

Project: Mustang
 Site: DD Section 30
 Well: Guttersen State DD30-766
 Wellbore: Guttersen State DD30-766
 Design: Plan #1

Northern Region - DJ Basin

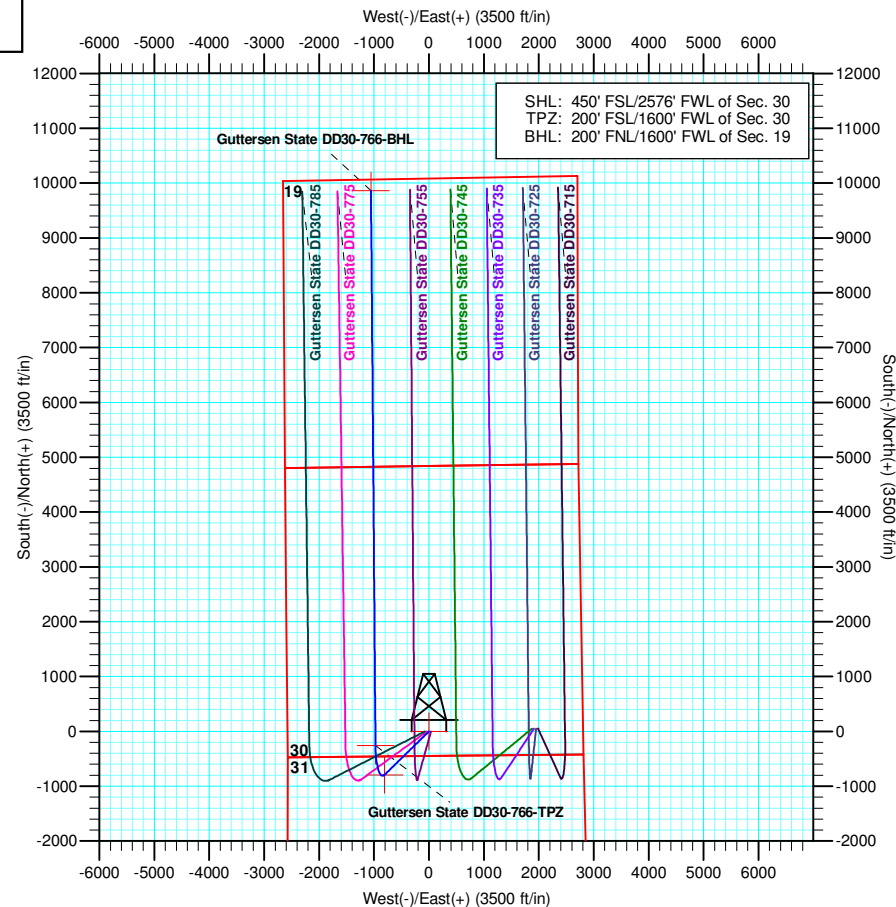
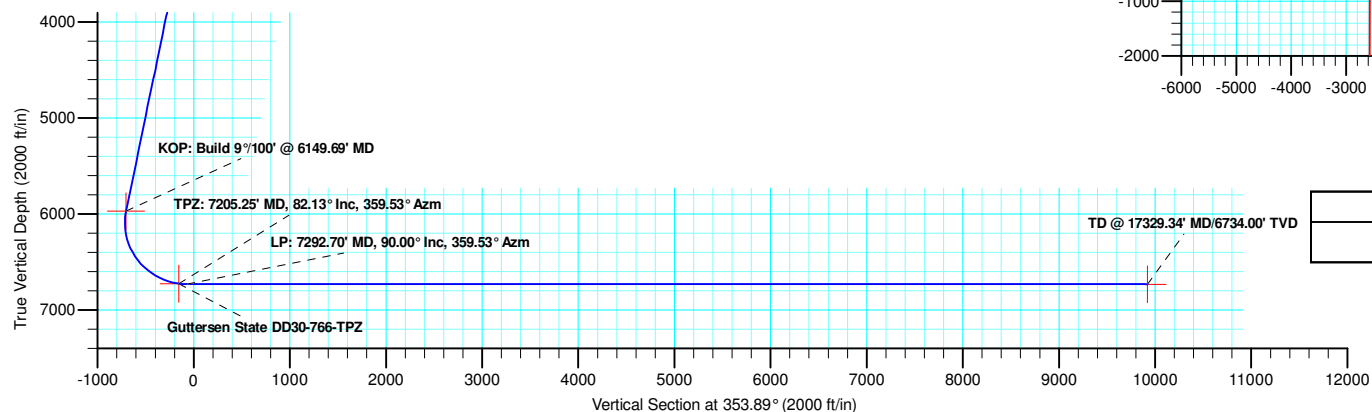
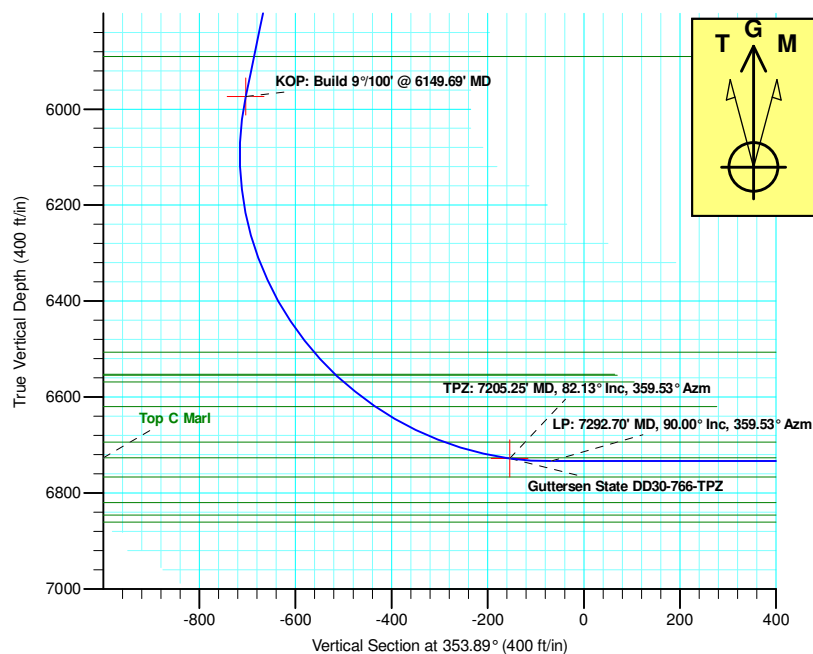
Geodetic System: US State Plane 1983
 Datum: North American Datum 1983
 Ellipsoid: GRS 1980
 Zone: Colorado Northern Zone
 System Datum: Mean Sea Level

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	2100.00	0.00	0.00	2100.00	0.00	0.00	0.00	0.00	0.00	
3	3020.77	18.42	225.61	3005.00	-102.63	-104.83	2.00	225.61	-90.88	
4	6149.69	18.42	225.61	5973.69	-794.09	-811.15	0.00	0.00	-703.24	
5	7205.25	82.13	359.53	6728.00	-259.43	-973.58	9.00	134.26	-154.33	Guttersen State DD30-766-TPZ
6	7292.70	90.00	359.53	6734.00	-172.26	-974.29	9.00	0.00	-67.58	
7	17329.34	90.00	359.53	6734.00	9864.05	-1055.93	0.00	0.00	9920.40	Guttersen State DD30-766-BHL

WELL DETAILS: Guttersen State DD30-766

+N/-S	+E/-W	Northing	Ground Level: Easting	4793.00 Latitude	Longitude	Slot
0.00	0.00	1313834.62	3284635.70	40.1903836	-104.4811345	



Plan: Plan #1 (Guttersen State DD30-766/Guttersen State DD30-766)

Created By: Keith Noack Date: 12:34, August 28 2018

Northern Region - DJ Basin

Mustang

DD Section 30

Guttersen State DD30-766

Guttersen State DD30-766

Plan: Plan #1

Standard Planning Report

28 August, 2018

Noble Energy, Inc.

Planning Report

Database:	EDMP	Local Co-ordinate Reference:	Well Guttersen State DD30-766
Company:	Northern Region - DJ Basin	TVD Reference:	KB @ 4823.00ft
Project:	Mustang	MD Reference:	KB @ 4823.00ft
Site:	DD Section 30	North Reference:	Grid
Well:	Guttersen State DD30-766	Survey Calculation Method:	Minimum Curvature
Wellbore:	Guttersen State DD30-766		
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	DD Section 30		
Site Position:		Northing:	1,316,013.13 usft
From:	Lat/Long	Easting:	3,284,747.15 usft
Position Uncertainty:	0.00 ft	Slot Radius:	13.200 in
		Latitude:	40.1963600
		Longitude:	-104.4806460
		Grid Convergence:	0.66 °

Well	Guttersen State DD30-766		
Well Position	+N/-S	-2,178.52 ft	Northing: 1,313,834.62 usft
	+E/-W	-111.45 ft	Easting: 3,284,635.70 usft
Position Uncertainty	0.00 ft	Wellhead Elevation:	Latitude: 40.1903836
			Longitude: -104.4811345
			Ground Level: 4,793.00 ft

Wellbore	Guttersen State DD30-766				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	7/12/2018	7.93	66.70	52,191.27780060

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	353.89

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	
2,100.00	0.00	0.00	2,100.00	0.00	0.00	0.00	0.00	0.00	0.00	
3,020.77	18.42	225.61	3,005.00	-102.63	-104.83	2.00	2.00	0.00	225.61	
6,149.69	18.42	225.61	5,973.69	-794.09	-811.15	0.00	0.00	0.00	0.00	
7,205.25	82.13	359.53	6,728.00	-259.43	-973.58	9.00	6.04	12.69	134.26	Guttersen State DD
7,292.70	90.00	359.53	6,734.00	-172.26	-974.29	9.00	9.00	0.00	0.00	
17,329.34	90.00	359.53	6,734.00	9,864.05	-1,055.93	0.00	0.00	0.00	0.00	Guttersen State DD

Noble Energy, Inc.

Planning Report

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Company:	Northern Region - DJ Basin	TVD Reference:	KB @ 4823.00ft
Project:	Mustang	MD Reference:	KB @ 4823.00ft
Site:	DD Section 30	North Reference:	Grid
Well:	Guttersen State DD30-766	Survey Calculation Method:	Minimum Curvature
Wellbore:	Guttersen State DD30-766		
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
612.00	0.00	0.00	612.00	0.00	0.00	0.00	0.00	0.00	0.00
Pierre									
686.00	0.00	0.00	686.00	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
1,600.00	0.00	0.00	1,600.00	0.00	0.00	0.00	0.00	0.00	0.00
1,623.00	0.00	0.00	1,623.00	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
2,100.00	0.00	0.00	2,100.00	0.00	0.00	0.00	0.00	0.00	0.00
Build: 2°/100'									
2,200.00	2.00	225.61	2,199.98	-1.22	-1.25	-1.08	2.00	2.00	0.00
2,300.00	4.00	225.61	2,299.84	-4.88	-4.99	-4.32	2.00	2.00	0.00
2,400.00	6.00	225.61	2,399.45	-10.98	-11.21	-9.72	2.00	2.00	0.00
2,500.00	8.00	225.61	2,498.70	-19.50	-19.92	-17.27	2.00	2.00	0.00
2,600.00	10.00	225.61	2,597.47	-30.45	-31.10	-26.96	2.00	2.00	0.00
2,700.00	12.00	225.61	2,695.62	-43.79	-44.73	-38.78	2.00	2.00	0.00
2,800.00	14.00	225.61	2,793.06	-59.53	-60.81	-52.72	2.00	2.00	0.00
2,900.00	16.00	225.61	2,889.64	-77.63	-79.30	-68.75	2.00	2.00	0.00
3,000.00	18.00	225.61	2,985.27	-98.09	-100.19	-86.86	2.00	2.00	0.00
3,020.77	18.42	225.61	3,005.00	-102.63	-104.83	-90.88	2.00	2.00	0.00
Hold: 18.42° Inc, 225.61° Azm									
3,100.00	18.42	225.61	3,080.17	-120.14	-122.72	-106.39	0.00	0.00	0.00
3,200.00	18.42	225.61	3,175.05	-142.23	-145.29	-125.96	0.00	0.00	0.00
3,300.00	18.42	225.61	3,269.93	-164.33	-167.86	-145.53	0.00	0.00	0.00
3,400.00	18.42	225.61	3,364.81	-186.43	-190.44	-165.10	0.00	0.00	0.00
3,500.00	18.42	225.61	3,459.69	-208.53	-213.01	-184.67	0.00	0.00	0.00
3,600.00	18.42	225.61	3,554.57	-230.63	-235.59	-204.24	0.00	0.00	0.00
3,663.69	18.42	225.61	3,615.00	-244.71	-249.96	-216.71	0.00	0.00	0.00
Parkman									
3,700.00	18.42	225.61	3,649.45	-252.73	-258.16	-223.82	0.00	0.00	0.00
3,800.00	18.42	225.61	3,744.33	-274.83	-280.73	-243.39	0.00	0.00	0.00
3,900.00	18.42	225.61	3,839.20	-296.93	-303.31	-262.96	0.00	0.00	0.00
4,000.00	18.42	225.61	3,934.08	-319.03	-325.88	-282.53	0.00	0.00	0.00
4,100.00	18.42	225.61	4,028.96	-341.13	-348.46	-302.10	0.00	0.00	0.00

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Project:	Mustang	MD Reference:	KB @ 4823.00ft
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Well:	Guttersen State DD30-766	Survey Calculation Method:	Minimum Curvature
Wellbore:	Guttersen State DD30-766		
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)
4,108.47	18.42	225.61	4,037.00	-343.00	-350.37	-303.76	0.00	0.00	0.00
Sussex									
4,200.00	18.42	225.61	4,123.84	-363.22	-371.03	-321.67	0.00	0.00	0.00
4,300.00	18.42	225.61	4,218.72	-385.32	-393.60	-341.24	0.00	0.00	0.00
4,303.46	18.42	225.61	4,222.00	-386.09	-394.38	-341.92	0.00	0.00	0.00
Shannon									
4,400.00	18.42	225.61	4,313.60	-407.42	-416.18	-360.81	0.00	0.00	0.00
4,500.00	18.42	225.61	4,408.48	-429.52	-438.75	-380.38	0.00	0.00	0.00
4,600.00	18.42	225.61	4,503.36	-451.62	-461.32	-399.95	0.00	0.00	0.00
4,700.00	18.42	225.61	4,598.24	-473.72	-483.90	-419.52	0.00	0.00	0.00
4,800.00	18.42	225.61	4,693.12	-495.82	-506.47	-439.09	0.00	0.00	0.00
4,900.00	18.42	225.61	4,788.00	-517.92	-529.05	-458.66	0.00	0.00	0.00
5,000.00	18.42	225.61	4,882.87	-540.02	-551.62	-478.24	0.00	0.00	0.00
5,100.00	18.42	225.61	4,977.75	-562.12	-574.19	-497.81	0.00	0.00	0.00
5,200.00	18.42	225.61	5,072.63	-584.22	-596.77	-517.38	0.00	0.00	0.00
5,300.00	18.42	225.61	5,167.51	-606.31	-619.34	-536.95	0.00	0.00	0.00
5,400.00	18.42	225.61	5,262.39	-628.41	-641.92	-556.52	0.00	0.00	0.00
5,500.00	18.42	225.61	5,357.27	-650.51	-664.49	-576.09	0.00	0.00	0.00
5,600.00	18.42	225.61	5,452.15	-672.61	-687.06	-595.66	0.00	0.00	0.00
5,700.00	18.42	225.61	5,547.03	-694.71	-709.64	-615.23	0.00	0.00	0.00
5,800.00	18.42	225.61	5,641.91	-716.81	-732.21	-634.80	0.00	0.00	0.00
5,900.00	18.42	225.61	5,736.79	-738.91	-754.79	-654.37	0.00	0.00	0.00
6,000.00	18.42	225.61	5,831.67	-761.01	-777.36	-673.94	0.00	0.00	0.00
6,061.48	18.42	225.61	5,890.00	-774.60	-791.24	-685.98	0.00	0.00	0.00
Teepee Buttes									
6,100.00	18.42	225.61	5,926.55	-783.11	-799.93	-693.51	0.00	0.00	0.00
6,149.69	18.42	225.61	5,973.69	-794.09	-811.15	-703.24	0.00	0.00	0.00
KOP: Build 9°/100' @ 6149.69' MD									
6,200.00	15.58	237.76	6,021.81	-803.26	-822.55	-711.14	9.00	-5.63	24.15
6,250.00	13.68	253.98	6,070.21	-808.47	-833.92	-715.12	9.00	-3.81	32.45
6,300.00	13.08	273.35	6,118.88	-809.78	-845.26	-715.21	9.00	-1.19	38.73
6,350.00	13.97	292.31	6,167.51	-807.15	-856.50	-711.40	9.00	1.76	37.92
6,400.00	16.08	307.70	6,215.82	-800.63	-867.56	-703.73	9.00	4.24	30.79
6,450.00	19.03	319.04	6,263.50	-790.23	-878.39	-692.24	9.00	5.89	22.67
6,500.00	22.48	327.23	6,310.26	-776.03	-888.91	-677.01	9.00	6.90	16.37
6,550.00	26.23	333.25	6,355.81	-758.12	-899.07	-658.11	9.00	7.51	12.06
6,600.00	30.18	337.84	6,399.87	-736.60	-908.79	-635.68	9.00	7.90	9.16
6,650.00	34.25	341.43	6,442.16	-711.60	-918.02	-609.85	9.00	8.15	7.19
6,700.00	38.41	344.34	6,482.44	-683.29	-926.69	-580.77	9.00	8.32	5.82
6,731.96	41.10	345.93	6,507.00	-663.54	-931.93	-560.58	9.00	8.42	4.98
Sharon Springs									
6,750.00	42.63	346.76	6,520.44	-651.84	-934.77	-548.64	9.00	8.47	4.57
6,795.72	46.53	348.65	6,553.00	-620.49	-941.58	-516.74	9.00	8.52	4.14
Top A Chalk									
6,798.64	46.77	348.76	6,555.00	-618.41	-942.00	-514.63	9.00	8.55	3.85
Top A Marl									
6,800.00	46.89	348.82	6,555.93	-617.43	-942.19	-513.64	9.00	8.56	3.83
6,819.42	48.56	349.54	6,569.00	-603.32	-944.89	-499.32	9.00	8.57	3.72
Top B Chalk									
6,850.00	51.18	350.60	6,588.71	-580.29	-948.91	-475.99	9.00	8.60	3.49
6,900.00	55.50	352.19	6,618.55	-540.64	-954.90	-435.93	9.00	8.63	3.17
6,902.57	55.72	352.27	6,620.00	-538.54	-955.18	-433.82	9.00	8.66	2.99
Top B Marl									

Noble Energy, Inc.

Planning Report

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Project:	Mustang	MD Reference:	KB @ 4823.00ft
Site:	DD Section 30	North Reference:	Grid
Well:	Guttersen State DD30-766	Survey Calculation Method:	Minimum Curvature
Wellbore:	Guttersen State DD30-766		
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)
6,950.00	59.84	353.62	6,645.29	-498.73	-960.10	-393.70	9.00	8.67	2.85
7,000.00	64.19	354.92	6,668.75	-454.81	-964.50	-349.56	9.00	8.70	2.61
7,050.00	68.55	356.14	6,688.79	-409.15	-968.06	-303.79	9.00	8.72	2.43
7,064.68	69.83	356.48	6,694.00	-395.46	-968.94	-290.08	9.00	8.73	2.33
Top C Chalk									
7,100.00	72.92	357.28	6,705.28	-362.04	-970.76	-256.66	9.00	8.74	2.27
7,150.00	77.29	358.37	6,718.13	-313.77	-972.59	-208.46	9.00	8.75	2.18
7,198.22	81.51	359.39	6,727.00	-266.39	-973.52	-161.26	9.00	8.76	2.11
Top C Marl									
7,200.00	81.67	359.42	6,727.26	-264.63	-973.53	-159.51	9.00	8.76	2.08
7,205.25	82.13	359.53	6,728.00	-259.43	-973.58	-154.33	9.00	8.76	2.08
TPZ: 7205.25' MD, 82.13° Inc, 359.53° Azm									
7,250.00	86.16	359.53	6,732.57	-214.93	-973.94	-110.04	9.00	9.00	0.00
7,292.70	90.00	359.53	6,734.00	-172.26	-974.29	-67.58	9.00	9.00	0.00
LP: 7292.70' MD, 90.00° Inc, 359.53° Azm									
7,300.00	90.00	359.53	6,734.00	-164.96	-974.35	-60.32	0.00	0.00	0.00
7,400.00	90.00	359.53	6,734.00	-64.97	-975.16	39.20	0.00	0.00	0.00
7,500.00	90.00	359.53	6,734.00	35.03	-975.98	138.72	0.00	0.00	0.00
7,600.00	90.00	359.53	6,734.00	135.03	-976.79	238.23	0.00	0.00	0.00
7,700.00	90.00	359.53	6,734.00	235.02	-977.60	337.75	0.00	0.00	0.00
7,800.00	90.00	359.53	6,734.00	335.02	-978.42	437.26	0.00	0.00	0.00
7,900.00	90.00	359.53	6,734.00	435.02	-979.23	536.78	0.00	0.00	0.00
8,000.00	90.00	359.53	6,734.00	535.01	-980.04	636.29	0.00	0.00	0.00
8,100.00	90.00	359.53	6,734.00	635.01	-980.86	735.81	0.00	0.00	0.00
8,200.00	90.00	359.53	6,734.00	735.01	-981.67	835.32	0.00	0.00	0.00
8,300.00	90.00	359.53	6,734.00	835.00	-982.48	934.84	0.00	0.00	0.00
8,400.00	90.00	359.53	6,734.00	935.00	-983.30	1,034.35	0.00	0.00	0.00
8,500.00	90.00	359.53	6,734.00	1,035.00	-984.11	1,133.87	0.00	0.00	0.00
8,600.00	90.00	359.53	6,734.00	1,134.99	-984.92	1,233.38	0.00	0.00	0.00
8,700.00	90.00	359.53	6,734.00	1,234.99	-985.74	1,332.90	0.00	0.00	0.00
8,800.00	90.00	359.53	6,734.00	1,334.99	-986.55	1,432.41	0.00	0.00	0.00
8,900.00	90.00	359.53	6,734.00	1,434.98	-987.36	1,531.93	0.00	0.00	0.00
9,000.00	90.00	359.53	6,734.00	1,534.98	-988.18	1,631.44	0.00	0.00	0.00
9,100.00	90.00	359.53	6,734.00	1,634.98	-988.99	1,730.96	0.00	0.00	0.00
9,200.00	90.00	359.53	6,734.00	1,734.98	-989.80	1,830.47	0.00	0.00	0.00
9,300.00	90.00	359.53	6,734.00	1,834.97	-990.62	1,929.99	0.00	0.00	0.00
9,400.00	90.00	359.53	6,734.00	1,934.97	-991.43	2,029.50	0.00	0.00	0.00
9,500.00	90.00	359.53	6,734.00	2,034.97	-992.24	2,129.02	0.00	0.00	0.00
9,600.00	90.00	359.53	6,734.00	2,134.96	-993.06	2,228.53	0.00	0.00	0.00
9,700.00	90.00	359.53	6,734.00	2,234.96	-993.87	2,328.05	0.00	0.00	0.00
9,800.00	90.00	359.53	6,734.00	2,334.96	-994.68	2,427.56	0.00	0.00	0.00
9,900.00	90.00	359.53	6,734.00	2,434.95	-995.50	2,527.08	0.00	0.00	0.00
10,000.00	90.00	359.53	6,734.00	2,534.95	-996.31	2,626.60	0.00	0.00	0.00
10,100.00	90.00	359.53	6,734.00	2,634.95	-997.13	2,726.11	0.00	0.00	0.00
10,200.00	90.00	359.53	6,734.00	2,734.94	-997.94	2,825.63	0.00	0.00	0.00
10,300.00	90.00	359.53	6,734.00	2,834.94	-998.75	2,925.14	0.00	0.00	0.00
10,400.00	90.00	359.53	6,734.00	2,934.94	-999.57	3,024.66	0.00	0.00	0.00
10,500.00	90.00	359.53	6,734.00	3,034.93	-1,000.38	3,124.17	0.00	0.00	0.00
10,600.00	90.00	359.53	6,734.00	3,134.93	-1,001.19	3,223.69	0.00	0.00	0.00
10,700.00	90.00	359.53	6,734.00	3,234.93	-1,002.01	3,323.20	0.00	0.00	0.00
10,800.00	90.00	359.53	6,734.00	3,334.92	-1,002.82	3,422.72	0.00	0.00	0.00
10,900.00	90.00	359.53	6,734.00	3,434.92	-1,003.63	3,522.23	0.00	0.00	0.00
11,000.00	90.00	359.53	6,734.00	3,534.92	-1,004.45	3,621.75	0.00	0.00	0.00

Noble Energy, Inc.

Planning Report

Database:	EDMP	Local Co-ordinate Reference:	Well Guttersen State DD30-766
Company:	Northern Region - DJ Basin	TVD Reference:	KB @ 4823.00ft
Project:	Mustang	MD Reference:	KB @ 4823.00ft
Site:	DD Section 30	North Reference:	Grid
Well:	Guttersen State DD30-766	Survey Calculation Method:	Minimum Curvature
Wellbore:	Guttersen State DD30-766		
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)
11,100.00	90.00	359.53	6,734.00	3,634.91	-1,005.26	3,721.26	0.00	0.00	0.00
11,200.00	90.00	359.53	6,734.00	3,734.91	-1,006.07	3,820.78	0.00	0.00	0.00
11,300.00	90.00	359.53	6,734.00	3,834.91	-1,006.89	3,920.29	0.00	0.00	0.00
11,400.00	90.00	359.53	6,734.00	3,934.90	-1,007.70	4,019.81	0.00	0.00	0.00
11,500.00	90.00	359.53	6,734.00	4,034.90	-1,008.51	4,119.32	0.00	0.00	0.00
11,600.00	90.00	359.53	6,734.00	4,134.90	-1,009.33	4,218.84	0.00	0.00	0.00
11,700.00	90.00	359.53	6,734.00	4,234.89	-1,010.14	4,318.35	0.00	0.00	0.00
11,800.00	90.00	359.53	6,734.00	4,334.89	-1,010.95	4,417.87	0.00	0.00	0.00
11,900.00	90.00	359.53	6,734.00	4,434.89	-1,011.77	4,517.38	0.00	0.00	0.00
12,000.00	90.00	359.53	6,734.00	4,534.88	-1,012.58	4,616.90	0.00	0.00	0.00
12,100.00	90.00	359.53	6,734.00	4,634.88	-1,013.39	4,716.41	0.00	0.00	0.00
12,200.00	90.00	359.53	6,734.00	4,734.88	-1,014.21	4,815.93	0.00	0.00	0.00
12,300.00	90.00	359.53	6,734.00	4,834.87	-1,015.02	4,915.44	0.00	0.00	0.00
12,400.00	90.00	359.53	6,734.00	4,934.87	-1,015.83	5,014.96	0.00	0.00	0.00
12,500.00	90.00	359.53	6,734.00	5,034.87	-1,016.65	5,114.48	0.00	0.00	0.00
12,600.00	90.00	359.53	6,734.00	5,134.86	-1,017.46	5,213.99	0.00	0.00	0.00
12,700.00	90.00	359.53	6,734.00	5,234.86	-1,018.27	5,313.51	0.00	0.00	0.00
12,800.00	90.00	359.53	6,734.00	5,334.86	-1,019.09	5,413.02	0.00	0.00	0.00
12,900.00	90.00	359.53	6,734.00	5,434.85	-1,019.90	5,512.54	0.00	0.00	0.00
13,000.00	90.00	359.53	6,734.00	5,534.85	-1,020.71	5,612.05	0.00	0.00	0.00
13,100.00	90.00	359.53	6,734.00	5,634.85	-1,021.53	5,711.57	0.00	0.00	0.00
13,200.00	90.00	359.53	6,734.00	5,734.84	-1,022.34	5,811.08	0.00	0.00	0.00
13,300.00	90.00	359.53	6,734.00	5,834.84	-1,023.15	5,910.60	0.00	0.00	0.00
13,400.00	90.00	359.53	6,734.00	5,934.84	-1,023.97	6,010.11	0.00	0.00	0.00
13,500.00	90.00	359.53	6,734.00	6,034.83	-1,024.78	6,109.63	0.00	0.00	0.00
13,600.00	90.00	359.53	6,734.00	6,134.83	-1,025.59	6,209.14	0.00	0.00	0.00
13,700.00	90.00	359.53	6,734.00	6,234.83	-1,026.41	6,308.66	0.00	0.00	0.00
13,800.00	90.00	359.53	6,734.00	6,334.82	-1,027.22	6,408.17	0.00	0.00	0.00
13,900.00	90.00	359.53	6,734.00	6,434.82	-1,028.03	6,507.69	0.00	0.00	0.00
14,000.00	90.00	359.53	6,734.00	6,534.82	-1,028.85	6,607.20	0.00	0.00	0.00
14,100.00	90.00	359.53	6,734.00	6,634.81	-1,029.66	6,706.72	0.00	0.00	0.00
14,200.00	90.00	359.53	6,734.00	6,734.81	-1,030.47	6,806.23	0.00	0.00	0.00
14,300.00	90.00	359.53	6,734.00	6,834.81	-1,031.29	6,905.75	0.00	0.00	0.00
14,400.00	90.00	359.53	6,734.00	6,934.80	-1,032.10	7,005.26	0.00	0.00	0.00
14,500.00	90.00	359.53	6,734.00	7,034.80	-1,032.91	7,104.78	0.00	0.00	0.00
14,600.00	90.00	359.53	6,734.00	7,134.80	-1,033.73	7,204.29	0.00	0.00	0.00
14,700.00	90.00	359.53	6,734.00	7,234.79	-1,034.54	7,303.81	0.00	0.00	0.00
14,800.00	90.00	359.53	6,734.00	7,334.79	-1,035.35	7,403.32	0.00	0.00	0.00
14,900.00	90.00	359.53	6,734.00	7,434.79	-1,036.17	7,502.84	0.00	0.00	0.00
15,000.00	90.00	359.53	6,734.00	7,534.78	-1,036.98	7,602.36	0.00	0.00	0.00
15,100.00	90.00	359.53	6,734.00	7,634.78	-1,037.79	7,701.87	0.00	0.00	0.00
15,200.00	90.00	359.53	6,734.00	7,734.78	-1,038.61	7,801.39	0.00	0.00	0.00
15,300.00	90.00	359.53	6,734.00	7,834.77	-1,039.42	7,900.90	0.00	0.00	0.00
15,400.00	90.00	359.53	6,734.00	7,934.77	-1,040.23	8,000.42	0.00	0.00	0.00
15,500.00	90.00	359.53	6,734.00	8,034.77	-1,041.05	8,099.93	0.00	0.00	0.00
15,600.00	90.00	359.53	6,734.00	8,134.76	-1,041.86	8,199.45	0.00	0.00	0.00
15,700.00	90.00	359.53	6,734.00	8,234.76	-1,042.67	8,298.96	0.00	0.00	0.00
15,800.00	90.00	359.53	6,734.00	8,334.76	-1,043.49	8,398.48	0.00	0.00	0.00
15,900.00	90.00	359.53	6,734.00	8,434.75	-1,044.30	8,497.99	0.00	0.00	0.00
16,000.00	90.00	359.53	6,734.00	8,534.75	-1,045.11	8,597.51	0.00	0.00	0.00
16,100.00	90.00	359.53	6,734.00	8,634.75	-1,045.93	8,697.02	0.00	0.00	0.00
16,200.00	90.00	359.53	6,734.00	8,734.74	-1,046.74	8,796.54	0.00	0.00	0.00
16,300.00	90.00	359.53	6,734.00	8,834.74	-1,047.55	8,896.05	0.00	0.00	0.00
16,400.00	90.00	359.53	6,734.00	8,934.74	-1,048.37	8,995.57	0.00	0.00	0.00

Noble Energy, Inc.

Planning Report

Database:	EDMP	Local Co-ordinate Reference:	Well Guttersen State DD30-766
Company:	Northern Region - DJ Basin	TVD Reference:	KB @ 4823.00ft
Project:	Mustang	MD Reference:	KB @ 4823.00ft
Site:	DD Section 30	North Reference:	Grid
Well:	Guttersen State DD30-766	Survey Calculation Method:	Minimum Curvature
Wellbore:	Guttersen State DD30-766		
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)
16,500.00	90.00	359.53	6,734.00	9,034.73	-1,049.18	9,095.08	0.00	0.00	0.00
16,600.00	90.00	359.53	6,734.00	9,134.73	-1,049.99	9,194.60	0.00	0.00	0.00
16,700.00	90.00	359.53	6,734.00	9,234.73	-1,050.81	9,294.11	0.00	0.00	0.00
16,800.00	90.00	359.53	6,734.00	9,334.72	-1,051.62	9,393.63	0.00	0.00	0.00
16,900.00	90.00	359.53	6,734.00	9,434.72	-1,052.43	9,493.14	0.00	0.00	0.00
17,000.00	90.00	359.53	6,734.00	9,534.72	-1,053.25	9,592.66	0.00	0.00	0.00
17,100.00	90.00	359.53	6,734.00	9,634.71	-1,054.06	9,692.17	0.00	0.00	0.00
17,200.00	90.00	359.53	6,734.00	9,734.71	-1,054.88	9,791.69	0.00	0.00	0.00
17,300.00	90.00	359.53	6,734.00	9,834.71	-1,055.69	9,891.21	0.00	0.00	0.00
17,329.34	90.00	359.53	6,734.00	9,864.05	-1,055.93	9,920.40	0.00	0.00	0.00
TD @ 17329.34' MD/6734.00' 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									
Guttersen State DD30	0.00	0.01	0.00	0.00	0.00	1,313,834.62	3,284,635.70	40.1903836	-104.4811345
- plan hits target center									
- Point									
Guttersen State DD30	0.00	0.01	5,973.69	-794.09	-811.15	1,313,040.53	3,283,824.56	40.1882295	-104.4840704
- plan hits target center									
- Point									
Guttersen State DD30	0.00	0.01	6,728.00	-259.43	-973.58	1,313,575.19	3,283,662.12	40.1897022	-104.4846298
- plan hits target center									
- Point									
Guttersen State DD30	0.00	0.00	6,734.00	9,864.05	-1,055.93	1,323,698.64	3,283,579.78	40.2174930	-104.4845096
- plan hits target center									
- Point									

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
612.00	612.00	Pierre				
686.00	686.00	Upper Pierre Aquifer Top				
1,623.00	1,623.00	Upper Pierre Aquifer Base				
3,663.69	3,615.00	Parkman				
4,108.47	4,037.00	Sussex				
4,303.46	4,222.00	Shannon				
6,061.48	5,890.00	Teepee Buttes				
6,731.96	6,507.00	Sharon Springs				
6,795.72	6,553.00	Top A Chalk				
6,798.64	6,555.00	Top A Marl				
6,819.42	6,569.00	Top B Chalk				
6,902.57	6,620.00	Top B Marl				
7,064.68	6,694.00	Top C Chalk				
7,198.22	6,727.00	Top C Marl				

Noble Energy, Inc.

Planning Report

Database:	EDMP	Local Co-ordinate Reference:	Well Guttersen State DD30-766
Company:	Northern Region - DJ Basin	TVD Reference:	KB @ 4823.00ft
Project:	Mustang	MD Reference:	KB @ 4823.00ft
Site:	DD Section 30	North Reference:	Grid
Well:	Guttersen State DD30-766	Survey Calculation Method:	Minimum Curvature
Wellbore:	Guttersen State DD30-766		
Design:	Plan #1		

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment	
		+N/-S (ft)	+E/-W (ft)		
2,100.00	2,100.00	0.00	0.00	Build: 2°/100'	
3,020.77	3,005.00	-102.63	-104.83	Hold: 18.42° Inc, 225.61° Azm	
6,149.69	5,973.69	-794.09	-811.15	KOP: Build 9°/100' @ 6149.69' MD	
7,205.25	6,728.00	-259.43	-973.58	TPZ: 7205.25' MD, 82.13° Inc, 359.53° Azm	
7,292.70	6,734.00	-172.26	-974.29	LP: 7292.70' MD, 90.00° Inc, 359.53° Azm	
17,329.34	6,734.00	9,864.05	-1,055.93	TD @ 17329.34' MD/6734.00' TVD	

Northern Region - DJ Basin

Mustang

DD Section 30

Guttersen State DD30-766

Guttersen State DD30-766

Plan #1

Anticollision Summary Report

28 August, 2018

Noble Energy, Inc.

Anticollision Summary Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Guttersen State DD30-766
Project:	Mustang	TVD Reference:	KB @ 4823.00ft
Reference Site:	DD Section 30	MD Reference:	KB @ 4823.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Guttersen State DD30-766	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Guttersen State DD30-766	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	8/20/2018		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
0.00	17,329.34	Plan #1 (Guttersen State DD30-766)	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						
D Section 24						
Dalbey D 24-10 (PR) - Wellbore #1 - Gyro Surveys	13,870.68	6,695.73	3,223.70	3,139.25	38.176	CC
Dalbey D 24-10 (PR) - Wellbore #1 - Gyro Surveys	13,900.00	6,695.74	3,223.83	3,139.14	38.067	ES
Dalbey D 24-10 (PR) - Wellbore #1 - Gyro Surveys	14,500.00	6,695.97	3,284.55	3,195.79	37.007	SF
Dalbey D 24-15 (SI) - Wellbore #1 - Gyro Surveys	12,911.87	6,653.86	3,696.28	3,619.03	47.843	CC, ES
Dalbey D 24-15 (SI) - Wellbore #1 - Gyro Surveys	13,800.00	6,659.58	3,801.48	3,718.31	45.706	SF
Glazier 2-24 (SI) - Wellbore #1 - Gyro Surveys	16,081.57	6,689.73	2,571.65	2,470.24	25.360	CC
Glazier 2-24 (SI) - Wellbore #1 - Gyro Surveys	16,100.00	6,689.63	2,571.71	2,470.14	25.319	ES
Glazier 2-24 (SI) - Wellbore #1 - Gyro Surveys	16,400.00	6,688.07	2,591.29	2,487.54	24.977	SF
Guttersen 11-24 (PR) - Wellbore #1 - Gyro Surveys	16,871.25	6,787.14	6,248.65	6,141.06	58.075	CC
Guttersen 11-24 (PR) - Wellbore #1 - Gyro Surveys	16,900.00	6,787.15	6,248.72	6,140.88	57.947	ES
Guttersen 11-24 (PR) - Wellbore #1 - Gyro Surveys	17,329.34	6,787.21	6,265.42	6,154.20	56.330	SF
Guttersen 12-24 (PR) - Wellbore #1 - Gyro Surveys	15,574.36	6,728.70	6,268.10	6,170.62	64.306	CC
Guttersen 12-24 (PR) - Wellbore #1 - Gyro Surveys	15,600.00	6,728.66	6,268.15	6,170.46	64.167	ES
Guttersen 12-24 (PR) - Wellbore #1 - Gyro Surveys	17,329.34	6,725.39	6,509.15	6,399.97	59.618	SF
Guttersen 21-24 (PR) - Wellbore #1 - Gyro Surveys	16,880.77	6,757.54	4,930.26	4,822.32	45.675	CC
Guttersen 21-24 (PR) - Wellbore #1 - Gyro Surveys	16,900.00	6,757.48	4,930.30	4,822.19	45.606	ES
Guttersen 21-24 (PR) - Wellbore #1 - Gyro Surveys	17,329.34	6,756.12	4,950.62	4,839.18	44.424	SF
Guttersen 22-24 (PR) - Wellbore #1 - Gyro Surveys	15,652.02	6,727.68	4,883.19	4,785.03	49.748	CC
Guttersen 22-24 (PR) - Wellbore #1 - Gyro Surveys	15,700.00	6,727.64	4,883.42	4,784.86	49.549	ES
Guttersen 22-24 (PR) - Wellbore #1 - Gyro Surveys	16,800.00	6,726.55	5,016.31	4,910.43	47.377	SF
Guttersen 24A (PR) - Wellbore #1 - Gyro Surveys	16,208.80	6,715.68	5,559.73	5,457.32	54.290	CC
Guttersen 24A (PR) - Wellbore #1 - Gyro Surveys	16,300.00	6,716.51	5,560.48	5,457.31	53.899	ES
Guttersen 24A (PR) - Wellbore #1 - Gyro Surveys	17,329.34	6,725.92	5,671.52	5,561.22	51.419	SF
Guttersen 24J (PR) - Wellbore #1 - Gyro Surveys	17,329.34	6,686.84	5,469.92	5,358.89	49.262	CC, ES, SF
Guttersen 24N (PR) - Wellbore #1 - MWD Surveys	16,243.36	6,627.35	4,331.04	4,229.56	42.681	CC
Guttersen 24N (PR) - Wellbore #1 - MWD Surveys	16,300.00	6,627.06	4,331.41	4,229.46	42.484	ES
Guttersen 24N (PR) - Wellbore #1 - MWD Surveys	17,100.00	6,623.00	4,414.94	4,307.58	41.123	SF
Guttersen 24S (PR) - Wellbore #1 - MWD Surveys	14,751.43	6,689.14	2,872.80	2,782.60	31.851	CC
Guttersen 24S (PR) - Wellbore #1 - MWD Surveys	14,800.00	6,688.82	2,873.21	2,782.60	31.710	ES
Guttersen 24S (PR) - Wellbore #1 - MWD Surveys	15,200.00	6,686.21	2,907.61	2,814.23	31.137	SF
Guttersen 43-24 (PR) - Wellbore #1 - Gyro Surveys	14,126.28	6,659.70	2,332.06	2,245.67	26.994	CC, ES
Guttersen 43-24 (PR) - Wellbore #1 - Gyro Surveys	14,500.00	6,658.09	2,361.82	2,272.80	26.531	SF
Guttersen 44-24 (PR) - Wellbore #1 - Gyro Surveys	12,888.05	6,712.70	2,262.37	2,185.18	29.312	CC
Guttersen 44-24 (PR) - Wellbore #1 - Gyro Surveys	12,900.00	6,712.68	2,262.40	2,185.11	29.274	ES
Guttersen 44-24 (PR) - Wellbore #1 - Gyro Surveys	13,200.00	6,712.11	2,283.77	2,204.33	28.748	SF
Karch Blue D 24-12 (PA) - Wellbore #1 - Gyro Surveys	14,395.85	6,697.31	6,216.43	6,128.10	70.383	CC
Karch Blue D 24-12 (PA) - Wellbore #1 - Gyro Surveys	14,400.00	6,697.31	6,216.43	6,128.07	70.357	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 Gutttersen State DD30-766
Project:	Mustang	TVD Reference:	KB @ 4823.00ft
Reference Site:	DD Section 30	MD Reference:	KB @ 4823.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Gutttersen State DD30-766	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Gutttersen State DD30-766	Database:	EDMP
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Summary

Site Name Offset Well - Wellbore - Design	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
D Section 24						
Karch Blue D 24-12 (PA) - Wellbore #1 - Gyro Surveys	16,400.00	6,698.02	6,531.51	6,430.14	64.435	SF
Karch Blue D 24-14 (PR) - Wellbore #1 - No Surveys	12,865.29	6,676.00	4,655.40	4,468.05	24.849	CC
Karch Blue D 24-14 (PR) - Wellbore #1 - No Surveys	12,900.00	6,676.00	4,655.53	4,467.91	24.813	ES
Karch Blue D 24-14 (PR) - Wellbore #1 - No Surveys	13,600.00	6,676.00	4,713.02	4,520.37	24.464	SF
Karch Blue D24-11 (PA) - Wellbore #1 - Gyro Surveys	14,389.83	6,618.16	4,799.63	4,704.97	50.704	CC
Karch Blue D24-11 (PA) - Wellbore #1 - Gyro Surveys	14,400.00	6,618.26	4,799.64	4,704.89	50.659	ES
Karch Blue D24-11 (PA) - Wellbore #1 - Gyro Surveys	15,600.00	6,630.20	4,949.83	4,846.99	48.132	SF
Koerner 31-24 (SI) - Wellbore #1 - Gyro Surveys	16,927.32	6,634.30	3,607.07	3,499.13	33.418	CC, ES
Koerner 31-24 (SI) - Wellbore #1 - Gyro Surveys	17,329.34	6,638.02	3,629.40	3,518.42	32.702	SF
Koerner 32-24 (SI) - Wellbore #1 - Gyro Surveys	15,493.19	6,776.42	3,597.96	3,501.05	37.127	CC
Koerner 32-24 (SI) - Wellbore #1 - Gyro Surveys	15,500.00	6,776.43	3,597.97	3,501.00	37.104	ES
Koerner 32-24 (SI) - Wellbore #1 - Gyro Surveys	16,200.00	6,777.23	3,666.73	3,565.04	36.058	SF
Koerner 42-24 (SI) - Wellbore #1 - Gyro Surveys	15,477.86	6,673.23	2,293.14	2,196.46	23.718	CC
Koerner 42-24 (SI) - Wellbore #1 - Gyro Surveys	15,500.00	6,672.98	2,293.25	2,196.37	23.670	ES
Koerner 42-24 (SI) - Wellbore #1 - Gyro Surveys	15,800.00	6,669.59	2,315.66	2,216.67	23.394	SF
LF Ranch 1-24 (SI) - Wellbore #1 - Gyro Surveys	13,288.67	6,835.79	5,876.96	5,796.51	73.052	CC
LF Ranch 1-24 (SI) - Wellbore #1 - Gyro Surveys	13,300.00	6,835.89	5,876.97	5,796.43	72.971	ES
LF Ranch 1-24 (SI) - Wellbore #1 - Gyro Surveys	15,200.00	6,905.86	6,179.93	6,086.86	66.399	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 Gutttersen State DD30-766
Project:	Mustang	TVD Reference:	KB @ 4823.00ft
Reference Site:	DD Section 30	MD Reference:	KB @ 4823.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Gutttersen State DD30-766	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Gutttersen State DD30-766	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 25						
Coors Energy 13-25D (PR) - Wellbore #1 - MWD Survey	8,963.10	6,819.06	6,204.97	6,144.77	103.069	CC
Coors Energy 13-25D (PR) - Wellbore #1 - MWD Survey	9,000.00	6,819.11	6,205.08	6,144.66	102.700	ES
Coors Energy 13-25D (PR) - Wellbore #1 - MWD Survey	12,000.00	6,823.67	6,908.28	6,829.26	87.414	SF
Coors Energy 14-25D (PR) - Wellbore #1 - MWD Survey	7,679.27	6,969.62	6,222.68	6,173.74	127.163	CC, ES
Coors Energy 14-25D (PR) - Wellbore #1 - MWD Survey	11,500.00	6,995.96	7,301.98	7,236.78	111.994	SF
Coors Energy 23-25D (PR) - Wellbore #1 - MWD Survey	8,965.11	6,873.57	4,879.88	4,821.39	83.437	CC
Coors Energy 23-25D (PR) - Wellbore #1 - MWD Survey	9,000.00	6,873.59	4,880.00	4,821.38	83.249	ES
Coors Energy 23-25D (PR) - Wellbore #1 - MWD Survey	10,600.00	6,874.52	5,146.46	5,081.12	78.761	SF
Coors Energy 24-25 (PR) - Wellbore #1 - Gyro Surveys	7,392.06	6,757.45	4,737.99	4,689.53	97.775	CC, ES
Coors Energy 24-25 (PR) - Wellbore #1 - Gyro Surveys	9,400.00	6,760.79	5,145.91	5,091.45	94.490	SF
Coors Energy 25HD (PR) - Wellbore #1 - MWD Surveys	0.00	0.00	6,268.45			
Coors Energy 25HD (PR) - Wellbore #1 - MWD Surveys	12,400.00	6,977.93	7,833.66	7,755.23	99.874	SF
Coors Energy 25LD (PR) - Wellbore #1 - MWD Surveys	7,204.23	6,976.01	5,530.81	5,480.63	110.236	CC
Coors Energy 25LD (PR) - Wellbore #1 - MWD Surveys	7,205.25	6,976.13	5,530.81	5,480.63	110.234	ES
Coors Energy 25LD (PR) - Wellbore #1 - MWD Surveys	9,700.00	7,037.39	6,078.67	6,022.01	107.291	SF
Coors Energy 25TD (PR) - Wellbore #1 - MWD Surveys	7,137.63	6,729.49	2,828.09	2,779.26	57.922	CC, ES
Coors Energy 25TD (PR) - Wellbore #1 - MWD Surveys	7,250.00	6,748.48	2,832.17	2,783.20	57.832	SF
Coors Energy 25XD (PR) - Wellbore #1 - MWD Surveys	8,200.00	6,960.13	1,712.27	1,658.90	32.085	SF
Coors Energy 25XD (PR) - Wellbore #1 - MWD Surveys	8,307.68	6,958.78	1,708.88	1,655.72	32.141	CC, ES
Coors Energy 25YD (PR) - Wellbore #1 - MWD Surveys	7,129.19	6,886.67	1,682.20	1,631.04	32.876	CC, ES
Coors Energy 25YD (PR) - Wellbore #1 - MWD Surveys	7,500.00	6,917.55	1,730.58	1,677.04	32.323	SF
Coors Energy 33-25D (PR) - Wellbore #1 - MWD Survey	8,951.83	6,876.68	3,568.91	3,507.94	58.541	CC, ES
Coors Energy 33-25D (PR) - Wellbore #1 - MWD Survey	10,000.00	6,879.60	3,719.65	3,652.30	55.229	SF
Coors Energy 34-25 (PR) - Wellbore #1 - Gyro Surveys	7,377.79	6,702.58	3,741.59	3,693.31	77.506	CC, ES
Coors Energy 34-25 (PR) - Wellbore #1 - Gyro Surveys	8,300.00	6,703.50	3,853.56	3,803.42	76.860	SF
Coors Energy 43-25D (PR) - Wellbore #1 - MWD Survey	8,964.03	6,937.61	2,274.32	2,213.75	37.548	CC, ES
Coors Energy 43-25D (PR) - Wellbore #1 - MWD Survey	9,100.00	6,938.86	2,278.38	2,217.59	37.477	SF
Coors Energy 44-25D (PR) - Wellbore #1 - MWD Survey	7,656.67	6,792.96	2,250.34	2,202.04	46.585	CC, ES
Coors Energy 44-25D (PR) - Wellbore #1 - MWD Survey	8,000.00	6,792.29	2,276.38	2,227.28	46.361	SF
Dalbey D 25-03 (SI) - Wellbore #1 - Gyro Surveys	11,215.37	6,900.00	5,203.89	5,138.01	78.999	CC, ES
Dalbey D 25-03 (SI) - Wellbore #1 - Gyro Surveys	17,200.00	17,200.00	7,926.98	7,802.36	63.611	SF
Dalbey D 25-05 (SI) - Wellbore #1 - Gyro Surveys	10,277.60	7,016.22	6,398.59	6,337.49	104.727	CC
Dalbey D 25-05 (SI) - Wellbore #1 - Gyro Surveys	10,300.00	7,013.95	6,398.63	6,337.40	104.511	ES
Dalbey D 25-05 (SI) - Wellbore #1 - Gyro Surveys	13,200.00	6,749.48	7,028.31	6,951.38	91.366	SF
Gutttersen 11-25 (PR) - Wellbore #1 - MWD Surveys	11,646.47	6,807.71	6,203.11	6,135.57	91.836	CC
Gutttersen 11-25 (PR) - Wellbore #1 - MWD Surveys	11,700.00	6,807.13	6,203.34	6,135.41	91.317	ES
Gutttersen 11-25 (PR) - Wellbore #1 - MWD Surveys	14,200.00	6,782.31	6,708.09	6,624.84	80.576	SF
Gutttersen 22-25 (PR) - Wellbore #1 - MWD Surveys	10,378.03	6,759.46	4,779.26	4,720.18	80.886	CC
Gutttersen 22-25 (PR) - Wellbore #1 - MWD Surveys	10,400.00	6,758.59	4,779.31	4,720.09	80.695	ES
Gutttersen 22-25 (PR) - Wellbore #1 - MWD Surveys	12,200.00	6,684.33	5,114.23	5,044.54	73.384	SF
Gutttersen 25E (PR) - Wellbore #1 - MWD Surveys	12,243.18	6,710.02	6,606.15	6,534.39	92.051	CC
Gutttersen 25E (PR) - Wellbore #1 - MWD Surveys	12,300.00	6,709.14	6,606.40	6,534.21	91.514	ES
Gutttersen 25E (PR) - Wellbore #1 - MWD Surveys	14,900.00	6,668.09	7,120.30	7,031.92	80.571	SF
Gutttersen 25KD (PR) - Wellbore #1 - MWD Surveys	9,765.35	7,046.18	5,534.89	5,477.37	96.219	CC
Gutttersen 25KD (PR) - Wellbore #1 - MWD Surveys	9,800.00	7,046.66	5,535.00	5,477.30	95.915	ES
Gutttersen 25KD (PR) - Wellbore #1 - MWD Surveys	12,500.00	7,081.25	6,173.46	6,099.93	83.948	SF
Gutttersen 25O (PR) - Wellbore #1 - MWD Surveys	9,894.98	6,685.60	4,341.25	4,284.89	77.027	CC
Gutttersen 25O (PR) - Wellbore #1 - MWD Surveys	9,900.00	6,685.60	4,341.25	4,284.86	76.986	ES
Gutttersen 25O (PR) - Wellbore #1 - MWD Surveys	11,500.00	6,686.55	4,628.45	4,562.97	70.689	SF
Gutttersen D 25-17 (SI) - Wellbore #1 - Gyro Surveys	10,978.07	6,587.70	3,104.96	3,041.16	48.664	CC
Gutttersen D 25-17 (SI) - Wellbore #1 - Gyro Surveys	11,000.00	6,587.45	3,105.04	3,041.08	48.544	ES
Gutttersen D 25-17 (SI) - Wellbore #1 - Gyro Surveys	11,700.00	6,579.53	3,187.77	3,119.35	46.590	SF
Gutttersen D25-715 - Wellbore #1 - Plan #1	17,329.34	14,865.24	1,927.92	1,771.93	12.359	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 Gutttersen State DD30-766
Project:	Mustang	TVD Reference:	KB @ 4823.00ft
Reference Site:	DD Section 30	MD Reference:	KB @ 4823.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Gutttersen State DD30-766	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Gutttersen State DD30-766	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 25						
Gutttersen D25-724 - Wellbore #1 - Plan #1	17,329.34	14,720.59	2,538.60	2,382.41	16.253	CC, ES, SF
Gutttersen D25-734 - Wellbore #1 - Plan #1	17,329.34	14,737.08	3,170.36	3,015.62	20.488	CC, ES, SF
Gutttersen D25-743 - Wellbore #1 - Plan #1	9,218.56	6,107.88	3,709.34	3,654.22	67.302	CC
Gutttersen D25-743 - Wellbore #1 - Plan #1	17,329.34	14,870.43	3,794.76	3,639.00	24.362	ES, SF
Gutttersen D25-753 - Wellbore #1 - Plan #1	17,329.34	15,057.04	4,399.73	4,244.12	28.274	CC, ES, SF
Gutttersen D25-762 - Wellbore #1 - Plan #1	17,329.34	14,977.76	4,988.33	4,832.82	32.077	CC, ES, SF
Gutttersen D25-772 - Wellbore #1 - Plan #1	9,312.93	6,134.11	5,574.73	5,518.58	99.292	CC
Gutttersen D25-772 - Wellbore #1 - Plan #1	17,329.34	15,125.09	5,656.99	5,501.93	36.482	ES, SF
Gutttersen D25-781 - Wellbore #1 - Plan #1	9,730.67	5,262.28	6,013.45	5,958.29	109.022	CC, ES
Gutttersen D25-781 - Wellbore #1 - Plan #1	17,329.34	15,149.13	6,275.31	6,120.47	40.526	SF
Gutttersen State D36-714 - Wellbore #1 - Plan #1	6,950.00	9,647.26	1,914.26	1,851.84	30.671	SF
Gutttersen State D36-714 - Wellbore #1 - Plan #1	9,474.55	7,150.00	1,882.28	1,824.80	32.746	CC
Gutttersen State D36-714 - Wellbore #1 - Plan #1	9,500.00	7,134.02	1,882.35	1,824.77	32.691	ES
Gutttersen State D36-724 - Wellbore #1 - Plan #1	6,900.00	9,613.65	2,544.87	2,482.54	40.826	SF
Gutttersen State D36-724 - Wellbore #1 - Plan #1	9,592.81	6,957.57	2,506.08	2,448.92	43.849	CC
Gutttersen State D36-724 - Wellbore #1 - Plan #1	9,600.00	6,952.00	2,506.08	2,448.90	43.831	ES
Gutttersen State D36-733 - Wellbore #1 - Plan #1	6,900.00	9,615.57	3,169.13	3,106.99	51.002	SF
Gutttersen State D36-733 - Wellbore #1 - Plan #1	9,953.91	6,498.26	3,112.15	3,054.07	53.590	CC, ES
Gutttersen State D36-743 - Wellbore #1 - Plan #1	10,081.25	6,014.78	3,656.60	3,598.41	62.847	CC
Gutttersen State D36-743 - Wellbore #1 - Plan #1	10,100.00	6,012.27	3,656.64	3,598.34	62.723	ES
Gutttersen State D36-743 - Wellbore #1 - Plan #1	11,200.00	5,864.79	3,820.97	3,756.41	59.192	SF
Gutttersen State D36-752 - Wellbore #1 - Plan #1	6,800.00	9,771.46	4,423.09	4,357.79	67.736	SF
Gutttersen State D36-752 - Wellbore #1 - Plan #1	9,456.43	7,192.77	4,372.32	4,313.94	74.895	CC
Gutttersen State D36-752 - Wellbore #1 - Plan #1	9,500.00	7,166.72	4,372.41	4,313.90	74.731	ES
Gutttersen State D36-762 - Wellbore #1 - Plan #1	9,966.95	6,573.86	4,958.70	4,899.93	84.386	CC
Gutttersen State D36-762 - Wellbore #1 - Plan #1	10,000.00	6,564.60	4,958.79	4,899.86	84.143	ES
Gutttersen State D36-762 - Wellbore #1 - Plan #1	11,900.00	6,205.98	5,301.02	5,231.87	76.654	SF
Gutttersen State D36-771 - Wellbore #1 - Plan #1	10,169.53	5,881.83	5,497.76	5,439.49	94.355	CC
Gutttersen State D36-771 - Wellbore #1 - Plan #1	10,200.00	5,874.13	5,497.83	5,439.40	94.084	ES
Gutttersen State D36-771 - Wellbore #1 - Plan #1	12,500.00	5,307.35	5,942.16	5,871.62	84.243	SF
Gutttersen State D36-781 - Wellbore #1 - Plan #1	10,401.29	5,077.50	5,912.52	5,855.16	103.069	CC, ES
Gutttersen State D36-781 - Wellbore #1 - Plan #1	12,800.00	4,507.11	6,353.74	6,283.45	90.393	SF
Karch Blue D 25-02 (DA) - Wellbore #1 - No Surveys	11,582.03	6,672.00	3,579.05	3,400.87	20.087	CC
Karch Blue D 25-02 (DA) - Wellbore #1 - No Surveys	11,600.00	6,672.00	3,579.10	3,400.78	20.072	ES
Karch Blue D 25-02 (DA) - Wellbore #1 - No Surveys	12,000.00	6,672.00	3,603.37	3,422.23	19.892	SF
Karch Blue D 25-08 (SI) - Wellbore #1 - Gyro Surveys	10,310.06	6,636.50	2,290.18	2,230.51	38.379	CC, ES
Karch Blue D 25-08 (SI) - Wellbore #1 - Gyro Surveys	10,800.00	6,622.94	2,341.96	2,279.28	37.362	SF
Karch Blue D25-07 (SI) - Wellbore #1 - Gyro Surveys	10,308.83	6,681.36	3,614.48	3,554.81	60.571	CC, ES
Karch Blue D25-07 (SI) - Wellbore #1 - Gyro Surveys	11,400.00	6,677.10	3,775.59	3,709.45	57.085	SF
L F Ranch 2-25 (PR) - Wellbore #1 - Gyro Surveys	11,545.83	6,646.14	2,301.48	2,233.86	34.036	CC, ES
L F Ranch 2-25 (PR) - Wellbore #1 - Gyro Surveys	12,000.00	6,634.45	2,345.84	2,275.20	33.211	SF
LF Ranches 1 (PA) - Wellbore #1 - No Surveys	11,253.69	6,676.00	2,589.18	2,413.14	14.708	CC, ES
LF Ranches 1 (PA) - Wellbore #1 - No Surveys	11,500.00	6,676.00	2,600.87	2,423.07	14.628	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 Guttersten State DD30-766
Project:	Mustang	TVD Reference:	KB @ 4823.00ft
Reference Site:	DD Section 30	MD Reference:	KB @ 4823.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Guttersten State DD30-766	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Guttersten State DD30-766	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 36						
Kanga State D 36-1JI (SI) - Wellbore #1 - Gyro Surveys	6,728.34	6,458.97	2,347.67	2,301.24	50.560	CC, ES
Kanga State D 36-1JI (SI) - Wellbore #1 - Gyro Surveys	6,950.00	6,614.44	2,366.40	2,319.15	50.079	SF
Kanga State D 36-2JI - Wellbore #1 - Gyro Surveys	6,969.64	6,668.77	3,717.44	3,669.66	77.804	CC, ES
Kanga State D 36-2JI - Wellbore #1 - Gyro Surveys	7,150.00	6,735.84	3,727.87	3,679.70	77.405	SF
Kanga State D36-11JI (PR) - Wellbore #1 - Gyro Surveys	6,486.90	6,217.61	5,801.07	5,716.31	68.437	CC
Kanga State D36-11JI (PR) - Wellbore #1 - Gyro Surveys	6,500.00	6,229.78	5,801.15	5,716.21	68.297	ES
Kanga State D36-11JI (PR) - Wellbore #1 - Gyro Surveys	6,950.00	6,565.14	5,901.44	5,811.87	65.885	SF
Rhoo State D36-07JI (SI) - Wellbore #1 - Gyro Surveys	6,618.56	6,521.82	4,055.83	4,009.67	87.866	CC, ES
Rhoo State D36-07JI (SI) - Wellbore #1 - Gyro Surveys	6,950.00	6,700.00	4,103.60	4,056.21	86.587	SF
Spike State D 36-04 (SI) - Gyro Surveys - Wellbore #1	6,978.45	6,772.98	6,288.30	6,240.33	131.087	CC
Spike State D 36-04 (SI) - Gyro Surveys - Wellbore #1	7,000.00	6,819.55	6,288.43	6,240.27	130.578	ES
Spike State D 36-04 (SI) - Gyro Surveys - Wellbore #1	10,200.00	6,898.00	7,326.13	7,268.26	126.596	SF
Spike State D 36-3 (SI) - Wellbore #1 - No Surveys	6,875.56	6,606.34	5,118.93	4,962.42	32.708	CC
Spike State D 36-3 (SI) - Wellbore #1 - No Surveys	6,900.00	6,620.55	5,119.10	4,962.27	32.642	ES
Spike State D 36-3 (SI) - Wellbore #1 - No Surveys	7,150.00	6,720.13	5,141.27	4,982.20	32.320	SF
Spike State D36-05 (SI) - Wellbore #1 - Gyro Surveys	6,664.29	6,319.18	6,639.03	6,593.11	144.576	CC, ES
Spike State D36-05 (SI) - Wellbore #1 - Gyro Surveys	6,950.00	6,950.00	6,659.96	6,611.55	137.559	SF
Spike State D36-06 (PA) - Wellbore #1 - Gyro Surveys	6,635.37	6,441.73	5,434.85	5,388.71	117.780	CC, ES
Spike State D36-06 (PA) - Wellbore #1 - Gyro Surveys	8,200.00	8,200.00	6,015.29	5,960.77	110.320	SF
State 09 (SI) - Wellbore #1 - Gyro Surveys	6,613.34	6,327.65	3,154.68	3,109.00	69.061	CC, ES
State 09 (SI) - Wellbore #1 - Gyro Surveys	6,950.00	6,950.00	3,197.75	3,149.49	66.272	SF
State 30 (SI) - Wellbore #1 - Gyro Surveys	6,476.91	6,265.74	6,515.23	6,470.29	145.005	CC, ES
State 30 (SI) - Wellbore #1 - Gyro Surveys	6,950.00	6,599.81	6,624.13	6,577.03	140.630	SF
DD Section 18						
Guttersten 18D - Wellbore #1 - Wellbore #1 - As Drilled	17,329.34	6,698.68	2,773.48	2,673.83	27.831	CC, ES, SF
Guttersten 24-18 - Wellbore #1 - Wellbore #1 - As Drilled	17,329.34	6,710.57	956.63	882.43	12.892	CC, ES, SF
Guttersten 33-18 - Wellbore #1 - Wellbore #1 - As Drilled	17,329.34	6,728.47	2,848.48	2,764.23	33.812	CC, ES, SF
Guttersten 34-18 - Wellbore #1 - Wellbore #1 - As Drilled	17,329.34	6,711.04	1,859.45	1,755.77	17.934	CC, ES, SF
Guttersten 43-18 - Wellbore #1 - Wellbore #1 - As Drilled	17,329.34	6,734.63	3,704.89	3,605.13	37.140	CC, ES, SF
Guttersten 44-18 - Wellbore #1 - Wellbore #1 - As Drilled	17,329.34	6,703.45	3,142.93	3,035.16	29.165	CC, ES, SF
Karch Blue DD18-03J - Wellbore #1 - Wellbore #1 - As D	17,329.34	6,710.32	1,894.48	1,842.02	36.114	CC, ES, SF
Karch Blue DD18-12 - Original Drilling - Original Drilling -	17,329.34	6,682.42	2,512.27	2,441.47	35.485	CC, ES, SF
Karch Blue DD18-13 - Wellbore #1 - Wellbore #1 - As Dr	17,329.34	6,721.52	1,366.22	1,270.86	14.327	CC, ES, SF
DD Section 19						
Champlin 366 Amoco B1 (PR) - Wellbore #1 - Gyro Surv	15,849.61	6,673.50	2,675.77	2,576.37	26.917	CC, ES
Champlin 366 Amoco B1 (PR) - Wellbore #1 - Gyro Surv	16,100.00	6,663.23	2,687.44	2,586.74	26.686	SF
Champlin 366 Amoco D1 (PA) - Wellbore #1 - No Survey	13,244.03	6,696.00	52.27	-138.26	0.274	Level 1, CC, ES, SF
Guttersten 31-19 (PR) - Wellbore #1 - Gyro Surveys	16,844.35	6,695.49	1,752.47	1,645.10	16.321	CC, ES
Guttersten 31-19 (PR) - Wellbore #1 - Gyro Surveys	16,900.00	6,694.57	1,753.36	1,645.69	16.285	SF
Guttersten 44-19 (SI) - Wellbore #1 - No Surveys	12,983.99	6,741.00	3,084.22	2,894.70	16.274	CC
Guttersten 44-19 (SI) - Wellbore #1 - No Surveys	13,000.00	6,741.00	3,084.26	2,894.64	16.266	ES
Guttersten 44-19 (SI) - Wellbore #1 - No Surveys	13,200.00	6,741.00	3,091.77	2,900.98	16.205	SF
DD Section 20						
Spike State DD 20-02J (PR) - Wellbore #1 - Gyro Survey	16,664.95	6,754.83	4,620.57	4,514.50	43.562	CC
Spike State DD 20-02J (PR) - Wellbore #1 - Gyro Survey	16,700.00	6,754.35	4,620.70	4,514.39	43.462	ES
Spike State DD 20-02J (PR) - Wellbore #1 - Gyro Survey	17,329.34	6,745.79	4,668.08	4,558.06	42.430	SF
Spike State DD 20-03J (PR) - Wellbore #1 - Gyro Survey	13,555.11	6,717.52	5,020.86	4,938.71	61.122	CC
Spike State DD 20-03J (PR) - Wellbore #1 - Gyro Survey	13,600.00	6,717.87	5,021.06	4,938.60	60.895	ES
Spike State DD 20-03J (PR) - Wellbore #1 - Gyro Survey	14,800.00	6,726.88	5,172.88	5,083.70	58.005	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 Guttersten State DD30-766
Project:	Mustang	TVD Reference:	KB @ 4823.00ft
Reference Site:	DD Section 30	MD Reference:	KB @ 4823.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Guttersten State DD30-766	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Guttersten State DD30-766	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						
DD Section 29						
Champlin 366 Amoco C UT 1 (PR) - Wellbore #1 - Gyro	11,279.13	7,002.86	7,359.82	7,292.54	109.386	CC
Champlin 366 Amoco C UT 1 (PR) - Wellbore #1 - Gyro	11,300.00	7,003.55	7,359.85	7,292.43	109.168	ES
Champlin 366 Amoco C UT 1 (PR) - Wellbore #1 - Gyro	12,800.00	12,800.00	7,515.32	7,418.51	77.624	SF
Champlin Amoco 1 (PA) - Wellbore #1 - No Surveys	2,100.00	2,139.01	4,211.47	4,161.40	84.103	CC
Champlin Amoco 1 (PA) - Wellbore #1 - No Surveys	2,200.00	2,238.99	4,212.95	4,160.53	80.373	ES
Champlin Amoco 1 (PA) - Wellbore #1 - No Surveys	8,900.00	6,773.01	5,130.15	4,965.76	31.206	SF
Guttersten 42-29 (PR) - Wellbore #1 - Gyro Surveys	2,126.24	2,226.64	8,034.83	8,019.84	535.715	CC, ES
Guttersten 42-29 (PR) - Wellbore #1 - Gyro Surveys	13,500.00	6,995.43	8,867.32	8,758.04	81.144	SF
DD Section 30						
Guttersten 11-30 (PR) - Wellbore #1 - Gyro Surveys	11,638.13	6,687.09	964.06	895.80	14.123	CC, ES
Guttersten 11-30 (PR) - Wellbore #1 - Gyro Surveys	11,700.00	6,686.30	966.04	897.26	14.044	SF
Guttersten 12-30 (PR) - Wellbore #1 - Gyro Surveys	10,219.72	6,678.19	1,045.25	986.07	17.662	CC, ES
Guttersten 12-30 (PR) - Wellbore #1 - Gyro Surveys	10,300.00	6,674.37	1,048.32	988.54	17.538	SF
Guttersten 22-30 (PR) - Wellbore #1 - Gyro Surveys	10,293.13	6,692.59	365.76	306.34	6.156	CC, ES, SF
Guttersten 30 A (PR) - Wellbore #1 - Gyro Surveys	10,920.73	6,689.75	235.43	171.98	3.711	CC, ES, SF
Guttersten State DD30-715 - Guttersten State DD30-715 -	2,100.00	2,130.00	1,987.08	1,972.38	135.200	CC, ES
Guttersten State DD30-715 - Guttersten State DD30-715 -	17,329.34	17,386.62	3,407.37	3,230.35	19.248	SF
Guttersten State DD30-725 - Guttersten State DD30-725 -	2,100.00	2,130.00	1,950.08	1,935.39	132.683	CC, ES
Guttersten State DD30-725 - Guttersten State DD30-725 -	17,329.34	17,250.39	2,769.11	2,592.49	15.679	SF
Guttersten State DD30-735 - Guttersten State DD30-735 -	2,807.49	3,183.39	1,911.16	1,890.77	93.713	CC, ES
Guttersten State DD30-735 - Guttersten State DD30-735 -	17,329.34	17,421.94	2,107.32	1,930.68	11.930	SF
Guttersten State DD30-745 - Guttersten State DD30-745 -	17,329.34	17,578.43	1,446.26	1,270.05	8.207	CC, ES, SF
Guttersten State DD30-755 - Guttersten State DD30-755 -	2,141.44	2,141.85	36.38	21.54	2.450	CC
Guttersten State DD30-755 - Guttersten State DD30-755 -	2,200.00	2,200.48	36.74	21.50	2.411	ES, SF
Guttersten State DD30-775 - Guttersten State DD30-775 -	2,000.00	2,001.00	38.00	24.12	2.738	CC, ES
Guttersten State DD30-775 - Guttersten State DD30-775 -	2,100.00	2,099.88	39.44	24.87	2.707	SF
Guttersten State DD30-785 - Guttersten State DD30-785 -	1,914.16	1,915.16	75.01	61.75	5.656	CC
Guttersten State DD30-785 - Guttersten State DD30-785 -	2,000.00	2,000.80	75.02	61.14	5.407	ES
Guttersten State DD30-785 - Guttersten State DD30-785 -	2,100.00	2,097.90	77.17	62.63	5.305	SF
Guttersten YY06-756 - Guttersten YY06-756 - Plan #1	2,100.00	2,103.00	154.82	140.22	10.604	CC, ES
Guttersten YY06-756 - Guttersten YY06-756 - Plan #1	2,300.00	2,303.16	160.81	144.82	10.056	SF
Guttersten YY06-766 - Guttersten YY06-766 - Plan #1	7,024.01	6,966.27	52.62	2.73	1.055	Level 2, CC, ES, SF
Guttersten YY06-775 - Guttersten YY06-775 - Plan #1	2,100.00	2,098.00	155.23	140.65	10.645	CC, ES
Guttersten YY06-775 - Guttersten YY06-775 - Plan #1	2,400.00	2,396.84	164.05	147.43	9.873	SF
Guttersten YY06-785 - Guttersten YY06-785 - Plan #1	2,000.00	1,998.00	168.15	154.28	12.127	CC
Guttersten YY06-785 - Guttersten YY06-785 - Plan #1	2,100.00	2,095.94	168.75	154.18	11.586	ES
Guttersten YY06-785 - Guttersten YY06-785 - Plan #1	2,400.00	2,388.47	182.92	166.36	11.048	SF
Karch Blue DD 30-12 (PA) - Wellbore #1 - No Surveys	9,098.34	6,687.00	1,090.50	926.77	6.660	CC
Karch Blue DD 30-12 (PA) - Wellbore #1 - No Surveys	9,100.00	6,687.00	1,090.50	926.76	6.660	ES, SF
Karch Blue DD 30-14 (PA) - Wellbore #1 - No Surveys	7,599.58	6,693.00	426.09	266.96	2.678	CC
Karch Blue DD 30-14 (PA) - Wellbore #1 - No Surveys	7,600.00	6,693.00	426.09	266.96	2.678	ES, SF
Karch Blue DD 30-3 J (PA) - Wellbore #1 - No Surveys	8,545.57	6,692.00	79.32	-82.23	0.491	Level 1, CC, ES, SF
L F Ranch 2-30 (PR) - Wellbore #1 - Gyro Surveys	11,293.31	6,717.44	349.00	282.68	5.262	CC, ES, SF
State 19 (PA) - Wellbore #1 - NO Surveys	10,939.32	6,743.00	2,573.93	2,398.62	14.682	CC, ES
State 19 (PA) - Wellbore #1 - NO Surveys	11,100.00	6,743.00	2,578.94	2,402.78	14.640	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 Guttersen State DD30-766
Project:	Mustang	TVD Reference:	KB @ 4823.00ft
Reference Site:	DD Section 30	MD Reference:	KB @ 4823.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Guttersen State DD30-766	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Guttersen State DD30-766	Database:	EDMP
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

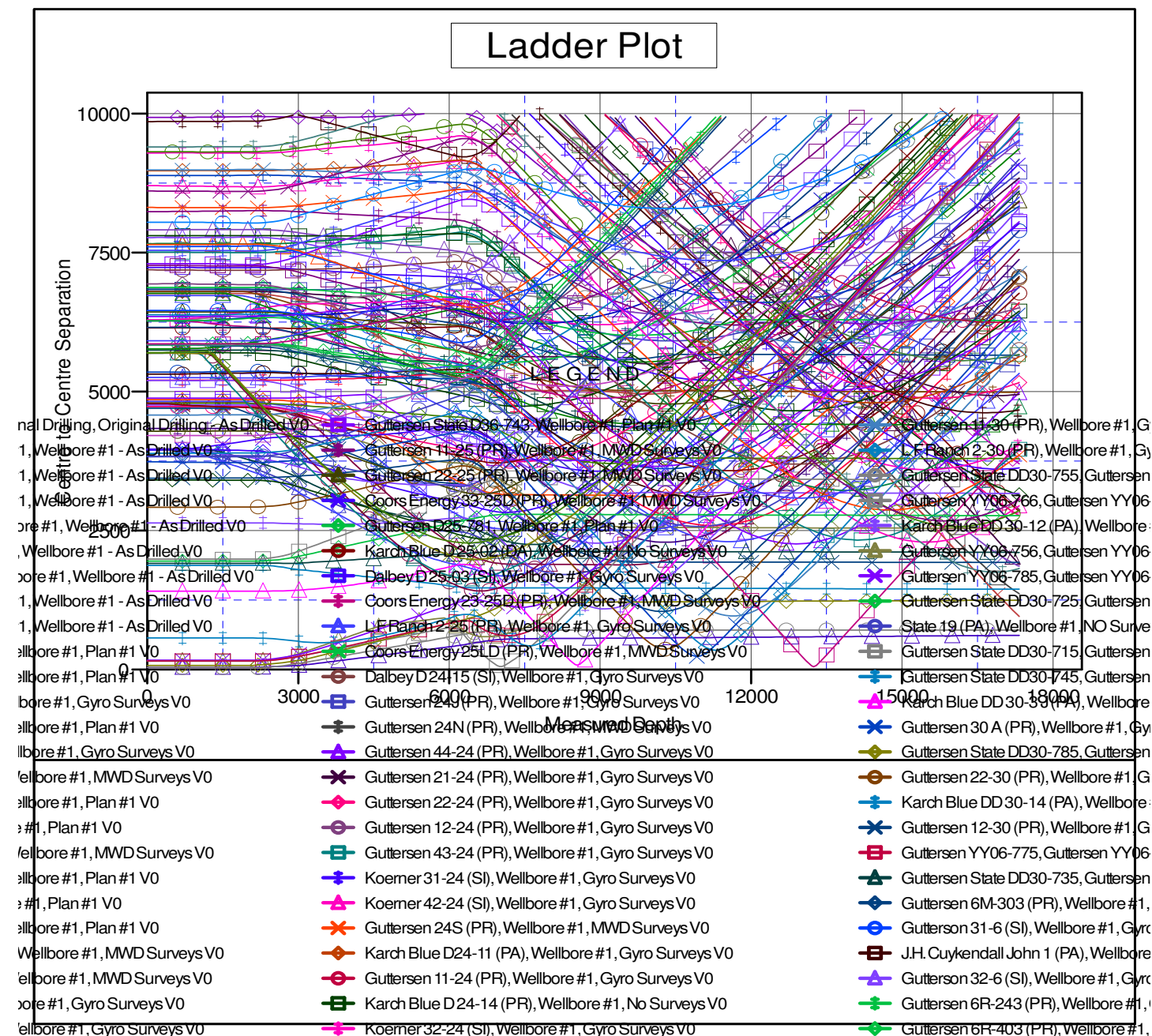
Summary

Site Name Offset Well - Wellbore - Design	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
DD Section 31						
Guttersen 31Q-221 (PR) - Wellbore #1 - MWD Surveys	6,417.69	10,956.00	1,630.11	1,522.65	15.170	CC
Guttersen 31Q-221 (PR) - Wellbore #1 - MWD Surveys	6,450.00	10,956.00	1,630.49	1,522.62	15.115	ES
Guttersen 31Q-221 (PR) - Wellbore #1 - MWD Surveys	6,550.00	10,956.00	1,636.40	1,527.57	15.036	SF
Guttersen 31Q-401 (PR) - Wellbore #1 - MWD Surveys	6,625.80	11,132.00	1,413.53	1,307.35	13.314	CC, ES
Guttersen 31Q-401 (PR) - Wellbore #1 - MWD Surveys	6,700.00	11,132.00	1,416.13	1,309.32	13.258	SF
Guttersen 31T-301 (PR) - Wellbore #1 - MWD Surveys	6,366.78	11,048.00	2,279.97	2,172.22	21.160	CC
Guttersen 31T-301 (PR) - Wellbore #1 - MWD Surveys	6,400.00	11,048.00	2,280.25	2,172.10	21.084	ES
Guttersen 31T-301 (PR) - Wellbore #1 - MWD Surveys	6,650.00	11,048.00	2,299.50	2,189.16	20.842	SF
Guttersen 31T-441 (PR) - Wellbore #1 - MWD Surveys	6,521.11	11,127.00	1,982.76	1,875.04	18.407	CC
Guttersen 31T-441 (PR) - Wellbore #1 - MWD Surveys	6,550.00	11,127.00	1,983.01	1,874.97	18.353	ES
Guttersen 31T-441 (PR) - Wellbore #1 - MWD Surveys	6,700.00	11,127.00	1,992.47	1,883.18	18.230	SF
Guttersen 33-31 (PR) - Wellbore #1 - Gyro Surveys	6,211.49	6,041.54	3,294.22	3,250.13	74.717	CC, ES
Guttersen 33-31 (PR) - Wellbore #1 - Gyro Surveys	6,500.00	6,290.17	3,351.69	3,305.74	72.941	SF
YY Section 6						
Guttersen 6M-303 (PR) - Wellbore #1 - Wellbore #1	6,230.79	5,881.00	5,122.32	5,078.15	115.978	CC, ES
Guttersen 6M-303 (PR) - Wellbore #1 - Wellbore #1	6,450.00	5,913.00	5,162.14	5,117.12	114.663	SF
Guttersen 6M-423 (PR) - Wellbore #1 - MWD Surveys	6,227.00	5,913.00	5,226.53	5,182.87	119.720	CC, ES
Guttersen 6M-423 (PR) - Wellbore #1 - MWD Surveys	6,500.00	6,010.00	5,284.73	5,239.81	117.657	SF
Guttersen 6R-243 (PR) - Wellbore #1 - Gyro Surveys	6,216.78	5,914.00	5,326.43	5,281.92	119.654	CC, ES
Guttersen 6R-243 (PR) - Wellbore #1 - Gyro Surveys	6,450.00	5,946.00	5,370.17	5,324.74	118.195	SF
Guttersen 6R-403 (PR) - Wellbore #1 - MWD Surveys	6,194.81	5,820.00	5,452.34	5,406.58	119.137	CC, ES
Guttersen 6R-403 (PR) - Wellbore #1 - MWD Surveys	6,500.00	5,992.10	5,520.52	5,473.18	116.611	SF
Gutterson 31-6 (SI) - Wellbore #1 - Gyro Surveys	6,250.66	6,122.21	5,882.00	5,837.65	132.603	CC, ES
Gutterson 31-6 (SI) - Wellbore #1 - Gyro Surveys	6,600.00	6,413.59	5,972.05	5,925.59	128.529	SF
Gutterson 32-6 (SI) - Wellbore #1 - Gyro Surveys	6,258.23	6,151.01	7,114.73	7,070.27	160.055	CC, ES
Gutterson 32-6 (SI) - Wellbore #1 - Gyro Surveys	6,750.00	6,784.13	7,288.83	7,240.65	151.291	SF
J.H. Cuykendall John 1 (PA) - Wellbore #1 - Gyro Survey	6,286.89	5,928.96	9,223.90	9,180.36	211.805	CC, ES
J.H. Cuykendall John 1 (PA) - Wellbore #1 - Gyro Survey	6,850.00	6,897.28	9,448.42	9,400.32	196.423	SF

Anticollision Summary Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Guttersen State DD30-766
Project:	Mustang	TVD Reference:	KB @ 4823.00ft
Reference Site:	DD Section 30	MD Reference:	KB @ 4823.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Guttersen State DD30-766	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Guttersen State DD30-766	Database:	EDMP
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Grid Convergence at Surface is: 0.66°

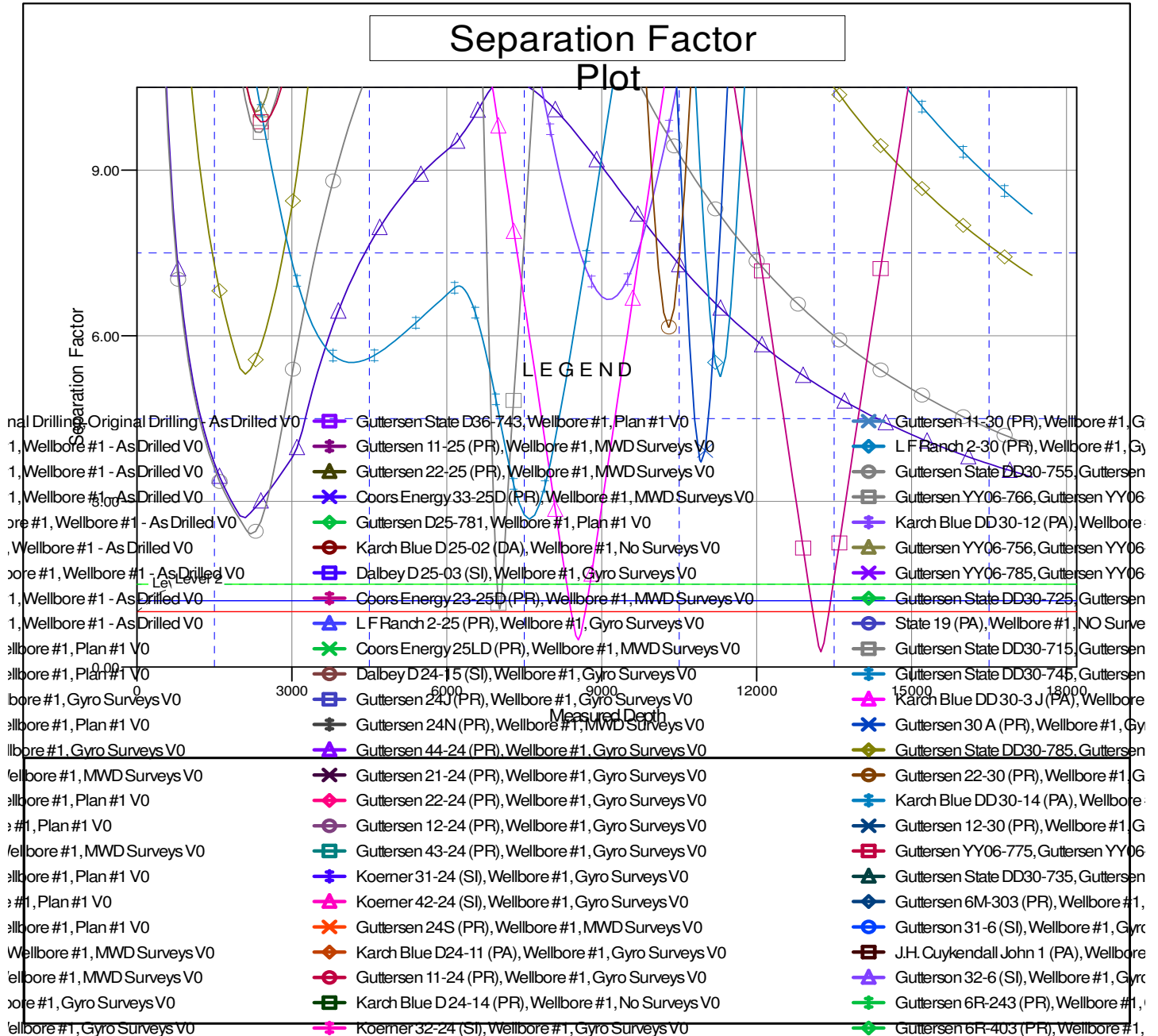


Noble Energy, Inc.
Anticollision Summary Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Guttersten State DD30-766
Project:	Mustang	TVD Reference:	KB @ 4823.00ft
Reference Site:	DD Section 30	MD Reference:	KB @ 4823.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Guttersten State DD30-766	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Guttersten State DD30-766	Database:	EDMP
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Reference Depths are relative to KB @ 4823.00ft
Offset Depths are relative to Offset Datum
Central Meridian is -105.5000000

Coordinates are relative to: Guttersten State DD30-766
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 0.66°



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