Project: Mustang
Site: D Section 21
Well: Vogler State D21-750
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

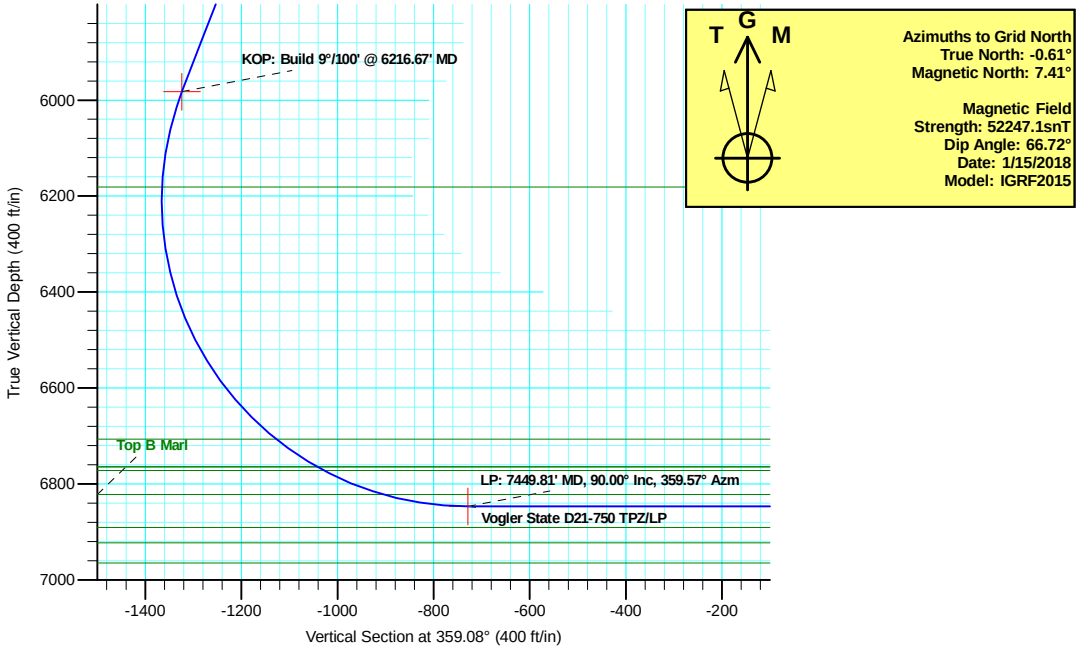
SECTION DETAILS

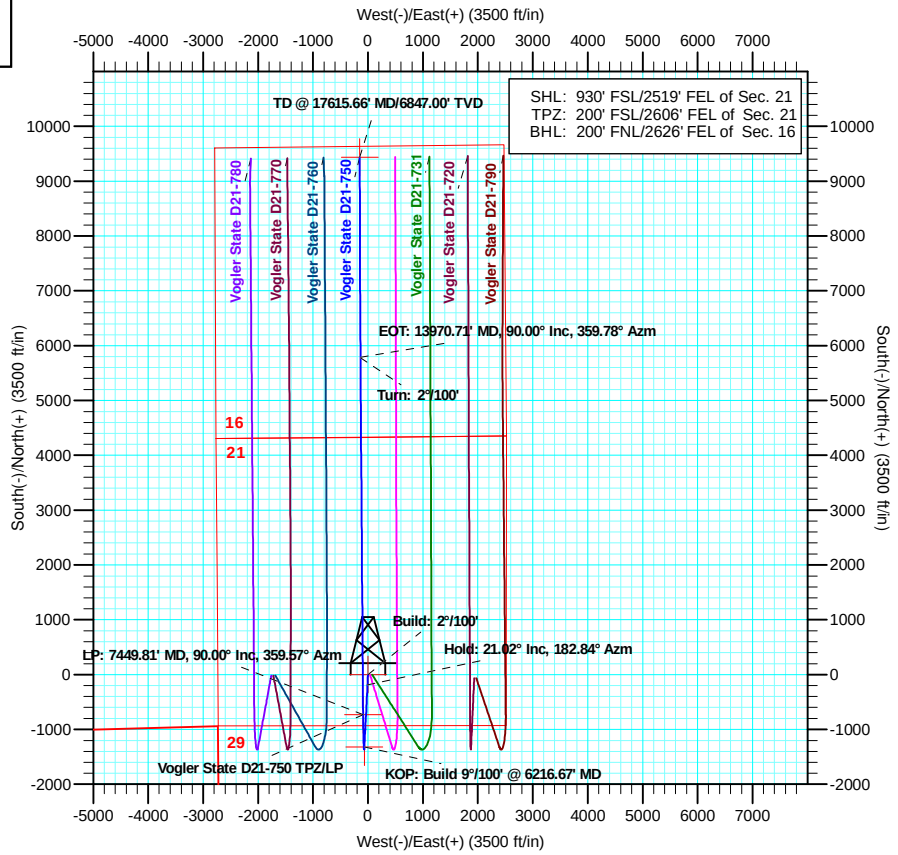
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	2000.00	0.00	0.00	2000.00	0.00	0.00	0.00	0.00	0.00
3	3050.93	21.02	182.84	3027.52	-190.38	-9.43	2.00	182.84	-190.20
4	6216.67	21.02	182.84	5982.62	-1324.45	-65.62	0.00	0.00	-1323.23
5	7449.81	90.00	359.57	6847.00	-730.20	-88.94	9.00	176.51	-728.68
6	13960.32	90.00	359.57	6847.00	5780.12	-137.38	0.00	0.00	5781.58
7	13970.71	90.00	359.78	6847.00	5790.51	-137.44	2.00	90.00	5791.97
8	17615.66	90.00	359.78	6847.00	9435.44	-151.34	0.00	0.00	9436.65

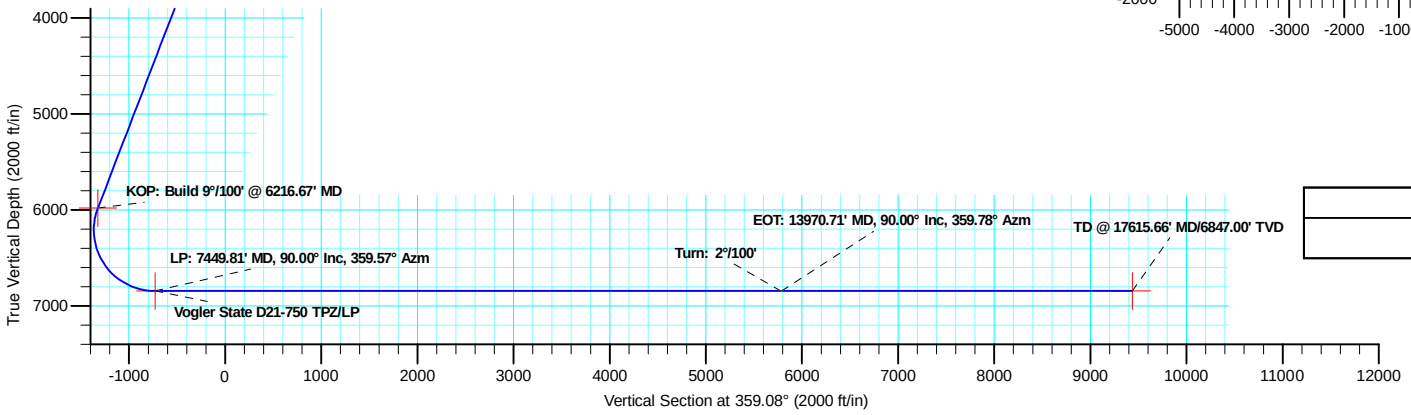
WELL DETAILS: Vogler State D21-750

Ground Level: 4824.00

+N/-S	+E/-W	Northing	Easting	Latittude	Longitude
0.00	0.00	1319376.85	3263682.09	40.2062334	-104.5559218







Plan: Plan 1 (Vogler State D21-750/Wellbore #1)
Created By: Keith Noack Date: 15:18, August 07 2018

Northern Region - DJ Basin

Mustang
D Section 21
Vogler State D21-750

Wellbore #1

Plan: Plan 1

Standard Planning Report

07 August, 2018

Database:	EDMP	**Local Co-ordinate Reference:**	Well Vogler State D21-750
Company:	Northern Region - DJ Basin	**TVD Reference:**	Well @ 4854.00ft
Project:	Mustang	**MD Reference:**	Well @ 4854.00ft
Site:	D Section 21	**North Reference:**	Grid
Well:	Vogler State D21-750	**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 D21-750					
Well Position	**+N/-S**	-3,665.05 ft	**Northing:**	1,319,376.85 usft	**Latitude:**	40.2062334
	+E/-W	2,068.62 ft	**Easting:**	3,263,682.09 usft	**Longitude:**	-104.5559217
Position Uncertainty		0.00 ft	**Wellhead Elevation:**		**Ground Level:**	4,824.00 ft

Wellbore	Wellbore #1				
Magnetics	**Model Name**	**Sample Date**	**Declination (°)**	**Dip Angle (°)**	**Field Strength (nT)**
	IGRF2015	1/15/2018	8.02	66.72	52,247.08517702

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	359.08	

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	
3,050.93	21.02	182.84	3,027.52	-190.38	-9.43	2.00	2.00	0.00	182.84	
6,216.67	21.02	182.84	5,982.62	-1,324.45	-65.62	0.00	0.00	0.00	0.00	
7,449.81	90.00	359.57	6,847.00	-730.20	-88.94	9.00	5.59	14.33	176.51	Vogler State D21-7
13,960.32	90.00	359.57	6,847.00	5,780.12	-137.38	0.00	0.00	0.00	0.00	Vogler State D21-7
13,970.71	90.00	359.78	6,847.00	5,790.51	-137.44	2.00	0.00	2.00	90.00	Vogler State D21-7
17,615.66	90.00	359.78	6,847.00	9,435.44	-151.34	0.00	0.00	0.00	0.00	Vogler State D21-7

Database:	EDMP	**Local Co-ordinate Reference:**	Well Vogler State D21-750
Company:	Northern Region - DJ Basin	**TVD Reference:**	Well @ 4854.00ft
Project:	Mustang	**MD Reference:**	Well @ 4854.00ft
Site:	D Section 21	**North Reference:**	Grid
Well:	Vogler State D21-750	**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
654.00	0.00	0.00	654.00	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
789.00	0.00	0.00	789.00	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
1,656.00	0.00	0.00	1,656.00	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	182.84	2,099.98	-1.74	-0.09	-1.74	2.00	2.00	0.00
2,200.00	4.00	182.84	2,199.84	-6.97	-0.35	-6.96	2.00	2.00	0.00
2,300.00	6.00	182.84	2,299.45	-15.67	-0.78	-15.66	2.00	2.00	0.00
2,400.00	8.00	182.84	2,398.70	-27.85	-1.38	-27.82	2.00	2.00	0.00
2,500.00	10.00	182.84	2,497.47	-43.47	-2.15	-43.43	2.00	2.00	0.00
2,600.00	12.00	182.84	2,595.62	-62.53	-3.10	-62.47	2.00	2.00	0.00
2,700.00	14.00	182.84	2,693.06	-84.99	-4.21	-84.91	2.00	2.00	0.00
2,800.00	16.00	182.84	2,789.64	-110.84	-5.49	-110.74	2.00	2.00	0.00
2,900.00	18.00	182.84	2,885.27	-140.04	-6.94	-139.91	2.00	2.00	0.00
3,000.00	20.00	182.84	2,979.82	-172.56	-8.55	-172.40	2.00	2.00	0.00
3,050.93	21.02	182.84	3,027.52	-190.38	-9.43	-190.20	2.00	2.00	0.00
Hold: 21.02° Inc, 182.84° Azm									
3,100.00	21.02	182.84	3,073.32	-207.96	-10.30	-207.76	0.00	0.00	0.00
3,200.00	21.02	182.84	3,166.67	-243.78	-12.08	-243.55	0.00	0.00	0.00
3,300.00	21.02	182.84	3,260.01	-279.60	-13.85	-279.34	0.00	0.00	0.00
3,400.00	21.02	182.84	3,353.36	-315.43	-15.63	-315.14	0.00	0.00	0.00
3,500.00	21.02	182.84	3,446.71	-351.25	-17.40	-350.93	0.00	0.00	0.00
3,600.00	21.02	182.84	3,540.05	-387.07	-19.18	-386.72	0.00	0.00	0.00
3,700.00	21.02	182.84	3,633.40	-422.90	-20.95	-422.51	0.00	0.00	0.00
3,800.00	21.02	182.84	3,726.75	-458.72	-22.73	-458.30	0.00	0.00	0.00
3,900.00	21.02	182.84	3,820.09	-494.54	-24.50	-494.09	0.00	0.00	0.00
3,960.96	21.02	182.84	3,877.00	-516.38	-25.58	-515.91	0.00	0.00	0.00
Parkman									
4,000.00	21.02	182.84	3,913.44	-530.37	-26.28	-529.88	0.00	0.00	0.00
4,100.00	21.02	182.84	4,006.79	-566.19	-28.05	-565.67	0.00	0.00	0.00

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Project:	Mustang	**MD Reference:**	Well @ 4854.00ft
Site:	D Section 21	**North Reference:**	Grid
Well:	Vogler State D21-750	**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)
4,200.00	21.02	182.84	4,100.13	-602.01	-29.83	-601.46	0.00	0.00	0.00
4,210.57	21.02	182.84	4,110.00	-605.80	-30.01	-605.24	0.00	0.00	0.00
Sussex									
4,300.00	21.02	182.84	4,193.48	-637.84	-31.60	-637.25	0.00	0.00	0.00
4,400.00	21.02	182.84	4,286.82	-673.66	-33.38	-673.04	0.00	0.00	0.00
4,500.00	21.02	182.84	4,380.17	-709.48	-35.15	-708.83	0.00	0.00	0.00
4,600.00	21.02	182.84	4,473.52	-745.31	-36.93	-744.62	0.00	0.00	0.00
4,700.00	21.02	182.84	4,566.86	-781.13	-38.70	-780.41	0.00	0.00	0.00
4,800.00	21.02	182.84	4,660.21	-816.95	-40.48	-816.20	0.00	0.00	0.00
4,900.00	21.02	182.84	4,753.56	-852.78	-42.25	-851.99	0.00	0.00	0.00
5,000.00	21.02	182.84	4,846.90	-888.60	-44.03	-887.78	0.00	0.00	0.00
5,100.00	21.02	182.84	4,940.25	-924.42	-45.80	-923.57	0.00	0.00	0.00
5,200.00	21.02	182.84	5,033.60	-960.25	-47.58	-959.36	0.00	0.00	0.00
5,228.29	21.02	182.84	5,060.00	-970.38	-48.08	-969.48	0.00	0.00	0.00
Shannon									
5,300.00	21.02	182.84	5,126.94	-996.07	-49.35	-995.15	0.00	0.00	0.00
5,400.00	21.02	182.84	5,220.29	-1,031.89	-51.13	-1,030.94	0.00	0.00	0.00
5,500.00	21.02	182.84	5,313.63	-1,067.72	-52.90	-1,066.73	0.00	0.00	0.00
5,600.00	21.02	182.84	5,406.98	-1,103.54	-54.68	-1,102.52	0.00	0.00	0.00
5,700.00	21.02	182.84	5,500.33	-1,139.36	-56.45	-1,138.31	0.00	0.00	0.00
5,800.00	21.02	182.84	5,593.67	-1,175.19	-58.22	-1,174.10	0.00	0.00	0.00
5,900.00	21.02	182.84	5,687.02	-1,211.01	-60.00	-1,209.89	0.00	0.00	0.00
6,000.00	21.02	182.84	5,780.37	-1,246.83	-61.77	-1,245.68	0.00	0.00	0.00
6,100.00	21.02	182.84	5,873.71	-1,282.66	-63.55	-1,281.47	0.00	0.00	0.00
6,200.00	21.02	182.84	5,967.06	-1,318.48	-65.32	-1,317.26	0.00	0.00	0.00
6,216.67	21.02	182.84	5,982.62	-1,324.45	-65.62	-1,323.23	0.00	0.00	0.00
KOP: Build 9°/100' @ 6216.67' MD									
6,250.00	18.03	183.43	6,014.03	-1,335.57	-66.22	-1,334.34	9.00	-8.98	1.77
6,300.00	13.54	184.78	6,062.13	-1,349.13	-67.18	-1,347.88	9.00	-8.97	2.71
6,350.00	9.07	187.45	6,111.15	-1,358.88	-68.17	-1,357.61	9.00	-8.94	5.33
6,400.00	4.65	195.15	6,160.78	-1,364.75	-69.22	-1,363.46	9.00	-8.83	15.41
6,420.26	2.94	204.78	6,181.00	-1,366.01	-69.65	-1,364.72	9.00	-8.46	47.50
Teepee Buttes									
6,450.00	1.25	270.34	6,210.72	-1,366.70	-70.29	-1,365.40	9.00	-5.67	220.47
6,500.00	4.69	344.10	6,260.65	-1,364.73	-71.40	-1,363.41	9.00	6.87	147.53
6,550.00	9.10	351.73	6,310.28	-1,358.85	-72.53	-1,357.51	9.00	8.83	15.25
6,600.00	13.57	354.38	6,359.29	-1,349.09	-73.67	-1,347.74	9.00	8.94	5.30
6,650.00	18.06	355.73	6,407.39	-1,335.52	-74.83	-1,334.15	9.00	8.97	2.70
6,700.00	22.55	356.55	6,454.27	-1,318.21	-75.98	-1,316.83	9.00	8.98	1.65
6,750.00	27.04	357.12	6,499.65	-1,297.28	-77.13	-1,295.88	9.00	8.99	1.13
6,800.00	31.54	357.53	6,543.24	-1,272.85	-78.26	-1,271.43	9.00	8.99	0.83
6,850.00	36.04	357.85	6,584.79	-1,245.07	-79.38	-1,243.64	9.00	8.99	0.64
6,900.00	40.53	358.11	6,624.03	-1,214.12	-80.47	-1,212.68	9.00	8.99	0.51
6,950.00	45.03	358.32	6,660.71	-1,180.19	-81.52	-1,178.73	9.00	9.00	0.43
7,000.00	49.53	358.50	6,694.63	-1,143.48	-82.54	-1,142.01	9.00	9.00	0.37
7,019.41	51.27	358.57	6,707.00	-1,128.53	-82.92	-1,127.05	9.00	9.00	0.33
Sharon Springs									
7,050.00	54.03	358.66	6,725.55	-1,104.22	-83.51	-1,102.74	9.00	9.00	0.31
7,100.00	58.53	358.81	6,753.31	-1,062.65	-84.42	-1,061.16	9.00	9.00	0.28
7,121.05	60.42	358.86	6,764.00	-1,044.53	-84.79	-1,043.03	9.00	9.00	0.27
Top A Chalk									
7,123.08	60.60	358.87	6,765.00	-1,042.76	-84.83	-1,041.26	9.00	9.00	0.26
Top A Marl									

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Site:	D Section 21	**North Reference:**	Grid
Well:	Vogler State D21-750	**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)
7,137.64	61.91	358.91	6,772.00	-1,030.00	-85.07	-1,028.50	9.00	9.00	0.26
Top B Chalk									
7,150.00	63.02	358.94	6,777.71	-1,019.04	-85.28	-1,017.54	9.00	9.00	0.25
7,200.00	67.52	359.06	6,798.62	-973.64	-86.08	-972.14	9.00	9.00	0.24
7,250.00	72.02	359.17	6,815.91	-926.74	-86.80	-925.23	9.00	9.00	0.22
7,270.79	73.89	359.21	6,822.00	-906.87	-87.08	-905.36	9.00	9.00	0.22
Top B Marl									
7,300.00	76.52	359.27	6,829.46	-878.63	-87.46	-877.12	9.00	9.00	0.21
7,350.00	81.02	359.38	6,839.19	-829.61	-88.03	-828.09	9.00	9.00	0.20
7,400.00	85.52	359.48	6,845.05	-779.97	-88.53	-778.45	9.00	9.00	0.20
7,449.81	90.00	359.57	6,847.00	-730.20	-88.94	-728.68	9.00	9.00	0.20
LP: 7449.81' MD, 90.00° Inc, 359.57° Azm									
7,500.00	90.00	359.57	6,847.00	-680.02	-89.32	-678.50	0.00	0.00	0.00
7,600.00	90.00	359.57	6,847.00	-580.02	-90.06	-578.50	0.00	0.00	0.00
7,700.00	90.00	359.57	6,847.00	-480.03	-90.81	-478.51	0.00	0.00	0.00
7,800.00	90.00	359.57	6,847.00	-380.03	-91.55	-378.51	0.00	0.00	0.00
7,900.00	90.00	359.57	6,847.00	-280.03	-92.29	-278.52	0.00	0.00	0.00
8,000.00	90.00	359.57	6,847.00	-180.03	-93.04	-178.52	0.00	0.00	0.00
8,100.00	90.00	359.57	6,847.00	-80.04	-93.78	-78.52	0.00	0.00	0.00
8,200.00	90.00	359.57	6,847.00	19.96	-94.53	21.47	0.00	0.00	0.00
8,300.00	90.00	359.57	6,847.00	119.96	-95.27	121.47	0.00	0.00	0.00
8,400.00	90.00	359.57	6,847.00	219.95	-96.01	221.47	0.00	0.00	0.00
8,500.00	90.00	359.57	6,847.00	319.95	-96.76	321.46	0.00	0.00	0.00
8,600.00	90.00	359.57	6,847.00	419.95	-97.50	421.46	0.00	0.00	0.00
8,700.00	90.00	359.57	6,847.00	519.95	-98.24	521.46	0.00	0.00	0.00
8,800.00	90.00	359.57	6,847.00	619.94	-98.99	621.45	0.00	0.00	0.00
8,900.00	90.00	359.57	6,847.00	719.94	-99.73	721.45	0.00	0.00	0.00
9,000.00	90.00	359.57	6,847.00	819.94	-100.48	821.44	0.00	0.00	0.00
9,100.00	90.00	359.57	6,847.00	919.94	-101.22	921.44	0.00	0.00	0.00
9,200.00	90.00	359.57	6,847.00	1,019.93	-101.96	1,021.44	0.00	0.00	0.00
9,300.00	90.00	359.57	6,847.00	1,119.93	-102.71	1,121.43	0.00	0.00	0.00
9,400.00	90.00	359.57	6,847.00	1,219.93	-103.45	1,221.43	0.00	0.00	0.00
9,500.00	90.00	359.57	6,847.00	1,319.92	-104.20	1,321.43	0.00	0.00	0.00
9,600.00	90.00	359.57	6,847.00	1,419.92	-104.94	1,421.42	0.00	0.00	0.00
9,700.00	90.00	359.57	6,847.00	1,519.92	-105.68	1,521.42	0.00	0.00	0.00
9,800.00	90.00	359.57	6,847.00	1,619.92	-106.43	1,621.41	0.00	0.00	0.00
9,900.00	90.00	359.57	6,847.00	1,719.91	-107.17	1,721.41	0.00	0.00	0.00
10,000.00	90.00	359.57	6,847.00	1,819.91	-107.92	1,821.41	0.00	0.00	0.00
10,100.00	90.00	359.57	6,847.00	1,919.91	-108.66	1,921.40	0.00	0.00	0.00
10,200.00	90.00	359.57	6,847.00	2,019.91	-109.40	2,021.40	0.00	0.00	0.00
10,300.00	90.00	359.57	6,847.00	2,119.90	-110.15	2,121.40	0.00	0.00	0.00
10,400.00	90.00	359.57	6,847.00	2,219.90	-110.89	2,221.39	0.00	0.00	0.00
10,500.00	90.00	359.57	6,847.00	2,319.90	-111.64	2,321.39	0.00	0.00	0.00
10,600.00	90.00	359.57	6,847.00	2,419.89	-112.38	2,421.39	0.00	0.00	0.00
10,700.00	90.00	359.57	6,847.00	2,519.89	-113.12	2,521.38	0.00	0.00	0.00
10,800.00	90.00	359.57	6,847.00	2,619.89	-113.87	2,621.38	0.00	0.00	0.00
10,900.00	90.00	359.57	6,847.00	2,719.89	-114.61	2,721.37	0.00	0.00	0.00
11,000.00	90.00	359.57	6,847.00	2,819.88	-115.36	2,821.37	0.00	0.00	0.00
11,100.00	90.00	359.57	6,847.00	2,919.88	-116.10	2,921.37	0.00	0.00	0.00
11,200.00	90.00	359.57	6,847.00	3,019.88	-116.84	3,021.36	0.00	0.00	0.00
11,300.00	90.00	359.57	6,847.00	3,119.87	-117.59	3,121.36	0.00	0.00	0.00
11,400.00	90.00	359.57	6,847.00	3,219.87	-118.33	3,221.36	0.00	0.00	0.00
11,500.00	90.00	359.57	6,847.00	3,319.87	-119.08	3,321.35	0.00	0.00	0.00

Database:	EDMP	**Local Co-ordinate Reference:**	Well Vogler State D21-750
Company:	Northern Region - DJ Basin	**TVD Reference:**	Well @ 4854.00ft
Project:	Mustang	**MD Reference:**	Well @ 4854.00ft
Site:	D Section 21	**North Reference:**	Grid
Well:	Vogler State D21-750	**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)
11,600.00	90.00	359.57	6,847.00	3,419.87	-119.82	3,421.35	0.00	0.00	0.00
11,700.00	90.00	359.57	6,847.00	3,519.86	-120.56	3,521.34	0.00	0.00	0.00
11,800.00	90.00	359.57	6,847.00	3,619.86	-121.31	3,621.34	0.00	0.00	0.00
11,900.00	90.00	359.57	6,847.00	3,719.86	-122.05	3,721.34	0.00	0.00	0.00
12,000.00	90.00	359.57	6,847.00	3,819.86	-122.79	3,821.33	0.00	0.00	0.00
12,100.00	90.00	359.57	6,847.00	3,919.85	-123.54	3,921.33	0.00	0.00	0.00
12,200.00	90.00	359.57	6,847.00	4,019.85	-124.28	4,021.33	0.00	0.00	0.00
12,300.00	90.00	359.57	6,847.00	4,119.85	-125.03	4,121.32	0.00	0.00	0.00
12,400.00	90.00	359.57	6,847.00	4,219.84	-125.77	4,221.32	0.00	0.00	0.00
12,500.00	90.00	359.57	6,847.00	4,319.84	-126.51	4,321.32	0.00	0.00	0.00
12,600.00	90.00	359.57	6,847.00	4,419.84	-127.26	4,421.31	0.00	0.00	0.00
12,700.00	90.00	359.57	6,847.00	4,519.84	-128.00	4,521.31	0.00	0.00	0.00
12,800.00	90.00	359.57	6,847.00	4,619.83	-128.75	4,621.30	0.00	0.00	0.00
12,900.00	90.00	359.57	6,847.00	4,719.83	-129.49	4,721.30	0.00	0.00	0.00
13,000.00	90.00	359.57	6,847.00	4,819.83	-130.23	4,821.30	0.00	0.00	0.00
13,100.00	90.00	359.57	6,847.00	4,919.83	-130.98	4,921.29	0.00	0.00	0.00
13,200.00	90.00	359.57	6,847.00	5,019.82	-131.72	5,021.29	0.00	0.00	0.00
13,300.00	90.00	359.57	6,847.00	5,119.82	-132.47	5,121.29	0.00	0.00	0.00
13,400.00	90.00	359.57	6,847.00	5,219.82	-133.21	5,221.28	0.00	0.00	0.00
13,500.00	90.00	359.57	6,847.00	5,319.81	-133.95	5,321.28	0.00	0.00	0.00
13,600.00	90.00	359.57	6,847.00	5,419.81	-134.70	5,421.27	0.00	0.00	0.00
13,700.00	90.00	359.57	6,847.00	5,519.81	-135.44	5,521.27	0.00	0.00	0.00
13,800.00	90.00	359.57	6,847.00	5,619.81	-136.19	5,621.27	0.00	0.00	0.00
13,900.00	90.00	359.57	6,847.00	5,719.80	-136.93	5,721.26	0.00	0.00	0.00
13,960.32	90.00	359.57	6,847.00	5,780.12	-137.38	5,781.58	0.00	0.00	0.00
Turn: 2°/100'									
13,970.71	90.00	359.78	6,847.00	5,790.51	-137.44	5,791.97	2.00	0.00	2.00
EOT: 13970.71' MD, 90.00° Inc, 359.78° Azm									
14,000.00	90.00	359.78	6,847.00	5,819.80	-137.55	5,821.26	0.00	0.00	0.00
14,100.00	90.00	359.78	6,847.00	5,919.80	-137.93	5,921.25	0.00	0.00	0.00
14,200.00	90.00	359.78	6,847.00	6,019.80	-138.31	6,021.24	0.00	0.00	0.00
14,300.00	90.00	359.78	6,847.00	6,119.80	-138.69	6,121.24	0.00	0.00	0.00
14,400.00	90.00	359.78	6,847.00	6,219.80	-139.07	6,221.23	0.00	0.00	0.00
14,500.00	90.00	359.78	6,847.00	6,319.80	-139.46	6,321.22	0.00	0.00	0.00
14,600.00	90.00	359.78	6,847.00	6,419.80	-139.84	6,421.21	0.00	0.00	0.00
14,700.00	90.00	359.78	6,847.00	6,519.80	-140.22	6,521.21	0.00	0.00	0.00
14,800.00	90.00	359.78	6,847.00	6,619.80	-140.60	6,621.20	0.00	0.00	0.00
14,900.00	90.00	359.78	6,847.00	6,719.79	-140.98	6,721.19	0.00	0.00	0.00
15,000.00	90.00	359.78	6,847.00	6,819.79	-141.36	6,821.18	0.00	0.00	0.00
15,100.00	90.00	359.78	6,847.00	6,919.79	-141.75	6,921.18	0.00	0.00	0.00
15,200.00	90.00	359.78	6,847.00	7,019.79	-142.13	7,021.17	0.00	0.00	0.00
15,300.00	90.00	359.78	6,847.00	7,119.79	-142.51	7,121.16	0.00	0.00	0.00
15,400.00	90.00	359.78	6,847.00	7,219.79	-142.89	7,221.15	0.00	0.00	0.00
15,500.00	90.00	359.78	6,847.00	7,319.79	-143.27	7,321.15	0.00	0.00	0.00
15,600.00	90.00	359.78	6,847.00	7,419.79	-143.65	7,421.14	0.00	0.00	0.00
15,700.00	90.00	359.78	6,847.00	7,519.79	-144.03	7,521.13	0.00	0.00	0.00
15,800.00	90.00	359.78	6,847.00	7,619.79	-144.42	7,621.12	0.00	0.00	0.00
15,900.00	90.00	359.78	6,847.00	7,719.79	-144.80	7,721.12	0.00	0.00	0.00
16,000.00	90.00	359.78	6,847.00	7,819.79	-145.18	7,821.11	0.00	0.00	0.00
16,100.00	90.00	359.78	6,847.00	7,919.79	-145.56	7,921.10	0.00	0.00	0.00
16,200.00	90.00	359.78	6,847.00	8,019.78	-145.94	8,021.09	0.00	0.00	0.00
16,300.00	90.00	359.78	6,847.00	8,119.78	-146.32	8,121.09	0.00	0.00	0.00
16,400.00	90.00	359.78	6,847.00	8,219.78	-146.70	8,221.08	0.00	0.00	0.00
16,500.00	90.00	359.78	6,847.00	8,319.78	-147.09	8,321.07	0.00	0.00	0.00

Database:	EDMP	**Local Co-ordinate Reference:**	Well Vogler State D21-750
Company:	Northern Region - DJ Basin	**TVD Reference:**	Well @ 4854.00ft
Project:	Mustang	**MD Reference:**	Well @ 4854.00ft
Site:	D Section 21	**North Reference:**	Grid
Well:	Vogler State D21-750	**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	359.78	6,847.00	8,419.78	-147.47	8,421.06	0.00	0.00	0.00
16,700.00	90.00	359.78	6,847.00	8,519.78	-147.85	8,521.06	0.00	0.00	0.00
16,800.00	90.00	359.78	6,847.00	8,619.78	-148.23	8,621.05	0.00	0.00	0.00
16,900.00	90.00	359.78	6,847.00	8,719.78	-148.61	8,721.04	0.00	0.00	0.00
17,000.00	90.00	359.78	6,847.00	8,819.78	-148.99	8,821.03	0.00	0.00	0.00
17,100.00	90.00	359.78	6,847.00	8,919.78	-149.38	8,921.03	0.00	0.00	0.00
17,200.00	90.00	359.78	6,847.00	9,019.78	-149.76	9,021.02	0.00	0.00	0.00
17,300.00	90.00	359.78	6,847.00	9,119.78	-150.14	9,121.01	0.00	0.00	0.00
17,400.00	90.00	359.78	6,847.00	9,219.78	-150.52	9,221.00	0.00	0.00	0.00
17,500.00	90.00	359.78	6,847.00	9,319.78	-150.90	9,321.00	0.00	0.00	0.00
17,600.00	90.00	359.78	6,847.00	9,419.77	-151.28	9,420.99	0.00	0.00	0.00
17,615.66	90.00	359.78	6,847.00	9,435.44	-151.34	9,436.65	0.00	0.00	0.00
TD @ 17615.66' MD/6847.00' TVD									

Design Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
Vogler State D21-750 - plan hits target center - Point	0.00	0.01	0.00	0.00	0.00	1,319,376.85	3,263,682.09	40.2062334	-104.5559217
Vogler State D21-750 - plan hits target center - Point	0.00	0.00	5,982.62	-1,324.45	-65.62	1,318,052.40	3,263,616.47	40.2025998	-104.5562071
Vogler State D21-750 - plan hits target center - Point	0.00	0.01	6,847.00	9,435.44	-151.34	1,328,812.26	3,263,530.75	40.2321376	-104.5561040
Vogler State D21-750 - plan hits target center - Point	0.00	0.01	6,847.00	-730.20	-88.94	1,318,646.64	3,263,593.15	40.2042316	-104.5562680

Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
654.00	654.00	Pierre			
789.00	789.00	Upper Pierre Aquifer Top			
1,656.00	1,656.00	Upper Pierre Aquifer Base			
3,960.96	3,877.00	Parkman			
4,210.57	4,110.00	Sussex			
5,228.29	5,060.00	Shannon			
6,420.26	6,181.00	Teepee Buttes			
7,019.41	6,707.00	Sharon Springs			
7,121.05	6,764.00	Top A Chalk			
7,123.08	6,765.00	Top A Marl			
7,137.64	6,772.00	Top B Chalk			
7,270.79	6,822.00	Top B Marl			

Database:	EDMP	**Local Co-ordinate Reference:**	Well Vogler State D21-750
Company:	Northern Region - DJ Basin	**TVD Reference:**	Well @ 4854.00ft
Project:	Mustang	**MD Reference:**	Well @ 4854.00ft
Site:	D Section 21	**North Reference:**	Grid
Well:	Vogler State D21-750	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan 1		

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates +N/-S (ft)	Local Coordinates +E/-W (ft)	Comment
2,000.00	2,000.00	0.00	0.00	Build: 2°/100'
3,050.93	3,027.52	-190.38	-9.43	Hold: 21.02° Inc, 182.84° Azm
6,216.67	5,982.62	-1,324.45	-65.62	KOP: Build 9°/100' @ 6216.67' MD
7,449.81	6,847.00	-730.20	-88.94	LP: 7449.81' MD, 90.00° Inc, 359.57° Azm
13,960.32	6,847.00	5,780.12	-137.38	Turn: 2°/100'
13,970.71	6,847.00	5,790.51	-137.44	EOT: 13970.71' MD, 90.00° Inc, 359.78° Azm
17,615.66	6,847.00	9,435.44	-151.34	TD @ 17615.66' MD/6847.00' TVD

Northern Region - DJ Basin

Mustang
D Section 21
Vogler State D21-750

Wellbore #1
Plan 1

Anticollision Summary Report

01 August, 2018

Noble Energy, Inc.

Anticollision Summary Report

Company:	Northern Region - DJ Basin	**Local Co-ordinate Reference:**	Well Vogler State D21-750
Project:	Mustang	**TVD Reference:**	Well @ 4854.00ft
Reference Site:	D Section 21	**MD Reference:**	Well @ 4854.00ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Vogler State D21-750	**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** 8/1/2018

From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.00	17,615.27	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 16						
Diggen State D16-23 (SI) - Wellbore #1 - Gyro Surveys	13,866.87	6,773.08	1,314.89	1,231.90	15.843	CC, ES
Diggen State D16-23 (SI) - Wellbore #1 - Gyro Surveys	13,959.93	6,772.87	1,318.18	1,234.63	15.777	SF
Diggin State D 16-07 (SI) - Wellbore #1 - No Surveys	15,749.28	6,771.00	555.01	345.61	2.651	CC, ES, SF
Diggin State D 16-19J (PR) - Wellbore #1 - No Surveys	16,441.17	6,730.00	1,356.25	1,142.32	6.340	CC, ES
Diggin State D 16-19J (PR) - Wellbore #1 - No Surveys	16,500.00	6,730.00	1,357.52	1,143.19	6.334	SF
Diggin State D16-13 (PR) - Wellbore #1 - Gyro Surveys	13,238.44	6,760.74	2,030.70	1,952.15	25.853	CC, ES
Diggin State D16-13 (PR) - Wellbore #1 - Gyro Surveys	13,500.00	6,759.50	2,047.48	1,967.38	25.563	SF
Guttersen ST D 15-32 (SI) - Wellbore #1 - Gyro Surveys	15,098.61	6,781.74	2,534.88	2,442.39	27.407	CC
Guttersen ST D 15-32 (SI) - Wellbore #1 - Gyro Surveys	15,100.00	6,781.74	2,534.88	2,442.38	27.404	ES
Guttersen ST D 15-32 (SI) - Wellbore #1 - Gyro Surveys	15,400.00	6,781.63	2,552.73	2,458.41	27.066	SF
Guttersen ST D 16-21 (SI) - Wellbore #1 - Gyro Surveys	15,073.24	6,760.12	55.84	-36.39	0.605	Level 1, CC, ES, SF
Guttersen ST D 16-22D (SI) - Wellbore #1 - MWD Surve	15,244.62	6,869.47	1,241.61	1,145.84	12.964	CC, ES
Guttersen ST D 16-22D (SI) - Wellbore #1 - MWD Surve	15,300.00	6,869.73	1,242.84	1,146.54	12.905	SF
Guttersen ST D 16-33 (SI) - Wellbore #1 - No Surveys	13,977.38	6,745.00	2,608.74	2,413.30	13.348	CC
Guttersen ST D 16-33 (SI) - Wellbore #1 - No Surveys	14,000.00	6,745.00	2,608.84	2,413.23	13.337	ES
Guttersen ST D 16-33 (SI) - Wellbore #1 - No Surveys	14,200.00	6,745.00	2,618.22	2,421.28	13.294	SF
Guttersen State D 15-31 (PR) - Wellbore #1 - Gyro Surve	16,800.73	6,766.08	2,460.01	2,354.43	23.300	CC, ES
Guttersen State D 15-31 (PR) - Wellbore #1 - Gyro Surve	17,100.00	6,766.10	2,478.15	2,370.83	23.091	SF
Guttersen State D 15-33 (SI) - Wellbore #1 - Gyro Survey	13,860.47	6,745.96	2,611.53	2,528.47	31.440	CC, ES
Guttersen State D 15-33 (SI) - Wellbore #1 - Gyro Survey	14,200.00	6,742.75	2,632.67	2,547.53	30.922	SF
Guttersen State D 16-15X (PR) - Wellbore #1 - Gyro Sur	13,320.12	6,794.05	605.57	526.33	7.642	CC, ES, SF
Guttersen State D 16-18 (SI) - Wellbore #1 - No Surveys	16,599.57	6,745.00	28.24	-187.22	0.131	Level 1, CC, ES, SF
Guttersen State D 16-20 (SI) - Wellbore #1 - Gyro Survey	15,132.61	6,736.80	1,321.27	1,228.64	14.265	CC, ES
Guttersen State D 16-20 (SI) - Wellbore #1 - Gyro Survey	15,200.00	6,736.77	1,322.98	1,229.90	14.213	SF
Guttersen State D 16-24 (SI) - Wellbore #1 - Gyro Survey	13,959.41	6,785.04	20.07	-63.89	0.239	Level 1, CC, ES, SF
Guttersen State D 16-27 (PR) - Wellbore #1 - No Survey	17,607.35	6,741.00	1,268.22	1,044.95	5.680	CC
Guttersen State D 16-27 (PR) - Wellbore #1 - No Survey	17,615.27	6,741.00	1,268.24	1,044.92	5.679	ES, SF
Guttersen State D 16-31 (PR) - Wellbore #1 - No Survey	16,476.06	6,741.00	2,447.68	2,233.26	11.415	CC
Guttersen State D 16-31 (PR) - Wellbore #1 - No Survey	16,500.00	6,741.00	2,447.79	2,233.19	11.406	ES
Guttersen State D 16-31 (PR) - Wellbore #1 - No Survey	16,600.00	6,741.00	2,450.81	2,235.50	11.383	SF
Guttersen State D 16-32D (SI) - Wellbore #1 - MWD Sur	15,279.94	6,937.49	2,541.04	2,439.24	24.962	CC
Guttersen State D 16-32D (SI) - Wellbore #1 - MWD Sur	15,300.00	6,937.54	2,541.12	2,439.17	24.926	ES
Guttersen State D 16-32D (SI) - Wellbore #1 - MWD Sur	15,600.00	6,938.24	2,561.12	2,457.46	24.707	SF
Guttersen State D16-63-1HN - Original Drilling - Original	13,487.98	9,142.03	67.17	-7.43	0.900	Level 1, CC, ES, SF
Guttersen State D16-65-1HN - Original Drilling - Original	14,800.00	9,141.11	63.21	-29.12	0.685	Level 1, ES, SF
Guttersen State D16-65-1HN - Original Drilling - Original	14,818.29	9,140.80	60.50	-24.41	0.712	Level 1, CC
Spike ST GWS D 16-01 (SI) - Wellbore #1 - Gyro Survey	17,295.94	6,762.65	2,003.64	1,894.21	18.309	CC

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 D21-750
Project:	Mustang	**TVD Reference:**	Well @ 4854.00ft
Reference Site:	D Section 21	**MD Reference:**	Well @ 4854.00ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Vogler State D21-750	**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 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 16						
Spike ST GWS D 16-01 (SI) - Wellbore #1 - Gyro Survey	17,300.00	6,762.67	2,003.65	1,894.18	18.304	ES
Spike ST GWS D 16-01 (SI) - Wellbore #1 - Gyro Survey	17,500.00	6,763.61	2,014.01	1,903.41	18.211	SF
Spike ST GWS D 16-02 (P&A) - Wellbore #1 - Gyro Surv	17,243.90	6,752.11	505.21	379.03	4.004	CC, ES, SF
Spike ST GWS D 16-03 (PR) - Wellbore #1 - No Surveys	17,170.77	6,739.00	671.54	451.74	3.055	CC, ES, SF
Spike ST GWS D 16-04 (SI) - Wellbore #1 - No Surveys	17,158.27	6,734.00	1,978.17	1,758.56	9.008	CC, ES
Spike ST GWS D 16-04 (SI) - Wellbore #1 - No Surveys	17,300.00	6,734.00	1,983.24	1,762.69	8.993	SF
Spike ST GWS D 16-05 (PR) - Wellbore #1 - Gyro Surve	15,801.35	6,745.39	2,023.11	1,925.34	20.694	CC, ES
Spike ST GWS D 16-05 (PR) - Wellbore #1 - Gyro Surve	16,000.00	6,745.45	2,032.84	1,933.82	20.530	SF
Spike ST GWS D 16-06 (SI) - Wellbore #1 - No Surveys	15,848.44	6,747.00	662.54	452.87	3.160	CC, ES, SF
Spike ST GWS D 16-08 (PR) - Wellbore #1 - Gyro Surve	15,810.25	6,792.60	2,157.99	2,060.01	22.024	CC, ES
Spike ST GWS D 16-08 (PR) - Wellbore #1 - Gyro Surve	16,000.00	6,790.86	2,166.32	2,067.17	21.849	SF
Spike ST GWS D 16-12 (PA) - Wellbore #1 - Gyro Surve	14,687.53	6,764.81	2,122.52	2,033.20	23.763	CC
Spike ST GWS D 16-12 (PA) - Wellbore #1 - Gyro Surve	14,700.00	6,764.70	2,122.56	2,033.14	23.738	ES
Spike ST GWS D 16-12 (PA) - Wellbore #1 - Gyro Surve	14,900.00	6,762.97	2,133.13	2,042.45	23.524	SF
Spike ST GWS D 16-14 (SI) - Wellbore #1 - No Surveys	12,980.43	6,780.00	596.33	407.48	3.158	CC, ES
Spike ST GWS D 16-14 (SI) - Wellbore #1 - No Surveys	13,000.00	6,780.00	596.65	407.68	3.157	SF
Spike ST GWS D 16-16 (SI) - Wellbore #1 - No Surveys	13,181.86	6,779.00	1,988.91	1,798.63	10.453	CC
Spike ST GWS D 16-16 (SI) - Wellbore #1 - No Surveys	13,200.00	6,779.00	1,988.99	1,798.58	10.446	ES
Spike ST GWS D 16-16 (SI) - Wellbore #1 - No Surveys	13,300.00	6,779.00	1,992.41	1,801.36	10.429	SF
Spike State D 16-10 (SI) - Wellbore #1 - Gyro Surveys	14,549.07	6,767.50	614.06	525.77	6.955	CC, ES, SF
Spike State D 16-11 (SI) - Wellbore #1 - Gyro Surveys	14,618.05	6,768.31	601.44	512.65	6.773	CC, ES, SF
Spike State D 16-9 (SI) - Wellbore #1 - Gyro Surveys	14,490.63	6,753.23	1,998.41	1,910.62	22.765	CC
Spike State D 16-9 (SI) - Wellbore #1 - Gyro Surveys	14,500.00	6,753.25	1,998.43	1,910.57	22.747	ES
Spike State D 16-9 (SI) - Wellbore #1 - Gyro Surveys	14,700.00	6,753.81	2,009.34	1,920.31	22.569	SF
Spike State D16-15 (P&A) - Wellbore #1 - Wellbore #1	13,238.00	6,785.55	604.00	514.87	6.777	CC, ES, SF
Spike State D16-99HZ - Original Drilling - Original Drilling	14,097.02	9,108.23	34.53	-44.97	0.434	Level 1, CC
Spike State D16-99HZ - Original Drilling - Original Drilling	14,100.00	9,108.03	34.66	-45.99	0.430	Level 1, ES, SF
Spike State GWS D 16-7J (PR) - Wellbore #1 - No Surve	16,597.75	6,764.00	1,300.85	1,085.03	6.027	CC
Spike State GWS D 16-7J (PR) - Wellbore #1 - No Surve	16,600.00	6,764.00	1,300.85	1,085.01	6.027	ES, SF
Spike State GWS D16-13J (PR) - Wellbore #1 - Gyro Su	13,814.72	6,765.01	1,394.30	1,311.52	16.844	CC, ES
Spike State GWS D16-13J (PR) - Wellbore #1 - Gyro Su	13,900.00	6,764.17	1,396.90	1,313.58	16.765	SF

Noble Energy, Inc.

Anticollision Summary Report

Company:	Northern Region - DJ Basin	**Local Co-ordinate Reference:**	Well Vogler State D21-750
Project:	Mustang	**TVD Reference:**	Well @ 4854.00ft
Reference Site:	D Section 21	**MD Reference:**	Well @ 4854.00ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Vogler State D21-750	**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 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 21						
Casey Blue D 21-11 (PR) - Wellbore #1 - No Surveys	9,326.42	6,807.00	665.70	498.90	3.991	CC, ES, SF
Casey Blue D21-13 (PR) - Wellbore #1 - Gyro Surveys	7,886.16	6,818.77	2,001.60	1,951.70	40.114	CC, ES
Casey Blue D21-13 (PR) - Wellbore #1 - Gyro Surveys	8,000.00	6,817.95	2,004.83	1,954.78	40.054	SF
Casey Blue D21-14 (SI) - Wellbore #1 - Gyro Surveys	7,956.88	6,812.16	527.61	477.88	10.610	CC, ES, SF
Casey Blue D21-3J (PR) - Wellbore #1 - Gyro Surveys	8,910.15	6,817.79	1,675.36	1,622.89	31.927	CC, ES
Casey Blue D21-3J (PR) - Wellbore #1 - Gyro Surveys	9,100.00	6,817.72	1,686.09	1,632.95	31.734	SF
Guttersen 21-31 (SI) - Wellbore #1 - Gyro Surveys	11,846.77	6,780.65	693.94	625.11	10.082	CC, ES
Guttersen 21-31 (SI) - Wellbore #1 - Gyro Surveys	11,900.00	6,780.74	695.98	626.89	10.073	SF
Guttersen 21-42 (SI) - Wellbore #1 - Gyro Surveys	10,523.44	6,796.71	1,998.62	1,938.17	33.060	CC, ES
Guttersen 21-42 (SI) - Wellbore #1 - Gyro Surveys	10,800.00	6,796.34	2,017.67	1,955.78	32.605	SF
Guttersen 32-21 (PR) - Wellbore #1 - No Surveys	10,489.07	6,811.00	651.61	478.69	3.768	CC, ES
Guttersen 32-21 (PR) - Wellbore #1 - No Surveys	10,500.00	6,811.00	651.70	478.72	3.767	SF
Guttersen 33-21 (PR) - Wellbore #1 - Gyro Surveys	9,313.17	6,812.85	712.14	657.90	13.130	CC, ES, SF
Guttersen 34-21 (PR) - Wellbore #1 - Gyro Surveys	3,169.42	3,103.83	540.82	519.24	25.060	CC
Guttersen 34-21 (PR) - Wellbore #1 - Gyro Surveys	3,200.00	3,131.88	540.95	519.16	24.826	ES
Guttersen 34-21 (PR) - Wellbore #1 - Gyro Surveys	8,020.05	6,793.76	730.12	680.08	14.592	SF
Guttersen 41-21 (PR) - Wellbore #1 - Gyro Surveys	11,898.20	6,795.91	2,023.97	1,954.74	29.235	CC
Guttersen 41-21 (PR) - Wellbore #1 - Gyro Surveys	11,900.00	6,795.90	2,023.98	1,954.73	29.230	ES
Guttersen 41-21 (PR) - Wellbore #1 - Gyro Surveys	12,200.00	6,795.41	2,046.35	1,975.45	28.863	SF
Guttersen 43-21 (PR) - Wellbore #1 - Gyro Surveys	9,164.56	6,835.32	1,828.52	1,774.82	34.053	CC, ES
Guttersen 43-21 (PR) - Wellbore #1 - Gyro Surveys	9,400.00	6,834.46	1,843.61	1,789.01	33.764	SF
Guttersen D21-32D (SI) - Wellbore #1 - MWD Surveys	100.00	61.95	1,189.34	1,189.10	5,017.161	CC, ES
Guttersen D21-32D (SI) - Wellbore #1 - MWD Surveys	10,600.00	7,179.41	2,684.94	2,610.58	36.105	SF
Guttersen USX D21-17 (PR) - Wellbore #1 - No Surveys	11,234.52	6,795.00	1,361.35	1,184.17	7.683	CC, ES
Guttersen USX D21-17 (PR) - Wellbore #1 - No Surveys	11,300.00	6,795.00	1,362.92	1,185.36	7.676	SF
Guttersen USX D21-20D (PR) - Wellbore #1 - MWD Surv	662.37	628.59	1,118.78	1,114.67	272.080	CC
Guttersen USX D21-20D (PR) - Wellbore #1 - MWD Surv	700.00	657.69	1,118.93	1,114.58	257.221	ES
Guttersen USX D21-20D (PR) - Wellbore #1 - MWD Surv	9,900.00	6,975.21	1,322.28	1,257.60	20.444	SF
Guttersen USX D21-21D (SI) - Wellbore #1 - MWD Surve	9,749.01	7,029.02	124.89	60.86	1.951	CC, ES, SF
Guttersen USX D21-24D (PR) - Wellbore #1 - MWD Surv	8,571.41	6,897.61	117.48	65.11	2.243	CC, ES, SF
Guttersen USX D21-25 (PR) - Wellbore #1 - MWD Surve	8,689.08	6,822.32	898.75	846.62	17.241	CC, ES
Guttersen USX D21-25 (PR) - Wellbore #1 - MWD Surve	8,700.00	6,822.27	898.82	846.66	17.231	SF
Guttersen USX D21-27D (PR) - Wellbore #1 - MWD Surv	12,449.06	6,956.21	1,338.47	1,257.85	16.602	CC, ES
Guttersen USX D21-27D (PR) - Wellbore #1 - MWD Surv	12,500.00	6,956.56	1,339.44	1,258.52	16.552	SF
Guttersen USX D21-28D (PR) - Wellbore #1 - MWD Surv	12,450.66	7,139.10	100.25	18.31	1.223	Level 3, CC, ES, SF
Guttersen USX D21-33D (SI) - Wellbore #1 - MWD Surve	100.00	65.10	1,166.57	1,166.32	4,815.112	CC
Guttersen USX D21-33D (SI) - Wellbore #1 - MWD Surve	600.00	557.72	1,169.28	1,165.57	315.263	ES
Guttersen USX D21-33D (SI) - Wellbore #1 - MWD Surve	9,300.00	7,004.24	2,667.81	2,610.79	46.788	SF
Guttersen USX D22-30D (PR) - Wellbore #1 - MWD Surv	12,434.93	7,075.95	2,603.03	2,521.67	31.994	CC, ES
Guttersen USX D22-30D (PR) - Wellbore #1 - MWD Surv	13,000.00	7,077.91	2,663.66	2,576.88	30.696	SF
Gutterson 18-21 (SI) - Wellbore #1 - Gyro Surveys	11,326.48	6,815.93	1,122.81	1,057.59	17.217	CC, ES
Gutterson 18-21 (SI) - Wellbore #1 - Gyro Surveys	11,400.00	6,815.99	1,125.21	1,059.58	17.144	SF
HSR Guttersen B 5-21 (PR) - Wellbore #1 - Gyro Survey	10,561.66	6,800.47	1,940.13	1,879.85	32.186	CC, ES
HSR Guttersen B 5-21 (PR) - Wellbore #1 - Gyro Survey	10,800.00	6,799.33	1,954.72	1,893.17	31.761	SF
HSR Gutterson 4-21 (PR) - Wellbore #1 - Gyro Surveys	11,777.12	6,822.91	2,006.16	1,937.79	29.344	CC
HSR Gutterson 4-21 (PR) - Wellbore #1 - Gyro Surveys	11,800.00	6,823.11	2,006.29	1,937.77	29.281	ES
HSR Gutterson 4-21 (PR) - Wellbore #1 - Gyro Surveys	12,000.00	6,824.91	2,018.50	1,948.83	28.971	SF
HSR-Guttersen 3-21 (SI) - Wellbore #1 - Gyro Surveys	11,758.18	6,833.33	539.17	470.44	7.844	CC, ES, SF
HSR-Guttersen 6-21 (SI) - Wellbore #1 - Gyro Surveys	10,552.35	6,797.46	601.88	541.35	9.943	CC, ES
HSR-Guttersen 6-21 (SI) - Wellbore #1 - Gyro Surveys	10,600.00	6,797.81	603.76	543.01	9.939	SF
Two E Ranch 1-21C (SI) - Wellbore #1 - Gyro Surveys	2,108.98	2,092.47	1,555.77	1,541.32	107.685	CC
Two E Ranch 1-21C (SI) - Wellbore #1 - Gyro Surveys	8,580.24	6,802.46	1,563.92	1,512.47	30.394	ES
Two E Ranch 1-21C (SI) - Wellbore #1 - Gyro Surveys	8,700.00	6,802.09	1,568.50	1,516.68	30.270	SF

Noble Energy, Inc.

Anticollision Summary Report

Company:	Northern Region - DJ Basin	**Local Co-ordinate Reference:**	Well Vogler State D21-750
Project:	Mustang	**TVD Reference:**	Well @ 4854.00ft
Reference Site:	D Section 21	**MD Reference:**	Well @ 4854.00ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Vogler State D21-750	**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 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 21						
Vogler State D21-720 - Wellbore #1 - Plan 1	2,000.00	1,996.00	1,933.95	1,920.09	139.550	CC
Vogler State D21-720 - Wellbore #1 - Plan 1	17,615.27	17,666.86	1,968.02	1,790.75	11.102	ES, SF
Vogler State D21-731 - Wellbore #1 - Plan 1	2,000.00	2,001.00	75.00	61.12	5.405	CC
Vogler State D21-731 - Wellbore #1 - Plan 1	2,200.00	2,200.84	75.67	60.42	4.961	ES
Vogler State D21-731 - Wellbore #1 - Plan 1	2,300.00	2,300.45	77.40	61.46	4.856	SF
Vogler State D21-740 - Wellbore #1 - Plan 1	2,000.00	2,001.00	37.00	23.12	2.666	CC
Vogler State D21-740 - Wellbore #1 - Plan 1	2,100.00	2,100.98	37.13	22.55	2.548	ES
Vogler State D21-740 - Wellbore #1 - Plan 1	2,200.00	2,200.84	38.00	22.74	2.491	SF
Vogler State D21-760 - Wellbore #1 - Plan 1	13,963.63	14,147.14	643.84	522.00	5.284	CC
Vogler State D21-760 - Wellbore #1 - Plan 1	17,200.00	17,378.53	651.41	480.15	3.804	ES
Vogler State D21-760 - Wellbore #1 - Plan 1	17,615.27	17,773.22	666.73	489.40	3.760	SF
Vogler State D21-770 - Wellbore #1 - Plan 1	9,808.15	9,798.50	1,296.48	1,230.68	19.704	CC
Vogler State D21-770 - Wellbore #1 - Plan 1	17,615.27	17,600.40	1,320.07	1,143.20	7.464	ES, SF
Vogler State D21-780 - Wellbore #1 - Plan 1	2,043.65	2,009.65	1,760.89	1,746.83	125.279	CC
Vogler State D21-780 - Wellbore #1 - Plan 1	2,200.00	2,148.61	1,761.32	1,746.29	117.179	ES
Vogler State D21-780 - Wellbore #1 - Plan 1	17,615.27	17,653.67	1,982.18	1,805.43	11.215	SF
Vogler State D21-790 - Wellbore #1 - Plan 1	2,000.00	2,004.00	1,971.93	1,958.04	141.996	CC
Vogler State D21-790 - Wellbore #1 - Plan 1	2,400.00	2,394.70	1,972.62	1,956.01	118.825	ES
Vogler State D21-790 - Wellbore #1 - Plan 1	17,615.27	17,607.67	2,616.35	2,439.52	14.796	SF
Vogler State D33-711 - Wellbore #1 - Plan 1	2,000.00	1,995.00	1,973.04	1,959.18	142.407	CC, ES
Vogler State D33-711 - Wellbore #1 - Plan 1	6,950.00	7,339.98	2,521.85	2,470.36	48.982	SF
Vogler State D33-718 - Wellbore #1 - Plan 1	2,000.00	2,005.00	1,935.08	1,921.18	139.307	CC
Vogler State D33-718 - Wellbore #1 - Plan 1	2,200.00	2,205.16	1,935.75	1,920.48	126.764	ES
Vogler State D33-718 - Wellbore #1 - Plan 1	7,050.00	7,279.21	2,057.59	2,006.24	40.075	SF
Vogler State D33-728 - Wellbore #1 - Plan 1	2,000.44	2,005.46	167.86	153.97	12.082	CC, ES
Vogler State D33-728 - Wellbore #1 - Plan 1	2,300.00	2,305.39	181.30	165.40	11.403	SF
Vogler State D33-738 - Wellbore #1 - Plan 1	2,000.00	2,005.00	154.58	140.69	11.128	CC, ES
Vogler State D33-738 - Wellbore #1 - Plan 1	2,200.00	2,204.84	161.43	146.16	10.570	SF
Vogler State D33-752 - Wellbore #1 - Plan 1	7,357.94	7,021.71	81.62	30.69	1.603	CC, ES, SF
Vogler State D33-759 - Wellbore #1 - Plan 1	7,278.14	7,204.38	571.78	519.30	10.897	CC, ES, SF
Vogler State D33-769 - Wellbore #1 - Plan 1	7,250.00	7,139.18	1,226.56	1,175.15	23.858	SF
Vogler State D33-769 - Wellbore #1 - Plan 1	7,300.00	7,101.51	1,225.84	1,174.51	23.883	ES
Vogler State D33-769 - Wellbore #1 - Plan 1	7,308.78	7,095.00	1,225.82	1,174.52	23.891	CC
Vogler State D33-779 - Wellbore #1 - Plan 1	2,000.00	1,972.00	1,766.97	1,753.20	128.297	CC
Vogler State D33-779 - Wellbore #1 - Plan 1	2,100.00	2,064.04	1,767.18	1,752.75	122.466	ES
Vogler State D33-779 - Wellbore #1 - Plan 1	7,200.00	7,087.95	1,883.19	1,832.06	36.833	SF

Noble Energy, Inc.

Anticollision Summary Report

Company:	Northern Region - DJ Basin	**Local Co-ordinate Reference:**	Well Vogler State D21-750
Project:	Mustang	**TVD Reference:**	Well @ 4854.00ft
Reference Site:	D Section 21	**MD Reference:**	Well @ 4854.00ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Vogler State D21-750	**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 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 28						
O'SH D 28-7 (P&A) - Wellbore #1 - No Surveys	6,443.77	6,160.88	1,655.45	1,508.80	11.288	CC
O'SH D 28-7 (P&A) - Wellbore #1 - No Surveys	6,450.00	6,167.11	1,655.48	1,508.68	11.277	ES
O'SH D 28-7 (P&A) - Wellbore #1 - No Surveys	6,600.00	6,315.67	1,673.13	1,522.96	11.142	SF
Spike ST GWS D 28-12 (SI) - Wellbore #1 - Gyro Surve	6,455.53	6,150.94	3,584.32	3,539.43	79.841	CC, ES
Spike ST GWS D 28-12 (SI) - Wellbore #1 - Gyro Surve	6,700.00	6,394.59	3,621.62	3,575.30	78.193	SF
Guttersen D State 28-29D (PR) - Wellbore #1 - MWD Su	7,300.00	6,863.16	1,290.10	1,239.49	25.490	SF
Guttersen D State 28-29D (PR) - Wellbore #1 - MWD Su	7,343.52	6,870.56	1,289.35	1,238.80	25.510	CC, ES
Guttersen D State 28-30D - Wellbore #1 - Guttersen D S	846.26	806.87	2,453.30	2,449.08	581.193	CC
Guttersen D State 28-30D - Wellbore #1 - Guttersen D S	1,100.00	1,032.87	2,453.94	2,447.87	404.459	ES
Guttersen D State 28-30D - Wellbore #1 - Guttersen D S	8,100.00	8,100.00	2,888.70	2,833.01	51.868	SF
Guttersen State D28-18D (PR) - Wellbore #1 - MWD Sur	6,459.42	6,247.86	741.95	694.83	15.747	CC, ES
Guttersen State D28-18D (PR) - Wellbore #1 - MWD Sur	6,500.00	6,291.33	743.12	695.78	15.698	SF
Guttersen State D28-21D (SI) - Wellbore #1 - MWD Surv	6,457.41	6,267.35	2,047.59	2,001.52	44.446	CC, ES
Guttersen State D28-21D (SI) - Wellbore #1 - MWD Surv	6,600.00	6,414.86	2,063.16	2,016.22	43.951	SF
Guttersen State D28-24D (SI) - Wellbore #1 - MWD Surv	6,444.42	6,236.60	3,584.36	3,538.03	77.366	CC
Guttersen State D28-24D (SI) - Wellbore #1 - MWD Surv	6,450.00	6,242.30	3,584.38	3,538.02	77.305	ES
Guttersen State D28-24D (SI) - Wellbore #1 - MWD Surv	6,650.00	6,443.11	3,616.89	3,569.37	76.115	SF
Guttersen State D28-28D (PR) - Wellbore #1 - MWD Sur	7,414.76	6,860.09	115.24	63.20	2.214	CC, ES, SF
Guttersen State D28-79HN - Wellbore #1 - Actual	6,928.40	11,086.00	2,585.02	2,476.32	23.782	CC, ES
Guttersen State D28-79HN - Wellbore #1 - Actual	6,950.00	11,086.00	2,585.17	2,476.43	23.774	SF
HSR Guttersen State 10-28 (SI) - Wellbore #1 - Gyro Su	6,440.25	6,111.76	2,841.21	2,796.74	63.889	CC, ES
HSR Guttersen State 10-28 (SI) - Wellbore #1 - Gyro Su	6,700.00	6,363.80	2,895.04	2,849.07	62.976	SF
HSR Guttersen State 15-28 (SI) - Wellbore #1 - Gyro Su	6,436.11	6,091.79	4,522.11	4,477.66	101.733	CC, ES
HSR Guttersen State 15-28 (SI) - Wellbore #1 - Gyro Su	6,700.00	6,303.98	4,576.68	4,530.82	99.801	SF
HSR Guttersen State 7-28 (PR) - Wellbore #1 - Gyro Sur	6,440.59	6,132.18	1,528.17	1,483.56	34.261	CC, ES
HSR Guttersen State 7-28 (PR) - Wellbore #1 - Gyro Sur	6,550.00	6,233.10	1,537.58	1,492.30	33.952	SF
O'SH D 28-1 (SI) - Wellbore #1 - Gyro Surveys	6,417.90	6,159.82	1,718.29	1,672.79	37.762	CC
O'SH D 28-1 (SI) - Wellbore #1 - Gyro Surveys	6,450.00	6,196.17	1,718.52	1,672.79	37.578	ES
O'SH D 28-1 (SI) - Wellbore #1 - Gyro Surveys	6,750.00	6,474.92	1,747.88	1,700.45	36.850	SF
O'SH D 28-2 (SI) - Wellbore #1 - Gyro Surveys	6,402.60	6,125.96	667.02	621.65	14.702	CC, ES
O'SH D 28-2 (SI) - Wellbore #1 - Gyro Surveys	6,550.00	6,271.44	671.83	625.51	14.506	SF
O'SH D 28-8 (SI) - Wellbore #1 - Gyro Surveys	6,410.00	6,095.18	2,521.54	2,476.50	55.989	CC, ES
O'SH D 28-8 (SI) - Wellbore #1 - Gyro Surveys	6,700.00	6,358.36	2,564.00	2,517.29	54.892	SF
Spike ST GWS D 28-03 (PR) - Wellbore #1 - Gyro Surve	6,554.10	6,249.59	600.00	540.36	10.062	CC
Spike ST GWS D 28-03 (PR) - Wellbore #1 - Gyro Surve	6,600.00	6,294.62	600.24	540.16	9.990	ES
Spike ST GWS D 28-03 (PR) - Wellbore #1 - Gyro Surve	6,750.00	6,435.32	606.20	544.75	9.865	SF
Spike ST GWS D 28-4 (SI) - Wellbore #1 - Gyro Surveys	6,751.26	6,431.96	1,975.93	1,928.55	41.699	CC, ES
Spike ST GWS D 28-4 (SI) - Wellbore #1 - Gyro Surveys	7,100.00	6,716.71	1,993.88	1,945.05	40.831	SF
Spike State D 28-13 (SI) - Wellbore #1 - Gyro Surveys	6,470.77	6,470.77	4,803.78	4,758.00	104.920	CC, ES
Spike State D 28-13 (SI) - Wellbore #1 - Gyro Surveys	6,750.00	6,521.81	4,858.42	4,811.82	104.264	SF
Spike State D28-05 (PR) - Wellbore #1 - Gyro Surveys	6,482.56	6,210.37	2,530.06	2,484.52	55.549	CC, ES
Spike State D28-05 (PR) - Wellbore #1 - Gyro Surveys	6,800.00	6,547.76	2,571.00	2,523.64	54.291	SF
Spike State D28-06 (SI) - Wellbore #1 - Gyro Surveys	6,467.23	6,201.53	1,469.98	1,425.25	32.860	CC, ES
Spike State D28-06 (SI) - Wellbore #1 - Gyro Surveys	6,600.00	6,329.65	1,483.57	1,438.03	32.577	SF
Spike State D28-11 (SI) - Wellbore #1 - Gyro Surveys	6,453.68	6,167.52	2,732.08	2,687.48	61.250	CC, ES
Spike State D28-11 (SI) - Wellbore #1 - Gyro Surveys	6,650.00	6,311.32	2,763.37	2,717.69	60.500	SF
Spike State GWS D 28-14 (P&A) - Wellbore #1 - Gyro Su	6,437.95	6,058.80	4,413.58	4,369.31	99.712	CC, ES
Spike State GWS D 28-14 (P&A) - Wellbore #1 - Gyro Su	6,700.00	6,321.98	4,466.15	4,420.36	97.526	SF

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

Noble Energy, Inc.

Anticollision Summary Report

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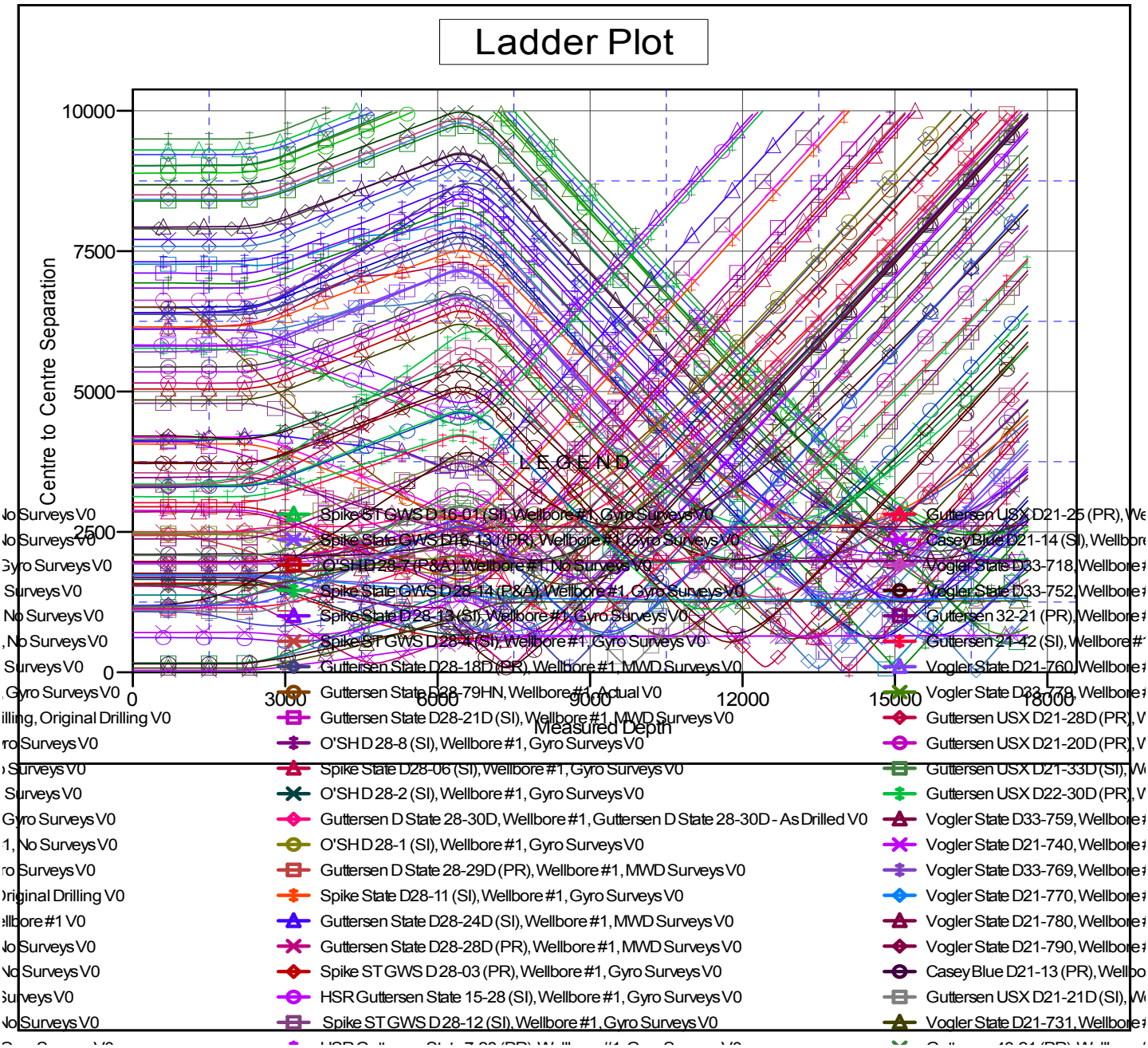
Project:	Mustang	**TVD Reference:**	Well @ 4854.00ft
Reference Site:	D Section 21	**MD Reference:**	Well @ 4854.00ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Vogler State D21-750	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDMP
Reference Design:	Plan 1	**Offset TVD Reference:**	Offset Datum

Reference Depths are relative to Well @ 4854.00ft	Coordinates are relative to: Vogler State D21-750
Offset Depths are relative to Offset Datum	Coordinate System is US State Plane 1983, Colorado Northern Zone
Central Meridian is -105.5000000	Grid Convergence at Surface is: 0.61°



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Anticollision Summary Report

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Reference Site:	D Section 21	**MD Reference:**	Well @ 4854.00ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Vogler State D21-750	**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 @ 4854.00ft	Coordinates are relative to: Vogler State D21-750
Offset Depths are relative to Offset Datum	Coordinate System is US State Plane 1983, Colorado Northern Zone
Central Meridian is -105.5000000	Grid Convergence at Surface is: 0.61°