

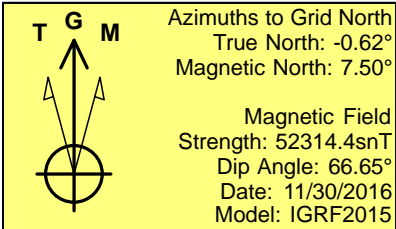
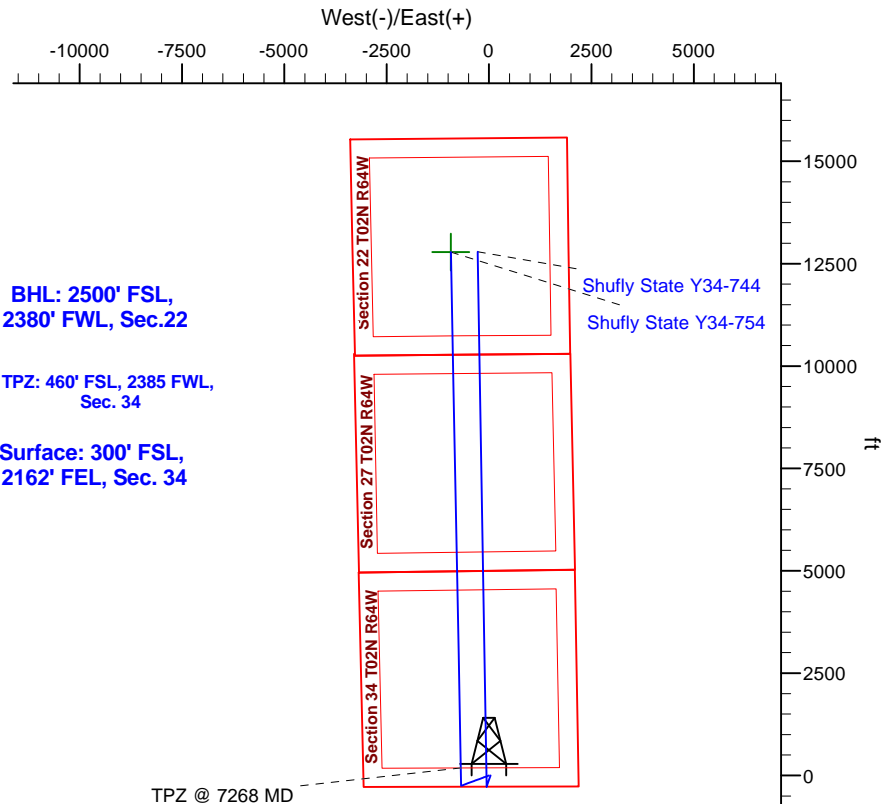
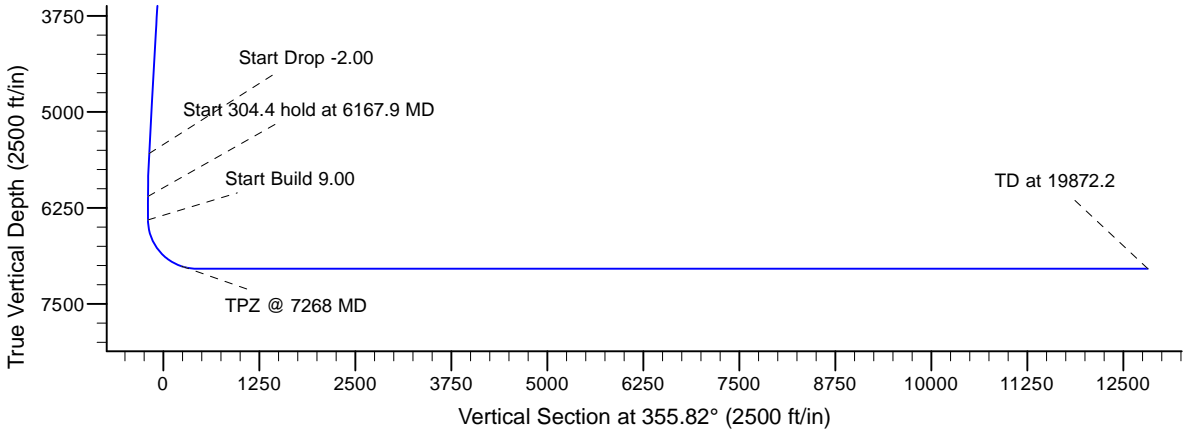
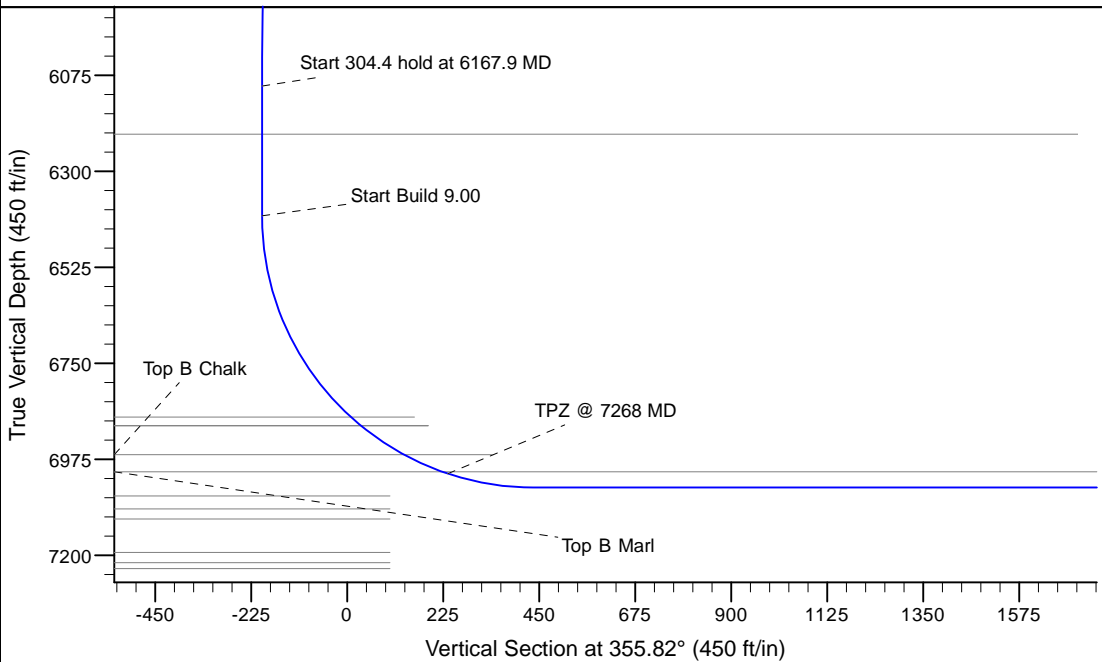
Project: Mustang
Site: Y Section 34
Well: Shufly State Y34-754
Wellbore: Original Drilling
Design: APD - Rev 0

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	2463.7	11.27	249.81	2460.0	-19.1	-51.9	2.00	249.81	-15.2	
4	5604.2	11.27	249.81	5540.0	-230.9	-628.1	0.00	0.00	-184.6	
5	6167.9	0.00	0.00	6100.0	-250.0	-680.0	2.00	180.00	-199.8	
6	6472.2	0.00	0.00	6404.4	-250.0	-680.0	0.00	0.00	-199.8	
7	7472.2	90.00	358.89	7041.0	386.5	-692.4	9.00	358.89	435.9	
8	19872.2	90.00	358.89	7041.0	12784.1	-933.3	0.00	0.00	12818.1	Shufly State Y34-754 BHL 2500'FSL, 2380'FWL



WELL DETAILS: Shufly State Y34-754

Northing	Easting	Ground Elevation: 5071.0	Latitude	Longitude
0.0 0.0	1276534.4537286	3269841.1739901	40.0884500	-104.5355400

Plan: APD - Rev 0 (Shufly State Y34-754/Original Drilling)

Created By: -Amanda Borowski Date: 12:42, May 01 2017

OK to submit with 2A as per Noble Drilling
5/8/2017 9:26

Northern Region - DJ Basin

Mustang

Y Section 34

Shufly State Y34-754

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 Y34-754
Project:	Mustang	TVD Reference:	WELL @ 5101.0ft
Reference Site:	Y Section 34	MD Reference:	WELL @ 5101.0ft
Site Error:	0.0 ft	North Reference:	Grid
Reference Well:	Shufly State Y34-754	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	19,872.2	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 State Y22-786 - Original Drilling - APD - Rev						Out of range
Bison Ridge Y22-711 - Original Drilling - APD - Rev 0						Out of range
Bison Ridge Y22-719 - Original Drilling - APD - Rev 0						Out of range
Bison Ridge Y22-726 - Original Drilling - APD - Rev 0	19,872.2	17,113.5	1,820.4	1,623.9	9.264	CC, ES, SF
Bison Ridge Y22-734 - Original Drilling - APD - Rev 0	19,872.2	17,053.2	1,327.2	1,131.3	6.774	CC, ES, SF
Bison Ridge Y22-741 - Original Drilling - APD - Rev 0	19,872.2	16,770.4	838.6	644.9	4.330	CC, ES, SF
Bison Ridge Y22-749 - Original Drilling - APD - Rev 0	19,872.2	17,011.5	361.8	179.7	1.987	CC, ES, SF
Bison Ridge Y22-756 - Original Drilling - APD - Rev 0	19,872.2	17,367.8	269.8	106.7	1.654	CC, ES, SF
Bison Ridge Y22-764 - Original Drilling - APD - Rev 0	19,872.2	17,043.2	673.6	482.7	3.529	CC, ES, SF
Bison Ridge Y22-771 - Original Drilling - APD - Rev 0	19,872.2	17,065.2	1,154.9	959.8	5.921	CC, ES, SF
Bison Ridge Y22-779 - Original Drilling - APD - Rev 0	19,872.2	17,209.0	1,650.0	1,454.8	8.454	CC, ES, SF
Oscar Y10-72-1HC - Original Drilling - APD - Rev 1						Out of range
Oscar Y10-72-1HC - Original Drilling - Original Drilling - A						Out of range
Oscar Y10-72-1HN - Original Drilling - APD - Rev 0						Out of range
Oscar Y10-72-1HN - Original Drilling - Original Drilling - A						Out of range
Oscar Y10-72HN - Original Drilling - APD - Rev 1						Out of range
Oscar Y10-72HN - Original Drilling - Original Drilling - As						Out of range
Oscar Y10-73-1HC - Original Drilling - APD - Rev 1						Out of range
Oscar Y10-73-1HC - Original Drilling - Original Drilling - A						Out of range
Oscar Y10-73-1HN - Original Drilling - APD - Rev 1						Out of range
Oscar Y10-73-1HN - Original Drilling - Original Drilling - A						Out of range
Oscar Y10-73HN - Original Drilling - APD - Rev 0						Out of range
Oscar Y10-73HN - Original Drilling - Original Drilling - As						Out of range
Oscar Y10-74-1HC - Original Drilling - APD - Rev 1						Out of range
Oscar Y10-74-1HC - Original Drilling - Original Drilling - A						Out of range
Oscar Y10-74-1HC - Original Drilling - Target Change						Out of range
Oscar Y10-74-1HN - Original Drilling - APD - Rev 0						Out of range
Oscar Y10-74-1HN - Original Drilling - Baxter						Out of range
Oscar Y10-74-1HN - Original Drilling - Original Drilling - A						Out of range
Oscar Y10-74HN - Original Drilling - APD - Rev 1						Out of range
Oscar Y10-74HN - Original Drilling - Original Drilling - As						Out of range
Oscar Y10-75-1HC - Original Drilling - APD - Rev 1						Out of range
Oscar Y10-75-1HC - Original Drilling - Original Drilling - A						Out of range
Oscar Y10-75-1HN - Original Drilling - APD - Rev 1						Out of range
Oscar Y10-75-1HN - Original Drilling - Original Drilling - A						Out of range
Oscar Y10-75HN - Original Drilling - APD - Rev 0						Out of range
Oscar Y10-75HN - Original Drilling - Original Drilling - As						Out of range

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 Y34-754
Project:	Mustang	TVD Reference:	WELL @ 5101.0ft
Reference Site:	Y Section 34	MD Reference:	WELL @ 5101.0ft
Site Error:	0.0 ft	North Reference:	Grid
Reference Well:	Shufly State Y34-754	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 Y10-76-1HC - Original Drilling - APD - Rev 0						Out of range
Oscar Y10-76-1HN - Original Drilling - APD - Rev 2						Out of range
Oscar Y10-76-1HN - Original Drilling - Original Drilling - A						Out of range
Oscar Y10-76HN - Original Drilling - APD - Rev 2						Out of range
Oscar Y10-76HN - Original Drilling - Original Drilling - As						Out of range
Oscar Y10-77-1HC - Original Drilling - APD - Rev 2						Out of range
Oscar Y10-77-1HC - Original Drilling - Original Drilling - A						Out of range
Oscar Y10-77-1HN - Original Drilling - APD 0 Rev 0						Out of range
Oscar Y10-77HN - Original Drilling - APD - Rev 2						Out of range
Oscar Y10-77HN - Original Drilling - Original Drilling - As						Out of range
Oscar Y10-78-1HC - Original Drilling - APD - Rev 2						Out of range
Oscar Y10-78-1HC - Original Drilling - Original Drilling - A						Out of range
Oscar Y10-78-1HN - Original Drilling - APD - Rev 2						Out of range
Oscar Y10-78-1HN - Original Drilling - Original Drilling - As						Out of range
Oscar Y10-78HN - Original Drilling - APD - Rev 2						Out of range
Oscar Y10-78HN - Original Drilling - Original Drilling - As						Out of range
Oscar Y10-79-1HC - Original Drilling - APD - Rev 2						Out of range
Oscar Y10-79-1HC - Original Drilling - Original Drilling - A						Out of range
Oscar Y10-79-1HN - Original Drilling - APD - Rev 2						Out of range
Oscar Y10-79-1HN - Original Drilling - Original Drilling - A						Out of range
Oscar Y10-79HN - Original Drilling - APD - Rev 2						Out of range
Oscar Y10-79HN - Original Drilling - Original Drilling - As						Out of range
Oscar Y10-79HN - Original Drilling - ST01 - ST01 - As Dr						Out of range
Oscar Y11-79HN - Original Drilling - APD - Rev 1						Out of range
Oscar Y11-79HN - Original Drilling - Original Drilling - As						Out of range
Oscar Y11-79HN - ST01 Original Drilling - ST01 Original						Out of range
Y Section 11						
Marolff 14-11 - Wellbore #1 - Wellbore #1 - As Drilled						Out of range
Marolff 34-11 - Wellbore #1 - Wellbore #1 - As Drilled						Out of range
Waste Management 12-11 - Wellbore #1 - Wellbore #1 -						Out of range
Waste Management Y23-712 - Original Drilling - APD - R						Out of range
Waste Management Y23-720 - Original Drilling - APD - R						Out of range
Waste Management Y23-728 - Original Drilling - APD - R						Out of range
Waste Management Y23-736 - Original Drilling - APD - R						Out of range
Waste Management Y23-744 - Original Drilling - APD - R						Out of range
Waste Management Y23-752 - Original Drilling - APD - R						Out of range
Waste Management Y23-760 - Original Drilling - APD - R						Out of range
Waste Management Y23-768 - Original Drilling - APD - R						Out of range
Waste Management Y23-776 - Original Drilling - APD - R						Out of range
Waste Management Y23-784 - Original Drilling - APD - R						Out of range
Y Section 22						
Acco-Terra-Bodeker 40 - Original Drilling - Original Drilling	18,717.9	6,932.0	1,075.7	837.5	4.516	CC, ES, SF
Goetz #1 (PA) - Original Drilling - Original Drilling - As Dr						Out of range
Goetz #2 (PA) - Original Drilling - Original Drilling - As Dr						Out of range
Goetz Y22-06 - Original Drilling - Original Drilling - As Dri	19,872.2	6,936.7	991.2	864.5	7.823	CC, ES, SF
Y Section 27						
Champlin 246 Amoco A 1 - Wellbore #1 - Wellbore #1 - A	13,409.5	6,969.7	944.3	861.9	11.458	CC, ES
Champlin 246 Amoco A 1 - Wellbore #1 - Wellbore #1 - A	13,500.0	6,967.6	948.6	865.5	11.419	SF

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Anticollision Summary Report

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Reference Site:	Y Section 34	MD Reference:	WELL @ 5101.0ft
Site Error:	0.0 ft	North Reference:	Grid
Reference Well:	Shufly State Y34-754	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

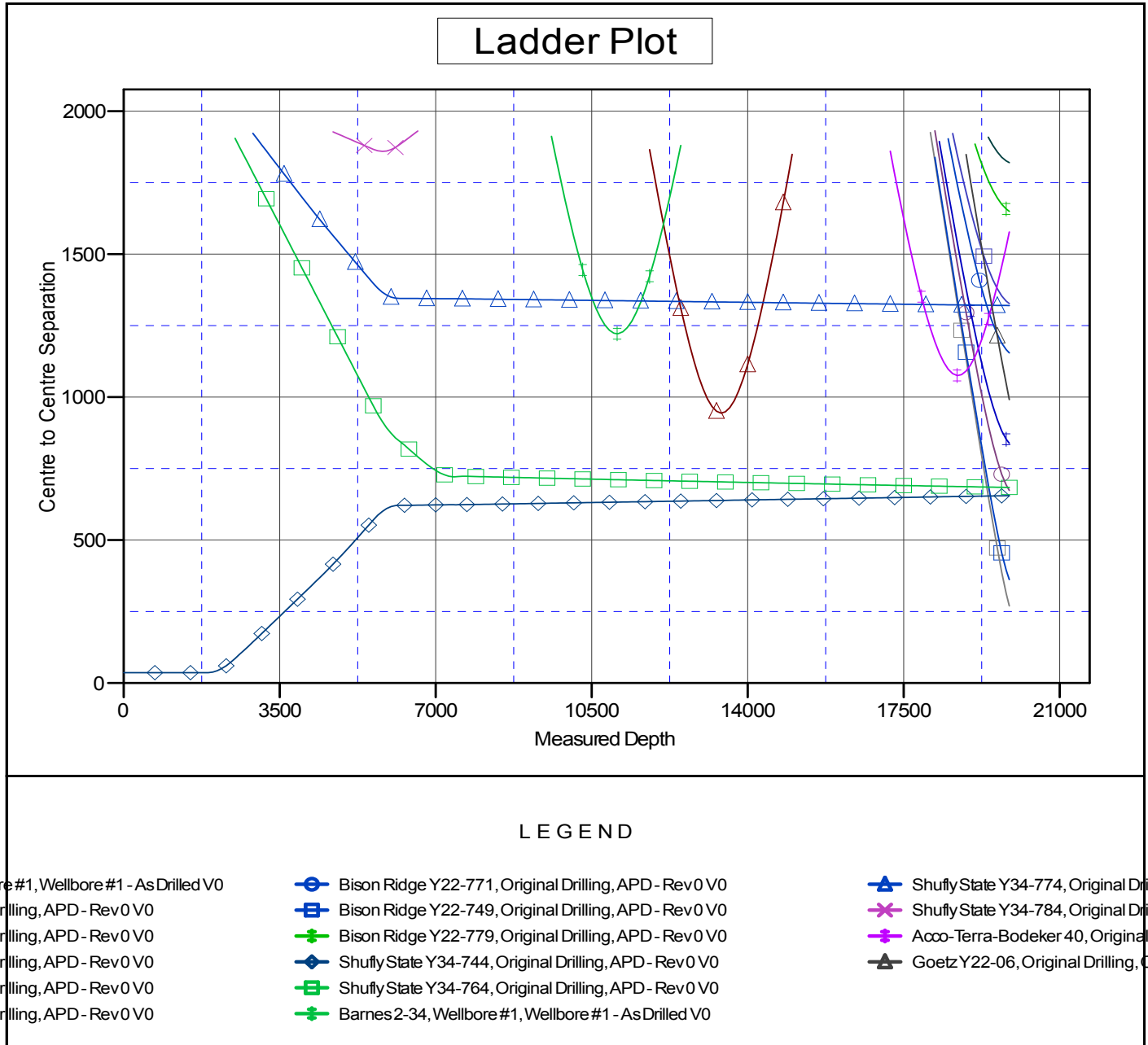
Summary						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Y Section 34						
Barnes 2-34 - Wellbore #1 - Wellbore #1 - As Drilled	11,071.0	6,933.0	1,221.9	1,041.5	6.774	CC, ES
Barnes 2-34 - Wellbore #1 - Wellbore #1 - As Drilled	11,100.0	6,933.0	1,222.3	1,041.7	6.770	SF
Fritzler 12-34 - Wellbore #1 - Wellbore #1 - As Drilled						Out of range
Shufly State Y34-744 - Original Drilling - APD - Rev 0	1,900.0	1,901.0	36.4	23.2	2.764	CC, ES
Shufly State Y34-744 - Original Drilling - APD - Rev 0	2,000.0	2,001.0	38.0	24.2	2.742	SF
Shufly State Y34-764 - Original Drilling - APD - Rev 0	19,872.2	19,956.4	684.1	467.3	3.156	CC, ES, SF
Shufly State Y34-774 - Original Drilling - APD - Rev 0	19,872.2	19,821.3	1,320.4	1,103.2	6.080	CC, ES, SF
Shufly State Y34-784 - Original Drilling - APD - Rev 0	5,811.5	5,556.4	1,859.7	1,819.3	46.039	CC, ES
Shufly State Y34-784 - Original Drilling - APD - Rev 0	6,600.0	6,338.1	1,930.7	1,884.7	42.011	SF

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Anticollision Summary Report

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Reference Well:	Shufly State Y34-754	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 @ 5101.0ft
Offset Depths are relative to Offset Datum
Central Meridian is -105.5000000

Coordinates are relative to: Shufly State Y34-754
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

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Anticollision Summary Report

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