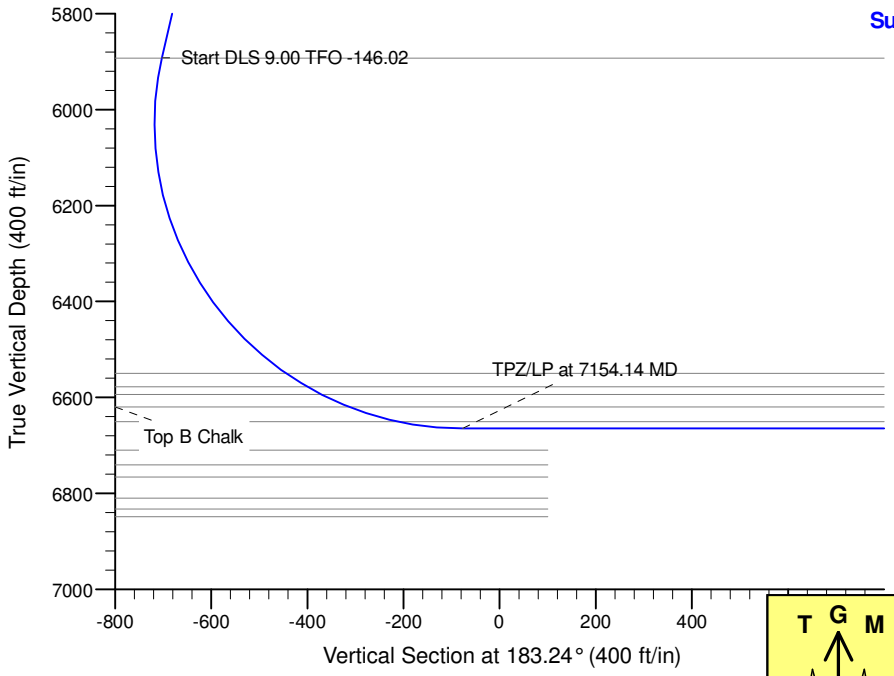
Project: Mustang
Site: D Section 01
Well: Guttersen D12-775
Wellbore: Wellbore #1
Design: Plan #1

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

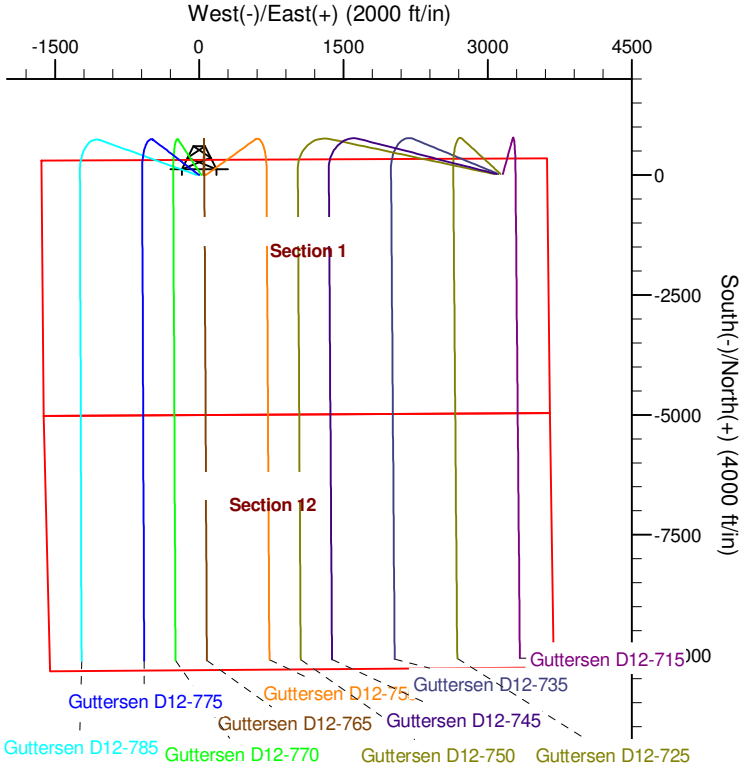
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	2400.00	0.00	0.00	2400.00	0.00	0.00	0.00	0.00	0.00	
3	3186.32	15.73	326.91	3176.49	89.84	-58.55	2.00	326.91	-86.39	
4	6008.11	15.73	326.91	5892.65	730.60	-476.16	0.00	0.00	-702.56	
5	7154.14	90.00	179.88	6665.00	110.41	-593.27	9.00	-146.02	-76.75	TPZ Guttersen D12-775
6	17387.70	90.00	179.88	6665.00	-10123.13	-572.26	0.00	0.00	10139.29	BHL Guttersen D12-775

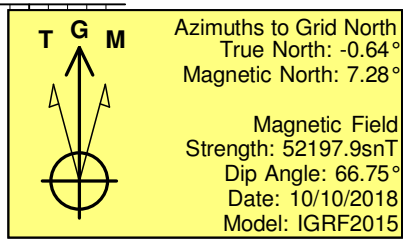


Surface:316' FNL,1640' FWL, Sec.1

TPZ: 200' FNL, 1047' FWL, Sec.1

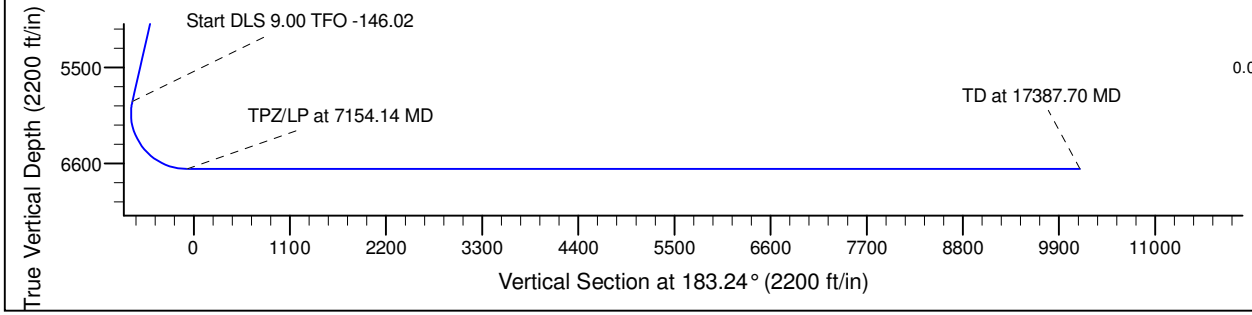
BHL: 200' FSL, 1001' FWL, Sec.12





Azimuths to Grid North
True North: -0.64°
Magnetic North: 7.28°

Magnetic Field
Strength: 52197.9snT
Dip Angle: 66.75°
Date: 10/10/2018
Model: IGRF2015



WELL DETAILS: Guttersen D12-775

	Northing	Easting	Latitude	Longitude
4745.00	1339437.53	3278252.25	40.2608610	-104.5029520

Plan: Plan #1 (Guttersen D12-775/Wellbore #1)

Created By: Colby Baxter Date: 10:06, October 11 2018

Checked: _____ Date: _____

Reviewed: _____ Date: _____

Approved: _____ Date: _____

Northern Region - DJ Basin

Mustang
D Section 01
Guttersen D12-775

Wellbore #1

Plan: Plan #1

Standard Survey Report

11 October, 2018

Noble Energy, Inc.

Survey Report

Company:	Northern Region - DJ Basin	**Local Co-ordinate Reference:**	Well Guttersen D12-775
Project:	Mustang	**TVD Reference:**	KB @ 4775.00ft
Site:	D Section 01	**MD Reference:**	KB @ 4775.00ft
Well:	Guttersen D12-775	**North Reference:**	Grid
Wellbore:	Wellbore #1	**Survey Calculation Method:**	Minimum Curvature
Design:	Plan #1	**Database:**	EDMP

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 01				
Site Position:		**Northing:**	1,336,284.99 usft	**Latitude:**	40.2522405
From:	Map	**Easting:**	3,277,182.91 usft	**Longitude:**	-104.5069099
Position Uncertainty:	0.00 ft	**Slot Radius:**	13.200 in	**Grid Convergence:**	0.64 °

Well	Guttersen D12-775					
Well Position	**+N/-S**	0.00 ft	**Northing:**	1,339,437.53 usft	**Latitude:**	40.2608610
	+E/-W	0.00 ft	**Easting:**	3,278,252.25 usft	**Longitude:**	-104.5029520
Position Uncertainty		0.00 ft	**Wellhead Elevation:**	ft	**Ground Level:**	4,745.00 ft

Wellbore	Wellbore #1			
Magnetics	**Model Name**	**Sample Date**	**Declination (°)**	**Dip Angle (°)**	**Field Strength (nT)**
	IGRF2015	10/10/2018	7.92	66.75	52,197.88147677

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	183.24

Survey Tool Program **Date** 10/11/2018

From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.00	17,387.70	Plan #1 (Wellbore #1)	2_MWD+IFR1	A005Mb: IFR declination correction only

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

Noble Energy, Inc.

Survey Report

Company:	Northern Region - DJ Basin	**Local Co-ordinate Reference:**	Well Guttersen D12-775
Project:	Mustang	**TVD Reference:**	KB @ 4775.00ft
Site:	D Section 01	**MD Reference:**	KB @ 4775.00ft
Well:	Guttersen D12-775	**North Reference:**	Grid
Wellbore:	Wellbore #1	**Survey Calculation Method:**	Minimum Curvature
Design:	Plan #1	**Database:**	EDMP

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)
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
2,500.00	2.00	326.91	2,499.98	1.46	-0.95	-1.41	2.00	2.00	0.00
2,600.00	4.00	326.91	2,599.84	5.85	-3.81	-5.62	2.00	2.00	0.00
2,700.00	6.00	326.91	2,699.45	13.15	-8.57	-12.64	2.00	2.00	0.00
2,800.00	8.00	326.91	2,798.70	23.36	-15.22	-22.46	2.00	2.00	0.00
2,900.00	10.00	326.91	2,897.47	36.46	-23.76	-35.06	2.00	2.00	0.00
3,000.00	12.00	326.91	2,995.62	52.45	-34.18	-50.43	2.00	2.00	0.00
3,100.00	14.00	326.91	3,093.06	71.29	-46.46	-68.56	2.00	2.00	0.00
3,186.32	15.73	326.91	3,176.49	89.84	-58.55	-86.39	2.00	2.00	0.00
3,200.00	15.73	326.91	3,189.65	92.95	-60.58	-89.38	0.00	0.00	0.00
3,300.00	15.73	326.91	3,285.91	115.65	-75.38	-111.22	0.00	0.00	0.00
3,400.00	15.73	326.91	3,382.17	138.36	-90.18	-133.05	0.00	0.00	0.00
3,500.00	15.73	326.91	3,478.42	161.07	-104.98	-154.89	0.00	0.00	0.00
3,600.00	15.73	326.91	3,574.68	183.78	-119.78	-176.72	0.00	0.00	0.00
3,700.00	15.73	326.91	3,670.94	206.48	-134.58	-198.56	0.00	0.00	0.00
3,800.00	15.73	326.91	3,767.19	229.19	-149.37	-220.40	0.00	0.00	0.00
3,900.00	15.73	326.91	3,863.45	251.90	-164.17	-242.23	0.00	0.00	0.00
4,000.00	15.73	326.91	3,959.71	274.61	-178.97	-264.07	0.00	0.00	0.00
4,100.00	15.73	326.91	4,055.96	297.31	-193.77	-285.90	0.00	0.00	0.00
4,200.00	15.73	326.91	4,152.22	320.02	-208.57	-307.74	0.00	0.00	0.00
4,300.00	15.73	326.91	4,248.48	342.73	-223.37	-329.58	0.00	0.00	0.00
4,400.00	15.73	326.91	4,344.73	365.44	-238.17	-351.41	0.00	0.00	0.00
4,500.00	15.73	326.91	4,440.99	388.14	-252.97	-373.25	0.00	0.00	0.00
4,600.00	15.73	326.91	4,537.25	410.85	-267.77	-395.08	0.00	0.00	0.00
4,700.00	15.73	326.91	4,633.50	433.56	-282.57	-416.92	0.00	0.00	0.00
4,800.00	15.73	326.91	4,729.76	456.27	-297.37	-438.76	0.00	0.00	0.00
4,900.00	15.73	326.91	4,826.02	478.97	-312.17	-460.59	0.00	0.00	0.00
5,000.00	15.73	326.91	4,922.27	501.68	-326.97	-482.43	0.00	0.00	0.00
5,100.00	15.73	326.91	5,018.53	524.39	-341.77	-504.26	0.00	0.00	0.00
5,200.00	15.73	326.91	5,114.79	547.10	-356.57	-526.10	0.00	0.00	0.00

Noble Energy, Inc.

Survey Report

Company:	Northern Region - DJ Basin	**Local Co-ordinate Reference:**	Well Guttersen D12-775
Project:	Mustang	**TVD Reference:**	KB @ 4775.00ft
Site:	D Section 01	**MD Reference:**	KB @ 4775.00ft
Well:	Guttersen D12-775	**North Reference:**	Grid
Wellbore:	Wellbore #1	**Survey Calculation Method:**	Minimum Curvature
Design:	Plan #1	**Database:**	EDMP

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)
5,300.00	15.73	326.91	5,211.04	569.80	-371.37	-547.94	0.00	0.00	0.00
5,400.00	15.73	326.91	5,307.30	592.51	-386.17	-569.77	0.00	0.00	0.00
5,500.00	15.73	326.91	5,403.56	615.22	-400.97	-591.61	0.00	0.00	0.00
5,600.00	15.73	326.91	5,499.81	637.93	-415.77	-613.44	0.00	0.00	0.00
5,700.00	15.73	326.91	5,596.07	660.63	-430.56	-635.28	0.00	0.00	0.00
5,800.00	15.73	326.91	5,692.33	683.34	-445.36	-657.12	0.00	0.00	0.00
5,900.00	15.73	326.91	5,788.58	706.05	-460.16	-678.95	0.00	0.00	0.00
6,000.00	15.73	326.91	5,884.84	728.76	-474.96	-700.79	0.00	0.00	0.00
6,008.11	15.73	326.91	5,892.65	730.60	-476.16	-702.56	0.00	0.00	0.00
6,100.00	9.97	299.25	5,982.28	744.94	-489.93	-716.11	9.00	-6.26	-30.10
6,200.00	9.63	244.41	6,081.02	745.56	-505.07	-715.87	9.00	-0.34	-54.84
6,300.00	15.71	212.89	6,178.65	730.55	-520.00	-700.03	9.00	6.08	-31.52
6,400.00	23.70	200.32	6,272.75	700.27	-534.36	-668.99	9.00	7.99	-12.57
6,500.00	32.21	193.97	6,361.02	655.47	-547.80	-623.50	9.00	8.50	-6.35
6,600.00	40.91	190.07	6,441.29	597.25	-559.98	-564.69	9.00	8.70	-3.89
6,700.00	49.70	187.35	6,511.56	527.05	-570.60	-494.01	9.00	8.79	-2.72
6,800.00	58.54	185.26	6,570.12	446.60	-579.41	-413.18	9.00	8.84	-2.09
6,900.00	67.41	183.54	6,615.52	357.87	-586.19	-324.22	9.00	8.87	-1.72
7,000.00	76.29	182.03	6,646.64	263.06	-590.77	-229.30	9.00	8.88	-1.51
7,100.00	85.18	180.62	6,662.73	164.49	-593.03	-130.76	9.00	8.89	-1.40
7,154.14	90.00	179.88	6,665.00	110.41	-593.27	-76.75	9.00	8.90	-1.37
7,200.00	90.00	179.88	6,665.00	64.55	-593.17	-30.97	0.00	0.00	0.00
7,300.00	90.00	179.88	6,665.00	-35.45	-592.97	68.86	0.00	0.00	0.00
7,400.00	90.00	179.88	6,665.00	-135.45	-592.76	168.69	0.00	0.00	0.00
7,500.00	90.00	179.88	6,665.00	-235.45	-592.56	268.51	0.00	0.00	0.00
7,600.00	90.00	179.88	6,665.00	-335.45	-592.35	368.34	0.00	0.00	0.00
7,700.00	90.00	179.88	6,665.00	-435.45	-592.15	468.17	0.00	0.00	0.00
7,800.00	90.00	179.88	6,665.00	-535.45	-591.94	568.00	0.00	0.00	0.00
7,900.00	90.00	179.88	6,665.00	-635.44	-591.73	667.83	0.00	0.00	0.00
8,000.00	90.00	179.88	6,665.00	-735.44	-591.53	767.66	0.00	0.00	0.00
8,100.00	90.00	179.88	6,665.00	-835.44	-591.32	867.49	0.00	0.00	0.00
8,200.00	90.00	179.88	6,665.00	-935.44	-591.12	967.32	0.00	0.00	0.00
8,300.00	90.00	179.88	6,665.00	-1,035.44	-590.91	1,067.14	0.00	0.00	0.00
8,400.00	90.00	179.88	6,665.00	-1,135.44	-590.71	1,166.97	0.00	0.00	0.00
8,500.00	90.00	179.88	6,665.00	-1,235.44	-590.50	1,266.80	0.00	0.00	0.00
8,600.00	90.00	179.88	6,665.00	-1,335.44	-590.30	1,366.63	0.00	0.00	0.00
8,700.00	90.00	179.88	6,665.00	-1,435.44	-590.09	1,466.46	0.00	0.00	0.00
8,800.00	90.00	179.88	6,665.00	-1,535.44	-589.89	1,566.29	0.00	0.00	0.00
8,900.00	90.00	179.88	6,665.00	-1,635.44	-589.68	1,666.12	0.00	0.00	0.00
9,000.00	90.00	179.88	6,665.00	-1,735.44	-589.48	1,765.95	0.00	0.00	0.00
9,100.00	90.00	179.88	6,665.00	-1,835.44	-589.27	1,865.78	0.00	0.00	0.00
9,200.00	90.00	179.88	6,665.00	-1,935.44	-589.07	1,965.60	0.00	0.00	0.00
9,300.00	90.00	179.88	6,665.00	-2,035.44	-588.86	2,065.43	0.00	0.00	0.00

Noble Energy, Inc.

Survey Report

Company:	Northern Region - DJ Basin	**Local Co-ordinate Reference:**	Well Guttersen D12-775
Project:	Mustang	**TVD Reference:**	KB @ 4775.00ft
Site:	D Section 01	**MD Reference:**	KB @ 4775.00ft
Well:	Guttersen D12-775	**North Reference:**	Grid
Wellbore:	Wellbore #1	**Survey Calculation Method:**	Minimum Curvature
Design:	Plan #1	**Database:**	EDMP

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)
9,400.00	90.00	179.88	6,665.00	-2,135.44	-588.66	2,165.26	0.00	0.00	0.00
9,500.00	90.00	179.88	6,665.00	-2,235.44	-588.45	2,265.09	0.00	0.00	0.00
9,600.00	90.00	179.88	6,665.00	-2,335.44	-588.24	2,364.92	0.00	0.00	0.00
9,700.00	90.00	179.88	6,665.00	-2,435.44	-588.04	2,464.75	0.00	0.00	0.00
9,800.00	90.00	179.88	6,665.00	-2,535.44	-587.83	2,564.58	0.00	0.00	0.00
9,900.00	90.00	179.88	6,665.00	-2,635.44	-587.63	2,664.41	0.00	0.00	0.00
10,000.00	90.00	179.88	6,665.00	-2,735.44	-587.42	2,764.23	0.00	0.00	0.00
10,100.00	90.00	179.88	6,665.00	-2,835.44	-587.22	2,864.06	0.00	0.00	0.00
10,200.00	90.00	179.88	6,665.00	-2,935.44	-587.01	2,963.89	0.00	0.00	0.00
10,300.00	90.00	179.88	6,665.00	-3,035.44	-586.81	3,063.72	0.00	0.00	0.00
10,400.00	90.00	179.88	6,665.00	-3,135.44	-586.60	3,163.55	0.00	0.00	0.00
10,500.00	90.00	179.88	6,665.00	-3,235.44	-586.40	3,263.38	0.00	0.00	0.00
10,600.00	90.00	179.88	6,665.00	-3,335.44	-586.19	3,363.21	0.00	0.00	0.00
10,700.00	90.00	179.88	6,665.00	-3,435.44	-585.99	3,463.04	0.00	0.00	0.00
10,800.00	90.00	179.88	6,665.00	-3,535.44	-585.78	3,562.86	0.00	0.00	0.00
10,900.00	90.00	179.88	6,665.00	-3,635.44	-585.58	3,662.69	0.00	0.00	0.00
11,000.00	90.00	179.88	6,665.00	-3,735.44	-585.37	3,762.52	0.00	0.00	0.00
11,100.00	90.00	179.88	6,665.00	-3,835.44	-585.17	3,862.35	0.00	0.00	0.00
11,200.00	90.00	179.88	6,665.00	-3,935.44	-584.96	3,962.18	0.00	0.00	0.00
11,300.00	90.00	179.88	6,665.00	-4,035.44	-584.75	4,062.01	0.00	0.00	0.00
11,400.00	90.00	179.88	6,665.00	-4,135.44	-584.55	4,161.84	0.00	0.00	0.00
11,500.00	90.00	179.88	6,665.00	-4,235.44	-584.34	4,261.67	0.00	0.00	0.00
11,600.00	90.00	179.88	6,665.00	-4,335.44	-584.14	4,361.50	0.00	0.00	0.00
11,700.00	90.00	179.88	6,665.00	-4,435.44	-583.93	4,461.32	0.00	0.00	0.00
11,800.00	90.00	179.88	6,665.00	-4,535.44	-583.73	4,561.15	0.00	0.00	0.00
11,900.00	90.00	179.88	6,665.00	-4,635.44	-583.52	4,660.98	0.00	0.00	0.00
12,000.00	90.00	179.88	6,665.00	-4,735.44	-583.32	4,760.81	0.00	0.00	0.00
12,100.00	90.00	179.88	6,665.00	-4,835.44	-583.11	4,860.64	0.00	0.00	0.00
12,200.00	90.00	179.88	6,665.00	-4,935.44	-582.91	4,960.47	0.00	0.00	0.00
12,300.00	90.00	179.88	6,665.00	-5,035.44	-582.70	5,060.30	0.00	0.00	0.00
12,400.00	90.00	179.88	6,665.00	-5,135.44	-582.50	5,160.13	0.00	0.00	0.00
12,500.00	90.00	179.88	6,665.00	-5,235.44	-582.29	5,259.95	0.00	0.00	0.00
12,600.00	90.00	179.88	6,665.00	-5,335.44	-582.09	5,359.78	0.00	0.00	0.00
12,700.00	90.00	179.88	6,665.00	-5,435.43	-581.88	5,459.61	0.00	0.00	0.00
12,800.00	90.00	179.88	6,665.00	-5,535.43	-581.68	5,559.44	0.00	0.00	0.00
12,900.00	90.00	179.88	6,665.00	-5,635.43	-581.47	5,659.27	0.00	0.00	0.00
13,000.00	90.00	179.88	6,665.00	-5,735.43	-581.26	5,759.10	0.00	0.00	0.00
13,100.00	90.00	179.88	6,665.00	-5,835.43	-581.06	5,858.93	0.00	0.00	0.00
13,200.00	90.00	179.88	6,665.00	-5,935.43	-580.85	5,958.76	0.00	0.00	0.00
13,300.00	90.00	179.88	6,665.00	-6,035.43	-580.65	6,058.58	0.00	0.00	0.00
13,400.00	90.00	179.88	6,665.00	-6,135.43	-580.44	6,158.41	0.00	0.00	0.00
13,500.00	90.00	179.88	6,665.00	-6,235.43	-580.24	6,258.24	0.00	0.00	0.00
13,600.00	90.00	179.88	6,665.00	-6,335.43	-580.03	6,358.07	0.00	0.00	0.00

Company:	Northern Region - DJ Basin	**Local Co-ordinate Reference:**	Well Guttersen D12-775
Project:	Mustang	**TVD Reference:**	KB @ 4775.00ft
Site:	D Section 01	**MD Reference:**	KB @ 4775.00ft
Well:	Guttersen D12-775	**North Reference:**	Grid
Wellbore:	Wellbore #1	**Survey Calculation Method:**	Minimum Curvature
Design:	Plan #1	**Database:**	EDMP

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)
13,700.00	90.00	179.88	6,665.00	-6,435.43	-579.83	6,457.90	0.00	0.00	0.00
13,800.00	90.00	179.88	6,665.00	-6,535.43	-579.62	6,557.73	0.00	0.00	0.00
13,900.00	90.00	179.88	6,665.00	-6,635.43	-579.42	6,657.56	0.00	0.00	0.00
14,000.00	90.00	179.88	6,665.00	-6,735.43	-579.21	6,757.39	0.00	0.00	0.00
14,100.00	90.00	179.88	6,665.00	-6,835.43	-579.01	6,857.22	0.00	0.00	0.00
14,200.00	90.00	179.88	6,665.00	-6,935.43	-578.80	6,957.04	0.00	0.00	0.00
14,300.00	90.00	179.88	6,665.00	-7,035.43	-578.60	7,056.87	0.00	0.00	0.00
14,400.00	90.00	179.88	6,665.00	-7,135.43	-578.39	7,156.70	0.00	0.00	0.00
14,500.00	90.00	179.88	6,665.00	-7,235.43	-578.19	7,256.53	0.00	0.00	0.00
14,600.00	90.00	179.88	6,665.00	-7,335.43	-577.98	7,356.36	0.00	0.00	0.00
14,700.00	90.00	179.88	6,665.00	-7,435.43	-577.78	7,456.19	0.00	0.00	0.00
14,800.00	90.00	179.88	6,665.00	-7,535.43	-577.57	7,556.02	0.00	0.00	0.00
14,900.00	90.00	179.88	6,665.00	-7,635.43	-577.36	7,655.85	0.00	0.00	0.00
15,000.00	90.00	179.88	6,665.00	-7,735.43	-577.16	7,755.67	0.00	0.00	0.00
15,100.00	90.00	179.88	6,665.00	-7,835.43	-576.95	7,855.50	0.00	0.00	0.00
15,200.00	90.00	179.88	6,665.00	-7,935.43	-576.75	7,955.33	0.00	0.00	0.00
15,300.00	90.00	179.88	6,665.00	-8,035.43	-576.54	8,055.16	0.00	0.00	0.00
15,400.00	90.00	179.88	6,665.00	-8,135.43	-576.34	8,154.99	0.00	0.00	0.00
15,500.00	90.00	179.88	6,665.00	-8,235.43	-576.13	8,254.82	0.00	0.00	0.00
15,600.00	90.00	179.88	6,665.00	-8,335.43	-575.93	8,354.65	0.00	0.00	0.00
15,700.00	90.00	179.88	6,665.00	-8,435.43	-575.72	8,454.48	0.00	0.00	0.00
15,800.00	90.00	179.88	6,665.00	-8,535.43	-575.52	8,554.31	0.00	0.00	0.00
15,900.00	90.00	179.88	6,665.00	-8,635.43	-575.31	8,654.13	0.00	0.00	0.00
16,000.00	90.00	179.88	6,665.00	-8,735.43	-575.11	8,753.96	0.00	0.00	0.00
16,100.00	90.00	179.88	6,665.00	-8,835.43	-574.90	8,853.79	0.00	0.00	0.00
16,200.00	90.00	179.88	6,665.00	-8,935.43	-574.70	8,953.62	0.00	0.00	0.00
16,300.00	90.00	179.88	6,665.00	-9,035.43	-574.49	9,053.45	0.00	0.00	0.00
16,400.00	90.00	179.88	6,665.00	-9,135.43	-574.29	9,153.28	0.00	0.00	0.00
16,500.00	90.00	179.88	6,665.00	-9,235.43	-574.08	9,253.11	0.00	0.00	0.00
16,600.00	90.00	179.88	6,665.00	-9,335.43	-573.87	9,352.94	0.00	0.00	0.00
16,700.00	90.00	179.88	6,665.00	-9,435.43	-573.67	9,452.76	0.00	0.00	0.00
16,800.00	90.00	179.88	6,665.00	-9,535.43	-573.46	9,552.59	0.00	0.00	0.00
16,900.00	90.00	179.88	6,665.00	-9,635.43	-573.26	9,652.42	0.00	0.00	0.00
17,000.00	90.00	179.88	6,665.00	-9,735.43	-573.05	9,752.25	0.00	0.00	0.00
17,100.00	90.00	179.88	6,665.00	-9,835.43	-572.85	9,852.08	0.00	0.00	0.00
17,200.00	90.00	179.88	6,665.00	-9,935.43	-572.64	9,951.91	0.00	0.00	0.00
17,300.00	90.00	179.88	6,665.00	-10,035.43	-572.44	10,051.74	0.00	0.00	0.00
17,387.70	90.00	179.88	6,665.00	-10,123.13	-572.26	10,139.29	0.00	0.00	0.00

Noble Energy, Inc.

Survey Report

Company:	Northern Region - DJ Basin	**Local Co-ordinate Reference:**	Well Guttersen D12-775
Project:	Mustang	**TVD Reference:**	KB @ 4775.00ft
Site:	D Section 01	**MD Reference:**	KB @ 4775.00ft
Well:	Guttersen D12-775	**North Reference:**	Grid
Wellbore:	Wellbore #1	**Survey Calculation Method:**	Minimum Curvature
Design:	Plan #1	**Database:**	EDMP

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
SHL Guttersen D12-775 - plan hits target center - Point	0.00	0.00	0.00	0.00	0.00	1,339,437.53	3,278,252.25	40.2608610	-104.5029520
KOP Guttersen D12-775 - plan hits target center - Point	0.00	0.00	5,892.65	730.60	-476.16	1,340,168.13	3,277,776.09	40.2628811	-104.5046287
BHL Guttersen D12-775 - plan hits target center - Point	0.00	0.00	6,665.00	-10,123.13	-572.26	1,329,314.43	3,277,680.00	40.2330915	-104.5054092
TPZ Guttersen D12-775 - plan hits target center - Point	0.00	0.00	6,665.00	110.41	-593.27	1,339,547.94	3,277,658.99	40.2611824	-104.5050732

Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
336.00	336.00	Pierre			
610.00	610.00	Upper Pierre Aquifer Top			
1,544.00	1,544.00	Upper Pierre Aquifer Base			
2,665.38	2,665.00	Parkman			
4,005.50	3,965.00	Sussex			
4,876.09	4,803.00	Shannon			
6,008.48	5,893.00	Teepee Buttes			
6,763.15	6,550.00	Sharon Springs			
6,815.40	6,578.00	Top A Chalk			
6,848.81	6,594.00	Top A Marl			
6,911.92	6,620.00	Top B Chalk			
7,019.60	6,651.00	Top B Marl			

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates +N/-S (ft)	Local Coordinates +E/-W (ft)	Comment
2400	2400	0	0	Start Build 2.00
6008	5893	731	-476	Start DLS 9.00 TFO -146.02
7154	6665	110	-593	TPZ/LP at 7154.14 MD
17,388	6665	-10,123	-572	TD at 17387.70 MD

Checked By: _____ Approved By: _____ Date: _____

Northern Region - DJ Basin

Mustang
D Section 01
Guttersen D12-775

Wellbore #1
Plan #1

Anticollision Summary Report

11 October, 2018

Noble Energy, Inc.

Anticollision Summary Report

Company:	Northern Region - DJ Basin	**Local Co-ordinate Reference:**	Well Guttersen D12-775
Project:	Mustang	**TVD Reference:**	KB @ 4775.00ft
Reference Site:	D Section 01	**MD Reference:**	KB @ 4775.00ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Guttersen D12-775	**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** 10/11/2018

From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.00	17,387.70	Plan #1 (Wellbore #1)	2_MWD+IFR1	A005Mb: IFR declination correction only

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
C Section 36						
Ava State C36-18 (SI) - Wellbore #1 - No Surveys	6,112.90	5,955.99	3,876.54	3,617.44	14.962	CC
Ava State C36-18 (SI) - Wellbore #1 - No Surveys	6,150.00	6,007.37	3,877.54	3,616.25	14.840	ES
Ava State C36-18 (SI) - Wellbore #1 - No Surveys	6,500.00	6,322.02	3,981.69	3,706.91	14.491	SF
Ava State C36-20 (PR) - Wellbore #1 - No Surveys	6,146.82	5,979.49	2,012.91	1,753.09	7.747	CC
Ava State C36-20 (PR) - Wellbore #1 - No Surveys	6,150.00	5,982.63	2,012.92	1,752.96	7.743	ES
Ava State C36-20 (PR) - Wellbore #1 - No Surveys	6,350.00	6,177.29	2,045.16	1,776.81	7.621	SF
Ava State C36-21 (SI) - Wellbore #1 - No Surveys	6,097.26	5,935.57	2,692.79	2,434.46	10.424	CC
Ava State C36-21 (SI) - Wellbore #1 - No Surveys	6,150.00	5,987.63	2,694.69	2,434.09	10.340	ES
Ava State C36-21 (SI) - Wellbore #1 - No Surveys	6,400.00	6,228.75	2,753.88	2,482.94	10.164	SF
Ava State C36-22 (SI) - Wellbore #1 - No Surveys	6,035.91	5,903.46	3,459.71	3,202.81	13.467	CC
Ava State C36-22 (SI) - Wellbore #1 - No Surveys	6,100.00	5,959.28	3,461.80	3,202.40	13.346	ES
Ava State C36-22 (SI) - Wellbore #1 - No Surveys	6,450.00	6,305.24	3,542.74	3,268.51	12.919	SF
Ava State C36-24 (PR) - Wellbore #1 - No Surveys	5,658.05	5,521.69	1,739.91	1,499.90	7.249	CC
Ava State C36-24 (PR) - Wellbore #1 - No Surveys	6,050.00	5,900.75	1,743.86	1,487.04	6.790	ES
Ava State C36-24 (PR) - Wellbore #1 - No Surveys	6,350.00	6,207.71	1,793.48	1,523.43	6.641	SF
Ava State C36-31 (PR) - Wellbore #1 - No Surveys	6,181.97	6,004.23	3,576.95	3,316.39	13.728	CC
Ava State C36-31 (PR) - Wellbore #1 - No Surveys	6,200.00	6,022.02	3,577.20	3,315.87	13.688	ES
Ava State C36-31 (PR) - Wellbore #1 - No Surveys	6,500.00	6,302.02	3,652.42	3,379.12	13.364	SF
Booth CC31-68-1HN (PR) - Original Drilling - Original Dri	6,050.99	5,973.81	5,551.17	5,507.62	127.455	CC, ES
Booth CC31-68-1HN (PR) - Original Drilling - Original Dri	6,300.00	6,033.00	5,588.98	5,544.43	125.449	SF
Booth State C36-69HN (PR) - Original Drilling - Original D	6,236.84	10,342.19	4,806.10	4,687.47	40.514	CC
Booth State C36-69HN (PR) - Original Drilling - Original D	6,250.00	10,345.53	4,806.25	4,687.46	40.457	ES
Booth State C36-69HN (PR) - Original Drilling - Original D	6,400.00	10,362.57	4,829.55	4,709.47	40.219	SF
Booth State CC30-79HN (PR) - Original Drilling - Orignal	979.93	976.94	6,243.22	6,238.90	1,445.016	CC
Booth State CC30-79HN (PR) - Original Drilling - Orignal	1,500.00	1,454.17	6,244.88	6,237.04	796.747	ES
Booth State CC30-79HN (PR) - Original Drilling - Orignal	6,450.00	6,031.00	6,550.50	6,507.56	152.581	SF
Booth State CC31-69HN (PR) - Original Drilling - Origina	1,158.15	1,154.19	6,272.99	6,267.43	1,128.966	CC
Booth State CC31-69HN (PR) - Original Drilling - Origina	1,200.96	1,197.00	6,273.26	6,267.40	1,071.235	ES
Booth State CC31-69HN (PR) - Original Drilling - Origina	6,400.00	6,033.00	6,475.71	6,432.72	150.642	SF
State 36-04I4 (PR) - Wellbore #1 - No Surveys	6,156.31	5,986.87	3,611.35	3,351.31	13.888	CC
State 36-04I4 (PR) - Wellbore #1 - No Surveys	6,200.00	6,030.02	3,612.85	3,350.94	13.794	ES
State 36-04I4 (PR) - Wellbore #1 - No Surveys	6,500.00	6,310.02	3,702.23	3,428.37	13.519	SF
State 36-07I4 (SI) - Wellbore #1 - No Surveys	6,087.01	5,938.50	3,463.06	3,204.61	13.400	CC
State 36-07I4 (SI) - Wellbore #1 - No Surveys	6,100.00	5,951.28	3,463.17	3,204.16	13.371	ES
State 36-07I4 (SI) - Wellbore #1 - No Surveys	6,500.00	6,330.02	3,569.66	3,294.42	12.969	SF
State 36-10I4 (SI) - Wellbore #1 - No Surveys	6,036.72	5,885.32	2,474.17	2,217.98	9.658	CC
State 36-10I4 (SI) - Wellbore #1 - No Surveys	6,100.00	5,947.28	2,476.21	2,217.30	9.564	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 Guttersen D12-775
Project:	Mustang	**TVD Reference:**	KB @ 4775.00ft
Reference Site:	D Section 01	**MD Reference:**	KB @ 4775.00ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Guttersen D12-775	**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
C Section 36						
State 36-10I4 (SI) - Wellbore #1 - No Surveys	6,350.00	6,208.71	2,522.65	2,252.52	9.339	SF
State 36-11I4 (PR) - Wellbore #1 - No Surveys	6,096.35	5,932.69	1,583.79	1,325.58	6.134	CC
State 36-11I4 (PR) - Wellbore #1 - No Surveys	6,150.00	5,985.63	1,585.76	1,325.23	6.087	ES
State 36-11I4 (PR) - Wellbore #1 - No Surveys	6,300.00	6,132.65	1,611.70	1,344.83	6.039	SF
State 36-12I4 (PR) - Wellbore #1 - No Surveys	6,196.31	6,046.38	1,634.82	1,372.84	6.240	CC
State 36-12I4 (PR) - Wellbore #1 - No Surveys	6,250.00	6,100.88	1,636.92	1,372.60	6.193	ES
State 36-12I4 (PR) - Wellbore #1 - No Surveys	6,350.00	6,204.71	1,652.08	1,383.31	6.147	SF
State 36-14I4 (PR) - Wellbore #1 - No Surveys	4,565.00	4,459.56	714.22	521.25	3.701	CC
State 36-14I4 (PR) - Wellbore #1 - No Surveys	5,000.00	4,878.27	723.88	512.42	3.423	ES
State 36-14I4 (PR) - Wellbore #1 - No Surveys	6,050.00	5,889.25	819.95	563.95	3.203	SF
State 36-15I4 (PR) - Wellbore #1 - No Surveys	2,963.36	2,915.73	2,377.15	2,252.15	19.017	CC
State 36-15I4 (PR) - Wellbore #1 - No Surveys	4,500.00	4,403.01	2,411.92	2,221.52	12.668	ES
State 36-15I4 (PR) - Wellbore #1 - No Surveys	6,600.00	6,402.71	2,629.67	2,351.32	9.448	SF
State 36-16I4 (PR) - Wellbore #1 - No Surveys	2,400.00	2,401.00	2,854.39	2,751.98	27.872	CC
State 36-16I4 (PR) - Wellbore #1 - No Surveys	2,800.00	2,802.30	2,862.41	2,742.53	23.877	ES
State 36-16I4 (PR) - Wellbore #1 - No Surveys	6,850.00	6,606.46	3,343.67	3,056.70	11.652	SF
State 36-2I4 (SI) - Wellbore #1 - No Surveys	6,103.59	5,942.82	4,576.64	4,318.04	17.698	CC
State 36-2I4 (SI) - Wellbore #1 - No Surveys	6,150.00	5,988.63	4,578.15	4,317.55	17.567	ES
State 36-2I4 (SI) - Wellbore #1 - No Surveys	6,600.00	6,401.71	4,740.00	4,461.81	17.039	SF
State 36-3I4 (SI) - Wellbore #1 - No Surveys	6,134.38	5,963.20	4,158.51	3,899.25	16.040	CC
State 36-3I4 (SI) - Wellbore #1 - No Surveys	6,150.00	5,978.63	4,158.70	3,898.76	15.999	ES
State 36-3I4 (SI) - Wellbore #1 - No Surveys	6,500.00	6,308.02	4,258.75	3,984.73	15.542	SF
State 36-6I4 (PR) - Wellbore #1 - No Surveys	6,128.07	5,952.96	3,175.82	2,916.92	12.267	CC
State 36-6I4 (PR) - Wellbore #1 - No Surveys	6,150.00	5,974.63	3,176.18	2,916.34	12.223	ES
State 36-6I4 (PR) - Wellbore #1 - No Surveys	6,450.00	6,260.76	3,252.92	2,980.82	11.955	SF
State 36-8I4 (SI) - Wellbore #1 - No Surveys	6,047.52	5,918.83	4,627.00	4,369.43	17.964	CC
State 36-8I4 (SI) - Wellbore #1 - No Surveys	6,100.00	5,970.28	4,628.48	4,368.64	17.813	ES
State 36-8I4 (SI) - Wellbore #1 - No Surveys	6,550.00	6,409.71	4,754.51	4,475.89	17.064	SF
State 36-9I4 (PR) - Wellbore #1 - No Surveys	3,804.61	3,767.63	3,465.14	3,302.91	21.359	CC
State 36-9I4 (PR) - Wellbore #1 - No Surveys	5,700.00	5,607.93	3,503.01	3,259.43	14.381	ES
State 36-9I4 (PR) - Wellbore #1 - No Surveys	6,650.00	6,473.79	3,666.29	3,384.92	13.030	SF
State B14-36 (PA) - Wellbore #1 - No Surveys	6,189.28	6,033.45	655.13	393.44	2.503	CC
State B14-36 (PA) - Wellbore #1 - No Surveys	6,200.00	6,044.02	655.22	393.06	2.499	ES
State B14-36 (PA) - Wellbore #1 - No Surveys	6,250.00	6,106.88	657.94	393.10	2.484	SF
State B41-36 (SI) - Wellbore #1 - No Surveys	6,075.59	5,937.28	4,933.74	4,675.35	19.094	CC
State B41-36 (SI) - Wellbore #1 - No Surveys	6,100.00	5,961.28	4,934.11	4,674.66	19.018	ES
State B41-36 (SI) - Wellbore #1 - No Surveys	6,700.00	6,509.44	5,154.45	4,871.66	18.227	SF
State C36-01 (SI) - Wellbore #1 - No Surveys	6,074.72	5,936.43	5,688.62	5,430.27	22.019	CC
State C36-01 (SI) - Wellbore #1 - No Surveys	6,100.00	5,961.28	5,689.01	5,429.57	21.928	ES
State C36-01 (SI) - Wellbore #1 - No Surveys	6,700.00	6,509.44	5,908.89	5,626.10	20.895	SF
State C36-04 (PR) - Wellbore #1 - No Surveys	6,169.90	6,001.30	4,261.94	4,001.43	16.360	CC
State C36-04 (PR) - Wellbore #1 - No Surveys	6,200.00	6,031.02	4,262.65	4,000.84	16.282	ES
State C36-04 (PR) - Wellbore #1 - No Surveys	6,600.00	6,408.71	4,400.79	4,122.97	15.841	SF
State C36-13 (SI) - Wellbore #1 - No Surveys	6,520.07	6,355.84	649.73	373.97	2.356	CC
State C36-13 (SI) - Wellbore #1 - No Surveys	6,550.00	6,380.29	650.15	373.36	2.349	ES
State C36-13 (SI) - Wellbore #1 - No Surveys	6,600.00	6,419.29	652.90	374.47	2.345	SF
State C36-15 (PR) - Wellbore #1 - No Surveys	2,400.00	2,377.00	1,656.76	1,555.31	16.331	CC
State C36-15 (PR) - Wellbore #1 - No Surveys	3,300.00	3,262.91	1,672.67	1,532.57	11.939	ES
State C36-15 (PR) - Wellbore #1 - No Surveys	6,700.00	6,488.56	2,040.07	1,758.17	7.237	SF
State C36-32D (SI) - Wellbore #1 - As Drilled	100.00	83.86	2,190.85	2,190.58	8,075.903	CC
State C36-32D (SI) - Wellbore #1 - As Drilled	500.00	473.85	2,192.16	2,189.78	919.852	ES
State C36-32D (SI) - Wellbore #1 - As Drilled	6,400.00	6,438.15	2,416.52	2,371.58	53.771	SF
State C36-33D (SI) - Wellbore #1 - Original Drilling	6,275.07	6,192.14	1,377.36	1,332.05	30.395	CC, 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 Guttersen D12-775
Project:	Mustang	**TVD Reference:**	KB @ 4775.00ft
Reference Site:	D Section 01	**MD Reference:**	KB @ 4775.00ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Guttersen D12-775	**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
C Section 36						
State C36-33D (SI) - Wellbore #1 - Original Drilling	6,450.00	6,370.99	1,393.41	1,347.09	30.083	SF
State C36-99HZ (PR) - Wellbore #1 - As Drilled	6,343.52	6,836.02	1,284.13	1,238.69	28.254	CC
State C36-99HZ (PR) - Wellbore #1 - As Drilled	6,350.00	6,836.33	1,284.18	1,238.64	28.199	ES
State C36-99HZ (PR) - Wellbore #1 - As Drilled	6,450.00	6,841.18	1,297.34	1,250.57	27.738	SF
State D01-30D (SI) - Wellbore #1 - Original Drilling	7,069.86	7,036.18	1,114.46	1,051.94	17.825	CC, ES
State D01-30D (SI) - Wellbore #1 - Original Drilling	7,200.00	7,041.04	1,123.86	1,060.34	17.691	SF

Noble Energy, Inc.

Anticollision Summary Report

Company:	Northern Region - DJ Basin	**Local Co-ordinate Reference:**	Well Guttersen D12-775
Project:	Mustang	**TVD Reference:**	KB @ 4775.00ft
Reference Site:	D Section 01	**MD Reference:**	KB @ 4775.00ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Guttersen D12-775	**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 01						
Abbey D 1-3 (PR) - Wellbore #1 - No Surveys	2,400.00	2,370.00	470.22	369.04	4.648	CC
Abbey D 1-3 (PR) - Wellbore #1 - No Surveys	2,500.00	2,469.98	471.93	366.40	4.472	ES
Abbey D 1-3 (PR) - Wellbore #1 - No Surveys	7,604.87	6,635.00	918.79	628.38	3.164	SF
Abbey D 1-4 (PR) - Wellbore #1 - No Surveys	7,614.51	6,623.00	409.91	119.93	1.414	Level 3, CC, ES, SF
Abbey D 1-5 (PR) - Wellbore #1 - No Surveys	8,958.77	6,621.00	448.68	150.13	1.503	CC, ES, SF
Abbey D 1-6 (PR) - Wellbore #1 - No Surveys	9,033.09	6,651.00	981.06	680.72	3.267	CC, ES, SF
Abbey D 1-7JI (SI) - Wellbore #1 - No Surveys	8,923.18	6,647.00	2,230.48	1,931.17	7.452	CC, ES
Abbey D 1-7JI (SI) - Wellbore #1 - No Surveys	9,000.00	6,647.00	2,231.80	1,931.90	7.442	SF
Abbey D01-08J1 - Abbey D01-08J1 OH - As-Drilled	2,416.96	2,428.04	3,297.56	3,280.81	196.928	CC, ES
Abbey D01-08J1 - Abbey D01-08J1 OH - As-Drilled	9,900.00	6,609.84	3,775.99	3,711.14	58.232	SF
Abbey D01-08J1 (PR) - Wellbore #1 - No Surveys	2,400.00	2,408.00	3,298.15	3,195.46	32.117	CC
Abbey D01-08J1 (PR) - Wellbore #1 - No Surveys	2,500.00	2,508.02	3,299.65	3,192.60	30.824	ES
Abbey D01-08J1 (PR) - Wellbore #1 - No Surveys	9,000.00	6,657.00	3,565.54	3,265.28	11.875	SF
Abbey D01-18 (SI) - Wellbore #1 - No Surveys	2,400.00	2,375.00	1,349.54	1,248.17	13.313	CC
Abbey D01-18 (SI) - Wellbore #1 - No Surveys	8,300.00	6,640.00	1,480.27	1,185.76	5.026	ES, SF
Abbey D01-19 (TA) - Wellbore #1 - No Surveys	8,547.39	6,638.00	315.10	18.97	1.064	Level 2, CC, ES, SF
Abbey D01-23 (PR) - Wellbore #1 - No Surveys	10,839.99	6,710.00	2,954.43	2,635.55	9.265	CC, ES
Abbey D01-23 (PR) - Wellbore #1 - No Surveys	11,100.00	6,710.00	2,965.85	2,644.65	9.234	SF
Abbey D01-27 (SI) - Wellbore #1 - No Surveys	2,400.00	2,387.00	2,249.40	2,147.55	22.085	CC
Abbey D01-27 (SI) - Wellbore #1 - No Surveys	2,600.00	2,586.84	2,252.94	2,142.38	20.379	ES
Abbey D01-27 (SI) - Wellbore #1 - No Surveys	7,300.00	6,652.00	2,843.38	2,553.44	9.807	SF
Abbey D01-28 (SI) - Wellbore #1 - No Surveys	2,400.00	2,369.00	1,142.88	1,041.75	11.301	CC
Abbey D01-28 (SI) - Wellbore #1 - No Surveys	2,600.00	2,568.84	1,146.50	1,036.67	10.438	ES
Abbey D01-28 (SI) - Wellbore #1 - No Surveys	7,300.00	6,634.00	1,736.79	1,447.57	6.005	SF
Abbey D01-29 (SI) - Wellbore #1 - No Surveys	3,910.87	3,845.91	199.84	34.06	1.205	Level 3, CC
Abbey D01-29 (SI) - Wellbore #1 - No Surveys	7,117.55	6,635.96	259.99	-28.74	0.900	Level 1, ES, SF
Abbey D01-32D - Wellbore #1 - Wellbore #1 - As Drilled	9,512.10	6,787.64	922.05	856.36	14.036	CC, ES
Abbey D01-32D - Wellbore #1 - Wellbore #1 - As Drilled	9,600.00	6,786.70	926.23	859.63	13.908	SF
Guttersen D01-31D (PR) - Guttersen D01-31D OH - As-D	8,264.76	6,745.05	1,122.74	1,066.20	19.857	CC, ES
Guttersen D01-31D (PR) - Guttersen D01-31D OH - As-D	8,300.00	6,743.81	1,123.30	1,066.67	19.838	SF
Guttersen D12-715 - Wellbore #1 - Plan #1	2,309.84	2,326.84	3,158.97	3,142.81	195.539	CC
Guttersen D12-715 - Wellbore #1 - Plan #1	2,400.00	2,414.68	3,158.97	3,142.18	188.111	ES
Guttersen D12-715 - Wellbore #1 - Plan #1	17,387.70	17,394.65	3,908.62	3,668.16	16.255	SF
Guttersen D12-725 - Wellbore #1 - Plan #1	3,015.72	3,389.50	3,096.23	3,073.85	138.325	CC
Guttersen D12-725 - Wellbore #1 - Plan #1	17,387.70	17,354.05	3,257.00	3,016.63	13.550	ES, SF
Guttersen D12-735 - Wellbore #1 - Plan #1	6,753.13	7,163.72	2,587.74	2,537.53	51.540	CC
Guttersen D12-735 - Wellbore #1 - Plan #1	17,387.70	17,566.38	2,606.03	2,365.58	10.838	ES, SF
Guttersen D12-745 - Wellbore #1 - Plan #1	7,102.38	7,505.38	1,942.03	1,889.31	36.835	CC
Guttersen D12-745 - Wellbore #1 - Plan #1	17,387.70	17,749.15	1,954.82	1,714.31	8.128	ES, SF
Guttersen D12-750 - Wellbore #1 - Plan #1	7,137.43	7,737.56	1,626.46	1,571.75	29.727	CC
Guttersen D12-750 - Wellbore #1 - Plan #1	17,387.70	17,957.30	1,637.01	1,395.76	6.785	ES, SF
Guttersen D12-755 - Wellbore #1 - Plan #1	2,200.00	2,200.00	67.54	52.24	4.413	CC, ES
Guttersen D12-755 - Wellbore #1 - Plan #1	2,300.00	2,298.63	68.54	52.53	4.280	SF
Guttersen D12-765 - Wellbore #1 - Plan #1	2,400.00	2,400.00	45.21	28.47	2.701	CC, ES
Guttersen D12-765 - Wellbore #1 - Plan #1	2,500.00	2,500.02	46.18	28.73	2.646	SF
Guttersen D12-770 - Wellbore #1 - Plan #1	2,400.00	2,400.00	22.61	5.87	1.350	Level 3, CC
Guttersen D12-770 - Wellbore #1 - Plan #1	2,500.00	2,500.23	23.02	5.57	1.319	Level 3, ES, SF
Guttersen D12-785 - Wellbore #1 - Plan #1	2,000.00	2,000.00	22.33	8.46	1.610	CC, ES, SF
Guttersen State C36-725 - Wellbore #1 - Plan #1	2,994.55	3,403.65	3,097.45	3,075.24	139.482	CC
Guttersen State C36-725 - Wellbore #1 - Plan #1	3,000.00	3,401.73	3,097.45	3,075.23	139.404	ES
Guttersen State C36-725 - Wellbore #1 - Plan #1	8,300.00	6,483.59	3,417.60	3,364.73	64.635	SF
Guttersen State C36-735 - Wellbore #1 - Plan #1	6,465.62	7,404.31	2,537.58	2,487.83	51.004	CC, ES
Guttersen State C36-735 - Wellbore #1 - Plan #1	6,600.00	7,320.58	2,540.07	2,490.21	50.947	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 D12-775
Project:	Mustang	**TVD Reference:**	KB @ 4775.00ft
Reference Site:	D Section 01	**MD Reference:**	KB @ 4775.00ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Guttersen D12-775	**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 01						
Guttersen State C36-745 - Wellbore #1 - Plan #1	6,550.00	7,552.37	1,893.25	1,841.63	36.676	SF
Guttersen State C36-745 - Wellbore #1 - Plan #1	6,577.80	7,535.69	1,893.12	1,841.51	36.678	CC, ES
Guttersen State C36-750 - Wellbore #1 - Plan #1	6,771.99	7,650.00	1,589.97	1,536.69	29.845	CC, ES
Guttersen State C36-750 - Wellbore #1 - Plan #1	6,800.00	7,635.78	1,590.12	1,536.84	29.842	SF
Guttersen State C36-755 - Wellbore #1 - Plan #1	2,000.00	2,001.00	164.23	150.35	11.835	CC
Guttersen State C36-755 - Wellbore #1 - Plan #1	2,100.00	2,098.98	164.85	150.27	11.308	ES
Guttersen State C36-755 - Wellbore #1 - Plan #1	2,400.00	2,408.83	175.66	158.96	10.520	SF
Guttersen State C36-765 - Wellbore #1 - Plan #1	2,426.50	2,428.87	153.06	136.14	9.045	CC, ES
Guttersen State C36-765 - Wellbore #1 - Plan #1	2,600.00	2,602.27	158.09	139.93	8.707	SF
Guttersen State C36-775 - Wellbore #1 - Plan #1	7,083.61	6,812.48	33.73	-15.54	0.685	Level 1, CC, ES, SF
Guttersen State C36-785 - Wellbore #1 - Plan #1	2,116.38	2,117.42	149.71	135.01	10.184	CC
Guttersen State C36-785 - Wellbore #1 - Plan #1	2,300.00	2,300.15	150.30	134.31	9.401	ES
Guttersen State C36-785 - Wellbore #1 - Plan #1	2,500.00	2,496.54	156.39	139.02	9.000	SF
HSR-Guttersen 11-1 (PR) - Wellbore #1 - No Surveys	10,213.99	6,664.00	919.36	608.23	2.955	CC, ES, SF
HSR-Guttersen 12-1 (PR) - Wellbore #1 - No Surveys	10,237.06	6,614.00	403.49	94.15	1.304	Level 3, CC, ES, SF
HSR-Guttersen 14-1 (SI) - Wellbore #1 - No Surveys	11,558.35	6,644.00	909.40	586.13	2.813	CC, ES
HSR-Guttersen 14-1 (SI) - Wellbore #1 - No Surveys	11,600.00	6,644.00	910.35	586.74	2.813	SF
HSR-Guttersen 15-1 (SI) - Wellbore #1 - Wellbore #1	11,741.22	6,682.00	2,410.09	2,083.49	7.379	CC, ES
HSR-Guttersen 15-1 (SI) - Wellbore #1 - Wellbore #1	11,900.00	6,682.00	2,415.32	2,087.27	7.363	SF
HSR-Guttersen 16-1 (SI) - Wellbore #1 - No Surveys	11,736.22	6,704.00	3,733.20	3,405.76	11.401	CC
HSR-Guttersen 16-1 (SI) - Wellbore #1 - No Surveys	11,800.00	6,704.00	3,733.74	3,405.68	11.381	ES
HSR-Guttersen 16-1 (SI) - Wellbore #1 - No Surveys	12,100.00	6,704.00	3,750.88	3,420.10	11.339	SF
Keisha White D01-01 - Wellbore #1 - Wellbore #1 - As D	838.18	837.21	2,977.31	2,971.81	541.313	CC
Keisha White D01-01 - Wellbore #1 - Wellbore #1 - As D	2,500.00	2,517.13	2,979.47	2,962.15	172.100	ES
Keisha White D01-01 - Wellbore #1 - Wellbore #1 - As D	8,900.00	6,672.49	3,756.67	3,699.53	65.739	SF
Keisha White D01-07 (PR) - Wellbore #1 - No Surveys	9,608.00	6,649.00	2,239.61	1,934.53	7.341	CC, ES
Keisha White D01-07 (PR) - Wellbore #1 - No Surveys	9,700.00	6,649.00	2,241.50	1,935.64	7.329	SF
Keisha White D01-08 (PR) - Wellbore #1 - No Surveys	9,687.70	6,666.00	3,465.69	3,159.24	11.309	CC
Keisha White D01-08 (PR) - Wellbore #1 - No Surveys	9,700.00	6,666.00	3,465.71	3,159.15	11.305	ES
Keisha White D01-08 (PR) - Wellbore #1 - No Surveys	10,000.00	6,666.00	3,479.73	3,170.62	11.257	SF
UPV 1-2J4 (PR) - Wellbore #1 - No Surveys	2,400.00	2,384.00	2,094.54	1,992.81	20.589	CC
UPV 1-2J4 (PR) - Wellbore #1 - No Surveys	2,600.00	2,583.84	2,100.01	1,989.57	19.016	ES
UPV 1-2J4 (PR) - Wellbore #1 - No Surveys	8,100.00	6,649.00	2,583.98	2,290.37	8.801	SF
Woody D01-09 - Wellbore #1 - Wellbore #1 - As Drilled	10,370.22	6,613.08	3,715.57	3,644.74	52.457	CC
Woody D01-09 - Wellbore #1 - Wellbore #1 - As Drilled	10,400.00	6,612.39	3,715.69	3,644.59	52.257	ES
Woody D01-09 - Wellbore #1 - Wellbore #1 - As Drilled	11,500.00	6,600.01	3,883.46	3,803.95	48.845	SF
Woody D01-10 (PR) - Wellbore #1 - No Surveys	10,196.98	6,682.00	2,052.18	1,740.49	6.584	CC
Woody D01-10 (PR) - Wellbore #1 - No Surveys	10,200.00	6,682.00	2,052.18	1,740.46	6.583	ES
Woody D01-10 (PR) - Wellbore #1 - No Surveys	10,300.00	6,682.00	2,054.77	1,742.17	6.573	SF

Noble Energy, Inc.

Anticollision Summary Report

Company:	Northern Region - DJ Basin	**Local Co-ordinate Reference:**	Well Guttersen D12-775
Project:	Mustang	**TVD Reference:**	KB @ 4775.00ft
Reference Site:	D Section 01	**MD Reference:**	KB @ 4775.00ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Guttersen D12-775	**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

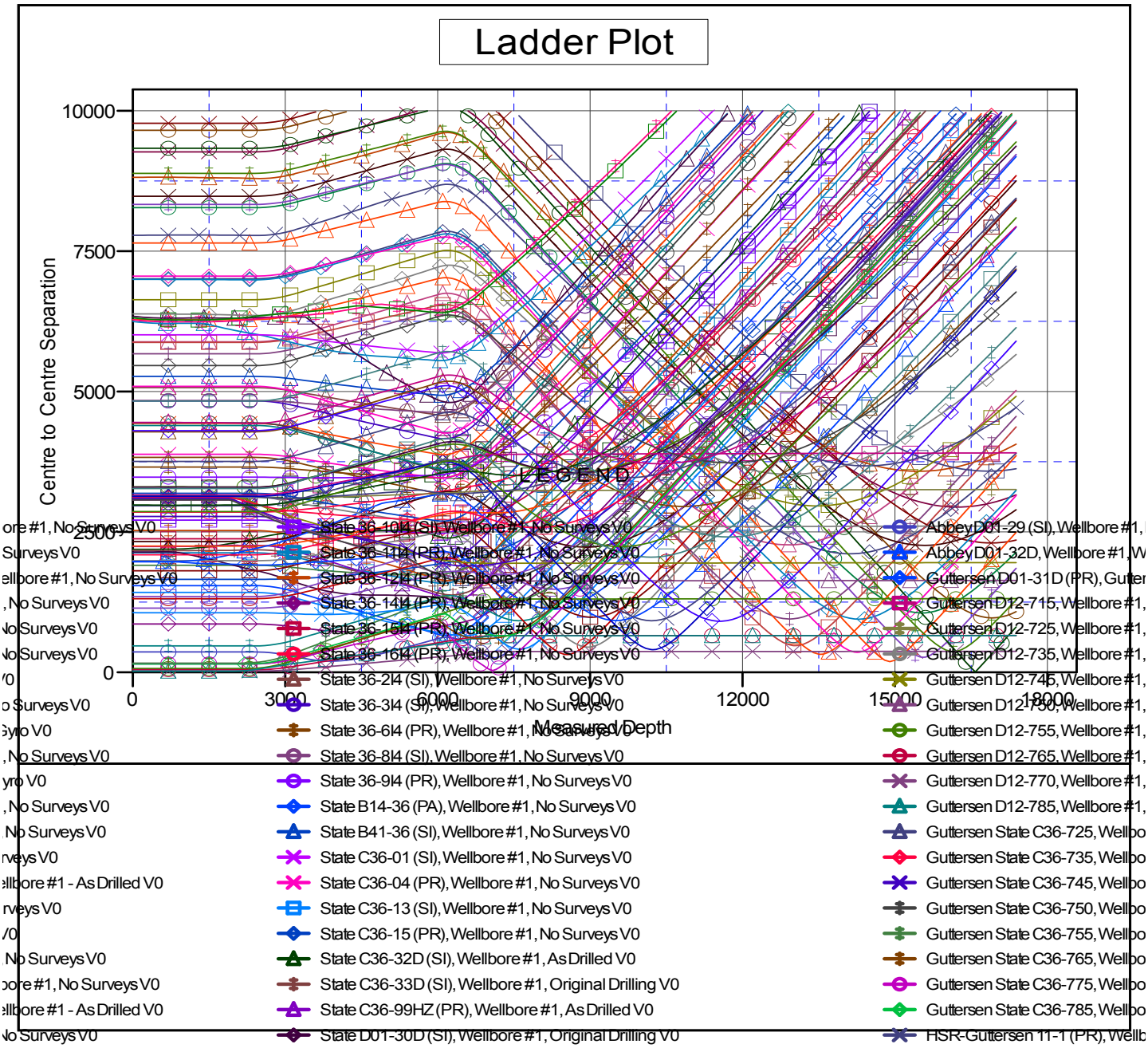
Site Name Offset Well - Wellbore - Design	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
D Section 12						
GUTTERERSEN STATE D #12-7JI(SI) - Wellbore #1 - N	14,108.31	6,646.00	2,110.97	1,967.41	14.704	CC, ES
GUTTERERSEN STATE D #12-7JI(SI) - Wellbore #1 - N	14,300.00	6,646.00	2,119.66	1,974.47	14.599	SF
GUTTERSEN #12D(PR) - Wellbore #1 - No Surveys	16,231.77	6,640.00	2,943.07	2,777.20	17.743	CC, ES
GUTTERSEN #12D(PR) - Wellbore #1 - No Surveys	16,600.00	6,640.00	2,966.02	2,797.13	17.562	SF
Guttersen #33-12(PR) - Wellbore #1 - No Surveys	15,578.70	6,630.00	2,261.38	2,102.51	14.234	CC
Guttersen #33-12(PR) - Wellbore #1 - No Surveys	15,600.00	6,630.00	2,261.48	2,102.39	14.216	ES
Guttersen #33-12(PR) - Wellbore #1 - No Surveys	15,800.00	6,630.00	2,272.18	2,111.49	14.140	SF
GUTTERSEN #34-12(PR) - Wellbore #1 - No Surveys	16,893.43	6,630.00	2,304.26	2,131.45	13.334	CC
GUTTERSEN #34-12(PR) - Wellbore #1 - No Surveys	16,900.00	6,630.00	2,304.27	2,131.39	13.329	ES
GUTTERSEN #34-12(PR) - Wellbore #1 - No Surveys	17,100.00	6,630.00	2,313.50	2,138.99	13.257	SF
Guttersen #43-12(PR) - Wellbore #1 - Gyro	15,464.70	6,652.69	3,581.11	3,458.24	29.145	CC
Guttersen #43-12(PR) - Wellbore #1 - Gyro	15,500.00	6,651.70	3,581.29	3,458.06	29.062	ES
Guttersen #43-12(PR) - Wellbore #1 - Gyro	16,100.00	6,634.70	3,636.99	3,509.10	28.440	SF
GUTTERSEN #44-12(PR) - Wellbore #1 - Gyro	16,843.16	6,478.13	3,583.87	3,447.23	26.228	CC
GUTTERSEN #44-12(PR) - Wellbore #1 - Gyro	16,900.00	6,477.66	3,584.32	3,447.10	26.120	ES
GUTTERSEN #44-12(PR) - Wellbore #1 - Gyro	17,387.70	6,473.63	3,625.00	3,483.94	25.698	SF
GUTTERSEN D #12-20(PR) - Wellbore #1 - No Surveys	14,901.95	6,630.00	191.97	40.23	1.265	Level 3, CC, ES, SF
GUTTERSEN D #12-25(PR) - Wellbore #1 - No Surveys	16,150.25	6,637.00	368.98	204.00	2.237	CC, ES, SF
GUTTERSEN STATE D #12-19(PR) - Wellbore #1 - No S	13,541.91	6,637.00	321.87	184.27	2.339	CC, ES, SF
GUTTERSEN STATE D #12-2JI(SI) - Wellbore #1 - No S	12,908.29	6,670.00	2,270.16	2,138.80	17.283	CC, ES
GUTTERSEN STATE D #12-2JI(SI) - Wellbore #1 - No S	13,200.00	6,670.00	2,288.82	2,155.09	17.114	SF
Guttersen State D12-01JI - Wellbore #1 - Wellbore #1 - A	12,941.66	6,623.76	3,524.74	3,428.40	36.589	CC
Guttersen State D12-01JI - Wellbore #1 - Wellbore #1 - A	13,000.00	6,626.82	3,525.22	3,428.29	36.368	ES
Guttersen State D12-01JI - Wellbore #1 - Wellbore #1 - A	13,700.00	6,666.94	3,605.08	3,502.42	35.117	SF
Guttersen State D12-08JI - Wellbore #1 - Wellbore #1 - A	14,434.18	6,700.55	3,677.38	3,565.16	32.768	CC
Guttersen State D12-08JI - Wellbore #1 - Wellbore #1 - A	14,500.00	6,701.10	3,677.97	3,565.08	32.580	ES
Guttersen State D12-08JI - Wellbore #1 - Wellbore #1 - A	15,100.00	6,705.97	3,737.16	3,619.45	31.748	SF
KARCH BLUE D #12-11(PR) - Wellbore #1 - No Surveys	15,527.88	6,621.00	1,057.33	899.07	6.681	CC, ES
KARCH BLUE D #12-11(PR) - Wellbore #1 - No Surveys	15,600.00	6,621.00	1,059.78	901.03	6.676	SF
KARCH BLUE D #12-12(PR) - Wellbore #1 - No Surveys	15,554.63	6,618.00	268.29	109.78	1.693	CC, ES, SF
KARCH BLUE D #12-14(PR) - Wellbore #1 - No Surveys	16,911.21	6,624.00	969.83	796.88	5.608	CC, ES, SF
L F RANCH #2-12(SI) - Wellbore #1 - No Surveys	16,579.65	6,615.00	10.42	-158.93	0.062	Level 1, CC, ES, SF
SPIKE STATE #D 12-3(PR) - Wellbore #1 - No Surveys	12,927.76	6,629.00	949.92	818.72	7.240	CC, ES
SPIKE STATE #D 12-3(PR) - Wellbore #1 - No Surveys	13,000.00	6,629.00	952.66	820.95	7.233	SF
SPIKE STATE #D 12-4(PR) - Wellbore #1 - No Surveys	13,042.84	6,620.00	475.53	343.23	3.594	CC, ES, SF
SPIKE STATE #D 12-5(PR) - Wellbore #1 - No Surveys	14,258.51	6,617.00	355.53	210.65	2.454	CC, ES, SF
SPIKE STATE #D 12-6(PA) - Wellbore #1 - Gyro	14,288.64	6,616.48	946.59	836.24	8.578	CC
SPIKE STATE #D 12-6(PA) - Wellbore #1 - Gyro	14,300.00	6,616.62	946.66	836.20	8.570	ES, SF
STATE #10(TA) - Wellbore #1 - No Surveys	13,464.70	6,684.00	2,964.29	2,827.08	21.604	CC
STATE #10(TA) - Wellbore #1 - No Surveys	13,500.00	6,684.00	2,964.50	2,826.93	21.550	ES
STATE #10(TA) - Wellbore #1 - No Surveys	13,900.00	6,684.00	2,996.08	2,855.23	21.272	SF

Noble Energy, Inc.

Anticollision Summary Report

Company:	Northern Region - DJ Basin	**Local Co-ordinate Reference:**	Well Guttersen D12-775
Project:	Mustang	**TVD Reference:**	KB @ 4775.00ft
Reference Site:	D Section 01	**MD Reference:**	KB @ 4775.00ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Guttersen D12-775	**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 @ 4775.00ft	Coordinates are relative to: Guttersen D12-775
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: 0.64°



Noble Energy, Inc.

Anticollision Summary Report

Company:	Northern Region - DJ Basin	**Local Co-ordinate Reference:**	Well Guttersen D12-775
Project:	Mustang	**TVD Reference:**	KB @ 4775.00ft
Reference Site:	D Section 01	**MD Reference:**	KB @ 4775.00ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Guttersen D12-775	**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 @ 4775.00ft	Coordinates are relative to: Guttersen D12-775
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: 0.64°