

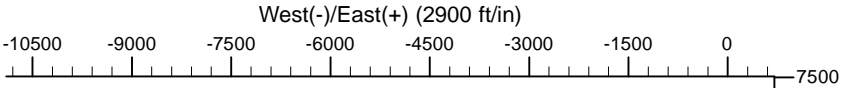
Project: Wells Ranch
Site: BB Section 11-T5N-R63W Weld County, CO
Well: Wells Ranch State BB09-617
Wellbore: Original Drilling
Design: APD - Rev 0

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

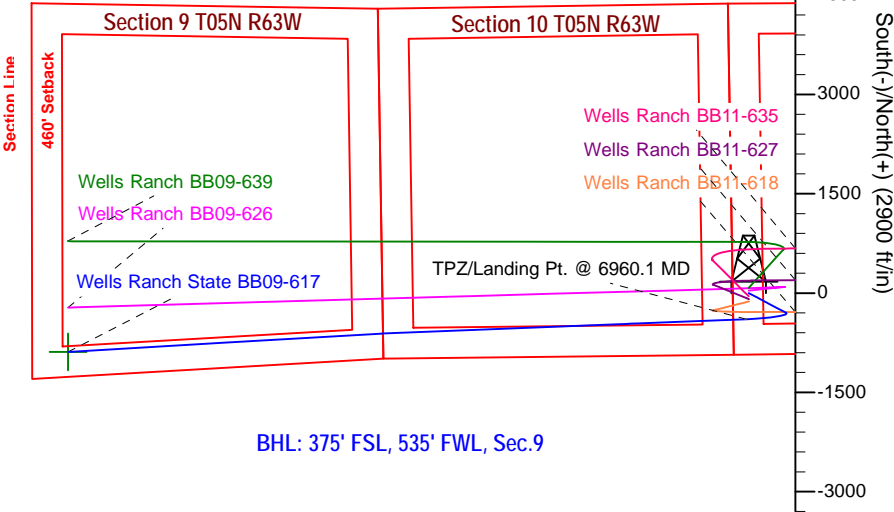
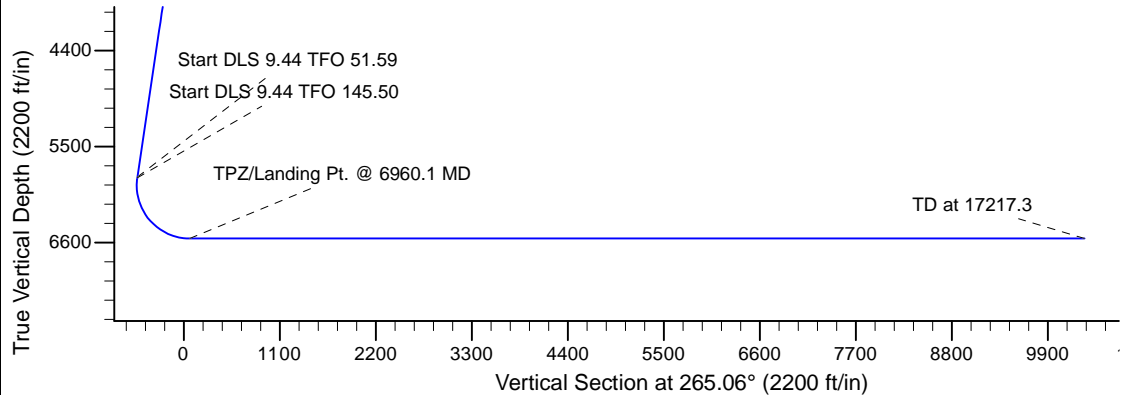
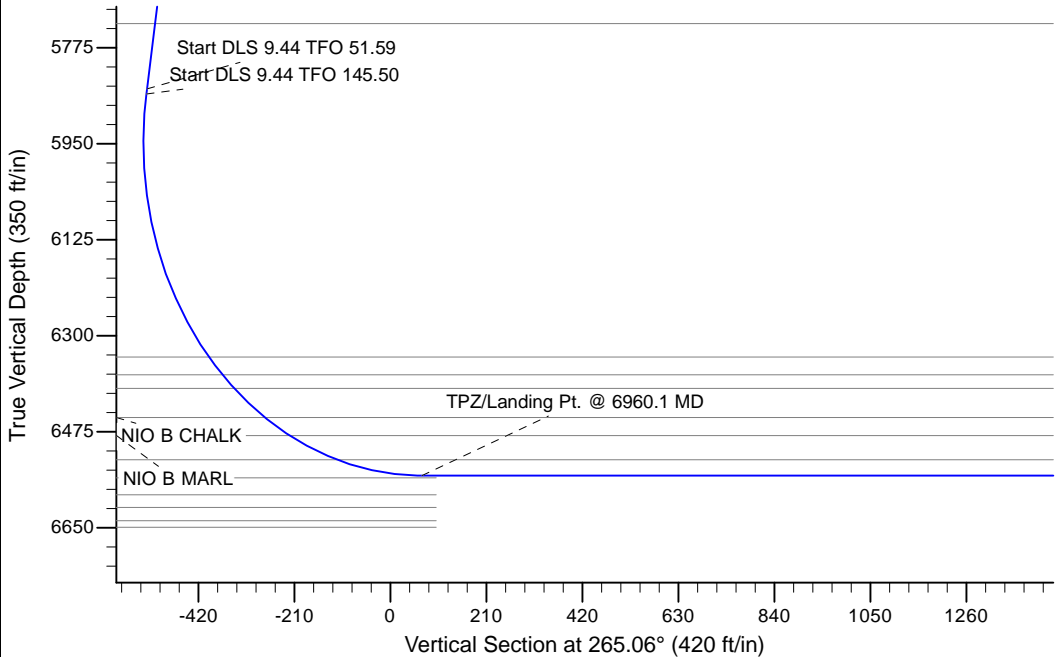
SECTION DETAILS

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	2000.0	0.00	0.00	2000.0	0.0	0.0	0.00	0.00	0.0	
3	2500.0	10.00	118.00	2497.5	-20.4	38.4	2.00	118.00	-36.5	
4	5904.3	10.00	118.00	5850.0	-298.0	560.4	0.00	0.00	-532.6	
5	5913.7	10.57	121.79	5859.2	-298.8	561.8	9.44	51.59	-534.0	
6	6960.1	90.00	267.75	6555.0	-395.0	-35.0	9.44	145.50	68.9	
7	7550.1	90.00	267.75	6555.0	-418.2	-624.5	0.00	0.00	658.3	
8	12460.1	90.00	267.75	6555.0	-610.9	-5530.8	0.00	0.00	5562.8	
9	12487.7	90.00	266.65	6555.0	-612.3	-5558.3	4.00	-90.00	5590.4	
10	17217.3	90.00	266.65	6555.0	-889.0	-10279.8	0.00	0.00	10318.1	Wells Ranch State BB09-617 BHL 375'FSL, 535'FWL

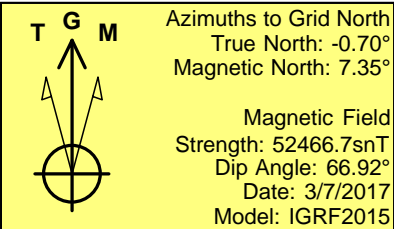


Surface: 925' FSL, 235' FWL, Sec.11

TPZ/Landing Pt: 535' FSL, 200' FWL, Sec.11



BHL: 375' FSL, 535' FWL, Sec.9



WELL DETAILS: Wells Ranch State BB09-617

	Northing	Easting	Ground Elevation: 4676.0	Latitude	Longitude
0.0	1393753.942568	2800.8675823		40.4091600	-104.4126100

Plan: APD - Rev 0 (Wells Ranch State BB09-617/Original Drilling)

Created By: Shailey Jewell Date: 8:52, March 08 2017

Checked: _____ Date: _____

Reviewed: _____ Date: _____

Approved: _____ Date: _____

Northern Region - DJ Basin

Wells Ranch

BB Section 11

Wells Ranch State BB09-617

Original Drilling

APD - Rev 0

Anticollision Summary Report

08 March, 2017

Anticollision Summary Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Wells Ranch State BB09-617
Project:	Wells Ranch	TVD Reference:	WELL @ 4706.0ft (Original Well Elev.)
Reference Site:	BB Section 11	MD Reference:	WELL @ 4706.0ft (Original Well Elev.)
Site Error:	0.0 ft	North Reference:	Grid
Reference Well:	Wells Ranch State BB09-617	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 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 1,880.8 ft	Error Surface:	Pedal Curve
Warning Levels Evaluated at:	2.79 Sigma	Casing Method:	Not applied

Survey Tool Program	Date	3/8/2017		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.0	17,217.3	APD - Rev 0 (Original Drilling)	OWSG_Rev2_MWD+IFR1+M	OWSG MWD + IFR1 + Multi-Station Correction

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						
BB Section 09						
70 Ranch 11-09 - Original Drilling - Original Drilling - As D						Out of range
70 Ranch 22-09 - Original Drilling - Original Drilling - As D						Out of range
70 Ranch 31-09 - Original Drilling - Original Drilling - As D						Out of range
70 Ranch 41-09 - Original Drilling - Original Drilling - As D						Out of range
70 Ranch 44-09 - Original Drilling - Original Drilling - As D	13,089.7	6,551.3	414.2	280.6	3.100	CC
70 Ranch 44-09 - Original Drilling - Original Drilling - As D	13,100.0	6,551.0	414.4	280.6	3.097	ES, SF
70 Ranch USX BB09-05 - Original Drilling - Original Drilling						Out of range
70 Ranch USX BB09-07 - Original Drilling - Original Drilling						Out of range
70 Ranch USX BB09-08 - Original Drilling - Original Drilling						Out of range
70 Ranch USX BB09-09 - Original Drilling - Original Drilling	13,032.0	6,550.6	1,627.4	1,494.9	12.283	CC, ES
70 Ranch USX BB09-09 - Original Drilling - Original Drilling	13,200.0	6,549.9	1,636.1	1,501.3	12.141	SF
70 Ranch USX BB09-10 - Original Drilling - Original Drilling	14,347.8	6,561.8	1,798.4	1,643.9	11.637	CC
70 Ranch USX BB09-10 - Original Drilling - Original Drilling	14,400.0	6,561.6	1,799.2	1,643.8	11.579	ES
70 Ranch USX BB09-10 - Original Drilling - Original Drilling	14,500.0	6,561.2	1,804.9	1,648.2	11.520	SF
70 Ranch USX BB09-11 - Original Drilling - Original Drilling	15,654.3	6,587.6	1,755.6	1,579.1	9.948	CC
70 Ranch USX BB09-11 - Original Drilling - Original Drilling	15,700.0	6,587.0	1,756.2	1,579.0	9.910	ES
70 Ranch USX BB09-11 - Original Drilling - Original Drilling	15,800.0	6,585.7	1,761.6	1,583.2	9.872	SF
70 Ranch USX BB09-15 - Original Drilling - Original Drilling	14,696.2	6,573.7	254.5	94.0	1.586	CC
70 Ranch USX BB09-15 - Original Drilling - Original Drilling	14,700.0	6,573.7	254.5	94.0	1.586	ES, SF
70 Ranch USX BB09-63HN - Original Drilling - Original Drilling	17,184.0	10,902.0	946.8	543.7	2.349	CC, ES
70 Ranch USX BB09-63HN - Original Drilling - Original Drilling	17,200.0	10,902.0	947.0	543.8	2.349	SF
70 Ranch USX BB09-99HZ - Original Drilling - Original Drilling	13,521.8	10,821.0	1,675.8	1,415.6	6.441	CC
70 Ranch USX BB09-99HZ - Original Drilling - Original Drilling	13,700.0	10,821.0	1,685.2	1,409.0	6.102	ES
70 Ranch USX BB09-99HZ - Original Drilling - Original Drilling	14,000.0	10,821.0	1,742.7	1,446.7	5.889	SF
National Hog Farm 13-09 - Original Drilling - Original Drilling						Out of range
National Hog Farm 14-09 - Original Drilling - Original Drilling	17,218.2	6,595.0	347.3	249.4	3.545	CC, ES, SF
National Hog Farm 21-09 - Original Drilling - Original Drilling						Out of range
National Hog Farm 24-09 - Original Drilling - Original Drilling	15,608.0	6,592.0	374.6	198.8	2.131	CC, ES, 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 Wells Ranch State BB09-617
Project:	Wells Ranch	TVD Reference:	WELL @ 4706.0ft (Original Well Elev.)
Reference Site:	BB Section 11	MD Reference:	WELL @ 4706.0ft (Original Well Elev.)
Site Error:	0.0 ft	North Reference:	Grid
Reference Well:	Wells Ranch State BB09-617	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.79 sigma
Reference Wellbore	Original Drilling	Database:	EDM Produccction
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						
BB Section 10						
Wells Ranch 10A - Original Drilling - Original Drilling - As						Out of range
Wells Ranch 10B - Original Drilling - Original Drilling - As	10,972.9	6,528.2	759.8	660.9	7.687	CC, ES
Wells Ranch 10B - Original Drilling - Original Drilling - As	11,000.0	6,528.2	760.2	661.1	7.666	SF
Wells Ranch 10C - Original Drilling - Original Drilling - As						Out of range
Wells Ranch 10F - Original Drilling - Original Drilling - As						Out of range
Wells Ranch 10H - Original Drilling - Original Drilling - As	12,251.6	6,546.4	905.7	786.1	7.571	CC, ES
Wells Ranch 10H - Original Drilling - Original Drilling - As	12,300.0	6,545.9	907.0	786.8	7.545	SF
Wells Ranch 10J - Original Drilling - Original Drilling - As						Out of range
Wells Ranch 10K - Original Drilling - Original Drilling - As						Out of range
Wells Ranch 11-10 - Original Drilling - Original Drilling - A						Out of range
Wells Ranch 12-10 - Original Drilling - Original Drilling - A						Out of range
Wells Ranch 13-10 - Original Drilling - Original Drilling - A	11,845.6	6,555.1	1,413.5	1,300.0	12.451	CC, ES
Wells Ranch 13-10 - Original Drilling - Original Drilling - A	12,000.0	6,559.5	1,421.9	1,306.5	12.323	SF
Wells Ranch 14-10 - Original Drilling - Original Drilling - A	11,874.2	6,522.1	326.2	212.7	2.875	CC, ES, SF
Wells Ranch 21-10 - Original Drilling - Original Drilling - A						Out of range
Wells Ranch 22-10 - Original Drilling - Original Drilling - A						Out of range
Wells Ranch 23-10 - Original Drilling - Original Drilling - A	10,510.7	6,521.8	1,427.2	1,335.6	15.580	CC, ES
Wells Ranch 23-10 - Original Drilling - Original Drilling - A	10,700.0	6,521.2	1,439.7	1,345.9	15.344	SF
Wells Ranch 24-10 - Original Drilling - Original Drilling - A	10,345.8	6,535.2	176.1	86.8	1.972	CC, ES, SF
Wells Ranch 31-10 - Original Drilling - Original Drilling - A						Out of range
Wells Ranch 32-10 - Original Drilling - Original Drilling - A						Out of range
Wells Ranch 33-10 - Original Drilling - Original Drilling - A	9,098.2	6,510.1	1,466.4	1,395.9	20.809	CC
Wells Ranch 33-10 - Original Drilling - Original Drilling - A	9,100.0	6,510.0	1,466.4	1,395.9	20.802	ES
Wells Ranch 33-10 - Original Drilling - Original Drilling - A	9,400.0	6,501.4	1,497.1	1,423.4	20.324	SF
Wells Ranch 34-10 - Original Drilling - Original Drilling - A	8,869.5	6,535.0	364.0	292.7	5.107	CC, ES, SF
Wells Ranch 41-10 - Original Drilling - Original Drilling - A						Out of range
Wells Ranch 42-10 - Original Drilling - Original Drilling - A						Out of range
Wells Ranch 43-10 - Original Drilling - Original Drilling - A	100.0	51.7	1,421.8	1,421.6	5,959.096	CC
Wells Ranch 43-10 - Original Drilling - Original Drilling - A	7,800.0	6,524.3	1,459.8	1,404.8	26.576	ES
Wells Ranch 43-10 - Original Drilling - Original Drilling - A	8,100.0	6,524.4	1,492.8	1,435.3	25.961	SF
Wells Ranch 44-10 - Original Drilling - Original Drilling - A	7,852.6	6,521.2	243.0	187.5	4.380	CC, ES, SF

Anticollision Summary Report

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Site Error:	0.0 ft	North Reference:	Grid
Reference Well:	Wells Ranch State BB09-617	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.79 sigma
Reference Wellbore	Original Drilling	Database:	EDM Produccction
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)	Between Ellipses (ft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
BB Section 11						
Wells 12-11 - Original Drilling - Original Drilling - As Drille						Out of range
Wells Ranch 13-11 - Original Drilling - Original Drilling - A	1,989.2	1,933.3	1,140.0	1,125.6	79.146	CC
Wells Ranch 13-11 - Original Drilling - Original Drilling - A	2,100.0	2,040.4	1,140.5	1,125.4	75.141	ES
Wells Ranch 13-11 - Original Drilling - Original Drilling - A	6,600.0	6,402.3	1,443.9	1,396.3	30.315	SF
Wells Ranch 14-11 - Original Drilling - Original Drilling - A	7,168.0	6,512.5	500.4	394.2	4.712	CC, ES, SF
Wells Ranch 23-11 - Original Drilling - Original Drilling - A						Out of range
Wells Ranch 24-11 - Original Drilling - Original Drilling - A	6,004.3	5,900.0	1,176.2	1,132.1	26.677	CC, ES
Wells Ranch 24-11 - Original Drilling - Original Drilling - A	6,100.0	5,994.1	1,183.8	1,139.0	26.446	SF
Wells Ranch BB09-626 - Original Drilling - APD - Rev 0	2,000.0	2,001.0	36.4	17.1	1.882	CC
Wells Ranch BB09-626 - Original Drilling - APD - Rev 0	2,100.0	2,101.0	37.3	17.0	1.834	ES
Wells Ranch BB09-626 - Original Drilling - APD - Rev 0	17,200.0	17,127.2	671.9	299.0	1.802	SF
Wells Ranch BB09-639 - Original Drilling - APD - Rev 0	2,000.0	2,000.0	76.5	60.8	4.860	CC, ES
Wells Ranch BB09-639 - Original Drilling - APD - Rev 0	17,218.2	17,152.6	1,673.2	1,070.7	2.777	SF
Wells Ranch BB11-618 - Original Drilling - APD - Rev 0	6,663.2	7,083.8	90.1	24.1	1.365	Level 3, CC, ES, SF
Wells Ranch BB11-627 - Original Drilling - APD - Rev 0	2,428.5	2,425.7	80.9	57.4	3.442	CC, ES
Wells Ranch BB11-627 - Original Drilling - APD - Rev 0	2,500.0	2,494.6	82.8	58.7	3.429	SF
Wells Ranch BB11-635 - Original Drilling - APD - Rev 0	2,298.7	2,299.4	40.6	18.4	1.826	CC
Wells Ranch BB11-635 - Original Drilling - APD - Rev 0	2,300.0	2,300.6	40.6	18.4	1.825	ES, SF
Wells Ranch USX BB11-01 - Original Drilling - Original D						Out of range
Wells Ranch USX BB11-02 - Original Drilling - Original D						Out of range
Wells Ranch USX BB11-03 - Original Drilling - Original D						Out of range
Wells Ranch USX BB11-04 - Original Drilling - Original D						Out of range
Wells Ranch USX BB11-06 - Original Drilling - Original D						Out of range
Wells Ranch USX BB11-07 - Original Drilling - Original D						Out of range
Wells Ranch USX BB11-08 - Original Drilling - Original D						Out of range
Wells Ranch USX BB11-09 - Original Drilling - Original D						Out of range
Wells Ranch USX BB11-10 - Original Drilling - Original D						Out of range
Wells Ranch USX BB11-15 - Original Drilling - Original D						Out of range
Wells Ranch USX BB11-16 - Original Drilling - Original D						Out of range
Wells Ranch USX BB11-17 - Original Drilling - Original D						Out of range
Wells Ranch USX BB11-23 - Original Drilling - Original D						Out of range
BB Section 12						
Wells Ranch 12D - Original Drilling - Original Drilling - As						Out of range
Wells Ranch 33-12 - Original Drilling - Original Drilling - A						Out of range
Wells Ranch 34-12 - Original Drilling - Original Drilling - A						Out of range
Wells Ranch 43-12 - Original Drilling - Original Drilling - A						Out of range
Wells Ranch 44-12 - Original Drilling - Original Drilling - A						Out of range
Wells Ranch BB12-01 - Original Drilling - Original Drilling						Out of range
Wells Ranch BB12-02 - Original Drilling - Original Drilling						Out of range
Wells Ranch BB12-03 - Original Drilling - Original Drilling						Out of range
Wells Ranch BB12-04 - Original Drilling - Original Drilling						Out of range
Wells Ranch BB12-05 - Original Drilling - Original Drilling						Out of range
Wells Ranch BB12-06 - Original Drilling - Original Drilling						Out of range
Wells Ranch BB12-07 - Original Drilling - Original Drilling						Out of range
Wells Ranch BB12-08 - Original Drilling - Original Drilling						Out of range