

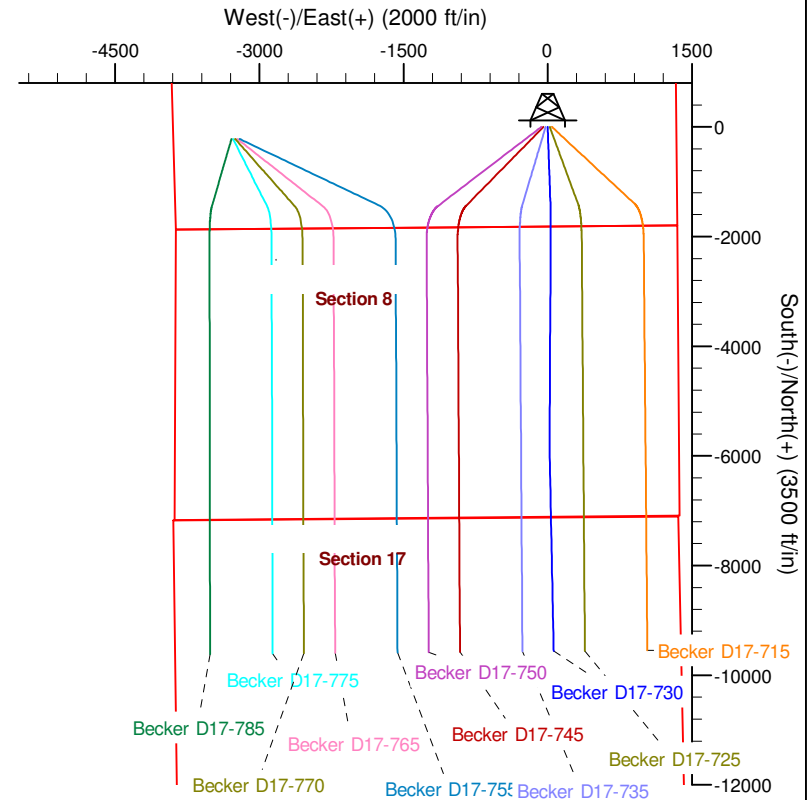
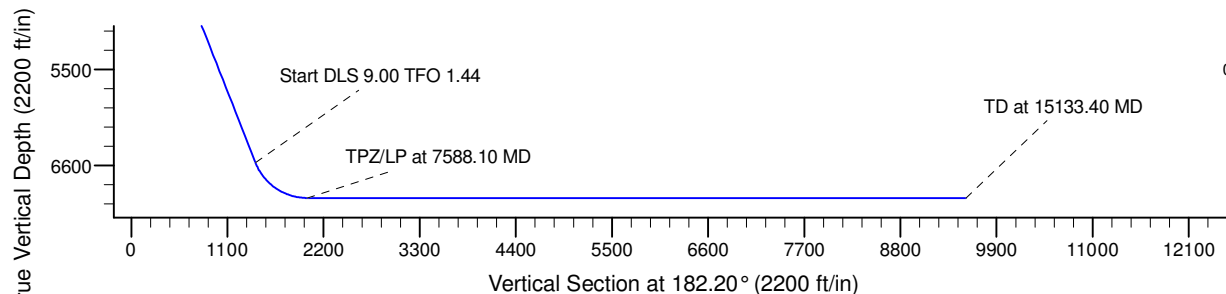
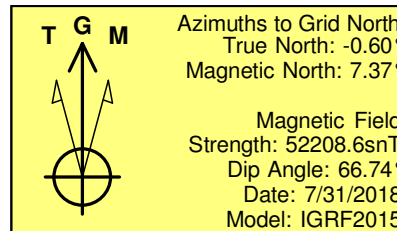
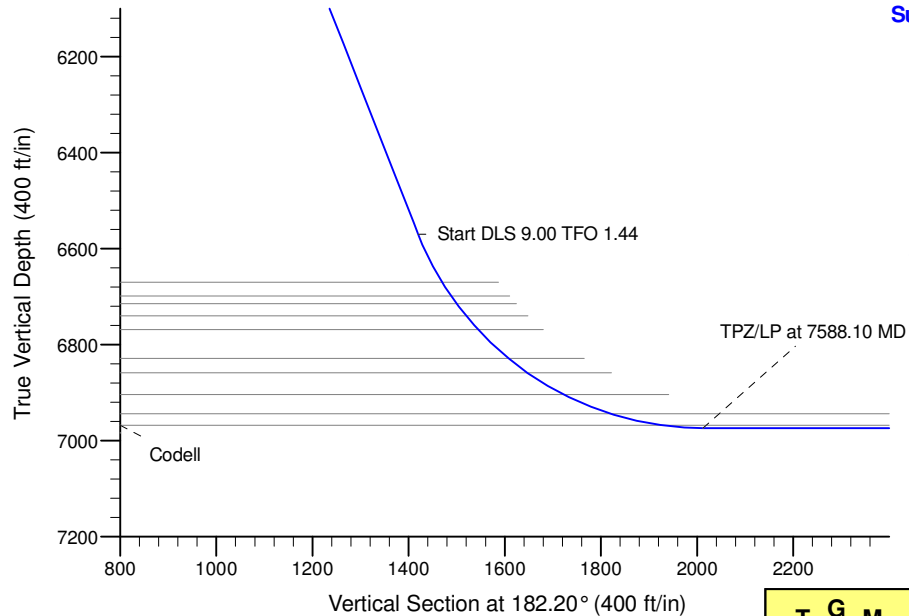
Project: Mustang
Site: D Section 08
Well: Becker D17-730
Wellbore: Wellbore #1
Design: Plan #1

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	2400.00	0.00	0.00	2400.00	0.00	0.00	0.00	0.00	0.00	
3	3470.28	21.41	178.83	3445.55	-197.57	4.03	2.00	178.83	197.27	
4	6825.87	21.41	178.83	6569.68	-1421.99	29.04	0.00	0.00	1419.83	
5	7588.10	90.00	180.17	6974.00	-2014.73	31.01	9.00	1.44	2012.06	Becker D17-730 TPZ
6	11398.12	90.00	180.17	6974.00	-5824.74	19.88	0.00	0.00	5819.69	D17 Nudge
7	11480.66	90.00	179.34	6974.00	-5907.28	20.23	1.00	-90.00	5902.16	Becker D17-730 BHL
8	15133.40	90.00	179.34	6974.00	-9559.77	62.18	0.00	0.00	9550.37	Becker D17-730 BHL



WELL DETAILS: Becker D17-730

	Northing	Easting	Latitude	Longitude
0.00	0.00	1336071.40	4746.00	-104.5702100

Plan: Plan #1 (Becker D17-730/Wellbore #1)

Created By: Colby Baxter	Date: 9:02, October 02 2018
Checked: _____	Date: _____
Reviewed: _____	Date: _____
Approved: _____	Date: _____

Northern Region - DJ Basin

Mustang

D Section 08

Becker D17-730

Wellbore #1

Plan: Plan #1

Standard Survey Report

02 October, 2018

Noble Energy, Inc.

Survey Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Becker D17-730
Project:	Mustang	TVD Reference:	KB @ 4776.00ft
Site:	D Section 08	MD Reference:	KB @ 4776.00ft
Well:	Becker D17-730	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Plan #1	Database:	EDMP

Project	Mustang, Weld County Colorado		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Northern Zone		

Site		D Section 08					
Site Position:		Northing:	1,334,012.94	usft	Latitude:	40.2466118	
From:	Map	Easting:	3,256,643.55	usft	Longitude:	-104.5805772	
Position Uncertainty:	0.00	ft	Slot Radius:	13.200	in	Grid Convergence:	0.59 °

Well	Becker D17-730					
Well Position	+N/-S	0.00 ft	Northing:	1,336,071.40 usft	Latitude:	40.2521800
	+E/-W	0.00 ft	Easting:	3,259,516.03 usft	Longitude:	-104.5702100
Position Uncertainty		0.00 ft	Wellhead Elevation:	ft	Ground Level:	4,746.00 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	7/31/2018	7.98	66.74	52,208.59159881

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	182.20	

Survey Tool Program	Date	10/1/2018			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
0.00	15,133.40	Plan #1 (Wellbore #1)	2_MWD+IFR1+MS	A008Mb: IFR dec & multi-station analysis	

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

Noble Energy, Inc.

Survey Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Becker D17-730
Project:	Mustang	TVD Reference:	KB @ 4776.00ft
Site:	D Section 08	MD Reference:	KB @ 4776.00ft
Well:	Becker D17-730	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Plan #1	Database:	EDMP

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00
1,100.00	0.00	0.00	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00
1,200.00	0.00	0.00	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00
1,300.00	0.00	0.00	1,300.00	0.00	0.00	0.00	0.00	0.00	0.00
1,400.00	0.00	0.00	1,400.00	0.00	0.00	0.00	0.00	0.00	0.00
1,500.00	0.00	0.00	1,500.00	0.00	0.00	0.00	0.00	0.00	0.00
1,600.00	0.00	0.00	1,600.00	0.00	0.00	0.00	0.00	0.00	0.00
1,700.00	0.00	0.00	1,700.00	0.00	0.00	0.00	0.00	0.00	0.00
1,800.00	0.00	0.00	1,800.00	0.00	0.00	0.00	0.00	0.00	0.00
1,900.00	0.00	0.00	1,900.00	0.00	0.00	0.00	0.00	0.00	0.00
2,000.00	0.00	0.00	2,000.00	0.00	0.00	0.00	0.00	0.00	0.00
2,100.00	0.00	0.00	2,100.00	0.00	0.00	0.00	0.00	0.00	0.00
2,200.00	0.00	0.00	2,200.00	0.00	0.00	0.00	0.00	0.00	0.00
2,300.00	0.00	0.00	2,300.00	0.00	0.00	0.00	0.00	0.00	0.00
2,400.00	0.00	0.00	2,400.00	0.00	0.00	0.00	0.00	0.00	0.00
2,500.00	2.00	178.83	2,499.98	-1.74	0.04	1.74	2.00	2.00	0.00
2,600.00	4.00	178.83	2,599.84	-6.98	0.14	6.97	2.00	2.00	0.00
2,700.00	6.00	178.83	2,699.45	-15.69	0.32	15.67	2.00	2.00	0.00
2,800.00	8.00	178.83	2,798.70	-27.87	0.57	27.83	2.00	2.00	0.00
2,900.00	10.00	178.83	2,897.47	-43.51	0.89	43.45	2.00	2.00	0.00
3,000.00	12.00	178.83	2,995.62	-62.59	1.28	62.49	2.00	2.00	0.00
3,100.00	14.00	178.83	3,093.06	-85.08	1.74	84.95	2.00	2.00	0.00
3,200.00	16.00	178.83	3,189.64	-110.95	2.27	110.79	2.00	2.00	0.00
3,300.00	18.00	178.83	3,285.27	-140.18	2.86	139.97	2.00	2.00	0.00
3,400.00	20.00	178.83	3,379.82	-172.73	3.53	172.47	2.00	2.00	0.00
3,470.28	21.41	178.83	3,445.55	-197.57	4.03	197.27	2.00	2.00	0.00
3,500.00	21.41	178.83	3,473.23	-208.42	4.26	208.10	0.00	0.00	0.00
3,600.00	21.41	178.83	3,566.33	-244.91	5.00	244.53	0.00	0.00	0.00
3,700.00	21.41	178.83	3,659.43	-281.39	5.75	280.97	0.00	0.00	0.00
3,800.00	21.41	178.83	3,752.53	-317.88	6.49	317.40	0.00	0.00	0.00
3,900.00	21.41	178.83	3,845.63	-354.37	7.24	353.83	0.00	0.00	0.00
4,000.00	21.41	178.83	3,938.74	-390.86	7.98	390.27	0.00	0.00	0.00
4,100.00	21.41	178.83	4,031.84	-427.35	8.73	426.70	0.00	0.00	0.00
4,200.00	21.41	178.83	4,124.94	-463.84	9.47	463.14	0.00	0.00	0.00
4,300.00	21.41	178.83	4,218.04	-500.33	10.22	499.57	0.00	0.00	0.00
4,400.00	21.41	178.83	4,311.14	-536.82	10.96	536.00	0.00	0.00	0.00
4,500.00	21.41	178.83	4,404.25	-573.31	11.71	572.44	0.00	0.00	0.00
4,600.00	21.41	178.83	4,497.35	-609.80	12.45	608.87	0.00	0.00	0.00
4,700.00	21.41	178.83	4,590.45	-646.28	13.20	645.30	0.00	0.00	0.00
4,800.00	21.41	178.83	4,683.55	-682.77	13.94	681.74	0.00	0.00	0.00
4,900.00	21.41	178.83	4,776.65	-719.26	14.69	718.17	0.00	0.00	0.00
5,000.00	21.41	178.83	4,869.76	-755.75	15.43	754.60	0.00	0.00	0.00
5,100.00	21.41	178.83	4,962.86	-792.24	16.18	791.04	0.00	0.00	0.00
5,200.00	21.41	178.83	5,055.96	-828.73	16.92	827.47	0.00	0.00	0.00

Noble Energy, Inc.

Survey Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Becker D17-730
Project:	Mustang	TVD Reference:	KB @ 4776.00ft
Site:	D Section 08	MD Reference:	KB @ 4776.00ft
Well:	Becker D17-730	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	21.41	178.83	5,149.06	-865.22	17.67	863.91	0.00	0.00	0.00
5,400.00	21.41	178.83	5,242.17	-901.71	18.42	900.34	0.00	0.00	0.00
5,500.00	21.41	178.83	5,335.27	-938.20	19.16	936.77	0.00	0.00	0.00
5,600.00	21.41	178.83	5,428.37	-974.69	19.91	973.21	0.00	0.00	0.00
5,700.00	21.41	178.83	5,521.47	-1,011.17	20.65	1,009.64	0.00	0.00	0.00
5,800.00	21.41	178.83	5,614.57	-1,047.66	21.40	1,046.07	0.00	0.00	0.00
5,900.00	21.41	178.83	5,707.68	-1,084.15	22.14	1,082.51	0.00	0.00	0.00
6,000.00	21.41	178.83	5,800.78	-1,120.64	22.89	1,118.94	0.00	0.00	0.00
6,100.00	21.41	178.83	5,893.88	-1,157.13	23.63	1,155.37	0.00	0.00	0.00
6,200.00	21.41	178.83	5,986.98	-1,193.62	24.38	1,191.81	0.00	0.00	0.00
6,300.00	21.41	178.83	6,080.08	-1,230.11	25.12	1,228.24	0.00	0.00	0.00
6,400.00	21.41	178.83	6,173.19	-1,266.60	25.87	1,264.68	0.00	0.00	0.00
6,500.00	21.41	178.83	6,266.29	-1,303.09	26.61	1,301.11	0.00	0.00	0.00
6,600.00	21.41	178.83	6,359.39	-1,339.58	27.36	1,337.54	0.00	0.00	0.00
6,700.00	21.41	178.83	6,452.49	-1,376.06	28.10	1,373.98	0.00	0.00	0.00
6,800.00	21.41	178.83	6,545.59	-1,412.55	28.85	1,410.41	0.00	0.00	0.00
6,825.87	21.41	178.83	6,569.68	-1,421.99	29.04	1,419.83	0.00	0.00	0.00
6,900.00	28.08	179.18	6,636.97	-1,453.00	29.57	1,450.79	9.00	9.00	0.48
7,000.00	37.07	179.47	6,721.15	-1,506.78	30.18	1,504.51	9.00	9.00	0.29
7,100.00	46.07	179.66	6,795.88	-1,573.07	30.67	1,570.73	9.00	9.00	0.19
7,200.00	55.07	179.80	6,859.33	-1,650.23	31.02	1,647.83	9.00	9.00	0.14
7,300.00	64.07	179.91	6,909.92	-1,736.37	31.24	1,733.89	9.00	9.00	0.11
7,400.00	73.07	180.01	6,946.41	-1,829.36	31.30	1,826.82	9.00	9.00	0.10
7,500.00	82.07	180.09	6,967.91	-1,926.92	31.21	1,924.30	9.00	9.00	0.09
7,588.10	90.00	180.17	6,974.00	-2,014.73	31.01	2,012.06	9.00	9.00	0.08
7,600.00	90.00	180.17	6,974.00	-2,026.63	30.97	2,023.96	0.00	0.00	0.00
7,700.00	90.00	180.17	6,974.00	-2,126.63	30.68	2,123.90	0.00	0.00	0.00
7,800.00	90.00	180.17	6,974.00	-2,226.63	30.39	2,223.83	0.00	0.00	0.00
7,900.00	90.00	180.17	6,974.00	-2,326.63	30.10	2,323.77	0.00	0.00	0.00
8,000.00	90.00	180.17	6,974.00	-2,426.63	29.80	2,423.71	0.00	0.00	0.00
8,100.00	90.00	180.17	6,974.00	-2,526.63	29.51	2,523.64	0.00	0.00	0.00
8,200.00	90.00	180.17	6,974.00	-2,626.63	29.22	2,623.58	0.00	0.00	0.00
8,300.00	90.00	180.17	6,974.00	-2,726.63	28.93	2,723.52	0.00	0.00	0.00
8,400.00	90.00	180.17	6,974.00	-2,826.63	28.64	2,823.46	0.00	0.00	0.00
8,500.00	90.00	180.17	6,974.00	-2,926.63	28.34	2,923.39	0.00	0.00	0.00
8,600.00	90.00	180.17	6,974.00	-3,026.63	28.05	3,023.33	0.00	0.00	0.00
8,700.00	90.00	180.17	6,974.00	-3,126.63	27.76	3,123.27	0.00	0.00	0.00
8,800.00	90.00	180.17	6,974.00	-3,226.63	27.47	3,223.21	0.00	0.00	0.00
8,900.00	90.00	180.17	6,974.00	-3,326.63	27.18	3,323.14	0.00	0.00	0.00
9,000.00	90.00	180.17	6,974.00	-3,426.63	26.88	3,423.08	0.00	0.00	0.00
9,100.00	90.00	180.17	6,974.00	-3,526.63	26.59	3,523.02	0.00	0.00	0.00
9,200.00	90.00	180.17	6,974.00	-3,626.63	26.30	3,622.95	0.00	0.00	0.00
9,300.00	90.00	180.17	6,974.00	-3,726.63	26.01	3,722.89	0.00	0.00	0.00

Noble Energy, Inc.

Survey Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Becker D17-730
Project:	Mustang	TVD Reference:	KB @ 4776.00ft
Site:	D Section 08	MD Reference:	KB @ 4776.00ft
Well:	Becker D17-730	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	180.17	6,974.00	-3,826.63	25.71	3,822.83	0.00	0.00	0.00
9,500.00	90.00	180.17	6,974.00	-3,926.63	25.42	3,922.77	0.00	0.00	0.00
9,600.00	90.00	180.17	6,974.00	-4,026.63	25.13	4,022.70	0.00	0.00	0.00
9,700.00	90.00	180.17	6,974.00	-4,126.63	24.84	4,122.64	0.00	0.00	0.00
9,800.00	90.00	180.17	6,974.00	-4,226.62	24.55	4,222.58	0.00	0.00	0.00
9,900.00	90.00	180.17	6,974.00	-4,326.62	24.25	4,322.52	0.00	0.00	0.00
10,000.00	90.00	180.17	6,974.00	-4,426.62	23.96	4,422.45	0.00	0.00	0.00
10,100.00	90.00	180.17	6,974.00	-4,526.62	23.67	4,522.39	0.00	0.00	0.00
10,200.00	90.00	180.17	6,974.00	-4,626.62	23.38	4,622.33	0.00	0.00	0.00
10,300.00	90.00	180.17	6,974.00	-4,726.62	23.09	4,722.26	0.00	0.00	0.00
10,400.00	90.00	180.17	6,974.00	-4,826.62	22.79	4,822.20	0.00	0.00	0.00
10,500.00	90.00	180.17	6,974.00	-4,926.62	22.50	4,922.14	0.00	0.00	0.00
10,600.00	90.00	180.17	6,974.00	-5,026.62	22.21	5,022.08	0.00	0.00	0.00
10,700.00	90.00	180.17	6,974.00	-5,126.62	21.92	5,122.01	0.00	0.00	0.00
10,800.00	90.00	180.17	6,974.00	-5,226.62	21.62	5,221.95	0.00	0.00	0.00
10,900.00	90.00	180.17	6,974.00	-5,326.62	21.33	5,321.89	0.00	0.00	0.00
11,000.00	90.00	180.17	6,974.00	-5,426.62	21.04	5,421.83	0.00	0.00	0.00
11,100.00	90.00	180.17	6,974.00	-5,526.62	20.75	5,521.76	0.00	0.00	0.00
11,200.00	90.00	180.17	6,974.00	-5,626.62	20.46	5,621.70	0.00	0.00	0.00
11,300.00	90.00	180.17	6,974.00	-5,726.62	20.16	5,721.64	0.00	0.00	0.00
11,398.12	90.00	180.17	6,974.00	-5,824.74	19.88	5,819.69	0.00	0.00	0.00
11,400.00	90.00	180.15	6,974.00	-5,826.62	19.87	5,821.57	1.00	0.00	-1.00
11,480.66	90.00	179.34	6,974.00	-5,907.28	20.23	5,902.16	1.00	0.00	-1.00
11,500.00	90.00	179.34	6,974.00	-5,926.62	20.45	5,921.48	0.00	0.00	0.00
11,600.00	90.00	179.34	6,974.00	-6,026.61	21.60	6,021.35	0.00	0.00	0.00
11,700.00	90.00	179.34	6,974.00	-6,126.60	22.75	6,121.23	0.00	0.00	0.00
11,800.00	90.00	179.34	6,974.00	-6,226.60	23.90	6,221.10	0.00	0.00	0.00
11,900.00	90.00	179.34	6,974.00	-6,326.59	25.05	6,320.98	0.00	0.00	0.00
12,000.00	90.00	179.34	6,974.00	-6,426.58	26.20	6,420.86	0.00	0.00	0.00
12,100.00	90.00	179.34	6,974.00	-6,526.58	27.34	6,520.73	0.00	0.00	0.00
12,200.00	90.00	179.34	6,974.00	-6,626.57	28.49	6,620.61	0.00	0.00	0.00
12,300.00	90.00	179.34	6,974.00	-6,726.56	29.64	6,720.48	0.00	0.00	0.00
12,400.00	90.00	179.34	6,974.00	-6,826.56	30.79	6,820.36	0.00	0.00	0.00
12,500.00	90.00	179.34	6,974.00	-6,926.55	31.94	6,920.24	0.00	0.00	0.00
12,600.00	90.00	179.34	6,974.00	-7,026.54	33.09	7,020.11	0.00	0.00	0.00
12,700.00	90.00	179.34	6,974.00	-7,126.54	34.23	7,119.99	0.00	0.00	0.00
12,800.00	90.00	179.34	6,974.00	-7,226.53	35.38	7,219.86	0.00	0.00	0.00
12,900.00	90.00	179.34	6,974.00	-7,326.52	36.53	7,319.74	0.00	0.00	0.00
13,000.00	90.00	179.34	6,974.00	-7,426.52	37.68	7,419.62	0.00	0.00	0.00
13,100.00	90.00	179.34	6,974.00	-7,526.51	38.83	7,519.49	0.00	0.00	0.00
13,200.00	90.00	179.34	6,974.00	-7,626.50	39.98	7,619.37	0.00	0.00	0.00
13,300.00	90.00	179.34	6,974.00	-7,726.50	41.13	7,719.24	0.00	0.00	0.00
13,400.00	90.00	179.34	6,974.00	-7,826.49	42.27	7,819.12	0.00	0.00	0.00

Noble Energy, Inc.

Survey Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Becker D17-730
Project:	Mustang	TVD Reference:	KB @ 4776.00ft
Site:	D Section 08	MD Reference:	KB @ 4776.00ft
Well:	Becker D17-730	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)
13,500.00	90.00	179.34	6,974.00	-7,926.48	43.42	7,918.99	0.00	0.00	0.00
13,600.00	90.00	179.34	6,974.00	-8,026.48	44.57	8,018.87	0.00	0.00	0.00
13,700.00	90.00	179.34	6,974.00	-8,126.47	45.72	8,118.75	0.00	0.00	0.00
13,800.00	90.00	179.34	6,974.00	-8,226.46	46.87	8,218.62	0.00	0.00	0.00
13,900.00	90.00	179.34	6,974.00	-8,326.46	48.02	8,318.50	0.00	0.00	0.00
14,000.00	90.00	179.34	6,974.00	-8,426.45	49.16	8,418.37	0.00	0.00	0.00
14,100.00	90.00	179.34	6,974.00	-8,526.44	50.31	8,518.25	0.00	0.00	0.00
14,200.00	90.00	179.34	6,974.00	-8,626.44	51.46	8,618.13	0.00	0.00	0.00
14,300.00	90.00	179.34	6,974.00	-8,726.43	52.61	8,718.00	0.00	0.00	0.00
14,400.00	90.00	179.34	6,974.00	-8,826.42	53.76	8,817.88	0.00	0.00	0.00
14,500.00	90.00	179.34	6,974.00	-8,926.42	54.91	8,917.75	0.00	0.00	0.00
14,600.00	90.00	179.34	6,974.00	-9,026.41	56.06	9,017.63	0.00	0.00	0.00
14,700.00	90.00	179.34	6,974.00	-9,126.40	57.20	9,117.51	0.00	0.00	0.00
14,800.00	90.00	179.34	6,974.00	-9,226.40	58.35	9,217.38	0.00	0.00	0.00
14,900.00	90.00	179.34	6,974.00	-9,326.39	59.50	9,317.26	0.00	0.00	0.00
15,000.00	90.00	179.34	6,974.00	-9,426.38	60.65	9,417.13	0.00	0.00	0.00
15,100.00	90.00	179.34	6,974.00	-9,526.38	61.80	9,517.01	0.00	0.00	0.00
15,133.40	90.00	179.34	6,974.00	-9,559.77	62.18	9,550.37	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
Becker D17-730 SHL - plan hits target center - Point	0.00	0.00	0.00	0.00	0.00	1,336,071.40	3,259,516.03	40.2521800	-104.5702100
Becker D17-730 KOP - plan misses target center by 2.76ft at 6825.89ft MD (6569.70 TVD, -1422.00 N, 29.04 E) - Point	0.00	0.00	6,569.71	-1,422.03	26.29	1,334,649.38	3,259,542.31	40.2482759	-104.5701692
Becker D17-730 TPZ - plan hits target center - Point	0.00	0.01	6,974.00	-2,014.73	31.01	1,334,056.68	3,259,547.03	40.2466488	-104.5701746
Becker D17-730 BHL - plan hits target center - Point	0.00	0.00	6,974.00	-9,559.77	62.18	1,326,511.65	3,259,578.21	40.2259372	-104.5703463
D17 Nudge - plan hits target center - Point	0.00	0.00	6,974.00	-5,824.74	19.88	1,330,246.68	3,259,535.90	40.2361909	-104.5703575

Noble Energy, Inc.

Survey Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Becker D17-730
Project:	Mustang	TVD Reference:	KB @ 4776.00ft
Site:	D Section 08	MD Reference:	KB @ 4776.00ft
Well:	Becker D17-730	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 (°)	
489.00	489.00	Pierre				
623.00	623.00	Upper Pierre Aquifer Top				
1,539.00	1,539.00	Upper Pierre Aquifer Base				
3,640.46	3,604.00	Parkman				
4,381.59	4,294.00	Sussex				
5,058.26	4,924.00	Shannon				
6,212.91	5,999.00	Teepee Buttes				
6,938.07	6,670.00	Sharon Springs				
6,972.67	6,699.00	Top A Chalk				
6,992.33	6,715.00	Top A Marl				
7,023.97	6,740.00	Top B Chalk				
7,062.38	6,769.00	Top B Marl				
7,149.81	6,829.00	Top C Chalk				
7,199.43	6,859.00	Top C Marl				
7,286.74	6,904.00	Top D Chalk				
7,391.88	6,944.00	Top Ft. Hayes				
7,500.62	6,968.00	Codell				

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates			
		+N/-S (ft)	+E/-W (ft)	Comment	
2400	2400	0	0	Start Build 2.00	
6826	6570	-1422	29	Start DLS 9.00 TFO 1.44	
7588	6974	-2015	31	TPZ/LP at 7588.10 MD	
11,398	6974	-5825	20	Start DLS 1.00 TFO -90.00	
11,481	6974	-5907	20	Start 3652.74 hold at 11480.66 MD	
15,133	6974	-9560	62	TD at 15133.40 MD	

Checked By: _____ Approved By: _____ Date: _____

Northern Region - DJ Basin

Mustang

D Section 08

Becker D17-730

Wellbore #1

Plan #1

Anticollision Summary Report

02 October, 2018

Noble Energy, Inc.
Anticollision Summary Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Becker D17-730
Project:	Mustang	TVD Reference:	KB @ 4776.00ft
Reference Site:	D Section 08	MD Reference:	KB @ 4776.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Becker D17-730	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	10/1/2018		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.00	15,133.40	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
D Section 05						
BECKER #15-9I(PR) - Wellbore #1 - Gyro Surveys	3,926.83	3,816.53	1,320.49	1,293.72	49.324	CC
BECKER #15-9I(PR) - Wellbore #1 - Gyro Surveys	4,000.00	3,883.18	1,320.81	1,293.53	48.418	ES
BECKER #15-9I(PR) - Wellbore #1 - Gyro Surveys	6,900.00	6,587.18	1,786.76	1,738.45	36.986	SF
BECKER #5-13(PA) - Wellbore #1 - No Surveys	2,400.00	2,392.00	1,957.51	1,928.27	66.936	CC
BECKER #5-13(PA) - Wellbore #1 - No Surveys	2,800.00	2,790.70	1,959.63	1,925.60	57.580	ES
BECKER #5-13(PA) - Wellbore #1 - No Surveys	6,950.00	6,672.12	2,532.95	2,449.00	30.171	SF
BECKER #5-14(PA) - Wellbore #1 - Gyro Surveys	5,603.76	5,409.38	3,238.25	3,199.15	82.823	CC
BECKER #5-14(PA) - Wellbore #1 - Gyro Surveys	6,000.00	5,817.40	3,239.31	3,197.10	76.748	ES
BECKER #5-14(PA) - Wellbore #1 - Gyro Surveys	7,550.00	6,853.46	3,379.19	3,326.49	64.124	SF
BECKER #5-16(PA) - Wellbore #1 - Gyro Surveys	100.00	69.06	536.90	536.66	2,176.836	CC
BECKER #5-16(PA) - Wellbore #1 - Gyro Surveys	2,400.00	2,367.79	543.19	526.73	32.993	ES
BECKER #5-16(PA) - Wellbore #1 - Gyro Surveys	3,400.00	3,344.61	611.92	588.73	26.388	SF
BECKER #5-2(PA) - Wellbore #1 - Gyro Surveys	5,423.84	5,246.53	2,261.93	2,224.13	59.846	CC
BECKER #5-2(PA) - Wellbore #1 - Gyro Surveys	5,500.00	5,311.24	2,262.22	2,223.87	59.001	ES
BECKER #5-2(PA) - Wellbore #1 - Gyro Surveys	7,300.00	6,913.02	2,398.51	2,346.75	46.340	SF
BECKER #5-5(PA) - Wellbore #1 - Gyro Surveys	5,844.98	5,608.86	501.74	460.94	12.296	CC, ES
BECKER #5-5(PA) - Wellbore #1 - Gyro Surveys	6,200.00	5,936.13	520.75	477.36	11.999	SF
BECKER #5-8(PR) - Wellbore #1 - Gyro Surveys	2,033.17	2,038.27	3,000.08	2,986.08	214.195	CC
BECKER #5-8(PR) - Wellbore #1 - Gyro Surveys	2,600.00	2,574.34	3,001.65	2,983.80	168.140	ES
BECKER #5-8(PR) - Wellbore #1 - Gyro Surveys	7,150.00	6,900.00	3,424.57	3,373.62	67.215	SF
BECKER #6(SI) - Wellbore #1 - Gyro Surveys	4,084.01	3,987.15	24.10	-3.85	0.862	Level 1, CC, ES, SF
Becker 5-1(PA) - Wellbore #1 - Gyro Surveys	1,275.04	1,266.07	637.31	628.72	74.237	CC
Becker 5-1(PA) - Wellbore #1 - Gyro Surveys	1,500.00	1,488.62	637.96	627.79	62.742	ES
Becker 5-1(PA) - Wellbore #1 - Gyro Surveys	3,500.00	3,459.64	742.63	718.68	31.017	SF
Becker 5-15(PA) - Wellbore #1 - Gyro Surveys	6,427.27	6,130.38	930.68	883.68	19.801	CC
Becker 5-15(PA) - Wellbore #1 - Gyro Surveys	6,500.00	6,196.36	931.18	883.61	19.573	ES
Becker 5-15(PA) - Wellbore #1 - Gyro Surveys	6,950.00	6,598.82	957.54	906.69	18.830	SF
Becker Ranch #5E-223 - Wellbore #1 - As Drilled	6,934.65	11,377.31	3,458.74	3,351.13	32.140	CC
Becker Ranch #5E-223 - Wellbore #1 - As Drilled	6,950.00	11,385.06	3,458.77	3,350.95	32.077	ES
Becker Ranch #5E-223 - Wellbore #1 - As Drilled	7,300.00	11,398.00	3,480.10	3,370.37	31.713	SF
Becker Ranch #5E-403 - As Drilled - As Drilled	7,069.27	11,599.00	3,755.18	3,641.98	33.175	CC
Becker Ranch #5E-403 - As Drilled - As Drilled	7,100.00	11,599.00	3,755.35	3,641.94	33.113	ES
Becker Ranch #5E-403 - As Drilled - As Drilled	7,450.00	11,599.00	3,781.07	3,665.65	32.759	SF
Becker Ranch #5J-103 - Wellbore #1 - As Drilled	5,885.93	8,438.00	3,933.37	3,881.12	75.278	CC
Becker Ranch #5J-103 - Wellbore #1 - As Drilled	5,900.00	8,438.00	3,933.40	3,881.08	75.179	ES
Becker Ranch #5J-103 - Wellbore #1 - As Drilled	6,700.00	8,438.00	4,016.73	3,961.32	72.490	SF
Becker Ranch #5J-203 - Wellbore #1 - Plan #1	7,065.54	11,568.80	2,477.61	2,405.13	34.186	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 Becker D17-730
Project:	Mustang	TVD Reference:	KB @ 4776.00ft
Reference Site:	D Section 08	MD Reference:	KB @ 4776.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Becker D17-730	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 05						
Becker Ranch #5J-203 - Wellbore #1 - Plan #1	7,350.00	11,568.80	2,500.12	2,425.83	33.653	SF
Becker Ranch #5J-303 - Wellbore #1 - As Drilled	6,995.89	11,473.00	2,797.68	2,684.74	24.770	CC
Becker Ranch #5J-303 - Wellbore #1 - As Drilled	7,000.00	11,473.00	2,797.69	2,684.72	24.766	ES
Becker Ranch #5J-303 - Wellbore #1 - As Drilled	7,150.00	11,473.00	2,803.04	2,689.60	24.710	SF
Becker Ranch #5J-323 - Wellbore #1 - As Drilled	6,987.17	11,430.00	2,151.94	2,039.87	19.203	CC
Becker Ranch #5J-323 - Wellbore #1 - As Drilled	7,000.00	11,430.00	2,151.99	2,039.83	19.188	ES
Becker Ranch #5J-323 - Wellbore #1 - As Drilled	7,100.00	11,430.00	2,155.72	2,042.99	19.123	SF
Becker Ranch #5J-323R - Wellbore #1 - Plan #1	6,892.23	11,244.97	2,123.03	2,053.76	30.646	CC
Becker Ranch #5J-323R - Wellbore #1 - Plan #1	6,900.00	11,246.94	2,123.05	2,053.71	30.620	ES
Becker Ranch #5J-323R - Wellbore #1 - Plan #1	7,350.00	11,435.65	2,180.61	2,107.80	29.949	SF
Becker Ranch #5J-343 - Wellbore #1 - As Drilled	6,979.22	11,500.00	3,117.48	3,005.55	27.853	CC
Becker Ranch #5J-343 - Wellbore #1 - As Drilled	7,000.00	11,500.00	3,117.56	3,005.53	27.827	ES
Becker Ranch #5J-343 - Wellbore #1 - As Drilled	7,200.00	11,500.00	3,127.44	3,014.57	27.710	SF
Becker Ranch #5M-203 - Wellbore #1 - Plan #1	6,926.70	11,268.00	1,199.08	1,127.92	16.849	CC, ES
Becker Ranch #5M-203 - Wellbore #1 - Plan #1	7,050.00	11,268.00	1,206.89	1,134.81	16.743	SF
Becker Ranch #5M-243 - Wellbore #1 - Plan #1	6,922.39	11,282.50	1,805.42	1,734.89	25.596	CC, ES
Becker Ranch #5M-243 - Wellbore #1 - Plan #1	7,050.00	11,282.50	1,810.87	1,739.79	25.478	SF
Becker Ranch #5M-303 - Wellbore #1 - Plan #1	6,983.31	11,462.20	1,484.25	1,413.17	20.882	CC, ES
Becker Ranch #5M-303 - Wellbore #1 - Plan #1	7,050.00	11,462.20	1,486.19	1,414.94	20.860	SF
Becker Ranch #5M-323 - Wellbore #1 - Plan #1	6,981.27	11,315.70	803.47	733.13	11.422	CC, ES
Becker Ranch #5M-323 - Wellbore #1 - Plan #1	7,000.00	11,315.70	803.76	733.29	11.406	SF
Becker Ranch #5M-423 - Wellbore #1 - Plan #1	7,060.47	11,437.50	1,026.77	956.08	14.526	CC, ES
Becker Ranch #5M-423 - Wellbore #1 - Plan #1	7,100.00	11,437.50	1,027.87	956.88	14.477	SF
Becker Ranch #5R-203 - Wellbore #1 - Plan #1	6,920.30	11,257.60	232.79	170.78	3.754	CC, ES, SF
Becker Ranch #5R-243 - Wellbore #1 - Plan #1	6,927.30	11,231.80	563.14	493.65	8.103	CC, ES, SF
Becker Ranch #5R-303 - Wellbore #1 - Plan #1	6,977.81	11,308.90	250.65	191.52	4.239	CC, ES, SF
Becker Ranch #5R-323 - Wellbore #1 - Plan #1	6,976.43	11,332.80	427.33	360.14	6.360	CC, ES, SF
Becker Ranch #5R-443 - Wellbore #1 - Plan #1	7,058.44	11,417.20	566.17	498.56	8.373	CC, ES, SF
Becker Ranch #5U-243 - Wellbore #1 - Plan #1	6,919.35	11,243.60	754.22	684.18	10.769	CC, ES
Becker Ranch #5U-243 - Wellbore #1 - Plan #1	6,950.00	11,243.60	755.02	684.84	10.759	SF
Becker Ranch #5U-303 - Wellbore #1 - Plan #1	6,974.83	11,348.00	1,167.56	1,096.56	16.444	CC, ES
Becker Ranch #5U-303 - Wellbore #1 - Plan #1	7,050.00	11,348.00	1,170.88	1,099.34	16.365	SF
Becker Ranch #5U-443 - Wellbore #1 - Plan #1	7,050.30	11,407.70	989.04	918.87	14.096	CC, ES
Becker Ranch #5U-443 - Wellbore #1 - Plan #1	7,100.00	11,407.70	990.91	920.42	14.058	SF
LDS #D08-18D(PR) - Wellbore #1 - MWD Surveys	8,600.00	7,423.05	1,221.98	1,148.10	16.540	SF
LDS #D08-18D(PR) - Wellbore #1 - MWD Surveys	8,719.33	7,422.31	1,216.14	1,142.97	16.619	CC, ES
LDS #D08-29(SI) - Wellbore #1 - Gyro Surveys	7,021.53	6,693.19	2,524.85	2,475.07	50.729	CC
LDS #D08-29(SI) - Wellbore #1 - Gyro Surveys	7,100.00	6,762.05	2,525.15	2,474.74	50.100	ES
LDS #D08-29(SI) - Wellbore #1 - Gyro Surveys	7,700.00	6,935.22	2,587.12	2,533.29	48.058	SF
LDS D08-28D(PR) - Wellbore #1 - MWD Surveys	7,177.53	6,954.94	1,520.68	1,468.44	29.109	CC
LDS D08-28D(PR) - Wellbore #1 - MWD Surveys	7,200.00	6,969.84	1,520.77	1,468.37	29.021	ES
LDS D08-28D(PR) - Wellbore #1 - MWD Surveys	7,500.00	7,091.75	1,546.98	1,492.58	28.437	SF
LDS D08-30D(SI) - Wellbore #1 - MWD Surveys	743.26	732.26	3,073.18	3,068.53	660.818	CC
LDS D08-30D(SI) - Wellbore #1 - MWD Surveys	800.00	771.00	3,073.37	3,068.38	615.841	ES
LDS D08-30D(SI) - Wellbore #1 - MWD Surveys	9,100.00	7,157.39	4,420.30	4,355.67	68.393	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 Becker D17-730
Project:	Mustang	TVD Reference:	KB @ 4776.00ft
Reference Site:	D Section 08	MD Reference:	KB @ 4776.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Becker D17-730	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 08						
Becker D17-715 - Wellbore #1 - Plan #1	2,000.00	1,999.00	44.66	30.74	3.208	CC, ES
Becker D17-715 - Wellbore #1 - Plan #1	2,100.00	2,098.17	45.55	30.94	3.116	SF
Becker D17-725 - Wellbore #1 - Plan #1	2,200.00	2,199.00	22.33	7.03	1.459	Level 3, CC
Becker D17-725 - Wellbore #1 - Plan #1	2,300.00	2,298.81	22.72	6.72	1.420	Level 3, ES, SF
Becker D17-735 - Wellbore #1 - Plan #1	2,400.00	2,401.00	22.33	5.59	1.334	Level 3, CC
Becker D17-735 - Wellbore #1 - Plan #1	2,500.00	2,500.98	22.41	4.97	1.285	Level 3, ES, SF
Becker D17-745 - Wellbore #1 - Plan #1	2,200.00	2,201.00	44.66	29.35	2.917	CC, ES
Becker D17-745 - Wellbore #1 - Plan #1	2,300.00	2,300.18	45.56	29.56	2.847	SF
Becker D17-750 - Wellbore #1 - Plan #1	2,300.00	2,369.00	66.99	50.84	4.148	CC
Becker D17-750 - Wellbore #1 - Plan #1	2,400.00	2,468.02	67.49	50.64	4.005	ES
Becker D17-750 - Wellbore #1 - Plan #1	2,500.00	2,566.51	70.02	52.51	3.999	SF
Becker D17-755 - Wellbore #1 - Plan #1	11,429.93	11,557.01	1,594.65	1,488.18	14.977	CC
Becker D17-755 - Wellbore #1 - Plan #1	15,133.40	15,260.34	1,627.16	1,464.59	10.009	ES, SF
Becker D17-765 - Wellbore #1 - Plan #1	11,426.90	11,289.63	2,247.73	2,128.60	18.868	CC
Becker D17-765 - Wellbore #1 - Plan #1	15,133.40	14,995.96	2,282.12	2,096.39	12.288	ES, SF
Becker D17-770 - Wellbore #1 - Plan #1	11,424.79	11,421.63	2,562.80	2,443.02	21.396	CC
Becker D17-770 - Wellbore #1 - Plan #1	15,133.40	15,130.07	2,598.69	2,412.09	13.927	ES, SF
Becker D17-775 - Wellbore #1 - Plan #1	11,423.06	11,274.13	2,888.18	2,768.87	24.206	CC
Becker D17-775 - Wellbore #1 - Plan #1	15,133.40	14,984.28	2,925.17	2,738.84	15.699	ES, SF
Becker D17-785 - Wellbore #1 - Plan #1	1,905.56	1,930.56	3,296.61	3,283.33	248.139	CC
Becker D17-785 - Wellbore #1 - Plan #1	2,100.00	2,100.00	3,297.11	3,282.54	226.284	ES
Becker D17-785 - Wellbore #1 - Plan #1	15,133.40	14,886.81	3,576.56	3,413.57	21.943	SF
HSR-ALVIN DECHANT #12-8 (SI) - Wellbore #1 - No Sur	10,624.09	6,960.00	3,126.93	3,018.01	28.709	CC, ES
HSR-ALVIN DECHANT #12-8 (SI) - Wellbore #1 - No Sur	11,100.00	6,960.00	3,162.94	3,051.04	28.267	SF
HSR-ALVIN DECHANT #13-8(SI) - Wellbore #1 - No Sur	12,163.67	6,949.00	3,205.98	3,085.87	26.692	CC
HSR-ALVIN DECHANT #13-8(SI) - Wellbore #1 - No Sur	12,200.00	6,949.00	3,206.19	3,085.80	26.633	ES
HSR-ALVIN DECHANT #13-8(SI) - Wellbore #1 - No Sur	12,600.00	6,949.00	3,235.54	3,112.53	26.303	SF
HSR-LDS #14-8(SI) - Wellbore #1 - No Surveys	11,647.64	6,940.00	2,063.53	1,947.35	17.762	CC, ES
HSR-LDS #14-8(SI) - Wellbore #1 - No Surveys	11,900.00	6,940.00	2,078.90	1,961.12	17.650	SF
HSR-LDS #15-8(SI) - Wellbore #1 - No Surveys	11,933.30	6,937.00	631.59	513.31	5.340	CC, ES, SF
HSR-LDS #16-8(SI) - Wellbore #1 - No Surveys	12,058.51	6,936.00	725.15	605.94	6.083	CC, ES
HSR-LDS #16-8(SI) - Wellbore #1 - No Surveys	12,100.00	6,936.00	726.34	606.91	6.082	SF
HSR-LDS #3-8(SI) - Wellbore #1 - No Surveys	8,172.71	6,938.00	2,067.92	1,975.00	22.255	CC, ES
HSR-LDS #3-8(SI) - Wellbore #1 - No Surveys	8,400.00	6,938.00	2,080.37	1,986.27	22.107	SF
HSR-LDS #4-8(SI) - Wellbore 1 - No Surveys	8,333.56	6,963.00	3,204.80	3,110.77	34.082	CC, ES
HSR-LDS #4-8(SI) - Wellbore 1 - No Surveys	8,900.00	6,963.00	3,254.48	3,157.37	33.513	SF
HSR-LDS #5-8(SI) - Wellbore #1 - No Surveys	9,486.86	6,956.00	3,359.79	3,258.72	33.241	CC
HSR-LDS #5-8(SI) - Wellbore #1 - No Surveys	9,500.00	6,956.00	3,359.82	3,258.66	33.213	ES
HSR-LDS #5-8(SI) - Wellbore #1 - No Surveys	10,100.00	6,956.00	3,415.28	3,310.55	32.609	SF
HSR-LDS #6-8(SI) - Wellbore #1 - No Surveys	9,417.23	6,936.00	1,959.21	1,858.76	19.506	CC, ES
HSR-LDS #6-8(SI) - Wellbore #1 - No Surveys	9,600.00	6,936.00	1,967.71	1,866.18	19.380	SF
HSR-LDS #9-8(SI) - Wellbore #1 - No Surveys	10,489.41	6,931.00	682.34	574.63	6.335	CC, ES
HSR-LDS #9-8(SI) - Wellbore #1 - No Surveys	10,500.00	6,931.00	682.42	574.64	6.331	SF
HSR-LDS A #10-8(SI) - Wellbore #1 - No Surveys	10,775.50	6,935.00	547.89	438.11	4.991	CC, ES
HSR-LDS A #10-8(SI) - Wellbore #1 - No Surveys	10,800.00	6,935.00	548.43	438.52	4.990	SF
HSR-LDS A #11-8(SI) - Wellbore #1 - No Surveys	10,638.33	6,937.00	2,007.15	1,898.33	18.445	CC, ES
HSR-LDS A #11-8(SI) - Wellbore #1 - No Surveys	10,800.00	6,937.00	2,013.65	1,903.80	18.331	SF
LDS #18-8(SI) - Wellbore #1 - No Surveys	8,872.04	6,958.00	2,603.00	2,505.83	26.788	CC
LDS #18-8(SI) - Wellbore #1 - No Surveys	8,900.00	6,958.00	2,603.15	2,505.81	26.743	ES
LDS #18-8(SI) - Wellbore #1 - No Surveys	9,200.00	6,958.00	2,623.58	2,524.52	26.485	SF
LDS #20-8(SI) - Wellbore #1 - No Surveys	11,398.03	6,934.00	30.03	-84.25	0.263	Level 1, CC
LDS #20-8(SI) - Wellbore #1 - No Surveys	11,398.12	6,934.00	30.03	-84.26	0.263	Level 1, ES, SF
LDS D #09-30(SI) - Wellbore #1 - No Surveys	7,559.33	6,924.35	1,139.62	1,049.93	12.707	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 Becker D17-730
Project:	Mustang	TVD Reference:	KB @ 4776.00ft
Reference Site:	D Section 08	MD Reference:	KB @ 4776.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Becker D17-730	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 08						
LDS D #09-30(SI) - Wellbore #1 - No Surveys	7,600.00	6,925.00	1,140.35	1,050.47	12.687	SF
LDS D #09-31D(SI) - Wellbore #1 - No Surveys	7,583.38	6,924.98	1,137.71	1,047.90	12.669	CC
LDS D #09-31D(SI) - Wellbore #1 - No Surveys	7,588.10	6,925.00	1,137.72	1,047.89	12.666	ES
LDS D #09-31D(SI) - Wellbore #1 - No Surveys	7,600.00	6,925.00	1,137.83	1,047.95	12.659	SF
RUBY RED #D #8-1D(PA) - Wellbore #1 - Gyro Surveys	8,388.94	6,850.00	301.41	244.98	5.342	CC, ES, SF
RUBY RED #D 8-7(PR) - Wellbore #1 - Gyro Surveys	9,454.34	6,936.06	790.62	726.39	12.310	CC, ES
RUBY RED #D 8-7(PR) - Wellbore #1 - Gyro Surveys	9,500.00	6,935.60	791.93	727.45	12.282	SF
RUBY RED #D 8-8(PR) - Wellbore #1 - Gyro Surveys	9,447.84	6,850.00	860.64	796.94	13.511	CC, ES
RUBY RED #D 8-8(PR) - Wellbore #1 - Gyro Surveys	9,500.00	6,850.00	862.22	798.26	13.480	SF
RUBY RED D8-2(PA) - Wellbore #1 - Gyro Surveys	7,911.86	6,850.00	889.47	834.90	16.300	CC, ES
RUBY RED D8-2(PA) - Wellbore #1 - Gyro Surveys	8,000.00	6,850.00	893.83	838.92	16.278	SF
TWO E RANCHES #1(PA) - Wellbore #1 - Gyro Surveys	11,077.50	6,800.00	2,915.86	2,840.94	38.920	CC
TWO E RANCHES #1(PA) - Wellbore #1 - Gyro Surveys	11,100.00	6,800.00	2,915.95	2,840.87	38.840	ES
TWO E RANCHES #1(PA) - Wellbore #1 - Gyro Surveys	11,600.00	6,800.00	2,964.58	2,886.59	38.014	SF

Noble Energy, Inc.
Anticollision Summary Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Becker D17-730
Project:	Mustang	TVD Reference:	KB @ 4776.00ft
Reference Site:	D Section 08	MD Reference:	KB @ 4776.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Becker D17-730	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 17						
Butterball D19-27D - Wellbore #1 - Gyro Surveys	15,133.40	7,206.54	5,914.84	5,807.27	54.982	CC, ES, SF
Guttersen State D16-33 (SI) - Wellbore #1 - No Surveys	15,133.40	6,950.00	1,912.68	1,789.99	15.590	CC, ES, SF
HSR LDS 6-17 (SI) - Wellbore #1 - No Surveys	14,676.60	6,948.00	2,142.48	2,003.02	15.363	CC
HSR LDS 6-17 (SI) - Wellbore #1 - No Surveys	14,700.00	6,948.00	2,142.61	2,002.97	15.344	ES
HSR LDS 6-17 (SI) - Wellbore #1 - No Surveys	14,900.00	6,948.00	2,154.10	2,013.22	15.291	SF
HSR LDS B5-17 (SI) - Wellbore #1 - No Surveys	14,520.54	6,949.00	3,247.74	3,109.50	23.493	CC, ES
HSR LDS B5-17 (SI) - Wellbore #1 - No Surveys	14,900.00	6,949.00	3,269.83	3,129.03	23.224	SF
HSR Mike Guttersen 16-17X (SI) - Wellbore #1 - No Su	15,133.40	6,955.00	2,368.21	2,270.38	24.207	CC, ES, SF
HSR Weeks 10-17 - Wellbore #1 - Gyro Surveys	15,133.40	6,700.00	1,133.46	1,052.43	13.988	CC, ES, SF
HSR Weeks 15-17 (SI) - Wellbore #1 - No Surveys	15,133.40	6,953.00	2,273.13	2,175.36	23.249	CC, ES, SF
HSR Weeks 9-17 - Wellbore #1 - Gyro Surveys	15,133.40	6,947.89	936.34	865.11	13.145	CC, ES, SF
HSR-LDS 3-17 (SI) - Wellbore #1 - No Surveys	13,352.43	6,943.00	2,132.38	2,003.27	16.515	CC, ES
HSR-LDS 3-17 (SI) - Wellbore #1 - No Surveys	13,500.00	6,943.00	2,137.49	2,007.34	16.424	SF
HSR-LDS 4-17 (SI) - Wellbore #1 - No Surveys	13,526.04	6,945.00	3,260.57	3,130.10	24.990	CC, ES
HSR-LDS 4-17 (SI) - Wellbore #1 - No Surveys	14,000.00	6,945.00	3,294.84	3,161.28	24.668	SF
LDS 18-17 (SI) - Wellbore #1 - No Surveys	14,021.63	6,948.00	2,461.75	2,327.41	18.325	CC, ES
LDS 18-17 (SI) - Wellbore #1 - No Surveys	14,300.00	6,948.00	2,477.44	2,341.29	18.196	SF
LDS D17-13 - Wellbore #1 - Gyro Surveys	15,133.40	6,900.00	4,372.52	4,278.96	46.734	CC, ES, SF
LDS D17-18 (SI) - Wellbore #1 - No Surveys	13,965.47	6,946.00	1,155.81	1,021.92	8.633	CC, ES
LDS D17-18 (SI) - Wellbore #1 - No Surveys	14,000.00	6,946.00	1,156.32	1,022.18	8.620	SF
LDS D17-20 - Wellbore #1 - No Surveys	15,133.40	6,954.00	2,635.20	2,492.86	18.513	CC, ES, SF
LDS D17-21 - Wellbore #1 - No Surveys	15,133.40	6,950.00	1,523.66	1,383.47	10.868	CC, ES, SF
LDS D17-22 (SI) - Wellbore #1 - No Surveys	15,133.40	6,945.00	68.90	-58.88	0.539	Level 1, CC, ES, SF
LDS D17-24D - Wellbore #1 - LDS D17-24D - As Drilled	15,133.40	7,093.07	2,005.12	1,916.60	22.653	CC, ES, SF
LDS D17-25D - Wellbore #1 - LDS D17-25D - As Drilled	15,133.40	7,191.83	2,882.74	2,780.69	28.249	CC, ES, SF
LDS D17-31D - LDS D17-31D - LDS D17-31D - As Drille	14,031.27	7,198.97	3,982.25	3,874.43	36.934	CC, ES
LDS D17-31D - LDS D17-31D - LDS D17-31D - As Drille	14,600.00	7,197.62	4,022.65	3,911.67	36.247	SF
LDS D17-32D - LDS D17-32D - LDS D17-32D - As Drille	15,133.40	7,025.28	4,007.75	3,901.63	37.766	CC, ES, SF
LDS D17-33 - LDS D17-33 - LDS D17-33 - As Drilled	15,133.40	6,968.33	4,036.73	3,934.99	39.678	CC, ES, SF
LDS D17-7 - Wellbore #1 - No Surveys	14,664.21	6,944.00	767.02	627.70	5.505	CC, ES
LDS D17-7 - Wellbore #1 - No Surveys	14,700.00	6,944.00	767.86	628.31	5.502	SF
LDS D20-29D - Wellbore #1 - LDS D20-29D - As Drilled	15,133.40	7,170.51	4,012.84	3,923.88	45.108	CC, ES, SF
LDS D20-30D - Wellbore #1 - LDS D20-30D - As Drilled	15,133.40	7,008.00	5,054.82	4,962.59	54.804	CC, ES, SF
LDS RED D17-11 (SI) - Wellbore #1 - No Surveys	15,133.40	6,951.00	2,000.64	1,864.76	14.723	CC, ES, SF
LDS Red D17-12 - Wellbore #1 - No Surveys	15,133.40	6,954.00	3,522.71	3,381.01	24.860	CC, ES, SF
LDS Red D17-14X (SI) - Wellbore #1 - No Surveys	15,133.40	6,955.00	2,699.71	2,580.72	22.688	CC, ES, SF
LDS Red D17-3J - Wellbore #1 - Gyro Surveys	15,133.40	6,953.71	3,532.65	3,436.55	36.759	CC, ES, SF
LDS White D17-1 - Wellbore #1 - Gyro Surveys	13,332.80	6,933.35	651.22	559.18	7.075	CC, ES, SF
LDS White D17-2 - Wellbore #1 - No Surveys	13,343.43	6,941.00	652.02	523.00	5.053	CC, ES, SF
LDS White D17-8 - Wellbore #1 - No Surveys	14,685.96	6,939.00	579.08	439.63	4.153	CC, ES
LDS White D17-8 - Wellbore #1 - No Surveys	14,700.00	6,939.00	579.25	439.72	4.151	SF
Thomson D20-31D - Wellbore #1 - Gyro Surveys	15,133.40	6,884.75	5,942.15	5,851.37	65.454	CC, ES, SF
Weeks 20-17 (SI) - Wellbore #1 - Gyro Surveys	15,133.40	6,931.15	1,618.74	1,563.61	29.362	CC, ES, SF

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

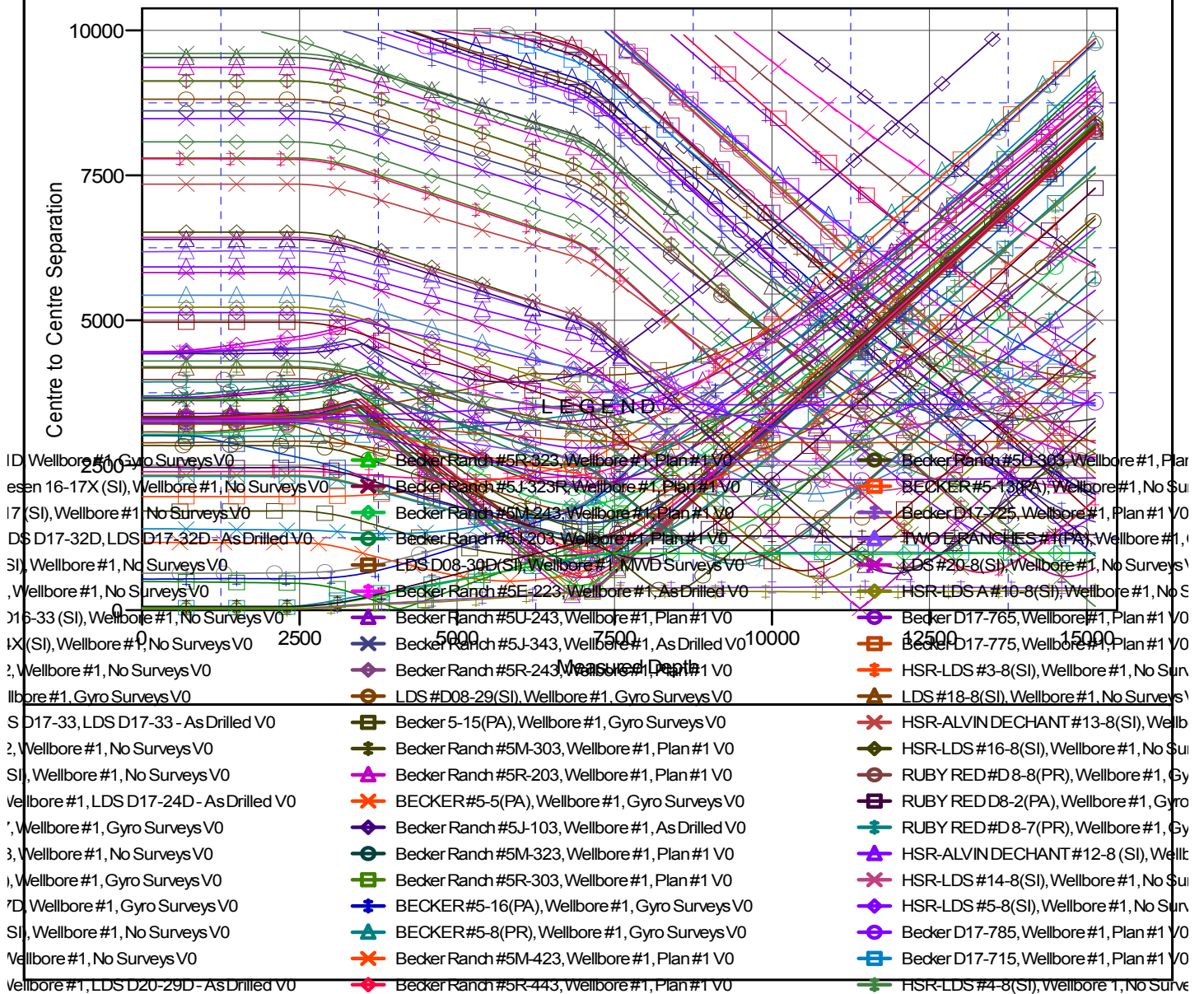
Noble Energy, Inc.
Anticollision Summary Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Becker D17-730
Project:	Mustang	TVD Reference:	KB @ 4776.00ft
Reference Site:	D Section 08	MD Reference:	KB @ 4776.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Becker D17-730	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 @ 4776.00ft
Offset Depths are relative to Offset Datum
Central Meridian is -105.5000000

Coordinates are relative to: Becker D17-730
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 0.60°

Ladder Plot



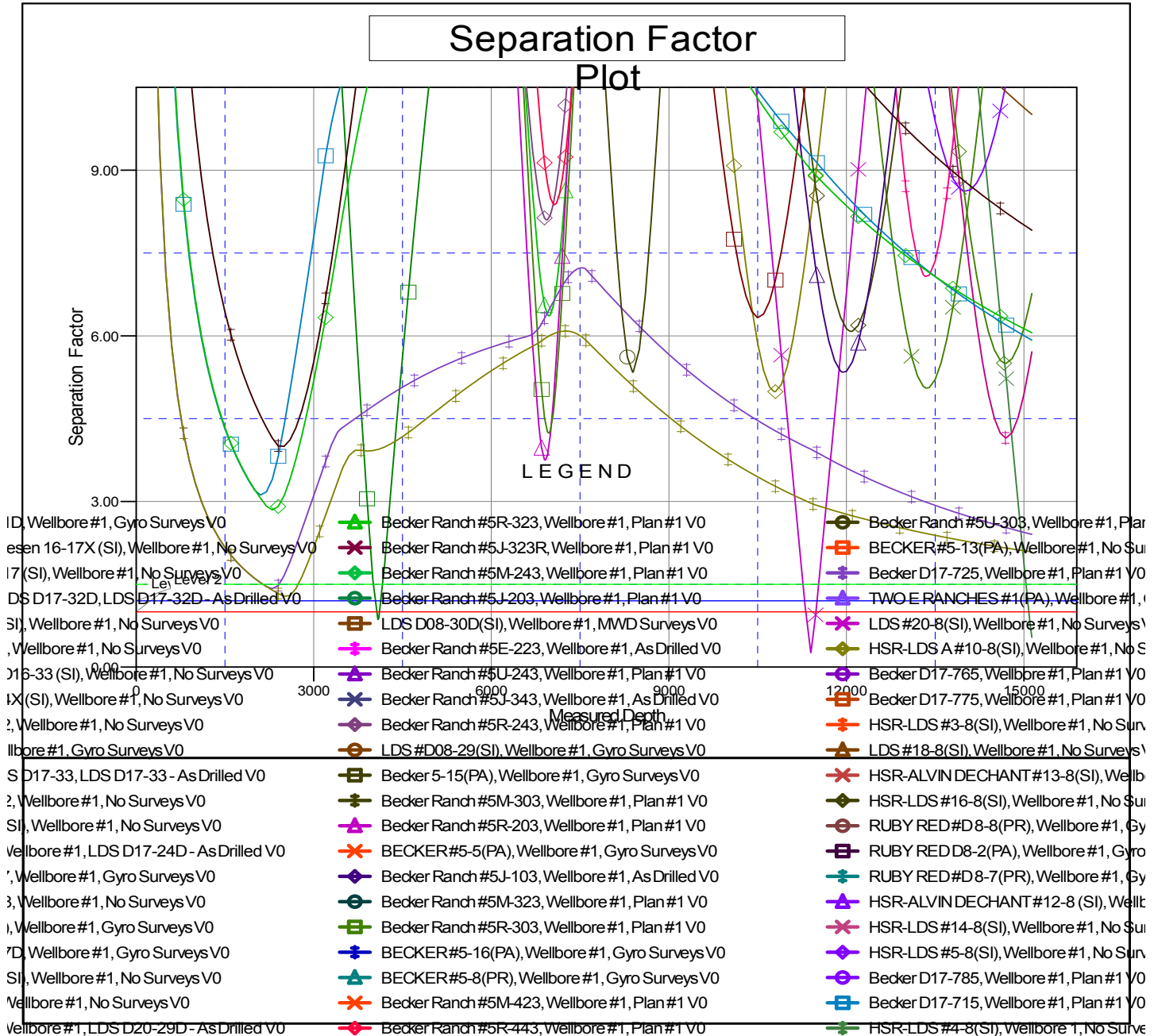
CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Noble Energy, Inc.
Anticollision Summary Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Becker D17-730
Project:	Mustang	TVD Reference:	KB @ 4776.00ft
Reference Site:	D Section 08	MD Reference:	KB @ 4776.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Becker D17-730	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 @ 4776.00ft
Offset Depths are relative to Offset Datum
Central Meridian is -105.5000000

Coordinates are relative to: Becker D17-730
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 0.60°



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