

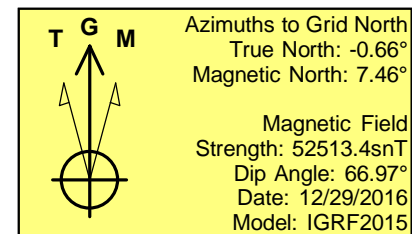
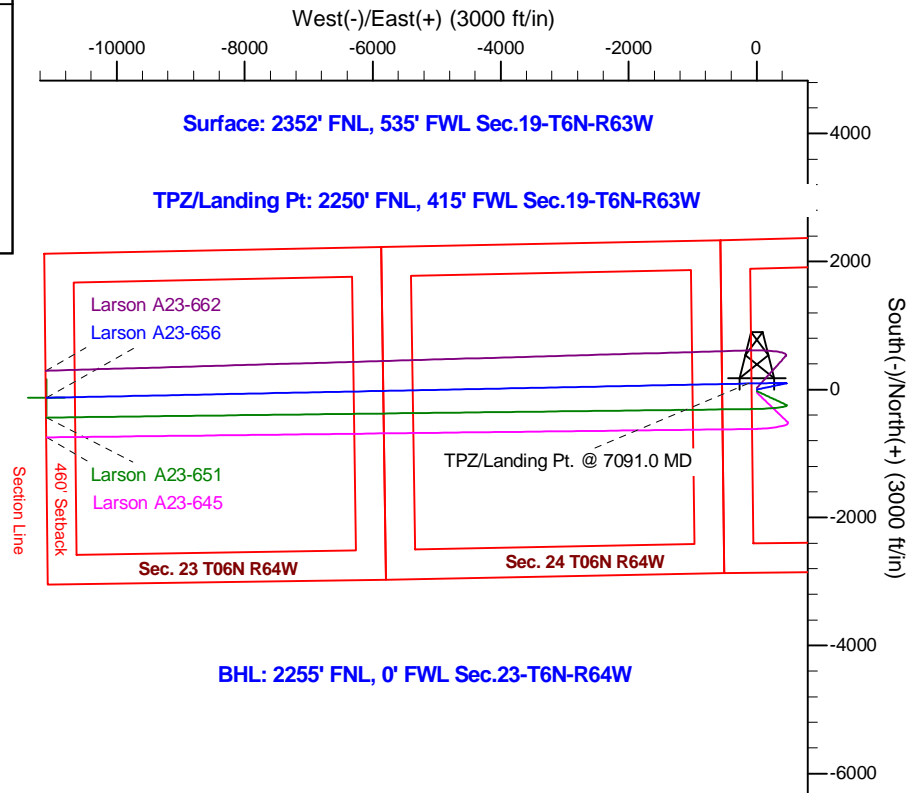
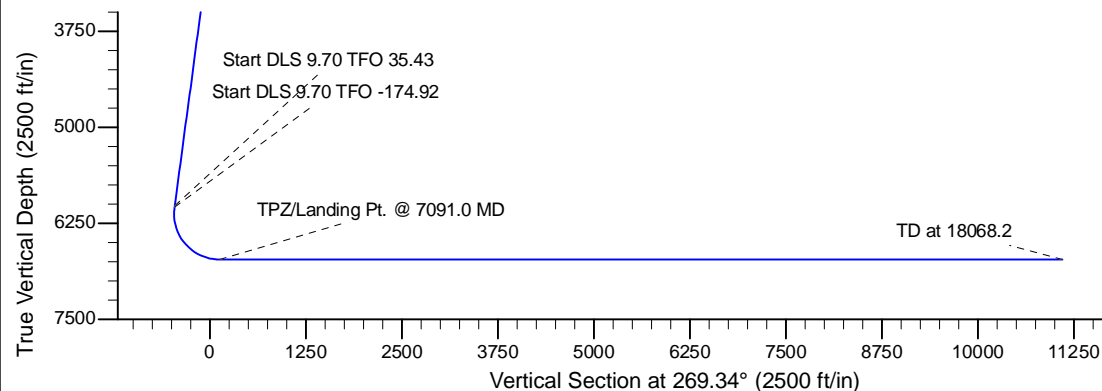
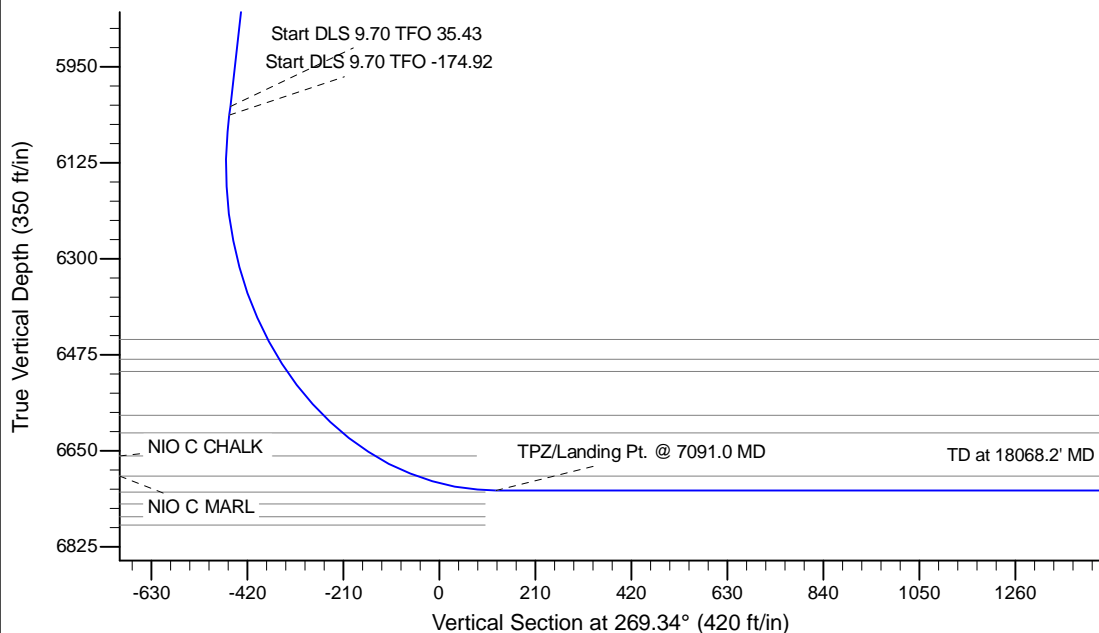
Project: Wells Ranch  
 Site: AA Section 19-T6N-R63W Weld County, CO  
 Well: Larson A23-656  
 Wellbore: Original Drilling  
 Design: APD - Rev 0

# 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	2400.0	0.00	0.00	2400.0	0.0	0.0	0.00	0.00	0.0	
3	2787.5	7.75	78.00	2786.3	5.4	25.6	2.00	78.00	-25.7	
4	6053.0	7.75	78.00	6022.0	97.0	456.3	0.00	0.00	-457.4	
5	6069.3	9.09	83.82	6038.1	97.4	458.7	9.70	35.43	-459.8	
6	7091.0	90.00	268.83	6722.0	95.0	-125.0	9.70	-174.92	123.9	
7	18068.2	90.00	268.84	6722.0	-128.0	-11099.9	0.00	90.00	11100.7	Larson A23-656 BHL 2255'FNL, 0'FWL



WELL DETAILS: Larson A23-656					
		Ground Elevation: 4649.0			
	Northing	Easting	Latitude	Longitude	
0.0	0.0	1416622.39	3281861.63	40.4726100	-104.4868600
Plan: APD - Rev 0 (Larson A23-656/Original Drilling)					
Created By: Shailey Jewell			Date: 9:42, January 06 2017		
OK to submit with 2A as per Noble Drilling					
1/6/2017 9:46					

# **Northern Region - DJ Basin**

**Wells Ranch**

**AA Section 19**

**Larson A23-656**

**Original Drilling**

**APD - Rev 0**

## **Anticollision Summary Report**

**06 January, 2017**

# Anticollision Summary Report

<b>Company:</b>	Northern Region - DJ Basin	<b>Local Co-ordinate Reference:</b>	Well Larson A23-656
<b>Project:</b>	Wells Ranch	<b>TVD Reference:</b>	WELL @ 4679.0ft (Original Well Elev.)
<b>Reference Site:</b>	AA Section 19	<b>MD Reference:</b>	WELL @ 4679.0ft (Original Well Elev.)
<b>Site Error:</b>	0.0 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Larson A23-656	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 ft	<b>Output errors are at</b>	2.79 sigma
<b>Reference Wellbore</b>	Original Drilling	<b>Database:</b>	EDM Produccction
<b>Reference Design:</b>	APD - Rev 0	<b>Offset TVD Reference:</b>	Offset Datum

<b>Reference</b>	APD - Rev 0		
<b>Filter type:</b>	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
<b>Interpolation Method:</b>	Stations	<b>Error Model:</b>	ISCWSA
<b>Depth Range:</b>	Unlimited	<b>Scan Method:</b>	Closest Approach 3D
<b>Results Limited by:</b>	Maximum center-center distance of 10,000.0 ft	<b>Error Surface:</b>	Pedal Curve
<b>Warning Levels Evaluated at:</b>	2.79 Sigma	<b>Casing Method:</b>	Not applied

<b>Survey Tool Program</b>	<b>Date</b>	1/6/2017		
<b>From (ft)</b>	<b>To (ft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>
0.0	18,068.2	APD - Rev 0 (Original Drilling)	MWD+IFR1+MS_WY	Fixed:v2:Rockies, crustal dec + 3-axis correction

<b>Summary</b>						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
<b>Offset Well - Wellbore - Design</b>						
A Section 22						
Carpio 22-01 - Original Drilling - Original Drilling - As Dril	18,069.1	6,720.1	2,311.3	2,086.8	10.297	CC, ES, SF
Carpio 22-04-19 - Original Drilling - Original Drilling - As D	18,069.1	6,821.4	2,714.3	2,557.8	17.345	CC, ES, SF
Carpio 22-41 - Original Drilling - Original Drilling - As Dril	18,069.1	6,734.1	1,294.1	1,043.1	5.157	CC, ES, SF
Carpio 22-43 - Original Drilling - Original Drilling - As Dril	18,069.1	6,822.6	3,000.0	2,820.0	16.659	CC, ES, SF
Carpio 22-45 - Original Drilling - Original Drilling - As Dril	18,069.1	6,802.5	2,065.8	1,860.3	10.051	CC, ES, SF
Eisenstat 22-11 (PA) - Original Drilling - Original Drilling -	18,069.1	6,767.0	1,908.5	1,514.8	4.848	CC, ES, SF
Eisenstat 22-13 - Original Drilling - Original Drilling - As D	18,069.1	6,770.3	2,115.4	2,061.9	39.560	CC, ES, SF
Eisenstat 22-15 - Original Drilling - Original Drilling - As D	18,069.1	6,774.8	1,723.3	1,562.0	10.680	CC, ES, SF
Eisenstat 22-21 - Original Drilling - Original Drilling - As D	18,069.1	6,795.6	3,406.1	3,294.6	30.549	CC, ES, SF
Eisenstat 22-23 - Original Drilling - Original Drilling - As D	18,069.1	6,817.3	4,535.4	4,478.0	79.027	CC, ES, SF
Gill Land Assoc. 1 (PA) - Original Drilling - Original Drillin	18,069.1	6,768.0	712.4	432.9	2.549	CC, ES, SF
Gill Land Assoc. 22-02 (PA) - Original Drilling - Original D	18,069.1	6,778.0	3,341.2	3,113.1	14.646	CC, ES, SF
Gill Land Assoc. 22-03 - Original Drilling - Original Drilling	18,069.1	6,781.9	4,867.0	4,774.1	52.380	CC, ES, SF
Gill Land Assoc. 22-04 (PA) - Original Drilling - Original D	18,069.1	6,776.0	2,568.5	2,244.1	7.916	CC, ES, SF
Gruen 22-01 - Original Drilling - Original Drilling - As Drill	18,069.1	6,761.2	4,792.2	4,717.1	63.824	CC, ES, SF
Gruen 22-02 - Original Drilling - Original Drilling - As Drill	18,069.1	6,639.8	4,092.3	3,949.9	28.726	CC, ES, SF
Gruen 22-31 - Original Drilling - Original Drilling - As Drill	18,069.1	6,769.5	3,506.0	3,418.0	39.847	CC, ES, SF
Gruen 22-33 - Original Drilling - Original Drilling - As Drill	18,069.1	6,802.1	5,175.6	5,057.9	43.975	CC, ES, SF
Gruen 22-35 - Original Drilling - Original Drilling - As Drill	18,069.1	6,748.8	4,397.6	4,288.4	40.297	CC, ES, SF
Ottinger 22-01 - Original Drilling - Original Drilling - As Dr	18,069.1	6,771.1	2,199.0	2,087.1	19.660	CC, ES, SF

# Anticollision Summary Report

<b>Company:</b>	Northern Region - DJ Basin	<b>Local Co-ordinate Reference:</b>	Well Larson A23-656
<b>Project:</b>	Wells Ranch	<b>TVD Reference:</b>	WELL @ 4679.0ft (Original Well Elev.)
<b>Reference Site:</b>	AA Section 19	<b>MD Reference:</b>	WELL @ 4679.0ft (Original Well Elev.)
<b>Site Error:</b>	0.0 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Larson A23-656	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 ft	<b>Output errors are at</b>	2.79 sigma
<b>Reference Wellbore</b>	Original Drilling	<b>Database:</b>	EDM Produccction
<b>Reference Design:</b>	APD - Rev 0	<b>Offset TVD Reference:</b>	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						
A Section 23						
Cecil 23-13 - Original Drilling - Original Drilling - As Drille	15,051.4	6,705.2	508.5	332.1	2.883	CC, ES, SF
Champlin 23-02 (PA) - Original Drilling - Original Drilling -	17,468.4	6,727.0	914.5	520.9	2.323	CC, ES
Champlin 23-02 (PA) - Original Drilling - Original Drilling -	17,500.0	6,727.0	915.1	521.0	2.322	SF
Champlin 23-03 - Original Drilling - Original Drilling - As D	16,348.3	6,691.5	2,198.4	1,997.5	10.943	CC
Champlin 23-03 - Original Drilling - Original Drilling - As D	16,400.0	6,690.9	2,199.0	1,997.2	10.897	ES
Champlin 23-03 - Original Drilling - Original Drilling - As D	16,600.0	6,688.4	2,212.8	2,008.4	10.828	SF
Champlin Amoco A 1 #308 - Original Drilling - Original Dr	16,512.5	6,702.0	2,253.1	1,878.3	6.011	CC, ES
Champlin Amoco A 1 #308 - Original Drilling - Original Dr	16,700.0	6,702.0	2,260.9	1,883.2	5.986	SF
Cooper 23-1-17 - Original Drilling - Original Drilling - As Dr	14,117.5	6,705.7	1,947.5	1,788.8	12.266	CC, ES
Cooper 23-1-17 - Original Drilling - Original Drilling - As Dr	14,400.0	6,707.2	1,967.9	1,805.2	12.093	SF
Cooper 23-1-19 - Original Drilling - Original Drilling - As D	15,256.1	6,682.4	1,122.5	942.3	6.228	CC, ES
Cooper 23-1-19 - Original Drilling - Original Drilling - As D	15,300.0	6,681.9	1,123.4	942.4	6.207	SF
Cooper 23-12 - Original Drilling - Original Drilling - As Dri	14,720.6	6,714.3	1,593.2	1,422.9	9.355	CC, ES
Cooper 23-12 - Original Drilling - Original Drilling - As Dri	14,900.0	6,713.1	1,603.2	1,430.4	9.276	SF
Cooper 23-1-20 - Original Drilling - Original Drilling - As D	15,255.1	6,680.1	226.4	45.9	1.255	Level 3, CC, ES, SF
Cooper 23-15 - Original Drilling - Original Drilling - As Dri	14,071.9	6,662.2	1,042.2	883.8	6.579	CC
Cooper 23-15 - Original Drilling - Original Drilling - As Dri	14,100.0	6,662.1	1,042.6	883.7	6.561	ES, SF
Foss 41-23D - Original Drilling - Original Drilling - As Drill	13,421.5	6,954.5	1,605.7	1,457.4	10.832	CC, ES
Foss 41-23D - Original Drilling - Original Drilling - As Drill	13,600.0	6,952.3	1,615.6	1,464.7	10.710	SF
Foss 42-23 - Original Drilling - Original Drilling - As Drille	13,642.7	6,701.1	162.6	12.8	1.085	Level 2, CC, ES, SF
J&L Farms 23-11 - Original Drilling - Original Drilling - As	17,526.3	6,723.3	1,655.0	1,431.7	7.411	CC, ES
J&L Farms 23-11 - Original Drilling - Original Drilling - As	17,700.0	6,724.0	1,664.1	1,438.6	7.378	SF
J&L Farms 23-12 - Original Drilling - Original Drilling - As	17,646.4	6,734.0	169.4	-56.5	0.750	Level 1, CC, ES, SF
J&L Farms 23-21 - Original Drilling - Original Drilling - As	15,907.3	6,693.1	1,862.4	1,669.8	9.671	CC, ES
J&L Farms 23-21 - Original Drilling - Original Drilling - As	16,100.0	6,690.4	1,872.3	1,677.0	9.584	SF
J&L Farms 23-22 - Original Drilling - Original Drilling - As	16,159.3	6,705.3	381.7	184.0	1.931	CC, ES, SF
McIntosh 33-23 - Original Drilling - Original Drilling - As D	14,766.4	6,625.6	1,160.7	990.1	6.806	CC
McIntosh 33-23 - Original Drilling - Original Drilling - As D	14,800.0	6,626.8	1,161.2	990.0	6.786	ES, SF
McIntosh 34-23 - Original Drilling - Original Drilling - As D	14,647.1	6,657.4	2,278.2	2,109.6	13.510	CC
McIntosh 34-23 - Original Drilling - Original Drilling - As D	14,700.0	6,657.8	2,278.8	2,109.2	13.438	ES
McIntosh 34-23 - Original Drilling - Original Drilling - As D	14,900.0	6,659.4	2,292.2	2,119.8	13.296	SF
McIntosh 43-23 - Original Drilling - Original Drilling - As D	13,279.4	6,726.9	891.3	748.3	6.231	CC
McIntosh 43-23 - Original Drilling - Original Drilling - As D	13,300.0	6,727.1	891.5	748.2	6.218	ES, SF
McIntosh 44-23 - Original Drilling - Original Drilling - As D	13,226.4	6,624.9	2,468.2	2,326.4	17.408	CC
McIntosh 44-23 - Original Drilling - Original Drilling - As D	13,300.0	6,626.3	2,469.3	2,326.2	17.256	ES
McIntosh 44-23 - Original Drilling - Original Drilling - As D	13,600.0	6,631.4	2,496.3	2,349.0	16.951	SF
Schroeder 23-31 - Original Drilling - Original Drilling - As	15,925.7	6,686.3	1,214.1	1,021.3	6.295	CC, ES
Schroeder 23-31 - Original Drilling - Original Drilling - As	16,000.0	6,685.9	1,216.4	1,022.5	6.273	SF
Schroeder 23-33 - Original Drilling - Original Drilling - As	17,596.2	6,709.2	2,505.4	2,280.6	11.147	CC
Schroeder 23-33 - Original Drilling - Original Drilling - As	17,600.0	6,709.2	2,505.4	2,280.5	11.143	ES
Schroeder 23-33 - Original Drilling - Original Drilling - As	17,900.0	6,707.2	2,523.7	2,294.8	11.025	SF

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

# Anticollision Summary Report

<b>Company:</b>	Northern Region - DJ Basin	<b>Local Co-ordinate Reference:</b>	Well Larson A23-656
<b>Project:</b>	Wells Ranch	<b>TVD Reference:</b>	WELL @ 4679.0ft (Original Well Elev.)
<b>Reference Site:</b>	AA Section 19	<b>MD Reference:</b>	WELL @ 4679.0ft (Original Well Elev.)
<b>Site Error:</b>	0.0 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Larson A23-656	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 ft	<b>Output errors are at</b>	2.79 sigma
<b>Reference Wellbore</b>	Original Drilling	<b>Database:</b>	EDM Production
<b>Reference Design:</b>	APD - Rev 0	<b>Offset TVD Reference:</b>	Offset Datum

## Summary

Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
AA Section 19						
J&L Farms 31-19 - Original Drilling - Original Drilling - As	6,173.8	6,139.0	2,631.7	2,597.4	76.838	CC, ES
J&L Farms 31-19 - Original Drilling - Original Drilling - As	6,700.0	6,594.6	2,804.5	2,766.2	73.259	SF
J&L Farms 32-19 - Original Drilling - Original Drilling - As	6,179.1	6,175.5	1,859.8	1,825.8	54.751	CC, ES
J&L Farms 32-19 - Original Drilling - Original Drilling - As	6,300.0	6,297.8	1,872.1	1,837.5	54.217	SF
J&L Farms 41-19 - Original Drilling - Original Drilling - As	6,165.1	6,103.6	3,778.1	3,744.1	111.089	CC, ES
J&L Farms 41-19 - Original Drilling - Original Drilling - As	6,400.0	6,315.5	3,819.4	3,784.4	109.089	SF
J&L Farms 42-19 - Original Drilling - Original Drilling - As	6,155.9	6,062.3	3,673.4	3,639.7	108.942	CC, ES
J&L Farms 42-19 - Original Drilling - Original Drilling - As	6,400.0	6,279.1	3,724.0	3,689.2	107.103	SF
Larson A23-645 - Original Drilling - APD - Rev 0	2,000.0	2,000.0	47.4	35.3	3.910	CC, ES
Larson A23-645 - Original Drilling - APD - Rev 0	18,069.1	18,108.8	619.3	184.7	1.425	Level 3, SF
Larson A23-651 - Original Drilling - APD - Rev 0	2,200.0	2,200.0	25.7	12.3	1.916	CC
Larson A23-651 - Original Drilling - APD - Rev 0	18,069.1	18,049.7	310.7	-122.6	0.717	Level 1, ES, SF
Larson A23-662 - Original Drilling - APD - Rev 0	2,000.0	2,000.0	21.9	9.7	1.801	CC
Larson A23-662 - Original Drilling - APD - Rev 0	18,068.2	18,064.8	424.5	-9.5	0.978	Level 1, ES, SF
Larson A23-668 - Original Drilling - APD - Rev 0	7,761.3	7,171.5	787.6	735.8	15.189	CC
Larson A23-668 - Original Drilling - APD - Rev 0	18,068.2	17,466.4	794.2	375.7	1.898	ES, SF
Larson A23-672 - Original Drilling - APD - Rev 0	9,305.8	8,704.7	1,099.8	1,005.3	11.642	CC
Larson A23-672 - Original Drilling - APD - Rev 0	18,069.1	17,459.1	1,116.9	708.4	2.734	ES, SF
Larson A23-678 - Original Drilling - APD - Rev 0	7,950.5	7,075.7	1,450.4	1,397.0	27.164	CC
Larson A23-678 - Original Drilling - APD - Rev 0	18,069.1	17,179.6	1,457.3	1,038.9	3.483	ES, SF
Larson A23-683 - Original Drilling - APD - Rev 0	7,728.4	6,997.1	1,760.0	1,709.4	34.832	CC
Larson A23-683 - Original Drilling - APD - Rev 0	18,069.1	17,320.2	1,768.7	1,350.3	4.227	ES, SF
Larson USX AA19-03 - Original Drilling - Original Drilling	6,203.1	6,202.6	1,779.6	1,745.0	51.405	CC, ES
Larson USX AA19-03 - Original Drilling - Original Drilling	6,400.0	6,399.6	1,798.2	1,762.8	50.715	SF
Larson USX AA19-04 - Original Drilling - Original Drilling	6,687.9	6,615.0	1,471.3	1,434.7	40.180	CC, ES
Larson USX AA19-04 - Original Drilling - Original Drilling	6,900.0	6,721.4	1,486.5	1,449.0	39.603	SF
Larson USX AA19-05 - Original Drilling - Original Drilling	6,882.2	6,666.6	184.3	147.0	4.944	CC, ES, SF
Larson USX AA19-06 - Original Drilling - Original Drilling	6,189.2	6,163.0	879.6	845.5	25.733	CC, ES
Larson USX AA19-06 - Original Drilling - Original Drilling	6,250.0	6,225.5	882.4	847.9	25.604	SF
Thrall USX AA19-11 - Original Drilling - Original Drilling -	6,163.9	6,122.9	1,548.7	1,514.5	45.321	CC, ES
Thrall USX AA19-11 - Original Drilling - Original Drilling -	6,350.0	6,309.6	1,567.3	1,532.3	44.776	SF
Thrall USX AA19-12 - Original Drilling - Original Drilling -	469.6	437.6	782.5	780.3	353.656	CC
Thrall USX AA19-12 - Original Drilling - Original Drilling -	2,500.0	2,470.5	787.3	773.8	58.198	ES
Thrall USX AA19-12 - Original Drilling - Original Drilling -	7,200.0	6,686.9	883.3	844.3	22.622	SF
Thrall USX AA19-13 - Original Drilling - Original Drilling -	100.0	61.6	2,208.6	2,208.5	10,000.000	CC
Thrall USX AA19-13 - Original Drilling - Original Drilling -	2,500.0	2,465.7	2,211.0	2,197.4	163.148	ES
Thrall USX AA19-13 - Original Drilling - Original Drilling -	8,100.0	6,695.5	2,640.3	2,593.6	56.556	SF
Thrall USX AA19-14 - Original Drilling - Original Drilling -	6,120.6	6,042.2	2,622.8	2,588.6	76.700	CC, ES
Thrall USX AA19-14 - Original Drilling - Original Drilling -	6,450.0	6,325.5	2,649.0	2,613.5	74.535	SF
Thrall USX AA19-25 - Original Drilling - Original Drilling -	4,356.4	4,310.5	1,351.1	1,327.1	56.469	CC
Thrall USX AA19-25 - Original Drilling - Original Drilling -	4,800.0	4,751.6	1,352.6	1,326.1	51.024	ES
Thrall USX AA19-25 - Original Drilling - Original Drilling -	6,650.0	6,524.6	1,399.0	1,362.7	38.549	SF
Wells Ranch USX AA19-09 - Original Drilling - Original D	6,158.4	6,093.8	3,613.5	3,579.7	106.846	CC, ES
Wells Ranch USX AA19-09 - Original Drilling - Original D	6,400.0	6,340.8	3,660.2	3,625.3	104.841	SF
Wells Ranch USX AA19-10 - Original Drilling - Original D	6,160.9	6,114.6	2,379.5	2,345.6	70.175	CC, ES
Wells Ranch USX AA19-10 - Original Drilling - Original D	6,350.0	6,301.5	2,407.0	2,372.3	69.255	SF
Wells Ranch USX AA19-15 - Original Drilling - Original D	6,166.1	6,246.8	3,057.9	3,022.4	86.182	CC, ES
Wells Ranch USX AA19-15 - Original Drilling - Original D	6,800.0	6,676.4	3,265.9	3,223.1	76.427	SF
Wells Ranch USX AA19-16 - Original Drilling - Original D	6,138.8	5,977.0	4,277.4	4,243.8	127.177	CC, ES
Wells Ranch USX AA19-16 - Original Drilling - Original D	6,450.0	6,252.5	4,344.1	4,309.2	124.376	SF
Wells Ranch USX AA19-23 - Original Drilling - Original D	6,179.1	6,229.5	3,336.6	3,302.3	97.127	CC, ES
Wells Ranch USX AA19-23 - Original Drilling - Original D	6,400.0	6,377.3	3,373.5	3,338.3	95.976	SF

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

# Anticollision Summary Report

<b>Company:</b>	Northern Region - DJ Basin	<b>Local Co-ordinate Reference:</b>	Well Larson A23-656
<b>Project:</b>	Wells Ranch	<b>TVD Reference:</b>	WELL @ 4679.0ft (Original Well Elev.)
<b>Reference Site:</b>	AA Section 19	<b>MD Reference:</b>	WELL @ 4679.0ft (Original Well Elev.)
<b>Site Error:</b>	0.0 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Larson A23-656	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 ft	<b>Output errors are at</b>	2.79 sigma
<b>Reference Wellbore</b>	Original Drilling	<b>Database:</b>	EDM Produccion
<b>Reference Design:</b>	APD - Rev 0	<b>Offset TVD Reference:</b>	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						
AA Section 20						
Cook 20D - Original Drilling - Original Drilling - As Drilled	6,156.8	6,056.8	8,269.5	8,235.8	245.245	CC, ES
Cook 20D - Original Drilling - Original Drilling - As Drilled	6,600.0	6,449.2	8,425.0	8,389.6	237.757	SF
Cook 33-20 - Original Drilling - Original Drilling - As Drilled	6,159.5	6,091.1	7,421.9	7,388.2	219.922	CC, ES
Cook 33-20 - Original Drilling - Original Drilling - As Drilled	6,550.0	6,437.5	7,544.9	7,509.6	213.890	SF
Cook 34-20 - Original Drilling - Original Drilling - As Drilled	6,162.8	6,158.6	7,654.3	7,619.8	222.317	CC, ES
Cook 34-20 - Original Drilling - Original Drilling - As Drilled	6,600.0	6,516.2	7,803.7	7,767.7	216.856	SF
Cook 43-20 - Original Drilling - Original Drilling - As Drilled	6,158.9	6,078.4	8,982.4	8,948.7	266.228	CC, ES
Cook 43-20 - Original Drilling - Original Drilling - As Drilled	6,550.0	6,415.3	9,106.3	9,071.0	258.418	SF
Cook 44-20 - Original Drilling - Original Drilling - As Drilled	6,145.6	5,882.6	9,185.4	9,152.2	276.243	CC
Cook 44-20 - Original Drilling - Original Drilling - As Drilled	6,150.0	5,886.1	9,185.4	9,152.2	276.078	ES
Cook 44-20 - Original Drilling - Original Drilling - As Drilled	6,600.0	6,455.2	9,341.2	9,305.8	264.028	SF
J&L Farms 01-20 - Original Drilling - Original Drilling - As Drilled	6,164.2	6,127.9	8,942.4	8,905.8	244.075	CC, ES
J&L Farms 01-20 - Original Drilling - Original Drilling - As Drilled	6,550.0	6,338.0	9,064.6	9,026.6	238.840	SF
J&L Farms 02-20 - Original Drilling - Original Drilling - As Drilled	6,164.3	6,121.5	7,673.4	7,639.1	223.378	CC, ES
J&L Farms 02-20 - Original Drilling - Original Drilling - As Drilled	6,600.0	6,500.3	7,824.0	7,788.0	217.131	SF
J&L Farms 08-20 - Original Drilling - Original Drilling - As Drilled	6,163.0	6,124.4	8,812.5	8,622.6	46.402	CC, ES
J&L Farms 08-20 - Original Drilling - Original Drilling - As Drilled	6,700.0	6,590.3	9,040.1	8,836.3	44.372	SF
J&L Farms 11-20 - Original Drilling - Original Drilling - As Drilled	6,144.5	5,926.9	4,980.4	4,946.9	148.486	CC
J&L Farms 11-20 - Original Drilling - Original Drilling - As Drilled	6,150.0	5,934.3	4,980.5	4,946.9	148.343	ES
J&L Farms 11-20 - Original Drilling - Original Drilling - As Drilled	6,500.0	6,516.9	5,066.0	5,030.4	142.216	SF
J&L Farms 12-20 - Original Drilling - Original Drilling - As Drilled	6,160.6	6,092.9	4,573.4	4,539.3	134.033	CC, ES
J&L Farms 12-20 - Original Drilling - Original Drilling - As Drilled	6,450.0	6,381.0	4,642.5	4,607.2	131.397	SF
J&L Farms 22-20 - Original Drilling - Original Drilling - As Drilled	6,160.9	6,094.2	6,127.1	6,093.3	181.205	CC, ES
J&L Farms 22-20 - Original Drilling - Original Drilling - As Drilled	6,500.0	6,396.2	6,221.8	6,186.6	176.884	SF
J&L Farms 32-20 - Original Drilling - Original Drilling - As Drilled	6,172.0	6,246.5	7,527.7	7,493.5	220.391	CC, ES
J&L Farms 32-20 - Original Drilling - Original Drilling - As Drilled	6,550.0	6,500.0	7,646.6	7,611.1	215.743	SF
Wells Ranch 13-20 - Original Drilling - Original Drilling - As Drilled	6,163.0	6,133.2	4,956.9	4,923.0	146.158	CC, ES
Wells Ranch 13-20 - Original Drilling - Original Drilling - As Drilled	6,450.0	6,420.0	5,023.1	4,987.9	142.781	SF
Wells Ranch 14-20 - Original Drilling - Original Drilling - As Drilled	6,165.4	6,174.0	5,434.9	5,400.9	159.531	CC, ES
Wells Ranch 14-20 - Original Drilling - Original Drilling - As Drilled	6,450.0	6,386.0	5,495.6	5,460.4	156.400	SF
Wells Ranch 23-20 - Original Drilling - Original Drilling - As Drilled	6,157.1	6,065.8	6,394.9	6,360.9	187.880	CC, ES
Wells Ranch 23-20 - Original Drilling - Original Drilling - As Drilled	6,500.0	6,343.1	6,490.9	6,455.6	183.912	SF
Wells Ranch 24-20 - Original Drilling - Original Drilling - As Drilled	6,156.3	6,078.4	6,443.4	6,409.5	189.872	CC, ES
Wells Ranch 24-20 - Original Drilling - Original Drilling - As Drilled	6,550.0	6,402.9	6,561.5	6,526.1	185.525	SF



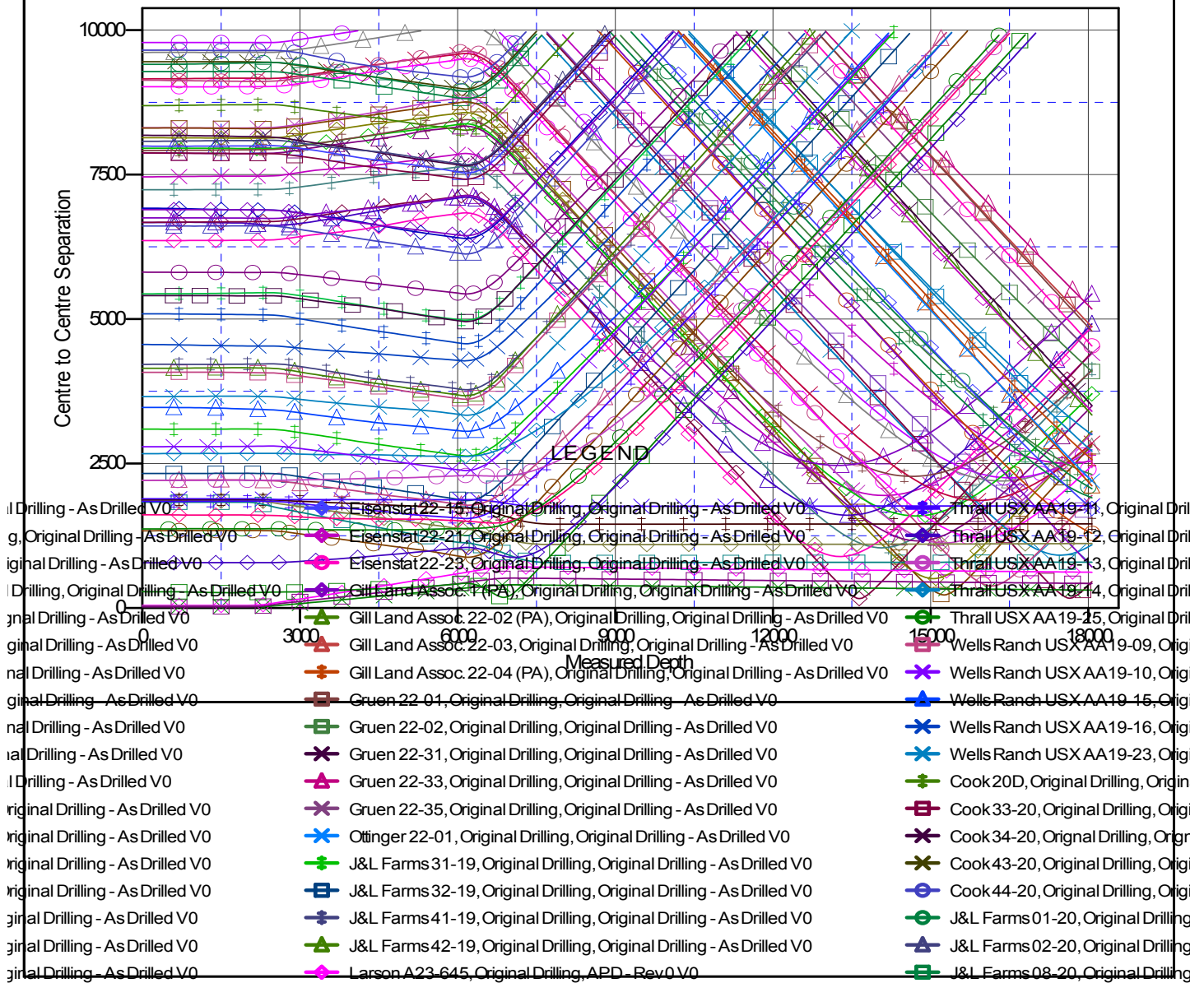
# Anticollision Summary Report

<b>Company:</b>	Northern Region - DJ Basin	<b>Local Co-ordinate Reference:</b>	Well Larson A23-656
<b>Project:</b>	Wells Ranch	<b>TVD Reference:</b>	WELL @ 4679.0ft (Original Well Elev.)
<b>Reference Site:</b>	AA Section 19	<b>MD Reference:</b>	WELL @ 4679.0ft (Original Well Elev.)
<b>Site Error:</b>	0.0 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Larson A23-656	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 ft	<b>Output errors are at</b>	2.79 sigma
<b>Reference Wellbore</b>	Original Drilling	<b>Database:</b>	EDM Production
<b>Reference Design:</b>	APD - Rev 0	<b>Offset TVD Reference:</b>	Offset Datum

Reference Depths are relative to WELL @ 4679.0ft (Original Well Elev.)  
Offset Depths are relative to Offset Datum  
Central Meridian is -105.5000000

Coordinates are relative to: Larson A23-656  
Coordinate System is US State Plane 1983, Colorado Northern Zone  
Grid Convergence at Surface is: 0.65°

## Ladder Plot



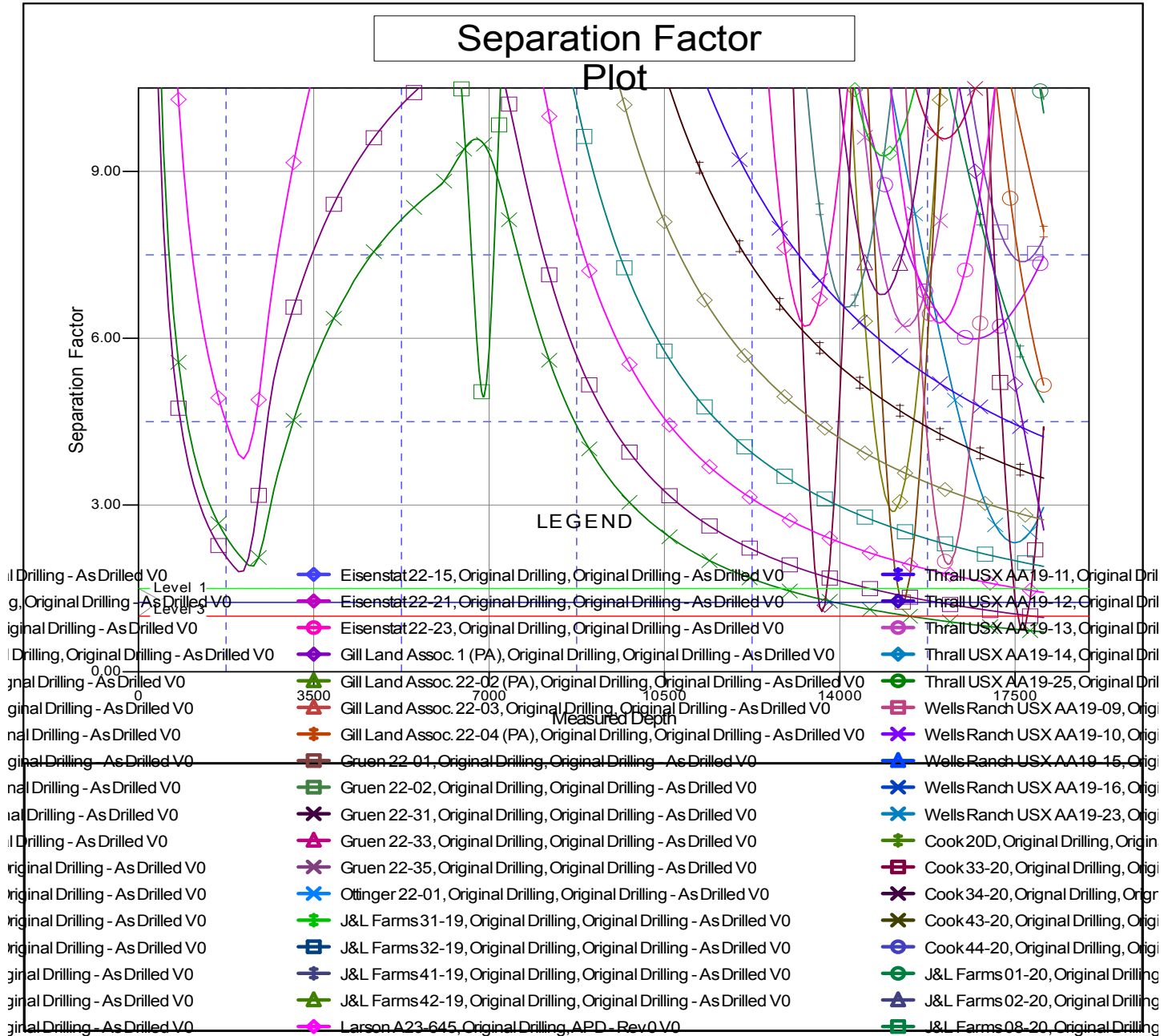
CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

# Anticollision Summary Report

<b>Company:</b>	Northern Region - DJ Basin	<b>Local Co-ordinate Reference:</b>	Well Larson A23-656
<b>Project:</b>	Wells Ranch	<b>TVD Reference:</b>	WELL @ 4679.0ft (Original Well Elev.)
<b>Reference Site:</b>	AA Section 19	<b>MD Reference:</b>	WELL @ 4679.0ft (Original Well Elev.)
<b>Site Error:</b>	0.0 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Larson A23-656	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 ft	<b>Output errors are at</b>	2.79 sigma
<b>Reference Wellbore</b>	Original Drilling	<b>Database:</b>	EDM Production
<b>Reference Design:</b>	APD - Rev 0	<b>Offset TVD Reference:</b>	Offset Datum

Reference Depths are relative to WELL @ 4679.0ft (Original Well Elev.)  
 Offset Depths are relative to Offset Datum  
 Central Meridian is -105.5000000

Coordinates are relative to: Larson A23-656  
 Coordinate System is US State Plane 1983, Colorado Northern Zone  
 Grid Convergence at Surface is: 0.65°



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