

Geodetic System: US State Plane 1983
Datum: North American Datum 1983
Ellipsoid: GRS 1980
Zone: Colorado Northern Zone
System Datum: Mean Sea Level

Plan: Plan #1 (Guttersen D10-715/Wellbore #1)	
Created By: Chad Stich	Date: 16:03, October 16 2018
Checked: _____	Date: _____
Reviewed: _____	Date: _____
Approved: _____	Date: _____

Northern Region - DJ Basin

Mustang

C Section 34

Guttersen D10-715

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 D10-715
Project:	Mustang	TVD Reference:	KB @ 4727.00ft
Site:	C Section 34	MD Reference:	KB @ 4727.00ft
Well:	Guttersen D10-715	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 D10-715					
Well Position	+N/-S	0.00 ft	Northing:	1,340,132.56 usft	Latitude:	40.2630280
	+E/-W	0.00 ft	Easting:	3,269,722.96 usft	Longitude:	-104.5334850
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	52,196.55169170

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	172.93	

Survey Tool Program	Date	10/10/2018			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
0.00	17,545.20	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	

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Survey Report

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Project:	Mustang	TVD Reference:	KB @ 4727.00ft
Site:	C Section 34	MD Reference:	KB @ 4727.00ft
Well:	Guttersen D10-715	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	89.78	2,099.98	0.01	1.75	0.21	2.00	2.00	0.00
2,200.00	4.00	89.78	2,199.84	0.03	6.98	0.83	2.00	2.00	0.00
2,300.00	6.00	89.78	2,299.45	0.06	15.69	1.87	2.00	2.00	0.00
2,400.00	8.00	89.78	2,398.70	0.11	27.88	3.33	2.00	2.00	0.00
2,500.00	10.00	89.78	2,497.47	0.17	43.52	5.19	2.00	2.00	0.00
2,600.00	12.00	89.78	2,595.62	0.24	62.60	7.47	2.00	2.00	0.00
2,700.00	14.00	89.78	2,693.06	0.33	85.10	10.15	2.00	2.00	0.00
2,800.00	16.00	89.78	2,789.64	0.43	110.98	13.24	2.00	2.00	0.00
2,872.94	17.46	89.78	2,859.50	0.51	131.97	15.74	2.00	2.00	0.00
2,900.00	17.46	89.78	2,885.31	0.54	140.09	16.71	0.00	0.00	0.00
3,000.00	17.46	89.78	2,980.70	0.65	170.09	20.29	0.00	0.00	0.00
3,100.00	17.46	89.78	3,076.09	0.77	200.09	23.87	0.00	0.00	0.00
3,200.00	17.46	89.78	3,171.49	0.88	230.10	27.45	0.00	0.00	0.00
3,300.00	17.46	89.78	3,266.88	1.00	260.10	31.03	0.00	0.00	0.00
3,400.00	17.46	89.78	3,362.27	1.11	290.10	34.61	0.00	0.00	0.00
3,500.00	17.46	89.78	3,457.67	1.23	320.10	38.19	0.00	0.00	0.00
3,600.00	17.46	89.78	3,553.06	1.34	350.10	41.77	0.00	0.00	0.00
3,700.00	17.46	89.78	3,648.45	1.46	380.11	45.35	0.00	0.00	0.00
3,800.00	17.46	89.78	3,743.85	1.58	410.11	48.93	0.00	0.00	0.00
3,900.00	17.46	89.78	3,839.24	1.69	440.11	52.51	0.00	0.00	0.00
4,000.00	17.46	89.78	3,934.63	1.81	470.11	56.09	0.00	0.00	0.00
4,100.00	17.46	89.78	4,030.03	1.92	500.11	59.67	0.00	0.00	0.00
4,200.00	17.46	89.78	4,125.42	2.04	530.11	63.25	0.00	0.00	0.00
4,300.00	17.46	89.78	4,220.81	2.15	560.12	66.82	0.00	0.00	0.00
4,400.00	17.46	89.78	4,316.21	2.27	590.12	70.40	0.00	0.00	0.00
4,500.00	17.46	89.78	4,411.60	2.38	620.12	73.98	0.00	0.00	0.00
4,600.00	17.46	89.78	4,506.99	2.50	650.12	77.56	0.00	0.00	0.00
4,700.00	17.46	89.78	4,602.39	2.61	680.12	81.14	0.00	0.00	0.00
4,800.00	17.46	89.78	4,697.78	2.73	710.13	84.72	0.00	0.00	0.00
4,900.00	17.46	89.78	4,793.17	2.84	740.13	88.30	0.00	0.00	0.00
5,000.00	17.46	89.78	4,888.57	2.96	770.13	91.88	0.00	0.00	0.00
5,100.00	17.46	89.78	4,983.96	3.07	800.13	95.46	0.00	0.00	0.00
5,200.00	17.46	89.78	5,079.35	3.19	830.13	99.04	0.00	0.00	0.00

Noble Energy, Inc.

Survey Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Guttersen D10-715
Project:	Mustang	TVD Reference:	KB @ 4727.00ft
Site:	C Section 34	MD Reference:	KB @ 4727.00ft
Well:	Guttersen D10-715	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	17.46	89.78	5,174.75	3.30	860.14	102.62	0.00	0.00	0.00
5,400.00	17.46	89.78	5,270.14	3.42	890.14	106.20	0.00	0.00	0.00
5,500.00	17.46	89.78	5,365.53	3.53	920.14	109.78	0.00	0.00	0.00
5,600.00	17.46	89.78	5,460.93	3.65	950.14	113.36	0.00	0.00	0.00
5,700.00	17.46	89.78	5,556.32	3.77	980.14	116.94	0.00	0.00	0.00
5,800.00	17.46	89.78	5,651.71	3.88	1,010.15	120.52	0.00	0.00	0.00
5,900.00	17.46	89.78	5,747.10	4.00	1,040.15	124.09	0.00	0.00	0.00
6,000.00	17.46	89.78	5,842.50	4.11	1,070.15	127.67	0.00	0.00	0.00
6,100.00	17.46	89.78	5,937.89	4.23	1,100.15	131.25	0.00	0.00	0.00
6,200.00	17.46	89.78	6,033.28	4.34	1,130.15	134.83	0.00	0.00	0.00
6,300.00	17.46	89.78	6,128.68	4.46	1,160.15	138.41	0.00	0.00	0.00
6,322.89	17.46	89.78	6,150.52	4.48	1,167.02	139.23	0.00	0.00	0.00
6,400.00	18.10	112.55	6,224.03	-0.07	1,189.68	146.54	9.00	0.83	29.53
6,500.00	22.27	135.92	6,318.02	-19.68	1,217.26	169.40	9.00	4.17	23.37
6,600.00	28.66	150.81	6,408.35	-54.30	1,242.18	206.82	9.00	6.39	14.89
6,700.00	36.10	160.33	6,492.80	-103.08	1,263.84	257.89	9.00	7.44	9.51
6,800.00	44.06	166.87	6,569.28	-164.81	1,281.69	321.35	9.00	7.96	6.54
6,900.00	52.30	171.74	6,635.92	-237.98	1,295.30	395.64	9.00	8.24	4.87
7,000.00	60.71	175.62	6,691.07	-320.78	1,304.33	478.92	9.00	8.40	3.88
7,100.00	69.20	178.91	6,733.38	-411.18	1,308.56	569.15	9.00	8.50	3.28
7,200.00	77.75	181.84	6,761.80	-506.94	1,307.88	664.11	9.00	8.55	2.93
7,300.00	86.33	184.58	6,775.63	-605.72	1,302.32	761.45	9.00	8.58	2.74
7,342.70	90.00	185.73	6,777.00	-648.22	1,298.49	803.15	9.00	8.59	2.69
7,400.00	90.00	185.16	6,777.00	-705.26	1,293.05	859.09	1.00	0.00	-1.00
7,500.00	90.00	184.16	6,777.00	-804.93	1,284.93	957.00	1.00	0.00	-1.00
7,600.00	90.00	183.16	6,777.00	-904.72	1,278.55	1,055.25	1.00	0.00	-1.00
7,700.00	90.00	182.16	6,777.00	-1,004.62	1,273.92	1,153.81	1.00	0.00	-1.00
7,800.00	90.00	181.16	6,777.00	-1,104.57	1,271.03	1,252.65	1.00	0.00	-1.00
7,900.00	90.00	180.16	6,777.00	-1,204.56	1,269.88	1,351.74	1.00	0.00	-1.00
7,961.10	90.00	179.55	6,777.00	-1,265.67	1,270.04	1,412.40	1.00	0.00	-1.00
8,000.00	90.00	179.55	6,777.00	-1,304.56	1,270.35	1,451.04	0.00	0.00	0.00
8,100.00	90.00	179.55	6,777.00	-1,404.56	1,271.14	1,550.37	0.00	0.00	0.00
8,200.00	90.00	179.55	6,777.00	-1,504.56	1,271.93	1,649.71	0.00	0.00	0.00
8,300.00	90.00	179.55	6,777.00	-1,604.55	1,272.72	1,749.04	0.00	0.00	0.00
8,400.00	90.00	179.55	6,777.00	-1,704.55	1,273.52	1,848.37	0.00	0.00	0.00
8,500.00	90.00	179.55	6,777.00	-1,804.55	1,274.31	1,947.71	0.00	0.00	0.00
8,600.00	90.00	179.55	6,777.00	-1,904.54	1,275.10	2,047.04	0.00	0.00	0.00
8,700.00	90.00	179.55	6,777.00	-2,004.54	1,275.89	2,146.37	0.00	0.00	0.00
8,800.00	90.00	179.55	6,777.00	-2,104.54	1,276.69	2,245.71	0.00	0.00	0.00
8,900.00	90.00	179.55	6,777.00	-2,204.53	1,277.48	2,345.04	0.00	0.00	0.00
9,000.00	90.00	179.55	6,777.00	-2,304.53	1,278.27	2,444.38	0.00	0.00	0.00
9,100.00	90.00	179.55	6,777.00	-2,404.53	1,279.06	2,543.71	0.00	0.00	0.00
9,200.00	90.00	179.55	6,777.00	-2,504.52	1,279.86	2,643.04	0.00	0.00	0.00

Noble Energy, Inc.

Survey Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Guttersen D10-715
Project:	Mustang	TVD Reference:	KB @ 4727.00ft
Site:	C Section 34	MD Reference:	KB @ 4727.00ft
Well:	Guttersen D10-715	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)
9,300.00	90.00	179.55	6,777.00	-2,604.52	1,280.65	2,742.38	0.00	0.00	0.00
9,400.00	90.00	179.55	6,777.00	-2,704.52	1,281.44	2,841.71	0.00	0.00	0.00
9,500.00	90.00	179.55	6,777.00	-2,804.52	1,282.23	2,941.04	0.00	0.00	0.00
9,600.00	90.00	179.55	6,777.00	-2,904.51	1,283.03	3,040.38	0.00	0.00	0.00
9,700.00	90.00	179.55	6,777.00	-3,004.51	1,283.82	3,139.71	0.00	0.00	0.00
9,800.00	90.00	179.55	6,777.00	-3,104.51	1,284.61	3,239.04	0.00	0.00	0.00
9,900.00	90.00	179.55	6,777.00	-3,204.50	1,285.40	3,338.38	0.00	0.00	0.00
10,000.00	90.00	179.55	6,777.00	-3,304.50	1,286.20	3,437.71	0.00	0.00	0.00
10,100.00	90.00	179.55	6,777.00	-3,404.50	1,286.99	3,537.05	0.00	0.00	0.00
10,200.00	90.00	179.55	6,777.00	-3,504.49	1,287.78	3,636.38	0.00	0.00	0.00
10,300.00	90.00	179.55	6,777.00	-3,604.49	1,288.57	3,735.71	0.00	0.00	0.00
10,400.00	90.00	179.55	6,777.00	-3,704.49	1,289.37	3,835.05	0.00	0.00	0.00
10,500.00	90.00	179.55	6,777.00	-3,804.48	1,290.16	3,934.38	0.00	0.00	0.00
10,600.00	90.00	179.55	6,777.00	-3,904.48	1,290.95	4,033.71	0.00	0.00	0.00
10,700.00	90.00	179.55	6,777.00	-4,004.48	1,291.74	4,133.05	0.00	0.00	0.00
10,800.00	90.00	179.55	6,777.00	-4,104.47	1,292.54	4,232.38	0.00	0.00	0.00
10,900.00	90.00	179.55	6,777.00	-4,204.47	1,293.33	4,331.72	0.00	0.00	0.00
11,000.00	90.00	179.55	6,777.00	-4,304.47	1,294.12	4,431.05	0.00	0.00	0.00
11,100.00	90.00	179.55	6,777.00	-4,404.47	1,294.91	4,530.38	0.00	0.00	0.00
11,200.00	90.00	179.55	6,777.00	-4,504.46	1,295.71	4,629.72	0.00	0.00	0.00
11,300.00	90.00	179.55	6,777.00	-4,604.46	1,296.50	4,729.05	0.00	0.00	0.00
11,400.00	90.00	179.55	6,777.00	-4,704.46	1,297.29	4,828.38	0.00	0.00	0.00
11,500.00	90.00	179.55	6,777.00	-4,804.45	1,298.08	4,927.72	0.00	0.00	0.00
11,600.00	90.00	179.55	6,777.00	-4,904.45	1,298.88	5,027.05	0.00	0.00	0.00
11,700.00	90.00	179.55	6,777.00	-5,004.45	1,299.67	5,126.38	0.00	0.00	0.00
11,800.00	90.00	179.55	6,777.00	-5,104.44	1,300.46	5,225.72	0.00	0.00	0.00
11,900.00	90.00	179.55	6,777.00	-5,204.44	1,301.25	5,325.05	0.00	0.00	0.00
12,000.00	90.00	179.55	6,777.00	-5,304.44	1,302.05	5,424.39	0.00	0.00	0.00
12,100.00	90.00	179.55	6,777.00	-5,404.43	1,302.84	5,523.72	0.00	0.00	0.00
12,200.00	90.00	179.55	6,777.00	-5,504.43	1,303.63	5,623.05	0.00	0.00	0.00
12,300.00	90.00	179.55	6,777.00	-5,604.43	1,304.42	5,722.39	0.00	0.00	0.00
12,400.00	90.00	179.55	6,777.00	-5,704.42	1,305.22	5,821.72	0.00	0.00	0.00
12,500.00	90.00	179.55	6,777.00	-5,804.42	1,306.01	5,921.05	0.00	0.00	0.00
12,600.00	90.00	179.55	6,777.00	-5,904.42	1,306.80	6,020.39	0.00	0.00	0.00
12,700.00	90.00	179.55	6,777.00	-6,004.42	1,307.59	6,119.72	0.00	0.00	0.00
12,800.00	90.00	179.55	6,777.00	-6,104.41	1,308.39	6,219.06	0.00	0.00	0.00
12,900.00	90.00	179.55	6,777.00	-6,204.41	1,309.18	6,318.39	0.00	0.00	0.00
13,000.00	90.00	179.55	6,777.00	-6,304.41	1,309.97	6,417.72	0.00	0.00	0.00
13,100.00	90.00	179.55	6,777.00	-6,404.40	1,310.76	6,517.06	0.00	0.00	0.00
13,200.00	90.00	179.55	6,777.00	-6,504.40	1,311.56	6,616.39	0.00	0.00	0.00
13,300.00	90.00	179.55	6,777.00	-6,604.40	1,312.35	6,715.72	0.00	0.00	0.00
13,400.00	90.00	179.55	6,777.00	-6,704.39	1,313.14	6,815.06	0.00	0.00	0.00
13,500.00	90.00	179.55	6,777.00	-6,804.39	1,313.93	6,914.39	0.00	0.00	0.00

Noble Energy, Inc.

Survey Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Guttersen D10-715
Project:	Mustang	TVD Reference:	KB @ 4727.00ft
Site:	C Section 34	MD Reference:	KB @ 4727.00ft
Well:	Guttersen D10-715	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)
13,600.00	90.00	179.55	6,777.00	-6,904.39	1,314.73	7,013.72	0.00	0.00	0.00
13,700.00	90.00	179.55	6,777.00	-7,004.38	1,315.52	7,113.06	0.00	0.00	0.00
13,800.00	90.00	179.55	6,777.00	-7,104.38	1,316.31	7,212.39	0.00	0.00	0.00
13,900.00	90.00	179.55	6,777.00	-7,204.38	1,317.10	7,311.73	0.00	0.00	0.00
14,000.00	90.00	179.55	6,777.00	-7,304.37	1,317.90	7,411.06	0.00	0.00	0.00
14,100.00	90.00	179.55	6,777.00	-7,404.37	1,318.69	7,510.39	0.00	0.00	0.00
14,200.00	90.00	179.55	6,777.00	-7,504.37	1,319.48	7,609.73	0.00	0.00	0.00
14,300.00	90.00	179.55	6,777.00	-7,604.36	1,320.27	7,709.06	0.00	0.00	0.00
14,400.00	90.00	179.55	6,777.00	-7,704.36	1,321.07	7,808.39	0.00	0.00	0.00
14,500.00	90.00	179.55	6,777.00	-7,804.36	1,321.86	7,907.73	0.00	0.00	0.00
14,600.00	90.00	179.55	6,777.00	-7,904.36	1,322.65	8,007.06	0.00	0.00	0.00
14,700.00	90.00	179.55	6,777.00	-8,004.35	1,323.44	8,106.39	0.00	0.00	0.00
14,800.00	90.00	179.55	6,777.00	-8,104.35	1,324.24	8,205.73	0.00	0.00	0.00
14,900.00	90.00	179.55	6,777.00	-8,204.35	1,325.03	8,305.06	0.00	0.00	0.00
15,000.00	90.00	179.55	6,777.00	-8,304.34	1,325.82	8,404.40	0.00	0.00	0.00
15,100.00	90.00	179.55	6,777.00	-8,404.34	1,326.61	8,503.73	0.00	0.00	0.00
15,200.00	90.00	179.55	6,777.00	-8,504.34	1,327.41	8,603.06	0.00	0.00	0.00
15,300.00	90.00	179.55	6,777.00	-8,604.33	1,328.20	8,702.40	0.00	0.00	0.00
15,400.00	90.00	179.55	6,777.00	-8,704.33	1,328.99	8,801.73	0.00	0.00	0.00
15,500.00	90.00	179.55	6,777.00	-8,804.33	1,329.78	8,901.06	0.00	0.00	0.00
15,600.00	90.00	179.55	6,777.00	-8,904.32	1,330.58	9,000.40	0.00	0.00	0.00
15,700.00	90.00	179.55	6,777.00	-9,004.32	1,331.37	9,099.73	0.00	0.00	0.00
15,800.00	90.00	179.55	6,777.00	-9,104.32	1,332.16	9,199.07	0.00	0.00	0.00
15,900.00	90.00	179.55	6,777.00	-9,204.31	1,332.95	9,298.40	0.00	0.00	0.00
16,000.00	90.00	179.55	6,777.00	-9,304.31	1,333.75	9,397.73	0.00	0.00	0.00
16,100.00	90.00	179.55	6,777.00	-9,404.31	1,334.54	9,497.07	0.00	0.00	0.00
16,200.00	90.00	179.55	6,777.00	-9,504.31	1,335.33	9,596.40	0.00	0.00	0.00
16,300.00	90.00	179.55	6,777.00	-9,604.30	1,336.12	9,695.73	0.00	0.00	0.00
16,400.00	90.00	179.55	6,777.00	-9,704.30	1,336.92	9,795.07	0.00	0.00	0.00
16,500.00	90.00	179.55	6,777.00	-9,804.30	1,337.71	9,894.40	0.00	0.00	0.00
16,600.00	90.00	179.55	6,777.00	-9,904.29	1,338.50	9,993.73	0.00	0.00	0.00
16,700.00	90.00	179.55	6,777.00	-10,004.29	1,339.29	10,093.07	0.00	0.00	0.00
16,800.00	90.00	179.55	6,777.00	-10,104.29	1,340.09	10,192.40	0.00	0.00	0.00
16,900.00	90.00	179.55	6,777.00	-10,204.28	1,340.88	10,291.74	0.00	0.00	0.00
17,000.00	90.00	179.55	6,777.00	-10,304.28	1,341.67	10,391.07	0.00	0.00	0.00
17,100.00	90.00	179.55	6,777.00	-10,404.28	1,342.46	10,490.40	0.00	0.00	0.00
17,200.00	90.00	179.55	6,777.00	-10,504.27	1,343.26	10,589.74	0.00	0.00	0.00
17,300.00	90.00	179.55	6,777.00	-10,604.27	1,344.05	10,689.07	0.00	0.00	0.00
17,400.00	90.00	179.55	6,777.00	-10,704.27	1,344.84	10,788.40	0.00	0.00	0.00
17,500.00	90.00	179.55	6,777.00	-10,804.26	1,345.63	10,887.74	0.00	0.00	0.00
17,545.20	90.00	179.55	6,777.00	-10,849.46	1,345.99	10,932.63	0.00	0.00	0.00

Noble Energy, Inc.

Survey Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Guttersen D10-715
Project:	Mustang	TVD Reference:	KB @ 4727.00ft
Site:	C Section 34	MD Reference:	KB @ 4727.00ft
Well:	Guttersen D10-715	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 D10-715-SHL - plan hits target center - Point	0.00	0.00	0.00	0.00	0.00	1,340,132.56	3,269,722.96	40.2630280	-104.5334850
Guttersen D10-715-KOF - plan hits target center - Point	0.00	0.00	6,150.51	4.48	1,167.02	1,340,137.04	3,270,889.98	40.2630053	-104.5293033
Guttersen D10-715-BHL - plan hits target center - Point	0.00	0.00	6,777.00	-10,849.46	1,345.99	1,329,283.12	3,271,068.95	40.2332067	-104.5290879
Guttersen D10-715-TPZ - plan hits target center - Point	0.00	0.00	6,777.00	-648.22	1,298.49	1,339,484.35	3,271,021.45	40.2612098	-104.5288578

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			
3,619.85	3,572.00	Parkman			
4,301.24	4,222.00	Sussex			
4,927.08	4,819.00	Shannon			
6,021.49	5,863.00	Teepee Buttes			
6,809.41	6,576.00	Sharon Springs			
6,850.09	6,604.00	Top A Chalk			
6,871.45	6,618.00	Top A Marl			
6,903.41	6,638.00	Top B Chalk			
6,983.84	6,683.00	Top B Marl			
7,096.14	6,732.00	Top C Chalk			
7,205.77	6,763.00	Top C Marl			

Plan Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
2000	2000	0	0	Start Build 2.00
6323	6151	4	1167	Start DLS 9.00 TFO 95.68
7343	6777	-648	1298	TPZ/LP at 7342.70 MD
17,545	6777	-10,849	1346	TD at 17545.20

Checked By: _____ Approved By: _____ Date: _____

Northern Region - DJ Basin

Mustang

C Section 34

Guttersen D10-715

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 D10-715
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 D10-715	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	10/10/2018		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
0.00	17,545.20	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
C Section 34						
ALOYSIOUS #C34-11(PA) - Wellbore #1 - Gyro Surveys	750.24	716.24	2,251.26	2,246.47	470.474	CC
ALOYSIOUS #C34-11(PA) - Wellbore #1 - Gyro Surveys	2,000.00	1,952.60	2,254.73	2,241.15	166.033	ES
ALOYSIOUS #C34-11(PA) - Wellbore #1 - Gyro Surveys	6,750.00	6,487.34	3,327.31	3,280.43	70.971	SF
ALOYSIOUS #C34-8(PR) - Wellbore #1 - No Surveys	2,000.00	1,966.00	4,106.75	4,082.66	170.453	CC, ES
ALOYSIOUS #C34-8(PR) - Wellbore #1 - No Surveys	6,850.00	6,569.94	5,239.25	5,157.21	63.867	SF
ALOYSIOUS #C34-9(SI) - Wellbore #1 - Gyro Surveys	5,415.15	5,241.50	1,524.19	1,485.94	39.857	CC
ALOYSIOUS #C34-9(SI) - Wellbore #1 - Gyro Surveys	5,600.00	5,422.24	1,524.95	1,485.33	38.486	ES
ALOYSIOUS #C34-9(SI) - Wellbore #1 - Gyro Surveys	6,450.00	6,249.99	1,565.27	1,519.33	34.076	SF
ALOYSIOUS #34-1(PR) - Wellbore #1 - No Surveys	2,000.00	1,996.00	5,102.19	5,077.84	209.493	CC
ALOYSIOUS #34-1(PR) - Wellbore #1 - No Surveys	2,100.00	2,095.98	5,103.22	5,077.64	199.522	ES
ALOYSIOUS #34-1(PR) - Wellbore #1 - No Surveys	6,850.00	6,599.94	6,095.98	6,013.54	73.944	SF
ALOYSIOUS #34-2(PR) - Wellbore #1 - No Surveys	5,409.63	5,244.33	200.12	134.27	3.039	CC, ES
ALOYSIOUS #34-2(PR) - Wellbore #1 - No Surveys	5,500.00	5,330.53	201.95	135.03	3.018	SF
ALOYSIOUS #34-3(PR) - Wellbore #1 - No Surveys	2,000.00	1,970.00	4,460.43	4,436.30	184.865	CC
ALOYSIOUS #34-3(PR) - Wellbore #1 - No Surveys	2,100.00	2,069.98	4,461.09	4,435.74	175.976	ES
ALOYSIOUS #34-3(PR) - Wellbore #1 - No Surveys	6,750.00	6,502.16	5,191.45	5,109.90	63.658	SF
ALOYSIOUS #34-4(SI) - Wellbore #1 - No Surveys	2,000.00	1,963.00	3,296.37	3,272.31	136.967	CC
ALOYSIOUS #34-4(SI) - Wellbore #1 - No Surveys	2,100.00	2,062.98	3,297.29	3,272.00	130.383	ES
ALOYSIOUS #34-4(SI) - Wellbore #1 - No Surveys	6,700.00	6,455.80	4,176.37	4,095.56	51.679	SF
ALOYSIOUS #34-5(PA) - Wellbore #1 - Gyro Surveys	1,930.51	1,894.58	1,612.04	1,598.89	122.623	CC
ALOYSIOUS #34-5(PA) - Wellbore #1 - Gyro Surveys	2,100.00	2,061.77	1,612.66	1,598.33	112.552	ES
ALOYSIOUS #34-5(PA) - Wellbore #1 - Gyro Surveys	6,450.00	6,258.92	2,195.07	2,149.66	48.342	SF
ALOYSIOUS #34-6(PR) - Wellbore #1 - Gyro Surveys	2,016.53	1,996.18	1,675.09	1,661.30	121.472	CC, ES
ALOYSIOUS #34-6(PR) - Wellbore #1 - Gyro Surveys	7,150.00	6,723.02	3,061.99	3,013.37	62.976	SF
ALOYSIOUS #34-7(PR) - Wellbore #1 - Gyro Surveys	151.81	122.81	2,987.91	2,987.34	5,280.628	CC
ALOYSIOUS #34-7(PR) - Wellbore #1 - Gyro Surveys	2,000.00	1,965.77	2,996.87	2,983.23	219.741	ES
ALOYSIOUS #34-7(PR) - Wellbore #1 - Gyro Surveys	7,342.70	6,754.80	4,379.30	4,330.34	89.439	SF
ALOYSIOUS #C34-15(PR) - Wellbore #1 - No Surveys	2,000.00	1,966.00	403.14	379.05	16.732	CC, ES
ALOYSIOUS #C34-15(PR) - Wellbore #1 - No Surveys	2,600.00	2,561.62	459.18	427.82	14.643	SF
Aloysius C #34-18(PA) - Wellbore #1 - Gyro Surveys	585.50	548.50	3,661.93	3,658.32	1,015.059	CC
Aloysius C #34-18(PA) - Wellbore #1 - Gyro Surveys	2,211.75	2,263.24	3,666.35	3,650.94	238.052	ES
Aloysius C #34-18(PA) - Wellbore #1 - Gyro Surveys	6,650.00	6,514.13	4,286.47	4,239.30	90.883	SF
ALOYSIOUS C #34-19(PR) - Wellbore #1 - No Surveys	2,000.00	1,973.00	4,185.33	4,161.17	173.275	CC
ALOYSIOUS C #34-19(PR) - Wellbore #1 - No Surveys	2,100.00	2,072.98	4,186.30	4,160.93	164.967	ES
ALOYSIOUS C #34-19(PR) - Wellbore #1 - No Surveys	6,750.00	6,505.16	5,105.20	5,023.81	62.728	SF
Aloysius C #34-20D(PR) - Wellbore #1 - MWD Surveys	100.00	81.95	2,297.67	2,297.40	8,518.486	CC
Aloysius C #34-20D(PR) - Wellbore #1 - MWD Surveys	800.00	781.49	2,297.75	2,293.74	572.932	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 Guttersten D10-715
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 D10-715	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						
C Section 34						
Aloysius C #34-20D(PR) - Wellbore #1 - MWD Surveys	6,700.00	6,705.24	4,212.05	4,165.24	89.980	SF
Aloysius C #34-21D(SI) - Wellbore #1 - MWD Surveys	807.38	789.22	1,666.54	1,662.49	411.331	CC, ES
Aloysius C #34-21D(SI) - Wellbore #1 - MWD Surveys	6,550.00	6,589.93	3,354.63	3,308.41	72.573	SF
ALOYSIUS C #34-22D(PR) - Wellbore #1 - MWD Survey	100.00	77.72	1,828.17	1,827.91	6,972.778	CC
ALOYSIUS C #34-22D(PR) - Wellbore #1 - MWD Survey	800.00	772.70	1,828.81	1,824.67	441.434	ES
ALOYSIUS C #34-22D(PR) - Wellbore #1 - MWD Survey	6,500.00	6,454.13	2,468.42	2,421.82	52.970	SF
ALOYSIUS C #34-23(PR) - Wellbore #1 - Gyro Surveys	3,499.98	3,444.72	861.81	837.57	35.554	CC
ALOYSIUS C #34-23(PR) - Wellbore #1 - Gyro Surveys	3,500.00	3,444.74	861.81	837.57	35.554	ES
ALOYSIUS C #34-23(PR) - Wellbore #1 - Gyro Surveys	5,800.00	5,634.39	1,129.58	1,088.90	27.768	SF
Aloysius C #34-24(SI) - Wellbore #1 - No Surveys	2,000.00	1,968.00	1,200.10	1,175.99	49.775	CC, ES
Aloysius C #34-24(SI) - Wellbore #1 - No Surveys	6,500.00	6,286.02	2,252.89	2,174.48	28.732	SF
ALOYSIUS C #34-27D(PR) - Wellbore #1 - MWD Survey	756.97	763.29	4,332.15	4,328.32	1,133.213	CC, ES
ALOYSIUS C #34-27D(PR) - Wellbore #1 - MWD Survey	6,650.00	6,580.67	4,876.92	4,827.94	99.569	SF
ALOYSIUS C #34-28D(PA) - Wellbore #1 - Gyro Surveys	638.43	610.82	4,504.01	4,500.00	1,121.760	CC
ALOYSIUS C #34-28D(PA) - Wellbore #1 - Gyro Surveys	700.00	654.13	4,504.15	4,499.76	1,026.733	ES
ALOYSIUS C #34-28D(PA) - Wellbore #1 - Gyro Surveys	6,600.00	6,522.07	5,204.32	5,144.08	86.381	SF
Aloysius C #34-31(PA) - Wellbore #1 - Gyro Surveys	448.17	441.18	4,917.12	4,914.38	1,794.868	CC
Aloysius C #34-31(PA) - Wellbore #1 - Gyro Surveys	1,000.00	955.67	4,918.72	4,912.21	754.992	ES
Aloysius C #34-31(PA) - Wellbore #1 - Gyro Surveys	6,850.00	6,649.35	6,055.57	6,007.75	126.624	SF
Aloysius C #34-32D(PR) - Wellbore #1 - MWD Surveys	100.00	80.61	2,948.57	2,948.31	10,000.000	CC
Aloysius C #34-32D(PR) - Wellbore #1 - MWD Surveys	600.00	566.20	2,950.20	2,947.29	1,012.513	ES
Aloysius C #34-32D(PR) - Wellbore #1 - MWD Surveys	7,000.00	7,051.35	5,405.55	5,355.85	108.753	SF
Aloysius C34-33D(PR) - Wellbore #1 - MWD Surveys	0.00	0.00	3,023.63			
Aloysius C34-33D(PR) - Wellbore #1 - MWD Surveys	300.00	267.86	3,024.51	3,023.20	2,300.983	ES
Aloysius C34-33D(PR) - Wellbore #1 - MWD Surveys	7,000.00	6,760.10	5,023.19	4,974.12	102.367	SF
Aloysius C34-99HZ - Original Drilling - Original Drilling - A	6,042.43	5,866.50	1,382.93	1,340.66	32.714	CC
Aloysius C34-99HZ - Original Drilling - Original Drilling - A	6,322.89	6,177.67	1,384.72	1,340.34	31.203	ES
Aloysius C34-99HZ - Original Drilling - Original Drilling - A	6,400.00	6,400.00	1,390.34	1,344.92	30.610	SF
DONOVAN D #02-30(PR) - Wellbore #1 - No Surveys	6,974.46	6,647.16	139.97	56.86	1.684	CC, ES, SF
Gittlein C22-750 - Wellbore #1 - Plan #1	2,000.00	2,002.00	1,332.91	1,319.03	96.031	CC, ES
Gittlein C22-750 - Wellbore #1 - Plan #1	6,750.00	7,488.90	2,307.70	2,255.86	44.518	SF
Gittlein C22-755 - Wellbore #1 - Plan #1	2,000.00	2,002.00	1,355.51	1,341.63	97.659	CC, ES
Gittlein C22-755 - Wellbore #1 - Plan #1	6,650.00	7,431.50	2,609.07	2,557.84	50.931	SF
Gittlein C22-765 - Wellbore #1 - Plan #1	2,000.00	2,002.00	1,378.09	1,364.21	99.286	CC, ES
Gittlein C22-765 - Wellbore #1 - Plan #1	6,650.00	7,409.82	3,252.05	3,201.21	63.972	SF
Gittlein C22-770 - Wellbore #1 - Plan #1	2,000.00	2,003.00	1,400.40	1,386.51	100.867	CC, ES
Gittlein C22-770 - Wellbore #1 - Plan #1	8,400.00	6,350.00	3,560.53	3,509.90	70.325	SF
Gittlein C22-775 - Wellbore #1 - Plan #1	2,000.00	2,003.00	1,422.98	1,409.10	102.494	CC, ES
Gittlein C22-775 - Wellbore #1 - Plan #1	8,900.00	6,257.10	3,970.15	3,917.90	75.985	SF
Gittlein C22-785 - Wellbore #1 - Plan #1	2,000.00	2,003.00	1,445.30	1,431.42	104.101	CC, ES
Gittlein C22-785 - Wellbore #1 - Plan #1	9,700.00	5,964.39	4,691.31	4,636.95	86.308	SF
Gittlein D10-755 - Wellbore #1 - Plan #1	2,000.00	2,002.00	1,335.41	1,321.53	96.211	CC, ES
Gittlein D10-755 - Wellbore #1 - Plan #1	17,545.20	17,324.73	2,608.77	2,423.46	14.078	SF
Gittlein D10-765 - Wellbore #1 - Plan #1	2,000.00	2,002.00	1,357.66	1,343.78	97.814	CC, ES
Gittlein D10-765 - Wellbore #1 - Plan #1	17,545.20	17,268.25	3,261.95	3,076.58	17.597	SF
Gittlein D10-770 - Wellbore #1 - Plan #1	2,000.00	2,002.00	1,380.22	1,366.34	99.439	CC, ES
Gittlein D10-770 - Wellbore #1 - Plan #1	17,545.20	17,511.67	3,589.10	3,403.32	19.319	SF
Gittlein D10-775 - Wellbore #1 - Plan #1	2,000.00	2,002.00	1,402.51	1,388.63	101.045	CC, ES
Gittlein D10-775 - Wellbore #1 - Plan #1	17,545.20	17,455.49	3,913.17	3,727.61	21.089	SF
Gittlein D10-785 - Wellbore #1 - Plan #1	2,000.00	2,003.00	1,425.04	1,411.16	102.642	CC, ES
Gittlein D10-785 - Wellbore #1 - Plan #1	17,545.20	17,591.40	4,566.05	4,380.34	24.588	SF
Guttersten C22-715 - Wellbore #1 - Plan #1	7,130.48	7,215.66	40.49	-12.14	0.769	Level 1, CC, ES, SF
Guttersten C22-725 - Wellbore #1 - Plan #1	2,000.00	2,000.00	156.55	142.68	11.285	CC, 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 D10-715
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 D10-715	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						
Guttersen C22-725 - Wellbore #1 - Plan #1	2,200.00	2,193.61	162.56	147.35	10.690	SF
Guttersen C22-730 - Wellbore #1 - Plan #1	2,000.00	2,000.00	164.30	150.42	11.843	CC, ES
Guttersen C22-730 - Wellbore #1 - Plan #1	2,400.00	2,401.30	177.68	160.99	10.641	SF
Guttersen C22-735 - Wellbore #1 - Plan #1	2,000.00	2,000.00	175.02	161.14	12.616	CC, ES
Guttersen C22-735 - Wellbore #1 - Plan #1	2,300.00	2,294.72	184.92	168.97	11.596	SF
Guttersen C22-745 - Wellbore #1 - Plan #1	2,000.00	2,000.00	187.41	173.53	13.509	CC, ES
Guttersen C22-745 - Wellbore #1 - Plan #1	2,200.00	2,187.11	198.18	183.02	13.067	SF
GUTTERSEN D #03-27(PR) - Wellbore #1 - No Surveys	3,440.35	3,369.76	310.44	268.88	7.469	CC
GUTTERSEN D #03-27(PR) - Wellbore #1 - No Surveys	3,500.00	3,426.67	310.95	268.66	7.353	ES
GUTTERSEN D #03-27(PR) - Wellbore #1 - No Surveys	3,800.00	3,712.85	328.66	282.70	7.151	SF
Guttersen D10-725 - Wellbore #1 - Plan #1	2,442.90	2,446.40	22.38	5.61	1.334	Level 3, CC, ES, SF
Guttersen D10-730 - Wellbore #1 - Plan #1	2,000.00	2,000.00	45.22	31.34	3.259	CC, ES
Guttersen D10-730 - Wellbore #1 - Plan #1	2,100.00	2,100.02	46.96	32.38	3.221	SF
Guttersen D10-735 - Wellbore #1 - Plan #1	2,000.00	2,000.00	67.54	53.67	4.868	CC, ES
Guttersen D10-735 - Wellbore #1 - Plan #1	2,100.00	2,100.02	69.28	54.70	4.752	SF
Guttersen D10-745 - Wellbore #1 - Plan #1	2,000.00	2,000.00	90.15	76.27	6.498	CC, ES
Guttersen D10-745 - Wellbore #1 - Plan #1	2,100.00	2,100.02	91.89	77.31	6.302	SF
Guttersen D10-750 - Wellbore #1 - Plan #1	2,000.00	2,000.00	112.76	98.88	8.128	CC, ES
Guttersen D10-750 - Wellbore #1 - Plan #1	2,100.00	2,096.11	116.18	101.62	7.984	SF
LANE #34-214(PR) - Wellbore #1 - No Surveys	2,000.00	1,962.00	3,967.27	3,943.21	164.903	CC
LANE #34-214(PR) - Wellbore #1 - No Surveys	2,600.00	2,557.62	3,970.37	3,939.02	126.659	ES
LANE #34-214(PR) - Wellbore #1 - No Surveys	6,650.00	6,413.44	4,286.99	4,206.19	53.055	SF
LANE #34-814(PR) - Wellbore #1 - No Surveys	5,630.21	5,451.74	3,026.08	2,957.51	44.134	CC
LANE #34-814(PR) - Wellbore #1 - No Surveys	6,000.00	5,804.50	3,028.11	2,954.95	41.389	ES
LANE #34-814(PR) - Wellbore #1 - No Surveys	6,600.00	6,370.35	3,098.08	3,017.60	38.497	SF
LANE C #34-17(PR) - Wellbore #1 - No Surveys	3,676.88	3,586.40	3,505.35	3,460.97	78.998	CC
LANE C #34-17(PR) - Wellbore #1 - No Surveys	4,200.00	4,085.42	3,508.86	3,458.06	69.075	ES
LANE C #34-17(PR) - Wellbore #1 - No Surveys	6,600.00	6,368.35	3,668.77	3,588.43	45.662	SF
POLLOCK-HADDIX #2(PA) - Wellbore #1 - Gyro Surveys	4,968.99	4,755.35	4,190.55	4,155.84	120.735	CC
POLLOCK-HADDIX #2(PA) - Wellbore #1 - Gyro Surveys	5,400.00	5,169.56	4,192.96	4,155.03	110.571	ES
POLLOCK-HADDIX #2(PA) - Wellbore #1 - Gyro Surveys	6,650.00	6,431.60	4,292.01	4,244.66	90.653	SF
POLLOCK-HADDIX #34-1(SI) - Wellbore #1 - No Survey	2,000.00	1,963.00	2,836.76	2,812.70	117.870	CC
POLLOCK-HADDIX #34-1(SI) - Wellbore #1 - No Survey	2,300.00	2,262.45	2,838.41	2,810.69	102.398	ES
POLLOCK-HADDIX #34-1(SI) - Wellbore #1 - No Survey	6,550.00	6,326.78	3,240.08	3,160.51	40.721	SF
TWO E RANCHES #1(PR) - Wellbore #1 - Gyro Surveys	100.00	62.83	2,904.44	2,904.20	10,000.000	CC
TWO E RANCHES #1(PR) - Wellbore #1 - Gyro Surveys	1,700.00	1,647.49	2,911.95	2,900.50	254.326	ES
TWO E RANCHES #1(PR) - Wellbore #1 - Gyro Surveys	7,100.00	6,840.41	4,243.66	4,194.80	86.864	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 D10-715
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 D10-715	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
D Section 02						
BOOTH D #02-31 - BOOTH D #02-31 - No Surveys	8,465.01	6,760.00	542.14	377.86	3.300	CC, ES
BOOTH D #02-31 - BOOTH D #02-31 - No Surveys	8,500.00	6,760.00	543.27	378.62	3.300	SF
Booth D11-715 - Booth D11-715 - Plan #1	4,834.71	3,320.67	4,915.29	4,886.92	173.212	CC
Booth D11-715 - Booth D11-715 - Plan #1	5,500.00	3,961.38	4,918.41	4,884.99	147.145	ES
Booth D11-715 - Booth D11-715 - Plan #1	17,545.20	17,514.35	5,262.10	5,079.86	28.874	SF
Booth D11-725 - Booth D11-725 - Plan #1	6,802.53	5,862.35	4,553.52	4,507.34	98.624	CC
Booth D11-725 - Booth D11-725 - Plan #1	17,545.20	17,473.90	4,608.82	4,426.96	25.343	ES, SF
Booth D11-730 - Booth D11-730 - Plan #1	6,895.63	6,285.33	4,278.80	4,230.97	89.471	CC
Booth D11-730 - Booth D11-730 - Plan #1	17,545.20	17,544.11	4,283.06	4,101.54	23.595	ES, SF
Booth D11-735 - Booth D11-735 - Plan #1	17,545.20	17,341.28	3,959.03	3,777.11	21.762	CC, ES, SF
Booth D11-745 - Booth D11-745 - Plan #1	17,545.20	17,438.95	3,305.92	3,124.21	18.194	CC, ES, SF
Booth D11-755 - Booth D11-755 - Plan #1	17,545.20	17,404.61	2,654.57	2,472.96	14.616	CC, ES, SF
Booth D11-765 - Booth D11-765 - Plan #1	17,545.20	17,478.93	2,003.12	1,821.54	11.032	CC, ES, SF
Booth D11-770 - Booth D11-770 - Plan #1	17,545.20	17,655.24	1,679.10	1,497.54	9.248	CC, ES, SF
Booth D11-775 - Booth D11-775 - Plan #1	17,545.20	17,641.49	1,351.59	1,169.93	7.440	CC, ES, SF
Booth D11-785 - Booth D11-785 - Plan #1	17,545.20	17,818.48	706.83	525.68	3.902	CC, ES, SF
DONOVAN D #2-19(PR) - DONOVAN D #2-19 - No Surv	8,377.31	6,757.00	1,579.26	1,415.40	9.638	CC, ES
DONOVAN D #2-19(PR) - DONOVAN D #2-19 - No Surv	8,500.00	6,757.00	1,584.02	1,419.40	9.622	SF
DONOVAN D #2-3JI(PR) - DONOVAN D #2-3JI - No Sur	7,700.04	6,761.00	2,338.68	2,177.05	14.469	CC, ES
DONOVAN D #2-3JI(PR) - DONOVAN D #2-3JI - No Sur	7,961.10	6,761.00	2,347.29	2,184.65	14.433	SF
DONOVAN D #2-4JI(SI) - DONOVAN D #2-4JI - No Surv	7,586.14	6,748.00	1,033.92	872.85	6.419	CC, ES
DONOVAN D #2-4JI(SI) - DONOVAN D #2-4JI - No Surv	7,600.00	6,748.00	1,034.00	872.87	6.417	SF
DONOVAN D #2-5JI - DONOVAN D #2-5JI - No Surveys	9,114.92	6,758.00	1,012.17	844.93	6.052	CC, ES
DONOVAN D #2-5JI - DONOVAN D #2-5JI - No Surveys	9,200.00	6,758.00	1,015.74	847.71	6.045	SF
DONOVAN D #2-6JI(PR) - DONOVAN D #2-6JI - No Sur	9,289.36	6,761.00	2,324.50	2,156.29	13.819	CC
DONOVAN D #2-6JI(PR) - DONOVAN D #2-6JI - No Sur	9,300.00	6,761.00	2,324.52	2,156.24	13.813	ES
DONOVAN D #2-6JI(PR) - DONOVAN D #2-6JI - No Sur	9,500.00	6,761.00	2,334.02	2,164.28	13.750	SF
GUTTERSEN #D02-25(PR) - GUTTERSEN #D02-25 - N	10,835.79	6,750.00	1,732.00	1,554.67	9.767	CC, ES
GUTTERSEN #D02-25(PR) - GUTTERSEN #D02-25 - N	11,000.00	6,750.00	1,739.77	1,560.89	9.726	SF
GUTTERSEN #D02-33D(PR) - GUTTERSEN #D02-33D	11,111.52	6,946.77	430.13	360.11	6.143	CC, ES, SF
GUTTERSEN #D11-29D(PR) - GUTTERSEN #D11-29D	12,380.71	7,019.84	1,662.26	1,572.75	18.569	CC
GUTTERSEN #D11-29D(PR) - GUTTERSEN #D11-29D	12,400.00	7,019.84	1,662.38	1,572.65	18.528	ES
GUTTERSEN #D11-29D(PR) - GUTTERSEN #D11-29D	12,600.00	7,019.84	1,676.67	1,585.27	18.346	SF
GUTTERSEN D #02-20(SI) - GUTTERSEN D #02-20 - W	10,052.09	6,700.01	1,834.90	1,784.40	36.335	CC, ES
GUTTERSEN D #02-20(SI) - GUTTERSEN D #02-20 - W	10,500.00	6,700.01	1,888.77	1,834.78	34.985	SF
Guttersen D02-75HN - Original Drilling - Original Drilling	11,300.00	11,300.00	2,895.00	2,785.69	26.484	ES, SF
Guttersen D02-75HN - Original Drilling - Original Drilling	12,225.53	6,516.00	2,865.13	2,790.77	38.533	CC
HSR-BOOTH #7-2(SI) - HSR-BOOTH #7-2 - No Surveys	9,113.78	6,752.00	3,713.88	3,546.77	22.223	CC, ES
HSR-BOOTH #7-2(SI) - HSR-BOOTH #7-2 - No Surveys	9,600.00	6,752.00	3,745.58	3,575.31	21.998	SF
HSR-BOOTH #8-2(SI) - HSR-BOOTH #8-2 - No Surveys	9,175.71	6,787.00	4,850.03	4,681.89	28.846	CC
HSR-BOOTH #8-2(SI) - HSR-BOOTH #8-2 - No Surveys	9,200.00	6,787.00	4,850.09	4,681.81	28.821	ES
HSR-BOOTH #8-2(SI) - HSR-BOOTH #8-2 - No Surveys	10,100.00	6,787.00	4,937.32	4,763.25	28.364	SF
KERN #1(PA) - KERN #1 - No Surveys	8,087.49	6,765.00	4,539.52	4,376.57	27.857	CC
KERN #1(PA) - KERN #1 - No Surveys	8,100.00	6,765.00	4,539.54	4,376.53	27.849	ES
KERN #1(PA) - KERN #1 - No Surveys	8,800.00	6,765.00	4,595.10	4,428.72	27.618	SF
KERN D #2-1(SI) - KERN D #2-1 - No Surveys	7,297.01	6,762.44	5,127.37	4,966.54	31.880	CC
KERN D #2-1(SI) - KERN D #2-1 - No Surveys	7,300.00	6,762.63	5,127.37	4,966.53	31.878	ES
KERN D #2-1(SI) - KERN D #2-1 - No Surveys	8,500.00	6,764.00	5,201.62	5,036.65	31.531	SF
KERN D #2-2JI(PR) - KERN D #2-2JI - No Surveys	7,331.98	6,762.91	3,542.95	3,382.08	22.024	CC, ES
KERN D #2-2JI(PR) - KERN D #2-2JI - No Surveys	8,000.00	6,763.00	3,571.54	3,408.69	21.931	SF
L F RANCH #2-2(SI) - L F RANCH #2-2 - No Surveys	11,463.60	6,750.00	1,332.00	1,150.41	7.335	CC, ES
L F RANCH #2-2(SI) - L F RANCH #2-2 - No Surveys	11,600.00	6,750.00	1,338.97	1,155.95	7.316	SF
TANIA #D11-27D(PR) - TANIA #D11-27D - Wellbore #1 -	12,419.68	6,869.72	4,274.43	4,196.91	55.144	CC, 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 D10-715
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 D10-715	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 02						
TANIA #D11-27D(PR) - TANIA #D11-27D - Wellbore #1 -	13,900.00	6,904.97	4,523.36	4,433.82	50.517	SF
TANIA #D11-28(PR) - TANIA #D11-28 - No Surveys	12,281.51	6,759.00	3,062.38	2,874.83	16.328	CC
TANIA #D11-28(PR) - TANIA #D11-28 - No Surveys	12,300.00	6,759.00	3,062.44	2,874.71	16.313	ES
TANIA #D11-28(PR) - TANIA #D11-28 - No Surveys	12,700.00	6,759.00	3,090.85	2,899.72	16.172	SF
TANIA BLUE #D 2-11(PR) - TANIA BLUE #D 2-11 - No S	10,451.34	6,755.00	2,475.78	2,300.84	14.152	CC, ES
TANIA BLUE #D 2-11(PR) - TANIA BLUE #D 2-11 - No S	10,700.00	6,755.00	2,488.23	2,311.22	14.057	SF
TANIA BLUE #D 2-12(PA) - TANIA BLUE #D 2-12 - No S	10,387.50	6,743.00	973.37	799.08	5.585	CC
TANIA BLUE #D 2-12(PA) - TANIA BLUE #D 2-12 - No S	10,400.00	6,743.00	973.45	799.01	5.580	ES, SF
TANIA BLUE #D 2-14(PR) - TANIA BLUE #D 2-14 - No S	11,922.86	6,753.00	2,424.83	2,239.96	13.116	CC, ES
TANIA BLUE #D 2-14(PR) - TANIA BLUE #D 2-14 - No S	12,200.00	6,753.00	2,440.61	2,253.26	13.027	SF
TANIA BLUE #D2-10(SI) - TANIA BLUE #D2-10 - No Sur	10,388.49	6,765.00	3,806.69	3,631.95	21.785	CC
TANIA BLUE #D2-10(SI) - TANIA BLUE #D2-10 - No Sur	10,400.00	6,765.00	3,806.71	3,631.88	21.774	ES
TANIA BLUE #D2-10(SI) - TANIA BLUE #D2-10 - No Sur	11,000.00	6,765.00	3,855.49	3,676.14	21.497	SF
TANIA BLUE #D2-16(PR) - TANIA BLUE #D2-16 - No Su	11,846.01	6,767.00	4,833.51	4,648.90	26.183	CC
TANIA BLUE #D2-16(PR) - TANIA BLUE #D2-16 - No Su	11,900.00	6,767.00	4,833.81	4,648.75	26.121	ES
TANIA BLUE #D2-16(PR) - TANIA BLUE #D2-16 - No Su	12,700.00	6,767.00	4,908.37	4,717.08	25.660	SF
TANIA BLUE D #2-15(SI) - TANIA BLUE D #2-15 - No Su	11,751.38	6,756.00	3,666.43	3,482.71	19.957	CC
TANIA BLUE D #2-15(SI) - TANIA BLUE D #2-15 - No Su	11,800.00	6,756.00	3,666.75	3,482.61	19.913	ES
TANIA BLUE D #2-15(SI) - TANIA BLUE D #2-15 - No Su	12,300.00	6,756.00	3,707.25	3,519.07	19.700	SF
TANIA BLUE D #2-9(SI) - TANIA BLUE D #2-9 - No Surv	10,421.93	6,780.00	5,080.41	4,905.16	28.989	CC, ES
TANIA BLUE D #2-9(SI) - TANIA BLUE D #2-9 - No Surv	11,400.00	6,780.00	5,173.70	4,991.32	28.368	SF
TANIA D #2-23(SI) - TANIA D #2-23 - No Surveys	11,035.09	6,767.00	4,381.51	4,202.50	24.477	CC
TANIA D #2-23(SI) - TANIA D #2-23 - No Surveys	11,100.00	6,767.00	4,381.99	4,202.46	24.408	ES
TANIA D #2-23(SI) - TANIA D #2-23 - No Surveys	11,800.00	6,767.00	4,447.77	4,262.90	24.058	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 D10-715
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 D10-715	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	10,554.71	6,773.00	2,930.15	2,620.93	9.476	CC, ES
Becca D 3-11 (PR) - Wellbore #1 - No Surveys	10,700.00	6,773.00	2,933.75	2,623.91	9.469	SF
Becca D 3-12 (PR) - Wellbore #1 - No Surveys	10,594.95	6,769.00	4,255.84	3,946.53	13.759	CC
Becca D 3-12 (PR) - Wellbore #1 - No Surveys	10,600.00	6,769.00	4,255.85	3,946.50	13.758	ES
Becca D 3-12 (PR) - Wellbore #1 - No Surveys	10,900.00	6,769.00	4,266.76	3,955.95	13.728	SF
Becca D 3-13 (PR) - Wellbore #1 - No Surveys	11,840.49	6,781.00	4,140.64	3,822.37	13.010	CC, ES
Becca D 3-13 (PR) - Wellbore #1 - No Surveys	12,100.00	6,781.00	4,148.76	3,829.14	12.980	SF
Becca D 3-14 (PR) - Wellbore #1 - No Surveys	11,713.12	6,771.00	2,921.20	2,604.23	9.216	CC, ES
Becca D 3-14 (PR) - Wellbore #1 - No Surveys	11,800.00	6,771.00	2,922.49	2,605.12	9.208	SF
Becca D03-24 (PR) - Wellbore #1 - No Surveys	11,121.27	6,775.00	2,339.55	2,026.56	7.475	CC, ES
Becca D03-24 (PR) - Wellbore #1 - No Surveys	11,200.00	6,775.00	2,340.87	2,027.58	7.472	SF
Becca D03-32D - Wellbore #1 - Wellbore #1 - As Drilled	0.00	0.00	3,977.50			
Becca D03-32D - Wellbore #1 - Wellbore #1 - As Drilled	800.00	757.31	3,978.51	3,973.40	779.052	ES
Becca D03-32D - Wellbore #1 - Wellbore #1 - As Drilled	12,500.00	7,068.00	5,657.44	5,578.85	71.991	SF
Cody D #03-28(SI) - Wellbore #1 - No Surveys	2,000.00	1,972.00	1,015.45	991.30	42.055	CC, ES
Cody D #03-28(SI) - Wellbore #1 - No Surveys	7,426.32	6,749.00	2,153.64	2,068.97	25.438	SF
Cody D 03-28 (SI) - Wellbore #1 - No Surveys	2,000.00	1,988.00	1,015.45	931.31	12.069	CC
Cody D 03-28 (SI) - Wellbore #1 - No Surveys	2,100.00	2,087.98	1,016.92	928.44	11.493	ES
Cody D 03-28 (SI) - Wellbore #1 - No Surveys	7,426.33	6,765.00	2,153.64	1,859.59	7.324	SF
Cody D 3-20 (PR) - Wellbore #1 - No Surveys	9,886.34	6,771.00	3,593.58	3,288.65	11.785	CC
Cody D 3-20 (PR) - Wellbore #1 - No Surveys	9,900.00	6,771.00	3,593.61	3,288.61	11.783	ES
Cody D 3-20 (PR) - Wellbore #1 - No Surveys	10,100.00	6,771.00	3,599.93	3,294.07	11.770	SF
Cody D 3-7 (PR) - Wellbore #1 - No Surveys	9,286.76	6,755.00	1,610.88	1,309.90	5.352	CC, ES
Cody D 3-7 (PR) - Wellbore #1 - No Surveys	9,300.00	6,755.00	1,610.93	1,309.93	5.352	SF
CODY WHITE #D 3-2(PR) - Wellbore #1 - No Surveys	2,000.00	1,968.00	1,178.09	1,153.98	48.862	CC
CODY WHITE #D 3-2(PR) - Wellbore #1 - No Surveys	2,100.00	2,067.98	1,178.61	1,153.28	46.525	ES
CODY WHITE #D 3-2(PR) - Wellbore #1 - No Surveys	7,841.55	6,745.00	1,619.65	1,533.94	18.898	SF
Cody White D 3-1 (PR) - Wellbore #1 - No Surveys	7,811.63	6,754.00	300.03	5.32	1.018	Level 2, CC, ES, SF
Cody White D 3-2 (PR) - Wellbore #1 - No Surveys	2,000.00	1,978.00	1,178.09	1,094.24	14.049	CC
Cody White D 3-2 (PR) - Wellbore #1 - No Surveys	2,400.00	2,376.70	1,186.76	1,085.56	11.728	ES
Cody White D 3-2 (PR) - Wellbore #1 - No Surveys	7,841.55	6,755.00	1,619.65	1,324.81	5.493	SF
Cody White D 3-8 (PR) - Wellbore #1 - No Surveys	9,126.19	6,756.00	299.57	-0.61	0.998	Level 1, CC, ES, SF
Guttersten D 02-32D (PR) - Wellbore #1 - As Drilled Surv	9,893.45	6,885.27	422.61	359.09	6.653	CC
Guttersten D 02-32D (PR) - Wellbore #1 - As Drilled Surv	9,900.00	6,885.26	422.66	358.94	6.633	ES
Guttersten D 02-32D (PR) - Wellbore #1 - As Drilled Surv	10,000.00	6,885.11	435.84	369.71	6.591	SF
Guttersten D 03-17 (PR) - Wellbore #1 - No Surveys	8,526.84	6,762.00	996.61	699.09	3.350	CC, ES, SF
Guttersten D 03-25 (PR) - Wellbore #1 - No Surveys	11,004.70	6,773.00	3,592.04	3,279.96	11.510	CC, ES
Guttersten D 03-25 (PR) - Wellbore #1 - No Surveys	11,200.00	6,773.00	3,597.34	3,284.33	11.492	SF
Guttersten D 10-29 (PR) - Wellbore #1 - No Surveys	12,371.51	6,782.00	3,466.67	3,144.67	10.766	CC
Guttersten D 10-29 (PR) - Wellbore #1 - No Surveys	12,400.00	6,782.00	3,466.79	3,144.63	10.761	ES
Guttersten D 10-29 (PR) - Wellbore #1 - No Surveys	12,500.00	6,782.00	3,469.06	3,146.39	10.751	SF
HSR-Gittlein, D 4-3 (PR) - Wellbore #1 - No Surveys	2,000.00	1,985.00	3,302.08	3,217.95	39.247	CC
HSR-Gittlein, D 4-3 (PR) - Wellbore #1 - No Surveys	2,100.00	2,084.98	3,303.76	3,215.27	37.337	ES
HSR-Gittlein, D 4-3 (PR) - Wellbore #1 - No Surveys	7,900.00	6,762.00	4,435.19	4,140.01	15.026	SF
HSR-Gittlein, D 5-3 (PR) - Wellbore #1 - No Surveys	2,000.00	2,008.00	3,992.90	3,907.85	46.944	CC
HSR-Gittlein, D 5-3 (PR) - Wellbore #1 - No Surveys	2,200.00	2,208.16	3,998.42	3,904.67	42.647	ES
HSR-Gittlein, D 5-3 (PR) - Wellbore #1 - No Surveys	9,400.00	6,769.00	4,436.60	4,134.79	14.700	SF
HSR-Gittlein, L 3-3 (PR) - Wellbore #1 - No Surveys	2,000.00	1,982.00	2,025.99	1,941.98	24.114	CC
HSR-Gittlein, L 3-3 (PR) - Wellbore #1 - No Surveys	2,100.00	2,081.98	2,027.44	1,939.08	22.944	ES
HSR-Gittlein, L 3-3 (PR) - Wellbore #1 - No Surveys	7,900.00	6,759.00	2,948.27	2,653.12	9.989	SF
HSR-Gittlein, L 6-3 (PR) - Wellbore #1 - No Surveys	9,123.09	6,763.00	2,942.68	2,642.24	9.794	CC, ES
HSR-Gittlein, L 6-3 (PR) - Wellbore #1 - No Surveys	9,200.00	6,763.00	2,943.69	2,642.97	9.789	SF
HSR-Guttersten "A" 16-3 (SI) - Wellbore #1 - Gyro Survey	11,800.00	6,763.35	364.06	291.56	5.022	ES, 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 D10-715
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 D10-715	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						
HSR-Guttersen "A" 16-3 (SI) - Wellbore #1 - Gyro Survey	11,803.94	6,763.37	364.03	291.58	5.024	CC
HSR-Guttersen "A" 9-3 (SI) - Wellbore #1 - Gyro Surveys	10,684.41	6,752.75	519.49	454.73	8.021	CC, ES, SF
HSR-Guttersen 10-3 (SI) - Wellbore #1 - No Surveys	10,474.33	6,768.00	1,607.36	1,298.86	5.210	CC, ES
HSR-Guttersen 10-3 (SI) - Wellbore #1 - No Surveys	10,500.00	6,768.00	1,607.57	1,299.00	5.210	SF
HSR-Guttersen 15-3 (SI) - Wellbore #1 - Gyro Surveys	11,939.66	6,752.94	1,517.86	1,444.56	20.708	CC, ES
HSR-Guttersen 15-3 (SI) - Wellbore #1 - Gyro Surveys	12,000.00	6,753.72	1,519.06	1,445.61	20.683	SF
UPRR 39 PAN AM A 01 (PA) - Wellbore #1 - No Surveys	11,797.10	6,782.00	4,255.21	3,937.25	13.383	CC
UPRR 39 PAN AM A 01 (PA) - Wellbore #1 - No Surveys	11,800.00	6,782.00	4,255.21	3,937.23	13.382	ES
UPRR 39 PAN AM A 01 (PA) - Wellbore #1 - No Surveys	12,100.00	6,782.00	4,265.97	3,946.42	13.350	SF

Noble Energy, Inc.
Anticollision Summary Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Guttersen D10-715
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 D10-715	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
D Section 10						
Duncan D 10-6 (SI) - Wellbore #1 - No Surveys	14,016.47	6,803.00	3,282.99	2,947.81	9.795	CC, ES
Duncan D 10-6 (SI) - Wellbore #1 - No Surveys	14,200.00	6,803.00	3,288.12	2,952.02	9.783	SF
Guttersen State D 10-24 (SI) - Wellbore #1 - No Surveys	16,397.90	6,837.00	2,312.92	1,958.06	6.518	CC
Guttersen State D 10-24 (SI) - Wellbore #1 - No Surveys	16,400.00	6,837.00	2,312.92	1,958.05	6.518	ES
Guttersen State D 10-24 (SI) - Wellbore #1 - No Surveys	16,500.00	6,837.00	2,315.17	1,959.90	6.517	SF
Guttersen State D15-27 - Wellbore #1 - Wellbore #1 - As	17,535.92	6,841.22	890.54	774.11	7.649	CC, ES, SF
Karch Blue D 10-02 (SI) - Wellbore #1 - Gyro Surveys	13,389.91	6,800.97	1,785.38	1,701.25	21.222	CC
Karch Blue D 10-02 (SI) - Wellbore #1 - Gyro Surveys	13,400.00	6,800.99	1,785.41	1,701.25	21.213	ES
Karch Blue D 10-02 (SI) - Wellbore #1 - Gyro Surveys	13,500.00	6,801.14	1,788.77	1,704.34	21.185	SF
Karch Blue D 10-07 (SI) - Wellbore #1 - Gyro Surveys	14,505.03	6,794.10	1,733.31	1,640.81	18.738	CC, ES
Karch Blue D 10-07 (SI) - Wellbore #1 - Gyro Surveys	14,600.00	6,793.64	1,735.91	1,643.17	18.717	SF
Karch Blue D 10-08 (SI) - Wellbore #1 - Gyro Surveys	14,712.67	6,818.07	434.14	153.14	1.545	CC, ES, SF
Karch State D 10-22 (SI) - Wellbore #1 - No Surveys	15,069.97	6,824.00	1,043.80	699.76	3.034	CC, ES, SF
Spike D 10-10 (SI) - Wellbore #1 - No Surveys	15,857.57	6,828.00	1,535.59	1,185.20	4.383	CC, ES, SF
Spike ST GWS D 10-09 (SI) - Wellbore #1 - No Surveys	15,832.94	6,829.00	365.91	15.67	1.045	Level 2, CC, ES, SF
Spike ST GWS D 10-12 (SI) - Wellbore #1 - No Surveys	15,757.12	6,814.00	4,324.87	3,976.04	12.398	CC
Spike ST GWS D 10-12 (SI) - Wellbore #1 - No Surveys	15,800.00	6,814.00	4,325.08	3,976.00	12.390	ES
Spike ST GWS D 10-12 (SI) - Wellbore #1 - No Surveys	16,000.00	6,814.00	4,331.68	3,981.48	12.369	SF
Spike ST GWS D 10-14 (PR) - Wellbore #1 - Gyro Surveys	17,245.85	6,853.51	2,943.04	2,828.92	25.789	CC, ES
Spike ST GWS D 10-14 (PR) - Wellbore #1 - Gyro Surveys	17,500.00	6,855.15	2,953.99	2,838.80	25.644	SF
Spike ST GWS D 10-16 (PA) - Wellbore #1 - No Surveys	17,093.33	6,828.00	350.95	125.24	1.555	CC, ES, SF
Spike State D 10-21D (SI) - Wellbore #1 - Wellbore #1	15,298.80	6,992.05	2,196.80	2,097.10	22.034	CC
Spike State D 10-21D (SI) - Wellbore #1 - Wellbore #1	15,300.00	6,992.05	2,196.80	2,097.09	22.033	ES
Spike State D 10-21D (SI) - Wellbore #1 - Wellbore #1	15,500.00	6,991.61	2,205.99	2,105.26	21.900	SF
Spike State D 10-23 (SI) - Wellbore #1 - No Surveys	16,413.72	6,833.00	886.24	531.31	2.497	CC, ES, SF
Spike State GWS D 10-11 (PR) - Wellbore #1 - No Surveys	15,727.69	6,814.00	2,959.78	2,610.96	8.485	CC, ES
Spike State GWS D 10-11 (PR) - Wellbore #1 - No Surveys	15,800.00	6,814.00	2,960.66	2,611.48	8.479	SF
Spike State GWS D 10-13J (PR) - Wellbore #1 - No Surveys	16,287.12	6,822.00	3,678.45	3,325.02	10.408	CC
Spike State GWS D 10-13J (PR) - Wellbore #1 - No Surveys	16,300.00	6,822.00	3,678.47	3,324.96	10.406	ES
Spike State GWS D 10-13J (PR) - Wellbore #1 - No Surveys	16,500.00	6,822.00	3,684.60	3,330.05	10.392	SF
Spike State GWS D 10-15 (PA) - Wellbore #1 - No Surveys	16,949.73	7,106.00	2,566.79	2,401.13	15.495	CC, ES
Spike State GWS D 10-15 (PA) - Wellbore #1 - No Surveys	17,300.00	7,106.00	2,590.58	2,422.22	15.387	SF
Two E Ranch 1-10 (PR) - Wellbore #1 - No Surveys	13,575.06	6,820.00	598.82	266.32	1.801	CC, ES, SF
Two E Ranch 2-10 (PR) - Wellbore #1 - No Surveys	13,028.02	6,779.00	4,123.29	3,796.49	12.617	CC, ES
Two E Ranch 2-10 (PR) - Wellbore #1 - No Surveys	13,300.00	6,779.00	4,132.25	3,803.98	12.588	SF
Two E Ranch 3-10 (PR) - Wellbore #1 - No Surveys	12,944.35	6,781.00	2,898.08	2,571.84	8.883	CC, ES
Two E Ranch 3-10 (PR) - Wellbore #1 - No Surveys	13,100.00	6,781.00	2,902.25	2,575.30	8.877	SF
Two E Ranch 4-10 (SI) - Wellbore #1 - No Surveys	14,490.69	6,804.03	4,139.48	3,800.67	12.218	CC
Two E Ranch 4-10 (SI) - Wellbore #1 - No Surveys	14,500.00	6,804.03	4,139.50	3,800.63	12.216	ES
Two E Ranch 4-10 (SI) - Wellbore #1 - No Surveys	14,700.00	6,804.03	4,144.77	3,804.79	12.191	SF
Volley State D 10-13 (PR) - Wellbore #1 - Gyro Surveys	17,187.23	6,914.60	4,365.15	4,251.21	38.313	CC
Volley State D 10-13 (PR) - Wellbore #1 - Gyro Surveys	17,200.00	6,914.72	4,365.16	4,251.15	38.287	ES
Volley State D 10-13 (PR) - Wellbore #1 - Gyro Surveys	17,545.20	6,917.92	4,379.80	4,263.90	37.789	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 D10-715
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 D10-715	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 11						
DALBEY D #11-2(SI) - DALBEY D #11-2 - No Surveys	13,136.02	6,757.00	3,556.37	3,362.59	18.353	CC
DALBEY D #11-2(SI) - DALBEY D #11-2 - No Surveys	13,200.00	6,757.00	3,556.95	3,362.58	18.300	ES
DALBEY D #11-2(SI) - DALBEY D #11-2 - No Surveys	13,600.00	6,757.00	3,586.51	3,388.79	18.139	SF
DUNCAN D #11-10(SI) - DUNCAN D #11-10 - No Survey	16,031.13	6,782.00	3,867.06	3,650.62	17.866	CC
DUNCAN D #11-10(SI) - DUNCAN D #11-10 - No Survey	16,100.00	6,782.00	3,867.68	3,650.57	17.815	ES
DUNCAN D #11-10(SI) - DUNCAN D #11-10 - No Survey	16,500.00	6,782.00	3,895.38	3,674.93	17.669	SF
DUNCAN D #11-11(SI) - DUNCAN D #11-11 - No Survey	15,832.60	6,816.00	2,127.15	1,911.58	9.867	CC, ES
DUNCAN D #11-11(SI) - DUNCAN D #11-11 - No Survey	16,000.00	6,816.00	2,133.73	1,916.49	9.822	SF
DUNCAN D #11-12(SI) - DUNCAN D #11-12 - No Survey	15,657.91	6,820.00	892.65	678.36	4.166	CC, ES
DUNCAN D #11-12(SI) - DUNCAN D #11-12 - No Survey	15,700.00	6,820.00	893.64	678.75	4.159	SF
DUNCAN D #11-5(SI) - DUNCAN D #11-5 - No Surveys	14,503.22	6,806.00	858.41	653.32	4.186	CC, ES, SF
DUNCAN D #11-6(SI) - DUNCAN D #11-6 - No Surveys	14,451.46	6,784.00	2,284.77	2,080.52	11.186	CC, ES
DUNCAN D #11-6(SI) - DUNCAN D #11-6 - No Surveys	14,700.00	6,784.00	2,298.25	2,091.67	11.125	SF
DUNCAN D #11-7(SI) - DUNCAN D #11-7 - No Surveys	14,388.99	6,764.00	3,616.18	3,412.80	17.781	CC
DUNCAN D #11-7(SI) - DUNCAN D #11-7 - No Surveys	14,400.00	6,764.00	3,616.19	3,412.71	17.772	ES
DUNCAN D #11-7(SI) - DUNCAN D #11-7 - No Surveys	14,900.00	6,764.00	3,652.10	3,444.41	17.584	SF
DUNCAN D #11-8(SI) - DUNCAN D #11-8 - No Surveys	14,461.66	6,768.00	4,814.02	4,610.00	23.597	CC
DUNCAN D #11-8(SI) - DUNCAN D #11-8 - No Surveys	14,500.00	6,768.00	4,814.17	4,609.81	23.557	ES
DUNCAN D #11-8(SI) - DUNCAN D #11-8 - No Surveys	15,300.00	6,768.00	4,886.47	4,675.72	23.186	SF
Duncan D 11-13 (SI) - Wellbore #1 - No Surveys	17,187.90	6,828.00	897.33	670.87	3.962	CC
Duncan D 11-13 (SI) - Wellbore #1 - No Surveys	17,200.00	6,828.00	897.41	670.77	3.960	ES, SF
Duncan D 11-14 (SI) - Wellbore #1 - Gyro Surveys	17,219.39	6,761.82	2,271.82	2,158.02	19.963	CC, ES
Duncan D 11-14 (SI) - Wellbore #1 - Gyro Surveys	17,500.00	6,761.40	2,289.09	2,172.79	19.683	SF
Duncan D 11-15 (SI) - Wellbore #1 - Gyro Surveys	17,130.33	6,746.44	3,651.99	3,539.01	32.324	CC
Duncan D 11-15 (SI) - Wellbore #1 - Gyro Surveys	17,200.00	6,745.88	3,652.66	3,539.00	32.137	ES
Duncan D 11-15 (SI) - Wellbore #1 - Gyro Surveys	17,545.20	6,743.08	3,675.48	3,558.92	31.533	SF
GUTTERSEN #43-11(SI) - GUTTERSEN #43-11 - No Su	15,783.58	6,770.00	4,952.28	4,738.00	23.112	CC
GUTTERSEN #43-11(SI) - GUTTERSEN #43-11 - No Su	15,800.00	6,770.00	4,952.30	4,737.88	23.096	ES
GUTTERSEN #43-11(SI) - GUTTERSEN #43-11 - No Su	16,600.00	6,770.00	5,019.12	4,798.27	22.726	SF
Guttersen 44-11 (PR) - Wellbore #1 - No Surveys	17,109.53	6,790.00	4,970.51	4,745.43	22.083	CC
Guttersen 44-11 (PR) - Wellbore #1 - No Surveys	17,200.00	6,790.00	4,971.34	4,745.42	22.005	ES
Guttersen 44-11 (PR) - Wellbore #1 - No Surveys	17,545.20	6,790.00	4,989.57	4,760.72	21.803	SF
TWO E RANCH #1-11(SI) - TWO E RANCH #1-11 - No S	13,023.86	6,774.00	971.12	777.83	5.024	CC, ES
TWO E RANCH #1-11(SI) - TWO E RANCH #1-11 - No S	13,100.00	6,774.00	974.10	779.85	5.015	SF
TWO E RANCH #2-11(PR) - TWO E RANCH #2-11 - No	13,099.98	6,763.00	2,274.97	2,081.34	11.749	CC
TWO E RANCH #2-11(PR) - TWO E RANCH #2-11 - No	13,100.00	6,763.00	2,274.97	2,081.34	11.749	ES
TWO E RANCH #2-11(PR) - TWO E RANCH #2-11 - No	13,300.00	6,763.00	2,283.75	2,088.21	11.679	SF
TWO E RANCHES #14-11(PA) - TWO E RANCHES #14	16,692.35	6,819.00	1,291.70	1,069.33	5.809	CC
TWO E RANCHES #14-11(PA) - TWO E RANCHES #14	16,700.00	6,819.00	1,291.73	1,069.25	5.806	ES
TWO E RANCHES #14-11(PA) - TWO E RANCHES #14	16,800.00	6,819.00	1,296.18	1,072.62	5.798	SF

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

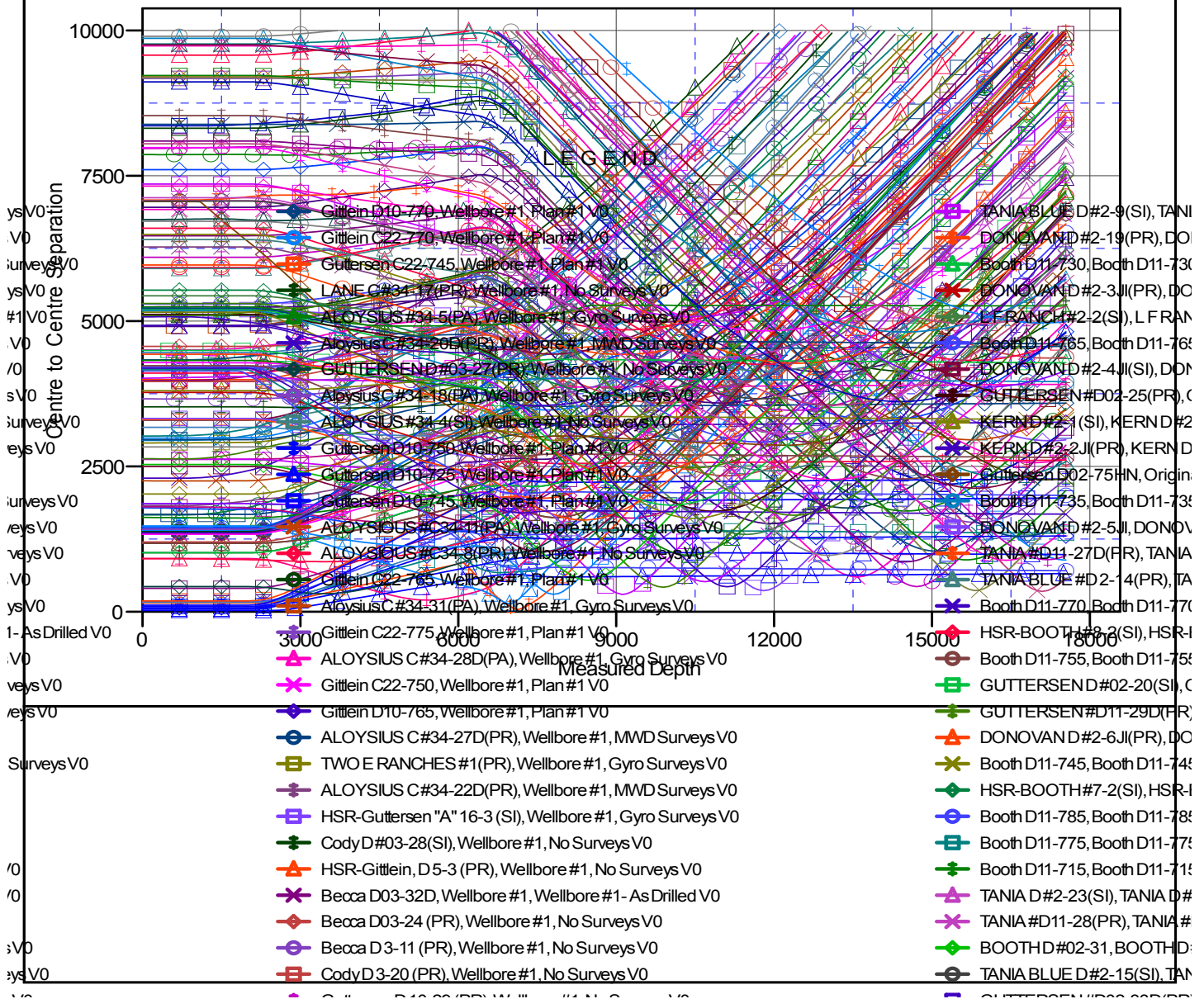
Noble Energy, Inc.
Anticollision Summary Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Guttersen D10-715
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 D10-715	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 D10-715
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 0.62°

Ladder Plot



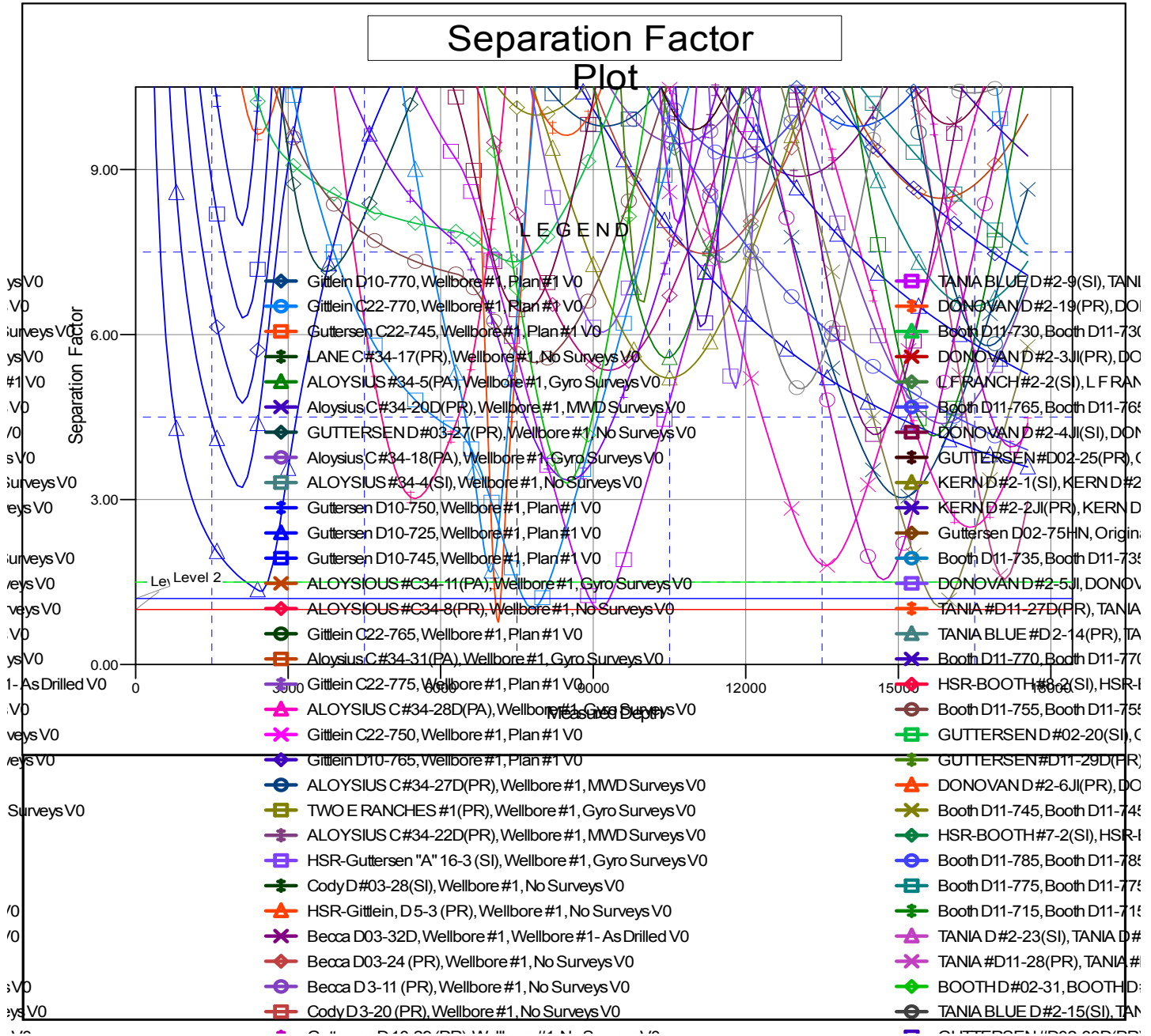
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