

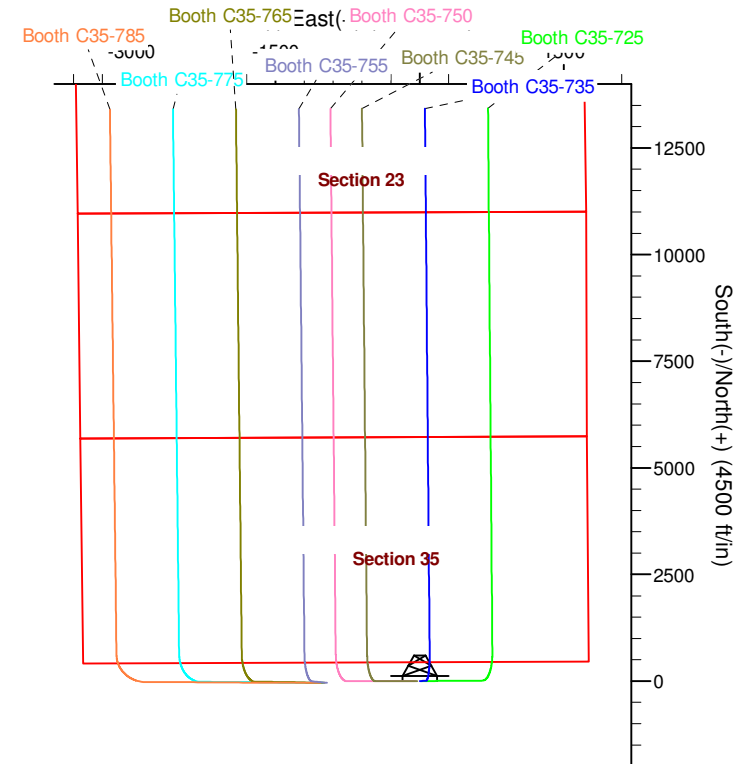
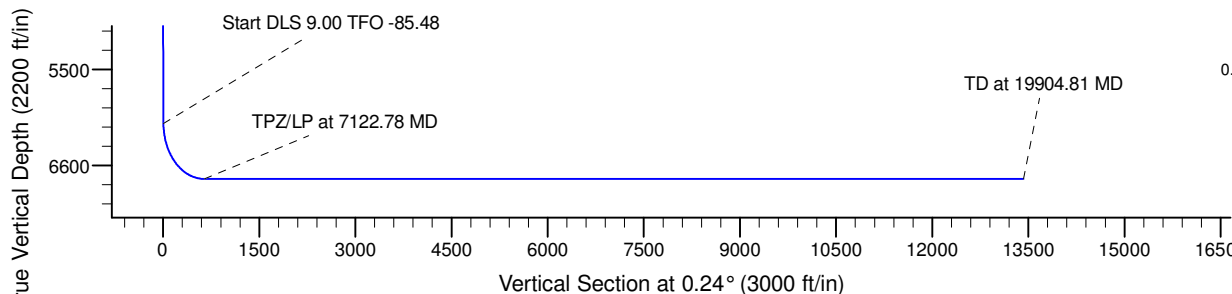
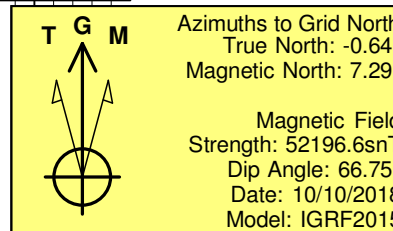
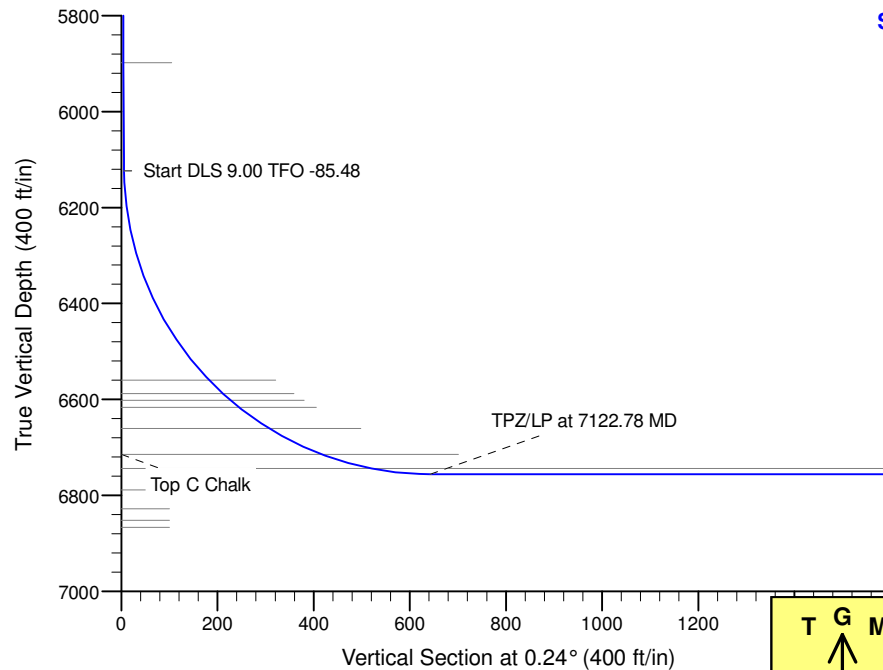
Project: Mustang
Site: C Section 35
Well: Booth C35-735
Wellbore: Wellbore #1
Design: Plan #1

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	5000.00	0.00	0.00	5000.00	0.00	0.00	0.00	0.00	0.00	
3	5146.87	3.67	85.26	5146.77	0.39	4.69	2.50	85.26	0.41	
4	6126.00	3.67	85.26	6123.89	5.57	67.18	0.00	0.00	5.86	
5	7122.78	90.00	359.78	6756.00	642.34	105.17	9.00	-85.49	642.77	
6	19904.82	90.00	359.78	6756.00	13424.28	56.23	0.00	0.00	13424.39	BHL Booth C35-735



WELL DETAILS: Booth C35-735

	Northing	Easting	Latitude	Longitude
0.00	0.00	1339280.40	4722.00 40.2605340	-104.5151410

Plan: Plan #1 (Booth C35-735/Wellbore #1)

Created By: Colby Baxter Date: 12:33, October 10 2018
Checked: _____ Date: _____
Reviewed: _____ Date: _____
Approved: _____ Date: _____

Northern Region - DJ Basin

Mustang

C Section 35

Booth C35-735

Wellbore #1

Plan: Plan #1

Standard Survey Report

10 October, 2018

Noble Energy, Inc.

Survey Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Booth C35-735
Project:	Mustang	TVD Reference:	KB @ 4752.00ft
Site:	C Section 35	MD Reference:	KB @ 4752.00ft
Well:	Booth C35-735	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 35			
Site Position:		Northing:	1,344,449.62 usft	Latitude:	40.2746900
From:	Lat/Long	Easting:	3,275,933.42 usft	Longitude:	-104.5110600
Position Uncertainty:	0.00 ft	Slot Radius:	13.200 in	Grid Convergence:	0.64 °

Well	Booth C35-735					
Well Position	+N/-S	0.00 ft	Northing:	1,339,280.40 usft	Latitude:	40.2605340
	+E/-W	0.00 ft	Easting:	3,274,852.06 usft	Longitude:	-104.5151410
Position Uncertainty		0.00 ft	Wellhead Elevation:	ft	Ground Level:	4,722.00 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	10/10/2018	7.93	66.75	52,196.63975561

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	0.24	

Survey Tool Program	Date	10/10/2018			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
0.00	19,904.79	Plan #1 (Wellbore #1)	2_MWD+IFR1	A005Mb: IFR declination correction only	

Planned Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00	
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00	
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00	
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00	
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00	
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00	
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00	
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	0.00	

Noble Energy, Inc.

Survey Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Booth C35-735
Project:	Mustang	TVD Reference:	KB @ 4752.00ft
Site:	C Section 35	MD Reference:	KB @ 4752.00ft
Well:	Booth C35-735	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Plan #1	Database:	EDMP

Planned Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,100.00	0.00	0.00	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,200.00	0.00	0.00	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,300.00	0.00	0.00	1,300.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,400.00	0.00	0.00	1,400.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,500.00	0.00	0.00	1,500.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,600.00	0.00	0.00	1,600.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,700.00	0.00	0.00	1,700.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,800.00	0.00	0.00	1,800.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,900.00	0.00	0.00	1,900.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,000.00	0.00	0.00	2,000.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,100.00	0.00	0.00	2,100.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,200.00	0.00	0.00	2,200.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,300.00	0.00	0.00	2,300.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,400.00	0.00	0.00	2,400.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,500.00	0.00	0.00	2,500.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,600.00	0.00	0.00	2,600.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,700.00	0.00	0.00	2,700.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,800.00	0.00	0.00	2,800.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,900.00	0.00	0.00	2,900.00	0.00	0.00	0.00	0.00	0.00	0.00	
3,000.00	0.00	0.00	3,000.00	0.00	0.00	0.00	0.00	0.00	0.00	
3,100.00	0.00	0.00	3,100.00	0.00	0.00	0.00	0.00	0.00	0.00	
3,200.00	0.00	0.00	3,200.00	0.00	0.00	0.00	0.00	0.00	0.00	
3,300.00	0.00	0.00	3,300.00	0.00	0.00	0.00	0.00	0.00	0.00	
3,400.00	0.00	0.00	3,400.00	0.00	0.00	0.00	0.00	0.00	0.00	
3,500.00	0.00	0.00	3,500.00	0.00	0.00	0.00	0.00	0.00	0.00	
3,600.00	0.00	0.00	3,600.00	0.00	0.00	0.00	0.00	0.00	0.00	
3,700.00	0.00	0.00	3,700.00	0.00	0.00	0.00	0.00	0.00	0.00	
3,800.00	0.00	0.00	3,800.00	0.00	0.00	0.00	0.00	0.00	0.00	
3,900.00	0.00	0.00	3,900.00	0.00	0.00	0.00	0.00	0.00	0.00	
4,000.00	0.00	0.00	4,000.00	0.00	0.00	0.00	0.00	0.00	0.00	
4,100.00	0.00	0.00	4,100.00	0.00	0.00	0.00	0.00	0.00	0.00	
4,200.00	0.00	0.00	4,200.00	0.00	0.00	0.00	0.00	0.00	0.00	
4,300.00	0.00	0.00	4,300.00	0.00	0.00	0.00	0.00	0.00	0.00	
4,400.00	0.00	0.00	4,400.00	0.00	0.00	0.00	0.00	0.00	0.00	
4,500.00	0.00	0.00	4,500.00	0.00	0.00	0.00	0.00	0.00	0.00	
4,600.00	0.00	0.00	4,600.00	0.00	0.00	0.00	0.00	0.00	0.00	
4,700.00	0.00	0.00	4,700.00	0.00	0.00	0.00	0.00	0.00	0.00	
4,800.00	0.00	0.00	4,800.00	0.00	0.00	0.00	0.00	0.00	0.00	
4,900.00	0.00	0.00	4,900.00	0.00	0.00	0.00	0.00	0.00	0.00	
5,000.00	0.00	0.00	5,000.00	0.00	0.00	0.00	0.00	0.00	0.00	
5,100.00	2.50	85.26	5,099.97	0.18	2.17	0.19	2.50	2.50	0.00	
5,146.87	3.67	85.26	5,146.77	0.39	4.69	0.41	2.50	2.50	0.00	
5,200.00	3.67	85.26	5,199.79	0.67	8.08	0.70	0.00	0.00	0.00	

Noble Energy, Inc.

Survey Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Booth C35-735
Project:	Mustang	TVD Reference:	KB @ 4752.00ft
Site:	C Section 35	MD Reference:	KB @ 4752.00ft
Well:	Booth C35-735	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	3.67	85.26	5,299.59	1.20	14.46	1.26	0.00	0.00	0.00
5,400.00	3.67	85.26	5,399.38	1.73	20.84	1.82	0.00	0.00	0.00
5,500.00	3.67	85.26	5,499.17	2.26	27.23	2.37	0.00	0.00	0.00
5,600.00	3.67	85.26	5,598.97	2.79	33.61	2.93	0.00	0.00	0.00
5,700.00	3.67	85.26	5,698.76	3.32	39.99	3.49	0.00	0.00	0.00
5,800.00	3.67	85.26	5,798.56	3.85	46.37	4.04	0.00	0.00	0.00
5,900.00	3.67	85.26	5,898.35	4.38	52.76	4.60	0.00	0.00	0.00
6,000.00	3.67	85.26	5,998.15	4.91	59.14	5.16	0.00	0.00	0.00
6,100.00	3.67	85.26	6,097.94	5.44	65.52	5.71	0.00	0.00	0.00
6,126.00	3.67	85.26	6,123.89	5.57	67.18	5.86	0.00	0.00	0.00
6,200.00	7.85	27.42	6,197.55	10.26	71.87	10.56	9.00	5.65	-78.15
6,300.00	16.35	12.37	6,295.26	30.12	78.05	30.44	9.00	8.50	-15.05
6,400.00	25.20	7.59	6,388.67	65.04	83.89	65.39	9.00	8.85	-4.78
6,500.00	34.12	5.20	6,475.48	114.18	89.26	114.55	9.00	8.92	-2.40
6,600.00	43.07	3.70	6,553.56	176.31	94.01	176.71	9.00	8.95	-1.49
6,700.00	52.04	2.64	6,620.97	249.92	98.04	250.33	9.00	8.97	-1.06
6,800.00	61.01	1.81	6,676.07	333.19	101.25	333.61	9.00	8.97	-0.83
6,900.00	69.99	1.11	6,717.49	424.07	103.55	424.50	9.00	8.98	-0.70
7,000.00	78.97	0.49	6,744.22	520.31	104.89	520.75	9.00	8.98	-0.62
7,100.00	87.95	359.91	6,755.59	619.56	105.23	619.99	9.00	8.98	-0.58
7,122.78	90.00	359.78	6,756.00	642.34	105.17	642.77	9.00	8.98	-0.57
7,200.00	90.00	359.78	6,756.00	719.55	104.88	719.99	0.00	0.00	0.00
7,300.00	90.00	359.78	6,756.00	819.55	104.49	819.98	0.00	0.00	0.00
7,400.00	90.00	359.78	6,756.00	919.55	104.11	919.98	0.00	0.00	0.00
7,500.00	90.00	359.78	6,756.00	1,019.55	103.72	1,019.98	0.00	0.00	0.00
7,600.00	90.00	359.78	6,756.00	1,119.55	103.34	1,119.97	0.00	0.00	0.00
7,700.00	90.00	359.78	6,756.00	1,219.55	102.96	1,219.97	0.00	0.00	0.00
7,800.00	90.00	359.78	6,756.00	1,319.55	102.57	1,319.97	0.00	0.00	0.00
7,900.00	90.00	359.78	6,756.00	1,419.55	102.19	1,419.96	0.00	0.00	0.00
8,000.00	90.00	359.78	6,756.00	1,519.55	101.80	1,519.96	0.00	0.00	0.00
8,100.00	90.00	359.78	6,756.00	1,619.55	101.42	1,619.96	0.00	0.00	0.00
8,200.00	90.00	359.78	6,756.00	1,719.55	101.04	1,719.95	0.00	0.00	0.00
8,300.00	90.00	359.78	6,756.00	1,819.55	100.65	1,819.95	0.00	0.00	0.00
8,400.00	90.00	359.78	6,756.00	1,919.54	100.27	1,919.95	0.00	0.00	0.00
8,500.00	90.00	359.78	6,756.00	2,019.54	99.88	2,019.94	0.00	0.00	0.00
8,600.00	90.00	359.78	6,756.00	2,119.54	99.50	2,119.94	0.00	0.00	0.00
8,700.00	90.00	359.78	6,756.00	2,219.54	99.12	2,219.94	0.00	0.00	0.00
8,800.00	90.00	359.78	6,756.00	2,319.54	98.73	2,319.94	0.00	0.00	0.00
8,900.00	90.00	359.78	6,756.00	2,419.54	98.35	2,419.93	0.00	0.00	0.00
9,000.00	90.00	359.78	6,756.00	2,519.54	97.97	2,519.93	0.00	0.00	0.00
9,100.00	90.00	359.78	6,756.00	2,619.54	97.58	2,619.93	0.00	0.00	0.00
9,200.00	90.00	359.78	6,756.00	2,719.54	97.20	2,719.92	0.00	0.00	0.00
9,300.00	90.00	359.78	6,756.00	2,819.54	96.81	2,819.92	0.00	0.00	0.00

Noble Energy, Inc.

Survey Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Booth C35-735
Project:	Mustang	TVD Reference:	KB @ 4752.00ft
Site:	C Section 35	MD Reference:	KB @ 4752.00ft
Well:	Booth C35-735	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Plan #1	Database:	EDMP

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
9,400.00	90.00	359.78	6,756.00	2,919.54	96.43	2,919.92	0.00	0.00	0.00
9,500.00	90.00	359.78	6,756.00	3,019.54	96.05	3,019.91	0.00	0.00	0.00
9,600.00	90.00	359.78	6,756.00	3,119.54	95.66	3,119.91	0.00	0.00	0.00
9,700.00	90.00	359.78	6,756.00	3,219.54	95.28	3,219.91	0.00	0.00	0.00
9,800.00	90.00	359.78	6,756.00	3,319.53	94.89	3,319.90	0.00	0.00	0.00
9,900.00	90.00	359.78	6,756.00	3,419.53	94.51	3,419.90	0.00	0.00	0.00
10,000.00	90.00	359.78	6,756.00	3,519.53	94.13	3,519.90	0.00	0.00	0.00
10,100.00	90.00	359.78	6,756.00	3,619.53	93.74	3,619.89	0.00	0.00	0.00
10,200.00	90.00	359.78	6,756.00	3,719.53	93.36	3,719.89	0.00	0.00	0.00
10,300.00	90.00	359.78	6,756.00	3,819.53	92.97	3,819.89	0.00	0.00	0.00
10,400.00	90.00	359.78	6,756.00	3,919.53	92.59	3,919.88	0.00	0.00	0.00
10,500.00	90.00	359.78	6,756.00	4,019.53	92.21	4,019.88	0.00	0.00	0.00
10,600.00	90.00	359.78	6,756.00	4,119.53	91.82	4,119.88	0.00	0.00	0.00
10,700.00	90.00	359.78	6,756.00	4,219.53	91.44	4,219.87	0.00	0.00	0.00
10,800.00	90.00	359.78	6,756.00	4,319.53	91.05	4,319.87	0.00	0.00	0.00
10,900.00	90.00	359.78	6,756.00	4,419.53	90.67	4,419.87	0.00	0.00	0.00
11,000.00	90.00	359.78	6,756.00	4,519.53	90.29	4,519.86	0.00	0.00	0.00
11,100.00	90.00	359.78	6,756.00	4,619.52	89.90	4,619.86	0.00	0.00	0.00
11,200.00	90.00	359.78	6,756.00	4,719.52	89.52	4,719.86	0.00	0.00	0.00
11,300.00	90.00	359.78	6,756.00	4,819.52	89.13	4,819.85	0.00	0.00	0.00
11,400.00	90.00	359.78	6,756.00	4,919.52	88.75	4,919.85	0.00	0.00	0.00
11,500.00	90.00	359.78	6,756.00	5,019.52	88.37	5,019.85	0.00	0.00	0.00
11,600.00	90.00	359.78	6,756.00	5,119.52	87.98	5,119.84	0.00	0.00	0.00
11,700.00	90.00	359.78	6,756.00	5,219.52	87.60	5,219.84	0.00	0.00	0.00
11,800.00	90.00	359.78	6,756.00	5,319.52	87.21	5,319.84	0.00	0.00	0.00
11,900.00	90.00	359.78	6,756.00	5,419.52	86.83	5,419.84	0.00	0.00	0.00
12,000.00	90.00	359.78	6,756.00	5,519.52	86.45	5,519.83	0.00	0.00	0.00
12,100.00	90.00	359.78	6,756.00	5,619.52	86.06	5,619.83	0.00	0.00	0.00
12,200.00	90.00	359.78	6,756.00	5,719.52	85.68	5,719.83	0.00	0.00	0.00
12,300.00	90.00	359.78	6,756.00	5,819.52	85.29	5,819.82	0.00	0.00	0.00
12,400.00	90.00	359.78	6,756.00	5,919.52	84.91	5,919.82	0.00	0.00	0.00
12,500.00	90.00	359.78	6,756.00	6,019.51	84.53	6,019.82	0.00	0.00	0.00
12,600.00	90.00	359.78	6,756.00	6,119.51	84.14	6,119.81	0.00	0.00	0.00
12,700.00	90.00	359.78	6,756.00	6,219.51	83.76	6,219.81	0.00	0.00	0.00
12,800.00	90.00	359.78	6,756.00	6,319.51	83.37	6,319.81	0.00	0.00	0.00
12,900.00	90.00	359.78	6,756.00	6,419.51	82.99	6,419.80	0.00	0.00	0.00
13,000.00	90.00	359.78	6,756.00	6,519.51	82.61	6,519.80	0.00	0.00	0.00
13,100.00	90.00	359.78	6,756.00	6,619.51	82.22	6,619.80	0.00	0.00	0.00
13,200.00	90.00	359.78	6,756.00	6,719.51	81.84	6,719.79	0.00	0.00	0.00
13,300.00	90.00	359.78	6,756.00	6,819.51	81.45	6,819.79	0.00	0.00	0.00
13,400.00	90.00	359.78	6,756.00	6,919.51	81.07	6,919.79	0.00	0.00	0.00
13,500.00	90.00	359.78	6,756.00	7,019.51	80.69	7,019.78	0.00	0.00	0.00
13,600.00	90.00	359.78	6,756.00	7,119.51	80.30	7,119.78	0.00	0.00	0.00

Noble Energy, Inc.

Survey Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Booth C35-735
Project:	Mustang	TVD Reference:	KB @ 4752.00ft
Site:	C Section 35	MD Reference:	KB @ 4752.00ft
Well:	Booth C35-735	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	359.78	6,756.00	7,219.51	79.92	7,219.78	0.00	0.00	0.00
13,800.00	90.00	359.78	6,756.00	7,319.51	79.53	7,319.77	0.00	0.00	0.00
13,900.00	90.00	359.78	6,756.00	7,419.50	79.15	7,419.77	0.00	0.00	0.00
14,000.00	90.00	359.78	6,756.00	7,519.50	78.77	7,519.77	0.00	0.00	0.00
14,100.00	90.00	359.78	6,756.00	7,619.50	78.38	7,619.76	0.00	0.00	0.00
14,200.00	90.00	359.78	6,756.00	7,719.50	78.00	7,719.76	0.00	0.00	0.00
14,300.00	90.00	359.78	6,756.00	7,819.50	77.61	7,819.76	0.00	0.00	0.00
14,400.00	90.00	359.78	6,756.00	7,919.50	77.23	7,919.75	0.00	0.00	0.00
14,500.00	90.00	359.78	6,756.00	8,019.50	76.85	8,019.75	0.00	0.00	0.00
14,600.00	90.00	359.78	6,756.00	8,119.50	76.46	8,119.75	0.00	0.00	0.00
14,700.00	90.00	359.78	6,756.00	8,219.50	76.08	8,219.75	0.00	0.00	0.00
14,800.00	90.00	359.78	6,756.00	8,319.50	75.69	8,319.74	0.00	0.00	0.00
14,900.00	90.00	359.78	6,756.00	8,419.50	75.31	8,419.74	0.00	0.00	0.00
15,000.00	90.00	359.78	6,756.00	8,519.50	74.93	8,519.74	0.00	0.00	0.00
15,100.00	90.00	359.78	6,756.00	8,619.50	74.54	8,619.73	0.00	0.00	0.00
15,200.00	90.00	359.78	6,756.00	8,719.49	74.16	8,719.73	0.00	0.00	0.00
15,300.00	90.00	359.78	6,756.00	8,819.49	73.77	8,819.73	0.00	0.00	0.00
15,400.00	90.00	359.78	6,756.00	8,919.49	73.39	8,919.72	0.00	0.00	0.00
15,500.00	90.00	359.78	6,756.00	9,019.49	73.01	9,019.72	0.00	0.00	0.00
15,600.00	90.00	359.78	6,756.00	9,119.49	72.62	9,119.72	0.00	0.00	0.00
15,700.00	90.00	359.78	6,756.00	9,219.49	72.24	9,219.71	0.00	0.00	0.00
15,800.00	90.00	359.78	6,756.00	9,319.49	71.85	9,319.71	0.00	0.00	0.00
15,900.00	90.00	359.78	6,756.00	9,419.49	71.47	9,419.71	0.00	0.00	0.00
16,000.00	90.00	359.78	6,756.00	9,519.49	71.09	9,519.70	0.00	0.00	0.00
16,100.00	90.00	359.78	6,756.00	9,619.49	70.70	9,619.70	0.00	0.00	0.00
16,200.00	90.00	359.78	6,756.00	9,719.49	70.32	9,719.70	0.00	0.00	0.00
16,300.00	90.00	359.78	6,756.00	9,819.49	69.94	9,819.69	0.00	0.00	0.00
16,400.00	90.00	359.78	6,756.00	9,919.49	69.55	9,919.69	0.00	0.00	0.00
16,500.00	90.00	359.78	6,756.00	10,019.49	69.17	10,019.69	0.00	0.00	0.00
16,600.00	90.00	359.78	6,756.00	10,119.48	68.78	10,119.68	0.00	0.00	0.00
16,700.00	90.00	359.78	6,756.00	10,219.48	68.40	10,219.68	0.00	0.00	0.00
16,800.00	90.00	359.78	6,756.00	10,319.48	68.02	10,319.68	0.00	0.00	0.00
16,900.00	90.00	359.78	6,756.00	10,419.48	67.63	10,419.67	0.00	0.00	0.00
17,000.00	90.00	359.78	6,756.00	10,519.48	67.25	10,519.67	0.00	0.00	0.00
17,100.00	90.00	359.78	6,756.00	10,619.48	66.86	10,619.67	0.00	0.00	0.00
17,200.00	90.00	359.78	6,756.00	10,719.48	66.48	10,719.66	0.00	0.00	0.00
17,300.00	90.00	359.78	6,756.00	10,819.48	66.10	10,819.66	0.00	0.00	0.00
17,400.00	90.00	359.78	6,756.00	10,919.48	65.71	10,919.66	0.00	0.00	0.00
17,500.00	90.00	359.78	6,756.00	11,019.48	65.33	11,019.65	0.00	0.00	0.00
17,600.00	90.00	359.78	6,756.00	11,119.48	64.94	11,119.65	0.00	0.00	0.00
17,700.00	90.00	359.78	6,756.00	11,219.48	64.56	11,219.65	0.00	0.00	0.00
17,800.00	90.00	359.78	6,756.00	11,319.48	64.18	11,319.65	0.00	0.00	0.00
17,900.00	90.00	359.78	6,756.00	11,419.47	63.79	11,419.64	0.00	0.00	0.00
18,000.00	90.00	359.78	6,756.00	11,519.47	63.41	11,519.64	0.00	0.00	0.00

Noble Energy, Inc.

Survey Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Booth C35-735
Project:	Mustang	TVD Reference:	KB @ 4752.00ft
Site:	C Section 35	MD Reference:	KB @ 4752.00ft
Well:	Booth C35-735	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)
18,100.00	90.00	359.78	6,756.00	11,619.47	63.02	11,619.64	0.00	0.00	0.00
18,200.00	90.00	359.78	6,756.00	11,719.47	62.64	11,719.63	0.00	0.00	0.00
18,300.00	90.00	359.78	6,756.00	11,819.47	62.26	11,819.63	0.00	0.00	0.00
18,400.00	90.00	359.78	6,756.00	11,919.47	61.87	11,919.63	0.00	0.00	0.00
18,500.00	90.00	359.78	6,756.00	12,019.47	61.49	12,019.62	0.00	0.00	0.00
18,600.00	90.00	359.78	6,756.00	12,119.47	61.10	12,119.62	0.00	0.00	0.00
18,700.00	90.00	359.78	6,756.00	12,219.47	60.72	12,219.62	0.00	0.00	0.00
18,800.00	90.00	359.78	6,756.00	12,319.47	60.34	12,319.61	0.00	0.00	0.00
18,900.00	90.00	359.78	6,756.00	12,419.47	59.95	12,419.61	0.00	0.00	0.00
19,000.00	90.00	359.78	6,756.00	12,519.47	59.57	12,519.61	0.00	0.00	0.00
19,100.00	90.00	359.78	6,756.00	12,619.47	59.18	12,619.60	0.00	0.00	0.00
19,200.00	90.00	359.78	6,756.00	12,719.47	58.80	12,719.60	0.00	0.00	0.00
19,300.00	90.00	359.78	6,756.00	12,819.46	58.42	12,819.60	0.00	0.00	0.00
19,400.00	90.00	359.78	6,756.00	12,919.46	58.03	12,919.59	0.00	0.00	0.00
19,500.00	90.00	359.78	6,756.00	13,019.46	57.65	13,019.59	0.00	0.00	0.00
19,600.00	90.00	359.78	6,756.00	13,119.46	57.26	13,119.59	0.00	0.00	0.00
19,700.00	90.00	359.78	6,756.00	13,219.46	56.88	13,219.58	0.00	0.00	0.00
19,800.00	90.00	359.78	6,756.00	13,319.46	56.50	13,319.58	0.00	0.00	0.00
19,900.00	90.00	359.78	6,756.00	13,419.46	56.11	13,419.58	0.00	0.00	0.00
19,904.82	90.00	359.78	6,756.00	13,424.28	56.23	13,424.39	0.00	0.00	0.00

Design Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
SHL Booth C35-735 - plan hits target center - Point	0.00	0.00	0.00	0.00	0.00	1,339,280.40	3,274,852.06	40.2605340	-104.5151410
KOP Booth C35-735 - plan hits target center - Point	0.00	0.00	6,123.89	5.58	67.17	1,339,285.98	3,274,919.23	40.2605473	-104.5149001
BHL Booth C35-735 - plan hits target center - Point	0.00	0.00	6,756.00	13,424.28	56.23	1,352,704.65	3,274,908.29	40.2973806	-104.5144049
TPZ Booth C35-735 - plan hits target center - Point	0.00	0.00	6,756.00	642.34	105.17	1,339,922.74	3,274,957.23	40.2622939	-104.5147386

Noble Energy, Inc.

Survey Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Booth C35-735
Project:	Mustang	TVD Reference:	KB @ 4752.00ft
Site:	C Section 35	MD Reference:	KB @ 4752.00ft
Well:	Booth C35-735	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Plan #1	Database:	EDMP

Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
431.00	431.00	Pierre			
614.00	614.00	Upper Pierre Aquifer Top			
1,518.00	1,518.00	Upper Pierre Aquifer Base			
3,636.00	3,636.00	Parkman			
4,310.00	4,310.00	Sussex			
4,840.00	4,840.00	Shannon			
5,899.65	5,898.00	Teepee Buttes			
6,608.88	6,560.00	Sharon Springs			
6,648.95	6,588.00	Top A Chalk			
6,670.04	6,602.00	Top A Marl			
6,693.58	6,617.00	Top B Chalk			
6,770.15	6,661.00	Top B Marl			
6,892.82	6,715.00	Top C Chalk			
6,998.85	6,744.00	Top C Marl			

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
5000	5000	0	0	Start Build 2.50
6126	6124	6	67	Start DLS 9.00 TFO -85.48
7123	6756	642	105	TPZ/LP at 7122.78 MD
19,905	6756	13,424	56	TD at 19904.81 MD

Checked By: _____ Approved By: _____ Date: _____

Northern Region - DJ Basin

Mustang

C Section 35

Booth C35-735

Wellbore #1

Plan #1

Anticollision Summary Report

10 October, 2018

Noble Energy, Inc.
Anticollision Summary Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Booth C35-735
Project:	Mustang	TVD Reference:	KB @ 4752.00ft
Reference Site:	C Section 35	MD Reference:	KB @ 4752.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Booth C35-735	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	19,904.79	Plan #1 (Wellbore #1)	2_MWD+IFR1	A005Mb: IFR declination correction only

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 23						
BOOTH #23-12I4(PR) - Wellbore #1 - No Surveys	19,845.51	6,660.00	3,138.93	2,934.40	15.347	CC, ES
BOOTH #23-12I4(PR) - Wellbore #1 - No Surveys	19,904.82	6,660.00	3,139.63	2,934.50	15.306	SF
BOOTH C #23-20(PR) - Wellbore #1 - No Surveys	19,904.82	6,662.00	2,329.04	2,123.86	11.351	CC, ES, SF
COLEMAN #23-6I4(PR) - Wellbore #1 - No Surveys	19,904.82	6,659.00	1,932.96	1,744.88	10.277	CC, ES, SF
COLEMAN #C23-31D(PR) - Wellbore #1 - MWD	19,904.82	6,812.23	3,879.10	3,718.85	24.207	CC, ES, SF
Coleman C #23-04(PR) - Wellbore #1 - No Surveys	19,904.82	6,656.00	3,686.45	3,508.02	20.660	CC, ES, SF
COLEMAN C #23-19(PR) - Wellbore #1 - No Surveys	19,904.82	6,658.00	2,744.15	2,564.63	15.286	CC, ES, SF
COLEMAN C #23-21(PR) - Wellbore #1 - No Surveys	19,904.82	6,661.00	1,220.07	1,020.74	6.121	CC, ES, SF
Coleman C #23-29D(SI) - Wellbore #1 - MWD Surveys	19,904.82	6,864.45	3,616.64	3,491.77	28.963	CC, ES, SF
KISSLER #1(SI) - Wellbore #1 - Gyro	18,119.63	2,024.54	2,981.11	2,846.32	22.117	CC, ES
KISSLER #1(SI) - Wellbore #1 - Gyro	18,500.00	2,020.50	3,005.28	2,867.49	21.811	SF
KISSLER #2(PR) - Wellbore #1 - No Surveys	19,422.65	6,666.00	1,654.71	1,454.68	8.272	CC, ES
KISSLER #2(PR) - Wellbore #1 - No Surveys	19,500.00	6,666.00	1,656.52	1,455.82	8.254	SF
KISSLER #3(DA) - Wellbore #1 - No Surveys	18,102.75	6,669.00	1,659.98	1,474.09	8.930	CC, ES
KISSLER #3(DA) - Wellbore #1 - No Surveys	18,200.00	6,669.00	1,662.83	1,476.13	8.906	SF
KISSLER #3X(SI) - Wellbore #1 - Gyro	17,978.30	6,682.69	1,705.38	1,555.83	11.403	CC
KISSLER #3X(SI) - Wellbore #1 - Gyro	18,000.00	6,682.77	1,705.52	1,555.75	11.388	ES
KISSLER #3X(SI) - Wellbore #1 - Gyro	18,100.00	6,683.14	1,709.72	1,559.20	11.359	SF
SATER C #23-15(PA) - Wellbore #1 - Gyro	17,928.72	6,647.62	482.44	333.60	3.241	CC, ES, SF
SATER C #23-17(PR) - Wellbore #1 - No Surveys	19,904.82	6,656.00	1,523.22	1,415.13	14.092	CC, ES, SF
SATER C #23-22(PR) - Wellbore #1 - No Surveys	19,904.82	6,664.00	361.00	204.86	2.312	CC, ES, SF
SATER C #23-24(PR) - Wellbore #1 - Gyro	18,574.74	6,656.38	877.59	721.78	5.632	CC, ES
SATER C #23-24(PR) - Wellbore #1 - Gyro	18,600.00	6,656.57	877.95	721.94	5.627	SF
SATER C #23-28D(PR) - Wellbore #1 - MWD Surveys	19,904.82	6,794.81	2,927.14	2,843.98	35.197	CC, ES, SF
Sater C24-79HN - Original Drilling - Original Drilling	19,904.82	8,264.78	1,707.59	1,520.64	9.134	CC, ES, SF
Sater C25-69HN - Original Drilling - Original Drilling	17,609.55	6,337.01	2,365.68	2,234.11	17.980	CC, ES
Sater C25-69HN - Original Drilling - Original Drilling	17,800.00	6,337.01	2,373.33	2,240.27	17.836	SF
Sater C25-79HN - Original Drilling - Original Drilling	12,447.24	12,228.11	1,516.34	1,351.43	9.195	ES, SF
Sater C25-79HN - Original Drilling - Original Drilling	16,887.23	7,782.56	1,506.59	1,363.53	10.531	CC
Sater C26-69HN - Original Drilling - Original Drilling	17,673.79	7,806.68	31.41	-68.16	0.315	Level 1, CC, ES, SF
UPRC #23-2I4(PR) - Wellbore #1 - No Surveys	19,904.82	6,653.00	2,060.95	1,970.19	22.707	CC, ES, SF
UPV #23-10I4(PR) - Wellbore #1 - No Surveys	19,602.12	6,664.00	513.73	311.79	2.544	CC, ES, SF
UPV #23-15I4(PA) - Wellbore #1 - Gyro	18,526.32	6,679.54	177.00	21.77	1.140	Level 2, CC, ES, SF
UPV #23-16I4(PR) - Wellbore #1 - Gyro	18,012.32	6,652.07	1,099.94	950.14	7.343	CC, ES
UPV #23-16I4(PR) - Wellbore #1 - Gyro	18,100.00	6,649.40	1,103.43	953.04	7.337	SF
UPV #23-1I4(SI) - Wellbore #1 - Gyro Surveys	19,904.82	6,663.34	2,548.65	2,460.02	28.755	CC, ES, SF
UPV #23-7I4(PR) - Wellbore #1 - No Surveys	19,904.82	6,660.00	936.98	793.54	6.532	CC, 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 Booth C35-735
Project:	Mustang	TVD Reference:	KB @ 4752.00ft
Reference Site:	C Section 35	MD Reference:	KB @ 4752.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Booth C35-735	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 23						
UPV #23-8I4(PR) - Wellbore #1 - Gyro Surveys	19,904.82	6,715.95	1,333.83	1,198.62	9.864	CC, ES, SF
UPV #23-9I4(PR) - Wellbore #1 - Gyro Surveys	19,605.65	6,715.75	1,226.91	1,059.85	7.344	CC, ES
UPV #23-9I4(PR) - Wellbore #1 - Gyro Surveys	19,700.00	6,715.81	1,230.54	1,062.82	7.337	SF
VOLKENS #1(SI) - Wellbore #1 - No Surveys	19,904.82	6,659.00	3,072.68	2,872.47	15.348	CC, ES, SF
VOLKENS #2(SI) - Wellbore #1 - No Surveys	19,904.82	4,650.00	3,383.61	3,252.59	25.824	CC, ES, SF
C Section 26						
BOOTH C #26-12(PR) - Wellbore #1 - No Surveys	14,263.57	6,682.00	3,058.85	2,913.62	21.061	CC
BOOTH C #26-12(PR) - Wellbore #1 - No Surveys	14,300.00	6,682.00	3,059.07	2,913.46	21.009	ES
BOOTH C #26-12(PR) - Wellbore #1 - No Surveys	14,700.00	6,682.00	3,089.83	2,940.91	20.749	SF
DINNEL #1(PR) - Wellbore #1 - No Surveys	15,449.56	6,679.00	2,979.17	2,821.46	18.890	CC
DINNEL #1(PR) - Wellbore #1 - No Surveys	15,500.00	6,679.00	2,979.60	2,821.38	18.832	ES
DINNEL #1(PR) - Wellbore #1 - No Surveys	15,800.00	6,679.00	2,999.71	2,839.00	18.665	SF
DINNEL #2(PA) - Wellbore #1 - Gyro	16,774.70	6,721.40	1,648.57	1,511.76	12.051	CC
DINNEL #2(PA) - Wellbore #1 - Gyro	16,800.00	6,721.23	1,648.76	1,511.71	12.030	ES
DINNEL #2(PA) - Wellbore #1 - Gyro	16,900.00	6,720.56	1,653.32	1,515.53	11.999	SF
DINNEL #26-4(SI) - Wellbore #1 - Gyro	16,000.00	16,000.00	3,113.41	2,955.36	19.700	SF
DINNEL #26-4(SI) - Wellbore #1 - Gyro	16,763.74	6,692.88	3,018.34	2,881.74	22.097	CC
DINNEL #26-4(SI) - Wellbore #1 - Gyro	16,800.00	6,691.41	3,018.56	2,881.59	22.039	ES
DINNEL #3(PR) - Wellbore #1 - No Surveys	15,458.96	6,677.00	1,670.78	1,512.99	10.589	CC, ES
DINNEL #3(PR) - Wellbore #1 - No Surveys	15,600.00	6,677.00	1,676.72	1,517.81	10.551	SF
DINNEL C #26-18(PR) - Wellbore #1 - No Surveys	16,094.63	6,676.00	1,170.68	1,006.15	7.116	CC
DINNEL C #26-18(PR) - Wellbore #1 - No Surveys	16,100.00	6,676.00	1,170.69	1,006.11	7.113	ES, SF
DINNEL C #26-19(SI) - Wellbore #1 - No Surveys	16,189.19	6,669.00	2,457.19	2,291.72	14.850	CC
DINNEL C #26-19(SI) - Wellbore #1 - No Surveys	16,200.00	6,669.00	2,457.21	2,291.63	14.840	ES
DINNEL C #26-19(SI) - Wellbore #1 - No Surveys	16,400.00	6,669.00	2,466.21	2,298.92	14.742	SF
DINNEL C #26-20(PR) - Wellbore #1 - No Surveys	14,990.16	6,679.00	2,321.64	2,168.79	15.189	CC
DINNEL C #26-20(PR) - Wellbore #1 - No Surveys	15,000.00	6,679.00	2,321.66	2,168.71	15.179	ES
DINNEL C #26-20(PR) - Wellbore #1 - No Surveys	15,200.00	6,679.00	2,331.11	2,176.44	15.072	SF
DINNEL C #26-21D(PR) - Wellbore #1 - No Surveys	15,429.66	6,678.00	1,641.55	1,484.06	10.423	CC, ES
DINNEL C #26-21D(PR) - Wellbore #1 - No Surveys	15,500.00	6,678.00	1,643.06	1,484.93	10.391	SF
PROSPECT CO #26-10I4(PR) - Wellbore #1 - No Survey	13,817.37	6,678.00	31.84	-108.69	0.227	Level 1, CC, ES, SF
PROSPECT CO #26-11I4(PR) - Wellbore #1 - No Survey	14,341.24	6,682.00	1,627.85	1,481.80	11.146	CC, ES
PROSPECT CO #26-11I4(PR) - Wellbore #1 - No Survey	14,500.00	6,682.00	1,635.57	1,488.28	11.105	SF
PROSPECT CO #26-12I4(PR) - Wellbore #1 - No Survey	13,638.31	6,682.00	2,567.23	2,428.53	18.509	CC, ES
PROSPECT CO #26-12I4(PR) - Wellbore #1 - No Survey	14,000.00	6,682.00	2,592.58	2,450.92	18.300	SF
PROSPECT CO #26-13I4(PR) - Wellbore #1 - No Survey	12,836.92	6,684.00	3,066.51	2,936.09	23.512	CC, ES
PROSPECT CO #26-13I4(PR) - Wellbore #1 - No Survey	13,300.00	6,684.00	3,101.28	2,966.91	23.080	SF
PROSPECT CO #26-14I4(PR) - Wellbore #1 - No Survey	12,835.15	6,706.00	1,436.75	1,306.15	11.002	CC, ES
PROSPECT CO #26-14I4(PR) - Wellbore #1 - No Survey	12,900.00	6,706.00	1,438.21	1,307.03	10.964	SF
PROSPECT CO #26-15I4(PR) - Wellbore #1 - No Survey	12,687.72	6,679.00	515.19	386.35	3.999	CC, ES
PROSPECT CO #26-15I4(PR) - Wellbore #1 - No Survey	12,700.00	6,679.00	515.34	386.40	3.997	SF
PROSPECT CO #26-16I4(PR) - Wellbore #1 - Gyro	12,805.92	6,702.21	981.48	886.41	10.324	CC, ES
PROSPECT CO #26-16I4(PR) - Wellbore #1 - Gyro	12,900.00	6,703.76	985.97	890.18	10.293	SF
PROSPECT CO #26-1I4(SI) - Wellbore #1 - Gyro	16,874.96	6,682.77	988.18	850.43	7.174	CC, ES
PROSPECT CO #26-1I4(SI) - Wellbore #1 - Gyro	16,900.00	6,682.29	988.49	850.50	7.163	SF
PROSPECT CO #26-7I4(PR) - Wellbore #1 - No Surveys	15,456.87	6,676.00	448.79	291.03	2.845	CC, ES, SF
PROSPECT CO #26-8I4(SI) - Wellbore #1 - Gyro	15,723.95	6,709.54	620.74	495.22	4.946	CC, ES, SF
PROSPECT CO #26-9I4(PR) - Wellbore #1 - Gyro	14,376.50	6,685.25	1,021.34	910.06	9.178	CC, ES
PROSPECT CO #26-9I4(PR) - Wellbore #1 - Gyro	14,400.00	6,685.47	1,021.61	910.09	9.161	SF
RASSMUSSEN #1(PA) - Wellbore #1 - Gyro	16,702.25	6,678.56	290.41	154.52	2.137	CC, 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 Booth C35-735
Project:	Mustang	TVD Reference:	KB @ 4752.00ft
Reference Site:	C Section 35	MD Reference:	KB @ 4752.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Booth C35-735	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 35						
BOOTH #11-35U(PR) - Wellbore #1 - No Surveys	11,335.41	6,694.00	3,150.65	3,035.33	27.322	CC, ES
BOOTH #11-35U(PR) - Wellbore #1 - No Surveys	11,900.00	6,694.00	3,200.83	3,080.78	26.661	SF
BOOTH #12-35DU(PR) - Wellbore #1 - No Surveys	10,621.14	6,684.00	2,168.89	2,060.63	20.034	CC, ES
BOOTH #12-35DU(PR) - Wellbore #1 - No Surveys	10,900.00	6,684.00	2,186.74	2,076.18	19.779	SF
BOOTH #21-35U(PR) - Wellbore #1 - No Surveys	11,346.26	6,694.00	1,638.35	1,522.93	14.194	CC, ES
BOOTH #21-35U(PR) - Wellbore #1 - No Surveys	11,500.00	6,694.00	1,645.55	1,528.85	14.101	SF
BOOTH #22-35U(PR) - Wellbore #1 - No Surveys	11,335.41	2,004.00	3,150.65	3,076.26	42.355	CC, ES
BOOTH #22-35U(PR) - Wellbore #1 - No Surveys	12,100.00	2,004.00	3,242.09	3,161.69	40.323	SF
BOOTH #35AU(PR) - Wellbore #1 - No Surveys	10,643.00	6,684.00	2,169.05	2,060.58	19.997	CC, ES
BOOTH #35AU(PR) - Wellbore #1 - No Surveys	10,900.00	6,684.00	2,184.22	2,073.60	19.746	SF
BOOTH C #35-01(SI) - Wellbore #1 - No Surveys	11,649.83	6,698.00	986.00	867.52	8.322	CC, ES
BOOTH C #35-01(SI) - Wellbore #1 - No Surveys	11,700.00	6,698.00	987.27	868.33	8.301	SF
BOOTH C #35-07(SI) - Wellbore #1 - No Surveys	10,319.70	6,713.00	324.73	219.08	3.074	CC, ES, SF
BOOTH C #35-08(SI) - Wellbore #1 - No Surveys	10,326.05	6,708.00	996.52	890.85	9.431	CC, ES
BOOTH C #35-08(SI) - Wellbore #1 - No Surveys	10,400.00	6,708.00	999.26	892.96	9.400	SF
BOOTH C #35-27(SI) - Wellbore #1 - Gyro	12,191.42	6,683.59	335.20	246.54	3.781	CC, ES
BOOTH C #35-27(SI) - Wellbore #1 - Gyro	12,200.00	6,683.72	335.31	246.57	3.778	SF
Booth C35-725 - Wellbore #1 - Plan #1	2,000.00	2,000.00	22.33	8.46	1.610	CC, ES, SF
Booth C35-745 - Wellbore #1 - Plan #1	2,600.00	2,599.00	22.61	4.43	1.244	Level 3, CC, ES, SF
Booth C35-750 - Wellbore #1 - Plan #1	2,000.00	1,999.00	45.21	31.34	3.260	CC, ES
Booth C35-750 - Wellbore #1 - Plan #1	2,100.00	2,097.42	46.90	32.33	3.220	SF
Booth C35-755 - Wellbore #1 - Plan #1	4,700.00	4,677.00	963.07	929.92	29.054	CC, ES
Booth C35-755 - Wellbore #1 - Plan #1	19,904.82	19,911.37	1,310.93	1,016.23	4.448	SF
Booth C35-765 - Wellbore #1 - Plan #1	2,400.00	2,378.00	985.37	968.71	59.140	CC, ES
Booth C35-765 - Wellbore #1 - Plan #1	19,904.82	19,915.47	1,967.21	1,671.97	6.663	SF
Booth C35-775 - Wellbore #1 - Plan #1	2,200.00	2,178.00	1,007.97	992.74	66.192	CC, ES
Booth C35-775 - Wellbore #1 - Plan #1	19,904.82	20,177.68	2,621.95	2,326.31	8.869	SF
Booth C35-785 - Wellbore #1 - Plan #1	2,000.00	1,978.00	1,030.55	1,016.76	74.710	CC, ES
Booth C35-785 - Wellbore #1 - Plan #1	19,904.82	20,337.37	3,277.62	2,981.31	11.062	SF
UPV #35-214(SI) - Wellbore #1 - No Surveys	11,198.02	6,688.00	25.78	-88.12	0.226	Level 1, CC, ES, SF

Noble Energy, Inc.
Anticollision Summary Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Booth C35-735
Project:	Mustang	TVD Reference:	KB @ 4752.00ft
Reference Site:	C Section 35	MD Reference:	KB @ 4752.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Booth C35-735	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 02						
BOOTH D #02-31 - BOOTH D #02-31 - No Surveys	5,000.00	4,958.00	3,436.48	3,319.63	29.409	CC
BOOTH D #02-31 - BOOTH D #02-31 - No Surveys	5,100.00	5,057.97	3,438.63	3,319.43	28.848	ES
BOOTH D #02-31 - BOOTH D #02-31 - No Surveys	6,750.00	6,608.16	3,618.72	3,463.05	23.246	SF
DONOVAN D #2-19(PR) - DONOVAN D #2-19 - No Surv	5,000.00	4,955.00	2,418.78	2,301.99	20.710	CC
DONOVAN D #2-19(PR) - DONOVAN D #2-19 - No Surv	5,100.00	5,054.97	2,420.89	2,301.75	20.320	ES
DONOVAN D #2-19(PR) - DONOVAN D #2-19 - No Surv	6,600.00	6,508.56	2,570.34	2,417.06	16.769	SF
DONOVAN D #2-3JI(PR) - DONOVAN D #2-3JI - No Sur	5,000.00	4,959.00	1,537.10	1,420.23	13.152	CC
DONOVAN D #2-3JI(PR) - DONOVAN D #2-3JI - No Sur	5,100.00	5,058.97	1,539.27	1,420.05	12.911	ES
DONOVAN D #2-3JI(PR) - DONOVAN D #2-3JI - No Sur	6,550.00	6,474.74	1,655.09	1,502.64	10.856	SF
DONOVAN D #2-4JI(SI) - DONOVAN D #2-4JI - No Surv	5,000.00	4,946.00	2,819.27	2,702.66	24.177	CC
DONOVAN D #2-4JI(SI) - DONOVAN D #2-4JI - No Surv	5,100.00	5,045.97	2,821.45	2,702.49	23.718	ES
DONOVAN D #2-4JI(SI) - DONOVAN D #2-4JI - No Surv	6,900.00	6,663.49	2,967.42	2,810.25	18.880	SF
DONOVAN D #2-5JI - DONOVAN D #2-5JI - No Surveys	5,000.00	4,956.00	3,237.95	3,121.14	27.720	CC
DONOVAN D #2-5JI - DONOVAN D #2-5JI - No Surveys	5,100.00	5,055.97	3,239.94	3,120.78	27.190	ES
DONOVAN D #2-5JI - DONOVAN D #2-5JI - No Surveys	6,600.00	6,509.56	3,407.00	3,253.71	22.225	SF
DONOVAN D #2-6JI(PR) - DONOVAN D #2-6JI - No Sur	5,000.00	4,959.00	2,300.59	2,183.72	19.685	CC
DONOVAN D #2-6JI(PR) - DONOVAN D #2-6JI - No Sur	5,100.00	5,058.97	2,302.17	2,182.95	19.310	ES
DONOVAN D #2-6JI(PR) - DONOVAN D #2-6JI - No Sur	6,400.00	6,347.67	2,404.97	2,255.48	16.089	SF
GUTTERSEN #D02-25(PR) - GUTTERSEN #D02-25 - N	5,000.00	4,948.00	3,892.28	3,775.63	33.367	CC
GUTTERSEN #D02-25(PR) - GUTTERSEN #D02-25 - N	5,100.00	5,047.97	3,893.60	3,774.60	32.719	ES
GUTTERSEN #D02-25(PR) - GUTTERSEN #D02-25 - N	6,500.00	6,423.48	4,036.60	3,885.30	26.678	SF
GUTTERSEN #D02-33D(PR) - GUTTERSEN #D02-33D	100.00	40.46	3,891.33	3,891.14	10,000.000	CC
GUTTERSEN #D02-33D(PR) - GUTTERSEN #D02-33D	1,000.00	936.13	3,894.69	3,888.32	611.320	ES
GUTTERSEN #D02-33D(PR) - GUTTERSEN #D02-33D	6,600.00	6,685.76	5,118.44	5,068.24	101.975	SF
GUTTERSEN #D11-29D(PR) - GUTTERSEN #D11-29D	100.00	57.93	3,890.95	3,890.73	10,000.000	CC
GUTTERSEN #D11-29D(PR) - GUTTERSEN #D11-29D	300.00	229.32	3,891.56	3,890.23	2,918.805	ES
GUTTERSEN #D11-29D(PR) - GUTTERSEN #D11-29D	6,500.00	6,722.39	5,424.32	5,374.72	109.347	SF
GUTTERSEN D #02-20(SI) - GUTTERSEN D #02-20 - W	2,504.62	2,456.69	3,183.05	3,169.57	236.064	CC
GUTTERSEN D #02-20(SI) - GUTTERSEN D #02-20 - W	3,100.00	3,034.33	3,184.24	3,168.00	196.137	ES
GUTTERSEN D #02-20(SI) - GUTTERSEN D #02-20 - W	6,500.00	6,428.61	3,344.78	3,309.67	95.286	SF
Guttersen D02-75HN - Original Drilling - Original Drilling	6,484.80	11,143.00	970.76	868.22	9.467	CC, ES
Guttersen D02-75HN - Original Drilling - Original Drilling	6,500.00	11,143.00	970.93	868.26	9.457	SF
HSR-BOOTH #7-2(SI) - HSR-BOOTH #7-2 - No Surveys	5,000.00	4,950.00	1,542.74	1,426.04	13.221	CC
HSR-BOOTH #7-2(SI) - HSR-BOOTH #7-2 - No Surveys	6,126.00	6,073.89	1,555.64	1,412.56	10.872	ES
HSR-BOOTH #7-2(SI) - HSR-BOOTH #7-2 - No Surveys	6,300.00	6,245.26	1,581.41	1,434.28	10.749	SF
HSR-BOOTH #8-2(SI) - HSR-BOOTH #8-2 - No Surveys	6,146.30	6,129.15	1,847.88	1,703.63	12.811	CC
HSR-BOOTH #8-2(SI) - HSR-BOOTH #8-2 - No Surveys	6,150.00	6,132.83	1,847.89	1,703.56	12.803	ES
HSR-BOOTH #8-2(SI) - HSR-BOOTH #8-2 - No Surveys	6,350.00	6,327.65	1,876.12	1,727.19	12.598	SF
KERN #1(PA) - KERN #1 - No Surveys	6,170.90	6,131.66	796.93	652.56	5.520	CC
KERN #1(PA) - KERN #1 - No Surveys	6,200.00	6,160.55	797.37	652.32	5.497	ES
KERN #1(PA) - KERN #1 - No Surveys	6,300.00	6,258.26	805.68	658.33	5.468	SF
KERN D #2-1(SI) - KERN D #2-1 - No Surveys	6,352.04	6,306.56	1,220.27	1,071.79	8.219	CC
KERN D #2-1(SI) - KERN D #2-1 - No Surveys	6,400.00	6,350.67	1,220.74	1,071.22	8.165	ES
KERN D #2-1(SI) - KERN D #2-1 - No Surveys	6,600.00	6,515.56	1,235.67	1,082.25	8.054	SF
KERN D #2-2JI(PR) - KERN D #2-2JI - No Surveys	5,000.00	4,961.00	326.04	209.13	2.789	CC
KERN D #2-2JI(PR) - KERN D #2-2JI - No Surveys	5,100.00	5,060.97	328.12	208.86	2.751	ES
KERN D #2-2JI(PR) - KERN D #2-2JI - No Surveys	6,126.00	6,084.89	390.97	247.69	2.729	SF
L F RANCH #2-2(SI) - L F RANCH #2-2 - No Surveys	5,000.00	4,948.00	4,636.64	4,519.99	39.748	CC
L F RANCH #2-2(SI) - L F RANCH #2-2 - No Surveys	5,100.00	5,047.97	4,637.97	4,518.97	38.974	ES
L F RANCH #2-2(SI) - L F RANCH #2-2 - No Surveys	6,550.00	6,463.74	4,807.13	4,654.88	31.574	SF
TANIA #D11-27D(PR) - TANIA #D11-27D - Wellbore #1 -	2,551.25	2,596.78	4,742.19	4,722.35	239.055	CC
TANIA #D11-27D(PR) - TANIA #D11-27D - Wellbore #1 -	2,700.00	2,690.97	4,743.13	4,722.03	224.702	ES
TANIA #D11-27D(PR) - TANIA #D11-27D - Wellbore #1 -	6,450.00	6,496.08	4,931.22	4,878.16	92.929	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 Booth C35-735
Project:	Mustang	TVD Reference:	KB @ 4752.00ft
Reference Site:	C Section 35	MD Reference:	KB @ 4752.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Booth C35-735	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 #D11-28(PR) - TANIA #D11-28 - No Surveys	5,000.00	4,957.00	4,770.84	4,654.01	40.836	CC
TANIA #D11-28(PR) - TANIA #D11-28 - No Surveys	6,126.00	6,080.89	4,787.53	4,644.31	33.428	ES
TANIA #D11-28(PR) - TANIA #D11-28 - No Surveys	6,550.00	6,472.74	4,927.83	4,775.39	32.328	SF
TANIA BLUE #D 2-11(PR) - TANIA BLUE #D 2-11 - No S	5,000.00	4,953.00	3,190.18	3,073.43	27.325	CC
TANIA BLUE #D 2-11(PR) - TANIA BLUE #D 2-11 - No S	5,100.00	5,052.97	3,191.27	3,072.17	26.795	ES
TANIA BLUE #D 2-11(PR) - TANIA BLUE #D 2-11 - No S	6,450.00	6,386.04	3,306.93	3,156.51	21.985	SF
TANIA BLUE #D 2-12(PA) - TANIA BLUE #D 2-12 - No S	5,000.00	4,941.00	4,029.60	3,913.09	34.586	CC
TANIA BLUE #D 2-12(PA) - TANIA BLUE #D 2-12 - No S	5,100.00	5,040.97	4,031.28	3,912.42	33.916	ES
TANIA BLUE #D 2-12(PA) - TANIA BLUE #D 2-12 - No S	6,550.00	6,456.74	4,196.02	4,043.92	27.586	SF
TANIA BLUE #D 2-14(PR) - TANIA BLUE #D 2-14 - No S	5,000.00	4,951.00	4,576.27	4,459.56	39.210	CC
TANIA BLUE #D 2-14(PR) - TANIA BLUE #D 2-14 - No S	5,146.87	5,097.77	4,578.08	4,457.92	38.101	ES
TANIA BLUE #D 2-14(PR) - TANIA BLUE #D 2-14 - No S	6,550.00	6,466.74	4,741.38	4,589.06	31.129	SF
TANIA BLUE #D2-10(SI) - TANIA BLUE #D2-10 - No Sur	5,000.00	4,963.00	2,810.85	2,693.90	24.035	CC
TANIA BLUE #D2-10(SI) - TANIA BLUE #D2-10 - No Sur	6,126.00	6,086.89	2,818.02	2,674.68	19.660	ES
TANIA BLUE #D2-10(SI) - TANIA BLUE #D2-10 - No Sur	6,400.00	6,351.67	2,878.08	2,728.50	19.241	SF
TANIA BLUE #D2-16(PR) - TANIA BLUE #D2-16 - No Su	6,131.55	6,094.43	4,367.43	4,223.92	30.433	CC
TANIA BLUE #D2-16(PR) - TANIA BLUE #D2-16 - No Su	6,150.00	6,112.83	4,367.69	4,223.75	30.344	ES
TANIA BLUE #D2-16(PR) - TANIA BLUE #D2-16 - No Su	6,500.00	6,440.48	4,469.01	4,317.35	29.469	SF
TANIA BLUE D #2-15(SI) - TANIA BLUE D #2-15 - No Su	5,000.00	4,954.00	4,177.78	4,061.01	35.778	CC
TANIA BLUE D #2-15(SI) - TANIA BLUE D #2-15 - No Su	6,126.00	6,077.89	4,186.50	4,043.34	29.244	ES
TANIA BLUE D #2-15(SI) - TANIA BLUE D #2-15 - No Su	6,500.00	6,429.48	4,296.18	4,144.75	28.370	SF
TANIA BLUE D #2-9(SI) - TANIA BLUE D #2-9 - No Surv	6,139.38	6,115.24	3,072.38	2,928.43	21.344	CC
TANIA BLUE D #2-9(SI) - TANIA BLUE D #2-9 - No Surv	6,150.00	6,125.83	3,072.46	2,928.26	21.308	ES
TANIA BLUE D #2-9(SI) - TANIA BLUE D #2-9 - No Surv	6,450.00	6,411.04	3,141.55	2,990.63	20.817	SF
TANIA D #2-23(SI) - TANIA D #2-23 - No Surveys	6,128.26	6,091.14	3,491.33	3,347.90	24.341	CC
TANIA D #2-23(SI) - TANIA D #2-23 - No Surveys	6,150.00	6,112.83	3,491.70	3,347.76	24.258	ES
TANIA D #2-23(SI) - TANIA D #2-23 - No Surveys	6,450.00	6,398.04	3,570.34	3,419.68	23.698	SF

Noble Energy, Inc.
Anticollision Summary Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Booth C35-735
Project:	Mustang	TVD Reference:	KB @ 4752.00ft
Reference Site:	C Section 35	MD Reference:	KB @ 4752.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Booth C35-735	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 @ 4752.00ft

Offset Depths are relative to Offset Datum

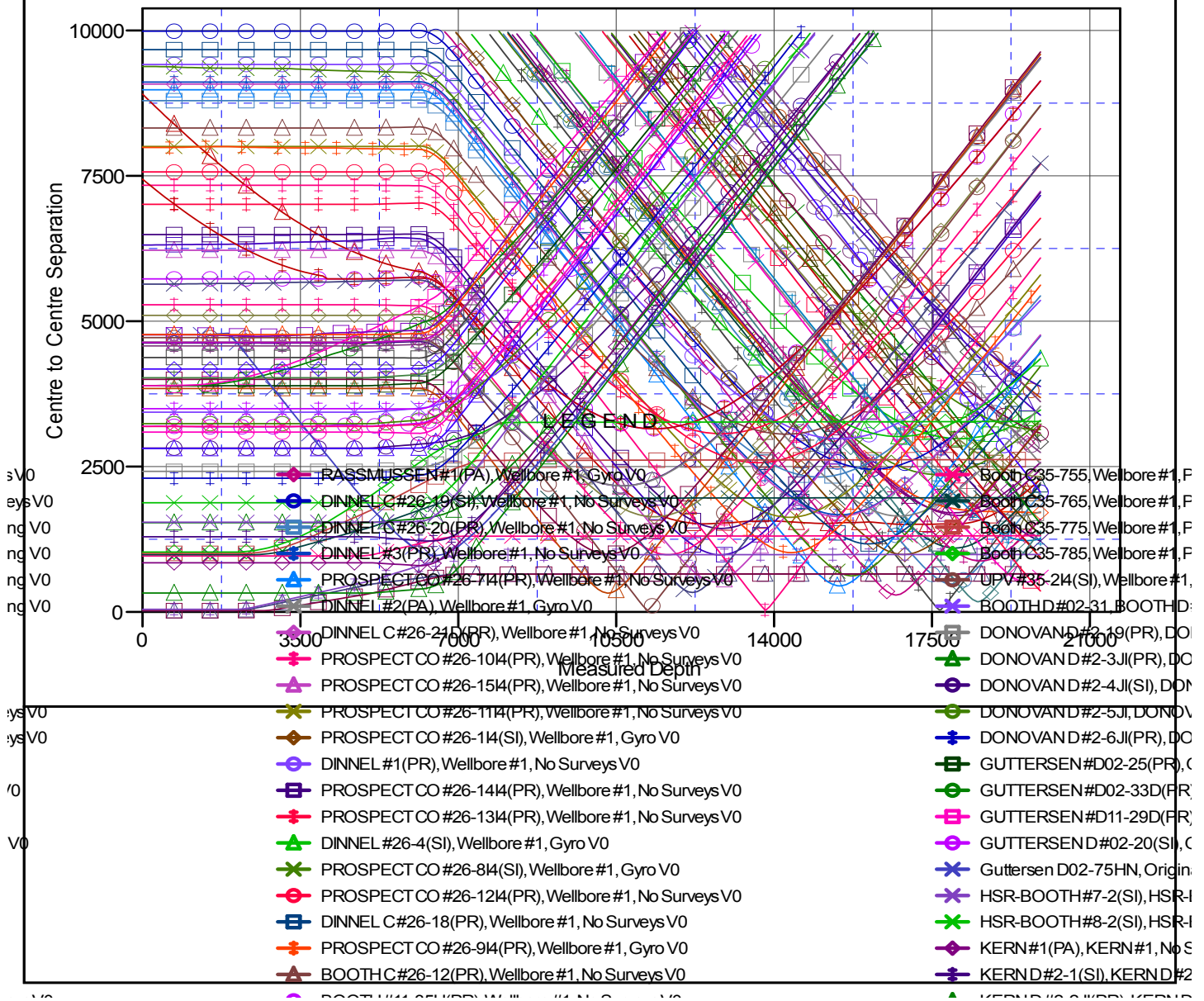
Central Meridian is -105.5000000

Coordinates are relative to: Booth C35-735

Coordinate System is US State Plane 1983, Colorado Northern Zone

Grid Convergence at Surface is: 0.64°

Ladder Plot



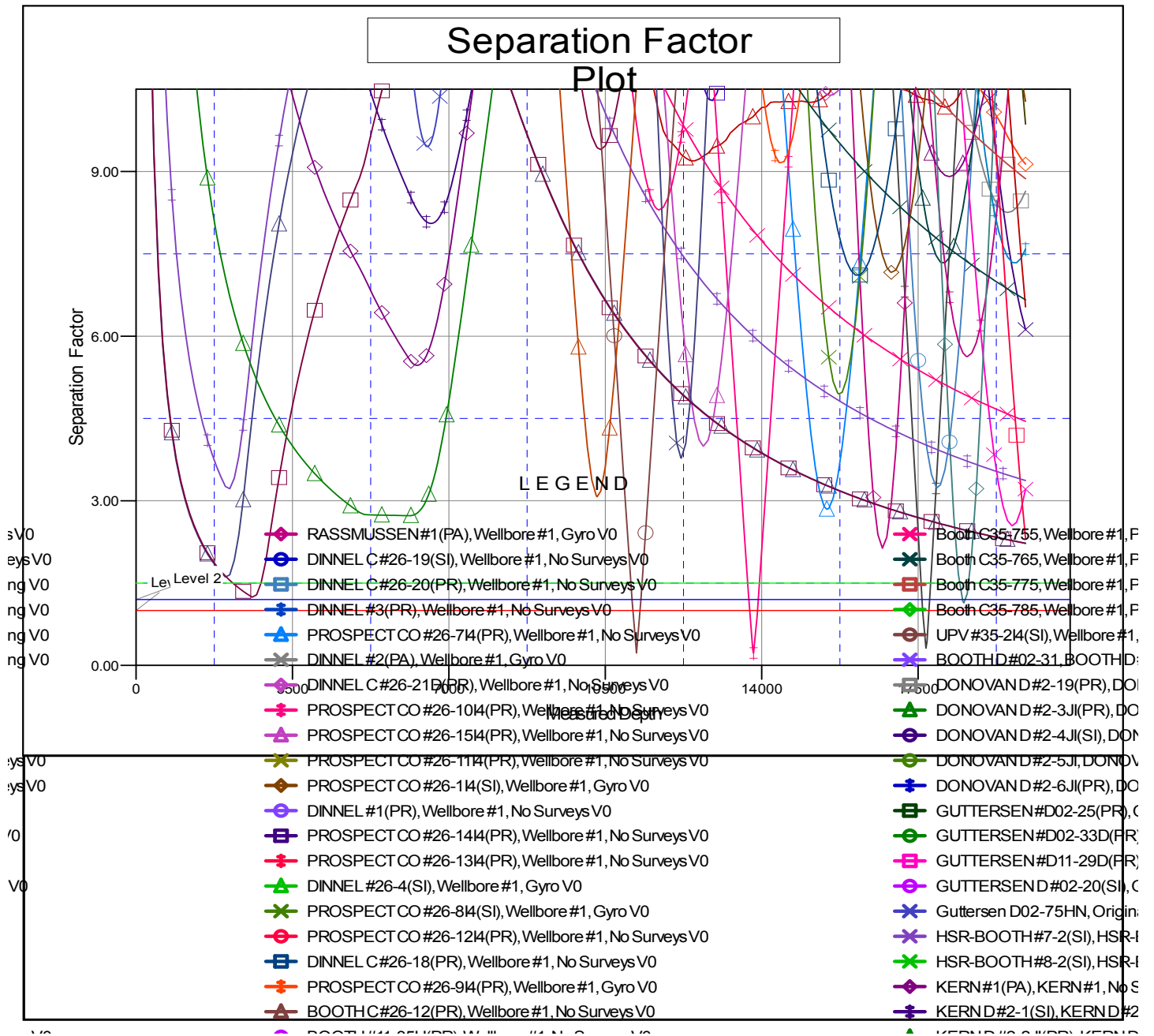
CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Summary Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Booth C35-735
Project:	Mustang	TVD Reference:	KB @ 4752.00ft
Reference Site:	C Section 35	MD Reference:	KB @ 4752.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Booth C35-735	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 @ 4752.00ft
Offset Depths are relative to Offset Datum
Central Meridian is -105.5000000

Coordinates are relative to: Booth C35-735
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 0.64°



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