Project: Mustang
Site: D Section 21
Well: Vogler State D21-760
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

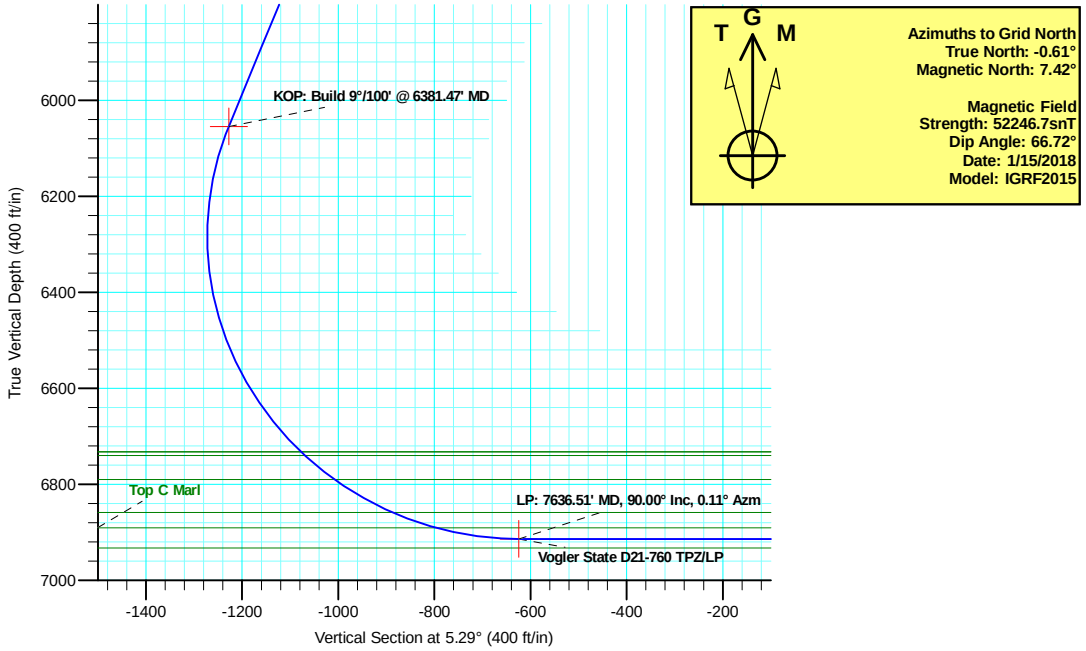
SECTION DETAILS

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	2400.00	0.00	0.00	2400.00	0.00	0.00	0.00	0.00	0.00
3	3727.93	26.56	150.83	3680.88	-263.95	147.36	2.00	150.83	-249.24
4	6381.47	26.56	150.83	6054.42	-1299.87	725.71	0.00	0.00	-1227.42
5	7636.51	90.00	0.10	6914.00	-714.04	936.92	9.00	-147.92	-624.62
6	9518.53	90.00	0.10	6914.00	1167.96	940.37	0.00	0.00	1249.69
7	9541.39	90.00	359.65	6914.00	1190.83	940.32	2.00	-90.00	1272.46
8	17356.74	90.00	359.65	6914.00	9006.03	892.26	0.00	0.00	9049.94
9	17468.89	90.00	357.40	6914.00	9118.14	889.37	2.00	-90.00	9161.30
10	17795.95	90.00	357.40	6914.00	9444.86	874.56	0.00	0.00	9485.27

WELL DETAILS: Vogler State D21-760

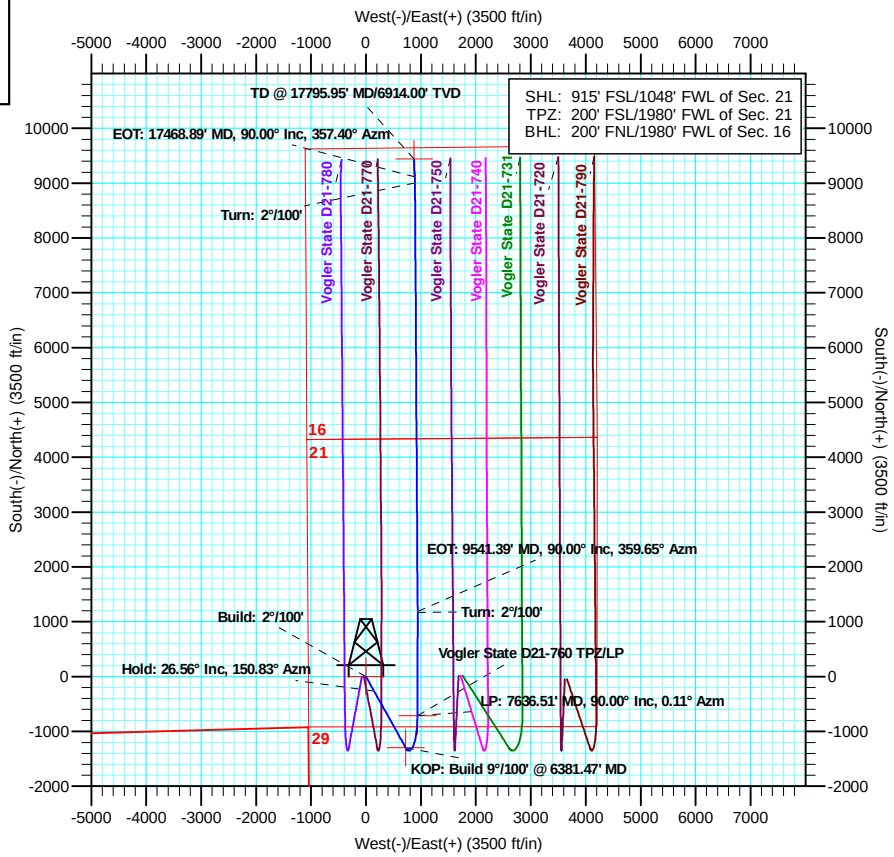
Ground Level: 4794.00

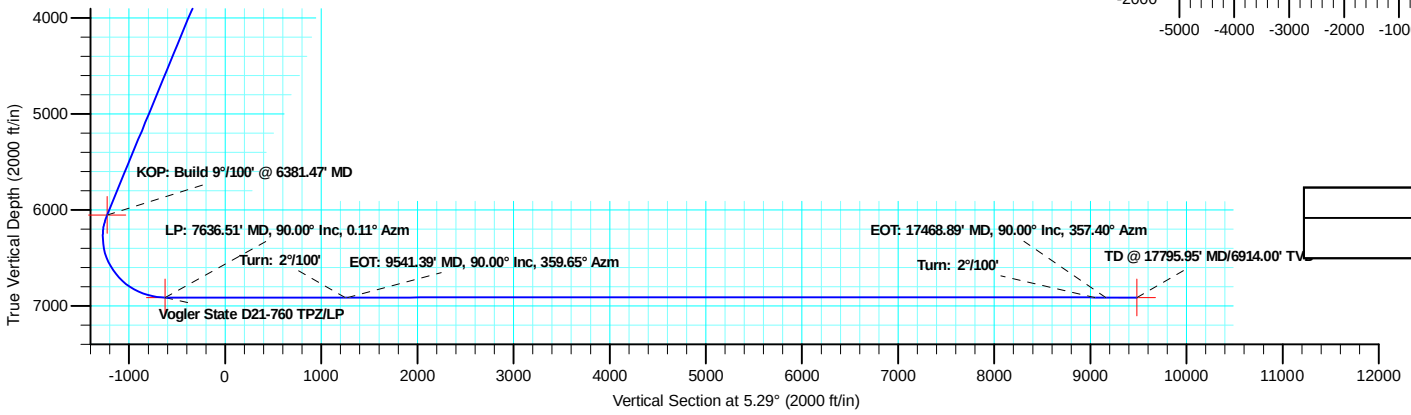
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.00	0.00	1319359.94	3261996.22	40.2062361	-104.5619580



Azimuths to Grid North
True North: -0.61°
Magnetic North: 7.42°

Magnetic Field
Strength: 52246.7snT
Dip Angle: 66.72°
Date: 1/15/2018
Model: IGRF2015





Plan: Plan 1 (Vogler State D21-760/Wellbore #1)
Created By: Keith Noack Date: 15:49, August 07 2018

Northern Region - DJ Basin

Mustang
D Section 21
Vogler State D21-760

Wellbore #1

Plan: Plan 1

Standard Planning Report

07 August, 2018

Database:	EDMP	**Local Co-ordinate Reference:**	Well Vogler State D21-760
Company:	Northern Region - DJ Basin	**TVD Reference:**	Well @ 4824.00ft
Project:	Mustang	**MD Reference:**	Well @ 4824.00ft
Site:	D Section 21	**North Reference:**	Grid
Well:	Vogler State D21-760	**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 D21-760					
Well Position	**+N/-S**	-3,681.95 ft	**Northing:**	1,319,359.94 usft	**Latitude:**	40.2062361
	+E/-W	382.74 ft	**Easting:**	3,261,996.22 usft	**Longitude:**	-104.5619580
Position Uncertainty		0.00 ft	**Wellhead Elevation:**		**Ground Level:**	4,794.00 ft

Wellbore	Wellbore #1				
Magnetics	**Model Name**	**Sample Date**	**Declination (°)**	**Dip Angle (°)**	**Field Strength (nT)**
	IGRF2015	1/15/2018	8.03	66.72	52,246.70078185

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	5.29	

Plan Sections

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,400.00	0.00	0.00	2,400.00	0.00	0.00	0.00	0.00	0.00	0.00	
3,727.93	26.56	150.83	3,680.88	-263.95	147.36	2.00	2.00	0.00	150.83	
6,381.47	26.56	150.83	6,054.42	-1,299.87	725.71	0.00	0.00	0.00	0.00	
7,636.51	90.00	0.10	6,914.00	-714.04	936.92	9.00	5.05	-12.01	-147.92	Vogler State D21-7
9,518.53	90.00	0.10	6,914.00	1,167.96	940.37	0.00	0.00	0.00	0.00	Vogler State D21-7
9,541.39	90.00	359.65	6,914.00	1,190.83	940.32	2.00	0.00	-2.00	-90.00	Vogler State D21-7
17,356.74	90.00	359.65	6,914.00	9,006.03	892.26	0.00	0.00	0.00	0.00	Vogler State D21-7
17,468.89	90.00	357.40	6,914.00	9,118.14	889.37	2.00	0.00	-2.00	-90.00	Vogler State D21-7
17,795.95	90.00	357.40	6,914.00	9,444.86	874.56	0.00	0.00	0.00	0.00	Vogler State D21-7

Database:	EDMP	**Local Co-ordinate Reference:**	Well Vogler State D21-760
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Project:	Mustang	**MD Reference:**	Well @ 4824.00ft
Site:	D Section 21	**North Reference:**	Grid
Well:	Vogler State D21-760	**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
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
1,700.00	0.00	0.00	1,700.00	0.00	0.00	0.00	0.00	0.00	0.00
1,800.00	0.00	0.00	1,800.00	0.00	0.00	0.00	0.00	0.00	0.00
1,900.00	0.00	0.00	1,900.00	0.00	0.00	0.00	0.00	0.00	0.00
2,000.00	0.00	0.00	2,000.00	0.00	0.00	0.00	0.00	0.00	0.00
2,100.00	0.00	0.00	2,100.00	0.00	0.00	0.00	0.00	0.00	0.00
2,200.00	0.00	0.00	2,200.00	0.00	0.00	0.00	0.00	0.00	0.00
2,300.00	0.00	0.00	2,300.00	0.00	0.00	0.00	0.00	0.00	0.00
2,400.00	0.00	0.00	2,400.00	0.00	0.00	0.00	0.00	0.00	0.00
Build: 2°/100'									
2,500.00	2.00	150.83	2,499.98	-1.52	0.85	-1.44	2.00	2.00	0.00
2,600.00	4.00	150.83	2,599.84	-6.09	3.40	-5.75	2.00	2.00	0.00
2,700.00	6.00	150.83	2,699.45	-13.70	7.65	-12.94	2.00	2.00	0.00
2,800.00	8.00	150.83	2,798.70	-24.34	13.59	-22.99	2.00	2.00	0.00
2,900.00	10.00	150.83	2,897.47	-38.00	21.22	-35.88	2.00	2.00	0.00
3,000.00	12.00	150.83	2,995.62	-54.66	30.52	-51.61	2.00	2.00	0.00
3,100.00	14.00	150.83	3,093.06	-74.30	41.48	-70.16	2.00	2.00	0.00
3,200.00	16.00	150.83	3,189.64	-96.90	54.10	-91.50	2.00	2.00	0.00
3,300.00	18.00	150.83	3,285.27	-122.43	68.35	-115.60	2.00	2.00	0.00
3,400.00	20.00	150.83	3,379.82	-150.85	84.22	-142.44	2.00	2.00	0.00
3,500.00	22.00	150.83	3,473.17	-182.14	101.69	-171.99	2.00	2.00	0.00
3,600.00	24.00	150.83	3,565.21	-216.25	120.73	-204.20	2.00	2.00	0.00
3,700.00	26.00	150.83	3,655.84	-253.15	141.33	-239.04	2.00	2.00	0.00
3,727.93	26.56	150.83	3,680.88	-263.95	147.36	-249.24	2.00	2.00	0.00
Hold: 26.56° Inc, 150.83° Azm									
3,800.00	26.56	150.83	3,745.35	-292.09	163.07	-275.81	0.00	0.00	0.00
3,900.00	26.56	150.83	3,834.80	-331.12	184.86	-312.67	0.00	0.00	0.00
4,000.00	26.56	150.83	3,924.24	-370.16	206.66	-349.53	0.00	0.00	0.00
4,100.00	26.56	150.83	4,013.69	-409.20	228.46	-386.40	0.00	0.00	0.00
4,200.00	26.56	150.83	4,103.14	-448.24	250.25	-423.26	0.00	0.00	0.00
4,300.00	26.56	150.83	4,192.59	-487.28	272.05	-460.12	0.00	0.00	0.00
4,400.00	26.56	150.83	4,282.04	-526.32	293.84	-496.99	0.00	0.00	0.00
4,500.00	26.56	150.83	4,371.48	-565.36	315.64	-533.85	0.00	0.00	0.00
4,600.00	26.56	150.83	4,460.93	-604.40	337.43	-570.71	0.00	0.00	0.00
4,700.00	26.56	150.83	4,550.38	-643.44	359.23	-607.58	0.00	0.00	0.00
4,800.00	26.56	150.83	4,639.83	-682.48	381.02	-644.44	0.00	0.00	0.00
4,900.00	26.56	150.83	4,729.27	-721.52	402.82	-681.30	0.00	0.00	0.00
5,000.00	26.56	150.83	4,818.72	-760.56	424.61	-718.17	0.00	0.00	0.00

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Company:	Northern Region - DJ Basin	**TVD Reference:**	Well @ 4824.00ft
Project:	Mustang	**MD Reference:**	Well @ 4824.00ft
Site:	D Section 21	**North Reference:**	Grid
Well:	Vogler State D21-760	**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)
5,100.00	26.56	150.83	4,908.17	-799.59	446.41	-755.03	0.00	0.00	0.00
5,200.00	26.56	150.83	4,997.62	-838.63	468.20	-791.89	0.00	0.00	0.00
5,300.00	26.56	150.83	5,087.07	-877.67	490.00	-828.76	0.00	0.00	0.00
5,400.00	26.56	150.83	5,176.51	-916.71	511.79	-865.62	0.00	0.00	0.00
5,500.00	26.56	150.83	5,265.96	-955.75	533.59	-902.48	0.00	0.00	0.00
5,600.00	26.56	150.83	5,355.41	-994.79	555.39	-939.35	0.00	0.00	0.00
5,700.00	26.56	150.83	5,444.86	-1,033.83	577.18	-976.21	0.00	0.00	0.00
5,800.00	26.56	150.83	5,534.31	-1,072.87	598.98	-1,013.07	0.00	0.00	0.00
5,900.00	26.56	150.83	5,623.75	-1,111.91	620.77	-1,049.93	0.00	0.00	0.00
6,000.00	26.56	150.83	5,713.20	-1,150.95	642.57	-1,086.80	0.00	0.00	0.00
6,100.00	26.56	150.83	5,802.65	-1,189.99	664.36	-1,123.66	0.00	0.00	0.00
6,200.00	26.56	150.83	5,892.10	-1,229.03	686.16	-1,160.52	0.00	0.00	0.00
6,300.00	26.56	150.83	5,981.54	-1,268.06	707.95	-1,197.39	0.00	0.00	0.00
6,381.47	26.56	150.83	6,054.42	-1,299.87	725.71	-1,227.42	0.00	0.00	0.00
KOP: Build 9°/100' @ 6381.47' MD									
6,400.00	25.16	148.74	6,071.09	-1,306.85	729.77	-1,234.00	9.00	-7.55	-11.24
6,450.00	21.56	141.89	6,116.99	-1,323.18	740.96	-1,249.22	9.00	-7.19	-13.70
6,500.00	18.35	132.63	6,164.00	-1,335.75	752.43	-1,260.68	9.00	-6.43	-18.53
6,550.00	15.75	120.04	6,211.81	-1,344.48	764.11	-1,268.30	9.00	-5.19	-25.18
6,600.00	14.12	103.70	6,260.14	-1,349.32	775.91	-1,272.03	9.00	-3.27	-32.68
6,650.00	13.79	85.01	6,308.69	-1,350.25	787.78	-1,271.86	9.00	-0.66	-37.38
6,700.00	14.86	67.26	6,357.16	-1,347.25	799.63	-1,267.78	9.00	2.13	-35.50
6,750.00	17.06	52.92	6,405.25	-1,340.35	811.40	-1,259.82	9.00	4.40	-28.68
6,800.00	20.03	42.23	6,452.66	-1,329.58	823.01	-1,248.03	9.00	5.93	-21.38
6,850.00	23.47	34.38	6,499.11	-1,315.02	834.39	-1,232.48	9.00	6.88	-15.71
6,900.00	27.21	28.50	6,544.30	-1,296.75	845.47	-1,213.27	9.00	7.47	-11.75
6,950.00	31.13	23.98	6,587.95	-1,274.88	856.19	-1,190.51	9.00	7.85	-9.04
7,000.00	35.18	20.39	6,629.81	-1,249.56	866.46	-1,164.34	9.00	8.10	-7.17
7,050.00	39.32	17.47	6,669.60	-1,220.93	876.24	-1,134.94	9.00	8.28	-5.85
7,100.00	43.52	15.02	6,707.09	-1,189.17	885.47	-1,102.47	9.00	8.40	-4.89
7,135.25	46.51	13.52	6,732.00	-1,165.02	891.60	-1,077.85	9.00	8.48	-4.28
Top A Chalk									
7,136.70	46.63	13.46	6,733.00	-1,163.99	891.85	-1,076.80	9.00	8.51	-4.05
Top A Marl									
7,146.98	47.51	13.05	6,740.00	-1,156.66	893.57	-1,069.35	9.00	8.51	-3.99
Top B Chalk									
7,150.00	47.76	12.93	6,742.04	-1,154.49	894.07	-1,067.13	9.00	8.52	-3.91
7,200.00	52.04	11.10	6,774.23	-1,117.09	902.01	-1,029.16	9.00	8.55	-3.66
7,226.30	54.30	10.22	6,790.00	-1,096.40	905.91	-1,008.20	9.00	8.59	-3.34
Top B Marl									
7,250.00	56.34	9.47	6,803.48	-1,077.20	909.24	-988.77	9.00	8.62	-3.16
7,300.00	60.67	8.00	6,829.60	-1,035.07	915.70	-946.23	9.00	8.64	-2.94
7,350.00	65.00	6.65	6,852.42	-990.96	921.36	-901.78	9.00	8.67	-2.70
7,365.99	66.39	6.24	6,859.00	-976.48	922.99	-887.22	9.00	8.69	-2.57
Top C Chalk									
7,400.00	69.35	5.39	6,871.81	-945.14	926.18	-855.71	9.00	8.70	-2.49
7,450.00	73.71	4.20	6,887.65	-897.89	930.14	-808.30	9.00	8.71	-2.38
7,462.34	74.78	3.92	6,891.00	-886.04	930.98	-796.43	9.00	8.72	-2.31
Top C Marl									
7,500.00	78.07	3.07	6,899.84	-849.51	933.21	-759.85	9.00	8.73	-2.26
7,550.00	82.44	1.96	6,908.30	-800.29	935.37	-710.64	9.00	8.73	-2.20
7,600.00	86.81	0.89	6,912.98	-750.54	936.61	-660.98	9.00	8.74	-2.16
7,636.51	90.00	0.10	6,914.00	-714.04	936.92	-624.62	9.00	8.74	-2.14

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Project:	Mustang	**MD Reference:**	Well @ 4824.00ft
Site:	D Section 21	**North Reference:**	Grid
Well:	Vogler State D21-760	**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)
LP: 7636.51' MD, 90.00° Inc, 0.11° Azm									
7,700.00	90.00	0.10	6,914.00	-650.56	937.04	-561.39	0.00	0.00	0.00
7,800.00	90.00	0.10	6,914.00	-550.56	937.22	-461.80	0.00	0.00	0.00
7,900.00	90.00	0.10	6,914.00	-450.56	937.40	-362.21	0.00	0.00	0.00
8,000.00	90.00	0.10	6,914.00	-350.56	937.59	-262.62	0.00	0.00	0.00
8,100.00	90.00	0.10	6,914.00	-250.56	937.77	-163.03	0.00	0.00	0.00
8,200.00	90.00	0.10	6,914.00	-150.56	937.95	-63.44	0.00	0.00	0.00
8,300.00	90.00	0.10	6,914.00	-50.56	938.14	36.15	0.00	0.00	0.00
8,400.00	90.00	0.10	6,914.00	49.44	938.32	135.74	0.00	0.00	0.00
8,500.00	90.00	0.10	6,914.00	149.44	938.50	235.34	0.00	0.00	0.00
8,600.00	90.00	0.10	6,914.00	249.44	938.69	334.93	0.00	0.00	0.00
8,700.00	90.00	0.10	6,914.00	349.44	938.87	434.52	0.00	0.00	0.00
8,800.00	90.00	0.10	6,914.00	449.44	939.05	534.11	0.00	0.00	0.00
8,900.00	90.00	0.10	6,914.00	549.44	939.24	633.70	0.00	0.00	0.00
9,000.00	90.00	0.10	6,914.00	649.44	939.42	733.29	0.00	0.00	0.00
9,100.00	90.00	0.10	6,914.00	749.44	939.60	832.88	0.00	0.00	0.00
9,200.00	90.00	0.10	6,914.00	849.44	939.79	932.47	0.00	0.00	0.00
9,300.00	90.00	0.10	6,914.00	949.44	939.97	1,032.06	0.00	0.00	0.00
9,400.00	90.00	0.10	6,914.00	1,049.44	940.15	1,131.65	0.00	0.00	0.00
9,500.00	90.00	0.10	6,914.00	1,149.44	940.33	1,231.24	0.00	0.00	0.00
9,518.53	90.00	0.10	6,914.00	1,167.96	940.37	1,249.69	0.00	0.00	0.00
Turn: 2°/100'									
9,541.39	90.00	359.65	6,914.00	1,190.83	940.32	1,272.46	2.00	0.00	-2.00
EOT: 9541.39' MD, 90.00° Inc, 359.65° Azm									
9,600.00	90.00	359.65	6,914.00	1,249.44	939.96	1,330.78	0.00	0.00	0.00
9,700.00	90.00	359.65	6,914.00	1,349.44	939.34	1,430.30	0.00	0.00	0.00
9,800.00	90.00	359.65	6,914.00	1,449.43	938.73	1,529.81	0.00	0.00	0.00
9,900.00	90.00	359.65	6,914.00	1,549.43	938.11	1,629.33	0.00	0.00	0.00
10,000.00	90.00	359.65	6,914.00	1,649.43	937.50	1,728.84	0.00	0.00	0.00
10,100.00	90.00	359.65	6,914.00	1,749.43	936.88	1,828.36	0.00	0.00	0.00
10,200.00	90.00	359.65	6,914.00	1,849.43	936.27	1,927.87	0.00	0.00	0.00
10,300.00	90.00	359.65	6,914.00	1,949.42	935.65	2,027.39	0.00	0.00	0.00
10,400.00	90.00	359.65	6,914.00	2,049.42	935.04	2,126.90	0.00	0.00	0.00
10,500.00	90.00	359.65	6,914.00	2,149.42	934.42	2,226.42	0.00	0.00	0.00
10,600.00	90.00	359.65	6,914.00	2,249.42	933.81	2,325.94	0.00	0.00	0.00
10,700.00	90.00	359.65	6,914.00	2,349.42	933.19	2,425.45	0.00	0.00	0.00
10,800.00	90.00	359.65	6,914.00	2,449.41	932.58	2,524.97	0.00	0.00	0.00
10,900.00	90.00	359.65	6,914.00	2,549.41	931.96	2,624.48	0.00	0.00	0.00
11,000.00	90.00	359.65	6,914.00	2,649.41	931.35	2,724.00	0.00	0.00	0.00
11,100.00	90.00	359.65	6,914.00	2,749.41	930.73	2,823.51	0.00	0.00	0.00
11,200.00	90.00	359.65	6,914.00	2,849.41	930.12	2,923.03	0.00	0.00	0.00
11,300.00	90.00	359.65	6,914.00	2,949.41	929.50	3,022.54	0.00	0.00	0.00
11,400.00	90.00	359.65	6,914.00	3,049.40	928.89	3,122.06	0.00	0.00	0.00
11,500.00	90.00	359.65	6,914.00	3,149.40	928.27	3,221.57	0.00	0.00	0.00
11,600.00	90.00	359.65	6,914.00	3,249.40	927.66	3,321.09	0.00	0.00	0.00
11,700.00	90.00	359.65	6,914.00	3,349.40	927.04	3,420.61	0.00	0.00	0.00
11,800.00	90.00	359.65	6,914.00	3,449.40	926.43	3,520.12	0.00	0.00	0.00
11,900.00	90.00	359.65	6,914.00	3,549.39	925.81	3,619.64	0.00	0.00	0.00
12,000.00	90.00	359.65	6,914.00	3,649.39	925.20	3,719.15	0.00	0.00	0.00
12,100.00	90.00	359.65	6,914.00	3,749.39	924.59	3,818.67	0.00	0.00	0.00
12,200.00	90.00	359.65	6,914.00	3,849.39	923.97	3,918.18	0.00	0.00	0.00
12,300.00	90.00	359.65	6,914.00	3,949.39	923.36	4,017.70	0.00	0.00	0.00
12,400.00	90.00	359.65	6,914.00	4,049.38	922.74	4,117.21	0.00	0.00	0.00

Database:	EDMP	**Local Co-ordinate Reference:**	Well Vogler State D21-760
Company:	Northern Region - DJ Basin	**TVD Reference:**	Well @ 4824.00ft
Project:	Mustang	**MD Reference:**	Well @ 4824.00ft
Site:	D Section 21	**North Reference:**	Grid
Well:	Vogler State D21-760	**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)
12,500.00	90.00	359.65	6,914.00	4,149.38	922.13	4,216.73	0.00	0.00	0.00
12,600.00	90.00	359.65	6,914.00	4,249.38	921.51	4,316.24	0.00	0.00	0.00
12,700.00	90.00	359.65	6,914.00	4,349.38	920.90	4,415.76	0.00	0.00	0.00
12,800.00	90.00	359.65	6,914.00	4,449.38	920.28	4,515.28	0.00	0.00	0.00
12,900.00	90.00	359.65	6,914.00	4,549.37	919.67	4,614.79	0.00	0.00	0.00
13,000.00	90.00	359.65	6,914.00	4,649.37	919.05	4,714.31	0.00	0.00	0.00
13,100.00	90.00	359.65	6,914.00	4,749.37	918.44	4,813.82	0.00	0.00	0.00
13,200.00	90.00	359.65	6,914.00	4,849.37	917.82	4,913.34	0.00	0.00	0.00
13,300.00	90.00	359.65	6,914.00	4,949.37	917.21	5,012.85	0.00	0.00	0.00
13,400.00	90.00	359.65	6,914.00	5,049.37	916.59	5,112.37	0.00	0.00	0.00
13,500.00	90.00	359.65	6,914.00	5,149.36	915.98	5,211.88	0.00	0.00	0.00
13,600.00	90.00	359.65	6,914.00	5,249.36	915.36	5,311.40	0.00	0.00	0.00
13,700.00	90.00	359.65	6,914.00	5,349.36	914.75	5,410.91	0.00	0.00	0.00
13,800.00	90.00	359.65	6,914.00	5,449.36	914.13	5,510.43	0.00	0.00	0.00
13,900.00	90.00	359.65	6,914.00	5,549.36	913.52	5,609.95	0.00	0.00	0.00
14,000.00	90.00	359.65	6,914.00	5,649.35	912.90	5,709.46	0.00	0.00	0.00
14,100.00	90.00	359.65	6,914.00	5,749.35	912.29	5,808.98	0.00	0.00	0.00
14,200.00	90.00	359.65	6,914.00	5,849.35	911.67	5,908.49	0.00	0.00	0.00
14,300.00	90.00	359.65	6,914.00	5,949.35	911.06	6,008.01	0.00	0.00	0.00
14,400.00	90.00	359.65	6,914.00	6,049.35	910.44	6,107.52	0.00	0.00	0.00
14,500.00	90.00	359.65	6,914.00	6,149.34	909.83	6,207.04	0.00	0.00	0.00
14,600.00	90.00	359.65	6,914.00	6,249.34	909.21	6,306.55	0.00	0.00	0.00
14,700.00	90.00	359.65	6,914.00	6,349.34	908.60	6,406.07	0.00	0.00	0.00
14,800.00	90.00	359.65	6,914.00	6,449.34	907.98	6,505.58	0.00	0.00	0.00
14,900.00	90.00	359.65	6,914.00	6,549.34	907.37	6,605.10	0.00	0.00	0.00
15,000.00	90.00	359.65	6,914.00	6,649.34	906.75	6,704.62	0.00	0.00	0.00
15,100.00	90.00	359.65	6,914.00	6,749.33	906.14	6,804.13	0.00	0.00	0.00
15,200.00	90.00	359.65	6,914.00	6,849.33	905.52	6,903.65	0.00	0.00	0.00
15,300.00	90.00	359.65	6,914.00	6,949.33	904.91	7,003.16	0.00	0.00	0.00
15,400.00	90.00	359.65	6,914.00	7,049.33	904.29	7,102.68	0.00	0.00	0.00
15,500.00	90.00	359.65	6,914.00	7,149.33	903.68	7,202.19	0.00	0.00	0.00
15,600.00	90.00	359.65	6,914.00	7,249.32	903.06	7,301.71	0.00	0.00	0.00
15,700.00	90.00	359.65	6,914.00	7,349.32	902.45	7,401.22	0.00	0.00	0.00
15,800.00	90.00	359.65	6,914.00	7,449.32	901.83	7,500.74	0.00	0.00	0.00
15,900.00	90.00	359.65	6,914.00	7,549.32	901.22	7,600.25	0.00	0.00	0.00
16,000.00	90.00	359.65	6,914.00	7,649.32	900.60	7,699.77	0.00	0.00	0.00
16,100.00	90.00	359.65	6,914.00	7,749.31	899.99	7,799.29	0.00	0.00	0.00
16,200.00	90.00	359.65	6,914.00	7,849.31	899.37	7,898.80	0.00	0.00	0.00
16,300.00	90.00	359.65	6,914.00	7,949.31	898.76	7,998.32	0.00	0.00	0.00
16,400.00	90.00	359.65	6,914.00	8,049.31	898.14	8,097.83	0.00	0.00	0.00
16,500.00	90.00	359.65	6,914.00	8,149.31	897.53	8,197.35	0.00	0.00	0.00
16,600.00	90.00	359.65	6,914.00	8,249.30	896.91	8,296.86	0.00	0.00	0.00
16,700.00	90.00	359.65	6,914.00	8,349.30	896.30	8,396.38	0.00	0.00	0.00
16,800.00	90.00	359.65	6,914.00	8,449.30	895.68	8,495.89	0.00	0.00	0.00
16,900.00	90.00	359.65	6,914.00	8,549.30	895.07	8,595.41	0.00	0.00	0.00
17,000.00	90.00	359.65	6,914.00	8,649.30	894.45	8,694.92	0.00	0.00	0.00
17,100.00	90.00	359.65	6,914.00	8,749.30	893.84	8,794.44	0.00	0.00	0.00
17,200.00	90.00	359.65	6,914.00	8,849.29	893.22	8,893.96	0.00	0.00	0.00
17,300.00	90.00	359.65	6,914.00	8,949.29	892.61	8,993.47	0.00	0.00	0.00
17,356.74	90.00	359.65	6,914.00	9,006.03	892.26	9,049.94	0.00	0.00	0.00
Turn: 2°/100'									
17,400.00	90.00	358.78	6,914.00	9,049.29	891.67	9,092.95	2.00	0.00	-2.00
17,468.89	90.00	357.40	6,914.00	9,118.14	889.37	9,161.30	2.00	0.00	-2.00
EOT: 17468.89' MD, 90.00° Inc, 357.40° Azm									

Database:	EDMP	**Local Co-ordinate Reference:**	Well Vogler State D21-760
Company:	Northern Region - DJ Basin	**TVD Reference:**	Well @ 4824.00ft
Project:	Mustang	**MD Reference:**	Well @ 4824.00ft
Site:	D Section 21	**North Reference:**	Grid
Well:	Vogler State D21-760	**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)
17,500.00	90.00	357.40	6,914.00	9,149.21	887.97	9,192.11	0.00	0.00	0.00
17,600.00	90.00	357.40	6,914.00	9,249.11	883.44	9,291.17	0.00	0.00	0.00
17,700.00	90.00	357.40	6,914.00	9,349.01	878.91	9,390.22	0.00	0.00	0.00
17,795.95	90.00	357.40	6,914.00	9,444.86	874.56	9,485.27	0.00	0.00	0.00
TD @ 17795.95' MD/6914.00' 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 D21-760 - plan hits target center - Point	0.00	0.00	0.00	0.00	0.00	1,319,359.94	3,261,996.22	40.2062361	-104.5619580
Vogler State D21-760 - plan hits target center - Point	0.00	0.00	6,054.42	-1,299.87	725.71	1,318,060.07	3,262,721.93	40.2026469	-104.5594092
Vogler State D21-760 - plan hits target center - Point	0.00	0.00	6,914.00	9,444.86	874.56	1,328,804.78	3,262,870.78	40.2321363	-104.5584679
Vogler State D21-760 - plan hits target center - Point	0.00	0.01	6,914.00	-714.04	936.92	1,318,645.89	3,262,933.14	40.2042488	-104.5586309

Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
7,135.25	6,732.00	Top A Chalk			
7,136.70	6,733.00	Top A Marl			
7,146.98	6,740.00	Top B Chalk			
7,226.30	6,790.00	Top B Marl			
7,365.99	6,859.00	Top C Chalk			
7,462.34	6,891.00	Top C Marl			

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates +N/-S (ft)	Local Coordinates +E/-W (ft)	Comment
2,400.00	2,400.00	0.00	0.00	Build: 2°/100'
3,727.93	3,680.88	-263.95	147.36	Hold: 26.56° Inc, 150.83° Azm
6,381.47	6,054.42	-1,299.87	725.71	KOP: Build 9°/100' @ 6381.47' MD
7,636.51	6,914.00	-714.04	936.92	LP: 7636.51' MD, 90.00° Inc, 0.11° Azm
9,518.53	6,914.00	1,167.96	940.37	Turn: 2°/100'
9,541.39	6,914.00	1,190.83	940.32	EOT: 9541.39' MD, 90.00° Inc, 359.65° Azm
17,356.74	6,914.00	9,006.03	892.26	Turn: 2°/100'
17,468.89	6,914.00	9,118.14	889.37	EOT: 17468.89' MD, 90.00° Inc, 357.40° Azm
17,795.95	6,914.00	9,444.86	874.56	TD @ 17795.95' MD/6914.00' TVD

Northern Region - DJ Basin

Mustang
D Section 21
Vogler State D21-760

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 D21-760
Project:	Mustang	**TVD Reference:**	Well @ 4824.00ft
Reference Site:	D Section 21	**MD Reference:**	Well @ 4824.00ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Vogler State D21-760	**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	17,795.63	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	14,051.86	6,867.43	1,951.90	1,868.87	23.509	CC, ES
Diggen State D16-23 (SI) - Wellbore #1 - Gyro Surveys	14,300.00	6,866.88	1,967.61	1,882.85	23.215	SF
Diggin State D 16-07 (SI) - Wellbore #1 - No Surveys	15,931.50	6,868.00	1,195.66	984.50	5.662	CC, ES
Diggin State D 16-07 (SI) - Wellbore #1 - No Surveys	16,000.00	6,868.00	1,197.62	985.90	5.656	SF
Diggin State D 16-19J (PR) - Wellbore #1 - No Surveys	16,627.84	6,827.00	713.98	498.27	3.310	CC, ES, SF
Diggin State D16-13 (PR) - Wellbore #1 - Gyro Surveys	13,418.71	6,856.48	1,393.23	1,314.40	17.673	CC, ES
Diggin State D16-13 (PR) - Wellbore #1 - Gyro Surveys	13,500.00	6,855.99	1,395.60	1,316.39	17.618	SF
Guttersen ST D 15-32 (SI) - Wellbore #1 - Gyro Surveys	15,276.13	6,875.84	3,174.04	3,081.39	34.259	CC
Guttersen ST D 15-32 (SI) - Wellbore #1 - Gyro Surveys	15,300.00	6,875.75	3,174.13	3,081.28	34.187	ES
Guttersen ST D 15-32 (SI) - Wellbore #1 - Gyro Surveys	15,800.00	6,873.96	3,216.98	3,120.77	33.438	SF
Guttersen ST D 16-21 (SI) - Wellbore #1 - Gyro Surveys	15,256.63	6,853.68	695.18	602.72	7.519	CC, ES
Guttersen ST D 16-21 (SI) - Wellbore #1 - Gyro Surveys	15,300.00	6,853.77	696.53	603.70	7.503	SF
Guttersen ST D 16-22D (SI) - Wellbore #1 - MWD Surve	15,425.64	6,973.57	1,881.05	1,785.16	19.616	CC, ES
Guttersen ST D 16-22D (SI) - Wellbore #1 - MWD Surve	15,700.00	6,974.58	1,900.96	1,802.68	19.343	SF
Guttersen ST D 16-33 (SI) - Wellbore #1 - No Surveys	14,166.98	6,842.00	1,972.22	1,774.88	9.994	CC, ES
Guttersen ST D 16-33 (SI) - Wellbore #1 - No Surveys	14,300.00	6,842.00	1,976.70	1,778.64	9.981	SF
Guttersen State D 15-31 (PR) - Wellbore #1 - Gyro Surve	16,978.53	6,867.25	3,103.09	2,997.47	29.380	CC
Guttersen State D 15-31 (PR) - Wellbore #1 - Gyro Surve	17,000.00	6,867.24	3,103.16	2,997.36	29.330	ES
Guttersen State D 15-31 (PR) - Wellbore #1 - Gyro Surve	17,400.00	6,866.91	3,131.91	3,023.34	28.849	SF
Guttersen State D 15-33 (SI) - Wellbore #1 - Gyro Survey	14,046.32	6,854.64	3,249.11	3,165.68	38.945	CC, ES
Guttersen State D 15-33 (SI) - Wellbore #1 - Gyro Survey	14,700.00	6,844.80	3,314.20	3,226.50	37.791	SF
Guttersen State D 16-15X (PR) - Wellbore #1 - Gyro Sur	13,504.43	6,886.87	1,242.74	1,163.21	15.626	CC, ES
Guttersen State D 16-15X (PR) - Wellbore #1 - Gyro Sur	13,600.00	6,887.05	1,246.41	1,166.15	15.530	SF
Guttersen State D 16-18 (SI) - Wellbore #1 - No Surveys	16,783.14	6,842.00	614.40	397.19	2.829	CC, ES
Guttersen State D 16-18 (SI) - Wellbore #1 - No Surveys	16,800.00	6,842.00	614.63	397.24	2.827	SF
Guttersen State D 16-20 (SI) - Wellbore #1 - Gyro Survey	15,318.99	6,842.74	683.58	590.80	7.367	CC, ES, SF
Guttersen State D 16-24 (SI) - Wellbore #1 - Gyro Survey	14,142.53	6,878.36	657.18	572.94	7.801	CC, ES
Guttersen State D 16-24 (SI) - Wellbore #1 - Gyro Survey	14,200.00	6,878.12	659.69	575.01	7.790	SF
Guttersen State D 16-27 (PR) - Wellbore #1 - No Survey	17,712.71	6,838.00	1,926.43	1,702.19	8.591	CC, ES
Guttersen State D 16-27 (PR) - Wellbore #1 - No Survey	17,795.63	6,838.00	1,928.21	1,703.15	8.568	SF
Guttersen State D 16-31 (PR) - Wellbore #1 - No Survey	16,665.28	6,838.00	1,805.32	1,589.10	8.350	CC, ES
Guttersen State D 16-31 (PR) - Wellbore #1 - No Survey	16,700.00	6,838.00	1,805.65	1,589.23	8.343	SF
Guttersen State D 16-32D (SI) - Wellbore #1 - MWD Sur	15,469.47	7,035.13	1,901.51	1,799.57	18.653	CC, ES
Guttersen State D 16-32D (SI) - Wellbore #1 - MWD Sur	15,600.00	7,035.25	1,905.99	1,803.42	18.583	SF
Guttersen State D16-63-1HN - Original Drilling - Original	13,681.09	9,778.52	30.80	-49.96	0.381	Level 1, CC
Guttersen State D16-63-1HN - Original Drilling - Original	13,700.00	9,778.69	36.14	-65.96	0.354	Level 1, ES, SF
Guttersen State D16-65-1HN - Original Drilling - Original	14,990.98	9,779.91	34.28	-56.51	0.378	Level 1, 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 D21-760
Project:	Mustang	**TVD Reference:**	Well @ 4824.00ft
Reference Site:	D Section 21	**MD Reference:**	Well @ 4824.00ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Vogler State D21-760	**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						
Guttersen State D16-65-1HN - Original Drilling - Original	15,000.00	9,779.79	35.45	-63.11	0.360	Level 1, ES, SF
Spike ST GWS D 16-01 (SI) - Wellbore #1 - Gyro Survey	17,418.20	6,859.23	2,649.14	2,540.20	24.318	CC, ES
Spike ST GWS D 16-01 (SI) - Wellbore #1 - Gyro Survey	17,700.00	6,860.90	2,668.57	2,557.40	24.005	SF
Spike ST GWS D 16-02 (P&A) - Wellbore #1 - Gyro Surv	17,406.82	6,851.20	1,149.63	1,023.12	9.087	CC, ES
Spike ST GWS D 16-02 (P&A) - Wellbore #1 - Gyro Surv	17,468.57	6,851.72	1,151.95	1,024.86	9.064	SF
Spike ST GWS D 16-03 (PR) - Wellbore #1 - No Surveys	17,355.84	6,836.00	27.56	-193.98	0.124	Level 1, CC, ES, SF
Spike ST GWS D 16-04 (SI) - Wellbore #1 - No Surveys	17,346.39	6,831.00	1,334.22	1,112.84	6.027	CC
Spike ST GWS D 16-04 (SI) - Wellbore #1 - No Surveys	17,356.42	6,831.00	1,334.25	1,112.83	6.026	ES
Spike ST GWS D 16-04 (SI) - Wellbore #1 - No Surveys	17,400.00	6,831.00	1,334.96	1,113.34	6.024	SF
Spike ST GWS D 16-05 (PR) - Wellbore #1 - Gyro Surve	15,989.50	6,841.31	1,382.53	1,284.73	14.137	CC
Spike ST GWS D 16-05 (PR) - Wellbore #1 - Gyro Surve	16,000.00	6,841.29	1,382.57	1,284.71	14.129	ES
Spike ST GWS D 16-05 (PR) - Wellbore #1 - Gyro Surve	16,100.00	6,841.16	1,386.94	1,288.70	14.118	SF
Spike ST GWS D 16-06 (SI) - Wellbore #1 - No Surveys	16,033.43	6,844.00	21.66	-189.81	0.102	Level 1, CC, ES, SF
Spike ST GWS D 16-08 (PR) - Wellbore #1 - Gyro Surve	15,987.85	6,888.68	2,798.37	2,700.47	28.583	CC
Spike ST GWS D 16-08 (PR) - Wellbore #1 - Gyro Surve	16,000.00	6,888.58	2,798.40	2,700.39	28.553	ES
Spike ST GWS D 16-08 (PR) - Wellbore #1 - Gyro Surve	16,400.00	6,884.97	2,828.56	2,727.82	28.078	SF
Spike ST GWS D 16-12 (PA) - Wellbore #1 - Gyro Surve	14,874.96	6,862.48	1,484.32	1,394.74	16.570	CC, ES
Spike ST GWS D 16-12 (PA) - Wellbore #1 - Gyro Surve	15,000.00	6,861.25	1,489.57	1,399.46	16.530	SF
Spike ST GWS D 16-14 (SI) - Wellbore #1 - No Surveys	13,163.18	6,877.00	41.43	-149.32	0.217	Level 1, CC, ES, SF
Spike ST GWS D 16-16 (SI) - Wellbore #1 - No Surveys	13,367.94	6,876.00	2,626.40	2,434.20	13.665	CC
Spike ST GWS D 16-16 (SI) - Wellbore #1 - No Surveys	13,400.00	6,876.00	2,626.60	2,434.15	13.648	ES
Spike ST GWS D 16-16 (SI) - Wellbore #1 - No Surveys	13,600.00	6,876.00	2,636.64	2,442.74	13.598	SF
Spike State D 16-10 (SI) - Wellbore #1 - Gyro Surveys	14,730.71	6,862.30	1,251.68	1,163.18	14.143	CC, ES
Spike State D 16-10 (SI) - Wellbore #1 - Gyro Surveys	14,800.00	6,861.85	1,253.60	1,164.53	14.074	SF
Spike State D 16-11 (SI) - Wellbore #1 - Gyro Surveys	14,802.74	6,860.06	37.36	-51.72	0.419	Level 1, CC, ES, SF
Spike State D 16-9 (SI) - Wellbore #1 - Gyro Surveys	14,669.84	6,844.19	2,636.80	2,548.77	29.955	CC
Spike State D 16-9 (SI) - Wellbore #1 - Gyro Surveys	14,700.00	6,844.28	2,636.97	2,548.69	29.872	ES
Spike State D 16-9 (SI) - Wellbore #1 - Gyro Surveys	15,100.00	6,845.55	2,671.65	2,580.73	29.385	SF
Spike State D16-15 (P&A) - Wellbore #1 - Wellbore #1	13,424.38	6,881.06	1,241.65	1,151.76	13.812	CC, ES
Spike State D16-15 (P&A) - Wellbore #1 - Wellbore #1	13,500.00	6,882.72	1,243.95	1,153.46	13.746	SF
Spike State D16-99HZ - Original Drilling - Original Drilling	14,263.35	9,746.32	126.47	41.20	1.483	Level 3, CC
Spike State D16-99HZ - Original Drilling - Original Drilling	14,300.00	9,746.11	131.67	37.86	1.404	Level 3, ES, SF
Spike State GWS D 16-7J (PR) - Wellbore #1 - No Surve	16,778.22	6,861.00	1,943.48	1,725.93	8.933	CC
Spike State GWS D 16-7J (PR) - Wellbore #1 - No Surve	16,800.00	6,861.00	1,943.60	1,725.86	8.926	ES
Spike State GWS D 16-7J (PR) - Wellbore #1 - No Surve	16,900.00	6,861.00	1,947.29	1,728.77	8.911	SF
Spike State GWS D16-13J (PR) - Wellbore #1 - Gyro Su	13,995.61	6,858.38	757.16	674.12	9.117	CC
Spike State GWS D16-13J (PR) - Wellbore #1 - Gyro Su	14,000.00	6,858.35	757.18	674.11	9.116	ES, SF

Noble Energy, Inc.

Anticollision Summary Report

Company:	Northern Region - DJ Basin	**Local Co-ordinate Reference:**	Well Vogler State D21-760
Project:	Mustang	**TVD Reference:**	Well @ 4824.00ft
Reference Site:	D Section 21	**MD Reference:**	Well @ 4824.00ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Vogler State D21-760	**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	9,508.89	6,904.00	23.07	-146.13	0.136	Level 1, CC, ES, SF
Casey Blue D21-13 (PR) - Wellbore #1 - Gyro Surveys	311.74	274.74	514.15	512.48	307.698	CC
Casey Blue D21-13 (PR) - Wellbore #1 - Gyro Surveys	2,900.00	2,849.82	521.11	501.29	26.291	ES
Casey Blue D21-13 (PR) - Wellbore #1 - Gyro Surveys	3,700.00	3,619.66	563.53	538.24	22.283	SF
Casey Blue D21-14 (SI) - Wellbore #1 - Gyro Surveys	8,141.17	6,903.95	128.46	77.77	2.534	CC, ES, SF
Casey Blue D21-3J (PR) - Wellbore #1 - Gyro Surveys	2,453.55	2,446.44	721.77	704.85	42.662	CC, ES
Casey Blue D21-3J (PR) - Wellbore #1 - Gyro Surveys	9,100.00	6,907.15	1,027.86	974.59	19.294	SF
Guttersen 21-31 (SI) - Wellbore #1 - Gyro Surveys	12,031.20	6,876.56	1,333.87	1,264.57	19.248	CC, ES
Guttersen 21-31 (SI) - Wellbore #1 - Gyro Surveys	12,200.00	6,876.12	1,344.51	1,274.09	19.094	SF
Guttersen 21-42 (SI) - Wellbore #1 - Gyro Surveys	10,709.38	6,909.38	2,639.89	2,578.79	43.207	CC, ES
Guttersen 21-42 (SI) - Wellbore #1 - Gyro Surveys	11,300.00	6,910.57	2,705.16	2,640.78	42.019	SF
Guttersen 32-21 (PR) - Wellbore #1 - No Surveys	10,673.43	6,908.00	1,292.58	1,117.46	7.381	CC, ES
Guttersen 32-21 (PR) - Wellbore #1 - No Surveys	10,700.00	6,908.00	1,292.85	1,117.57	7.376	SF
Guttersen 33-21 (PR) - Wellbore #1 - Gyro Surveys	9,508.10	6,906.01	1,355.22	1,300.14	24.605	CC
Guttersen 33-21 (PR) - Wellbore #1 - Gyro Surveys	9,518.21	6,905.98	1,355.26	1,300.13	24.585	ES
Guttersen 33-21 (PR) - Wellbore #1 - Gyro Surveys	9,600.00	6,905.69	1,358.89	1,303.41	24.493	SF
Guttersen 34-21 (PR) - Wellbore #1 - Gyro Surveys	8,216.71	6,870.29	1,387.54	1,336.30	27.081	CC, ES
Guttersen 34-21 (PR) - Wellbore #1 - Gyro Surveys	8,300.00	6,871.51	1,390.04	1,338.69	27.069	SF
Guttersen 41-21 (PR) - Wellbore #1 - Gyro Surveys	12,084.12	6,888.19	2,663.53	2,593.85	38.223	CC
Guttersen 41-21 (PR) - Wellbore #1 - Gyro Surveys	12,100.00	6,888.14	2,663.58	2,593.78	38.160	ES
Guttersen 41-21 (PR) - Wellbore #1 - Gyro Surveys	12,600.00	6,886.70	2,713.03	2,640.11	37.207	SF
Guttersen 43-21 (PR) - Wellbore #1 - Gyro Surveys	9,369.89	6,926.79	2,471.78	2,417.31	45.377	CC, ES
Guttersen 43-21 (PR) - Wellbore #1 - Gyro Surveys	9,800.00	6,925.82	2,511.05	2,454.80	44.643	SF
Guttersen D21-32D (SI) - Wellbore #1 - MWD Surveys	1,015.75	1,016.83	751.96	744.94	107.052	CC
Guttersen D21-32D (SI) - Wellbore #1 - MWD Surveys	1,400.00	1,404.85	754.81	744.33	72.030	ES
Guttersen D21-32D (SI) - Wellbore #1 - MWD Surveys	10,500.00	7,280.97	1,989.46	1,916.75	27.363	SF
Guttersen USX D21-17 (PR) - Wellbore #1 - No Surveys	11,419.79	6,892.00	2,001.36	1,822.08	11.163	CC, ES
Guttersen USX D21-17 (PR) - Wellbore #1 - No Surveys	11,600.00	6,892.00	2,009.46	1,828.99	11.135	SF
Guttersen USX D21-20D (PR) - Wellbore #1 - MWD Surv	9,958.64	7,069.25	673.73	609.22	10.444	CC, ES
Guttersen USX D21-20D (PR) - Wellbore #1 - MWD Surv	10,000.00	7,069.29	675.00	610.17	10.412	SF
Guttersen USX D21-21D (SI) - Wellbore #1 - MWD Surve	9,932.54	7,121.60	517.68	452.98	8.001	CC, ES
Guttersen USX D21-21D (SI) - Wellbore #1 - MWD Surve	10,000.00	7,121.74	522.06	456.16	7.922	SF
Guttersen USX D21-24D (PR) - Wellbore #1 - MWD Surv	8,758.63	6,987.44	533.02	479.63	9.984	CC, ES, SF
Guttersen USX D21-25 (PR) - Wellbore #1 - MWD Surve	8,869.06	6,914.40	249.46	196.38	4.699	CC, ES, SF
Guttersen USX D21-27D (PR) - Wellbore #1 - MWD Surv	12,634.80	7,051.11	1,976.86	1,895.94	24.430	CC, ES
Guttersen USX D21-27D (PR) - Wellbore #1 - MWD Surv	12,900.00	7,052.02	1,994.57	1,912.02	24.164	SF
Guttersen USX D21-28D (PR) - Wellbore #1 - MWD Surv	12,600.00	7,231.57	740.06	657.59	8.974	SF
Guttersen USX D21-28D (PR) - Wellbore #1 - MWD Surv	12,634.34	7,231.60	739.26	657.05	8.992	CC, ES
Guttersen USX D21-33D (SI) - Wellbore #1 - MWD Surve	2,745.82	2,858.64	456.77	434.24	20.271	CC, ES
Guttersen USX D21-33D (SI) - Wellbore #1 - MWD Surve	3,000.00	3,075.69	483.79	458.40	19.051	SF
Guttersen USX D22-30D (PR) - Wellbore #1 - MWD Surv	12,622.06	7,165.01	3,242.75	3,160.99	39.660	CC, ES
Guttersen USX D22-30D (PR) - Wellbore #1 - MWD Surv	13,500.00	7,167.74	3,359.49	3,269.60	37.371	SF
Gutterson 18-21 (SI) - Wellbore #1 - Gyro Surveys	11,508.62	6,906.01	481.90	416.38	7.354	CC, ES, SF
HSR Guttersen B 5-21 (PR) - Wellbore #1 - Gyro Survey	10,742.22	6,895.49	1,298.95	1,238.49	21.483	CC, ES
HSR Guttersen B 5-21 (PR) - Wellbore #1 - Gyro Survey	10,800.00	6,895.21	1,300.24	1,239.52	21.415	SF
HSR Gutterson 4-21 (PR) - Wellbore #1 - Gyro Surveys	11,958.86	6,913.60	1,365.93	1,297.21	19.879	CC, ES
HSR Gutterson 4-21 (PR) - Wellbore #1 - Gyro Surveys	12,100.00	6,914.87	1,373.20	1,303.91	19.818	SF
HSR-Guttersen 3-21 (SI) - Wellbore #1 - Gyro Surveys	11,938.34	6,891.52	104.86	35.20	1.505	CC, ES, SF
HSR-Guttersen 6-21 (SI) - Wellbore #1 - Gyro Surveys	10,735.79	6,894.23	39.04	-21.97	0.640	Level 1, CC, ES, SF
Two E Ranch 1-21C (SI) - Wellbore #1 - Gyro Surveys	8,782.96	6,903.32	2,213.81	2,161.32	42.173	CC, ES
Two E Ranch 1-21C (SI) - Wellbore #1 - Gyro Surveys	9,100.00	6,901.17	2,236.40	2,182.96	41.846	SF
Vogler State D21-720 - Wellbore #1 - Plan 1	9,535.37	9,402.18	2,595.15	2,532.93	41.713	CC
Vogler State D21-720 - Wellbore #1 - Plan 1	17,400.00	17,266.80	2,611.14	2,440.31	15.285	ES

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 D21-760
Project:	Mustang	**TVD Reference:**	Well @ 4824.00ft
Reference Site:	D Section 21	**MD Reference:**	Well @ 4824.00ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Vogler State D21-760	**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	17,795.63	17,662.12	2,626.59	2,449.54	14.835	SF
Vogler State D21-731 - Wellbore #1 - Plan 1	3,939.10	3,589.74	1,740.45	1,714.67	67.495	CC
Vogler State D21-731 - Wellbore #1 - Plan 1	4,000.00	3,636.60	1,740.70	1,714.53	66.505	ES
Vogler State D21-731 - Wellbore #1 - Plan 1	17,795.63	17,783.42	1,933.07	1,755.74	10.901	SF
Vogler State D21-740 - Wellbore #1 - Plan 1	10,673.12	10,626.17	1,270.93	1,196.98	17.187	CC
Vogler State D21-740 - Wellbore #1 - Plan 1	17,400.00	17,349.20	1,290.73	1,120.19	7.569	ES
Vogler State D21-740 - Wellbore #1 - Plan 1	17,795.63	17,744.51	1,306.54	1,129.79	7.392	SF
Vogler State D21-750 - Wellbore #1 - Plan 1	14,148.60	13,965.91	643.84	521.97	5.283	CC
Vogler State D21-750 - Wellbore #1 - Plan 1	17,400.00	17,214.99	651.67	480.07	3.798	ES
Vogler State D21-750 - Wellbore #1 - Plan 1	17,795.63	17,610.31	667.09	489.29	3.752	SF
Vogler State D21-770 - Wellbore #1 - Plan 1	2,401.01	2,399.18	37.35	20.67	2.238	CC, ES
Vogler State D21-770 - Wellbore #1 - Plan 1	2,500.00	2,497.80	38.52	21.18	2.221	SF
Vogler State D21-780 - Wellbore #1 - Plan 1	2,000.00	1,996.00	75.00	61.14	5.412	CC
Vogler State D21-780 - Wellbore #1 - Plan 1	2,100.00	2,095.51	75.31	60.75	5.174	ES
Vogler State D21-780 - Wellbore #1 - Plan 1	2,300.00	2,293.56	79.19	63.28	4.979	SF
Vogler State D21-790 - Wellbore #1 - Plan 1	14,057.43	13,896.55	3,220.41	3,100.42	26.839	CC
Vogler State D21-790 - Wellbore #1 - Plan 1	17,356.42	17,157.84	3,258.41	3,088.32	19.157	ES
Vogler State D21-790 - Wellbore #1 - Plan 1	17,795.63	17,603.44	3,278.50	3,101.47	18.519	SF
Vogler State D33-711 - Wellbore #1 - Plan 1	7,400.00	6,958.54	3,178.35	3,126.50	61.298	SF
Vogler State D33-711 - Wellbore #1 - Plan 1	7,783.80	6,686.78	3,156.81	3,105.73	61.796	CC, ES
Vogler State D33-718 - Wellbore #1 - Plan 1	7,400.00	7,143.87	2,724.80	2,672.73	52.330	SF
Vogler State D33-718 - Wellbore #1 - Plan 1	7,589.83	6,998.17	2,716.45	2,664.75	52.542	CC, ES
Vogler State D33-728 - Wellbore #1 - Plan 1	1,908.72	1,943.72	1,768.90	1,755.56	132.563	CC
Vogler State D33-728 - Wellbore #1 - Plan 1	2,000.00	2,023.36	1,769.02	1,755.07	126.783	ES
Vogler State D33-728 - Wellbore #1 - Plan 1	7,400.00	7,400.00	2,039.07	1,983.75	36.855	SF
Vogler State D33-738 - Wellbore #1 - Plan 1	7,450.00	7,043.78	1,400.63	1,348.11	26.667	SF
Vogler State D33-738 - Wellbore #1 - Plan 1	7,600.00	6,920.49	1,395.80	1,343.66	26.770	ES
Vogler State D33-738 - Wellbore #1 - Plan 1	7,603.35	6,917.89	1,395.80	1,343.67	26.775	CC
Vogler State D33-752 - Wellbore #1 - Plan 1	7,500.00	7,097.58	748.49	696.27	14.333	SF
Vogler State D33-752 - Wellbore #1 - Plan 1	7,508.96	7,090.84	748.46	696.26	14.337	CC, ES
Vogler State D33-759 - Wellbore #1 - Plan 1	7,428.95	7,216.53	105.64	51.77	1.961	CC, ES, SF
Vogler State D33-769 - Wellbore #1 - Plan 1	2,960.33	3,008.55	152.01	131.66	7.471	CC, ES
Vogler State D33-769 - Wellbore #1 - Plan 1	3,100.00	3,131.06	155.29	134.06	7.314	SF
Vogler State D33-779 - Wellbore #1 - Plan 1	2,623.92	2,640.16	136.98	118.85	7.554	CC, ES
Vogler State D33-779 - Wellbore #1 - Plan 1	2,700.00	2,715.74	138.22	119.57	7.412	SF

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

Noble Energy, Inc.

Anticollision Summary Report

Company:	Northern Region - DJ Basin	**Local Co-ordinate Reference:**	Well Vogler State D21-760
Project:	Mustang	**TVD Reference:**	Well @ 4824.00ft
Reference Site:	D Section 21	**MD Reference:**	Well @ 4824.00ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Vogler State D21-760	**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	6,774.77	6,415.13	2,105.91	1,953.32	13.801	CC
O'SH D 28-7 (P&A) - Wellbore #1 - No Surveys	6,800.00	6,438.95	2,106.30	1,953.17	13.755	ES
O'SH D 28-7 (P&A) - Wellbore #1 - No Surveys	6,950.00	6,574.22	2,125.02	1,968.89	13.610	SF
Spike ST GWS D 28-12 (SI) - Wellbore #1 - Gyro Surve	6,568.14	6,194.56	3,167.66	3,121.47	68.578	CC, ES
Spike ST GWS D 28-12 (SI) - Wellbore #1 - Gyro Surve	6,800.00	6,410.10	3,206.72	3,159.01	67.211	SF
Guttersen D State 28-29D (PR) - Wellbore #1 - MWD Su	5,046.25	4,921.95	172.43	136.59	4.812	CC, ES
Guttersen D State 28-29D (PR) - Wellbore #1 - MWD Su	5,100.00	4,968.37	174.33	137.71	4.760	SF
Guttersen D State 28-30D - Wellbore #1 - Guttersen D S	3,832.92	3,721.45	1,310.11	1,281.67	46.068	CC, ES
Guttersen D State 28-30D - Wellbore #1 - Guttersen D S	7,550.00	7,001.01	2,086.92	2,035.19	40.337	SF
Guttersen State D28-18D (PR) - Wellbore #1 - MWD Sur	6,770.58	6,485.92	952.46	905.17	20.142	CC, ES
Guttersen State D28-18D (PR) - Wellbore #1 - MWD Sur	6,850.00	6,557.91	956.81	909.14	20.070	SF
Guttersen State D28-21D (SI) - Wellbore #1 - MWD Surv	6,697.36	6,431.46	2,175.48	2,127.11	44.969	CC
Guttersen State D28-21D (SI) - Wellbore #1 - MWD Surv	6,700.00	6,433.88	2,175.49	2,127.09	44.954	ES
Guttersen State D28-21D (SI) - Wellbore #1 - MWD Surv	6,850.00	6,585.37	2,192.92	2,143.68	44.535	SF
Guttersen State D28-24D (SI) - Wellbore #1 - MWD Surv	6,662.43	6,381.19	3,660.97	3,613.99	77.925	CC, ES
Guttersen State D28-24D (SI) - Wellbore #1 - MWD Surv	6,900.00	6,562.05	3,705.52	3,657.17	76.639	SF
Guttersen State D28-28D (PR) - Wellbore #1 - MWD Sur	7,608.15	6,953.13	545.87	492.62	10.251	CC, ES, SF
Guttersen State D28-79HN - Wellbore #1 - Actual	6,720.06	11,086.00	1,819.71	1,712.36	16.951	CC
Guttersen State D28-79HN - Wellbore #1 - Actual	6,750.00	11,086.00	1,820.01	1,712.27	16.892	ES
Guttersen State D28-79HN - Wellbore #1 - Actual	6,900.00	11,086.00	1,830.47	1,721.25	16.760	SF
HSR Guttersen State 10-28 (SI) - Wellbore #1 - Gyro Su	6,707.89	6,367.71	3,071.72	3,025.71	66.762	CC, ES
HSR Guttersen State 10-28 (SI) - Wellbore #1 - Gyro Su	6,950.00	6,677.25	3,111.12	3,063.62	65.491	SF
HSR Guttersen State 15-28 (SI) - Wellbore #1 - Gyro Su	6,678.55	6,200.00	4,768.25	4,722.71	104.693	CC, ES
HSR Guttersen State 15-28 (SI) - Wellbore #1 - Gyro Su	7,000.00	6,476.70	4,844.33	4,797.07	102.498	SF
HSR Guttersen State 7-28 (PR) - Wellbore #1 - Gyro Sur	6,745.31	6,340.82	1,916.42	1,870.19	41.456	CC
HSR Guttersen State 7-28 (PR) - Wellbore #1 - Gyro Sur	6,750.00	6,345.44	1,916.43	1,870.17	41.431	ES
HSR Guttersen State 7-28 (PR) - Wellbore #1 - Gyro Sur	6,900.00	6,482.88	1,931.82	1,884.74	41.033	SF
O'SH D 28-1 (SI) - Wellbore #1 - Gyro Surveys	7,073.29	6,700.47	2,461.28	2,412.32	50.266	CC, ES
O'SH D 28-1 (SI) - Wellbore #1 - Gyro Surveys	7,350.00	6,943.51	2,492.30	2,442.38	49.927	SF
O'SH D 28-2 (SI) - Wellbore #1 - Gyro Surveys	7,111.52	6,711.88	1,415.75	1,366.62	28.813	CC, ES
O'SH D 28-2 (SI) - Wellbore #1 - Gyro Surveys	7,150.00	6,737.03	1,416.45	1,367.29	28.809	SF
O'SH D 28-8 (SI) - Wellbore #1 - Gyro Surveys	6,856.63	6,436.25	3,197.21	3,149.88	67.550	CC, ES
O'SH D 28-8 (SI) - Wellbore #1 - Gyro Surveys	7,200.00	6,742.86	3,252.27	3,203.40	66.537	SF
Spike ST GWS D 28-03 (PR) - Wellbore #1 - Gyro Surve	6,883.35	6,498.51	203.48	141.69	3.293	CC, ES
Spike ST GWS D 28-03 (PR) - Wellbore #1 - Gyro Surve	6,900.00	6,513.42	203.73	141.85	3.292	SF
Spike ST GWS D 28-4 (SI) - Wellbore #1 - Gyro Surveys	5,400.15	5,153.80	1,005.04	967.16	26.534	CC, ES
Spike ST GWS D 28-4 (SI) - Wellbore #1 - Gyro Surveys	6,300.00	5,958.36	1,082.38	1,037.72	24.239	SF
Spike State D 28-13 (SI) - Wellbore #1 - Gyro Surveys	6,614.40	6,394.05	4,517.18	4,470.52	96.804	CC, ES
Spike State D 28-13 (SI) - Wellbore #1 - Gyro Surveys	6,900.00	6,569.27	4,581.23	4,533.06	95.106	SF
Spike State D28-05 (PR) - Wellbore #1 - Gyro Surveys	6,507.78	6,160.94	1,875.53	1,829.19	40.476	CC, ES
Spike State D28-05 (PR) - Wellbore #1 - Gyro Surveys	6,750.00	6,408.71	1,909.71	1,861.64	39.729	SF
Spike State D28-06 (SI) - Wellbore #1 - Gyro Surveys	6,690.08	6,347.40	1,459.78	1,413.86	31.787	CC, ES
Spike State D28-06 (SI) - Wellbore #1 - Gyro Surveys	6,800.00	6,456.21	1,468.87	1,422.25	31.507	SF
Spike State D28-11 (SI) - Wellbore #1 - Gyro Surveys	6,653.89	6,280.86	2,710.44	2,664.60	59.126	CC, ES
Spike State D28-11 (SI) - Wellbore #1 - Gyro Surveys	6,850.00	6,419.68	2,742.31	2,695.33	58.373	SF
Spike State GWS D 28-14 (P&A) - Wellbore #1 - Gyro Su	6,633.94	6,170.07	4,402.90	4,357.35	96.658	CC, ES
Spike State GWS D 28-14 (P&A) - Wellbore #1 - Gyro Su	6,900.00	6,413.23	4,457.89	4,410.75	94.575	SF

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Anticollision Summary Report

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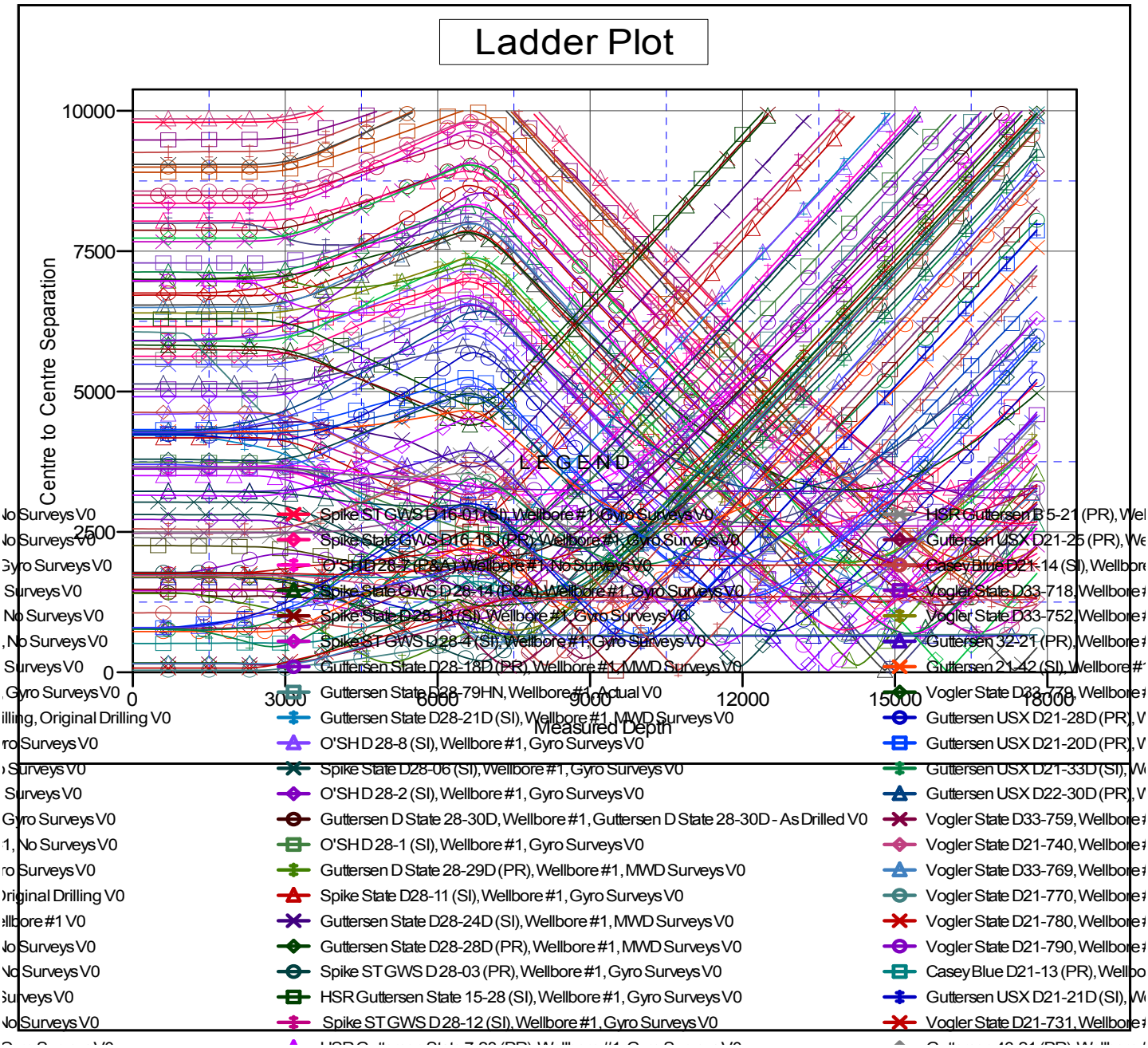
Reference Site:	D Section 21	**MD Reference:**	Well @ 4824.00ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Vogler State D21-760	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDMP
Reference Design:	Plan 1	**Offset TVD Reference:**	Offset Datum

Reference Depths are relative to Well @ 4824.00ft	Coordinates are relative to: Vogler State D21-760
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

Company:	Northern Region - DJ Basin	**Local Co-ordinate Reference:**	Well Vogler State D21-760
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Reference Site:	D Section 21	**MD Reference:**	Well @ 4824.00ft
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Reference Well:	Vogler State D21-760	**Survey Calculation Method:**	Minimum Curvature
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Reference Wellbore	Wellbore #1	**Database:**	EDMP
Reference Design:	Plan 1	**Offset TVD Reference:**	Offset Datum

Reference Depths are relative to Well @ 4824.00ft	Coordinates are relative to: Vogler State D21-760
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°