11	6,746.68	6,692.71	124.997	ES
Guttersen 10-20 - Wellbore #1 - Gyro Surveys	12,800.00	6,870.67	7,558.20	7,487.53	106.959	SF
LDS D20-30D - LDS D20-30D - LDS D20-30D - As Drille	12,370.98	6,850.08	9,986.60	9,912.36	134.515	CC
LDS D20-30D - LDS D20-30D - LDS D20-30D - As Drille	12,400.00	6,849.91	9,986.65	9,912.21	134.168	ES
LDS D20-30D - LDS D20-30D - LDS D20-30D - As Drille	12,800.00	6,847.53	9,995.81	9,918.72	129.662	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 Vogler State D21-720
Project:	Mustang	TVD Reference:	Well @ 4850.00ft
Reference Site:	D Section 21	MD Reference:	Well @ 4850.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Vogler State D21-720	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:	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
D Section 21						
Casey Blue D 21-11 (PR) - Wellbore #1 - No Surveys	9,376.33	6,884.00	2,618.24	2,449.73	15.538	CC, ES
Casey Blue D 21-11 (PR) - Wellbore #1 - No Surveys	9,600.00	6,884.00	2,627.78	2,458.29	15.504	SF
Casey Blue D21-13 (PR) - Wellbore #1 - Gyro Surveys	7,930.49	6,932.00	3,947.61	3,897.35	78.539	CC, ES
Casey Blue D21-13 (PR) - Wellbore #1 - Gyro Surveys	8,800.00	6,921.06	4,042.22	3,990.00	77.398	SF
Casey Blue D21-14 (SI) - Wellbore #1 - Gyro Surveys	8,007.73	6,904.61	2,474.99	2,424.98	49.490	CC, ES
Casey Blue D21-14 (SI) - Wellbore #1 - Gyro Surveys	8,300.00	6,906.10	2,492.18	2,441.63	49.295	SF
Casey Blue D21-3J (PR) - Wellbore #1 - Gyro Surveys	8,956.72	6,917.86	3,625.49	3,572.70	68.680	CC, ES
Casey Blue D21-3J (PR) - Wellbore #1 - Gyro Surveys	9,900.00	6,917.57	3,746.19	3,689.67	66.284	SF
Guttersen 21-31 (SI) - Wellbore #1 - Gyro Surveys	11,901.16	6,870.52	1,266.24	1,196.85	18.250	CC, ES
Guttersen 21-31 (SI) - Wellbore #1 - Gyro Surveys	12,000.00	6,870.32	1,270.09	1,200.13	18.156	SF
Guttersen 21-42 (SI) - Wellbore #1 - Gyro Surveys	10,581.95	6,919.83	42.43	-18.62	0.695	Level 1, CC, ES, SF
Guttersen 32-21 (PR) - Wellbore #1 - No Surveys	10,543.30	6,888.00	1,304.75	1,130.07	7.469	CC, ES
Guttersen 32-21 (PR) - Wellbore #1 - No Surveys	10,600.00	6,888.00	1,305.98	1,130.99	7.463	SF
Guttersen 33-21 (PR) - Wellbore #1 - Gyro Surveys	9,367.31	6,897.86	1,240.05	1,185.33	22.662	CC, ES
Guttersen 33-21 (PR) - Wellbore #1 - Gyro Surveys	9,500.00	6,897.39	1,247.13	1,191.88	22.573	SF
Guttersen 34-21 (PR) - Wellbore #1 - Gyro Surveys	8,076.59	6,932.34	1,214.74	1,164.15	24.012	CC, ES
Guttersen 34-21 (PR) - Wellbore #1 - Gyro Surveys	8,100.00	6,932.66	1,214.96	1,164.34	24.000	SF
Guttersen 41-21 (PR) - Wellbore #1 - Gyro Surveys	11,956.74	6,880.68	63.32	-6.47	0.907	Level 1, CC, ES, SF
Guttersen 43-21 (PR) - Wellbore #1 - Gyro Surveys	9,222.47	6,891.52	124.11	70.02	2.295	CC, ES, SF
Guttersen D21-32D (SI) - Wellbore #1 - MWD Surveys	0.00	0.00	3,071.01			
Guttersen D21-32D (SI) - Wellbore #1 - MWD Surveys	100.00	57.62	3,071.03	3,070.80	10,000.000	ES
Guttersen D21-32D (SI) - Wellbore #1 - MWD Surveys	11,700.00	7,279.77	4,883.87	4,802.61	60.104	SF
Guttersen USX D21-17 (PR) - Wellbore #1 - No Surveys	11,291.07	6,872.00	597.46	418.50	3.338	CC, ES
Guttersen USX D21-17 (PR) - Wellbore #1 - No Surveys	11,300.00	6,872.00	597.53	418.51	3.338	SF
Guttersen USX D21-20D (PR) - Wellbore #1 - MWD Surv	734.84	705.30	3,004.16	2,999.52	646.855	CC
Guttersen USX D21-20D (PR) - Wellbore #1 - MWD Surv	800.00	751.00	3,004.48	2,999.44	595.808	ES
Guttersen USX D21-20D (PR) - Wellbore #1 - MWD Surv	10,600.00	7,081.36	3,360.37	3,291.85	49.041	SF
Guttersen USX D21-21D (SI) - Wellbore #1 - MWD Surv	9,800.86	7,118.93	2,078.25	2,013.77	32.233	CC, ES
Guttersen USX D21-21D (SI) - Wellbore #1 - MWD Surv	9,900.00	7,119.13	2,080.61	2,016.00	32.201	SF
Guttersen USX D21-24D (PR) - Wellbore #1 - MWD Surv	8,622.68	6,999.40	2,066.71	2,013.84	39.091	CC, ES
Guttersen USX D21-24D (PR) - Wellbore #1 - MWD Surv	8,900.00	6,997.55	2,085.23	2,031.42	38.748	SF
Guttersen USX D21-25 (PR) - Wellbore #1 - MWD Surv	8,737.86	6,914.95	2,848.54	2,795.95	54.167	CC, ES
Guttersen USX D21-25 (PR) - Wellbore #1 - MWD Surv	9,300.00	6,912.89	2,903.48	2,848.96	53.259	SF
Guttersen USX D21-27D (PR) - Wellbore #1 - MWD Surv	12,505.96	7,031.43	624.39	543.31	7.701	CC, ES, SF
Guttersen USX D21-28D (PR) - Wellbore #1 - MWD Surv	12,503.11	7,229.26	1,862.05	1,779.72	22.618	CC, ES
Guttersen USX D21-28D (PR) - Wellbore #1 - MWD Surv	12,900.00	7,229.56	1,903.88	1,816.93	21.895	SF
Guttersen USX D21-33D (SI) - Wellbore #1 - MWD Surv	100.00	68.59	3,051.11	3,050.86	10,000.000	CC
Guttersen USX D21-33D (SI) - Wellbore #1 - MWD Surv	600.00	549.92	3,053.29	3,049.61	829.496	ES
Guttersen USX D21-33D (SI) - Wellbore #1 - MWD Surv	10,800.00	7,010.89	5,012.69	4,947.96	77.446	SF
Guttersen USX D22-30D (PR) - Wellbore #1 - MWD Surv	12,495.85	7,179.80	641.49	559.54	7.828	CC
Guttersen USX D22-30D (PR) - Wellbore #1 - MWD Surv	12,500.00	7,179.81	641.50	559.45	7.818	ES
Guttersen USX D22-30D (PR) - Wellbore #1 - MWD Surv	12,600.00	7,180.13	649.89	565.91	7.739	SF
Gutterson 18-21 (SI) - Wellbore #1 - Gyro Surveys	11,374.96	6,914.08	3,080.96	3,015.45	47.029	CC
Gutterson 18-21 (SI) - Wellbore #1 - Gyro Surveys	11,400.00	6,914.10	3,081.06	3,015.39	46.915	ES
Gutterson 18-21 (SI) - Wellbore #1 - Gyro Surveys	12,000.00	6,914.60	3,143.72	3,074.71	45.551	SF
HSR Guttersen B 5-21 (PR) - Wellbore #1 - Gyro Survey	10,606.99	6,883.66	3,896.47	3,836.08	64.521	CC, ES
HSR Guttersen B 5-21 (PR) - Wellbore #1 - Gyro Survey	11,700.00	6,878.42	4,046.87	3,980.67	61.133	SF
HSR Gutterson 4-21 (PR) - Wellbore #1 - Gyro Surveys	11,823.48	6,919.01	3,965.89	3,897.14	57.685	CC, ES
HSR Gutterson 4-21 (PR) - Wellbore #1 - Gyro Surveys	12,800.00	6,927.80	4,084.33	4,009.95	54.910	SF
HSR-Guttersen 3-21 (SI) - Wellbore #1 - Gyro Surveys	11,799.56	7,029.40	2,491.42	2,421.32	35.544	CC
HSR-Guttersen 3-21 (SI) - Wellbore #1 - Gyro Surveys	11,800.00	7,029.38	2,491.42	2,421.32	35.542	ES
HSR-Guttersen 3-21 (SI) - Wellbore #1 - Gyro Surveys	12,200.00	7,011.14	2,523.33	2,451.11	34.940	SF
HSR-Guttersen 6-21 (SI) - Wellbore #1 - Gyro Surveys	10,603.03	6,875.13	2,558.42	2,497.50	41.995	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 Vogler State D21-720
Project:	Mustang	TVD Reference:	Well @ 4850.00ft
Reference Site:	D Section 21	MD Reference:	Well @ 4850.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Vogler State D21-720	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:	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
D Section 21						
HSR-Guttersen 6-21 (SI) - Wellbore #1 - Gyro Surveys	11,100.00	6,878.76	2,606.24	2,542.72	41.034	SF
Two E Ranch 1-21C (SI) - Wellbore #1 - Gyro Surveys	8,637.09	6,909.62	385.80	333.78	7.417	CC, ES, SF
Vogler State D21-731 - Wellbore #1 - Plan 1	17,681.46	17,802.74	700.45	524.17	3.973	CC, ES, SF
Vogler State D21-740 - Wellbore #1 - Plan 1	17,675.76	17,760.44	1,320.13	1,142.69	7.440	CC, ES, SF
Vogler State D21-750 - Wellbore #1 - Plan 1	2,000.00	2,004.00	1,933.94	1,920.05	139.261	CC
Vogler State D21-750 - Wellbore #1 - Plan 1	17,681.46	17,615.66	1,968.08	1,790.69	11.095	ES, SF
Vogler State D21-760 - Wellbore #1 - Plan 1	9,407.68	9,547.25	2,595.15	2,532.86	41.664	CC
Vogler State D21-760 - Wellbore #1 - Plan 1	17,300.00	17,400.00	2,611.34	2,440.31	15.268	ES
Vogler State D21-760 - Wellbore #1 - Plan 1	17,681.46	17,706.77	2,625.14	2,448.89	14.894	SF
Vogler State D21-770 - Wellbore #1 - Plan 1	9,846.09	9,788.76	3,251.23	3,185.42	49.401	CC
Vogler State D21-770 - Wellbore #1 - Plan 1	17,681.46	17,600.78	3,287.28	3,110.14	18.558	ES, SF
Vogler State D21-780 - Wellbore #1 - Plan 1	2,040.00	2,010.00	3,694.09	3,680.05	263.027	CC
Vogler State D21-780 - Wellbore #1 - Plan 1	2,200.00	2,139.59	3,694.57	3,679.57	246.271	ES
Vogler State D21-780 - Wellbore #1 - Plan 1	17,681.46	17,653.91	3,946.64	3,769.44	22.273	SF
Vogler State D21-790 - Wellbore #1 - Plan 1	2,000.00	2,000.00	38.00	24.13	2.739	CC
Vogler State D21-790 - Wellbore #1 - Plan 1	2,100.00	2,100.02	38.12	23.55	2.616	ES
Vogler State D21-790 - Wellbore #1 - Plan 1	2,200.00	2,200.16	38.95	23.70	2.554	SF
Vogler State D33-711 - Wellbore #1 - Plan 1	2,000.00	1,999.00	154.86	140.99	11.166	CC
Vogler State D33-711 - Wellbore #1 - Plan 1	2,100.00	2,102.68	155.39	140.83	10.672	ES
Vogler State D33-711 - Wellbore #1 - Plan 1	2,500.00	2,514.97	169.55	152.36	9.863	SF
Vogler State D33-718 - Wellbore #1 - Plan 1	7,275.67	7,130.08	106.07	54.88	2.072	CC, ES, SF
Vogler State D33-728 - Wellbore #1 - Plan 1	7,200.00	7,390.42	558.74	505.33	10.461	SF
Vogler State D33-728 - Wellbore #1 - Plan 1	7,226.52	7,371.88	558.43	505.07	10.466	CC, ES
Vogler State D33-738 - Wellbore #1 - Plan 1	7,050.00	7,308.49	1,217.48	1,165.49	23.419	SF
Vogler State D33-738 - Wellbore #1 - Plan 1	7,142.38	7,248.20	1,215.58	1,163.72	23.443	CC, ES
Vogler State D33-752 - Wellbore #1 - Plan 1	7,150.00	7,260.42	1,868.93	1,817.30	36.193	SF
Vogler State D33-752 - Wellbore #1 - Plan 1	7,334.64	7,106.16	1,865.23	1,813.96	36.377	CC, ES
Vogler State D33-759 - Wellbore #1 - Plan 1	7,100.00	7,400.00	2,511.38	2,458.44	47.443	SF
Vogler State D33-759 - Wellbore #1 - Plan 1	7,207.06	7,350.00	2,509.43	2,456.57	47.473	CC, ES
Vogler State D33-769 - Wellbore #1 - Plan 1	7,000.00	7,377.33	3,175.84	3,123.86	61.101	SF
Vogler State D33-769 - Wellbore #1 - Plan 1	7,250.00	7,219.59	3,168.59	3,116.84	61.232	ES
Vogler State D33-769 - Wellbore #1 - Plan 1	7,255.60	7,216.30	3,168.59	3,116.85	61.241	CC
Vogler State D33-779 - Wellbore #1 - Plan 1	2,000.00	1,976.00	3,700.07	3,686.28	268.377	CC
Vogler State D33-779 - Wellbore #1 - Plan 1	2,100.00	2,058.99	3,700.26	3,685.84	256.734	ES
Vogler State D33-779 - Wellbore #1 - Plan 1	6,950.00	7,405.53	3,837.96	3,786.09	73.985	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 Vogler State D21-720
Project:	Mustang	TVD Reference:	Well @ 4850.00ft
Reference Site:	D Section 21	MD Reference:	Well @ 4850.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Vogler State D21-720	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:	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
D Section 22						
Dalbey D22-05 (SI) - Wellbore #1 - Gyro Surveys	10,582.36	6,861.73	1,255.34	1,194.41	20.602	CC, ES
Dalbey D22-05 (SI) - Wellbore #1 - Gyro Surveys	10,700.00	6,861.69	1,260.84	1,199.31	20.489	SF
O'SH D 22-11 (SI) - Wellbore #1 - No Surveys	9,051.95	6,899.00	2,355.46	2,188.01	14.067	CC, ES
O'SH D 22-11 (SI) - Wellbore #1 - No Surveys	9,200.00	6,899.00	2,360.11	2,192.08	14.046	SF
Dalbey D 22-04 (PR) - Wellbore #1 - Gyro Surveys	12,096.22	6,883.56	1,248.75	1,178.93	17.886	CC
Dalbey D 22-04 (PR) - Wellbore #1 - Gyro Surveys	12,100.00	6,883.53	1,248.76	1,178.91	17.879	ES
Dalbey D 22-04 (PR) - Wellbore #1 - Gyro Surveys	12,200.00	6,882.71	1,253.06	1,182.66	17.801	SF
Dalbey D 22-3 (SI) - Wellbore #1 - Gyro Surveys	12,067.64	6,883.12	2,808.20	2,737.66	39.811	CC
Dalbey D 22-3 (SI) - Wellbore #1 - Gyro Surveys	12,100.00	6,883.14	2,808.38	2,737.63	39.691	ES
Dalbey D 22-3 (SI) - Wellbore #1 - Gyro Surveys	12,600.00	6,883.41	2,858.21	2,784.66	38.858	SF
Dalbey D22-6 (SI) - Wellbore #1 - Gyro Surveys	10,970.01	6,852.64	2,317.08	2,253.84	36.641	CC, ES
Dalbey D22-6 (SI) - Wellbore #1 - Gyro Surveys	11,300.00	6,850.71	2,340.46	2,275.41	35.978	SF
Guttersen D 22-18 (SI) - Wellbore #1 - Gyro Surveys	11,309.80	6,899.47	3,361.10	3,295.96	51.596	CC, ES
Guttersen D 22-18 (SI) - Wellbore #1 - Gyro Surveys	12,100.00	6,893.52	3,452.74	3,383.25	49.687	SF
Guttersen State D 22-22 (SI) - Wellbore #1 - Gyro Survey	9,939.68	6,962.61	4,650.46	4,593.08	81.045	CC, ES
Guttersen State D 22-22 (SI) - Wellbore #1 - Gyro Survey	11,500.00	6,960.65	4,905.24	4,840.09	75.287	SF
Guttersen State D 22-24 (SI) - Wellbore #1 - Gyro Survey	354.75	330.76	3,338.52	3,336.50	1,652.583	CC
Guttersen State D 22-24 (SI) - Wellbore #1 - Gyro Survey	500.00	457.20	3,338.95	3,335.96	1,118.137	ES
Guttersen State D 22-24 (SI) - Wellbore #1 - Gyro Survey	9,700.00	6,908.68	3,542.59	3,486.63	63.309	SF
Guttersen State D22-720 (Killed) - Wellbore #1 - Plan 1	1,911.69	1,924.69	4,537.40	4,524.12	341.510	CC
Guttersen State D22-720 (Killed) - Wellbore #1 - Plan 1	2,000.00	2,000.00	4,537.42	4,523.55	327.073	ES
Guttersen State D22-720 (Killed) - Wellbore #1 - Plan 1	13,700.00	11,506.18	5,431.85	5,330.79	53.745	SF
Guttersen State D22-730 - Wellbore #1 - Plan 1	6,268.02	6,389.12	4,476.04	4,428.86	94.854	CC
Guttersen State D22-730 - Wellbore #1 - Plan 1	17,000.00	17,025.69	4,591.41	4,425.43	27.662	ES
Guttersen State D22-730 - Wellbore #1 - Plan 1	17,681.46	17,675.43	4,604.84	4,428.47	26.109	SF
Guttersen State D22-740 - Wellbore #1 - Plan 1	17,681.46	17,603.24	3,948.01	3,771.00	22.303	CC, ES, SF
Guttersen State D22-750 - Wellbore #1 - Plan 1	2,000.00	2,004.00	2,140.11	2,126.22	154.107	CC
Guttersen State D22-750 - Wellbore #1 - Plan 1	2,200.00	2,203.84	2,140.50	2,125.23	140.217	ES
Guttersen State D22-750 - Wellbore #1 - Plan 1	17,681.46	17,684.45	3,302.73	3,125.23	18.606	SF
Guttersen State D22-760 - Wellbore #1 - Plan 1	2,000.00	2,004.00	2,102.40	2,088.51	151.391	CC
Guttersen State D22-760 - Wellbore #1 - Plan 1	2,300.00	2,303.45	2,103.32	2,087.37	131.892	ES
Guttersen State D22-760 - Wellbore #1 - Plan 1	17,681.46	17,587.91	2,637.93	2,461.31	14.936	SF
Guttersen State D22-770 - Wellbore #1 - Plan 1	17,681.46	17,586.10	1,983.32	1,805.99	11.184	CC, ES, SF
Guttersen State D22-780 - Wellbore #1 - Plan 1	12,645.96	12,709.60	1,319.21	1,218.09	13.047	CC
Guttersen State D22-780 - Wellbore #1 - Plan 1	17,681.46	17,725.38	1,320.21	1,143.10	7.454	ES, SF
Guttersen State D34-719 - Wellbore #1 - Plan 1	2,000.00	2,012.00	4,539.54	4,525.63	326.213	CC
Guttersen State D34-719 - Wellbore #1 - Plan 1	2,200.00	2,211.84	4,540.17	4,524.88	296.853	ES
Guttersen State D34-719 - Wellbore #1 - Plan 1	10,000.00	5,704.64	5,686.03	5,632.90	107.009	SF
Guttersen State D34-729 - Wellbore #1 - Plan 1	2,000.00	2,012.00	4,502.13	4,488.22	323.525	CC
Guttersen State D34-729 - Wellbore #1 - Plan 1	2,200.00	2,211.84	4,502.76	4,487.47	294.407	ES
Guttersen State D34-729 - Wellbore #1 - Plan 1	6,950.00	7,401.93	4,681.94	4,630.24	90.556	SF
Guttersen State D34-739 - Wellbore #1 - Plan 1	6,950.00	7,404.94	4,021.28	3,969.33	77.415	SF
Guttersen State D34-739 - Wellbore #1 - Plan 1	7,050.00	7,323.95	4,020.47	3,968.66	77.601	ES
Guttersen State D34-739 - Wellbore #1 - Plan 1	7,070.12	7,308.36	4,020.45	3,968.67	77.645	CC
Guttersen State D34-749 - Wellbore #1 - Plan 1	2,000.00	2,005.00	2,144.79	2,130.90	154.404	CC
Guttersen State D34-749 - Wellbore #1 - Plan 1	2,200.00	2,204.84	2,145.67	2,130.40	140.522	ES
Guttersen State D34-749 - Wellbore #1 - Plan 1	8,100.00	6,274.16	3,182.92	3,134.03	65.098	SF
Guttersen State D34-759 - Wellbore #1 - Plan 1	2,000.00	2,005.00	2,107.45	2,093.56	151.716	CC
Guttersen State D34-759 - Wellbore #1 - Plan 1	2,200.00	2,204.84	2,108.34	2,093.07	138.077	ES
Guttersen State D34-759 - Wellbore #1 - Plan 1	7,000.00	7,348.65	2,690.59	2,638.95	52.105	SF
Guttersen State D34-769 - Wellbore #1 - Plan 1	7,050.00	7,311.67	2,030.60	1,979.01	39.353	SF
Guttersen State D34-769 - Wellbore #1 - Plan 1	7,200.00	7,190.20	2,027.96	1,976.55	39.453	ES
Guttersen State D34-769 - Wellbore #1 - Plan 1	7,216.92	7,177.23	2,027.93	1,976.56	39.476	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 Vogler State D21-720
Project:	Mustang	TVD Reference:	Well @ 4850.00ft
Reference Site:	D Section 21	MD Reference:	Well @ 4850.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Vogler State D21-720	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:	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
D Section 22						
Guttersen State D34-779 - Wellbore #1 - Plan 1	7,100.00	7,336.18	1,370.15	1,318.08	26.316	SF
Guttersen State D34-779 - Wellbore #1 - Plan 1	7,185.42	7,283.04	1,368.67	1,316.71	26.337	CC, ES
Guttersen State D34-790 - Wellbore #1 - Plan 1	2,000.00	2,013.00	4,577.23	4,563.31	328.837	CC
Guttersen State D34-790 - Wellbore #1 - Plan 1	2,200.00	2,200.00	4,577.87	4,562.62	300.151	ES
Guttersen State D34-790 - Wellbore #1 - Plan 1	10,900.00	4,949.10	6,409.64	6,354.81	116.909	SF
OSH D 22-12 (SI) - Wellbore #1 - Gyro Surveys	9,371.89	6,879.40	1,217.06	1,162.40	22.267	CC, ES
OSH D 22-12 (SI) - Wellbore #1 - Gyro Surveys	9,500.00	6,879.94	1,223.78	1,168.61	22.181	SF
OSH D 22-13 (SI) - Wellbore #1 - Gyro Surveys	3,469.81	3,411.99	1,119.11	1,095.36	47.128	CC
OSH D 22-13 (SI) - Wellbore #1 - Gyro Surveys	3,500.00	3,440.24	1,119.17	1,095.21	46.712	ES
OSH D 22-13 (SI) - Wellbore #1 - Gyro Surveys	7,900.00	6,899.09	1,152.94	1,102.93	23.058	SF
OSH D 22-14 (PR) - Wellbore #1 - Gyro Surveys	3,179.43	3,154.42	2,661.04	2,639.26	122.191	CC
OSH D 22-14 (PR) - Wellbore #1 - Gyro Surveys	3,300.00	3,263.82	2,661.45	2,638.85	117.744	ES
OSH D 22-14 (PR) - Wellbore #1 - Gyro Surveys	8,200.00	6,893.37	2,757.04	2,706.28	54.321	SF
Sevendust State D 22-1 (SI) - Wellbore #1 - Gyro Survey	12,081.87	6,919.99	5,312.25	5,241.47	75.053	CC
Sevendust State D 22-1 (SI) - Wellbore #1 - Gyro Survey	12,100.00	6,920.20	5,312.28	5,241.37	74.922	ES
Sevendust State D 22-1 (SI) - Wellbore #1 - Gyro Survey	13,800.00	6,939.79	5,583.15	5,502.40	69.141	SF
Spike ST GWS D 22-07 (SI) - Wellbore #1 - No Surveys	10,446.86	6,892.00	3,776.97	3,602.77	21.682	CC, ES
Spike ST GWS D 22-07 (SI) - Wellbore #1 - No Surveys	10,900.00	6,892.00	3,804.05	3,627.33	21.525	SF
Spike ST GWS D 22-08 (SI) - Wellbore #1 - Gyro Survey	10,488.07	6,941.22	5,448.65	5,388.07	89.936	CC
Spike ST GWS D 22-08 (SI) - Wellbore #1 - Gyro Survey	10,500.00	6,941.27	5,448.67	5,388.01	89.834	ES
Spike ST GWS D 22-08 (SI) - Wellbore #1 - Gyro Survey	12,600.00	6,950.74	5,843.63	5,771.85	81.418	SF
Spike ST GWS D 22-09 (PA) - Wellbore #1 - No Surveys	9,403.72	6,906.00	5,477.93	5,308.86	32.400	CC, ES
Spike ST GWS D 22-09 (PA) - Wellbore #1 - No Surveys	10,300.00	6,906.00	5,550.77	5,377.38	32.014	SF
Spike ST GWS D 22-15 (PR) - Wellbore #1 - Gyro Survey	0.00	0.00	3,813.54			
Spike ST GWS D 22-15 (PR) - Wellbore #1 - Gyro Survey	2,600.00	2,566.32	3,816.33	3,798.63	215.610	ES
Spike ST GWS D 22-15 (PR) - Wellbore #1 - Gyro Survey	9,000.00	6,885.22	4,004.32	3,951.41	75.680	SF
Spike ST GWS D 22-4J (PR) - Wellbore #1 - Gyro Survey	2,101.27	2,100.00	4,866.37	4,851.91	336.593	CC
Spike ST GWS D 22-4J (PR) - Wellbore #1 - Gyro Survey	2,200.00	2,191.71	4,866.65	4,851.55	322.381	ES
Spike ST GWS D 22-4J (PR) - Wellbore #1 - Gyro Survey	10,200.00	6,992.38	5,307.62	5,249.83	91.840	SF
Spike State D22-1J (PA) - Wellbore #1 - Gyro Surveys	11,252.10	6,947.49	4,404.26	4,339.19	67.683	CC
Spike State D22-1J (PA) - Wellbore #1 - Gyro Surveys	11,300.00	6,947.06	4,404.52	4,339.15	67.374	ES
Spike State D22-1J (PA) - Wellbore #1 - Gyro Surveys	12,600.00	6,935.31	4,605.88	4,533.42	63.560	SF
Spike State GWS D 22-10 (PA) - Wellbore #1 - Gyro Sur	9,297.79	6,876.80	3,841.49	3,788.10	71.955	CC
Spike State GWS D 22-10 (PA) - Wellbore #1 - Gyro Sur	9,300.00	6,876.78	3,841.49	3,788.09	71.942	ES
Spike State GWS D 22-10 (PA) - Wellbore #1 - Gyro Sur	10,400.00	6,867.33	3,996.47	3,938.23	68.621	SF
Spike State GWS D 22-2 (PR) - Wellbore #1 - Gyro Surv	12,152.40	6,894.45	3,797.76	3,726.69	53.431	CC
Spike State GWS D 22-2 (PR) - Wellbore #1 - Gyro Surv	12,200.00	6,894.54	3,798.06	3,726.66	53.193	ES
Spike State GWS D 22-2 (PR) - Wellbore #1 - Gyro Surv	13,100.00	6,896.23	3,914.20	3,837.72	51.182	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 Vogler State D21-720
Project:	Mustang	TVD Reference:	Well @ 4850.00ft
Reference Site:	D Section 21	MD Reference:	Well @ 4850.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Vogler State D21-720	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:	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
D Section 28						
O'SH D 28-7 (P&A) - Wellbore #1 - No Surveys	6,505.32	6,253.16	2,013.34	1,864.53	13.530	CC, ES
O'SH D 28-7 (P&A) - Wellbore #1 - No Surveys	6,750.00	6,491.08	2,048.85	1,894.70	13.291	SF
Spike ST GWS D 28-12 (SI) - Wellbore #1 - Gyro Surve	6,510.21	6,249.61	4,977.02	4,931.37	109.016	CC, ES
Spike ST GWS D 28-12 (SI) - Wellbore #1 - Gyro Surve	6,950.00	6,642.93	5,063.99	5,016.06	105.652	SF
Guttersen D State 28-29D (PR) - Wellbore #1 - MWD Su	7,396.62	6,956.50	3,234.62	3,183.73	63.559	CC, ES, SF
Guttersen D State 28-30D - Wellbore #1 - Guttersen D S	849.76	819.72	4,170.66	4,166.41	979.905	CC, ES
Guttersen D State 28-30D - Wellbore #1 - Guttersen D S	10,100.00	10,100.00	5,494.19	5,426.54	81.215	SF
Guttersen State D28-18D (PR) - Wellbore #1 - MWD Sur	6,526.73	6,335.94	2,245.20	2,195.04	44.757	CC, ES
Guttersen State D28-18D (PR) - Wellbore #1 - MWD Sur	6,850.00	6,638.07	2,273.08	2,221.30	43.899	SF
Guttersen State D28-21D (SI) - Wellbore #1 - MWD Sur	6,522.01	6,387.73	2,875.57	2,828.86	61.561	CC, ES
Guttersen State D28-21D (SI) - Wellbore #1 - MWD Sur	6,800.00	6,666.71	2,917.88	2,869.60	60.439	SF
Guttersen State D28-24D (SI) - Wellbore #1 - MWD Sur	6,505.02	6,375.18	4,117.10	4,067.81	83.529	CC, ES
Guttersen State D28-24D (SI) - Wellbore #1 - MWD Sur	6,750.00	6,554.00	4,159.00	4,108.51	82.371	SF
Guttersen State D28-28D (PR) - Wellbore #1 - MWD Sur	7,450.00	6,949.43	2,061.09	2,008.67	39.317	SF
Guttersen State D28-28D (PR) - Wellbore #1 - MWD Sur	7,468.77	6,950.60	2,061.00	2,008.59	39.325	CC, ES
Guttersen State D28-79HN - Wellbore #1 - Actual	6,948.49	11,086.00	4,514.77	4,405.59	41.351	CC
Guttersen State D28-79HN - Wellbore #1 - Actual	6,950.00	11,086.00	4,514.77	4,405.59	41.350	ES
Guttersen State D28-79HN - Wellbore #1 - Actual	7,050.00	11,086.00	4,516.55	4,407.20	41.307	SF
HSR Guttersen State 10-28 (SI) - Wellbore #1 - Gyro Su	6,482.90	6,133.67	3,203.39	3,158.55	71.433	CC, ES
HSR Guttersen State 10-28 (SI) - Wellbore #1 - Gyro Su	6,700.00	6,269.51	3,238.55	3,192.60	70.488	SF
HSR Guttersen State 15-28 (SI) - Wellbore #1 - Gyro Su	6,488.43	6,179.47	4,531.42	4,486.58	101.047	CC, ES
HSR Guttersen State 15-28 (SI) - Wellbore #1 - Gyro Su	6,850.00	6,850.00	4,630.29	4,582.31	96.511	SF
HSR Guttersen State 7-28 (PR) - Wellbore #1 - Gyro Sur	6,513.19	6,260.75	2,131.28	2,085.75	46.813	CC, ES
HSR Guttersen State 7-28 (PR) - Wellbore #1 - Gyro Sur	6,800.00	6,609.22	2,173.48	2,126.22	45.993	SF
O'SH D 28-1 (SI) - Wellbore #1 - Gyro Surveys	6,498.11	6,260.00	641.83	596.57	14.179	CC
O'SH D 28-1 (SI) - Wellbore #1 - Gyro Surveys	6,500.00	6,261.89	641.84	596.56	14.175	ES
O'SH D 28-1 (SI) - Wellbore #1 - Gyro Surveys	6,550.00	6,312.33	643.67	598.07	14.116	SF
O'SH D 28-2 (SI) - Wellbore #1 - Gyro Surveys	6,601.58	6,365.56	1,314.86	1,268.20	28.180	CC, ES
O'SH D 28-2 (SI) - Wellbore #1 - Gyro Surveys	6,900.00	6,633.68	1,330.70	1,282.48	27.599	SF
O'SH D 28-8 (SI) - Wellbore #1 - Gyro Surveys	6,485.10	6,230.82	1,572.96	1,527.97	34.966	CC, ES
O'SH D 28-8 (SI) - Wellbore #1 - Gyro Surveys	6,600.00	6,336.99	1,583.65	1,537.95	34.648	SF
Spike ST GWS D 28-03 (PR) - Wellbore #1 - Gyro Surve	6,721.49	6,434.42	2,538.82	2,477.46	41.375	CC
Spike ST GWS D 28-03 (PR) - Wellbore #1 - Gyro Surve	6,800.00	6,506.40	2,539.20	2,477.12	40.902	ES
Spike ST GWS D 28-03 (PR) - Wellbore #1 - Gyro Surve	7,250.00	6,805.60	2,571.25	2,506.30	39.590	SF
Spike ST GWS D 28-4 (SI) - Wellbore #1 - Gyro Surveys	6,798.88	6,485.05	3,918.20	3,870.61	82.330	CC
Spike ST GWS D 28-4 (SI) - Wellbore #1 - Gyro Surveys	6,950.00	6,683.44	3,918.75	3,870.20	80.710	ES
Spike ST GWS D 28-4 (SI) - Wellbore #1 - Gyro Surveys	7,350.00	6,955.42	3,942.35	3,892.46	79.026	SF
Spike State D 28-13 (SI) - Wellbore #1 - Gyro Surveys	6,523.60	6,396.69	5,884.16	5,838.24	128.133	CC, ES
Spike State D 28-13 (SI) - Wellbore #1 - Gyro Surveys	6,850.00	6,600.00	5,947.68	5,900.27	125.462	SF
Spike State D28-05 (PR) - Wellbore #1 - Gyro Surveys	6,569.43	6,390.44	4,291.56	4,245.04	92.243	CC, ES
Spike State D28-05 (PR) - Wellbore #1 - Gyro Surveys	7,050.00	6,767.74	4,351.12	4,302.35	89.212	SF
Spike State D28-06 (SI) - Wellbore #1 - Gyro Surveys	6,527.81	6,291.90	2,753.82	2,707.91	59.975	CC, ES
Spike State D28-06 (SI) - Wellbore #1 - Gyro Surveys	6,850.00	6,595.71	2,794.90	2,747.20	58.596	SF
Spike State D28-11 (SI) - Wellbore #1 - Gyro Surveys	6,493.49	6,179.01	3,622.37	3,577.17	80.126	CC
Spike State D28-11 (SI) - Wellbore #1 - Gyro Surveys	6,500.00	6,183.89	3,622.40	3,577.15	80.056	ES
Spike State D28-11 (SI) - Wellbore #1 - Gyro Surveys	6,800.00	6,408.51	3,679.21	3,632.44	78.661	SF
Spike State GWS D 28-14 (P&A) - Wellbore #1 - Gyro Sl	6,494.59	6,186.16	5,015.38	4,970.38	111.449	CC
Spike State GWS D 28-14 (P&A) - Wellbore #1 - Gyro Sl	6,500.00	6,191.91	5,015.40	4,970.36	111.357	ES
Spike State GWS D 28-14 (P&A) - Wellbore #1 - Gyro Sl	6,800.00	6,466.07	5,078.00	5,031.31	108.770	SF

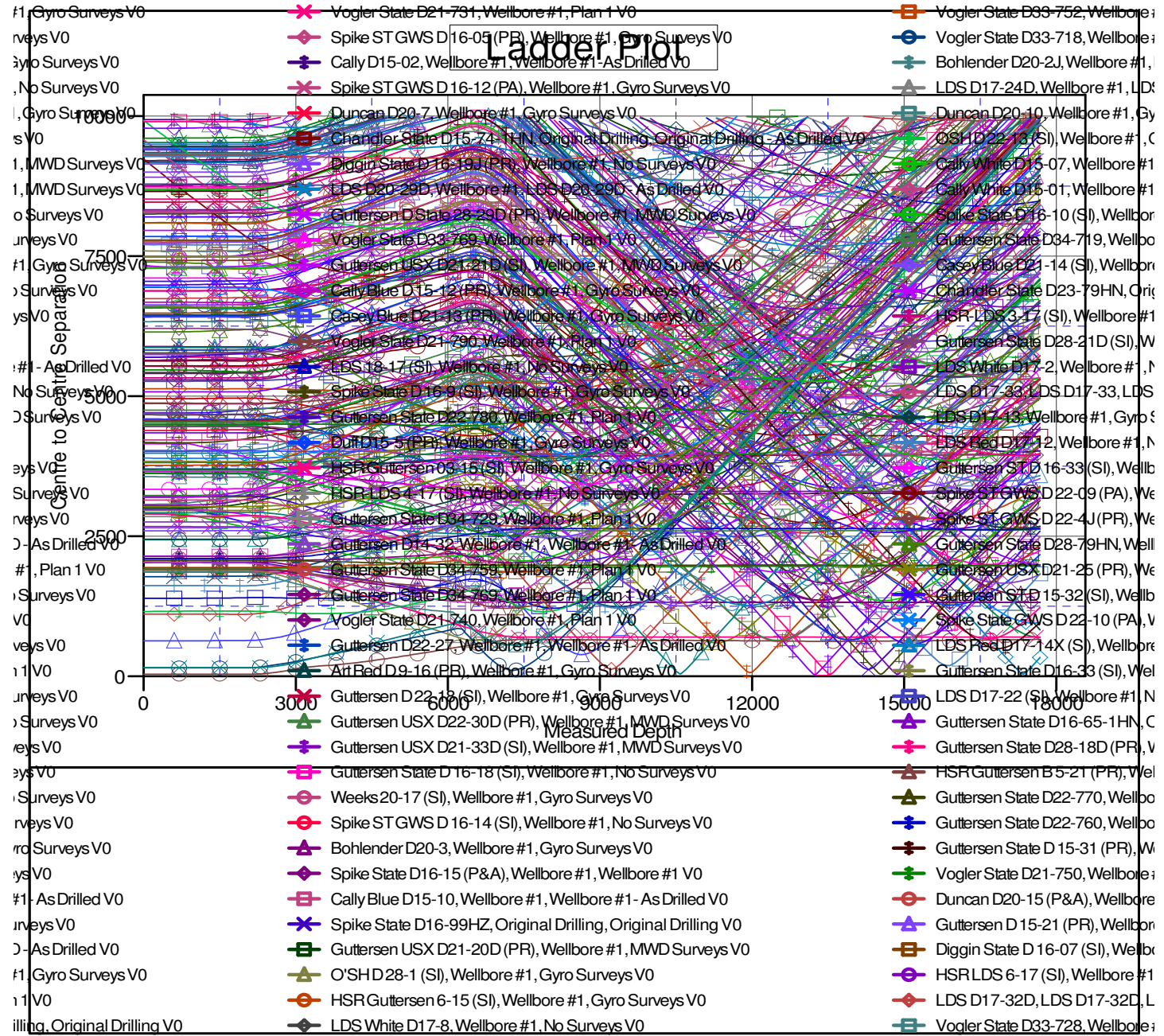
CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Noble Energy, Inc.
Anticollision Summary Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Vogler State D21-720
Project:	Mustang	TVD Reference:	Well @ 4850.00ft
Reference Site:	D Section 21	MD Reference:	Well @ 4850.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Vogler State D21-720	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:	Plan 1	Offset TVD Reference:	Offset Datum

Reference Depths are relative to Well @ 4850.00ft
Offset Depths are relative to Offset Datum
Central Meridian is -105.5000000

Coordinates are relative to: Vogler State D21-720
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 0.61°



Noble Energy, Inc.
Anticollision Summary Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Vogler State D21-720
Project:	Mustang	TVD Reference:	Well @ 4850.00ft
Reference Site:	D Section 21	MD Reference:	Well @ 4850.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Vogler State D21-720	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:	Plan 1	Offset TVD Reference:	Offset Datum

Reference Depths are relative to Well @ 4850.00ft
Offset Depths are relative to Offset Datum
Central Meridian is -105.5000000

Coordinates are relative to: Vogler State D21-720
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 0.61°

