Project: Mustang
Site: D Section 23
Well: Guttersen D35-760
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

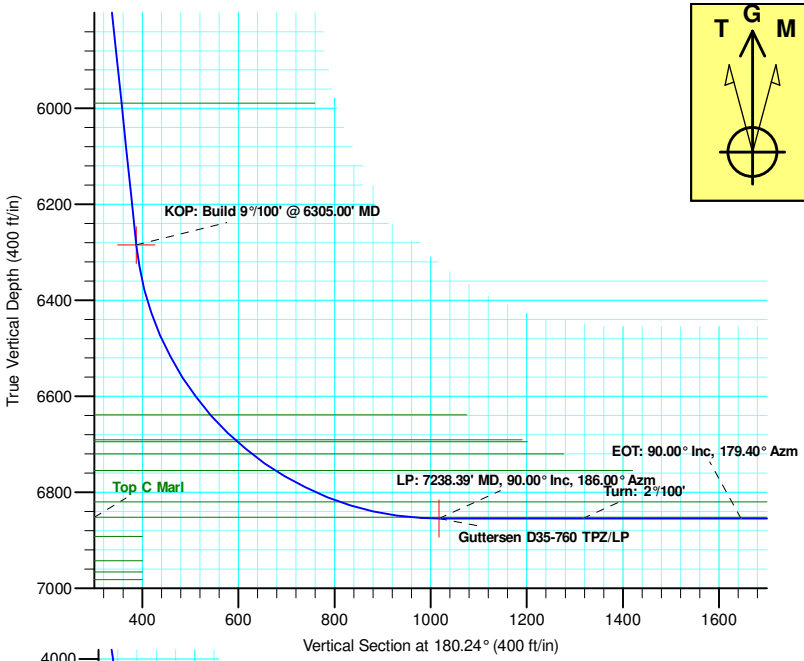
SECTION DETAILS

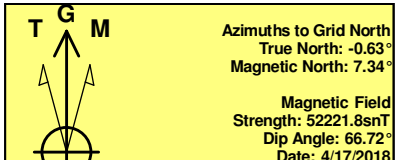
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSect	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	2425.00	0.00	0.00	2425.00	0.00	0.00	0.00	0.00	0.00	
3	2724.77	6.00	185.64	2724.23	-15.59	-1.54	2.00	185.64	15.60	
4	6305.00	6.00	185.64	6284.87	-387.74	-38.28	0.00	0.00	387.89	
5	7238.39	90.00	186.00	6855.00	-1017.45	-104.08	9.00	0.36	1017.87	Guttersen D35-760 TPZ/LP
6	7538.39	90.00	186.00	6855.00	-1315.80	-135.44	0.00	0.00	1316.35	
7	7868.39	90.00	179.40	6855.00	-1645.26	-150.98	2.00	-90.00	1645.87	
8	10040.48	90.00	179.40	6855.00	-3817.23	-128.23	0.00	0.00	3817.73	Guttersen D35-760 Updip
9	10140.37	91.00	179.40	6854.13	-3917.11	-127.18	1.00	-0.18	3917.60	
10	16690.88	91.00	179.40	6739.94	-10466.26	-58.24	0.00	0.00	10466.41	
11	16798.36	90.00	179.00	6739.00	-10573.72	-56.74	1.00	-158.33	10573.87	
12	17398.36	90.00	179.00	6739.00	-11173.63	-46.27	0.00	0.00	11173.73	Guttersen D35-760 BHL

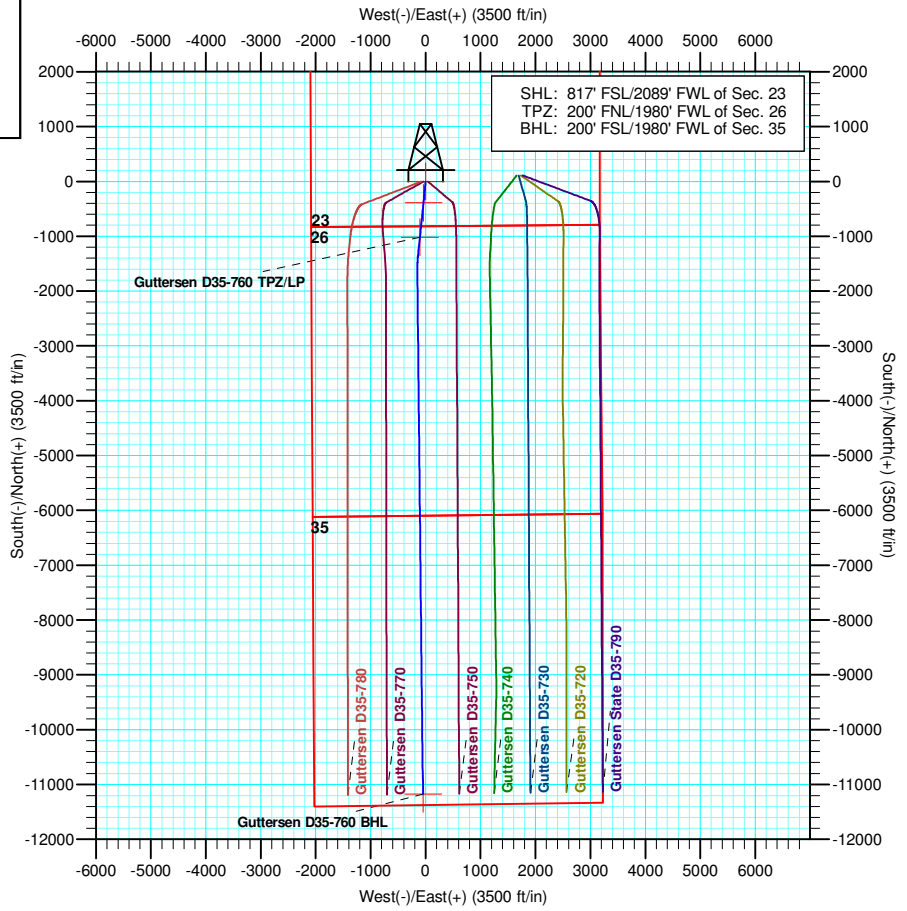
WELL DETAILS: Guttersen D35-760

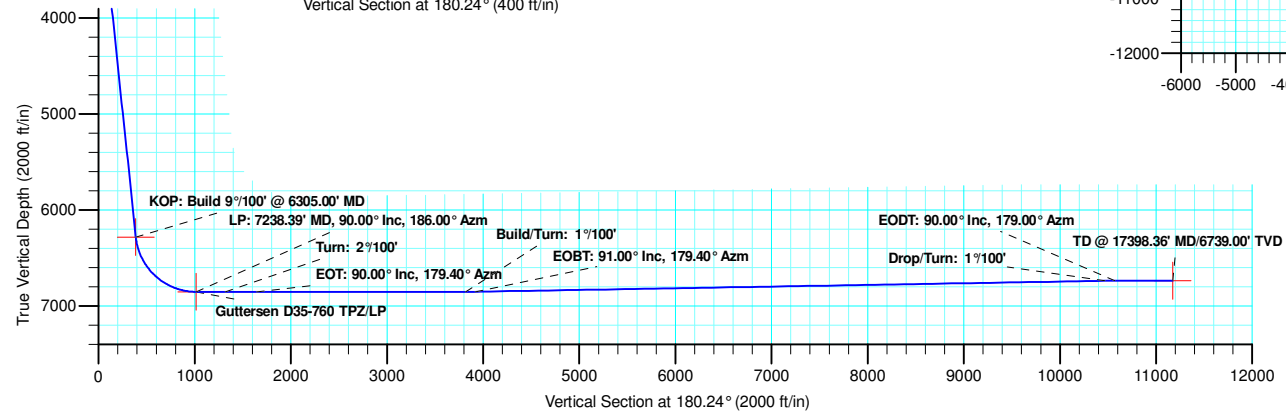
Ground Level: 4829.00

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.00	0.00	1319345.73	3273577.34	40.2058534	-104.5204972	









Plan: Plan #1 (Guttersen D35-760/Wellbore #1)

Created By: Keith Noack Date: 14:26, August 15 2018

Northern Region - DJ Basin

Mustang
D Section 23
Guttersen D35-760

Wellbore #1

Plan: Plan #1

Standard Planning Report

15 August, 2018

Database:	EDMP	**Local Co-ordinate Reference:**	Well Guttersen D35-760
Company:	Northern Region - DJ Basin	**TVD Reference:**	KB @ 4859.00ft
Project:	Mustang	**MD Reference:**	KB @ 4859.00ft
Site:	D Section 23	**North Reference:**	Grid
Well:	Guttersen D35-760	**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 23

Site Position:		**Northing:**	1,319,071.18 usft	**Latitude:**	40.2050590
From:	Lat/Long	**Easting:**	3,274,917.86 usft	**Longitude:**	-104.5157090
Position Uncertainty:	0.00 ft	**Slot Radius:**	13.200 in	**Grid Convergence:**	0.64 °

Well Guttersen D35-760

Well Position	**+N/-S**	274.55 ft	**Northing:**	1,319,345.73 usft	**Latitude:**	40.2058534
	+E/-W	-1,340.52 ft	**Easting:**	3,273,577.34 usft	**Longitude:**	-104.5204972
Position Uncertainty		0.00 ft	**Wellhead Elevation:**		**Ground Level:**	4,829.00 ft

Wellbore Wellbore #1

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	4/17/2018	7.98	66.72	52,221.79129314

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	180.24

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	
2,425.00	0.00	0.00	2,425.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,724.77	6.00	185.64	2,724.23	-15.59	-1.54	2.00	2.00	0.00	185.64	
6,305.00	6.00	185.64	6,284.87	-387.74	-38.28	0.00	0.00	0.00	0.00	
7,238.39	90.00	186.00	6,855.00	-1,017.45	-104.08	9.00	9.00	0.04	0.36	Guttersen D35-760
7,538.39	90.00	186.00	6,855.00	-1,315.80	-135.44	0.00	0.00	0.00	0.00	
7,868.39	90.00	179.40	6,855.00	-1,645.26	-150.98	2.00	0.00	-2.00	-90.00	
10,040.48	90.00	179.40	6,855.00	-3,817.23	-128.23	0.00	0.00	0.00	0.00	Guttersen D35-760
10,140.37	91.00	179.40	6,854.13	-3,917.11	-127.18	1.00	1.00	0.00	-0.18	
16,690.88	91.00	179.40	6,739.94	-10,466.26	-58.24	0.00	0.00	0.00	0.00	
16,798.36	90.00	179.00	6,739.00	-10,573.72	-56.74	1.00	-0.93	-0.37	-158.33	
17,398.36	90.00	179.00	6,739.00	-11,173.63	-46.27	0.00	0.00	0.00	0.00	Guttersen D35-760

Database:	EDMP	**Local Co-ordinate Reference:**	Well Guttersen D35-760
Company:	Northern Region - DJ Basin	**TVD Reference:**	KB @ 4859.00ft
Project:	Mustang	**MD Reference:**	KB @ 4859.00ft
Site:	D Section 23	**North Reference:**	Grid
Well:	Guttersen D35-760	**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
589.00	0.00	0.00	589.00	0.00	0.00	0.00	0.00	0.00	0.00
Pierre									
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
791.00	0.00	0.00	791.00	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
1,679.00	0.00	0.00	1,679.00	0.00	0.00	0.00	0.00	0.00	0.00
Upper Pierre Aquifer Base									
1,700.00	0.00	0.00	1,700.00	0.00	0.00	0.00	0.00	0.00	0.00
1,800.00	0.00	0.00	1,800.00	0.00	0.00	0.00	0.00	0.00	0.00
1,900.00	0.00	0.00	1,900.00	0.00	0.00	0.00	0.00	0.00	0.00
2,000.00	0.00	0.00	2,000.00	0.00	0.00	0.00	0.00	0.00	0.00
2,100.00	0.00	0.00	2,100.00	0.00	0.00	0.00	0.00	0.00	0.00
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
2,425.00	0.00	0.00	2,425.00	0.00	0.00	0.00	0.00	0.00	0.00
Build: 2°/100'									
2,500.00	1.50	185.64	2,499.99	-0.98	-0.10	0.98	2.00	2.00	0.00
2,600.00	3.50	185.64	2,599.89	-5.32	-0.52	5.32	2.00	2.00	0.00
2,700.00	5.50	185.64	2,699.58	-13.13	-1.30	13.13	2.00	2.00	0.00
2,724.77	6.00	185.64	2,724.23	-15.59	-1.54	15.60	2.00	2.00	0.00
Hold: 6.00° Inc, 185.64° Azm									
2,800.00	6.00	185.64	2,799.04	-23.41	-2.31	23.42	0.00	0.00	0.00
2,900.00	6.00	185.64	2,898.49	-33.81	-3.34	33.82	0.00	0.00	0.00
3,000.00	6.00	185.64	2,997.95	-44.20	-4.36	44.22	0.00	0.00	0.00
3,100.00	6.00	185.64	3,097.40	-54.60	-5.39	54.62	0.00	0.00	0.00
3,200.00	6.00	185.64	3,196.85	-64.99	-6.42	65.02	0.00	0.00	0.00
3,300.00	6.00	185.64	3,296.31	-75.39	-7.44	75.42	0.00	0.00	0.00
3,400.00	6.00	185.64	3,395.76	-85.78	-8.47	85.81	0.00	0.00	0.00
3,500.00	6.00	185.64	3,495.21	-96.17	-9.49	96.21	0.00	0.00	0.00
3,600.00	6.00	185.64	3,594.67	-106.57	-10.52	106.61	0.00	0.00	0.00
3,700.00	6.00	185.64	3,694.12	-116.96	-11.55	117.01	0.00	0.00	0.00
3,781.33	6.00	185.64	3,775.00	-125.42	-12.38	125.47	0.00	0.00	0.00
Parkman									
3,800.00	6.00	185.64	3,793.57	-127.36	-12.57	127.41	0.00	0.00	0.00
3,900.00	6.00	185.64	3,893.03	-137.75	-13.60	137.81	0.00	0.00	0.00
4,000.00	6.00	185.64	3,992.48	-148.15	-14.62	148.21	0.00	0.00	0.00

Database:	EDMP	**Local Co-ordinate Reference:**	Well Guttersen D35-760
Company:	Northern Region - DJ Basin	**TVD Reference:**	KB @ 4859.00ft
Project:	Mustang	**MD Reference:**	KB @ 4859.00ft
Site:	D Section 23	**North Reference:**	Grid
Well:	Guttersen D35-760	**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)
4,100.00	6.00	185.64	4,091.93	-158.54	-15.65	158.60	0.00	0.00	0.00
4,181.51	6.00	185.64	4,173.00	-167.01	-16.49	167.08	0.00	0.00	0.00
Sussex									
4,200.00	6.00	185.64	4,191.38	-168.94	-16.68	169.00	0.00	0.00	0.00
4,300.00	6.00	185.64	4,290.84	-179.33	-17.70	179.40	0.00	0.00	0.00
4,400.00	6.00	185.64	4,390.29	-189.72	-18.73	189.80	0.00	0.00	0.00
4,500.00	6.00	185.64	4,489.74	-200.12	-19.76	200.20	0.00	0.00	0.00
4,600.00	6.00	185.64	4,589.20	-210.51	-20.78	210.60	0.00	0.00	0.00
4,700.00	6.00	185.64	4,688.65	-220.91	-21.81	221.00	0.00	0.00	0.00
4,800.00	6.00	185.64	4,788.10	-231.30	-22.83	231.39	0.00	0.00	0.00
4,900.00	6.00	185.64	4,887.56	-241.70	-23.86	241.79	0.00	0.00	0.00
4,934.63	6.00	185.64	4,922.00	-245.30	-24.22	245.40	0.00	0.00	0.00
Shannon									
5,000.00	6.00	185.64	4,987.01	-252.09	-24.89	252.19	0.00	0.00	0.00
5,100.00	6.00	185.64	5,086.46	-262.49	-25.91	262.59	0.00	0.00	0.00
5,200.00	6.00	185.64	5,185.91	-272.88	-26.94	272.99	0.00	0.00	0.00
5,300.00	6.00	185.64	5,285.37	-283.27	-27.96	283.39	0.00	0.00	0.00
5,400.00	6.00	185.64	5,384.82	-293.67	-28.99	293.79	0.00	0.00	0.00
5,500.00	6.00	185.64	5,484.27	-304.06	-30.02	304.19	0.00	0.00	0.00
5,600.00	6.00	185.64	5,583.73	-314.46	-31.04	314.58	0.00	0.00	0.00
5,700.00	6.00	185.64	5,683.18	-324.85	-32.07	324.98	0.00	0.00	0.00
5,800.00	6.00	185.64	5,782.63	-335.25	-33.09	335.38	0.00	0.00	0.00
5,900.00	6.00	185.64	5,882.09	-345.64	-34.12	345.78	0.00	0.00	0.00
6,000.00	6.00	185.64	5,981.54	-356.04	-35.15	356.18	0.00	0.00	0.00
6,007.50	6.00	185.64	5,989.00	-356.82	-35.22	356.96	0.00	0.00	0.00
Teepee Buttes									
6,100.00	6.00	185.64	6,080.99	-366.43	-36.17	366.58	0.00	0.00	0.00
6,200.00	6.00	185.64	6,180.44	-376.82	-37.20	376.98	0.00	0.00	0.00
6,305.00	6.00	185.64	6,284.87	-387.74	-38.28	387.89	0.00	0.00	0.00
KOP: Build 9°/100' @ 6305.00' MD									
6,350.00	10.05	185.79	6,329.42	-393.98	-38.90	394.14	9.00	9.00	0.33
6,400.00	14.55	185.85	6,378.26	-404.57	-39.98	404.74	9.00	9.00	0.14
6,450.00	19.05	185.89	6,426.12	-418.94	-41.46	419.11	9.00	9.00	0.07
6,500.00	23.55	185.91	6,472.69	-437.00	-43.33	437.18	9.00	9.00	0.05
6,550.00	28.05	185.93	6,517.70	-458.64	-45.57	458.82	9.00	9.00	0.03
6,600.00	32.55	185.94	6,560.86	-483.72	-48.18	483.91	9.00	9.00	0.02
6,650.00	37.05	185.95	6,601.91	-512.09	-51.13	512.30	9.00	9.00	0.02
6,697.88	41.35	185.96	6,639.00	-542.18	-54.27	542.40	9.00	9.00	0.01
Sharon Springs									
6,700.00	41.55	185.96	6,640.59	-543.57	-54.42	543.80	9.00	9.00	0.01
6,750.00	46.05	185.96	6,676.67	-577.98	-58.01	578.22	9.00	9.00	0.01
6,771.00	47.94	185.97	6,691.00	-593.26	-59.61	593.50	9.00	9.00	0.01
Top A Chalk									
6,777.01	48.48	185.97	6,695.00	-597.71	-60.07	597.95	9.00	9.00	0.01
Top A Marl									
6,800.00	50.55	185.97	6,709.93	-615.10	-61.89	615.35	9.00	9.00	0.01
6,816.10	51.99	185.97	6,720.00	-627.59	-63.20	627.84	9.00	9.00	0.01
Top B Chalk									
6,850.00	55.05	185.97	6,740.16	-654.70	-66.03	654.97	9.00	9.00	0.01
6,876.72	57.45	185.98	6,755.00	-676.79	-68.34	677.07	9.00	9.00	0.01
Top B Marl									
6,900.00	59.55	185.98	6,767.16	-696.53	-70.41	696.82	9.00	9.00	0.01
6,950.00	64.05	185.98	6,790.79	-740.34	-75.00	740.65	9.00	9.00	0.01

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Site:	D Section 23	**North Reference:**	Grid
Well:	Guttersen D35-760	**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)
7,000.00	68.55	185.99	6,810.89	-785.86	-79.77	786.19	9.00	9.00	0.01
7,026.31	70.91	185.99	6,820.00	-810.41	-82.34	810.74	9.00	9.00	0.01
Top C Chalk									
7,050.00	73.05	185.99	6,827.33	-832.81	-84.69	833.16	9.00	9.00	0.01
7,100.00	77.55	185.99	6,840.02	-880.90	-89.74	881.26	9.00	9.00	0.01
7,150.00	82.05	185.99	6,848.87	-929.83	-94.88	930.21	9.00	9.00	0.01
7,176.56	84.44	186.00	6,852.00	-956.05	-97.63	956.45	9.00	9.00	0.01
Top C Marl									
7,200.00	86.55	186.00	6,853.84	-979.29	-100.07	979.70	9.00	9.00	0.01
7,238.39	90.00	186.00	6,855.00	-1,017.45	-104.08	1,017.87	9.00	9.00	0.01
LP: 7238.39' MD, 90.00° Inc, 186.00° Azm									
7,300.00	90.00	186.00	6,855.00	-1,078.72	-110.52	1,079.17	0.00	0.00	0.00
7,400.00	90.00	186.00	6,855.00	-1,178.17	-120.97	1,178.66	0.00	0.00	0.00
7,500.00	90.00	186.00	6,855.00	-1,277.63	-131.43	1,278.16	0.00	0.00	0.00
7,538.39	90.00	186.00	6,855.00	-1,315.80	-135.44	1,316.35	0.00	0.00	0.00
Turn: 2°/100'									
7,600.00	90.00	184.77	6,855.00	-1,377.14	-141.22	1,377.72	2.00	0.00	-2.00
7,700.00	90.00	182.77	6,855.00	-1,476.92	-147.79	1,477.52	2.00	0.00	-2.00
7,800.00	90.00	180.77	6,855.00	-1,576.87	-150.88	1,577.48	2.00	0.00	-2.00
7,868.39	90.00	179.40	6,855.00	-1,645.26	-150.98	1,645.87	2.00	0.00	-2.00
EOT: 90.00° Inc, 179.40° Azm									
7,900.00	90.00	179.40	6,855.00	-1,676.87	-150.65	1,677.47	0.00	0.00	0.00
8,000.00	90.00	179.40	6,855.00	-1,776.86	-149.60	1,777.46	0.00	0.00	0.00
8,100.00	90.00	179.40	6,855.00	-1,876.85	-148.55	1,877.45	0.00	0.00	0.00
8,200.00	90.00	179.40	6,855.00	-1,976.85	-147.50	1,977.44	0.00	0.00	0.00
8,300.00	90.00	179.40	6,855.00	-2,076.84	-146.46	2,077.43	0.00	0.00	0.00
8,400.00	90.00	179.40	6,855.00	-2,176.84	-145.41	2,177.42	0.00	0.00	0.00
8,500.00	90.00	179.40	6,855.00	-2,276.83	-144.36	2,277.41	0.00	0.00	0.00
8,600.00	90.00	179.40	6,855.00	-2,376.83	-143.32	2,377.40	0.00	0.00	0.00
8,700.00	90.00	179.40	6,855.00	-2,476.82	-142.27	2,477.39	0.00	0.00	0.00
8,800.00	90.00	179.40	6,855.00	-2,576.82	-141.22	2,577.38	0.00	0.00	0.00
8,900.00	90.00	179.40	6,855.00	-2,676.81	-140.17	2,677.37	0.00	0.00	0.00
9,000.00	90.00	179.40	6,855.00	-2,776.81	-139.13	2,777.36	0.00	0.00	0.00
9,100.00	90.00	179.40	6,855.00	-2,876.80	-138.08	2,877.35	0.00	0.00	0.00
9,200.00	90.00	179.40	6,855.00	-2,976.79	-137.03	2,977.34	0.00	0.00	0.00
9,300.00	90.00	179.40	6,855.00	-3,076.79	-135.98	3,077.33	0.00	0.00	0.00
9,400.00	90.00	179.40	6,855.00	-3,176.78	-134.94	3,177.31	0.00	0.00	0.00
9,500.00	90.00	179.40	6,855.00	-3,276.78	-133.89	3,277.30	0.00	0.00	0.00
9,600.00	90.00	179.40	6,855.00	-3,376.77	-132.84	3,377.29	0.00	0.00	0.00
9,700.00	90.00	179.40	6,855.00	-3,476.77	-131.80	3,477.28	0.00	0.00	0.00
9,800.00	90.00	179.40	6,855.00	-3,576.76	-130.75	3,577.27	0.00	0.00	0.00
9,900.00	90.00	179.40	6,855.00	-3,676.76	-129.70	3,677.26	0.00	0.00	0.00
10,000.00	90.00	179.40	6,855.00	-3,776.75	-128.65	3,777.25	0.00	0.00	0.00
10,040.48	90.00	179.40	6,855.00	-3,817.23	-128.23	3,817.73	0.00	0.00	0.00
Build/Turn: 1°/100'									
10,100.00	90.60	179.40	6,854.69	-3,876.74	-127.61	3,877.24	1.00	1.00	0.00
10,140.37	91.00	179.40	6,854.13	-3,917.11	-127.18	3,917.60	1.00	1.00	0.00
EOBT: 91.00° Inc, 179.40° Azm									
10,200.00	91.00	179.40	6,853.09	-3,976.73	-126.55	3,977.22	0.00	0.00	0.00
10,300.00	91.00	179.40	6,851.35	-4,076.70	-125.50	4,077.19	0.00	0.00	0.00
10,400.00	91.00	179.40	6,849.60	-4,176.68	-124.45	4,177.16	0.00	0.00	0.00
10,500.00	91.00	179.40	6,847.86	-4,276.66	-123.40	4,277.14	0.00	0.00	0.00
10,600.00	91.00	179.40	6,846.12	-4,376.64	-122.34	4,377.11	0.00	0.00	0.00

Database:	EDMP	**Local Co-ordinate Reference:**	Well Guttersen D35-760
Company:	Northern Region - DJ Basin	**TVD Reference:**	KB @ 4859.00ft
Project:	Mustang	**MD Reference:**	KB @ 4859.00ft
Site:	D Section 23	**North Reference:**	Grid
Well:	Guttersen D35-760	**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)
10,700.00	91.00	179.40	6,844.37	-4,476.62	-121.29	4,477.09	0.00	0.00	0.00
10,800.00	91.00	179.40	6,842.63	-4,576.60	-120.24	4,577.06	0.00	0.00	0.00
10,900.00	91.00	179.40	6,840.89	-4,676.58	-119.19	4,677.03	0.00	0.00	0.00
11,000.00	91.00	179.40	6,839.14	-4,776.56	-118.14	4,777.01	0.00	0.00	0.00
11,100.00	91.00	179.40	6,837.40	-4,876.54	-117.08	4,876.98	0.00	0.00	0.00
11,200.00	91.00	179.40	6,835.66	-4,976.52	-116.03	4,976.96	0.00	0.00	0.00
11,300.00	91.00	179.40	6,833.91	-5,076.50	-114.98	5,076.93	0.00	0.00	0.00
11,400.00	91.00	179.40	6,832.17	-5,176.48	-113.93	5,176.90	0.00	0.00	0.00
11,500.00	91.00	179.40	6,830.43	-5,276.46	-112.87	5,276.88	0.00	0.00	0.00
11,600.00	91.00	179.40	6,828.68	-5,376.44	-111.82	5,376.85	0.00	0.00	0.00
11,700.00	91.00	179.40	6,826.94	-5,476.41	-110.77	5,476.83	0.00	0.00	0.00
11,800.00	91.00	179.40	6,825.20	-5,576.39	-109.72	5,576.80	0.00	0.00	0.00
11,900.00	91.00	179.40	6,823.45	-5,676.37	-108.66	5,676.77	0.00	0.00	0.00
12,000.00	91.00	179.40	6,821.71	-5,776.35	-107.61	5,776.75	0.00	0.00	0.00
12,100.00	91.00	179.40	6,819.97	-5,876.33	-106.56	5,876.72	0.00	0.00	0.00
12,200.00	91.00	179.40	6,818.22	-5,976.31	-105.51	5,976.70	0.00	0.00	0.00
12,300.00	91.00	179.40	6,816.48	-6,076.29	-104.45	6,076.67	0.00	0.00	0.00
12,400.00	91.00	179.40	6,814.74	-6,176.27	-103.40	6,176.64	0.00	0.00	0.00
12,500.00	91.00	179.40	6,812.99	-6,276.25	-102.35	6,276.62	0.00	0.00	0.00
12,600.00	91.00	179.40	6,811.25	-6,376.23	-101.30	6,376.59	0.00	0.00	0.00
12,700.00	91.00	179.40	6,809.51	-6,476.21	-100.24	6,476.57	0.00	0.00	0.00
12,800.00	91.00	179.40	6,807.77	-6,576.19	-99.19	6,576.54	0.00	0.00	0.00
12,900.00	91.00	179.40	6,806.02	-6,676.17	-98.14	6,676.51	0.00	0.00	0.00
13,000.00	91.00	179.40	6,804.28	-6,776.14	-97.09	6,776.49	0.00	0.00	0.00
13,100.00	91.00	179.40	6,802.54	-6,876.12	-96.03	6,876.46	0.00	0.00	0.00
13,200.00	91.00	179.40	6,800.79	-6,976.10	-94.98	6,976.44	0.00	0.00	0.00
13,300.00	91.00	179.40	6,799.05	-7,076.08	-93.93	7,076.41	0.00	0.00	0.00
13,400.00	91.00	179.40	6,797.31	-7,176.06	-92.88	7,176.38	0.00	0.00	0.00
13,500.00	91.00	179.40	6,795.56	-7,276.04	-91.83	7,276.36	0.00	0.00	0.00
13,600.00	91.00	179.40	6,793.82	-7,376.02	-90.77	7,376.33	0.00	0.00	0.00
13,700.00	91.00	179.40	6,792.08	-7,476.00	-89.72	7,476.31	0.00	0.00	0.00
13,800.00	91.00	179.40	6,790.33	-7,575.98	-88.67	7,576.28	0.00	0.00	0.00
13,900.00	91.00	179.40	6,788.59	-7,675.96	-87.62	7,676.26	0.00	0.00	0.00
14,000.00	91.00	179.40	6,786.85	-7,775.94	-86.56	7,776.23	0.00	0.00	0.00
14,100.00	91.00	179.40	6,785.10	-7,875.92	-85.51	7,876.20	0.00	0.00	0.00
14,200.00	91.00	179.40	6,783.36	-7,975.90	-84.46	7,976.18	0.00	0.00	0.00
14,300.00	91.00	179.40	6,781.62	-8,075.88	-83.41	8,076.15	0.00	0.00	0.00
14,400.00	91.00	179.40	6,779.87	-8,175.85	-82.35	8,176.13	0.00	0.00	0.00
14,500.00	91.00	179.40	6,778.13	-8,275.83	-81.30	8,276.10	0.00	0.00	0.00
14,600.00	91.00	179.40	6,776.39	-8,375.81	-80.25	8,376.07	0.00	0.00	0.00
14,700.00	91.00	179.40	6,774.64	-8,475.79	-79.20	8,476.05	0.00	0.00	0.00
14,800.00	91.00	179.40	6,772.90	-8,575.77	-78.14	8,576.02	0.00	0.00	0.00
14,900.00	91.00	179.40	6,771.16	-8,675.75	-77.09	8,676.00	0.00	0.00	0.00
15,000.00	91.00	179.40	6,769.41	-8,775.73	-76.04	8,775.97	0.00	0.00	0.00
15,100.00	91.00	179.40	6,767.67	-8,875.71	-74.99	8,875.94	0.00	0.00	0.00
15,200.00	91.00	179.40	6,765.93	-8,975.69	-73.93	8,975.92	0.00	0.00	0.00
15,300.00	91.00	179.40	6,764.18	-9,075.67	-72.88	9,075.89	0.00	0.00	0.00
15,400.00	91.00	179.40	6,762.44	-9,175.65	-71.83	9,175.87	0.00	0.00	0.00
15,500.00	91.00	179.40	6,760.70	-9,275.63	-70.78	9,275.84	0.00	0.00	0.00
15,600.00	91.00	179.40	6,758.95	-9,375.61	-69.72	9,375.81	0.00	0.00	0.00
15,700.00	91.00	179.40	6,757.21	-9,475.59	-68.67	9,475.79	0.00	0.00	0.00
15,800.00	91.00	179.40	6,755.47	-9,575.56	-67.62	9,575.76	0.00	0.00	0.00
15,900.00	91.00	179.40	6,753.72	-9,675.54	-66.57	9,675.74	0.00	0.00	0.00
16,000.00	91.00	179.40	6,751.98	-9,775.52	-65.51	9,775.71	0.00	0.00	0.00

Database:	EDMP	**Local Co-ordinate Reference:**	Well Guttersen D35-760
Company:	Northern Region - DJ Basin	**TVD Reference:**	KB @ 4859.00ft
Project:	Mustang	**MD Reference:**	KB @ 4859.00ft
Site:	D Section 23	**North Reference:**	Grid
Well:	Guttersen D35-760	**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)
16,100.00	91.00	179.40	6,750.24	-9,875.50	-64.46	9,875.68	0.00	0.00	0.00
16,200.00	91.00	179.40	6,748.49	-9,975.48	-63.41	9,975.66	0.00	0.00	0.00
16,300.00	91.00	179.40	6,746.75	-10,075.46	-62.36	10,075.63	0.00	0.00	0.00
16,400.00	91.00	179.40	6,745.01	-10,175.44	-61.31	10,175.61	0.00	0.00	0.00
16,500.00	91.00	179.40	6,743.26	-10,275.42	-60.25	10,275.58	0.00	0.00	0.00
16,600.00	91.00	179.40	6,741.52	-10,375.40	-59.20	10,375.55	0.00	0.00	0.00
16,690.88	91.00	179.40	6,739.94	-10,466.26	-58.24	10,466.41	0.00	0.00	0.00
Drop/Turn: 1°/100'									
16,700.00	90.91	179.36	6,739.78	-10,475.38	-58.15	10,475.53	1.00	-0.93	-0.37
16,798.36	90.00	179.00	6,739.00	-10,573.72	-56.74	10,573.87	1.00	-0.93	-0.37
EODT: 90.00° Inc, 179.00° Azm									
16,800.00	90.00	179.00	6,739.00	-10,575.36	-56.71	10,575.51	0.00	0.00	0.00
16,900.00	90.00	179.00	6,739.00	-10,675.35	-54.97	10,675.48	0.00	0.00	0.00
17,000.00	90.00	179.00	6,739.00	-10,775.33	-53.22	10,775.46	0.00	0.00	0.00
17,100.00	90.00	179.00	6,739.00	-10,875.32	-51.48	10,875.44	0.00	0.00	0.00
17,200.00	90.00	179.00	6,739.00	-10,975.30	-49.73	10,975.41	0.00	0.00	0.00
17,300.00	90.00	179.00	6,739.00	-11,075.29	-47.99	11,075.39	0.00	0.00	0.00
17,398.36	90.00	179.00	6,739.00	-11,173.63	-46.27	11,173.73	0.00	0.00	0.00
TD @ 17398.36' MD/6739.00' 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
Guttersen D35-760 SI - plan hits target center - Point	0.00	0.00	0.00	0.00	0.00	1,319,345.73	3,273,577.34	40.2058534	-104.5204972
Guttersen D35-760 K - plan hits target center - Point	0.00	0.00	6,284.87	-387.74	-38.28	1,318,957.99	3,273,539.07	40.2047902	-104.5206496
Guttersen D35-760 BI - plan hits target center - Point	0.00	0.00	6,739.00	-11,173.63	-46.27	1,308,172.12	3,273,531.07	40.1751837	-104.5211045
Guttersen D35-760 TI - plan hits target center - Point	0.00	0.00	6,855.00	-1,017.45	-104.08	1,318,328.28	3,273,473.26	40.2030637	-104.5209100

Database:	EDMP	**Local Co-ordinate Reference:**	Well Guttersen D35-760
Company:	Northern Region - DJ Basin	**TVD Reference:**	KB @ 4859.00ft
Project:	Mustang	**MD Reference:**	KB @ 4859.00ft
Site:	D Section 23	**North Reference:**	Grid
Well:	Guttersen D35-760	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1		

Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
589.00	589.00	Pierre			
791.00	791.00	Upper Pierre Aquifer Top			
1,679.00	1,679.00	Upper Pierre Aquifer Base			
3,781.33	3,775.00	Parkman			
4,181.51	4,173.00	Sussex			
4,934.63	4,922.00	Shannon			
6,007.50	5,989.00	Teepee Buttes			
6,697.88	6,639.00	Sharon Springs			
6,771.00	6,691.00	Top A Chalk			
6,777.01	6,695.00	Top A Marl			
6,816.10	6,720.00	Top B Chalk			
6,876.72	6,755.00	Top B Marl			
7,026.31	6,820.00	Top C Chalk			
7,176.56	6,852.00	Top C Marl			

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates +N/-S (ft)	Local Coordinates +E/-W (ft)	Comment
2,425.00	2,425.00	0.00	0.00	Build: 2°/100'
2,724.77	2,724.23	-15.59	-1.54	Hold: 6.00° Inc, 185.64° Azm
6,305.00	6,284.87	-387.74	-38.28	KOP: Build 9°/100' @ 6305.00' MD
7,238.39	6,855.00	-1,017.45	-104.08	LP: 7238.39' MD, 90.00° Inc, 186.00° Azm
7,538.39	6,855.00	-1,315.80	-135.44	Turn: 2°/100'
7,868.39	6,855.00	-1,645.26	-150.98	EOT: 90.00° Inc, 179.40° Azm
10,040.48	6,855.00	-3,817.23	-128.23	Build/Turn: 1°/100'
10,140.37	6,854.13	-3,917.11	-127.18	EOBT: 91.00° Inc, 179.40° Azm
16,690.88	6,739.94	-10,466.26	-58.24	Drop/Turn: 1°/100'
16,798.36	6,739.00	-10,573.72	-56.74	EODT: 90.00° Inc, 179.00° Azm
17,398.36	6,739.00	-11,173.63	-46.27	TD @ 17398.36' MD/6739.00' TVD

Northern Region - DJ Basin

Mustang
D Section 23
Guttersen D35-760

Wellbore #1
Plan #1

Anticollision Summary Report

15 August, 2018

Noble Energy, Inc.

Anticollision Summary Report

Company:	Northern Region - DJ Basin	**Local Co-ordinate Reference:**	Well Guttersen D35-760
Project:	Mustang	**TVD Reference:**	KB @ 4859.00ft
Reference Site:	D Section 23	**MD Reference:**	KB @ 4859.00ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Guttersen D35-760	**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** 7/31/2018

From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.00	17,397.96	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 23						
Guttersen 23-20 (SI) - Wellbore #1 - Gyro Surveys	1,987.70	1,974.87	2,114.65	2,101.01	155.083	CC
Guttersen 23-20 (SI) - Wellbore #1 - Gyro Surveys	2,100.00	2,074.40	2,115.07	2,100.69	147.046	ES
Guttersen 23-20 (SI) - Wellbore #1 - Gyro Surveys	6,500.00	6,512.05	2,512.61	2,467.37	55.543	SF
Guttersen 23-32 (SI) - Wellbore #1 - Gyro Surveys	100.00	25.16	2,879.57	2,879.40	10,000.000	CC
Guttersen 23-32 (SI) - Wellbore #1 - Gyro Surveys	2,425.00	2,345.77	2,887.25	2,870.76	175.072	ES
Guttersen 23-32 (SI) - Wellbore #1 - Gyro Surveys	6,550.00	6,475.41	3,248.10	3,202.84	71.765	SF
Guttersen 23-41 (PR) - Wellbore #1 - Gyro Surveys	100.00	12.12	4,553.44	4,553.29	10,000.000	CC
Guttersen 23-41 (PR) - Wellbore #1 - Gyro Surveys	2,500.00	2,468.76	4,562.00	4,544.82	265.590	ES
Guttersen 23-41 (PR) - Wellbore #1 - Gyro Surveys	6,700.00	6,564.02	5,031.10	4,985.05	109.264	SF
Guttersen 31-23 (PR) - Wellbore #1 - Gyro Surveys	0.00	0.00	3,981.50			
Guttersen 31-23 (PR) - Wellbore #1 - Gyro Surveys	2,433.66	2,426.60	3,982.17	3,965.37	237.126	ES
Guttersen 31-23 (PR) - Wellbore #1 - Gyro Surveys	6,700.00	6,664.02	4,484.56	4,438.17	96.675	SF
Guttersen 42-23 (PR) - Wellbore #1 - Gyro Surveys	100.00	42.70	3,549.58	3,549.38	10,000.000	CC
Guttersen 42-23 (PR) - Wellbore #1 - Gyro Surveys	2,496.56	2,520.24	3,557.31	3,539.98	205.263	ES
Guttersen 42-23 (PR) - Wellbore #1 - Gyro Surveys	6,700.00	6,582.63	3,926.26	3,880.12	85.097	SF
Guttersen D23-711 - Wellbore #1 - Plan #1	2,425.00	2,406.00	1,769.65	1,752.80	105.013	CC
Guttersen D23-711 - Wellbore #1 - Plan #1	2,600.00	2,580.89	1,770.06	1,752.00	98.035	ES
Guttersen D23-711 - Wellbore #1 - Plan #1	8,200.00	6,400.00	3,169.69	3,117.35	60.558	SF
Guttersen D35-720 - Wellbore #1 - Plan #1	2,200.00	2,182.00	1,735.60	1,720.35	113.868	CC, ES
Guttersen D35-720 - Wellbore #1 - Plan #1	17,398.36	17,404.37	2,613.21	2,422.59	13.709	SF
Guttersen D35-730 - Wellbore #1 - Plan #1	2,425.00	2,405.00	1,698.15	1,681.30	100.791	CC
Guttersen D35-730 - Wellbore #1 - Plan #1	2,500.00	2,471.39	1,698.51	1,681.18	98.025	ES
Guttersen D35-730 - Wellbore #1 - Plan #1	17,398.36	17,346.12	1,954.93	1,764.04	10.241	SF
Guttersen D35-740 - Wellbore #1 - Plan #1	6,836.77	6,957.01	1,278.46	1,229.68	26.208	CC
Guttersen D35-740 - Wellbore #1 - Plan #1	17,398.36	17,381.84	1,293.11	1,102.36	6.779	ES, SF
Guttersen D35-750 - Wellbore #1 - Plan #1	2,200.00	2,201.00	37.50	22.19	2.449	CC, ES
Guttersen D35-750 - Wellbore #1 - Plan #1	2,300.00	2,299.96	38.86	22.85	2.428	SF
Guttersen D35-770 - Wellbore #1 - Plan #1	2,400.00	2,400.00	37.50	20.76	2.240	CC
Guttersen D35-770 - Wellbore #1 - Plan #1	2,425.00	2,424.72	37.59	20.68	2.223	ES, SF
Guttersen D35-780 - Wellbore #1 - Plan #1	2,200.00	2,200.00	75.00	59.69	4.900	CC, ES
Guttersen D35-780 - Wellbore #1 - Plan #1	2,300.00	2,297.57	76.60	60.60	4.788	SF
Guttersen State D23-721 - Wellbore #1 - Plan #1	2,425.00	2,405.00	1,732.16	1,715.32	102.810	CC
Guttersen State D23-721 - Wellbore #1 - Plan #1	2,600.00	2,579.89	1,732.57	1,714.52	95.978	ES
Guttersen State D23-721 - Wellbore #1 - Plan #1	7,400.00	6,585.72	2,521.38	2,471.76	50.806	SF
Guttersen State D23-731 - Wellbore #1 - Plan #1	2,425.00	2,405.00	1,694.67	1,677.82	100.585	CC
Guttersen State D23-731 - Wellbore #1 - Plan #1	2,500.00	2,475.74	1,694.84	1,677.50	97.730	ES
Guttersen State D23-731 - Wellbore #1 - Plan #1	7,050.00	7,164.44	1,881.66	1,831.80	37.734	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 Guttersen D35-760
Project:	Mustang	**TVD Reference:**	KB @ 4859.00ft
Reference Site:	D Section 23	**MD Reference:**	KB @ 4859.00ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Guttersen D35-760	**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 23						
Guttersen State D23-741 - Wellbore #1 - Plan #1	6,804.19	7,498.34	1,210.27	1,161.07	24.601	CC, ES
Guttersen State D23-741 - Wellbore #1 - Plan #1	6,950.00	7,397.89	1,216.75	1,167.02	24.467	SF
Guttersen State D23-751 - Wellbore #1 - Plan #1	2,200.00	2,200.00	154.49	139.18	10.093	CC, ES
Guttersen State D23-751 - Wellbore #1 - Plan #1	2,400.00	2,389.53	161.08	144.45	9.688	SF
Guttersen State D23-761 - Wellbore #1 - Plan #1	6,900.00	7,241.09	85.51	36.67	1.751	ES, SF
Guttersen State D23-761 - Wellbore #1 - Plan #1	6,908.97	7,234.09	85.34	36.74	1.756	CC
Guttersen State D23-771 - Wellbore #1 - Plan #1	2,400.00	2,398.00	154.75	138.01	9.248	CC
Guttersen State D23-771 - Wellbore #1 - Plan #1	2,724.77	2,706.78	155.80	137.05	8.307	ES
Guttersen State D23-771 - Wellbore #1 - Plan #1	2,900.00	2,872.77	161.06	141.30	8.151	SF
Guttersen State D23-781 - Wellbore #1 - Plan #1	2,200.00	2,199.00	167.94	152.64	10.974	CC, ES
Guttersen State D23-781 - Wellbore #1 - Plan #1	2,425.00	2,411.74	175.87	159.08	10.474	SF
Guttersen State D35-790 - Wellbore #1 - Plan #1	2,200.00	2,184.00	1,773.04	1,757.79	116.269	CC, ES
Guttersen State D35-790 - Wellbore #1 - Plan #1	17,398.36	17,573.53	3,274.49	3,084.12	17.200	SF
Guttersen USX D 23-17 (PR) - Wellbore #1 - Gyro Surve	2,030.13	1,987.37	3,612.56	3,598.72	261.146	CC
Guttersen USX D 23-17 (PR) - Wellbore #1 - Gyro Surve	2,425.00	2,374.61	3,613.30	3,596.70	217.610	ES
Guttersen USX D 23-17 (PR) - Wellbore #1 - Gyro Surve	6,750.00	6,556.16	4,126.22	4,080.10	89.463	SF
Parker Blue D 23-09 (SI) - Wellbore #1 - Gyro Surveys	2,330.10	2,249.63	2,912.66	2,896.83	184.050	CC
Parker Blue D 23-09 (SI) - Wellbore #1 - Gyro Surveys	2,425.00	2,335.83	2,912.86	2,896.39	176.907	ES
Parker Blue D 23-09 (SI) - Wellbore #1 - Gyro Surveys	6,750.00	6,615.13	3,138.43	3,091.90	67.440	SF
Parker Blue D 23-10 (SI) - Wellbore #1 - Gyro Surveys	2,487.72	2,460.13	1,828.46	1,811.36	106.936	CC
Parker Blue D 23-10 (SI) - Wellbore #1 - Gyro Surveys	2,500.00	2,471.67	1,828.48	1,811.30	106.426	ES
Parker Blue D 23-10 (SI) - Wellbore #1 - Gyro Surveys	6,500.00	6,417.78	2,087.72	2,042.81	46.482	SF
Parker Blue D 23-11 (SI) - Wellbore #1 - Gyro Surveys	647.67	624.68	1,403.87	1,399.77	342.630	CC
Parker Blue D 23-11 (SI) - Wellbore #1 - Gyro Surveys	1,100.00	1,069.08	1,404.89	1,397.62	193.275	ES
Parker Blue D 23-11 (SI) - Wellbore #1 - Gyro Surveys	6,450.00	6,409.62	1,808.87	1,764.23	40.516	SF
Parker Blue D 23-13 (SI) - Wellbore #1 - Gyro Surveys	100.00	79.10	1,489.84	1,489.57	5,642.966	CC
Parker Blue D 23-13 (SI) - Wellbore #1 - Gyro Surveys	1,300.00	1,267.53	1,493.77	1,485.09	172.019	ES
Parker Blue D 23-13 (SI) - Wellbore #1 - Gyro Surveys	6,700.00	6,611.73	1,632.57	1,586.20	35.210	SF
Parker Blue D 23-14 (SI) - Wellbore #1 - Gyro Surveys	2,423.90	2,392.95	107.20	90.56	6.443	CC
Parker Blue D 23-14 (SI) - Wellbore #1 - Gyro Surveys	2,425.00	2,394.04	107.20	90.55	6.440	ES
Parker Blue D 23-14 (SI) - Wellbore #1 - Gyro Surveys	2,500.00	2,468.91	108.24	91.08	6.307	SF
Parker Blue D 23-15 (SI) - Wellbore #1 - Gyro Surveys	5,265.63	5,213.31	1,291.87	1,255.56	35.581	CC
Parker Blue D 23-15 (SI) - Wellbore #1 - Gyro Surveys	5,300.00	5,243.62	1,291.93	1,255.39	35.360	ES
Parker Blue D 23-15 (SI) - Wellbore #1 - Gyro Surveys	6,700.00	6,599.70	1,345.53	1,299.18	29.034	SF
Parker Blue D 23-3J (SI) - Wellbore #1 - Gyro Surveys	2,116.40	2,102.52	1,577.81	1,563.27	108.532	CC
Parker Blue D 23-3J (SI) - Wellbore #1 - Gyro Surveys	2,427.34	2,414.38	1,578.36	1,561.62	94.306	ES
Parker Blue D 23-3J (SI) - Wellbore #1 - Gyro Surveys	6,500.00	6,462.84	1,906.26	1,858.58	39.983	SF
Parker Red D 23-05 (PR) - Wellbore #1 - Gyro Surveys	968.81	961.83	2,807.31	2,800.89	436.721	CC
Parker Red D 23-05 (PR) - Wellbore #1 - Gyro Surveys	2,400.00	2,371.41	2,810.24	2,793.76	170.556	ES
Parker Red D 23-05 (PR) - Wellbore #1 - Gyro Surveys	6,600.00	6,533.40	3,225.25	3,179.58	70.634	SF
Parker Red D 23-2J (SI) - Wellbore #1 - Gyro Surveys	686.78	673.78	2,834.41	2,830.00	642.950	CC
Parker Red D 23-2J (SI) - Wellbore #1 - Gyro Surveys	2,100.00	2,064.61	2,837.48	2,823.15	197.993	ES
Parker Red D 23-2J (SI) - Wellbore #1 - Gyro Surveys	6,500.00	6,435.44	3,269.84	3,224.93	72.816	SF
Parker Red D 23-3 (PR) - Wellbore #1 - Gyro Surveys	1,983.00	1,947.32	3,793.90	3,780.38	280.483	CC
Parker Red D 23-3 (PR) - Wellbore #1 - Gyro Surveys	2,000.00	1,956.82	3,793.92	3,780.30	278.546	ES
Parker Red D 23-3 (PR) - Wellbore #1 - Gyro Surveys	6,650.00	6,650.05	4,294.13	4,247.84	92.775	SF
Parker Red D 23-4 (SI) - Wellbore #1 - Gyro Surveys	479.40	453.40	4,013.72	4,010.82	1,386.251	CC
Parker Red D 23-4 (SI) - Wellbore #1 - Gyro Surveys	1,800.00	1,743.16	4,017.53	4,005.40	331.119	ES
Parker Red D 23-4 (SI) - Wellbore #1 - Gyro Surveys	6,650.00	6,558.04	4,428.77	4,382.88	96.493	SF
Two E Ranch 1-23 (SI) - Wellbore #1 - Gyro Surveys	3,350.43	3,355.97	2,285.88	2,262.78	98.971	CC
Two E Ranch 1-23 (SI) - Wellbore #1 - Gyro Surveys	3,600.00	3,589.35	2,286.82	2,262.04	92.318	ES
Two E Ranch 1-23 (SI) - Wellbore #1 - Gyro Surveys	6,750.00	6,618.39	2,483.69	2,437.14	53.361	SF

Noble Energy, Inc.

Anticollision Summary Report

Company:	Northern Region - DJ Basin	**Local Co-ordinate Reference:**	Well Guttersen D35-760
Project:	Mustang	**TVD Reference:**	KB @ 4859.00ft
Reference Site:	D Section 23	**MD Reference:**	KB @ 4859.00ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Guttersen D35-760	**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 26						
Adam Red D 26-11 (PR) - Wellbore #1 - Gyro Surveys	10,320.96	6,855.95	130.67	65.55	2.006	CC, ES, SF
Adam Red D 26-12 (PR) - Wellbore #1 - Gyro Surveys	10,307.05	6,851.07	1,333.56	1,261.30	18.454	CC, ES
Adam Red D 26-12 (PR) - Wellbore #1 - Gyro Surveys	10,400.00	6,848.99	1,336.79	1,263.90	18.340	SF
Adam Red D 26-13 (PR) - Wellbore #1 - Gyro Surveys	11,455.57	6,843.09	1,159.46	1,086.36	15.861	CC, ES
Adam Red D 26-13 (PR) - Wellbore #1 - Gyro Surveys	11,600.00	6,834.26	1,168.39	1,094.42	15.795	SF
Adam Red D 26-14 (PR) - Wellbore #1 - Gyro Surveys	11,475.03	6,837.99	204.30	126.39	2.622	CC, ES, SF
Coors Energy 14-25H (PR) - Wellbore #1 - MWD Survey	11,180.61	6,032.00	3,461.86	3,396.04	52.601	CC
Coors Energy 14-25H (PR) - Wellbore #1 - MWD Survey	11,200.00	6,032.00	3,461.91	3,395.97	52.502	ES
Coors Energy 14-25H (PR) - Wellbore #1 - MWD Survey	11,900.00	6,032.00	3,535.81	3,466.03	50.670	SF
Heyde 1-26 (PR) - Wellbore #1 - Gyro Surveys	8,005.61	6,818.89	2,363.48	2,311.81	45.741	CC, ES
Heyde 1-26 (PR) - Wellbore #1 - Gyro Surveys	8,400.00	6,820.49	2,396.16	2,342.91	44.997	SF
Heyde 26ND (PR) - Wellbore #1 - MWD Surveys	8,362.88	6,972.19	798.39	742.54	14.296	CC, ES
Heyde 26ND (PR) - Wellbore #1 - MWD Surveys	8,500.00	6,971.94	810.08	752.86	14.157	SF
Heyde 26RD (PR) - Wellbore #1 - MWD Surveys	6,820.04	6,732.08	1,986.12	1,936.92	40.375	CC
Heyde 26RD (PR) - Wellbore #1 - MWD Surveys	6,850.00	6,750.07	1,986.25	1,936.87	40.223	ES
Heyde 26RD (PR) - Wellbore #1 - MWD Surveys	7,150.00	6,860.40	2,007.69	1,956.73	39.392	SF
Heyde 26VD (PR) - Wellbore #1 - MWD Surveys	100.00	54.21	2,652.55	2,652.32	10,000.000	CC
Heyde 26VD (PR) - Wellbore #1 - MWD Surveys	500.00	441.38	2,653.78	2,651.43	1,127.078	ES
Heyde 26VD (PR) - Wellbore #1 - MWD Surveys	9,400.00	7,032.00	3,428.07	3,365.33	54.637	SF
Heyde 31-26 (PR) - Wellbore #1 - No Surveys	7,623.29	6,813.38	1,101.08	1,050.94	21.961	CC, ES
Heyde 31-26 (PR) - Wellbore #1 - No Surveys	7,700.00	6,813.40	1,102.72	1,052.32	21.880	SF
Heyde 32-26 (SI) - Wellbore #1 - Gyro Surveys	9,014.26	6,808.58	1,264.14	1,207.38	22.274	CC, ES
Heyde 32-26 (SI) - Wellbore #1 - Gyro Surveys	9,100.00	6,809.37	1,267.04	1,209.89	22.171	SF
Heyde 41-26 (PR) - Wellbore #1 - Gyro Surveys	7,205.60	6,806.49	2,703.64	2,654.80	55.363	CC, ES
Heyde 41-26 (PR) - Wellbore #1 - Gyro Surveys	8,100.00	6,828.18	2,803.68	2,751.83	54.068	SF
Heyde 42-26 (PR) - Wellbore #1 - Gyro Surveys	8,972.42	6,839.16	2,664.90	2,608.24	47.035	CC
Heyde 42-26 (PR) - Wellbore #1 - Gyro Surveys	9,000.00	6,839.10	2,665.05	2,608.24	46.917	ES
Heyde 42-26 (PR) - Wellbore #1 - Gyro Surveys	9,500.00	6,838.01	2,716.62	2,657.40	45.867	SF
HSR-Waste Services 10-26 (SI) - Wellbore #1 - No Surve	10,542.11	6,834.13	1,575.04	1,395.46	8.770	CC, ES
HSR-Waste Services 10-26 (SI) - Wellbore #1 - No Surve	10,600.00	6,833.12	1,576.11	1,396.20	8.761	SF
HSR-Waste Services 15-26 (SI) - Wellbore #1 - No Surve	11,536.90	6,832.78	1,321.39	1,134.79	7.081	CC, ES
HSR-Waste Services 15-26 (SI) - Wellbore #1 - No Surve	11,600.00	6,831.68	1,322.90	1,135.96	7.077	SF
HSR-Waste Services 16-26 (SI) - Wellbore #1 - Gyro Su	11,553.77	6,853.92	2,572.27	2,498.46	34.848	CC, ES
HSR-Waste Services 16-26 (SI) - Wellbore #1 - Gyro Su	12,000.00	6,843.92	2,610.67	2,534.41	34.232	SF
HSR-Waste Services 9-26 (PA) - Wellbore #1 - Gyro Sur	10,300.22	6,802.11	2,755.02	2,690.18	42.491	CC, ES
HSR-Waste Services 9-26 (PA) - Wellbore #1 - Gyro Sur	10,800.00	6,804.01	2,799.97	2,732.39	41.433	SF
Waste Management 11-26 (PR) - Wellbore #1 - Gyro Sur	7,819.05	6,804.99	1,321.01	1,270.18	25.990	CC, ES
Waste Management 11-26 (PR) - Wellbore #1 - Gyro Sur	7,900.00	6,807.20	1,324.45	1,273.26	25.875	SF
Waste Management 12-26 (PR) - Wellbore #1 - Gyro Sur	9,095.12	6,867.86	1,378.73	1,321.27	23.994	CC
Waste Management 12-26 (PR) - Wellbore #1 - Gyro Sur	9,100.00	6,867.63	1,378.74	1,321.24	23.981	ES
Waste Management 12-26 (PR) - Wellbore #1 - Gyro Sur	9,300.00	6,858.39	1,393.83	1,335.24	23.789	SF
Waste Management 12-26A (PR) - Wellbore #1 - Gyro S	8,539.52	6,847.31	732.57	678.25	13.485	CC, ES
Waste Management 12-26A (PR) - Wellbore #1 - Gyro S	8,600.00	6,853.00	735.05	680.36	13.441	SF
Waste Management 21-26 (PR) - Wellbore #1 - Gyro Sur	7,571.08	6,834.40	137.60	87.72	2.759	CC, ES, SF
Waste Management 22-26 (PR) - Wellbore #1 - Gyro Sur	9,041.67	6,846.22	28.19	-28.72	0.495	Level 1, CC, ES, SF
Waste Management 26FD (PR) - Wellbore #1 - MWD Su	8,374.19	6,985.70	1,870.44	1,815.80	34.231	CC, ES
Waste Management 26FD (PR) - Wellbore #1 - MWD Su	8,700.00	6,982.02	1,898.60	1,842.38	33.766	SF
Waste Management 26KD (PR) - Wellbore #1 - MWD Su	9,638.59	6,990.76	647.62	579.88	9.560	CC, ES, SF
Waste Management D 26-25 (SI) - Wellbore #1 - Gyro S	10,984.33	6,866.75	460.01	390.24	6.593	CC, ES
Waste Management D 26-25 (SI) - Wellbore #1 - Gyro S	11,000.00	6,867.08	460.28	390.37	6.584	SF
Waste Mangement 26JD (PR) - Wellbore #1 - MWD Surv	7,174.43	6,932.05	665.81	613.82	12.805	CC, ES, SF

Noble Energy, Inc.

Anticollision Summary Report

Company:	Northern Region - DJ Basin	**Local Co-ordinate Reference:**	Well Guttersen D35-760
Project:	Mustang	**TVD Reference:**	KB @ 4859.00ft
Reference Site:	D Section 23	**MD Reference:**	KB @ 4859.00ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Guttersen D35-760	**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 35						
UPRR 1 (DA) - Wellbore #1 - No Surveys	12,985.40	6,850.53	1,301.77	1,104.05	6.584	CC
UPRR 1 (DA) - Wellbore #1 - No Surveys	13,000.00	6,850.28	1,301.85	1,104.02	6.581	ES, SF
Waste Management 22-35 (SI) - Wellbore #1 - Gyro Surv	14,380.92	6,821.08	83.71	-11.40	0.880	Level 1, CC, ES, SF
Waste Management 31-35 (SI) - Wellbore #1 - Gyro Surv	12,864.76	6,827.28	1,107.12	1,023.94	13.310	CC, ES
Waste Management 31-35 (SI) - Wellbore #1 - Gyro Surv	12,900.00	6,826.42	1,107.68	1,024.30	13.285	SF
Waste Management 41-35 (SI) - Wellbore #1 - Gyro Surv	12,982.78	6,816.37	2,675.39	2,591.02	31.711	CC
Waste Management 41-35 (SI) - Wellbore #1 - Gyro Surv	13,000.00	6,815.96	2,675.44	2,590.96	31.667	ES
Waste Management 41-35 (SI) - Wellbore #1 - Gyro Surv	13,400.00	6,806.33	2,707.71	2,621.03	31.239	SF
Waste Management D 35-15 (PR) - Wellbore #1 - Gyro S	17,063.76	6,753.87	1,235.86	1,119.93	10.660	CC, ES
Waste Management D 35-15 (PR) - Wellbore #1 - Gyro S	17,100.00	6,753.27	1,236.39	1,120.27	10.647	SF
Waste Management USX D 35-11 (SI) - Wellbore #1 - Gy	15,706.94	6,795.23	20.98	-84.37	0.199	Level 1, CC, ES, SF
Waste Management USX D 35-14 (SI) - Wellbore #1 - Nc	16,754.88	6,773.15	86.91	-138.62	0.385	Level 1, CC, ES, SF
Waste Management USX D 35-7 (PR) - Wellbore #1 - Gy	14,227.32	6,789.31	1,289.68	1,195.90	13.752	CC, ES
Waste Management USX D 35-7 (PR) - Wellbore #1 - Gy	14,300.00	6,787.23	1,291.72	1,197.56	13.718	SF
Waste Management USX D 35-9 (SI) - Wellbore #1 - No	15,734.69	7,559.00	3,247.61	3,046.29	16.132	CC, ES
Waste Management USX D 35-9 (SI) - Wellbore #1 - No	16,100.00	7,559.00	3,268.09	3,064.15	16.025	SF
Waste Services 21-35 (PR) - Wellbore #1 - Gyro Surveys	12,791.16	6,837.42	142.63	59.64	1.719	CC, ES, SF

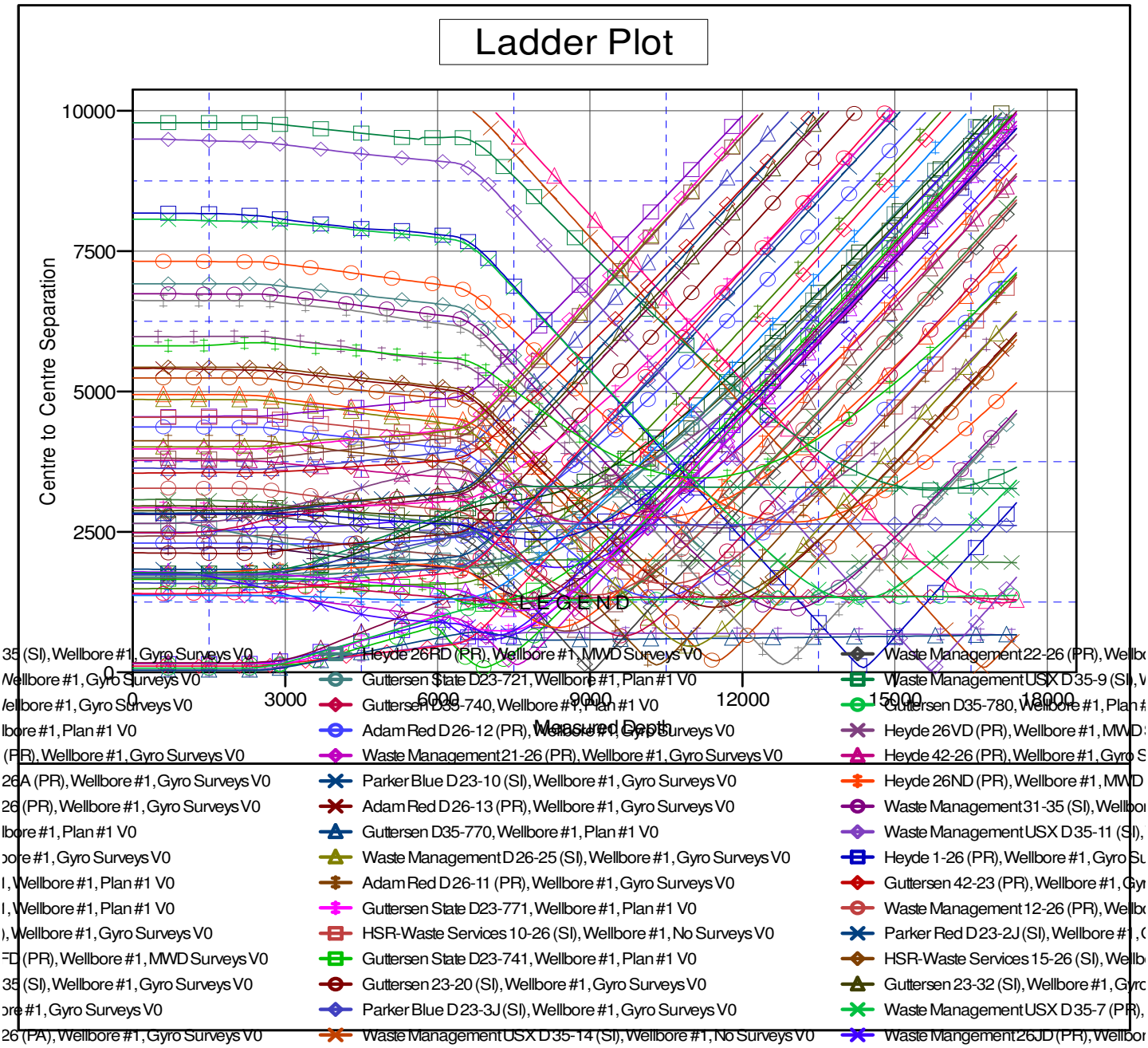
Noble Energy, Inc.

Anticollision Summary Report

Company:	Northern Region - DJ Basin	**Local Co-ordinate Reference:**	Well Guttersen D35-760
Project:	Mustang	**TVD Reference:**	KB @ 4859.00ft
Reference Site:	D Section 23	**MD Reference:**	KB @ 4859.00ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Guttersen D35-760	**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 KB @ 4859.00ft
Offset Depths are relative to Offset Datum
Central Meridian is -105.5000000

Coordinates are relative to: Guttersen D35-760
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 0.63°



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Anticollision Summary Report

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Reference Depths are relative to KB @ 4859.00ft	Coordinates are relative to: Guttersen D35-760
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: 0.63°