

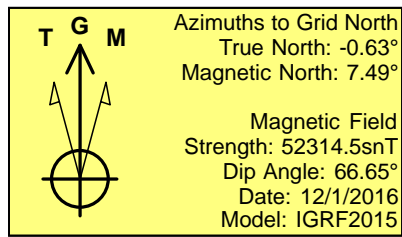
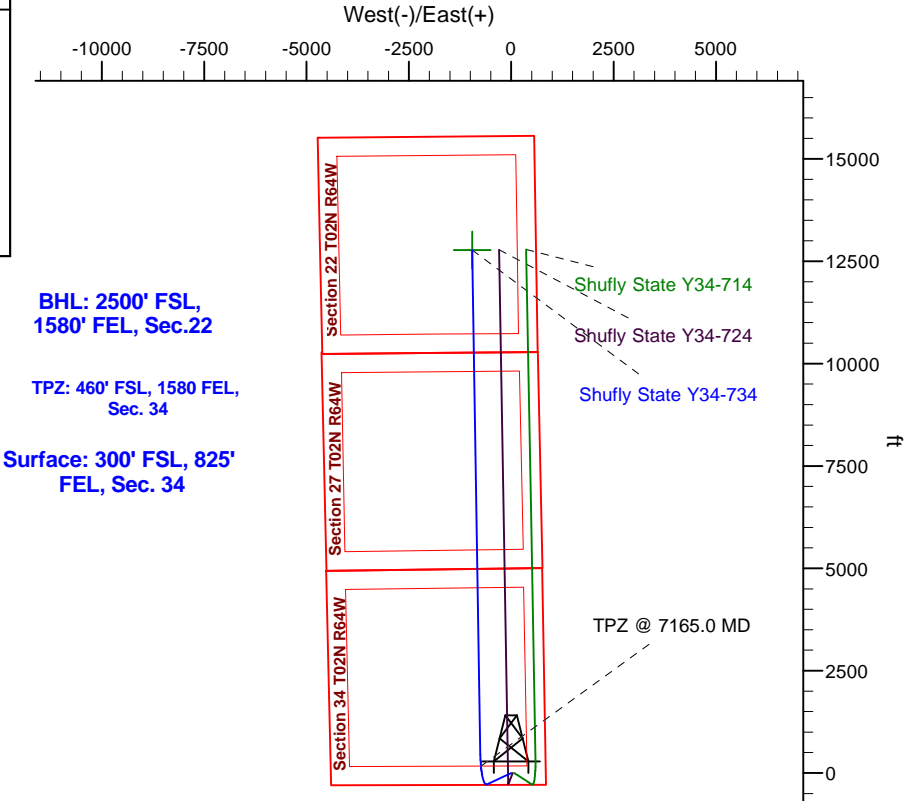
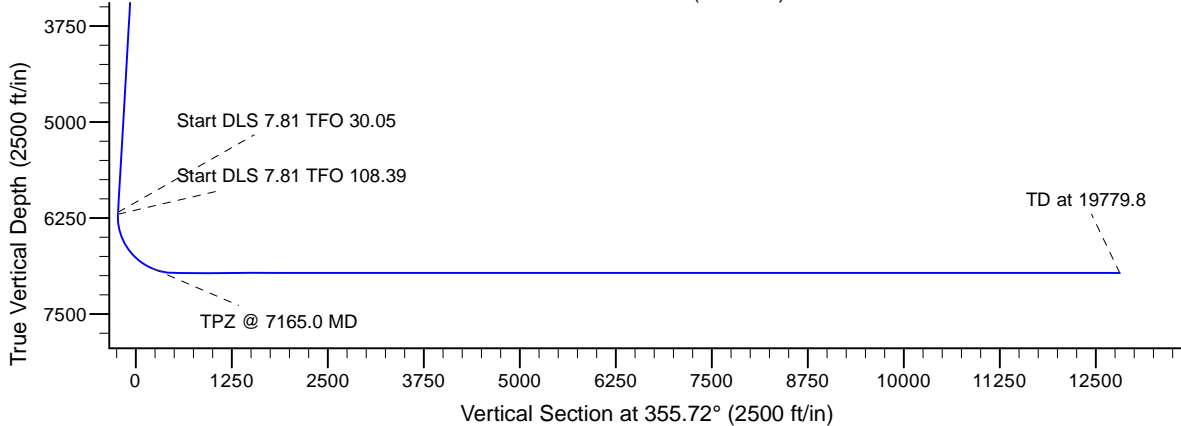
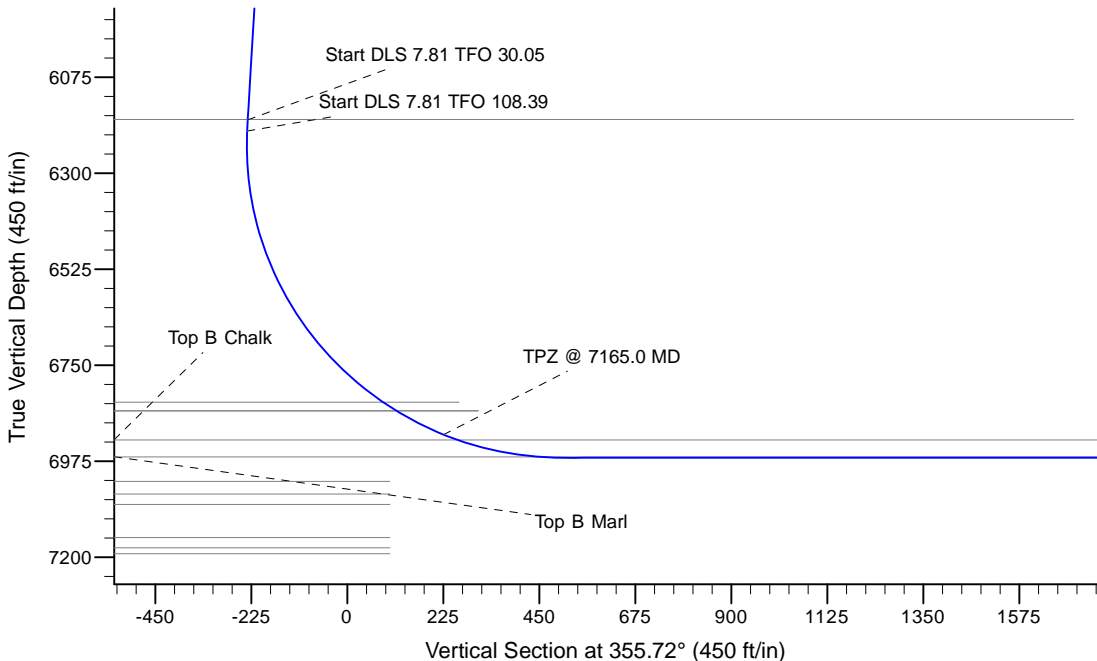
Project: Mustang
 Site: Y Section 34
 Well: Shufly State Y34-734
 Wellbore: Original Drilling
 Design: APD - Rev 0

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	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	1900.0	0.00	0.00	1900.0	0.0	0.0	0.00	0.00	0.0	
3	2362.5	9.25	245.00	2360.5	-15.7	-33.8	2.00	245.00	-13.2	
4	6227.3	9.25	245.00	6175.0	-278.3	-596.8	0.00	0.00	-233.0	
5	6253.5	11.07	250.34	6200.8	-280.0	-601.1	7.81	30.05	-234.4	
6	7451.6	90.00	359.06	6967.0	450.0	-755.0	7.81	108.39	505.1	
7	19779.8	90.00	359.07	6967.0	12776.5	-956.3	0.00	90.00	12812.3	Shufly State Y34-734 BHL 2500'FSL, 1580 FEL



WELL DETAILS: Shufly State Y34-734				
Northing		Ground Elevation: 5042.0		Longitude
Easting		Latitude		
0.0 0.0	1276552.6780656	3271178.4520193	40.0884600	-104.5307600
Plan: APD - Rev 0 (Shufly State Y34-734/Original Drilling)				
Created By: Amanda Borowski			Date: 11:10, May 01 2017	
OK to submit with 2A as per Noble Drilling				
5/8/2017 9:23				

Northern Region - DJ Basin

Mustang

Y Section 34

Shufly State Y34-734

Original Drilling

APD - Rev 0

Anticollision Summary Report

08 May, 2017

Noble Energy, Inc.
Anticollision Summary Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Shufly State Y34-734
Project:	Mustang	TVD Reference:	WELL @ 5072.0ft (Original Well Elev.)
Reference Site:	Y Section 34	MD Reference:	WELL @ 5072.0ft (Original Well Elev.)
Site Error:	0.0 ft	North Reference:	Grid
Reference Well:	Shufly State Y34-734	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Original Drilling	Database:	EDMP
Reference Design:	APD - Rev 0	Offset TVD Reference:	Offset Datum

Reference	APD - Rev 0		
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	MD Interval 100.0ft	Error Model:	ISCWSA
Depth Range:	Unlimited	Scan Method:	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 1,933.6 ft	Error Surface:	Pedal Curve
Warning Levels Evaluated at:	2.00 Sigma	Casing Method:	Not applied

Survey Tool Program	Date	5/1/2017		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.0	19,779.8	APD - Rev 0 (Original Drilling)	2_MWD+IFR1+MS	A008Mb: IFR dec & multi-station analysis

Summary						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
Y Section 10						
Bison Ridge Y22-711 - Original Drilling - APD - Rev 0	19,779.8	17,431.3	1,507.1	1,310.4	7.664	CC, ES, SF
Bison Ridge Y22-719 - Original Drilling - APD - Rev 0	19,779.8	17,161.3	1,001.8	805.1	5.093	CC, ES, SF
Bison Ridge Y22-726 - Original Drilling - APD - Rev 0	19,779.8	17,113.5	527.4	335.2	2.743	CC, ES, SF
Bison Ridge Y22-734 - Original Drilling - APD - Rev 0	19,779.8	17,053.2	139.0	75.7	2.195	CC, ES, SF
Bison Ridge Y22-741 - Original Drilling - APD - Rev 0	19,779.8	16,770.4	520.1	333.8	2.791	CC, ES, SF
Bison Ridge Y22-749 - Original Drilling - APD - Rev 0	19,779.8	17,011.5	991.9	797.7	5.107	CC, ES, SF
Bison Ridge Y22-756 - Original Drilling - APD - Rev 0	19,779.8	17,367.8	1,495.8	1,300.9	7.674	CC, ES, SF
Bison Ridge Y22-764 - Original Drilling - APD - Rev 0						Out of range
Y Section 11						
Waste Management Y23-784 - Original Drilling - APD - R						Out of range
Y Section 22						
Goetz #1 (PA) - Original Drilling - Original Drilling - As Dr	19,779.8	6,915.0	1,871.7	1,686.4	10.103	CC, ES, SF
Goetz Y22-06 - Original Drilling - Original Drilling - As Dri						Out of range
Minne Y22-72-1HN - Original Drilling - APD - Rev 1	19,779.8	9,473.2	1,249.6	1,140.3	11.436	CC, ES, SF
Minne Y22-72HC - Original Drilling - APD - Rev 0	19,779.8	9,519.8	940.5	830.7	8.564	CC, ES, SF
Minne Y22-72HN - Original Drilling - APD - Rev 1	19,779.8	9,419.9	919.4	810.5	8.442	CC, ES, SF
Minne Y22-73-1HN - Original Drilling - APD - Rev 0	19,779.8	9,418.3	530.6	421.0	4.838	CC, ES, SF
Minne Y22-73HC - Original Drilling - APD - Rev 1	19,779.8	9,652.2	224.4	118.4	2.116	CC, ES, SF
Minne Y22-73HN - Original Drilling - APD - Rev 0	19,779.8	9,290.7	258.2	148.9	2.363	CC, ES, SF
Minne Y22-74-1HN - Original Drilling - APD - Rev 1	17,807.6	11,519.5	96.7	9.0	1.103	Level 2, CC
Minne Y22-74-1HN - Original Drilling - APD - Rev 1	19,779.8	9,547.3	104.4	1.2	1.012	Level 2, ES, SF
Minne Y22-74HC - Original Drilling - APD - Rev 0	17,814.8	11,556.2	448.8	358.9	4.993	CC
Minne Y22-74HC - Original Drilling - APD - Rev 0	19,779.8	9,591.2	449.6	344.1	4.260	ES, SF
Minne Y22-74HN - Original Drilling - APD - Rev 1	17,809.3	11,418.7	399.3	306.1	4.286	CC
Minne Y22-74HN - Original Drilling - APD - Rev 1	19,779.8	9,449.5	399.7	290.7	3.667	ES, SF
Minne Y22-75-1HN - Original Drilling - APD - Rev 0	17,819.7	11,428.2	734.7	642.1	7.932	CC
Minne Y22-75-1HN - Original Drilling - APD - Rev 0	19,779.8	9,468.1	736.0	627.8	6.798	ES, SF
Minne Y22-75HC - Original Drilling - APD - Rev 0	19,779.8	9,604.0	1,084.7	977.0	10.073	CC, ES, SF
Minne Y22-75HN - Original Drilling - APD - Rev 0	17,825.9	11,241.1	1,059.5	966.2	11.357	CC
Minne Y22-75HN - Original Drilling - APD - Rev 0	19,779.8	9,287.2	1,062.3	953.4	9.749	ES, SF
Minne Y22-76-1HN - Original Drilling - APD - Rev 1	17,826.3	11,468.5	1,377.7	1,284.7	14.804	CC
Minne Y22-76-1HN - Original Drilling - APD - Rev 1	19,779.8	9,525.3	1,392.2	1,283.5	12.810	ES, SF
Minne Y22-76HC - Original Drilling - APD - Rev 0	17,828.5	11,512.4	1,721.7	1,629.1	18.595	CC
Minne Y22-76HC - Original Drilling - APD - Rev 0	19,779.8	9,561.3	1,731.1	1,622.8	15.994	ES, SF
Minne Y22-76HN - Original Drilling - APD - Rev 1	17,834.3	11,385.8	1,705.4	1,612.0	18.256	CC

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

Noble Energy, Inc.
Anticollision Summary Report

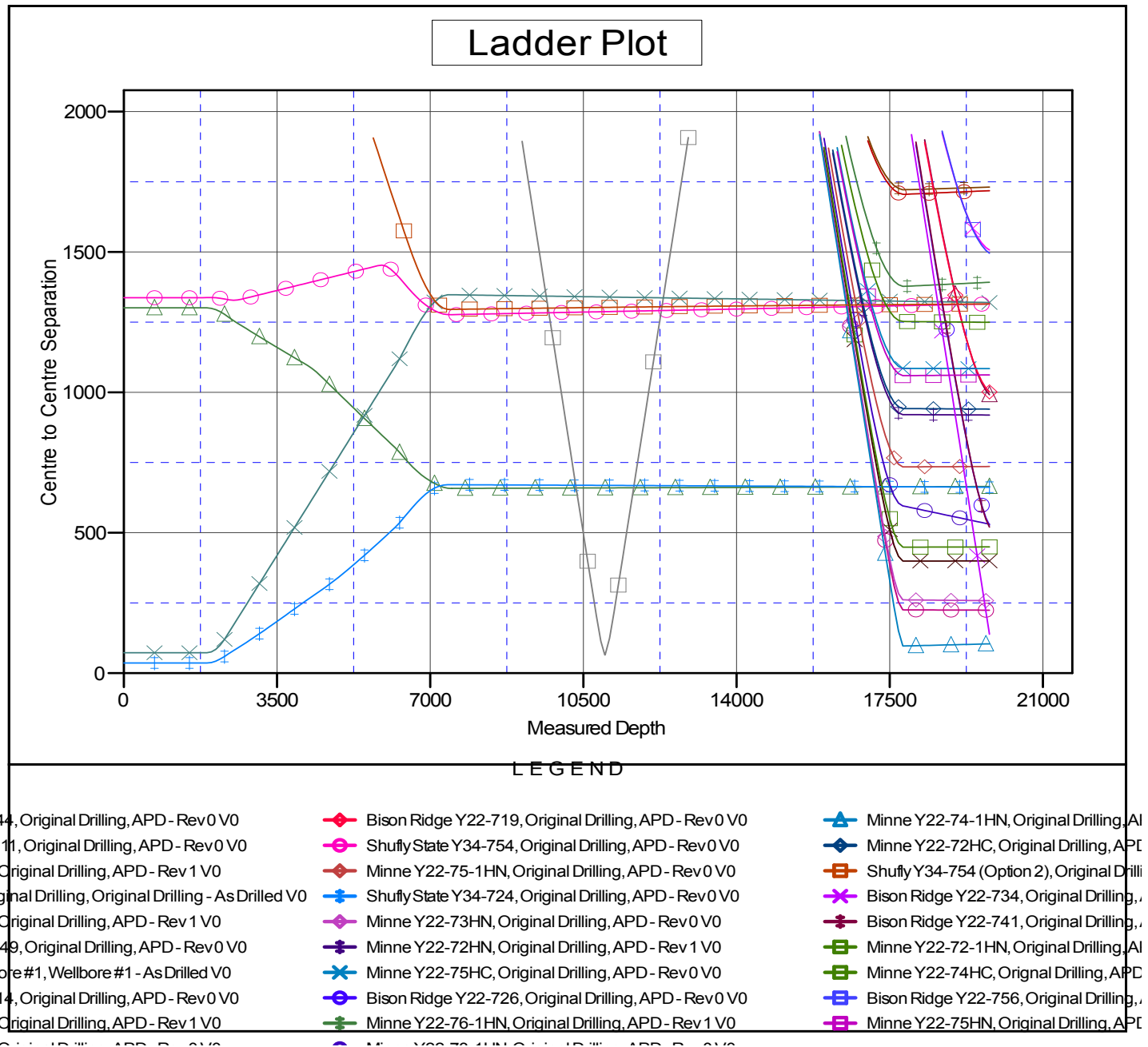
Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Shufly State Y34-734
Project:	Mustang	TVD Reference:	WELL @ 5072.0ft (Original Well Elev.)
Reference Site:	Y Section 34	MD Reference:	WELL @ 5072.0ft (Original Well Elev.)
Site Error:	0.0 ft	North Reference:	Grid
Reference Well:	Shufly State Y34-734	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Original Drilling	Database:	EDMP
Reference Design:	APD - Rev 0	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						
Y Section 22						
Minne Y22-76HN - Original Drilling - APD - Rev 1	19,779.8	9,457.3	1,718.5	1,609.5	15.771	ES, SF
Minne Y22-77-1HN - Original Drilling - APD - Rev 0						Out of range
Y Section 34						
Barnes 2-34 - Wellbore #1 - Wellbore #1 - As Drilled	10,993.2	6,888.0	64.9	-114.9	0.361	Level 1, CC, ES, SF
Shufly State Y34-714 - Original Drilling - APD - Rev 0	1,900.0	1,897.0	72.7	59.6	5.534	CC, ES
Shufly State Y34-714 - Original Drilling - APD - Rev 0	2,000.0	1,994.9	75.7	61.8	5.474	SF
Shufly State Y34-724 - Original Drilling - APD - Rev 0	1,900.0	1,901.0	36.4	23.2	2.764	CC, ES
Shufly State Y34-724 - Original Drilling - APD - Rev 0	2,000.0	2,001.0	38.0	24.1	2.739	SF
Shufly State Y34-744 - Original Drilling - APD - Rev 0	7,497.8	7,606.0	657.7	608.0	13.227	CC
Shufly State Y34-744 - Original Drilling - APD - Rev 0	19,779.8	19,875.9	664.8	447.8	3.064	ES, SF
Shufly State Y34-754 - Original Drilling - APD - Rev 0	7,480.0	7,557.7	1,276.6	1,226.0	25.271	CC
Shufly State Y34-754 - Original Drilling - APD - Rev 0	19,779.8	19,857.3	1,315.0	1,097.7	6.051	ES, SF
Shufly State Y34-764 - Original Drilling - APD - Rev 0						Out of range
Shufly Y34-754 (Option 2) - Original Drilling - Prelim - Re	7,487.6	7,828.8	1,295.2	1,270.2	51.669	CC
Shufly Y34-754 (Option 2) - Original Drilling - Prelim - Re	19,779.8	20,122.8	1,315.1	1,206.3	12.087	ES, SF
Y Section 35						
Seahorse State Y35-784 - Original Drilling - APD - Rev 0						Out of range

Anticollision Summary Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Shufly State Y34-734
Project:	Mustang	TVD Reference:	WELL @ 5072.0ft (Original Well Elev.)
Reference Site:	Y Section 34	MD Reference:	WELL @ 5072.0ft (Original Well Elev.)
Site Error:	0.0 ft	North Reference:	Grid
Reference Well:	Shufly State Y34-734	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Original Drilling	Database:	EDMP
Reference Design:	APD - Rev 0	Offset TVD Reference:	Offset Datum

Coordinates are relative to: Shufly State Y34-734
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 0.63°

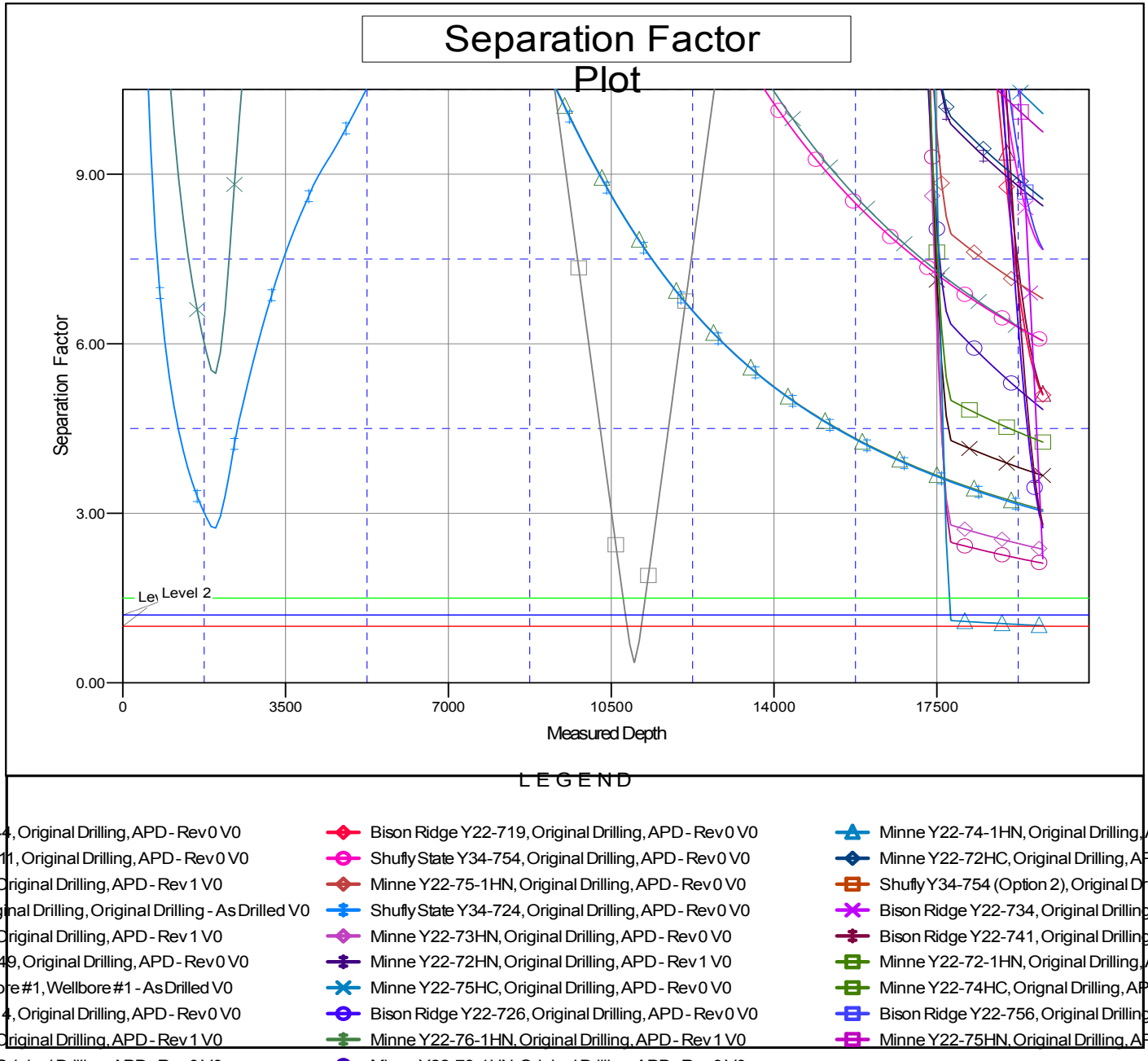


Noble Energy, Inc.
Anticollision Summary Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Shufly State Y34-734
Project:	Mustang	TVD Reference:	WELL @ 5072.0ft (Original Well Elev.)
Reference Site:	Y Section 34	MD Reference:	WELL @ 5072.0ft (Original Well Elev.)
Site Error:	0.0 ft	North Reference:	Grid
Reference Well:	Shufly State Y34-734	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Original Drilling	Database:	EDMP
Reference Design:	APD - Rev 0	Offset TVD Reference:	Offset Datum

Reference Depths are relative to WELL @ 5072.0ft (Original Well Elev.)
Offset Depths are relative to Offset Datum
Central Meridian is -105.5000000

Coordinates are relative to: Shufly State Y34-734
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 0.63°



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