

Project: Mustang
Site: C Section 34
Well: Gutttersen D10-725
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	VSec	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	2000.00	0.00	0.00	2000.00	0.00	0.00	0.00	0.00	0.00	
3	2443.16	8.86	91.89	2441.40	-1.13	34.19	2.00	91.89	3.38	
4	6116.98	8.86	91.89	6071.35	-19.85	599.93	0.00	0.00	59.31	
5	7113.57	90.00	179.90	6697.00	-656.29	698.55	9.00	88.03	700.86	Gutttersen D10-725-TPZ
6	17312.33	90.00	179.90	6697.00	-10855.03	716.41	0.00	0.00	10878.65	Gutttersen D10-725-BHL

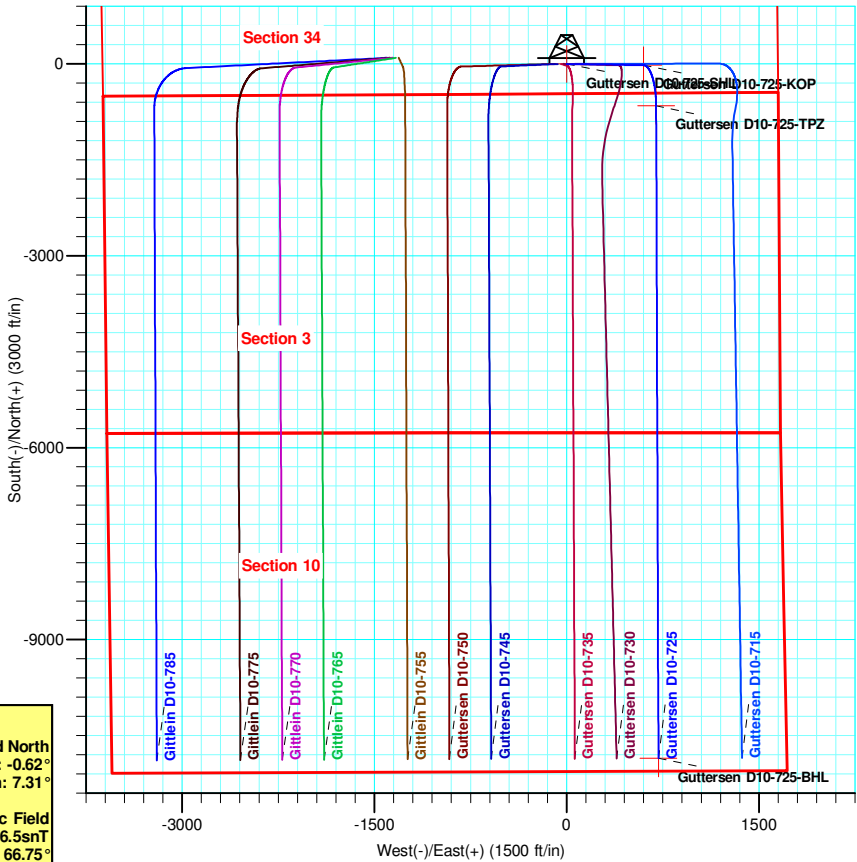
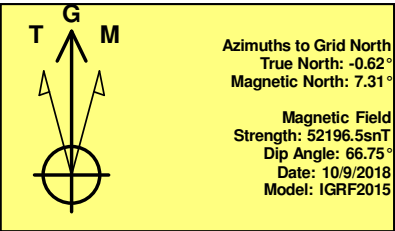
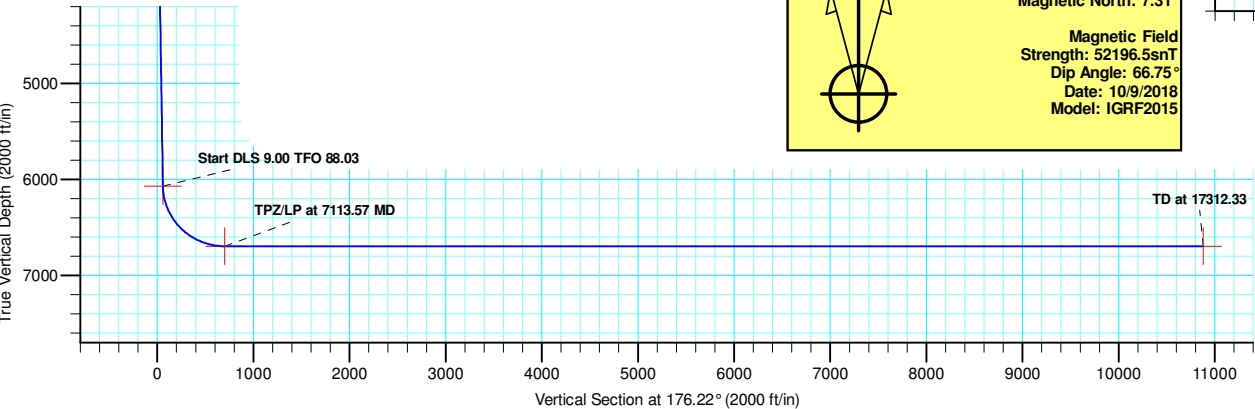
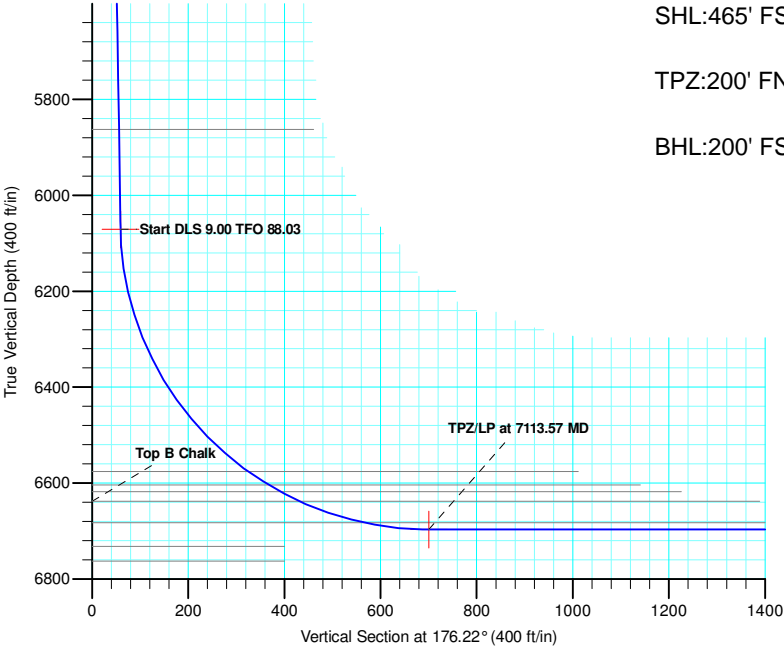
WELL DETAILS: Gutttersen D10-725

	Northing	Ground Level:	4697.00	Longitude
0.00	0.00	Easting	3269700.35	-104.5335660
		Latitude	40.2630290	

SHL:465' FSL, 1648' FEL, Sec C34

TPZ:200' FNL, 953' FEL, Sec D3

BHL:200' FSL, 1002' FEL, Sec D10



Plan: Plan #1 (Gutttersen D10-725/Wellbore #1)

Created By: Chad Stich Date: 16:00, October 16 2018
Checked: _____ Date: _____
Reviewed: _____ Date: _____
Approved: _____ Date: _____

Northern Region - DJ Basin

Mustang

C Section 34

Guttersen D10-725

Wellbore #1

Plan: Plan #1

Standard Survey Report

16 October, 2018

Noble Energy, Inc.

Survey Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Guttersen D10-725
Project:	Mustang	TVD Reference:	KB @ 4727.00ft
Site:	C Section 34	MD Reference:	KB @ 4727.00ft
Well:	Guttersen D10-725	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		C Section 34			
Site Position:		Northing:	1,341,626.72 usft	Latitude:	40.2670999
From:	Map	Easting:	3,270,704.36 usft	Longitude:	-104.5299100
Position Uncertainty:	0.00 ft	Slot Radius:	13.200 in	Grid Convergence:	0.63 °

Well	Guttersen D10-725					
Well Position	+N/-S	0.00 ft	Northing:	1,340,132.68 usft	Latitude:	40.2630290
	+E/-W	0.00 ft	Easting:	3,269,700.36 usft	Longitude:	-104.5335660
Position Uncertainty		0.00 ft	Wellhead Elevation:	ft	Ground Level:	4,697.00 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	10/9/2018	7.94	66.75	52,196.54384417

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	176.22	

Survey Tool Program	Date	10/9/2018			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
0.00	17,312.33	Plan #1 (Wellbore #1)	2_MWD+IFR1+MS	A008Mb: IFR dec & multi-station analysis	

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.

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Project:	Mustang	TVD Reference:	KB @ 4727.00ft
Site:	C Section 34	MD Reference:	KB @ 4727.00ft
Well:	Guttersen D10-725	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	2.00	91.89	2,099.98	-0.06	1.74	0.17	2.00	2.00	0.00	
2,200.00	4.00	91.89	2,199.84	-0.23	6.97	0.69	2.00	2.00	0.00	
2,300.00	6.00	91.89	2,299.45	-0.52	15.69	1.55	2.00	2.00	0.00	
2,400.00	8.00	91.89	2,398.70	-0.92	27.86	2.75	2.00	2.00	0.00	
2,443.16	8.86	91.89	2,441.40	-1.13	34.19	3.38	2.00	2.00	0.00	
2,500.00	8.86	91.89	2,497.56	-1.42	42.94	4.25	0.00	0.00	0.00	
2,600.00	8.86	91.89	2,596.36	-1.93	58.34	5.77	0.00	0.00	0.00	
2,700.00	8.86	91.89	2,695.17	-2.44	73.74	7.29	0.00	0.00	0.00	
2,800.00	8.86	91.89	2,793.97	-2.95	89.14	8.81	0.00	0.00	0.00	
2,900.00	8.86	91.89	2,892.78	-3.46	104.54	10.34	0.00	0.00	0.00	
3,000.00	8.86	91.89	2,991.59	-3.97	119.94	11.86	0.00	0.00	0.00	
3,100.00	8.86	91.89	3,090.39	-4.48	135.34	13.38	0.00	0.00	0.00	
3,200.00	8.86	91.89	3,189.20	-4.99	150.74	14.90	0.00	0.00	0.00	
3,300.00	8.86	91.89	3,288.00	-5.50	166.14	16.43	0.00	0.00	0.00	
3,400.00	8.86	91.89	3,386.81	-6.01	181.54	17.95	0.00	0.00	0.00	
3,500.00	8.86	91.89	3,485.62	-6.52	196.93	19.47	0.00	0.00	0.00	
3,600.00	8.86	91.89	3,584.42	-7.02	212.33	20.99	0.00	0.00	0.00	
3,700.00	8.86	91.89	3,683.23	-7.53	227.73	22.51	0.00	0.00	0.00	
3,800.00	8.86	91.89	3,782.03	-8.04	243.13	24.04	0.00	0.00	0.00	
3,900.00	8.86	91.89	3,880.84	-8.55	258.53	25.56	0.00	0.00	0.00	
4,000.00	8.86	91.89	3,979.64	-9.06	273.93	27.08	0.00	0.00	0.00	
4,100.00	8.86	91.89	4,078.45	-9.57	289.33	28.60	0.00	0.00	0.00	
4,200.00	8.86	91.89	4,177.26	-10.08	304.73	30.13	0.00	0.00	0.00	
4,300.00	8.86	91.89	4,276.06	-10.59	320.13	31.65	0.00	0.00	0.00	
4,400.00	8.86	91.89	4,374.87	-11.10	335.53	33.17	0.00	0.00	0.00	
4,500.00	8.86	91.89	4,473.67	-11.61	350.93	34.69	0.00	0.00	0.00	
4,600.00	8.86	91.89	4,572.48	-12.12	366.33	36.22	0.00	0.00	0.00	
4,700.00	8.86	91.89	4,671.29	-12.63	381.72	37.74	0.00	0.00	0.00	
4,800.00	8.86	91.89	4,770.09	-13.14	397.12	39.26	0.00	0.00	0.00	
4,900.00	8.86	91.89	4,868.90	-13.65	412.52	40.78	0.00	0.00	0.00	
5,000.00	8.86	91.89	4,967.70	-14.16	427.92	42.31	0.00	0.00	0.00	
5,100.00	8.86	91.89	5,066.51	-14.67	443.32	43.83	0.00	0.00	0.00	
5,200.00	8.86	91.89	5,165.32	-15.18	458.72	45.35	0.00	0.00	0.00	

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Survey Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Guttersen D10-725
Project:	Mustang	TVD Reference:	KB @ 4727.00ft
Site:	C Section 34	MD Reference:	KB @ 4727.00ft
Well:	Guttersen D10-725	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	8.86	91.89	5,264.12	-15.69	474.12	46.87	0.00	0.00	0.00
5,400.00	8.86	91.89	5,362.93	-16.19	489.52	48.40	0.00	0.00	0.00
5,500.00	8.86	91.89	5,461.73	-16.70	504.92	49.92	0.00	0.00	0.00
5,600.00	8.86	91.89	5,560.54	-17.21	520.32	51.44	0.00	0.00	0.00
5,700.00	8.86	91.89	5,659.34	-17.72	535.72	52.96	0.00	0.00	0.00
5,800.00	8.86	91.89	5,758.15	-18.23	551.12	54.49	0.00	0.00	0.00
5,900.00	8.86	91.89	5,856.96	-18.74	566.51	56.01	0.00	0.00	0.00
6,000.00	8.86	91.89	5,955.76	-19.25	581.91	57.53	0.00	0.00	0.00
6,100.00	8.86	91.89	6,054.57	-19.76	597.31	59.05	0.00	0.00	0.00
6,116.98	8.86	91.89	6,071.35	-19.85	599.93	59.31	0.00	0.00	0.00
6,200.00	11.77	131.48	6,153.11	-25.67	612.68	65.97	9.00	3.50	47.68
6,300.00	18.91	152.85	6,249.56	-46.89	627.75	88.13	9.00	7.15	21.37
6,400.00	27.16	162.22	6,341.54	-83.12	642.15	125.23	9.00	8.25	9.37
6,500.00	35.75	167.40	6,426.78	-133.47	655.52	176.35	9.00	8.59	5.18
6,600.00	44.49	170.77	6,503.18	-196.69	667.54	240.22	9.00	8.74	3.37
6,700.00	53.30	173.23	6,568.87	-271.24	677.90	315.29	9.00	8.81	2.46
6,800.00	62.15	175.18	6,622.23	-355.27	686.37	399.70	9.00	8.85	1.95
6,900.00	71.02	176.83	6,661.94	-446.71	692.72	491.36	9.00	8.87	1.65
7,000.00	79.90	178.31	6,687.02	-543.32	696.79	588.03	9.00	8.89	1.48
7,100.00	88.79	179.71	6,696.86	-642.72	698.50	687.32	9.00	8.89	1.40
7,113.57	90.00	179.90	6,697.00	-656.29	698.55	700.86	9.00	8.89	1.39
7,200.00	90.00	179.90	6,697.00	-742.72	698.70	787.12	0.00	0.00	0.00
7,300.00	90.00	179.90	6,697.00	-842.72	698.87	886.91	0.00	0.00	0.00
7,400.00	90.00	179.90	6,697.00	-942.72	699.05	986.71	0.00	0.00	0.00
7,500.00	90.00	179.90	6,697.00	-1,042.72	699.22	1,086.50	0.00	0.00	0.00
7,600.00	90.00	179.90	6,697.00	-1,142.72	699.40	1,186.30	0.00	0.00	0.00
7,700.00	90.00	179.90	6,697.00	-1,242.72	699.57	1,286.09	0.00	0.00	0.00
7,800.00	90.00	179.90	6,697.00	-1,342.72	699.75	1,385.89	0.00	0.00	0.00
7,900.00	90.00	179.90	6,697.00	-1,442.72	699.92	1,485.68	0.00	0.00	0.00
8,000.00	90.00	179.90	6,697.00	-1,542.72	700.10	1,585.47	0.00	0.00	0.00
8,100.00	90.00	179.90	6,697.00	-1,642.72	700.28	1,685.27	0.00	0.00	0.00
8,200.00	90.00	179.90	6,697.00	-1,742.72	700.45	1,785.06	0.00	0.00	0.00
8,300.00	90.00	179.90	6,697.00	-1,842.72	700.63	1,884.86	0.00	0.00	0.00
8,400.00	90.00	179.90	6,697.00	-1,942.72	700.80	1,984.65	0.00	0.00	0.00
8,500.00	90.00	179.90	6,697.00	-2,042.72	700.98	2,084.45	0.00	0.00	0.00
8,600.00	90.00	179.90	6,697.00	-2,142.72	701.15	2,184.24	0.00	0.00	0.00
8,700.00	90.00	179.90	6,697.00	-2,242.72	701.33	2,284.03	0.00	0.00	0.00
8,800.00	90.00	179.90	6,697.00	-2,342.72	701.50	2,383.83	0.00	0.00	0.00
8,900.00	90.00	179.90	6,697.00	-2,442.72	701.68	2,483.62	0.00	0.00	0.00
9,000.00	90.00	179.90	6,697.00	-2,542.72	701.85	2,583.42	0.00	0.00	0.00
9,100.00	90.00	179.90	6,697.00	-2,642.72	702.03	2,683.21	0.00	0.00	0.00
9,200.00	90.00	179.90	6,697.00	-2,742.72	702.20	2,783.01	0.00	0.00	0.00
9,300.00	90.00	179.90	6,697.00	-2,842.72	702.38	2,882.80	0.00	0.00	0.00

Noble Energy, Inc.

Survey Report

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Site:	C Section 34	MD Reference:	KB @ 4727.00ft
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9,400.00	90.00	179.90	6,697.00	-2,942.72	702.55	2,982.59	0.00	0.00	0.00
9,500.00	90.00	179.90	6,697.00	-3,042.72	702.73	3,082.39	0.00	0.00	0.00
9,600.00	90.00	179.90	6,697.00	-3,142.72	702.90	3,182.18	0.00	0.00	0.00
9,700.00	90.00	179.90	6,697.00	-3,242.72	703.08	3,281.98	0.00	0.00	0.00
9,800.00	90.00	179.90	6,697.00	-3,342.72	703.25	3,381.77	0.00	0.00	0.00
9,900.00	90.00	179.90	6,697.00	-3,442.71	703.43	3,481.57	0.00	0.00	0.00
10,000.00	90.00	179.90	6,697.00	-3,542.71	703.60	3,581.36	0.00	0.00	0.00
10,100.00	90.00	179.90	6,697.00	-3,642.71	703.78	3,681.15	0.00	0.00	0.00
10,200.00	90.00	179.90	6,697.00	-3,742.71	703.95	3,780.95	0.00	0.00	0.00
10,300.00	90.00	179.90	6,697.00	-3,842.71	704.13	3,880.74	0.00	0.00	0.00
10,400.00	90.00	179.90	6,697.00	-3,942.71	704.30	3,980.54	0.00	0.00	0.00
10,500.00	90.00	179.90	6,697.00	-4,042.71	704.48	4,080.33	0.00	0.00	0.00
10,600.00	90.00	179.90	6,697.00	-4,142.71	704.66	4,180.13	0.00	0.00	0.00
10,700.00	90.00	179.90	6,697.00	-4,242.71	704.83	4,279.92	0.00	0.00	0.00
10,800.00	90.00	179.90	6,697.00	-4,342.71	705.01	4,379.71	0.00	0.00	0.00
10,900.00	90.00	179.90	6,697.00	-4,442.71	705.18	4,479.51	0.00	0.00	0.00
11,000.00	90.00	179.90	6,697.00	-4,542.71	705.36	4,579.30	0.00	0.00	0.00
11,100.00	90.00	179.90	6,697.00	-4,642.71	705.53	4,679.10	0.00	0.00	0.00
11,200.00	90.00	179.90	6,697.00	-4,742.71	705.71	4,778.89	0.00	0.00	0.00
11,300.00	90.00	179.90	6,697.00	-4,842.71	705.88	4,878.69	0.00	0.00	0.00
11,400.00	90.00	179.90	6,697.00	-4,942.71	706.06	4,978.48	0.00	0.00	0.00
11,500.00	90.00	179.90	6,697.00	-5,042.71	706.23	5,078.27	0.00	0.00	0.00
11,600.00	90.00	179.90	6,697.00	-5,142.71	706.41	5,178.07	0.00	0.00	0.00
11,700.00	90.00	179.90	6,697.00	-5,242.71	706.58	5,277.86	0.00	0.00	0.00
11,800.00	90.00	179.90	6,697.00	-5,342.71	706.76	5,377.66	0.00	0.00	0.00
11,900.00	90.00	179.90	6,697.00	-5,442.71	706.93	5,477.45	0.00	0.00	0.00
12,000.00	90.00	179.90	6,697.00	-5,542.71	707.11	5,577.25	0.00	0.00	0.00
12,100.00	90.00	179.90	6,697.00	-5,642.71	707.28	5,677.04	0.00	0.00	0.00
12,200.00	90.00	179.90	6,697.00	-5,742.71	707.46	5,776.83	0.00	0.00	0.00
12,300.00	90.00	179.90	6,697.00	-5,842.71	707.63	5,876.63	0.00	0.00	0.00
12,400.00	90.00	179.90	6,697.00	-5,942.71	707.81	5,976.42	0.00	0.00	0.00
12,500.00	90.00	179.90	6,697.00	-6,042.71	707.98	6,076.22	0.00	0.00	0.00
12,600.00	90.00	179.90	6,697.00	-6,142.71	708.16	6,176.01	0.00	0.00	0.00
12,700.00	90.00	179.90	6,697.00	-6,242.71	708.33	6,275.81	0.00	0.00	0.00
12,800.00	90.00	179.90	6,697.00	-6,342.71	708.51	6,375.60	0.00	0.00	0.00
12,900.00	90.00	179.90	6,697.00	-6,442.71	708.68	6,475.40	0.00	0.00	0.00
13,000.00	90.00	179.90	6,697.00	-6,542.71	708.86	6,575.19	0.00	0.00	0.00
13,100.00	90.00	179.90	6,697.00	-6,642.71	709.03	6,674.98	0.00	0.00	0.00
13,200.00	90.00	179.90	6,697.00	-6,742.71	709.21	6,774.78	0.00	0.00	0.00
13,300.00	90.00	179.90	6,697.00	-6,842.71	709.39	6,874.57	0.00	0.00	0.00
13,400.00	90.00	179.90	6,697.00	-6,942.71	709.56	6,974.37	0.00	0.00	0.00
13,500.00	90.00	179.90	6,697.00	-7,042.71	709.74	7,074.16	0.00	0.00	0.00
13,600.00	90.00	179.90	6,697.00	-7,142.71	709.91	7,173.96	0.00	0.00	0.00

Noble Energy, Inc.

Survey Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Guttersen D10-725
Project:	Mustang	TVD Reference:	KB @ 4727.00ft
Site:	C Section 34	MD Reference:	KB @ 4727.00ft
Well:	Guttersen D10-725	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	179.90	6,697.00	-7,242.71	710.09	7,273.75	0.00	0.00	0.00
13,800.00	90.00	179.90	6,697.00	-7,342.71	710.26	7,373.54	0.00	0.00	0.00
13,900.00	90.00	179.90	6,697.00	-7,442.71	710.44	7,473.34	0.00	0.00	0.00
14,000.00	90.00	179.90	6,697.00	-7,542.71	710.61	7,573.13	0.00	0.00	0.00
14,100.00	90.00	179.90	6,697.00	-7,642.71	710.79	7,672.93	0.00	0.00	0.00
14,200.00	90.00	179.90	6,697.00	-7,742.71	710.96	7,772.72	0.00	0.00	0.00
14,300.00	90.00	179.90	6,697.00	-7,842.71	711.14	7,872.52	0.00	0.00	0.00
14,400.00	90.00	179.90	6,697.00	-7,942.71	711.31	7,972.31	0.00	0.00	0.00
14,500.00	90.00	179.90	6,697.00	-8,042.71	711.49	8,072.10	0.00	0.00	0.00
14,600.00	90.00	179.90	6,697.00	-8,142.71	711.66	8,171.90	0.00	0.00	0.00
14,700.00	90.00	179.90	6,697.00	-8,242.71	711.84	8,271.69	0.00	0.00	0.00
14,800.00	90.00	179.90	6,697.00	-8,342.71	712.01	8,371.49	0.00	0.00	0.00
14,900.00	90.00	179.90	6,697.00	-8,442.71	712.19	8,471.28	0.00	0.00	0.00
15,000.00	90.00	179.90	6,697.00	-8,542.71	712.36	8,571.08	0.00	0.00	0.00
15,100.00	90.00	179.90	6,697.00	-8,642.71	712.54	8,670.87	0.00	0.00	0.00
15,200.00	90.00	179.90	6,697.00	-8,742.71	712.71	8,770.66	0.00	0.00	0.00
15,300.00	90.00	179.90	6,697.00	-8,842.71	712.89	8,870.46	0.00	0.00	0.00
15,400.00	90.00	179.90	6,697.00	-8,942.71	713.06	8,970.25	0.00	0.00	0.00
15,500.00	90.00	179.90	6,697.00	-9,042.71	713.24	9,070.05	0.00	0.00	0.00
15,600.00	90.00	179.90	6,697.00	-9,142.71	713.41	9,169.84	0.00	0.00	0.00
15,700.00	90.00	179.90	6,697.00	-9,242.71	713.59	9,269.64	0.00	0.00	0.00
15,800.00	90.00	179.90	6,697.00	-9,342.71	713.77	9,369.43	0.00	0.00	0.00
15,900.00	90.00	179.90	6,697.00	-9,442.71	713.94	9,469.22	0.00	0.00	0.00
16,000.00	90.00	179.90	6,697.00	-9,542.71	714.12	9,569.02	0.00	0.00	0.00
16,100.00	90.00	179.90	6,697.00	-9,642.71	714.29	9,668.81	0.00	0.00	0.00
16,200.00	90.00	179.90	6,697.00	-9,742.71	714.47	9,768.61	0.00	0.00	0.00
16,300.00	90.00	179.90	6,697.00	-9,842.71	714.64	9,868.40	0.00	0.00	0.00
16,400.00	90.00	179.90	6,697.00	-9,942.71	714.82	9,968.20	0.00	0.00	0.00
16,500.00	90.00	179.90	6,697.00	-10,042.70	714.99	10,067.99	0.00	0.00	0.00
16,600.00	90.00	179.90	6,697.00	-10,142.70	715.17	10,167.78	0.00	0.00	0.00
16,700.00	90.00	179.90	6,697.00	-10,242.70	715.34	10,267.58	0.00	0.00	0.00
16,800.00	90.00	179.90	6,697.00	-10,342.70	715.52	10,367.37	0.00	0.00	0.00
16,900.00	90.00	179.90	6,697.00	-10,442.70	715.69	10,467.17	0.00	0.00	0.00
17,000.00	90.00	179.90	6,697.00	-10,542.70	715.87	10,566.96	0.00	0.00	0.00
17,100.00	90.00	179.90	6,697.00	-10,642.70	716.04	10,666.76	0.00	0.00	0.00
17,200.00	90.00	179.90	6,697.00	-10,742.70	716.22	10,766.55	0.00	0.00	0.00
17,300.00	90.00	179.90	6,697.00	-10,842.70	716.39	10,866.34	0.00	0.00	0.00
17,312.33	90.00	179.90	6,697.00	-10,855.03	716.41	10,878.65	0.00	0.00	0.00

Noble Energy, Inc.

Survey Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Guttersen D10-725
Project:	Mustang	TVD Reference:	KB @ 4727.00ft
Site:	C Section 34	MD Reference:	KB @ 4727.00ft
Well:	Guttersen D10-725	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
Guttersen D10-725-SHL - plan hits target center - Point	0.00	0.00	0.00	0.00	0.00	1,340,132.68	3,269,700.36	40.2630290	-104.5335660
Guttersen D10-725-KOF - plan hits target center - Point	0.00	0.00	6,071.35	-19.85	599.93	1,340,112.83	3,270,300.28	40.2629566	-104.5314172
Guttersen D10-725-BHL - plan hits target center - Point	0.00	0.00	6,697.00	-10,855.03	716.41	1,329,277.67	3,270,416.77	40.2332113	-104.5314239
Guttersen D10-725-TPZ - plan hits target center - Point	0.00	0.00	6,697.00	-656.29	698.55	1,339,476.39	3,270,398.90	40.2612066	-104.5310887

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
425.00	425.00	Pierre				
558.00	558.00	Upper Pierre Aquifer Top				
1,462.00	1,462.00	Upper Pierre Aquifer Base				
3,587.43	3,572.00	Parkman				
4,245.28	4,222.00	Sussex				
4,849.50	4,819.00	Shannon				
5,906.12	5,863.00	Teepee Buttes				
6,712.08	6,576.00	Sharon Springs				
6,762.97	6,604.00	Top A Chalk				
6,791.07	6,618.00	Top A Marl				
6,835.63	6,638.00	Top B Chalk				
6,979.00	6,683.00	Top B Marl				

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates			
		+N/-S (ft)	+E/-W (ft)	Comment	
2000	2000	0	0	Start Build 2.00	
6117	6071	-20	600	Start DLS 9.00 TFO 88.03	
7114	6697	-656	699	TPZ/LP at 7113.57 MD	
17,312	6697	-10,855	716	TD at 17312.33	

Checked By: _____ Approved By: _____ Date: _____

Northern Region - DJ Basin

Mustang

C Section 34

Guttersen D10-725

Wellbore #1

Plan #1

Anticollision Summary Report

16 October, 2018

Noble Energy, Inc.
Anticollision Summary Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Guttersten D10-725
Project:	Mustang	TVD Reference:	KB @ 4727.00ft
Reference Site:	C Section 34	MD Reference:	KB @ 4727.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Guttersten D10-725	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	10/9/2018		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.00	17,312.33	Plan #1 (Wellbore #1)	2_MWD+IFR1+MS	A008Mb: IFR dec & multi-station analysis

Summary						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
C Section 34						
ALOYSIOUS #C34-11(PA) - Wellbore #1 - Gyro Surveys	747.00	713.01	2,234.29	2,229.53	469.173	CC
ALOYSIOUS #C34-11(PA) - Wellbore #1 - Gyro Surveys	2,000.00	1,952.63	2,237.76	2,224.18	164.782	ES
ALOYSIOUS #C34-11(PA) - Wellbore #1 - Gyro Surveys	6,400.00	6,310.69	2,733.87	2,689.35	61.415	SF
ALOYSIOUS #C34-8(PR) - Wellbore #1 - No Surveys	2,000.00	1,966.00	4,090.12	4,066.02	169.763	CC, ES
ALOYSIOUS #C34-8(PR) - Wellbore #1 - No Surveys	6,600.00	6,469.18	4,722.57	4,642.93	59.298	SF
ALOYSIOUS #C34-9(SI) - Wellbore #1 - Gyro Surveys	6,133.87	6,048.27	1,587.81	1,544.88	36.987	CC, ES
ALOYSIOUS #C34-9(SI) - Wellbore #1 - Gyro Surveys	6,300.00	6,218.92	1,608.68	1,564.56	36.463	SF
ALOYSIOUS #34-1(PR) - Wellbore #1 - No Surveys	2,000.00	1,996.00	5,088.76	5,064.40	208.941	CC
ALOYSIOUS #34-1(PR) - Wellbore #1 - No Surveys	2,100.00	2,095.98	5,089.83	5,064.25	199.001	ES
ALOYSIOUS #34-1(PR) - Wellbore #1 - No Surveys	6,600.00	6,499.18	5,656.60	5,576.68	70.773	SF
ALOYSIOUS #34-2(PR) - Wellbore #1 - No Surveys	6,236.22	6,153.42	378.48	302.50	4.981	CC
ALOYSIOUS #34-2(PR) - Wellbore #1 - No Surveys	6,250.00	6,166.75	378.59	302.44	4.971	ES
ALOYSIOUS #34-2(PR) - Wellbore #1 - No Surveys	6,300.00	6,214.56	380.92	304.16	4.963	SF
ALOYSIOUS #34-3(PR) - Wellbore #1 - No Surveys	2,000.00	1,970.00	4,451.76	4,427.63	184.505	CC
ALOYSIOUS #34-3(PR) - Wellbore #1 - No Surveys	2,100.00	2,069.98	4,452.47	4,427.12	175.639	ES
ALOYSIOUS #34-3(PR) - Wellbore #1 - No Surveys	6,500.00	6,396.78	4,854.23	4,775.39	61.574	SF
ALOYSIOUS #34-4(SI) - Wellbore #1 - No Surveys	2,000.00	1,963.00	3,284.42	3,260.35	136.470	CC
ALOYSIOUS #34-4(SI) - Wellbore #1 - No Surveys	2,100.00	2,062.98	3,285.38	3,260.09	129.913	ES
ALOYSIOUS #34-4(SI) - Wellbore #1 - No Surveys	6,450.00	6,348.14	3,747.32	3,669.10	47.906	SF
ALOYSIOUS #34-5(PA) - Wellbore #1 - Gyro Surveys	1,931.60	1,895.66	1,606.77	1,593.61	122.151	CC
ALOYSIOUS #34-5(PA) - Wellbore #1 - Gyro Surveys	2,100.00	2,062.11	1,607.40	1,593.07	112.177	ES
ALOYSIOUS #34-5(PA) - Wellbore #1 - Gyro Surveys	6,300.00	6,235.97	1,854.89	1,810.87	42.136	SF
ALOYSIOUS #34-6(PR) - Wellbore #1 - Gyro Surveys	2,016.51	1,996.05	1,652.61	1,638.82	119.847	CC, ES
ALOYSIOUS #34-6(PR) - Wellbore #1 - Gyro Surveys	6,750.00	6,573.11	2,397.85	2,351.37	51.592	SF
ALOYSIOUS #34-7(PR) - Wellbore #1 - Gyro Surveys	151.85	122.85	2,965.33	2,964.76	5,238.422	CC
ALOYSIOUS #34-7(PR) - Wellbore #1 - Gyro Surveys	2,000.00	1,965.81	2,974.29	2,960.65	218.083	ES
ALOYSIOUS #34-7(PR) - Wellbore #1 - Gyro Surveys	6,950.00	6,671.17	3,736.74	3,689.52	79.126	SF
ALOYSIOUS #C34-15(PR) - Wellbore #1 - No Surveys	2,000.00	1,966.00	383.30	359.21	15.909	CC, ES
ALOYSIOUS #C34-15(PR) - Wellbore #1 - No Surveys	6,150.00	6,069.95	961.26	886.53	12.864	SF
Aloysius C #34-18(PA) - Wellbore #1 - Gyro Surveys	585.69	548.69	3,654.53	3,650.92	1,012.627	CC
Aloysius C #34-18(PA) - Wellbore #1 - Gyro Surveys	2,200.00	2,253.10	3,659.11	3,643.78	238.775	ES
Aloysius C #34-18(PA) - Wellbore #1 - Gyro Surveys	6,500.00	6,495.54	4,017.66	3,972.11	88.207	SF
ALOYSIOUS C #34-19(PR) - Wellbore #1 - No Surveys	2,000.00	1,973.00	4,172.56	4,148.41	172.747	CC
ALOYSIOUS C #34-19(PR) - Wellbore #1 - No Surveys	2,100.00	2,072.98	4,173.59	4,148.21	164.468	ES
ALOYSIOUS C #34-19(PR) - Wellbore #1 - No Surveys	6,550.00	6,439.21	4,700.07	4,620.78	59.280	SF
Aloysius C #34-20D(PR) - Wellbore #1 - MWD Surveys	100.00	81.94	2,280.71	2,280.44	8,456.068	CC
Aloysius C #34-20D(PR) - Wellbore #1 - MWD Surveys	800.00	781.41	2,280.81	2,276.80	568.726	ES

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

Noble Energy, Inc.
Anticollision Summary Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Guttersen D10-725
Project:	Mustang	TVD Reference:	KB @ 4727.00ft
Reference Site:	C Section 34	MD Reference:	KB @ 4727.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Guttersen D10-725	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)	Between Ellipses (ft)	Separation Factor	Warning
C Section 34						
Aloysius C #34-20D(PR) - Wellbore #1 - MWD Surveys	6,500.00	6,648.40	3,698.38	3,653.20	81.858	SF
Aloysius C #34-21D(SI) - Wellbore #1 - MWD Surveys	812.11	793.76	1,660.94	1,656.86	407.439	CC, ES
Aloysius C #34-21D(SI) - Wellbore #1 - MWD Surveys	6,400.00	6,567.11	2,985.46	2,940.45	66.326	SF
ALOYSIUS C #34-22D(PR) - Wellbore #1 - MWD Survey	100.00	77.74	1,839.67	1,839.41	7,016.062	CC
ALOYSIUS C #34-22D(PR) - Wellbore #1 - MWD Survey	800.00	772.71	1,840.29	1,836.14	444.202	ES
ALOYSIUS C #34-22D(PR) - Wellbore #1 - MWD Survey	6,300.00	6,383.82	2,355.22	2,309.67	51.706	SF
ALOYSIUS C #34-23(PR) - Wellbore #1 - Gyro Surveys	4,826.06	4,795.64	855.56	821.89	25.408	CC
ALOYSIUS C #34-23(PR) - Wellbore #1 - Gyro Surveys	4,900.00	4,863.35	855.88	821.70	25.038	ES
ALOYSIUS C #34-23(PR) - Wellbore #1 - Gyro Surveys	6,200.00	6,133.57	915.40	872.04	21.115	SF
Aloysius C #34-24(SI) - Wellbore #1 - No Surveys	2,000.00	1,968.00	1,183.71	1,159.60	49.095	CC, ES
Aloysius C #34-24(SI) - Wellbore #1 - No Surveys	6,300.00	6,217.56	1,714.67	1,638.13	22.400	SF
ALOYSIUS C #34-27D(PR) - Wellbore #1 - MWD Survey	757.04	763.34	4,337.04	4,333.22	1,134.391	CC, ES
ALOYSIUS C #34-27D(PR) - Wellbore #1 - MWD Survey	6,500.00	6,553.30	4,849.08	4,801.52	101.968	SF
ALOYSIUS C #34-28D(PA) - Wellbore #1 - Gyro Surveys	636.49	609.49	4,495.42	4,491.41	1,122.854	CC
ALOYSIUS C #34-28D(PA) - Wellbore #1 - Gyro Surveys	700.00	654.21	4,495.55	4,491.16	1,024.700	ES
ALOYSIUS C #34-28D(PA) - Wellbore #1 - Gyro Surveys	6,450.00	6,493.50	5,036.73	4,978.75	86.869	SF
Aloysius C #34-31(PA) - Wellbore #1 - Gyro Surveys	448.38	441.38	4,901.05	4,898.31	1,788.069	CC
Aloysius C #34-31(PA) - Wellbore #1 - Gyro Surveys	1,000.00	955.84	4,902.65	4,896.13	752.454	ES
Aloysius C #34-31(PA) - Wellbore #1 - Gyro Surveys	6,600.00	6,557.79	5,557.29	5,511.34	120.948	SF
Aloysius C #34-32D(PR) - Wellbore #1 - MWD Surveys	100.00	80.63	2,927.95	2,927.68	10,000.000	CC
Aloysius C #34-32D(PR) - Wellbore #1 - MWD Surveys	600.00	566.32	2,929.58	2,926.66	1,005.365	ES
Aloysius C #34-32D(PR) - Wellbore #1 - MWD Surveys	6,550.00	6,741.17	4,743.94	4,697.18	101.450	SF
Aloysius C34-33D(PR) - Wellbore #1 - MWD Surveys	0.00	0.00	3,001.06			
Aloysius C34-33D(PR) - Wellbore #1 - MWD Surveys	300.00	268.00	3,001.94	3,000.63	2,283.405	ES
Aloysius C34-33D(PR) - Wellbore #1 - MWD Surveys	6,650.00	6,648.97	4,366.80	4,319.71	92.740	SF
Aloysius C34-99HZ - Original Drilling - Original Drilling - A	6,295.86	6,913.00	1,393.48	1,347.13	30.063	CC
Aloysius C34-99HZ - Original Drilling - Original Drilling - A	6,300.00	6,913.00	1,393.50	1,347.10	30.032	ES
Aloysius C34-99HZ - Original Drilling - Original Drilling - A	6,450.00	6,925.17	1,420.09	1,372.11	29.599	SF
DONOVAN D #02-30(PR) - Wellbore #1 - No Surveys	6,796.83	6,589.74	781.15	699.80	9.602	CC
DONOVAN D #02-30(PR) - Wellbore #1 - No Surveys	6,800.00	6,591.23	781.16	699.78	9.599	ES
DONOVAN D #02-30(PR) - Wellbore #1 - No Surveys	6,850.00	6,612.86	783.01	701.28	9.581	SF
Gittlein C22-750 - Wellbore #1 - Plan #1	2,000.00	2,002.00	1,310.33	1,296.45	94.404	CC, ES
Gittlein C22-750 - Wellbore #1 - Plan #1	6,884.43	7,171.86	1,689.38	1,639.17	33.651	SF
Gittlein C22-755 - Wellbore #1 - Plan #1	2,000.00	2,002.00	1,332.92	1,319.04	96.032	CC, ES
Gittlein C22-755 - Wellbore #1 - Plan #1	6,700.00	7,240.14	2,000.24	1,950.44	40.164	SF
Gittlein C22-765 - Wellbore #1 - Plan #1	2,000.00	2,002.00	1,355.51	1,341.63	97.659	CC, ES
Gittlein C22-765 - Wellbore #1 - Plan #1	6,600.00	7,306.09	2,640.62	2,591.11	53.334	SF
Gittlein C22-770 - Wellbore #1 - Plan #1	2,000.00	2,003.00	1,377.81	1,363.93	99.240	CC, ES
Gittlein C22-770 - Wellbore #1 - Plan #1	7,900.00	6,350.00	2,919.27	2,869.72	58.921	SF
Gittlein C22-775 - Wellbore #1 - Plan #1	2,000.00	2,003.00	1,400.40	1,386.51	100.867	CC, ES
Gittlein C22-775 - Wellbore #1 - Plan #1	8,300.00	6,261.08	3,285.25	3,234.19	64.350	SF
Gittlein C22-785 - Wellbore #1 - Plan #1	2,000.00	2,003.00	1,422.71	1,408.83	102.474	CC, ES
Gittlein C22-785 - Wellbore #1 - Plan #1	8,900.00	6,006.59	3,902.87	3,849.83	73.580	SF
Gittlein D10-755 - Wellbore #1 - Plan #1	2,000.00	2,002.00	1,312.85	1,298.97	94.586	CC, ES
Gittlein D10-755 - Wellbore #1 - Plan #1	17,312.33	17,328.97	1,958.21	1,773.00	10.573	SF
Gittlein D10-765 - Wellbore #1 - Plan #1	2,000.00	2,002.00	1,335.10	1,321.22	96.189	CC, ES
Gittlein D10-765 - Wellbore #1 - Plan #1	17,312.33	17,272.24	2,608.77	2,423.57	14.086	SF
Gittlein D10-770 - Wellbore #1 - Plan #1	2,000.00	2,002.00	1,357.66	1,343.78	97.814	CC, ES
Gittlein D10-770 - Wellbore #1 - Plan #1	17,312.33	17,515.82	2,941.74	2,756.52	15.882	SF
Gittlein D10-775 - Wellbore #1 - Plan #1	2,000.00	2,002.00	1,379.94	1,366.06	99.419	CC, ES
Gittlein D10-775 - Wellbore #1 - Plan #1	17,312.33	17,459.17	3,261.96	3,076.81	17.618	SF
Gittlein D10-785 - Wellbore #1 - Plan #1	2,000.00	2,003.00	1,402.48	1,388.59	101.017	CC, ES
Gittlein D10-785 - Wellbore #1 - Plan #1	17,312.33	17,595.57	3,913.15	3,727.82	21.114	SF

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

Noble Energy, Inc.
Anticollision Summary Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Guttersten D10-725
Project:	Mustang	TVD Reference:	KB @ 4727.00ft
Reference Site:	C Section 34	MD Reference:	KB @ 4727.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Guttersten D10-725	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	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
C Section 34						
Guttersten C22-715 - Wellbore #1 - Plan #1	2,168.00	2,167.90	150.02	134.96	9.963	CC
Guttersten C22-715 - Wellbore #1 - Plan #1	2,200.00	2,199.84	150.04	134.75	9.818	ES
Guttersten C22-715 - Wellbore #1 - Plan #1	2,500.00	2,491.67	160.10	142.80	9.254	SF
Guttersten C22-725 - Wellbore #1 - Plan #1	6,925.25	6,980.63	52.37	2.68	1.054	Level 2, CC, ES, SF
Guttersten C22-730 - Wellbore #1 - Plan #1	2,000.00	2,000.00	156.47	142.60	11.279	CC
Guttersten C22-730 - Wellbore #1 - Plan #1	2,100.00	2,100.02	156.93	142.35	10.763	ES
Guttersten C22-730 - Wellbore #1 - Plan #1	7,100.00	6,912.11	388.99	339.43	7.850	SF
Guttersten C22-735 - Wellbore #1 - Plan #1	2,000.00	2,000.00	164.62	150.75	11.866	CC
Guttersten C22-735 - Wellbore #1 - Plan #1	2,100.00	2,100.02	165.29	150.71	11.336	ES
Guttersten C22-735 - Wellbore #1 - Plan #1	2,300.00	2,294.69	172.58	156.63	10.824	SF
Guttersten C22-745 - Wellbore #1 - Plan #1	2,000.00	2,000.00	174.87	161.00	12.605	CC, ES
Guttersten C22-745 - Wellbore #1 - Plan #1	2,200.00	2,187.86	184.92	169.75	12.191	SF
GUTTERSEN D #03-27(PR) - Wellbore #1 - No Surveys	4,402.24	4,346.08	298.45	244.97	5.581	CC
GUTTERSEN D #03-27(PR) - Wellbore #1 - No Surveys	4,600.00	4,541.48	300.00	244.08	5.365	ES
GUTTERSEN D #03-27(PR) - Wellbore #1 - No Surveys	6,700.00	6,537.87	353.96	273.31	4.389	SF
Guttersten D10-715 - Wellbore #1 - Plan #1	2,445.56	2,442.08	22.39	5.61	1.335	Level 3, CC, ES, SF
Guttersten D10-730 - Wellbore #1 - Plan #1	2,000.00	2,000.00	22.61	8.74	1.630	CC, ES, SF
Guttersten D10-735 - Wellbore #1 - Plan #1	2,000.00	2,000.00	44.93	31.06	3.239	CC, ES
Guttersten D10-735 - Wellbore #1 - Plan #1	2,100.00	2,100.02	46.68	32.10	3.201	SF
Guttersten D10-745 - Wellbore #1 - Plan #1	2,000.00	2,000.00	67.54	53.67	4.869	CC, ES
Guttersten D10-745 - Wellbore #1 - Plan #1	2,100.00	2,100.02	69.28	54.70	4.752	SF
Guttersten D10-750 - Wellbore #1 - Plan #1	2,000.00	2,000.00	90.15	76.28	6.498	CC, ES
Guttersten D10-750 - Wellbore #1 - Plan #1	2,100.00	2,096.84	93.58	79.03	6.430	SF
LANE #34-214(PR) - Wellbore #1 - No Surveys	2,000.00	1,962.00	3,966.19	3,942.13	164.858	CC
LANE #34-214(PR) - Wellbore #1 - No Surveys	2,443.16	2,403.40	3,968.83	3,939.38	134.782	ES
LANE #34-214(PR) - Wellbore #1 - No Surveys	6,450.00	6,347.14	4,148.82	4,070.46	52.947	SF
LANE #34-814(PR) - Wellbore #1 - No Surveys	6,125.60	6,041.86	3,071.81	2,997.14	41.142	CC, ES
LANE #34-814(PR) - Wellbore #1 - No Surveys	6,400.00	6,303.54	3,129.98	3,052.08	40.179	SF
LANE C #34-17(PR) - Wellbore #1 - No Surveys	3,948.57	3,888.83	3,517.36	3,469.53	73.545	CC
LANE C #34-17(PR) - Wellbore #1 - No Surveys	5,800.00	5,718.15	3,528.91	3,458.31	49.983	ES
LANE C #34-17(PR) - Wellbore #1 - No Surveys	6,450.00	6,345.14	3,623.06	3,544.69	46.227	SF
POLLOCK-HADDIX #2(PA) - Wellbore #1 - Gyro Surveys	4,886.95	4,750.13	4,239.55	4,205.79	125.592	CC
POLLOCK-HADDIX #2(PA) - Wellbore #1 - Gyro Surveys	6,116.98	5,991.85	4,243.08	4,200.43	99.486	ES
POLLOCK-HADDIX #2(PA) - Wellbore #1 - Gyro Surveys	6,500.00	6,402.38	4,351.56	4,306.20	95.927	SF
POLLOCK-HADDIX #34-1(SI) - Wellbore #1 - No Survey	2,000.00	1,963.00	2,834.34	2,810.28	117.769	CC
POLLOCK-HADDIX #34-1(SI) - Wellbore #1 - No Survey	2,300.00	2,262.45	2,836.44	2,808.72	102.333	ES
POLLOCK-HADDIX #34-1(SI) - Wellbore #1 - No Survey	6,400.00	6,304.54	3,045.98	2,968.18	39.150	SF
TWO E RANCHES #1(PR) - Wellbore #1 - Gyro Surveys	100.00	62.91	2,883.76	2,883.52	10,000.000	CC
TWO E RANCHES #1(PR) - Wellbore #1 - Gyro Surveys	1,700.00	1,647.66	2,891.24	2,879.79	252.504	ES
TWO E RANCHES #1(PR) - Wellbore #1 - Gyro Surveys	6,650.00	6,567.93	3,570.05	3,523.93	77.412	SF

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

Noble Energy, Inc.
Anticollision Summary Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Guttersen D10-725
Project:	Mustang	TVD Reference:	KB @ 4727.00ft
Reference Site:	C Section 34	MD Reference:	KB @ 4727.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Guttersen D10-725	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	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
D Section 03						
Becca D 3-11 (PR) - Wellbore #1 - No Surveys	10,335.75	6,707.00	2,321.05	2,015.17	7.588	CC, ES
Becca D 3-11 (PR) - Wellbore #1 - No Surveys	10,400.00	6,707.00	2,321.94	2,015.75	7.583	SF
Becca D 3-12 (PR) - Wellbore #1 - No Surveys	10,384.18	6,689.00	3,646.47	3,340.99	11.937	CC
Becca D 3-12 (PR) - Wellbore #1 - No Surveys	10,400.00	6,689.00	3,646.51	3,340.94	11.934	ES
Becca D 3-12 (PR) - Wellbore #1 - No Surveys	10,600.00	6,689.00	3,652.86	3,346.20	11.912	SF
Becca D 3-13 (PR) - Wellbore #1 - No Surveys	11,628.98	6,701.00	3,523.58	3,209.02	11.202	CC, ES
Becca D 3-13 (PR) - Wellbore #1 - No Surveys	11,800.00	6,701.00	3,527.73	3,212.18	11.179	SF
Becca D 3-14 (PR) - Wellbore #1 - No Surveys	11,494.08	6,709.00	2,304.95	1,991.03	7.343	CC
Becca D 3-14 (PR) - Wellbore #1 - No Surveys	11,500.00	6,709.00	2,304.96	1,991.01	7.342	ES
Becca D 3-14 (PR) - Wellbore #1 - No Surveys	11,600.00	6,709.00	2,307.38	1,992.93	7.338	SF
Becca D03-24 (PR) - Wellbore #1 - No Surveys	10,898.65	6,705.00	1,726.96	1,417.43	5.579	CC
Becca D03-24 (PR) - Wellbore #1 - No Surveys	10,900.00	6,705.00	1,726.97	1,417.43	5.579	ES, SF
Becca D03-32D - Wellbore #1 - Wellbore #1 - As Drilled	0.00	0.00	3,964.39			
Becca D03-32D - Wellbore #1 - Wellbore #1 - As Drilled	800.00	757.44	3,965.41	3,960.30	776.412	ES
Becca D03-32D - Wellbore #1 - Wellbore #1 - As Drilled	11,900.00	6,966.61	4,940.38	4,863.81	64.518	SF
Cody D #03-28(SI) - Wellbore #1 - No Surveys	2,000.00	1,972.00	996.55	972.41	41.273	CC, ES
Cody D #03-28(SI) - Wellbore #1 - No Surveys	7,050.00	6,665.87	1,531.04	1,448.52	18.553	SF
Cody D 03-28 (SI) - Wellbore #1 - No Surveys	2,000.00	1,988.00	996.56	912.42	11.845	CC
Cody D 03-28 (SI) - Wellbore #1 - No Surveys	2,200.00	2,187.84	1,002.26	909.44	10.798	ES
Cody D 03-28 (SI) - Wellbore #1 - No Surveys	7,050.00	6,681.87	1,531.04	1,241.73	5.292	SF
Cody D 3-20 (PR) - Wellbore #1 - No Surveys	9,671.48	6,709.00	2,988.60	2,686.91	9.906	CC
Cody D 3-20 (PR) - Wellbore #1 - No Surveys	9,700.00	6,709.00	2,988.74	2,686.91	9.902	ES
Cody D 3-20 (PR) - Wellbore #1 - No Surveys	9,800.00	6,709.00	2,991.36	2,689.05	9.895	SF
Cody D 3-7 (PR) - Wellbore #1 - No Surveys	9,059.68	6,675.00	1,009.63	712.79	3.401	CC, ES, SF
CODY WHITE #D 3-2(PR) - Wellbore #1 - No Surveys	7,580.76	6,665.00	1,025.93	942.16	12.247	CC, ES
CODY WHITE #D 3-2(PR) - Wellbore #1 - No Surveys	7,600.00	6,665.00	1,026.11	942.32	12.246	SF
Cody White D 3-1 (PR) - Wellbore #1 - No Surveys	7,568.66	6,674.00	294.09	3.76	1.013	Level 2, CC, ES, SF
Cody White D 3-2 (PR) - Wellbore #1 - No Surveys	7,580.76	6,675.00	1,025.93	735.53	3.533	CC, ES, SF
Cody White D 3-8 (PR) - Wellbore #1 - No Surveys	8,891.02	6,676.00	300.65	4.68	1.016	Level 2, CC, ES, SF
Guttersen D 02-32D (PR) - Wellbore #1 - As Drilled Surv	9,653.98	6,803.28	1,027.11	964.82	16.490	CC, ES
Guttersen D 02-32D (PR) - Wellbore #1 - As Drilled Surv	9,800.00	6,802.87	1,037.44	973.24	16.158	SF
Guttersen D 03-17 (PR) - Wellbore #1 - No Surveys	8,295.99	6,682.00	400.06	106.83	1.364	Level 3, CC, ES, SF
Guttersen D 03-25 (PR) - Wellbore #1 - No Surveys	10,789.81	6,707.00	2,980.15	2,671.32	9.650	CC
Guttersen D 03-25 (PR) - Wellbore #1 - No Surveys	10,800.00	6,707.00	2,980.17	2,671.29	9.648	ES
Guttersen D 03-25 (PR) - Wellbore #1 - No Surveys	10,900.00	6,707.00	2,982.19	2,672.77	9.638	SF
Guttersen D 10-29 (PR) - Wellbore #1 - No Surveys	12,155.83	6,702.00	2,846.35	2,528.03	8.942	CC, ES
Guttersen D 10-29 (PR) - Wellbore #1 - No Surveys	12,300.00	6,702.00	2,850.00	2,530.89	8.931	SF
HSR-Gittlein, D 4-3 (PR) - Wellbore #1 - No Surveys	2,000.00	1,985.00	3,280.50	3,196.36	38.990	CC
HSR-Gittlein, D 4-3 (PR) - Wellbore #1 - No Surveys	2,100.00	2,084.98	3,282.15	3,193.67	37.093	ES
HSR-Gittlein, D 4-3 (PR) - Wellbore #1 - No Surveys	7,500.00	6,682.00	3,836.15	3,545.73	13.209	SF
HSR-Gittlein, D 5-3 (PR) - Wellbore #1 - No Surveys	8,906.74	6,689.00	3,827.28	3,530.70	12.905	CC, ES
HSR-Gittlein, D 5-3 (PR) - Wellbore #1 - No Surveys	9,100.00	6,689.00	3,832.15	3,534.70	12.883	SF
HSR-Gittlein, L 3-3 (PR) - Wellbore #1 - No Surveys	2,000.00	1,982.00	2,007.38	1,923.36	23.893	CC
HSR-Gittlein, L 3-3 (PR) - Wellbore #1 - No Surveys	2,200.00	2,181.84	2,013.00	1,920.30	21.715	ES
HSR-Gittlein, L 3-3 (PR) - Wellbore #1 - No Surveys	7,600.00	6,679.00	2,354.39	2,063.77	8.101	SF
HSR-Gittlein, L 6-3 (PR) - Wellbore #1 - No Surveys	8,904.23	6,683.00	2,342.42	2,046.10	7.905	CC, ES
HSR-Gittlein, L 6-3 (PR) - Wellbore #1 - No Surveys	9,000.00	6,683.00	2,344.38	2,047.68	7.901	SF
HSR-Guttersen "A" 16-3 (SI) - Wellbore #1 - Gyro Survey	11,568.66	6,681.15	252.43	180.96	3.532	CC, ES, SF
HSR-Guttersen "A" 9-3 (SI) - Wellbore #1 - Gyro Surveys	10,450.39	6,674.15	90.67	26.97	1.423	Level 3, CC, ES, SF
HSR-Guttersen 10-3 (SI) - Wellbore #1 - No Surveys	10,247.20	6,688.00	998.79	694.25	3.280	CC, ES, SF
HSR-Guttersen 15-3 (SI) - Wellbore #1 - Gyro Surveys	11,710.95	6,675.35	899.95	827.52	12.426	CC, ES, SF
UPRR 39 PAN AM A 01 (PA) - Wellbore #1 - No Surveys	11,586.30	6,702.00	3,638.42	3,324.16	11.578	CC
UPRR 39 PAN AM A 01 (PA) - Wellbore #1 - No Surveys	11,600.00	6,702.00	3,638.44	3,324.10	11.575	ES

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

Noble Energy, Inc.
Anticollision Summary Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Guttersen D10-725
Project:	Mustang	TVD Reference:	KB @ 4727.00ft
Reference Site:	C Section 34	MD Reference:	KB @ 4727.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Guttersen D10-725	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	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
D Section 03						
UPRR 39 PAN AM A 01 (PA) - Wellbore #1 - No Surveys	11,800.00	6,702.00	3,644.69	3,329.19	11.552	SF
D Section 10						
Duncan D 10-6 (SI) - Wellbore #1 - No Surveys	13,799.63	6,723.00	2,652.52	2,320.93	8.000	CC
Duncan D 10-6 (SI) - Wellbore #1 - No Surveys	13,800.00	6,723.00	2,652.52	2,320.93	7.999	ES
Duncan D 10-6 (SI) - Wellbore #1 - No Surveys	13,900.00	6,723.00	2,654.42	2,322.26	7.992	SF
Guttersen State D 10-24 (SI) - Wellbore #1 - No Surveys	16,175.02	6,757.00	1,667.76	1,316.45	4.747	CC, ES
Guttersen State D 10-24 (SI) - Wellbore #1 - No Surveys	16,200.00	6,757.00	1,667.95	1,316.52	4.746	SF
Guttersen State D15-27 - Wellbore #1 - Wellbore #1- As	17,300.00	6,759.93	238.35	122.59	2.059	ES, SF
Guttersen State D15-27 - Wellbore #1 - Wellbore #1- As	17,303.55	6,759.95	238.33	122.59	2.059	CC
Karch Blue D 10-02 (SI) - Wellbore #1 - Gyro Surveys	13,163.76	6,722.46	1,159.09	1,075.73	13.904	CC, ES
Karch Blue D 10-02 (SI) - Wellbore #1 - Gyro Surveys	13,200.00	6,722.47	1,159.65	1,076.17	13.892	SF
Karch Blue D 10-07 (SI) - Wellbore #1 - Gyro Surveys	14,278.97	6,715.93	1,099.59	1,007.79	11.978	CC, ES
Karch Blue D 10-07 (SI) - Wellbore #1 - Gyro Surveys	14,300.00	6,715.84	1,099.80	1,007.92	11.971	SF
Karch Blue D 10-08 (SI) - Wellbore #1 - Gyro Surveys	14,476.36	6,739.42	200.90	-77.37	0.722	Level 1, CC, ES, SF
Karch State D 10-22 (SI) - Wellbore #1 - No Surveys	14,839.28	6,744.00	406.86	66.49	1.195	Level 2, CC, ES, SF
Spike D 10-10 (SI) - Wellbore #1 - No Surveys	15,629.90	6,748.00	893.79	547.00	2.577	CC, ES, SF
Spike ST GWS D 10-09 (SI) - Wellbore #1 - No Surveys	15,598.05	6,749.00	275.72	-70.86	0.796	Level 1, CC
Spike ST GWS D 10-09 (SI) - Wellbore #1 - No Surveys	15,600.00	6,749.00	275.73	-70.90	0.795	Level 1, ES, SF
Spike ST GWS D 10-12 (SI) - Wellbore #1 - No Surveys	15,546.67	6,734.00	3,683.63	3,338.28	10.666	CC, ES
Spike ST GWS D 10-12 (SI) - Wellbore #1 - No Surveys	15,800.00	6,734.00	3,692.33	3,345.46	10.645	SF
Spike ST GWS D 10-14 (PR) - Wellbore #1 - Gyro Surveys	17,026.47	6,775.31	2,292.89	2,179.33	20.191	CC, ES
Spike ST GWS D 10-14 (PR) - Wellbore #1 - Gyro Surveys	17,200.00	6,775.82	2,299.45	2,185.08	20.106	SF
Spike ST GWS D 10-16 (PA) - Wellbore #1 - No Surveys	16,858.33	6,748.00	298.46	74.78	1.334	Level 3, CC, ES, SF
Spike State D 10-21D (SI) - Wellbore #1 - Wellbore #1	15,075.44	6,904.52	1,558.75	1,459.70	15.737	CC, ES
Spike State D 10-21D (SI) - Wellbore #1 - Wellbore #1	15,200.00	6,904.16	1,563.72	1,463.90	15.666	SF
Spike State D 10-23 (SI) - Wellbore #1 - No Surveys	16,182.03	6,753.00	241.01	-110.29	0.686	Level 1, CC, ES, SF
Spike State GWS D 10-11 (PR) - Wellbore #1 - No Surveys	15,508.81	6,734.00	2,318.75	1,973.47	6.716	CC, ES
Spike State GWS D 10-11 (PR) - Wellbore #1 - No Surveys	15,600.00	6,734.00	2,320.54	1,974.78	6.711	SF
Spike State GWS D 10-13J (PR) - Wellbore #1 - No Surveys	16,072.67	6,742.00	3,033.95	2,684.01	8.670	CC
Spike State GWS D 10-13J (PR) - Wellbore #1 - No Surveys	16,100.00	6,742.00	3,034.07	2,683.96	8.666	ES
Spike State GWS D 10-13J (PR) - Wellbore #1 - No Surveys	16,200.00	6,742.00	3,036.62	2,685.93	8.659	SF
Spike State GWS D 10-15 (PA) - Wellbore #1 - No Surveys	16,722.09	7,106.00	2,164.23	2,024.73	15.515	CC, ES
Spike State GWS D 10-15 (PA) - Wellbore #1 - No Surveys	17,312.33	7,106.00	2,243.27	2,093.56	14.984	SF
Two E Ranch 1-10 (PR) - Wellbore #1 - No Surveys	13,341.65	6,740.00	28.88	-299.88	0.088	Level 1, CC, ES, SF
Two E Ranch 2-10 (PR) - Wellbore #1 - No Surveys	12,816.38	6,701.00	3,498.90	3,175.63	10.824	CC, ES
Two E Ranch 2-10 (PR) - Wellbore #1 - No Surveys	13,000.00	6,701.00	3,503.72	3,179.36	10.802	SF
Two E Ranch 3-10 (PR) - Wellbore #1 - No Surveys	12,725.15	6,701.00	2,274.23	1,951.66	7.050	CC, ES
Two E Ranch 3-10 (PR) - Wellbore #1 - No Surveys	12,800.00	6,701.00	2,275.46	1,952.50	7.046	SF
Two E Ranch 4-10 (SI) - Wellbore #1 - No Surveys	14,279.12	6,716.00	3,506.07	3,171.10	10.467	CC
Two E Ranch 4-10 (SI) - Wellbore #1 - No Surveys	14,300.00	6,716.00	3,506.13	3,171.03	10.463	ES
Two E Ranch 4-10 (SI) - Wellbore #1 - No Surveys	14,500.00	6,716.00	3,513.02	3,176.74	10.447	SF
Volley State D 10-13 (PR) - Wellbore #1 - Gyro Surveys	16,976.12	6,818.92	3,717.24	3,603.84	32.781	CC
Volley State D 10-13 (PR) - Wellbore #1 - Gyro Surveys	17,000.00	6,819.14	3,717.32	3,603.76	32.735	ES
Volley State D 10-13 (PR) - Wellbore #1 - Gyro Surveys	17,312.33	6,821.99	3,732.41	3,617.07	32.360	SF

Noble Energy, Inc.
Anticollision Summary Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Guttersen D10-725
Project:	Mustang	TVD Reference:	KB @ 4727.00ft
Reference Site:	C Section 34	MD Reference:	KB @ 4727.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Guttersen D10-725	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 @ 4727.00ft

Offset Depths are relative to Offset Datum

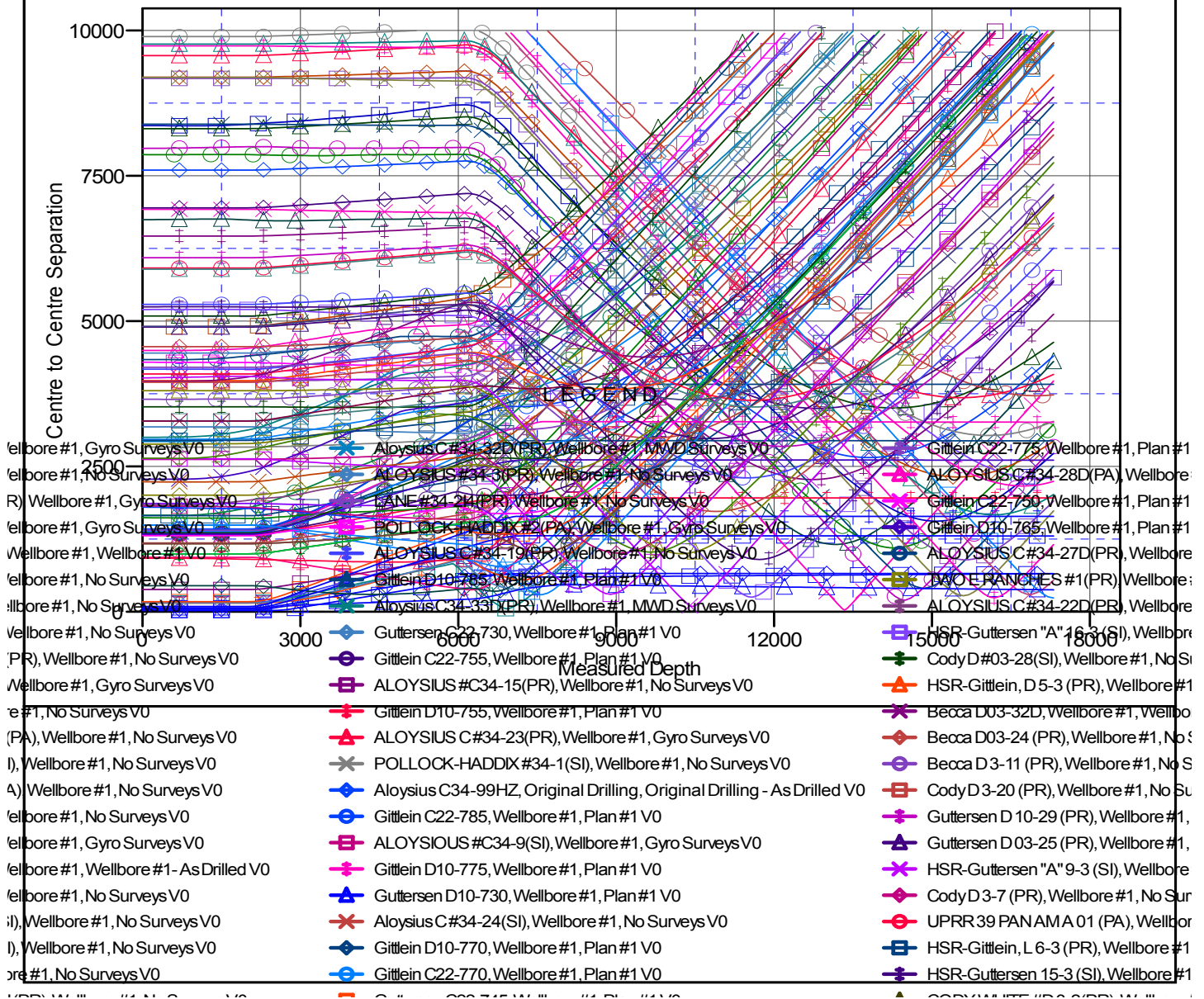
Central Meridian is -105.5000000

Coordinates are relative to: Guttersen D10-725

Coordinate System is US State Plane 1983, Colorado Northern Zone

Grid Convergence at Surface is: 0.62°

Ladder Plot



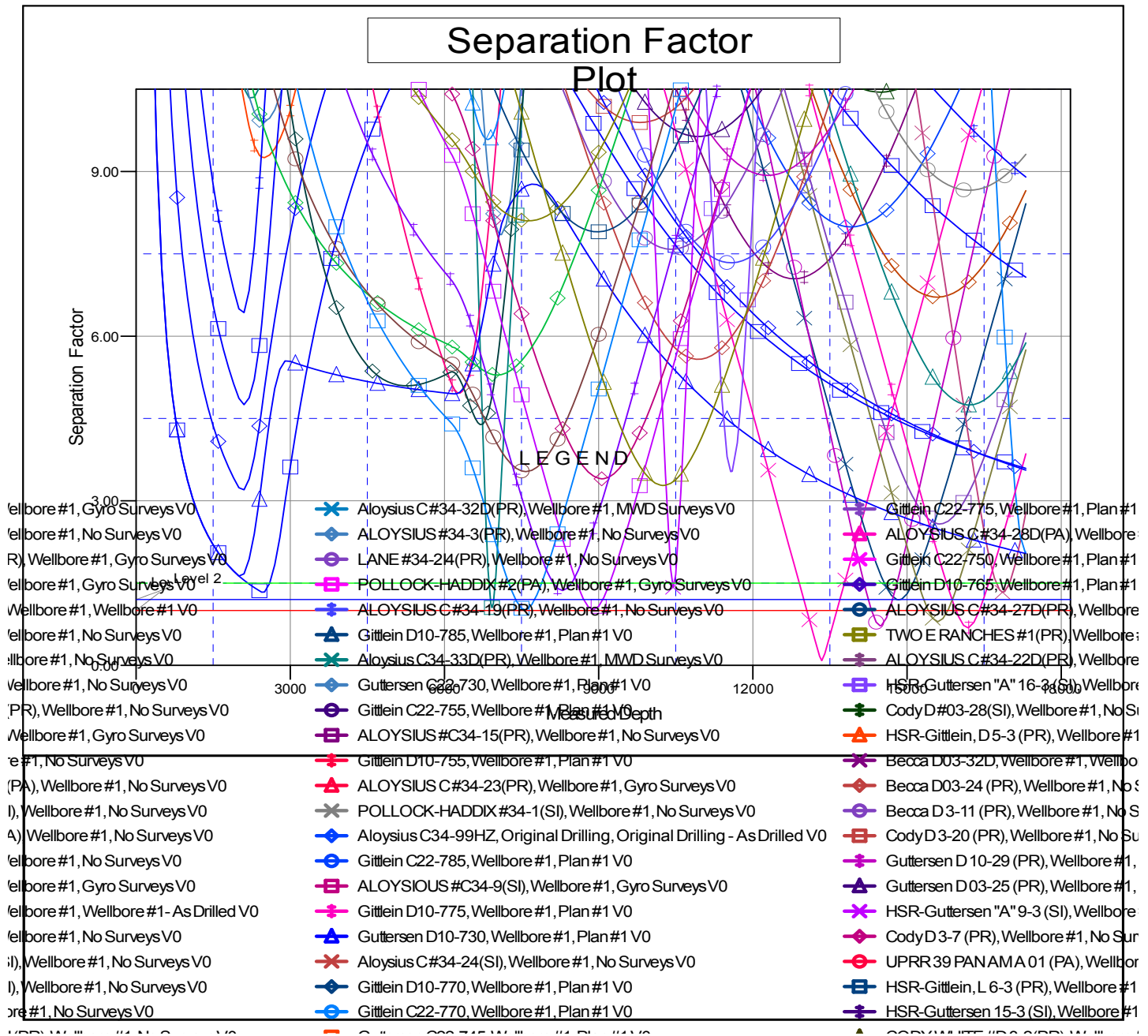
CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Summary Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Guttersen D10-725
Project:	Mustang	TVD Reference:	KB @ 4727.00ft
Reference Site:	C Section 34	MD Reference:	KB @ 4727.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Guttersen D10-725	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 @ 4727.00ft
Offset Depths are relative to Offset Datum
Central Meridian is -105.5000000

Coordinates are relative to: Guttersen D10-725
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 0.62°



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