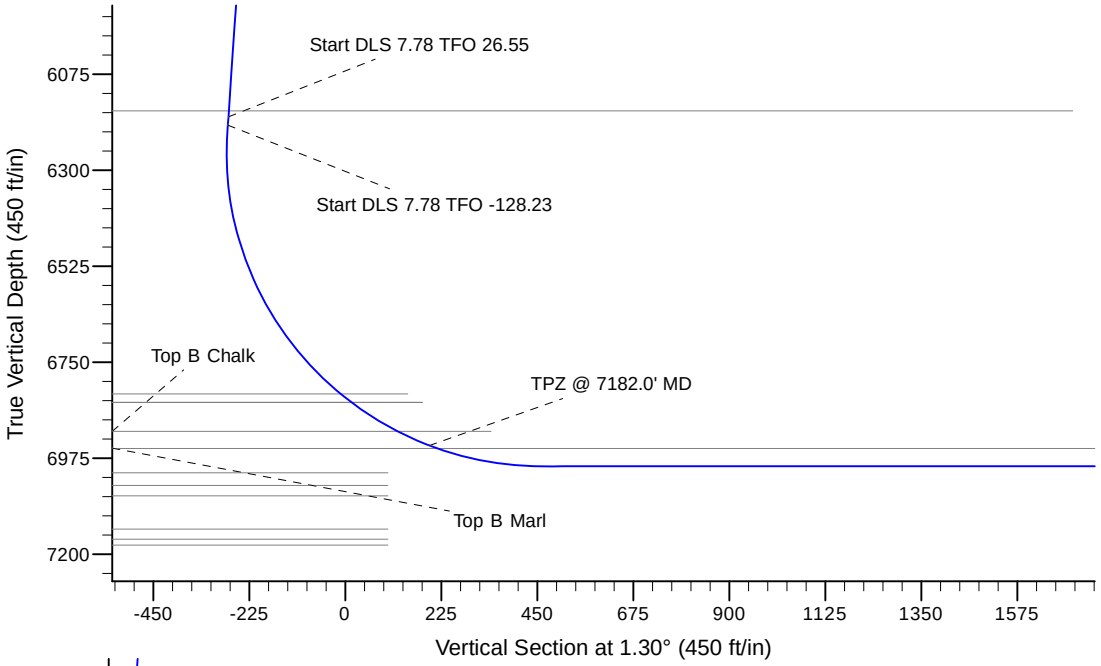
Project: Mustang
Site: Y Section 34
Well: Shufly State Y34-714
Wellbore: Original Drilling
Design: APD - Rev 0

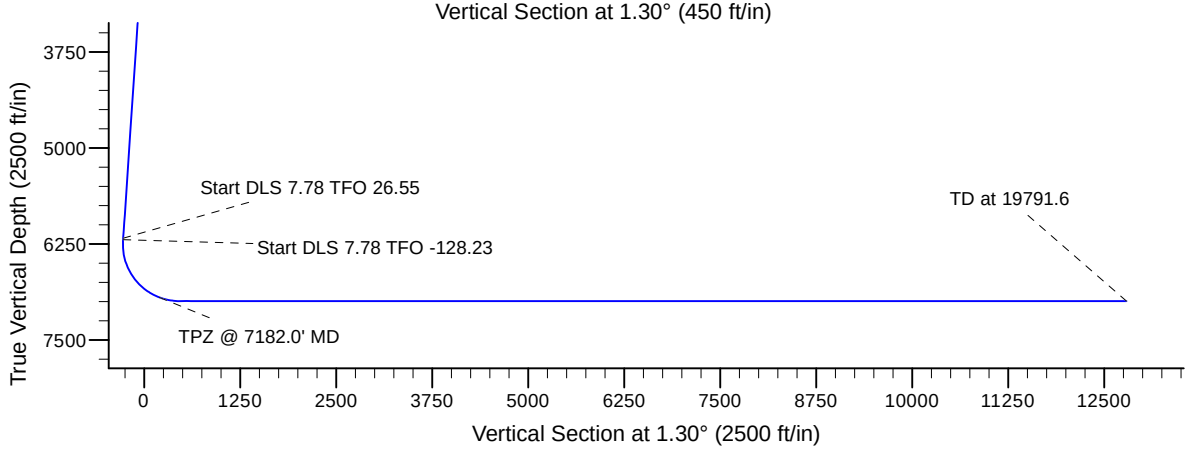
Northern Region - DJ Basin

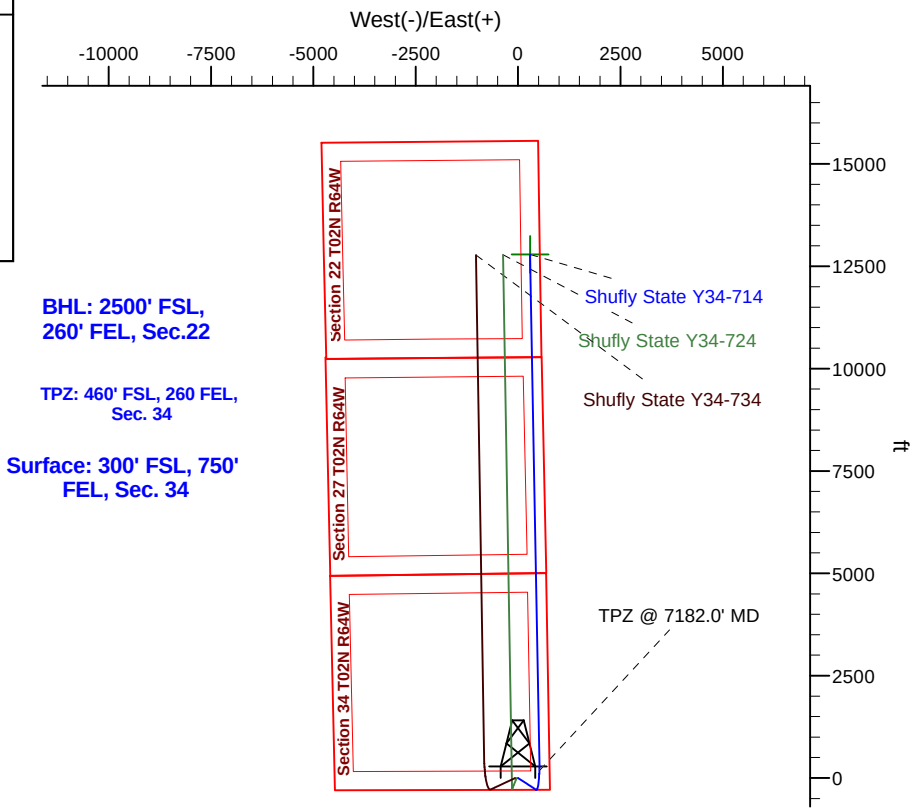
Geodetic System: US State Plane 1983
Datum: North American Datum 1983
Ellipsoid: GRS 1980
Zone: Colorado Northern Zone
System Datum: Mean Sea Level

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	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	2262.5	7.25	123.00	2261.5	-12.5	19.2	2.00	123.00	-12.0	
4	6207.5	7.25	123.00	6175.0	-283.6	436.7	0.00	0.00	-273.6	
5	6226.8	8.62	127.48	6194.1	-285.2	438.9	7.78	26.55	-275.1	
6	7452.9	90.00	358.93	6994.0	450.0	520.0	7.78	-128.23	461.7	
7	19791.6	90.00	358.94	6994.0	12786.5	290.9	0.00	90.00	12789.8	Shufly State Y34-714 BHL 2500'FSL, 260'FEL



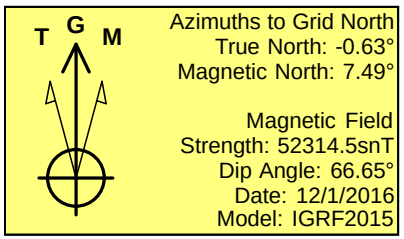




BHL: 2500' FSL, 260' FEL, Sec.22

TPZ: 460' FSL, 260 FEL, Sec. 34

Surface: 300' FSL, 750' FEL, Sec. 34



Azimuths to Grid North
True North: -0.63°
Magnetic North: 7.49°

Magnetic Field
Strength: 52314.5snT
Dip Angle: 66.65°
Date: 12/1/2016
Model: IGRF2015

WELL DETAILS: Shufly State Y34-714

Ground Elevation : 5039.0

		Northing	Easting	Latitude	Longitude
0.0	0.0	1276553.4816656	3271251.1930324	40.0884600	-104.5305000

Plan: APD - Rev 0 (Shufly State Y34-714/Original Drilling)

Created By: Amanda Borowski Date: 10:40, May 01 2017

OK to submit with 2A as per Noble Drilling
5/8/2017 8:57

Northern Region - DJ Basin

Mustang
Y Section 34
Shufly State Y34-714

Original Drilling
APD - Rev 0

Anticollision Summary Report

25 May, 2017

Noble Energy, Inc.

Anticollision Summary Report

Company:	Northern Region - DJ Basin	**Local Co-ordinate Reference:**	Well Shufly State Y34-714
Project:	Mustang	**TVD Reference:**	WELL @ 5069.0ft (Original Well Elev.)
Reference Site:	Y Section 34	**MD Reference:**	WELL @ 5069.0ft (Original Well Elev.)
Site Error:	0.0 ft	**North Reference:**	Grid
Reference Well:	Shufly State Y34-714	**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** 5/25/2017

From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.0	19,791.5	APD - Rev 0 (Original Drilling)	2_MWD+IFR1+MS	A008Mb: IFR dec & multi-station analysis

Summary

Site Name Offset Well - Wellbore - Design	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Y Section 10						
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
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

CC - Min centre to center distance or covergent 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 Y34-714
Project:	Mustang	**TVD Reference:**	WELL @ 5069.0ft (Original Well Elev.)
Reference Site:	Y Section 34	**MD Reference:**	WELL @ 5069.0ft (Original Well Elev.)
Site Error:	0.0 ft	**North Reference:**	Grid
Reference Well:	Shufly State Y34-714	**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 Offset Well - Wellbore - Design	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Y Section 10						
Oscar Y10-78-1HC - Original Drilling - Original Drilling - A						Out of range
Oscar Y10-78-1HN - Orignal Drilling - APD - Rev 2						Out of range
Oscar Y10-78-1HN - Orignal Drilling - Orignal 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	19,791.6	19,439.5	1,816.5	1,713.2	17.576	CC, ES, SF
Waste Management Y23-776 - Original Drilling - APD - R	19,791.6	19,513.6	1,327.7	1,229.8	13.553	CC, ES, SF
Waste Management Y23-784 - Original Drilling - APD - R	19,791.6	19,429.6	938.6	852.8	10.944	CC, ES, SF
Y Section 22						
Acco-Terra-Bodeker 40 - Original Drilling - Original Drillin						Out of range
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						Out of range
Y Section 27						
Champlin 246 Amoco A 1 - Wellbore #1 - Wellbore #1 - A						Out of range

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

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Reference Well:	Shufly State Y34-714	**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 Offset Well - Wellbore - Design	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	11,019.0	6,918.0	1,404.4	1,224.0	7.785	CC, ES
Barnes 2-34 - Wellbore #1 - Wellbore #1 - As Drilled	11,100.0	6,918.0	1,406.7	1,225.9	7.780	SF
Fritzler 12-34 - Wellbore #1 - Wellbore #1 - As Drilled						Out of range
Shufly State Y34-724 - Original Drilling - APD - Rev 0	1,900.0	1,902.0	36.4	23.2	2.763	CC, ES
Shufly State Y34-724 - Original Drilling - APD - Rev 0	2,000.0	2,002.0	37.8	24.0	2.729	SF
Shufly State Y34-734 - Original Drilling - APD - Rev 0	1,900.0	1,903.0	72.7	59.6	5.525	CC, ES
Shufly State Y34-734 - Original Drilling - APD - Rev 0	2,000.0	2,000.6	75.8	62.0	5.479	SF
Shufly State Y34-744 - Original Drilling - APD - Rev 0	1,900.0	1,931.0	1,373.8	1,360.5	103.548	CC, ES
Shufly State Y34-744 - Original Drilling - APD - Rev 0	6,400.0	6,415.7	1,927.8	1,883.0	42.981	SF
Shufly State Y34-754 - Original Drilling - APD - Rev 0	1,801.0	1,833.0	1,410.2	1,397.6	112.267	CC
Shufly State Y34-754 - Original Drilling - APD - Rev 0	1,900.0	1,921.9	1,410.3	1,397.0	106.586	ES
Shufly State Y34-754 - Original Drilling - APD - Rev 0	4,000.0	3,708.5	1,923.0	1,896.6	72.724	SF
Shufly State Y34-764 - Original Drilling - APD - Rev 0						Out of range
Shufly State Y34-774 - Original Drilling - APD - Rev 0						Out of range
Shufly State Y34-784 - Original Drilling - APD - Rev 0						Out of range

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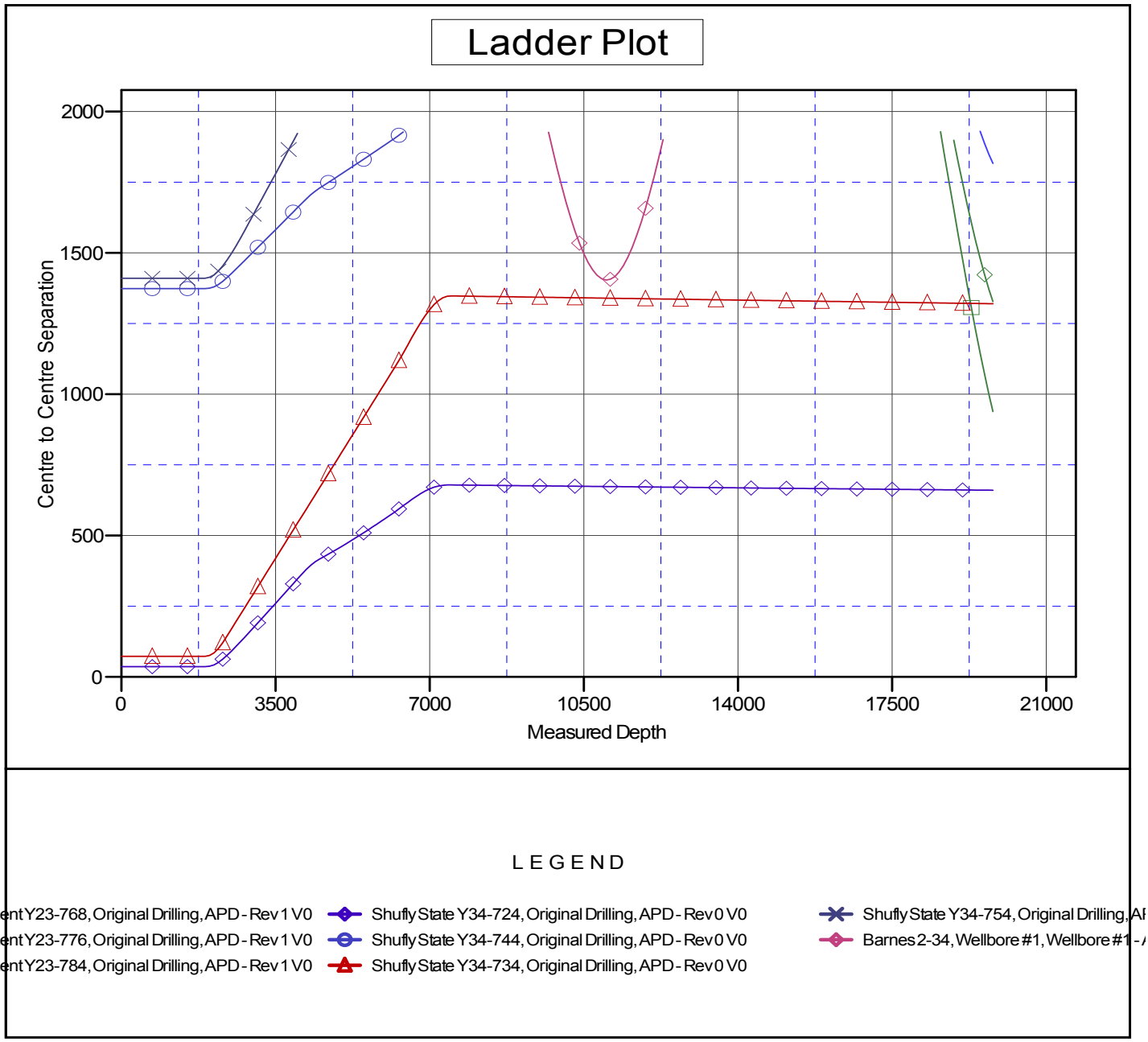
Well Error:	0.0 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Original Drilling	**Database:**	EDMP
Reference Design:	APD - Rev 0	**Offset TVD Reference:**	Offset Datum

Reference Depths are relative to WELL @ 5069.0ft (Original Well Elev.
Offset Depths are relative to Offset Datum
Central Meridian is -105.5000000

Coordinates are relative to: Shufly State Y34-714
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 0.63°



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