

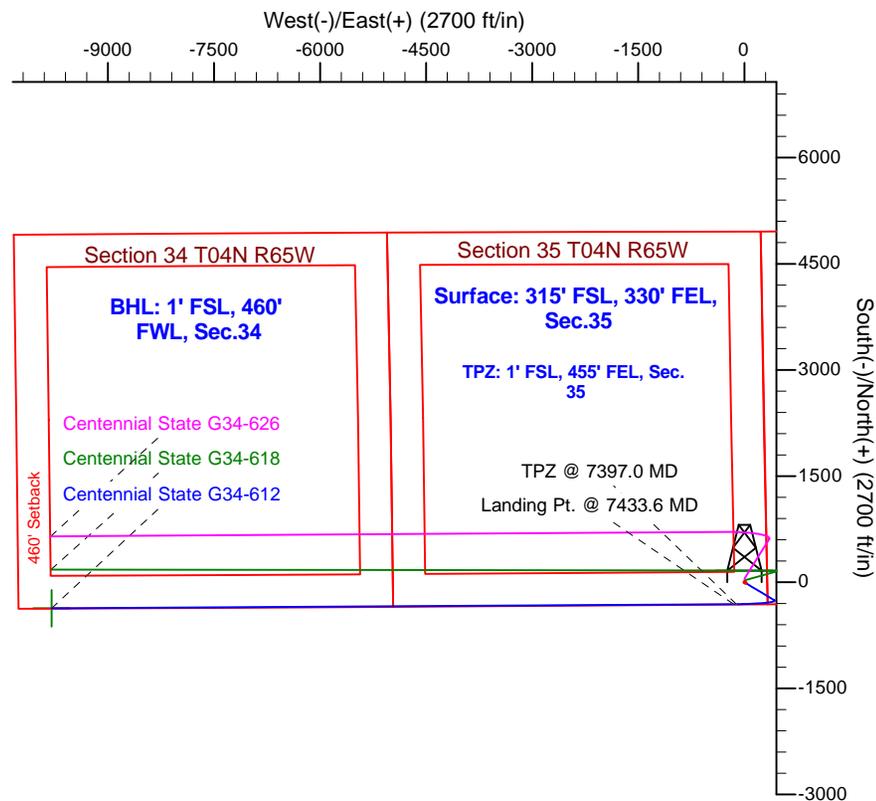
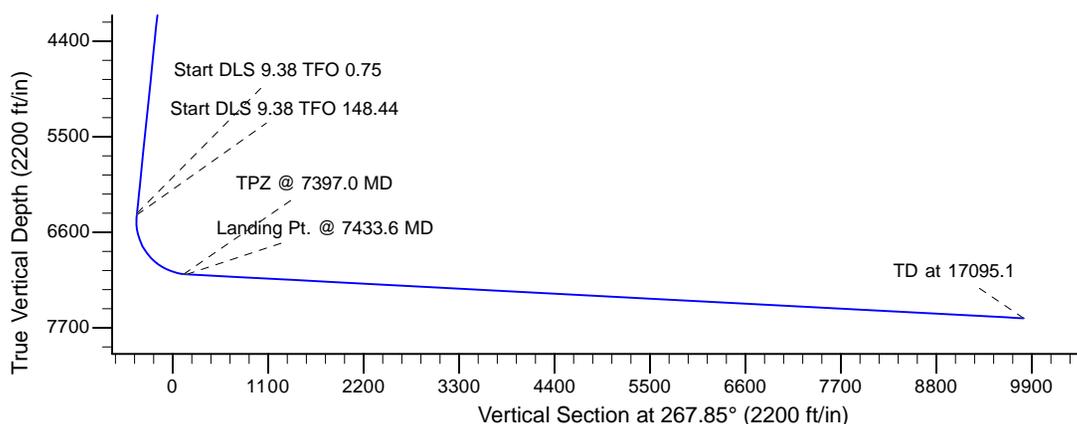
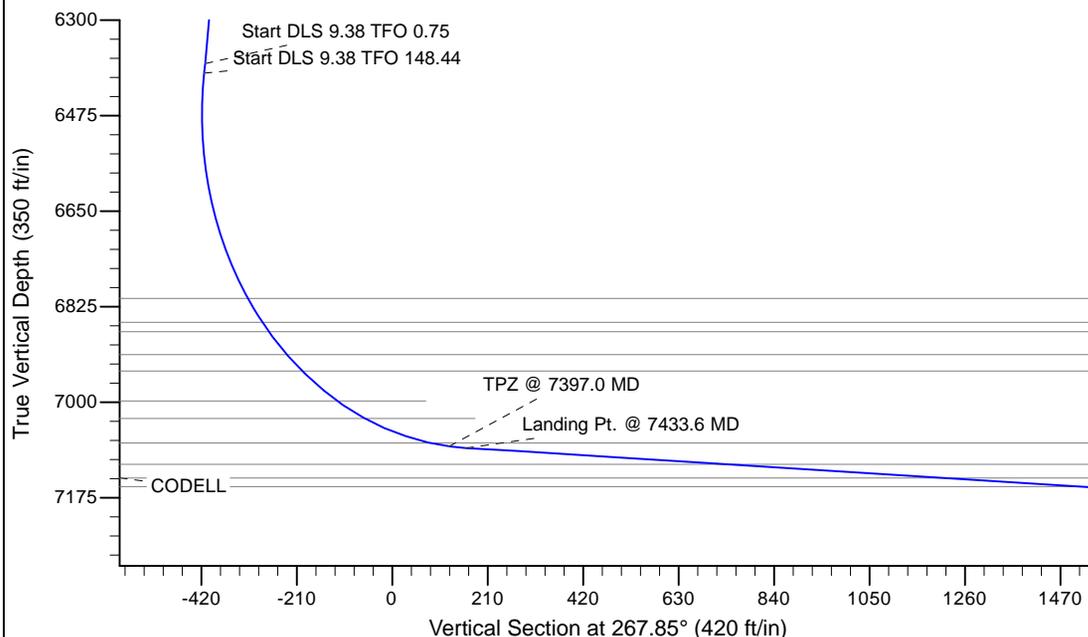
Project: Bronco
 Site: G Section 35-T4N-R65W Weld County, CO
 Well: Centennial State G34-612
 Wellbore: Original Drilling
 Design: APD - Rev 1

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	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	2200.0	0.00	0.00	2200.0	0.0	0.0	0.00	0.00	0.0	
3	2550.0	7.00	121.00	2549.1	-11.0	18.3	2.00	121.00	-17.9	
4	6409.6	7.00	121.00	6380.0	-253.3	421.5	0.00	0.00	-411.7	
5	6427.3	8.66	121.14	6397.5	-254.5	423.6	9.38	0.75	-413.7	
6	7433.6	87.00	269.64	7084.0	-310.0	-150.0	9.38	148.44	161.5	Centennial G34-612 State BHL 1'FSL, 460'FWL
7	17095.1	87.00	269.67	7589.9	-368.3	-9798.1	0.00	96.24	9805.0	



T G M

Azimuths to Grid North
 True North: -0.57°
 Magnetic North: 8.37°

Magnetic Field
 Strength: 53247.1snT
 Dip Angle: 67.02°
 Date: 12/31/2009
 Model: IGRF200510

WELL DETAILS: Centennial State G34-612					
		Ground Level: 4816.0			
0.0	0.0	Northing	Easting	Latitude	Longitude
		1339635.66	3244993.82	40.2623700	-104.6221100

Plan: APD - Rev 1 (Centennial State G34-612/Original Drilling)
 Created By: Shailey Jewell Date: 15:20, January 30 2017

OK to submit with 2A as per Noble drilling
 1/30/2017 3:27

Northern Region - DJ Basin

Bronco

G Section 35

Centennial State G34-612

Original Drilling

APD - Rev 1

Anticollision Summary Report

30 January, 2017

Anticollision Summary Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Centennial State G34-612
Project:	Bronco	TVD Reference:	WELL @ 4846.0ft (Original Well Elev)
Reference Site:	G Section 35	MD Reference:	WELL @ 4846.0ft (Original Well Elev)
Site Error:	0.0 ft	North Reference:	Grid
Reference Well:	Centennial State G34-612	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.79 sigma
Reference Wellbore	Original Drilling	Database:	EDM Production
Reference Design:	APD - Rev 1	Offset TVD Reference:	Offset Datum

Reference	APD - Rev 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 10,000.0 ft	Error Surface:	Pedal Curve
Warning Levels Evaluated at:	2.79 Sigma	Casing Method:	Not applied

Survey Tool Program	Date	1/30/2017		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.0	17,095.1	APD - Rev 1 (Original Drilling)	MWD+IFR1+MS_WY	Fixed:v2:Rockies, crustal dec + 3-axis correction

Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Summary						
Offset Well - Wellbore - Design						
G Section 34						
Aristocrat Angus Ranches #1 - Wellbore #1 - Wellbore #	15,910.6	7,443.8	1,094.3	718.1	2.909	CC, ES, SF
Beaman G34-17 - Wellbore #1 - Wellbore #1 - As Drilled	13,735.9	7,257.0	3,824.0	3,678.6	26.293	CC
Beaman G34-17 - Wellbore #1 - Wellbore #1 - As Drilled	13,800.0	7,257.0	3,824.6	3,678.0	26.092	ES
Beaman G34-17 - Wellbore #1 - Wellbore #1 - As Drilled	14,700.0	7,257.0	3,943.7	3,785.0	24.856	SF
Beaman G34-18 - Wellbore #1 - Wellbore #1 - As Drilled	14,797.5	7,393.0	4,410.3	4,244.4	26.583	CC
Beaman G34-18 - Wellbore #1 - Wellbore #1 - As Drilled	14,900.0	7,397.6	4,411.5	4,243.8	26.299	ES
Beaman G34-18 - Wellbore #1 - Wellbore #1 - As Drilled	15,900.0	7,454.1	4,545.6	4,364.4	25.077	SF
Beaman G34-99HZ - Original Drilling - Original Driling - A	15,317.4	9,462.0	4,115.7	3,826.9	14.252	CC
Beaman G34-99HZ - Original Drilling - Original Driling - A	16,000.0	16,000.0	4,140.8	3,516.8	6.636	ES, SF
Beaman G35-31 - Wellbore #1 - Wellbore #1 - As Drilled	12,470.2	7,213.0	4,052.7	3,930.8	33.249	CC
Beaman G35-31 - Wellbore #1 - Wellbore #1 - As Drilled	12,500.0	7,213.0	4,052.8	3,930.4	33.105	ES
Beaman G35-31 - Wellbore #1 - Wellbore #1 - As Drilled	13,700.0	7,213.0	4,235.1	4,096.2	30.496	SF
Beebe 10-34 - Wellbore #1 - Wellbore #1 - As Drilled	14,130.8	7,340.3	2,129.8	1,972.1	13.501	CC
Beebe 10-34 - Wellbore #1 - Wellbore #1 - As Drilled	14,200.0	7,343.4	2,131.0	1,972.0	13.407	ES
Beebe 10-34 - Wellbore #1 - Wellbore #1 - As Drilled	14,400.0	7,352.1	2,146.7	1,985.1	13.285	SF
Bochius Pooling Unit 1 - Wellbore #1 - Wellbore #1 - As	12,980.7	7,257.1	4,616.6	4,484.9	35.051	CC
Bochius Pooling Unit 1 - Wellbore #1 - Wellbore #1 - As	13,100.0	7,263.9	4,618.2	4,484.3	34.496	ES
Bochius Pooling Unit 1 - Wellbore #1 - Wellbore #1 - As	14,500.0	7,340.6	4,859.4	4,706.4	31.756	SF
Bockius 34-1G - Wellbore #1 - Wellbore #1 - As Drilled	12,892.6	7,199.0	4,754.5	4,624.9	36.685	CC
Bockius 34-1G - Wellbore #1 - Wellbore #1 - As Drilled	13,000.0	7,199.0	4,755.7	4,624.2	36.160	ES
Bockius 34-1G - Wellbore #1 - Wellbore #1 - As Drilled	14,400.0	7,199.0	4,987.7	4,836.9	33.090	SF
Bockius 34-2G - Wellbore #1 - Wellbore #1 - As Drilled	14,194.6	7,204.0	4,785.0	4,631.2	31.109	CC
Bockius 34-2G - Wellbore #1 - Wellbore #1 - As Drilled	14,300.0	7,204.0	4,786.2	4,630.5	30.738	ES
Bockius 34-2G - Wellbore #1 - Wellbore #1 - As Drilled	15,500.0	7,204.0	4,959.9	4,787.6	28.789	SF
Bockius 34-8G - Wellbore #1 - Wellbore #1 - As Drilled	12,904.5	7,185.0	3,473.3	3,343.5	26.768	CC
Bockius 34-8G - Wellbore #1 - Wellbore #1 - As Drilled	13,000.0	7,185.0	3,474.6	3,343.1	26.436	ES
Bockius 34-8G - Wellbore #1 - Wellbore #1 - As Drilled	13,800.0	7,185.0	3,586.8	3,444.8	25.260	SF
Bockius 37-07G - Wellbore #1 - Wellbore #1 - As Drilled	14,556.2	7,226.0	3,485.5	3,325.0	21.712	CC
Bockius 37-07G - Wellbore #1 - Wellbore #1 - As Drilled	14,600.0	7,226.0	3,485.8	3,324.5	21.609	ES
Bockius 37-07G - Wellbore #1 - Wellbore #1 - As Drilled	15,300.0	7,226.0	3,564.0	3,393.3	20.879	SF
Champ G34-06X - Wellbore #1 - Wellbore #1 - As Drilled	15,568.5	7,413.2	3,182.4	3,002.1	17.651	CC
Champ G34-06X - Wellbore #1 - Wellbore #1 - As Drilled	15,600.0	7,414.7	3,182.6	3,001.7	17.596	ES
Champ G34-06X - Wellbore #1 - Wellbore #1 - As Drilled	16,100.0	7,438.6	3,226.4	3,038.7	17.185	SF
Cornelius 23-34 - Wellbore #1 - Wellbore #1 - As Drilled	14,794.1	7,459.9	1,320.9	1,150.6	7.757	CC
Cornelius 23-34 - Wellbore #1 - Wellbore #1 - As Drilled	14,800.0	7,460.3	1,320.9	1,150.5	7.752	ES
Cornelius 23-34 - Wellbore #1 - Wellbore #1 - As Drilled	14,900.0	7,466.7	1,325.1	1,153.4	7.717	SF
HSR - Aristocrat 12-34A - Wellbore #1 - Wellbore #1 - As	16,743.7	7,505.8	1,964.4	1,758.0	9.518	CC

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

Anticollision Summary Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Centennial State G34-612
Project:	Bronco	TVD Reference:	WELL @ 4846.0ft (Original Well Elev)
Reference Site:	G Section 35	MD Reference:	WELL @ 4846.0ft (Original Well Elev)
Site Error:	0.0 ft	North Reference:	Grid
Reference Well:	Centennial State G34-612	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.79 sigma
Reference Wellbore	Original Drilling	Database:	EDM Production
Reference Design:	APD - Rev 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
G Section 34						
Offset Well - Wellbore - Design						
HSR - Aristocrat 12-34A - Wellbore #1 - Wellbore #1 - As	16,800.0	7,509.0	1,965.2	1,757.8	9.478	ES
HSR - Aristocrat 12-34A - Wellbore #1 - Wellbore #1 - As	16,900.0	7,514.7	1,970.6	1,761.9	9.442	SF
HSR - Carney 15-34 - Wellbore #1 - Wellbore #1 - As Dri	14,061.7	7,345.8	755.9	601.6	4.900	CC, ES
HSR - Carney 15-34 - Wellbore #1 - Wellbore #1 - As Dri	14,100.0	7,346.9	756.8	602.1	4.892	SF
HSR - Gun Club 09-34 - Wellbore #1 - Wellbore #1 - As D	13,120.8	7,550.7	2,094.0	1,948.8	14.421	CC, ES
HSR - Gun Club 09-34 - Wellbore #1 - Wellbore #1 - As D	13,300.0	7,555.0	2,101.6	1,954.5	14.289	SF
HSR - Gun Club 16-34 - Wellbore #1 - Wellbore #1 - As D	13,081.4	7,514.0	751.5	617.4	5.602	CC
HSR - Gun Club 16-34 - Wellbore #1 - Wellbore #1 - As D	13,100.0	7,514.0	751.8	617.3	5.591	ES, SF
HSR - Houston 13-34A - Wellbore #1 - Wellbore #1 - As	16,835.9	7,498.7	817.7	609.5	3.929	CC, ES, SF
HSR - Kemper 10-34 - Wellbore #1 - Wellbore #1 - As Dr	13,857.1	7,337.1	1,540.2	1,392.3	10.415	CC
HSR - Kemper 10-34 - Wellbore #1 - Wellbore #1 - As Dr	13,900.0	7,340.0	1,540.8	1,392.2	10.370	ES
HSR - Kemper 10-34 - Wellbore #1 - Wellbore #1 - As Dr	14,000.0	7,346.8	1,546.8	1,396.9	10.324	SF
HSR - Merritt 11-34A - Wellbore #1 - Wellbore #1 - As Dr	15,667.7	7,428.9	2,153.0	1,967.7	11.616	CC
HSR - Merritt 11-34A - Wellbore #1 - Wellbore #1 - As Dr	15,700.0	7,430.6	2,153.3	1,967.3	11.581	ES
HSR - Merritt 11-34A - Wellbore #1 - Wellbore #1 - As Dr	15,900.0	7,441.3	2,165.5	1,976.8	11.477	SF
HSR - Owens 14-34 - Wellbore #1 - Wellbore #1 - As Dri	15,791.7	7,248.0	717.4	537.4	3.985	CC
HSR - Owens 14-34 - Wellbore #1 - Wellbore #1 - As Dri	15,800.0	7,248.0	717.4	537.3	3.983	ES, SF
Moser 34-3G - Wellbore #1 - Wellbore #1 - As Drilled	15,626.8	7,221.0	4,632.3	4,451.7	25.656	CC
Moser 34-3G - Wellbore #1 - Wellbore #1 - As Drilled	15,700.0	7,221.0	4,632.9	4,451.0	25.474	ES
Moser 34-3G - Wellbore #1 - Wellbore #1 - As Drilled	16,700.0	7,221.0	4,755.0	4,559.3	24.309	SF
Moser 34-4G - Wellbore #1 - Wellbore #1 - As Drilled	16,744.3	7,520.3	4,822.6	4,615.5	23.294	CC
Moser 34-4G - Wellbore #1 - Wellbore #1 - As Drilled	16,800.0	7,523.1	4,822.9	4,614.8	23.178	ES
Moser 34-4G - Wellbore #1 - Wellbore #1 - As Drilled	17,095.1	7,537.9	4,835.3	4,622.1	22.679	SF
Moser 34-5G - Wellbore #1 - Wellbore #1 - As Drilled	16,862.5	7,222.0	3,071.8	2,868.4	15.101	CC
Moser 34-5G - Wellbore #1 - Wellbore #1 - As Drilled	16,900.0	7,222.0	3,072.1	2,868.0	15.053	ES
Moser 34-5G - Wellbore #1 - Wellbore #1 - As Drilled	17,095.1	7,222.0	3,080.6	2,873.5	14.875	SF
Moser 34-6G - Wellbore #1 - Wellbore #1 - As Drilled	16,053.8	7,000.0	3,771.4	3,584.1	20.135	CC
Moser 34-6G - Wellbore #1 - Wellbore #1 - As Drilled	16,100.0	7,000.0	3,771.7	3,583.6	20.048	ES
Moser 34-6G - Wellbore #1 - Wellbore #1 - As Drilled	16,800.0	7,000.0	3,844.5	3,647.1	19.467	SF
Moser G34-30 - Wellbore #1 - Wellbore #1 - As Drilled	17,095.1	7,295.0	5,141.2	4,933.1	24.709	CC, ES, SF
Moser PC G34-65HN - Original Drilling - As Drilled	7,517.9	16,402.0	2,805.6	2,782.5	121.212	CC
Moser PC G34-65HN - Original Drilling - As Drilled	12,400.0	11,542.6	2,838.2	2,735.9	27.735	ES
Moser PC G34-65HN - Original Drilling - As Drilled	17,095.1	7,105.0	2,967.8	2,781.2	15.903	SF

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

Anticollision Summary Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Centennial State G34-612
Project:	Bronco	TVD Reference:	WELL @ 4846.0ft (Original Well Elev)
Reference Site:	G Section 35	MD Reference:	WELL @ 4846.0ft (Original Well Elev)
Site Error:	0.0 ft	North Reference:	Grid
Reference Well:	Centennial State G34-612	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.79 sigma
Reference Wellbore	Original Drilling	Database:	EDM Production
Reference Design:	APD - Rev 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
G Section 35						
Centennial State G34-618 - Original Drilling - APD - Rev	2,000.0	2,000.0	25.5	13.4	2.101	CC
Centennial State G34-618 - Original Drilling - APD - Rev	2,100.0	2,099.7	26.0	13.3	2.040	ES, SF
Centennial State G34-626 - Original Drilling - APD - Rev	2,200.0	2,200.0	47.3	34.0	3.537	CC, ES
Centennial State G34-626 - Original Drilling - APD - Rev	17,095.1	17,026.6	1,142.5	788.2	3.224	SF
Centennial State G34-635 - Original Drilling - APD - Rev	7,262.3	7,261.1	1,665.6	1,621.5	37.816	CC
Centennial State G34-635 - Original Drilling - APD - Rev	17,095.1	17,018.0	1,770.7	1,406.4	4.860	ES, SF
Centennial State G34-645 - Original Drilling - APD - Rev	2,200.0	2,180.0	2,029.2	2,015.9	152.278	CC
Centennial State G34-645 - Original Drilling - APD - Rev	17,095.1	17,033.7	2,376.7	2,002.8	6.356	ES, SF
Centennial State G34-660 - Original Drilling - APD - Rev	6,916.4	7,123.2	3,173.2	3,130.5	74.221	CC
Centennial State G34-660 - Original Drilling - APD - Rev	17,095.1	17,110.8	3,346.5	2,966.0	8.795	ES, SF
Centennial State G34-666 - Original Drilling - APD - Rev	2,222.1	2,203.7	3,384.1	3,370.7	251.777	CC
Centennial State G34-666 - Original Drilling - APD - Rev	2,300.0	2,293.3	3,384.5	3,370.6	243.318	ES
Centennial State G34-666 - Original Drilling - APD - Rev	17,095.1	16,939.2	3,820.6	3,442.4	10.103	SF
Centennial State G34-675 - Original Drilling - APD - Rev	1,900.0	1,868.0	3,406.1	3,394.7	298.600	CC
Centennial State G34-675 - Original Drilling - APD - Rev	2,000.0	1,940.6	3,406.4	3,394.4	285.175	ES
Centennial State G34-675 - Original Drilling - APD - Rev	13,200.0	12,287.6	4,224.6	4,007.0	19.408	SF
Centennial State G34-679 - Original Drilling - APD - Rev	4,901.1	5,130.1	4,391.8	4,360.7	141.256	CC
Centennial State G34-679 - Original Drilling - APD - Rev	17,095.1	16,981.4	4,573.9	4,194.4	12.051	ES, SF
Centennial State G34-684 - Original Drilling - APD - Rev	2,200.0	2,155.0	4,433.5	4,420.3	334.670	CC, ES
Centennial State G34-684 - Original Drilling - APD - Rev	17,095.1	16,840.1	4,972.9	4,594.0	13.126	SF
Centennial State G34-689 - Original Drilling - APD - Rev	2,004.2	1,960.2	4,455.4	4,443.4	370.572	CC
Centennial State G34-689 - Original Drilling - APD - Rev	2,100.0	2,024.3	4,455.6	4,443.1	355.782	ES
Centennial State G34-689 - Original Drilling - APD - Rev	17,095.1	16,844.7	5,256.9	4,877.9	13.870	SF
CPC Mark 35-01 - Wellbore #1 - Wellbore #1 - As Drilled	830.7	740.7	4,449.9	4,445.8	1,075.282	CC
CPC Mark 35-01 - Wellbore #1 - Wellbore #1 - As Drilled	8,900.0	7,120.0	4,457.0	4,398.9	76.725	ES
CPC Mark 35-01 - Wellbore #1 - Wellbore #1 - As Drilled	11,400.0	7,181.0	5,129.1	5,038.1	56.354	SF
CPC Mark 35-02 - Wellbore #1 - Wellbore #1 - As Drilled	2,215.1	2,171.1	2,982.2	2,970.0	243.790	CC, ES
CPC Mark 35-02 - Wellbore #1 - Wellbore #1 - As Drilled	9,700.0	7,146.7	3,853.5	3,789.6	60.350	SF
Mark 11-35 - Wellbore #1 - 150' Drift	10,376.7	7,054.9	1,984.8	1,896.7	22.530	CC
Mark 11-35 - Wellbore #1 - 150' Drift	10,400.0	7,056.1	1,985.0	1,896.5	22.430	ES
Mark 11-35 - Wellbore #1 - 150' Drift	10,800.0	7,076.5	2,029.3	1,935.3	21.592	SF
Mark 11-35 - Wellbore #1 - Wellbore #1 - As Drilled	10,442.4	7,164.8	1,820.2	1,735.5	21.493	CC
Mark 11-35 - Wellbore #1 - Wellbore #1 - As Drilled	10,500.0	7,167.2	1,821.1	1,735.4	21.265	ES
Mark 11-35 - Wellbore #1 - Wellbore #1 - As Drilled	10,800.0	7,179.8	1,854.9	1,765.3	20.711	SF
Mark 12-35 - Wellbore #1 - Wellbore #1 - As Drilled	11,344.3	7,187.2	1,976.5	1,875.4	19.548	CC
Mark 12-35 - Wellbore #1 - Wellbore #1 - As Drilled	11,400.0	7,189.6	1,977.3	1,875.2	19.376	ES
Mark 12-35 - Wellbore #1 - Wellbore #1 - As Drilled	11,700.0	7,202.4	2,008.2	1,902.2	18.944	SF
Mark 14-35 - Wellbore #1 - Wellbore #1 - As Drilled	10,325.6	7,145.6	738.8	656.2	8.940	CC, ES
Mark 14-35 - Wellbore #1 - Wellbore #1 - As Drilled	10,400.0	7,149.4	742.5	659.0	8.891	SF
Mark 35-11 - Original Drilling - Original Drilling - As Drilled	2,352.2	2,420.6	4,417.7	4,404.7	339.306	CC, ES
Mark 35-11 - Original Drilling - Original Drilling - As Drilled	11,200.0	7,222.4	5,954.8	5,872.5	72.436	SF
Mark 35-13 - Wellbore #1 - Wellbore #1 - As Drilled	8,916.5	7,079.2	3,412.2	3,353.6	58.197	CC
Mark 35-13 - Wellbore #1 - Wellbore #1 - As Drilled	9,000.0	7,082.0	3,413.2	3,353.3	56.928	ES
Mark 35-13 - Wellbore #1 - Wellbore #1 - As Drilled	10,600.0	7,135.4	3,804.4	3,723.6	47.084	SF
Mark 35-15 - Wellbore #1 - Wellbore #1 - As Drilled	2,254.6	2,225.9	4,037.6	4,025.5	331.898	CC, ES
Mark 35-15 - Wellbore #1 - Wellbore #1 - As Drilled	11,000.0	7,185.4	4,989.9	4,906.8	60.033	SF
Mark E Unit 1 - Wellbore #1 - Wellbore #1 - As Drilled	11,173.2	7,177.4	943.4	843.6	9.455	CC
Mark E Unit 1 - Wellbore #1 - Wellbore #1 - As Drilled	11,200.0	7,178.2	943.8	843.6	9.419	ES
Mark E Unit 1 - Wellbore #1 - Wellbore #1 - As Drilled	11,300.0	7,181.1	951.9	850.6	9.405	SF
Ocoma G35-03 - Wellbore #1 - Wellbore #1 - As Drilled	10,447.5	7,112.0	4,722.2	4,637.5	55.777	CC
Ocoma G35-03 - Wellbore #1 - Wellbore #1 - As Drilled	10,500.0	7,112.0	4,722.5	4,636.9	55.181	ES
Ocoma G35-03 - Wellbore #1 - Wellbore #1 - As Drilled	12,600.0	7,112.0	5,189.5	5,075.2	45.400	SF
Ocoma G35-04 - Wellbore #1 - Wellbore #1 - As Drilled	11,677.6	7,220.9	4,389.9	4,282.7	40.939	CC

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

Anticollision Summary Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Centennial State G34-612
Project:	Bronco	TVD Reference:	WELL @ 4846.0ft (Original Well Elev)
Reference Site:	G Section 35	MD Reference:	WELL @ 4846.0ft (Original Well Elev)
Site Error:	0.0 ft	North Reference:	Grid
Reference Well:	Centennial State G34-612	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.79 sigma
Reference Wellbore	Original Drilling	Database:	EDM Production
Reference Design:	APD - Rev 1	Offset TVD Reference:	Offset Datum

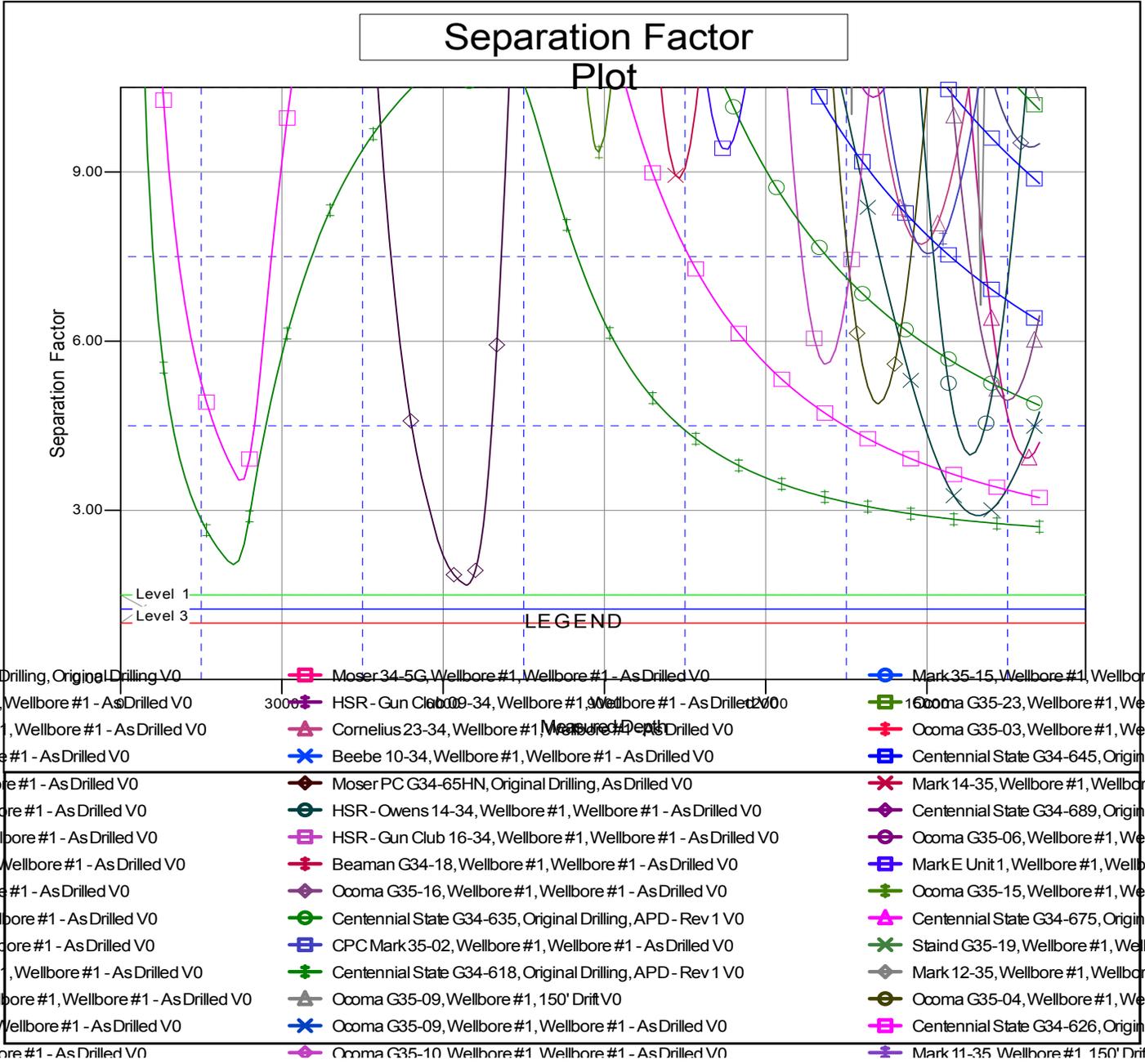
Summary						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
G Section 35						
Ocoma G35-04 - Wellbore #1 - Wellbore #1 - As Drilled	11,800.0	7,226.0	4,391.6	4,282.2	40.141	ES
Ocoma G35-04 - Wellbore #1 - Wellbore #1 - As Drilled	13,300.0	7,211.0	4,680.2	4,550.8	36.156	SF
Ocoma G35-05 - Wellbore #1 - Wellbore #1 - As Drilled	11,694.7	7,208.9	3,378.8	3,271.3	31.414	CC
Ocoma G35-05 - Wellbore #1 - Wellbore #1 - As Drilled	11,800.0	7,212.6	3,380.5	3,271.1	30.900	ES
Ocoma G35-05 - Wellbore #1 - Wellbore #1 - As Drilled	12,700.0	7,244.5	3,525.0	3,403.6	29.045	SF
Ocoma G35-06 - Wellbore #1 - Wellbore #1 - As Drilled	10,415.8	7,124.6	3,305.9	3,221.9	39.312	CC
Ocoma G35-06 - Wellbore #1 - Wellbore #1 - As Drilled	10,500.0	7,128.4	3,307.0	3,221.5	38.657	ES
Ocoma G35-06 - Wellbore #1 - Wellbore #1 - As Drilled	11,600.0	7,177.0	3,511.2	3,410.9	34.984	SF
Ocoma G35-09 - Wellbore #1 - 150' Drift	100.0	61.4	1,646.6	1,646.4	7,988.332	CC
Ocoma G35-09 - Wellbore #1 - 150' Drift	1,100.0	1,051.7	1,649.9	1,643.5	258.362	ES
Ocoma G35-09 - Wellbore #1 - 150' Drift	8,400.0	7,010.0	2,288.1	2,235.1	43.169	SF
Ocoma G35-09 - Wellbore #1 - Wellbore #1 - As Drilled	2,324.1	2,331.5	1,592.7	1,579.8	123.374	CC, ES
Ocoma G35-09 - Wellbore #1 - Wellbore #1 - As Drilled	8,600.0	7,111.5	2,121.8	2,070.5	41.361	SF
Ocoma G35-10 - Wellbore #1 - Wellbore #1 - As Drilled	286.9	227.9	2,484.2	2,483.1	2,147.674	CC
Ocoma G35-10 - Wellbore #1 - Wellbore #1 - As Drilled	300.0	237.6	2,484.2	2,483.0	2,029.568	ES
Ocoma G35-10 - Wellbore #1 - Wellbore #1 - As Drilled	9,800.0	7,182.5	2,854.9	2,784.5	40.588	SF
Ocoma G35-15 - Wellbore #1 - Wellbore #1 - As Drilled	8,840.2	7,100.3	539.5	482.2	9.411	CC, ES
Ocoma G35-15 - Wellbore #1 - Wellbore #1 - As Drilled	8,900.0	7,101.2	542.8	484.8	9.353	SF
Ocoma G35-16 - Wellbore #1 - Wellbore #1 - As Drilled	2,346.5	2,328.0	347.8	335.1	27.311	CC, ES
Ocoma G35-16 - Wellbore #1 - Wellbore #1 - As Drilled	7,400.0	7,052.5	574.1	534.5	14.488	SF
Ocoma G35-23 - Wellbore #1 - Wellbore #1 - As Drilled	8,248.2	7,083.1	1,378.9	1,330.7	28.589	CC, ES
Ocoma G35-23 - Wellbore #1 - Wellbore #1 - As Drilled	8,600.0	7,093.8	1,423.1	1,370.8	27.209	SF
Staind G35-19 - Wellbore #1 - Wellbore #1 - As Drilled	10,976.8	7,246.2	3,946.6	3,850.8	41.193	CC
Staind G35-19 - Wellbore #1 - Wellbore #1 - As Drilled	11,000.0	7,247.3	3,946.6	3,850.4	41.016	ES
Staind G35-19 - Wellbore #1 - Wellbore #1 - As Drilled	12,400.0	7,316.0	4,194.7	4,078.8	36.205	SF
G Section 36						
Mark State PC G36-79HN - Original Drilling - Original Dri	6,941.3	11,313.0	537.5	516.5	25.624	CC, ES
Mark State PC G36-79HN - Original Drilling - Original Dri	7,000.0	11,313.0	541.3	520.0	25.495	SF
Pedro State H01-30D - Wellbore #1 - Wellbore #1 - As D	6,430.6	6,485.7	61.3	24.7	1.675	CC, ES
Pedro State H01-30D - Wellbore #1 - Wellbore #1 - As D	6,450.0	6,505.0	61.5	24.8	1.674	SF
H Section 03						
Aristocrat Angus 02-00-03 - Original Drilling - Design #1	16,451.6	7,319.0	987.8	788.8	4.962	CC, ES
Aristocrat Angus 02-00-03 - Original Drilling - Design #1	16,500.0	7,319.0	989.0	789.1	4.948	SF
Aristocrat Angus 04-02-03 - Original Drilling - Original Dri	14,941.0	7,452.7	1,330.6	1,155.1	7.583	CC, ES
Aristocrat Angus 04-02-03 - Original Drilling - Original Dri	15,000.0	7,454.6	1,331.9	1,155.5	7.554	SF

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

Anticollision Summary Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Centennial State G34-612
Project:	Bronco	TVD Reference:	WELL @ 4846.0ft (Original Well Elev)
Reference Site:	G Section 35	MD Reference:	WELL @ 4846.0ft (Original Well Elev)
Site Error:	0.0 ft	North Reference:	Grid
Reference Well:	Centennial State G34-612	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.79 sigma
Reference Wellbore	Original Drilling	Database:	EDM Production
Reference Design:	APD - Rev 1	Offset TVD Reference:	Offset Datum

Reference Depths are relative to WELL @ 4846.0ft (Original Well Elev) Coordinates are relative to: Centennial State G34-612
 Offset Depths are relative to Offset Datum Coordinate System is US State Plane 1983, Colorado Northern Zone
 Central Meridian is -105.5000000 Grid Convergence at Surface is: 0.57°



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