

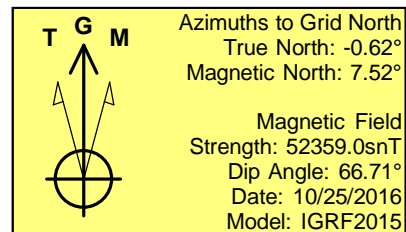
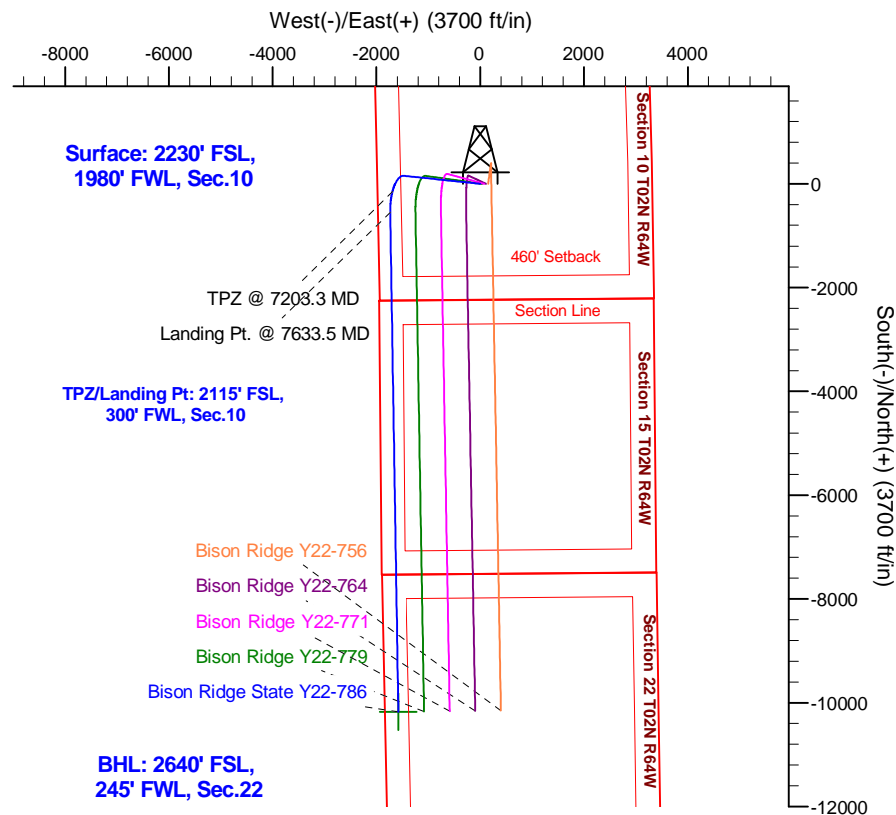
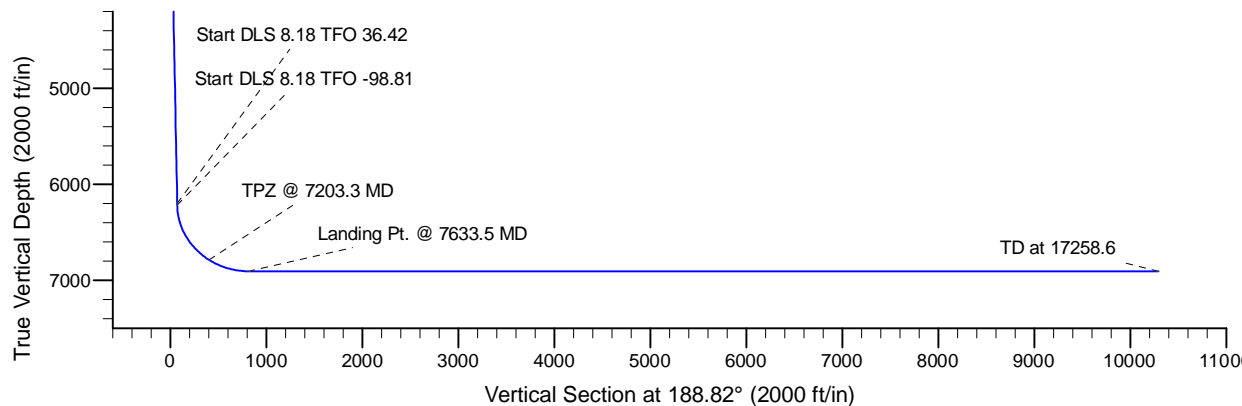
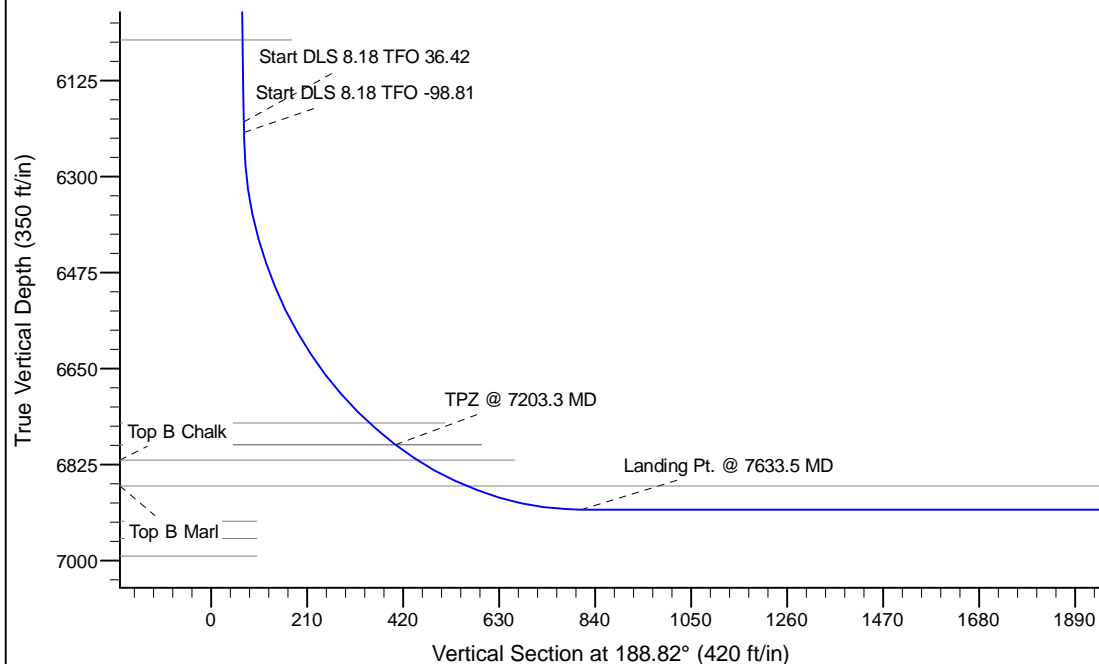
Project: Mustang
 Site: Y Section 10-T2N-R64W Weld County, CO
 Well: Bison Ridge State Y22-786
 Wellbore: Original Drilling
 Design: APD - Rev 0

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	2000.0	0.00	0.00	2000.0	0.0	0.0	0.00	0.00	0.0	
3	3087.5	21.75	276.00	3061.6	21.3	-202.8	2.00	276.00	10.0	
4	6466.5	21.75	276.00	6200.0	152.2	-1448.1	0.00	0.00	71.7	
5	6487.9	23.18	278.64	6219.8	153.2	-1456.2	8.18	36.42	71.9	
6	7633.5	90.00	179.07	6907.0	-550.0	-1735.0	8.18	-98.81	809.6	
7	17258.6	90.00	179.07	6907.0	-10173.8	-1579.0	0.00	0.00	10295.6	Bison Ridge State Y22-786 BHL 2640'FSL, 245'FWL



WELL DETAILS: Bison Ridge State Y22-786

Ground Elevation: 4930.0
 Northing Easting Latitude Longitude
 0.00.0 1299607.6158396 3268349.0258935 40.1518300 -104.5399800

Plan: APD - Rev 0 (Bison Ridge State Y22-786/Original Drilling)

Created By: Shailey Jewell Date: 14:11, April 26 2017

OK to submit with 2A as per Noble Drilling
4/26/2017 2:45

Northern Region - DJ Basin

Mustang

Y Section 10

Bison Ridge State Y22-786

Original Drilling

APD - Rev 0

Anticollision Summary Report

26 April, 2017

Noble Energy, Inc.
Anticollision Summary Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Bison Ridge State Y22-786
Project:	Mustang	TVD Reference:	WELL @ 4960.0ft (Original Well Elev.)
Reference Site:	Y Section 10	MD Reference:	WELL @ 4960.0ft (Original Well Elev.)
Site Error:	0.0 ft	North Reference:	Grid
Reference Well:	Bison Ridge State Y22-786	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	4/26/2017		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.0	17,258.6	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						
DP 406						
Rubicon State Y16-718 - Wellbore #1 - Design #1	7,679.0	9,595.7	785.8	734.7	15.372	CC, ES
Rubicon State Y16-718 - Wellbore #1 - Design #1	10,400.0	6,941.6	813.0	758.3	14.869	SF
Y Section 10						
Bison Ridge Y22-711 - Original Drilling - APD - Rev 0	2,000.0	1,993.0	1,375.3	1,368.4	198.266	CC, ES
Bison Ridge Y22-711 - Original Drilling - APD - Rev 0	2,800.0	2,511.6	1,555.0	1,545.5	163.004	SF
Bison Ridge Y22-719 - Original Drilling - Prelim - Rev 1	2,000.0	1,993.0	1,336.2	1,329.2	192.624	CC, ES
Bison Ridge Y22-719 - Original Drilling - Prelim - Rev 1	2,900.0	2,646.4	1,527.7	1,517.8	154.250	SF
Bison Ridge Y22-726 - Original Drilling - Prelim - Rev 1	2,000.0	1,994.0	1,299.8	1,292.9	187.385	CC, ES
Bison Ridge Y22-726 - Original Drilling - Prelim - Rev 1	3,000.0	2,780.8	1,508.7	1,498.4	146.899	SF
Bison Ridge Y22-734 - Original Drilling - Prelim - Rev 1	2,000.0	1,994.0	1,263.5	1,256.5	182.147	CC, ES
Bison Ridge Y22-734 - Original Drilling - Prelim - Rev 1	4,000.0	3,708.8	1,909.5	1,895.8	139.173	SF
Bison Ridge Y22-741 - Original Drilling - Prelim - Rev 1	2,000.0	1,994.0	1,224.3	1,217.4	176.505	CC, ES
Bison Ridge Y22-741 - Original Drilling - Prelim - Rev 1	4,400.0	4,277.9	1,925.1	1,909.6	124.358	SF
Bison Ridge Y22-749 - Original Drilling - Prelim - Rev 1	2,350.8	2,490.4	1,182.9	1,174.8	146.000	CC, ES
Bison Ridge Y22-749 - Original Drilling - Prelim - Rev 1	5,600.0	5,570.0	1,916.7	1,896.3	93.915	SF
Bison Ridge Y22-756 - Original Drilling - Prelim - Rev 1	2,000.0	2,001.0	150.9	144.0	21.761	CC, ES
Bison Ridge Y22-756 - Original Drilling - Prelim - Rev 1	2,200.0	2,200.8	157.9	150.2	20.690	SF
Bison Ridge Y22-764 - Original Drilling - Prelim - Rev 1	2,000.0	2,001.0	111.8	104.9	16.119	CC, ES
Bison Ridge Y22-764 - Original Drilling - Prelim - Rev 1	2,200.0	2,200.8	118.7	111.1	15.562	SF
Bison Ridge Y22-771 - Original Drilling - Prelim - Rev 1	2,000.0	2,001.0	75.5	61.6	5.439	CC, ES
Bison Ridge Y22-771 - Original Drilling - Prelim - Rev 1	2,100.0	2,101.0	77.2	62.6	5.294	SF
Bison Ridge Y22-779 - Original Drilling - APD - Rev 0	2,000.0	2,000.0	36.3	22.5	2.619	CC, ES
Bison Ridge Y22-779 - Original Drilling - APD - Rev 0	2,100.0	2,100.0	38.1	23.5	2.611	SF
Oscar Y10-72-1HC - Original Drilling - Original Drilling - A						Out of range
Oscar Y10-72-1HN - Original Drilling - Original Drilling - A						Out of range
Oscar Y10-72HN - Original Drilling - Original Drilling - As						Out of range
Oscar Y10-73-1HC - Original Drilling - Original Drilling - A						Out of range
Oscar Y10-73-1HN - Original Drilling - Original Drilling - A						Out of range
Oscar Y10-73HN - Original Drilling - Original Drilling - As						Out of range
Oscar Y10-74-1HC - Original Drilling - Original Drilling - A	1,509.8	1,495.8	1,297.3	1,288.2	142.190	CC
Oscar Y10-74-1HC - Original Drilling - Original Drilling - A	1,600.0	1,578.4	1,297.5	1,288.0	136.253	ES
Oscar Y10-74-1HC - Original Drilling - Original Drilling - A	3,900.0	3,810.2	1,929.5	1,905.8	81.564	SF
Oscar Y10-74-1HN - Original Drilling - Original Drilling - A	1,097.7	1,083.7	1,377.7	1,370.7	196.966	CC
Oscar Y10-74-1HN - Original Drilling - Original Drilling - A	1,200.0	1,180.0	1,377.9	1,370.4	182.621	ES
Oscar Y10-74-1HN - Original Drilling - Original Drilling - A	3,500.0	3,232.8	1,917.9	1,897.5	94.238	SF
Oscar Y10-74HN - Original Drilling - Original Drilling - As	912.0	899.0	1,302.2	1,296.4	224.846	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 Bison Ridge State Y22-786
Project:	Mustang	TVD Reference:	WELL @ 4960.0ft (Original Well Elev.)
Reference Site:	Y Section 10	MD Reference:	WELL @ 4960.0ft (Original Well Elev.)
Site Error:	0.0 ft	North Reference:	Grid
Reference Well:	Bison Ridge State Y22-786	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

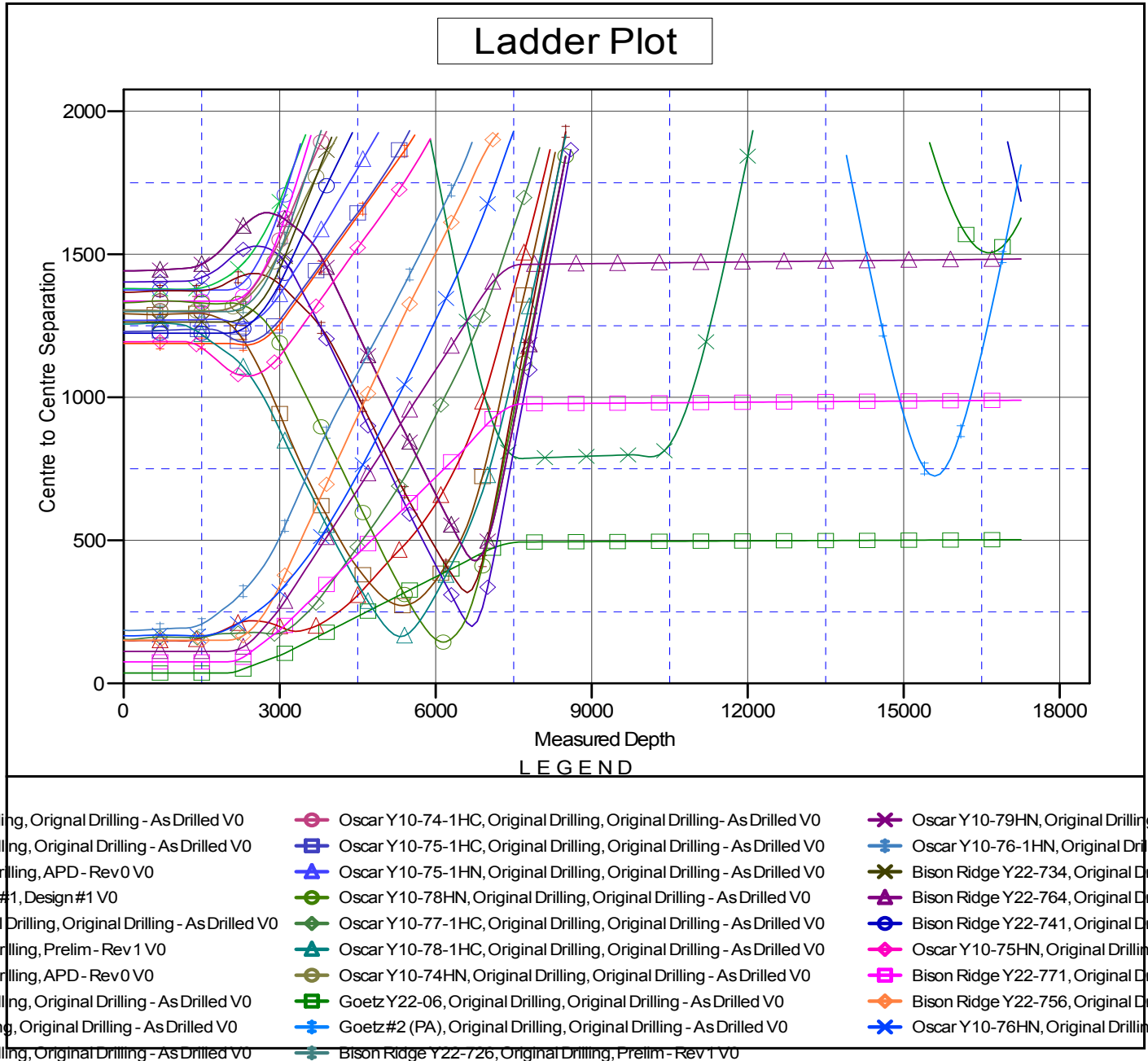
Summary						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
Y Section 10						
Oscar Y10-74HN - Original Drilling - Original Drilling - As	1,800.0	1,773.7	1,303.2	1,292.7	124.424	ES
Oscar Y10-74HN - Original Drilling - Original Drilling - As	4,100.0	4,040.1	1,910.1	1,884.9	75.680	SF
Oscar Y10-75-1HC - Original Drilling - Original Drilling - A	2,354.6	2,490.2	1,192.6	1,178.6	85.034	CC, ES
Oscar Y10-75-1HC - Original Drilling - Original Drilling - A	5,500.0	5,363.5	1,932.1	1,896.8	54.711	SF
Oscar Y10-75-1HN - Original Drilling - Original Drilling - A	2,266.7	2,368.9	1,256.4	1,243.0	93.318	CC, ES
Oscar Y10-75-1HN - Original Drilling - Original Drilling - A	4,900.0	4,850.3	1,925.5	1,894.1	61.300	SF
Oscar Y10-75HN - Original Drilling - Original Drilling - As	2,379.0	2,515.2	1,074.2	1,059.9	75.306	CC
Oscar Y10-75HN - Original Drilling - Original Drilling - As	2,400.0	2,535.1	1,074.2	1,059.8	74.620	ES
Oscar Y10-75HN - Original Drilling - Original Drilling - As	5,900.0	5,783.8	1,904.0	1,865.4	49.233	SF
Oscar Y10-76-1HN - Original Drilling - Original Drilling - A	100.0	83.6	185.0	184.7	686.354	CC
Oscar Y10-76-1HN - Original Drilling - Original Drilling - A	200.0	183.1	185.3	184.5	231.851	ES
Oscar Y10-76-1HN - Original Drilling - Original Drilling - A	2,000.0	1,955.1	270.6	259.3	23.859	SF
Oscar Y10-76HN - Original Drilling - Original Drilling - As	1,425.9	1,410.9	165.7	157.2	19.567	CC, ES
Oscar Y10-76HN - Original Drilling - Original Drilling - As	2,100.0	2,068.0	198.4	186.5	16.661	SF
Oscar Y10-77-1HC - Original Drilling - Original Drilling - A	100.0	84.0	153.3	153.1	569.135	CC
Oscar Y10-77-1HC - Original Drilling - Original Drilling - A	1,414.1	1,399.2	159.2	150.6	18.452	ES
Oscar Y10-77-1HC - Original Drilling - Original Drilling - A	3,000.0	2,977.4	175.2	157.0	9.626	SF
Oscar Y10-77HN - Original Drilling - Original Drilling - As	1,209.8	1,195.8	148.8	141.4	19.880	CC, ES
Oscar Y10-77HN - Original Drilling - Original Drilling - As	3,600.0	3,552.4	193.2	170.9	8.673	SF
Oscar Y10-78-1HC - Original Drilling - Original Drilling - A	5,326.1	5,172.5	163.6	128.4	4.643	CC, ES, SF
Oscar Y10-78-1HN - Original Drilling - Original Drilling - As	5,361.3	5,232.6	271.7	235.5	7.496	CC, ES
Oscar Y10-78-1HN - Original Drilling - Original Drilling - As	5,400.0	5,269.0	272.1	235.6	7.463	SF
Oscar Y10-78HN - Original Drilling - Original Drilling - As	6,145.8	5,920.0	144.1	103.1	3.515	CC, ES, SF
Oscar Y10-79-1HC - Original Drilling - Original Drilling - A	6,697.5	6,441.0	199.4	154.6	4.446	CC
Oscar Y10-79-1HC - Original Drilling - Original Drilling - A	6,700.0	6,442.7	199.4	154.6	4.443	ES, SF
Oscar Y10-79-1HN - Original Drilling - Original Drilling - A	6,610.3	6,351.0	317.5	272.8	7.111	CC, ES, SF
Oscar Y10-79HN - Original Drilling - Original Drilling - As	6,753.3	6,467.6	428.7	383.7	9.528	CC, ES
Oscar Y10-79HN - Original Drilling - Original Drilling - As	6,800.0	6,491.7	431.1	385.7	9.493	SF
Oscar Y10-79HN - Original Drilling - ST01 - ST01 - As Dr	6,753.3	6,467.6	428.7	383.7	9.528	CC, ES
Oscar Y10-79HN - Original Drilling - ST01 - ST01 - As Dr	6,800.0	6,491.7	431.1	385.7	9.493	SF
Oscar Y11-79HN - Original Drilling - Original Drilling - As						Out of range
Oscar Y11-79HN - ST01 Original Drilling - ST01 Original						Out of range
Y Section 15						
Feather 31-15 - Original Drilling - Original Drilling - As Dr						Out of range
UPRR 62 Pan Am B1 - Original Drilling - Original Drilling						Out of range
Y Section 22						
Acco-Terra-Bodeker 40 - Original Drilling - Original Drilling	17,258.6	6,939.0	1,685.7	1,480.1	8.198	CC, ES, SF
Goetz #1 (PA) - Original Drilling - Original Drilling - As Dr						Out of range
Goetz #2 (PA) - Original Drilling - Original Drilling - As Dr	15,597.7	6,931.0	724.7	511.3	3.396	CC, ES, SF
Goetz Y22-06 - Original Drilling - Original Drilling - As Dr	16,643.7	6,950.8	1,505.1	1,366.8	10.884	CC, ES, SF

Noble Energy, Inc.
Anticollision Summary Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Bison Ridge State Y22-786
Project:	Mustang	TVD Reference:	WELL @ 4960.0ft (Original Well Elev.)
Reference Site:	Y Section 10	MD Reference:	WELL @ 4960.0ft (Original Well Elev.)
Site Error:	0.0 ft	North Reference:	Grid
Reference Well:	Bison Ridge State Y22-786	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 @ 4960.0ft (Original Well Elev.)
Offset Depths are relative to Offset Datum
Central Meridian is -105.5000000

Coordinates are relative to: Bison Ridge State Y22-786
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 0.62°



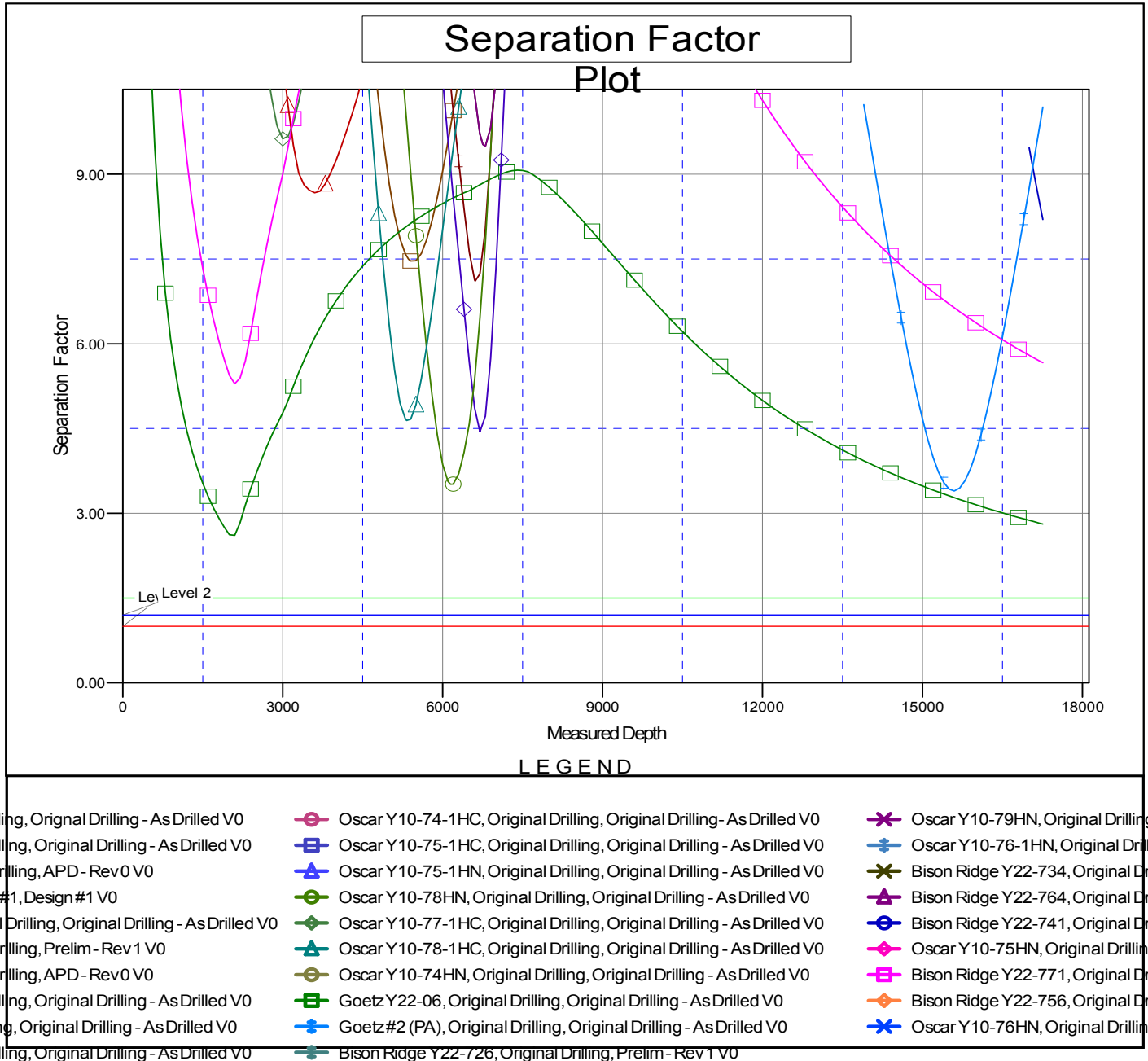
CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Noble Energy, Inc.
Anticollision Summary Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Bison Ridge State Y22-786
Project:	Mustang	TVD Reference:	WELL @ 4960.0ft (Original Well Elev.)
Reference Site:	Y Section 10	MD Reference:	WELL @ 4960.0ft (Original Well Elev.)
Site Error:	0.0 ft	North Reference:	Grid
Reference Well:	Bison Ridge State Y22-786	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 @ 4960.0ft (Original Well Elev.)
Offset Depths are relative to Offset Datum
Central Meridian is -105.5000000

Coordinates are relative to: Bison Ridge State Y22-786
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 0.62°



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