

# **Northern Region - DJ Basin**

**Wells Ranch**

**BB Section 07**

**SLW Ranch State BB07-615**

**Original Drilling**

**Plan 1**

## **Anticollision Summary Report**

**26 September, 2017**

# Noble Energy, Inc.

## Anticollision Summary Report

<b>Company:</b>	Northern Region - DJ Basin	<b>Local Co-ordinate Reference:</b>	Well SLW Ranch State BB07-615
<b>Project:</b>	Wells Ranch	<b>TVD Reference:</b>	WELL @ 4647.0ft
<b>Reference Site:</b>	BB Section 07	<b>MD Reference:</b>	WELL @ 4647.0ft
<b>Site Error:</b>	0.0 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	SLW Ranch State BB07-615	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Original Drilling	<b>Database:</b>	EDMP
<b>Reference Design:</b>	Plan 1	<b>Offset TVD Reference:</b>	Offset Datum

<b>Reference</b>	Plan 1		
<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>	2.00 Sigma	<b>Casing Method:</b>	Not applied

<b>Survey Tool Program</b>	Date	9/26/2017		
<b>From (ft)</b>	<b>To (ft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>
0.0	17,978.2	Plan 1 (Original Drilling)	2_MWD+IFR1+MS	A008Mb: IFR dec & multi-station analysis

Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
<b>Summary</b>						
<b>Offset Well - Wellbore - Design</b>						
B Section 01						
Lucci B01-69HNL - Original Drilling - Original Drilling - As	0.0	0.0	9,876.9			
Lucci B01-69HNL - Original Drilling - Original Drilling - As	1,300.0	1,242.3	9,877.9	9,870.5	1,331.417	ES
Lucci B01-69HNL - Original Drilling - Original Drilling - As	3,700.0	11,017.3	9,993.3	9,887.0	93.958	SF
Lucci B01-99HZ - Original Drilling - Original Drilling - As	4,904.3	11,600.0	6,211.1	6,150.3	102.186	CC, ES
Lucci B01-99HZ - Original Drilling - Original Drilling - As	6,350.0	11,600.0	6,381.8	6,312.7	92.370	SF
Lucci B03-69HNL - Original Drilling - Original Drilling - As	1,982.9	1,977.0	9,881.0	9,869.5	858.398	CC
Lucci B03-69HNL - Original Drilling - Original Drilling - As	2,000.0	1,983.2	9,881.0	9,869.4	852.271	ES
Lucci B03-69HNL - Original Drilling - Original Drilling - As	3,000.0	2,933.7	9,986.7	9,968.5	547.792	SF
Lucci BC B1-16 - Wellbore #1 - Wellbore #1	1,169.5	1,148.5	4,549.7	4,541.9	583.403	CC
Lucci BC B1-16 - Wellbore #1 - Wellbore #1	1,400.0	1,359.4	4,550.0	4,540.7	486.111	ES
Lucci BC B1-16 - Wellbore #1 - Wellbore #1	10,700.0	6,539.3	7,165.2	7,097.7	106.229	SF
SLW Ranch B01-62-1HN - Original Drilling - As Drilled	2,581.2	3,425.5	4,715.8	4,694.0	216.323	CC
SLW Ranch B01-62-1HN - Original Drilling - As Drilled	2,713.2	3,769.0	4,717.9	4,693.5	193.635	ES
SLW Ranch B01-62-1HN - Original Drilling - As Drilled	10,500.0	6,210.0	6,583.7	6,516.6	98.099	SF
SLW Ranch B01-63-1HN - Original Drilling - As Drilled	2,192.3	2,427.7	4,943.7	4,929.6	350.887	CC
SLW Ranch B01-63-1HN - Original Drilling - As Drilled	2,200.0	2,435.2	4,943.7	4,929.6	349.379	ES
SLW Ranch B01-63-1HN - Original Drilling - As Drilled	11,100.0	6,112.0	7,336.4	7,263.3	100.331	SF
SLW Ranch B01-64-1HN - Original Drilling - As Drilled	680.0	650.0	4,976.0	4,973.8	2,256.938	CC
SLW Ranch B01-64-1HN - Original Drilling - As Drilled	700.0	650.0	4,976.1	4,973.8	2,185.846	ES
SLW Ranch B01-64-1HN - Original Drilling - As Drilled	11,900.0	6,116.0	8,325.6	8,242.8	100.520	SF
SLW Ranch B01-66-1HN - Original Drilling - Original Drill	700.0	689.0	7,699.8	7,696.4	2,221.621	CC
SLW Ranch B01-66-1HN - Original Drilling - Original Drill	1,800.0	1,763.6	7,700.3	7,689.0	685.922	ES
SLW Ranch B01-66-1HN - Original Drilling - Original Drill	12,600.0	6,538.0	9,978.5	9,893.3	117.108	SF
SLW Ranch B01-67-1HN - Original Drilling - As Drilled - S	2,349.9	3,169.0	7,581.6	7,563.4	416.912	CC, ES
SLW Ranch B01-67-1HN - Original Drilling - As Drilled - S	11,800.0	6,111.0	9,965.2	9,886.8	127.114	SF
SLW Ranch B01-68-1HN - Original Drilling - Original Drill	1,006.0	996.0	7,742.3	7,736.5	1,344.523	CC
SLW Ranch B01-68-1HN - Original Drilling - Original Drill	1,500.0	1,463.0	7,744.2	7,735.0	843.255	ES
SLW Ranch B01-68-1HN - Original Drilling - Original Drill	10,300.0	6,208.0	9,985.4	9,917.9	147.972	SF
SLW Ranch B01-69-1HN - Original Drilling - As Drilled	819.0	809.0	7,765.2	7,760.8	1,763.595	CC
SLW Ranch B01-69-1HN - Original Drilling - As Drilled	900.0	841.5	7,765.4	7,760.6	1,615.627	ES
SLW Ranch B01-69-1HN - Original Drilling - As Drilled	9,700.0	4,880.0	9,999.6	9,943.2	177.059	SF
SLW Ranch B12-69-1HN - Wellbore #1 - APD - Rev 0	3,805.6	5,118.1	4,198.2	4,185.2	321.418	CC, ES
SLW Ranch B12-69-1HN - Wellbore #1 - APD - Rev 0	10,900.0	6,151.6	6,553.1	6,510.3	153.213	SF
SLW Ranch B12-69-1HN - Wellbore #1 - APD - Rev 1	2,761.0	3,740.2	4,644.9	4,635.6	497.131	CC
SLW Ranch B12-69-1HN - Wellbore #1 - APD - Rev 1	5,414.6	6,874.2	4,645.8	4,626.2	237.169	ES
SLW Ranch B12-69-1HN - Wellbore #1 - APD - Rev 1	10,900.0	6,545.3	6,733.9	6,690.8	156.445	SF
SLW Ranch B12-69-1HN - Wellbore #1 - Sidetrack	2,787.3	4,389.9	4,626.7	4,605.5	218.867	CC

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

# Noble Energy, Inc.

## Anticollision Summary Report

<b>Company:</b>	Northern Region - DJ Basin	<b>Local Co-ordinate Reference:</b>	Well SLW Ranch State BB07-615
<b>Project:</b>	Wells Ranch	<b>TVD Reference:</b>	WELL @ 4647.0ft
<b>Reference Site:</b>	BB Section 07	<b>MD Reference:</b>	WELL @ 4647.0ft
<b>Site Error:</b>	0.0 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	SLW Ranch State BB07-615	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Original Drilling	<b>Database:</b>	EDMP
<b>Reference Design:</b>	Plan 1	<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
B Section 01						
SLW Ranch B12-69-1HN - Wellbore #1 - Sidetrack	2,800.0	4,402.5	4,626.7	4,605.5	217.898	ES
SLW Ranch B12-69-1HN - Wellbore #1 - Sidetrack	6,500.0	7,454.9	4,877.1	4,827.2	97.714	SF
SLW Ranch B12-69-1HN - Wellbore #1 - Sidetrack #2	2,719.2	4,235.9	4,669.8	4,649.0	225.004	CC, ES
SLW Ranch B12-69-1HN - Wellbore #1 - Sidetrack #2	6,400.0	7,480.3	4,895.8	4,844.0	94.580	SF
SLW Ranch B12-69-1HN - Wellbore #1 - Sidetrack #3	2,581.0	3,940.6	4,743.5	4,721.7	216.984	CC
SLW Ranch B12-69-1HN - Wellbore #1 - Sidetrack #3	2,600.0	3,952.4	4,743.6	4,721.6	215.813	ES
SLW Ranch B12-69-1HN - Wellbore #1 - Sidetrack #3	6,450.0	7,650.4	4,990.2	4,931.7	85.279	SF
SLW Ranch B12-69-1HN - Wellbore #1 - Wellbore #1- As	4,840.4	7,010.0	4,373.3	4,332.5	107.029	CC, ES
SLW Ranch B12-69-1HN - Wellbore #1 - Wellbore #1- As	9,500.0	6,916.0	5,804.1	5,745.4	98.923	SF
B Section 12						
SLW Ranch B12-62-1HN - Original Drilling - As Drilled	6,700.0	10,779.0	276.7	213.3	4.367	SF
SLW Ranch B12-62-1HN - Original Drilling - As Drilled	6,706.8	10,779.0	276.5	213.3	4.371	CC, ES
SLW Ranch B12-63-1HN - Original Drilling - As Drilled	6,576.3	10,812.0	648.2	520.9	5.092	CC
SLW Ranch B12-63-1HN - Original Drilling - As Drilled	6,600.0	10,812.0	648.7	520.2	5.049	ES
SLW Ranch B12-63-1HN - Original Drilling - As Drilled	6,650.0	10,812.0	653.1	522.8	5.011	SF
SLW Ranch B12-64-1HN - Original Drilling - As Drilled	6,468.4	10,993.0	1,253.9	1,122.7	9.557	CC
SLW Ranch B12-64-1HN - Original Drilling - As Drilled	6,500.0	10,993.0	1,254.4	1,122.2	9.489	ES
SLW Ranch B12-64-1HN - Original Drilling - As Drilled	6,650.0	10,993.0	1,267.8	1,132.2	9.352	SF
SLW Ranch B12-65-1HN - Original Drilling - As Drilled	6,214.3	10,954.8	1,884.6	1,808.0	24.612	CC
SLW Ranch B12-65-1HN - Original Drilling - As Drilled	6,250.0	10,955.8	1,884.9	1,808.0	24.489	ES
SLW Ranch B12-65-1HN - Original Drilling - As Drilled	6,500.0	10,974.0	1,905.3	1,826.1	24.067	SF
SLW Ranch B12-65HN - Original Drilling - As Drilled	6,056.5	10,992.0	2,418.6	2,342.5	31.777	CC, ES
SLW Ranch B12-65HN - Original Drilling - As Drilled	6,450.0	10,992.0	2,455.0	2,375.9	31.044	SF
SLW Ranch B12-66-1HN - Original Drilling - As Drilled	5,971.0	11,132.0	2,733.3	2,656.5	35.568	CC
SLW Ranch B12-66-1HN - Original Drilling - As Drilled	6,000.0	11,132.0	2,733.5	2,656.3	35.430	ES
SLW Ranch B12-66-1HN - Original Drilling - As Drilled	6,450.0	11,132.0	2,779.5	2,698.7	34.393	SF
SLW Ranch B12-67-1HN - Original Drilling - Original Drill	5,773.7	11,212.5	3,331.7	3,198.5	24.997	CC
SLW Ranch B12-67-1HN - Original Drilling - Original Drill	5,800.0	11,207.9	3,331.8	3,198.3	24.948	ES
SLW Ranch B12-67-1HN - Original Drilling - Original Drill	6,600.0	11,239.3	3,437.5	3,295.5	24.207	SF
SLW Ranch B12-79HN - Original Drilling - As Drilled	6,279.0	6,584.0	4,829.2	4,782.8	104.012	CC, ES
SLW Ranch B12-79HN - Original Drilling - As Drilled	6,500.0	6,584.0	4,871.8	4,824.4	102.740	SF
SLW Ranch B13-69HN - Original Drilling - As Drilled	6,744.1	10,833.0	389.6	278.4	3.505	CC, ES, SF
Thomson B12-12 - Wellbore #1 - Wellbore #1	6,144.2	5,878.7	4,447.7	4,404.2	102.280	CC
Thomson B12-12 - Wellbore #1 - Wellbore #1	6,150.0	5,882.6	4,447.7	4,404.2	102.190	ES
Thomson B12-12 - Wellbore #1 - Wellbore #1	6,750.0	6,750.0	4,697.8	4,649.5	97.250	SF
Trebor B12-05 - Wellbore #1 - As Drilled	6,123.4	6,100.0	4,585.7	4,541.1	102.844	CC, ES
Trebor B12-05 - Wellbore #1 - As Drilled	6,550.0	6,520.6	4,702.9	4,655.3	98.965	SF
Trebor B12-06 - Wellbore #1 - As Drilled	2,765.6	2,766.2	3,808.0	3,789.0	200.662	CC
Trebor B12-06 - Wellbore #1 - As Drilled	2,900.0	2,913.5	3,808.1	3,788.2	190.806	ES
Trebor B12-06 - Wellbore #1 - As Drilled	6,550.0	6,268.0	4,169.2	4,123.1	90.413	SF
Trebor B12-07 - Wellbore #1 - As Drilled	100.0	37.5	2,775.2	2,775.0	10,000.000	CC
Trebor B12-07 - Wellbore #1 - As Drilled	1,500.0	1,429.9	2,782.2	2,772.2	279.021	ES
Trebor B12-07 - Wellbore #1 - As Drilled	6,500.0	6,199.1	3,420.3	3,374.8	75.175	SF
Trebor B12-19 - Wellbore #1 - As Drilled	257.0	200.0	4,630.6	4,629.4	3,818.776	CC
Trebor B12-19 - Wellbore #1 - As Drilled	3,700.0	3,762.1	4,640.5	4,614.6	179.134	ES
Trebor B12-19 - Wellbore #1 - As Drilled	6,800.0	6,800.0	5,038.3	4,989.8	103.755	SF
Trebor B12-8 - Wellbore #1 - As Drilled	0.0	0.0	1,916.0			
Trebor B12-8 - Wellbore #1 - As Drilled	2,000.0	1,963.5	1,924.7	1,911.0	141.170	ES
Trebor B12-8 - Wellbore #1 - As Drilled	7,050.0	6,667.1	3,152.4	3,104.2	65.408	SF

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

**Noble Energy, Inc.**  
Anticollision Summary Report

<b>Company:</b>	Northern Region - DJ Basin	<b>Local Co-ordinate Reference:</b>	Well SLW Ranch State BB07-615
<b>Project:</b>	Wells Ranch	<b>TVD Reference:</b>	WELL @ 4647.0ft
<b>Reference Site:</b>	BB Section 07	<b>MD Reference:</b>	WELL @ 4647.0ft
<b>Site Error:</b>	0.0 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	SLW Ranch State BB07-615	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Original Drilling	<b>Database:</b>	EDMP
<b>Reference Design:</b>	Plan 1	<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
BB Section 03						
Wells Ranch 12-03 - Original Drilling - Original Drilling - A						Out of range
Wells Ranch State BB05-613 - Original Drilling - APD - R	17,978.2	11,949.1	5,369.0	5,228.1	38.089	CC, ES, SF
Wells Ranch State BB05-617 - Original Drilling - APD - R	17,978.2	11,861.6	5,645.7	5,504.8	40.071	CC, ES, SF
Wells Ranch State BB05-625 - Original Drilling - APD - R	17,978.2	11,717.6	6,195.8	6,054.9	43.953	CC, ES, SF
Wells Ranch State BB05-630 - Original Drilling - APD - R	17,978.2	11,878.6	6,466.2	6,325.3	45.895	CC, ES, SF
Wells Ranch State BB05-635 - Original Drilling - APD - R	17,978.2	11,926.1	6,823.9	6,682.9	48.411	CC, ES, SF
Wells Ranch State BB05-644 - Original Drilling - APD - R	17,978.2	11,829.5	7,453.1	7,312.2	52.896	CC, ES, SF
Wells Ranch State BB05-650 - Original Drilling - APD - R	17,978.2	11,949.4	7,783.8	7,642.8	55.219	CC, ES, SF
Wells Ranch State BB05-656 - Original Drilling - APD - R	17,900.0	11,608.9	8,185.6	7,977.1	39.255	ES, SF
Wells Ranch State BB05-656 - Original Drilling - APD - R	17,978.2	11,512.9	8,185.6	7,977.2	39.282	CC
Wells Ranch State BB05-665 - Original Drilling - APD - R	12,884.9	17,030.1	8,871.2	8,791.8	111.742	CC
Wells Ranch State BB05-665 - Original Drilling - APD - R	17,978.2	11,936.8	8,871.3	8,730.5	62.967	ES, SF
Wells Ranch State BB05-669 - Original Drilling - APD - R	12,891.1	17,137.3	9,206.2	9,126.6	115.636	CC
Wells Ranch State BB05-669 - Original Drilling - APD - R	17,978.2	12,053.0	9,206.7	9,065.7	65.299	ES, SF
Wells Ranch State BB05-678 - Original Drilling - APD - R	12,889.1	17,118.5	9,544.5	9,465.0	120.059	CC
Wells Ranch State BB05-678 - Original Drilling - APD - R	17,978.2	12,029.4	9,547.0	9,406.1	67.738	ES, SF
Wells Ranch State BB05-685 - Original Drilling - APD - R						Out of range
Wells Ranch State BB05-690 - Original Drilling - APD - R						Out of range
Wells Ranch USX BB03-04 - Original Drilling - Original D						Out of range
Wells Ranch USX BB03-12 - Original Drilling - Original D	17,978.2	6,708.5	9,005.9	8,866.2	64.472	CC, ES, SF
Wells Ranch USX BB03-13 - Original Drilling - Original D	17,978.2	6,879.0	8,156.1	8,024.9	62.123	CC, ES, SF
Wells Ranch USX BB03-25 PA - Original Drilling - Gyro S	17,978.2	6,600.0	9,042.5	8,914.2	70.506	CC, ES, SF

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

# Noble Energy, Inc.

## Anticollision Summary Report

<b>Company:</b>	Northern Region - DJ Basin	<b>Local Co-ordinate Reference:</b>	Well SLW Ranch State BB07-615
<b>Project:</b>	Wells Ranch	<b>TVD Reference:</b>	WELL @ 4647.0ft
<b>Reference Site:</b>	BB Section 07	<b>MD Reference:</b>	WELL @ 4647.0ft
<b>Site Error:</b>	0.0 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	SLW Ranch State BB07-615	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Original Drilling	<b>Database:</b>	EDMP
<b>Reference Design:</b>	Plan 1	<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
<b>Offset Well - Wellbore - Design</b>						
BB Section 07						
Skurich 11-07 - Original Drilling - Original Drilling - As Dri	828.2	792.3	3,259.6	3,254.3	611.538	CC
Skurich 11-07 - Original Drilling - Original Drilling - As Dri	1,900.0	1,848.5	3,261.3	3,248.4	253.619	ES
Skurich 11-07 - Original Drilling - Original Drilling - As Dri	11,000.0	11,000.0	5,527.2	5,441.3	64.335	SF
Skurich 13-07 - Original Drilling - Original Drilling - As Dri	100.0	60.9	660.5	660.3	2,843.150	CC
Skurich 13-07 - Original Drilling - Original Drilling - As Dri	2,000.0	1,959.3	670.4	656.8	49.243	ES
Skurich 13-07 - Original Drilling - Original Drilling - As Dri	8,000.0	6,568.4	1,718.9	1,666.9	33.047	SF
Skurich 21-07 - Original Drilling - Original Drilling - As Dri	2,032.3	2,053.4	3,742.2	3,728.2	266.524	CC, ES
Skurich 21-07 - Original Drilling - Original Drilling - As Dri	11,500.0	11,500.0	5,106.7	5,011.1	53.442	SF
Skurich 23-07 - Original Drilling - Original Drilling - As Dri	9,111.6	6,612.0	1,825.5	1,655.4	10.731	CC, ES
Skurich 23-07 - Original Drilling - Original Drilling - As Dri	9,300.0	6,612.0	1,835.2	1,663.6	10.700	SF
Skurich 33-07 - Original Drilling - Original Drilling - As Dri	10,449.2	6,641.8	1,943.1	1,868.5	26.030	CC, ES
Skurich 33-07 - Original Drilling - Original Drilling - As Dri	10,700.0	6,639.2	1,959.3	1,882.6	25.572	SF
Skurich 43-07 - Original Drilling - Original Drilling - As Drill	11,782.2	6,689.1	1,651.7	1,561.7	18.363	CC
Skurich 43-07 - Original Drilling - Original Drilling - As Drill	11,800.0	6,689.2	1,651.8	1,561.6	18.330	ES
Skurich 43-07 - Original Drilling - Original Drilling - As Drill	12,000.0	6,690.8	1,666.0	1,574.5	18.209	SF
Skurich-SLW 7B - Original Drilling - Original Drilling - As	8,425.7	6,627.2	1,084.5	1,027.0	18.862	CC, ES
Skurich-SLW 7B - Original Drilling - Original Drilling - As	8,500.0	6,628.1	1,087.0	1,029.1	18.763	SF
Skurich-SLW 7D - Original Drilling - Original Drilling - As	2,000.0	1,993.0	2,836.8	2,790.0	60.621	CC
Skurich-SLW 7D - Original Drilling - Original Drilling - As	2,100.0	2,093.0	2,838.6	2,789.4	57.768	ES
Skurich-SLW 7D - Original Drilling - Original Drilling - As	9,300.0	6,615.0	3,855.8	3,684.7	22.534	SF
Skurich-SLW Ranch 7A - Original Drilling - Original Drilling	11,046.5	6,634.8	1,007.7	926.6	12.419	CC, ES
Skurich-SLW Ranch 7A - Original Drilling - Original Drilling	11,100.0	6,632.6	1,009.1	927.7	12.385	SF
SLW Ranch 12-07 - Original Drilling - Original Drilling - A	0.0	0.0	1,839.3			
SLW Ranch 12-07 - Original Drilling - Original Drilling - A	2,000.0	1,985.7	1,848.8	1,835.1	134.831	ES
SLW Ranch 12-07 - Original Drilling - Original Drilling - A	8,800.0	6,637.7	3,280.4	3,223.9	58.100	SF
SLW Ranch 14-07 - Original Drilling - Original Drilling - A	7,695.1	6,590.4	418.5	256.0	2.575	CC, ES
SLW Ranch 14-07 - Original Drilling - Original Drilling - A	7,700.0	6,590.5	418.5	256.0	2.575	SF
SLW Ranch 22-07 - Original Drilling - Original Drilling - A	2,017.4	2,028.1	2,692.2	2,678.3	193.595	CC, ES
SLW Ranch 22-07 - Original Drilling - Original Drilling - A	10,000.0	6,579.4	3,330.7	3,263.5	49.554	SF
SLW Ranch 24-07 - Original Drilling - Original Drilling - A	9,152.3	6,601.2	194.4	133.3	3.185	CC, ES, SF
SLW Ranch 31-07 - Original Drilling - Original Drilling - A	10,309.6	6,649.8	4,505.5	4,432.3	61.565	CC, ES
SLW Ranch 31-07 - Original Drilling - Original Drilling - A	11,900.0	6,634.6	4,777.8	4,691.3	55.234	SF
SLW Ranch 32-07 - Original Drilling - Original Drilling - A	10,150.0	6,655.9	3,302.8	3,231.3	46.197	CC
SLW Ranch 32-07 - Original Drilling - Original Drilling - A	10,200.0	6,656.2	3,303.2	3,231.2	45.891	ES
SLW Ranch 32-07 - Original Drilling - Original Drilling - A	11,100.0	6,662.3	3,436.7	3,357.5	43.399	SF
SLW Ranch 34-07 - Original Drilling - Original Drilling - A	10,500.0	6,630.5	248.1	173.0	3.305	SF
SLW Ranch 34-07 - Original Drilling - Original Drilling - A	10,502.6	6,630.5	248.1	173.0	3.305	CC, ES
SLW Ranch 41-07 - Original Drilling - Original Drilling - A	11,716.9	6,681.7	4,537.3	4,448.2	50.939	CC
SLW Ranch 41-07 - Original Drilling - Original Drilling - A	11,800.0	6,681.5	4,538.0	4,448.1	50.448	ES
SLW Ranch 41-07 - Original Drilling - Original Drilling - A	13,100.0	6,679.3	4,743.3	4,642.4	46.985	SF
SLW Ranch 42-07 - Original Drilling - Original Drilling - A	11,669.5	6,617.2	3,172.9	3,084.7	35.979	CC
SLW Ranch 42-07 - Original Drilling - Original Drilling - A	11,700.0	6,617.2	3,173.0	3,084.5	35.853	ES
SLW Ranch 42-07 - Original Drilling - Original Drilling - A	12,400.0	6,617.5	3,255.9	3,161.6	34.556	SF
SLW Ranch 44-07 - Original Drilling - Original Drilling - A	11,732.0	6,663.5	180.2	91.1	2.022	CC, ES, SF
SLW Ranch BB07-79HNL - Original Drilling - APD - Rev	6,950.0	6,740.2	103.7	84.3	5.341	SF
SLW Ranch BB07-79HNL - Original Drilling - APD - Rev	7,000.0	6,740.3	92.2	79.4	7.242	ES
SLW Ranch BB07-79HNL - Original Drilling - APD - Rev	7,001.5	6,740.3	92.2	79.6	7.344	CC
SLW Ranch State BB06-690 - Original Drilling - Plan 1	1,910.8	1,925.8	2,506.0	2,492.7	188.606	CC
SLW Ranch State BB06-690 - Original Drilling - Plan 1	2,000.0	2,011.0	2,506.0	2,492.1	180.134	ES
SLW Ranch State BB06-690 - Original Drilling - Plan 1	13,800.0	12,849.2	5,350.6	5,185.2	32.367	SF
SLW Ranch State BB07-621 - Original Drilling - Plan 1	2,000.0	2,000.0	21.9	8.0	1.576	CC, ES
SLW Ranch State BB07-621 - Original Drilling - Plan 1	17,978.2	17,805.2	358.8	81.3	1.293	Level 3, SF
SLW Ranch State BB07-627 - Original Drilling - Plan 1	2,000.0	2,000.0	47.4	33.5	3.414	CC, ES

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

**Noble Energy, Inc.**  
Anticollision Summary Report

<b>Company:</b>	Northern Region - DJ Basin	<b>Local Co-ordinate Reference:</b>	Well SLW Ranch State BB07-615
<b>Project:</b>	Wells Ranch	<b>TVD Reference:</b>	WELL @ 4647.0ft
<b>Reference Site:</b>	BB Section 07	<b>MD Reference:</b>	WELL @ 4647.0ft
<b>Site Error:</b>	0.0 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	SLW Ranch State BB07-615	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Original Drilling	<b>Database:</b>	EDMP
<b>Reference Design:</b>	Plan 1	<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
BB Section 07						
SLW Ranch State BB07-627 - Original Drilling - Plan 1	17,978.2	17,887.5	760.1	478.8	2.702	SF
SLW Ranch State BB07-633 - Original Drilling - Plan 1	2,000.0	2,001.0	69.2	55.3	4.988	CC, ES
SLW Ranch State BB07-633 - Original Drilling - Plan 1	17,978.2	17,690.4	1,191.9	910.9	4.241	SF
SLW Ranch State BB07-639 - Original Drilling - Plan 1	2,000.0	2,001.0	91.1	77.2	6.566	CC, ES
SLW Ranch State BB07-639 - Original Drilling - Plan 1	17,978.2	17,865.2	1,545.8	1,264.3	5.492	SF
SLW Ranch State BB07-646 - Original Drilling - Plan 1	2,000.0	2,000.0	113.0	99.1	8.143	CC, ES
SLW Ranch State BB07-646 - Original Drilling - Plan 1	17,978.2	17,709.8	2,000.5	1,719.1	7.111	SF
SLW Ranch State BB07-650 - Original Drilling - Plan 1	2,000.0	2,000.0	134.8	120.9	9.718	CC, ES
SLW Ranch State BB07-650 - Original Drilling - Plan 1	17,978.2	17,802.1	2,415.4	2,134.1	8.587	SF
SLW Ranch State BB07-653 - Original Drilling - Plan 1	2,841.0	3,558.4	2,376.2	2,354.6	109.974	CC, ES
SLW Ranch State BB07-653 - Original Drilling - Plan 1	17,978.2	17,868.4	2,838.3	2,557.7	10.114	SF
SLW Ranch State BB07-660 - Original Drilling - Plan 1	2,000.0	2,014.0	2,398.1	2,384.2	172.243	CC, ES
SLW Ranch State BB07-660 - Original Drilling - Plan 1	17,978.2	17,872.9	3,321.7	3,040.9	11.829	SF
SLW Ranch State BB07-668 - Original Drilling - Plan 1	2,000.0	2,014.0	2,418.8	2,404.9	173.727	CC, ES
SLW Ranch State BB07-668 - Original Drilling - Plan 1	17,978.2	17,831.6	3,807.3	3,525.9	13.528	SF
SLW Ranch State BB07-673 - Original Drilling - Plan 1	2,000.0	2,014.0	2,439.5	2,425.6	175.212	CC, ES
SLW Ranch State BB07-673 - Original Drilling - Plan 1	17,978.2	17,843.1	4,196.5	3,915.8	14.949	SF
SLW Ranch State BB07-678 - Original Drilling - Plan 1	2,000.0	2,015.0	2,461.1	2,447.2	176.718	CC, ES
SLW Ranch State BB07-678 - Original Drilling - Plan 1	17,978.2	17,802.5	4,498.7	4,218.4	16.048	SF
SLW Ranch State BB07-685 - Original Drilling - Plan 1	2,000.0	2,015.0	2,485.3	2,471.3	178.454	CC, ES
SLW Ranch State BB07-685 - Original Drilling - Plan 1	17,978.2	17,176.5	4,926.8	4,654.5	18.094	SF

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

## Noble Energy, Inc.

### Anticollision Summary Report

<b>Company:</b>	Northern Region - DJ Basin	<b>Local Co-ordinate Reference:</b>	Well SLW Ranch State BB07-615
<b>Project:</b>	Wells Ranch	<b>TVD Reference:</b>	WELL @ 4647.0ft
<b>Reference Site:</b>	BB Section 07	<b>MD Reference:</b>	WELL @ 4647.0ft
<b>Site Error:</b>	0.0 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	SLW Ranch State BB07-615	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Original Drilling	<b>Database:</b>	EDMP
<b>Reference Design:</b>	Plan 1	<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						
BB Section 08						
State 11-08 - Original Drilling - Original Drilling - As Drille	13,030.2	6,657.0	4,593.9	4,379.6	21.434	CC
State 11-08 - Original Drilling - Original Drilling - As Drille	13,100.0	6,657.0	4,594.4	4,379.3	21.360	ES
State 11-08 - Original Drilling - Original Drilling - As Drille	13,800.0	6,657.0	4,657.9	4,436.2	21.007	SF
State 5519 08-34 - Original Drilling - Original Drilling - As	15,674.4	6,714.7	403.0	266.8	2.959	CC, ES, SF
State 5519 08-43 - Original Drilling - Original Drilling - As	17,027.1	6,748.6	1,542.4	1,389.5	10.088	CC, ES
State 5519 08-43 - Original Drilling - Original Drilling - As	17,100.0	6,752.2	1,544.1	1,390.6	10.061	SF
State 5519 23-08 - Original Drilling - Original Drilling - As	13,042.6	6,621.8	3,075.2	2,971.0	29.504	CC
State 5519 12-08 - Original Drilling - Original Drilling - As	13,100.0	6,621.7	3,075.8	2,970.9	29.341	ES
State 5519 12-08 - Original Drilling - Original Drilling - As	13,600.0	6,621.0	3,125.3	3,016.4	28.699	SF
State 5519 13-08 - Original Drilling - Original Drilling - As	12,936.4	6,652.0	1,759.4	1,546.3	8.255	CC, ES
State 5519 13-08 - Original Drilling - Original Drilling - As	13,000.0	6,652.0	1,760.6	1,546.9	8.239	SF
State 5519 14-08 - Original Drilling - Original Drilling - As	12,736.1	6,668.3	62.9	-38.9	0.618	Level 1, CC, ES, SF
State 5519 21-08 - Original Drilling - Original Drilling - As	14,187.6	6,738.5	4,220.6	4,102.2	35.655	CC
State 5519 21-08 - Original Drilling - Original Drilling - As	14,200.0	6,738.4	4,220.6	4,102.1	35.614	ES
State 5519 21-08 - Original Drilling - Original Drilling - As	15,100.0	6,730.7	4,318.0	4,191.8	34.196	SF
State 5519 23-08 - Original Drilling - Original Drilling - As	14,348.9	6,717.4	1,700.8	1,580.5	14.141	CC, ES
State 5519 23-08 - Original Drilling - Original Drilling - As	14,500.0	6,716.6	1,707.5	1,586.1	14.066	SF
State 5519 24-08 - Original Drilling - Original Drilling - As	14,258.5	6,705.5	76.2	-43.1	0.639	Level 1, CC, ES, SF
State 5519 31-08 - Original Drilling - Original Drilling - As	15,890.9	6,803.4	4,107.5	3,967.9	29.414	CC
State 5519 31-08 - Original Drilling - Original Drilling - As	15,900.0	6,804.2	4,107.6	3,967.8	29.392	ES
State 5519 31-08 - Original Drilling - Original Drilling - As	16,600.0	6,860.8	4,167.9	4,021.8	28.527	SF
State 5519 32-08 - Original Drilling - Original Drilling - As	15,620.4	6,733.8	3,008.6	2,873.0	22.183	CC, ES
State 5519 32-08 - Original Drilling - Original Drilling - As	16,000.0	6,728.7	3,032.4	2,893.6	21.841	SF
State 5519 33-08 - Original Drilling - Original Drilling - As	15,626.2	6,758.8	1,659.2	1,523.3	12.211	CC, ES
State 5519 33-08 - Original Drilling - Original Drilling - As	15,700.0	6,759.4	1,660.8	1,524.4	12.168	SF
State 5519 41-08 - Original Drilling - Original Drilling - As	16,948.0	6,752.7	4,634.7	4,483.0	30.541	CC
State 5519 41-08 - Original Drilling - Original Drilling - As	17,000.0	6,752.9	4,635.0	4,482.7	30.426	ES
State 5519 41-08 - Original Drilling - Original Drilling - As	17,800.0	6,754.5	4,712.3	4,553.1	29.590	SF
State 5519 42-08 - Original Drilling - Original Drilling - As	17,018.0	6,626.7	3,136.4	2,984.3	20.622	CC, ES
State 5519 42-08 - Original Drilling - Original Drilling - As	17,400.0	6,627.1	3,159.6	3,004.2	20.340	SF
State 5519 44-08 - Original Drilling - Original Drilling - As	16,915.0	6,723.4	207.5	56.2	1.371	Level 3, CC, ES, SF
State 5519 8A - Original Drilling - Original Drilling - As Dr	16,176.6	6,702.8	1,027.6	885.5	7.233	CC, ES
State 5519 8A - Original Drilling - Original Drilling - As Dr	16,200.0	6,704.1	1,027.8	885.6	7.227	SF
State 5519 8D - Original Drilling - Original Drilling - As Dr	13,647.7	6,812.0	3,813.0	3,700.6	33.943	CC
State 5519 8D - Original Drilling - Original Drilling - As Dr	13,700.0	6,811.3	3,813.3	3,700.4	33.778	ES
State 5519 8D - Original Drilling - Original Drilling - As Dr	14,400.0	6,801.8	3,886.4	3,767.6	32.706	SF
State Lease 5519 22-08 - Original Drilling - Original Drillin	14,419.9	6,601.8	3,439.6	3,319.1	28.561	CC, ES
State Lease 5519 22-08 - Original Drilling - Original Drillin	15,000.0	6,569.5	3,488.0	3,362.7	27.846	SF

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

**Noble Energy, Inc.**  
Anticollision Summary Report

<b>Company:</b>	Northern Region - DJ Basin	<b>Local Co-ordinate Reference:</b>	Well SLW Ranch State BB07-615
<b>Project:</b>	Wells Ranch	<b>TVD Reference:</b>	WELL @ 4647.0ft
<b>Reference Site:</b>	BB Section 07	<b>MD Reference:</b>	WELL @ 4647.0ft
<b>Site Error:</b>	0.0 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	SLW Ranch State BB07-615	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Original Drilling	<b>Database:</b>	EDMP
<b>Reference Design:</b>	Plan 1	<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
<b>Offset Well - Wellbore - Design</b>						
BB Section 09						
70 Ranch 11-09 - Original Drilling - Original Drilling - As D	17,400.0	17,400.0	4,909.0	4,716.8	25.551	SF
70 Ranch 11-09 - Original Drilling - Original Drilling - As D	17,978.2	6,666.6	4,809.0	4,645.4	29.396	CC, ES
70 Ranch 22-09 - Original Drilling - Original Drilling - As D	17,978.2	6,763.0	3,683.3	3,528.5	23.800	CC, ES, SF
70 Ranch 31-09 - Original Drilling - Original Drilling - As D	17,978.2	6,432.9	5,179.0	5,035.0	35.978	CC, ES, SF
70 Ranch 41-09 - Original Drilling - Original Drilling - As D	17,978.2	6,601.9	6,198.5	6,068.8	47.766	CC, ES, SF
70 Ranch 44-09 - Original Drilling - Original Drilling - As D	17,978.2	6,561.5	4,302.2	4,241.3	70.692	CC, ES, SF
70 Ranch USX BB09-05 - Original Drilling - Original Drilli	17,978.2	6,700.0	3,249.8	3,085.8	19.820	CC, ES, SF
70 Ranch USX BB09-07 - Original Drilling - Original Drilli	17,978.2	6,717.5	4,368.9	4,236.5	33.002	CC, ES, SF
70 Ranch USX BB09-08 - Original Drilling - Original Drilli	17,978.2	6,688.1	5,257.3	5,144.1	46.417	CC, ES, SF
70 Ranch USX BB09-09 - Original Drilling - Original Drilli	17,978.2	6,668.4	4,637.6	4,548.7	52.160	CC, ES, SF
70 Ranch USX BB09-10 - Original Drilling - Original Drilli	17,978.2	6,674.7	3,524.1	3,415.6	32.499	CC, ES, SF
70 Ranch USX BB09-11 - Original Drilling - Original Drillin	17,978.2	6,692.4	2,466.0	2,332.6	18.486	CC, ES, SF
70 Ranch USX BB09-15 - Original Drilling - Original Drilli	17,978.2	6,686.3	2,686.6	2,625.0	43.632	CC, ES, SF
70 Ranch USX BB09-63HN - Original Drilling - Original D	17,978.2	10,902.0	986.2	736.5	3.950	CC, ES, SF
70 Ranch USX BB09-99HZ - Original Drilling - Original D	17,978.2	9,402.8	3,911.9	3,734.0	21.996	CC, ES, SF
National Hog Farm 13-09 - Original Drilling - Original Dril	17,978.2	6,672.5	1,937.0	1,773.7	11.865	CC, ES, SF
National Hog Farm 14-09 - Original Drilling - Original Dril	17,815.4	6,718.9	129.3	-33.0	0.797	Level 1, CC, ES, SF
National Hog Farm 21-09 - Original Drilling - Original Dril	17,978.2	6,818.7	4,935.5	4,777.6	31.254	CC, ES, SF
National Hog Farm 24-09 - Original Drilling - Original Dril	17,978.2	6,753.1	1,801.1	1,727.2	24.362	CC, ES, SF
BB Section 17						
70 Ranch State BB18-689 - Original Drilling - As Drilled -	7,646.6	15,851.1	412.7	270.8	2.909	SF
70 Ranch State BB18-689 - Original Drilling - As Drilled -	10,914.4	12,576.0	392.1	258.8	2.941	CC, ES

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

**Noble Energy, Inc.**  
Anticollision Summary Report

<b>Company:</b>	Northern Region - DJ Basin	<b>Local Co-ordinate Reference:</b>	Well SLW Ranch State BB07-615
<b>Project:</b>	Wells Ranch	<b>TVD Reference:</b>	WELL @ 4647.0ft
<b>Reference Site:</b>	BB Section 07	<b>MD Reference:</b>	WELL @ 4647.0ft
<b>Site Error:</b>	0.0 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	SLW Ranch State BB07-615	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Original Drilling	<b>Database:</b>	EDMP
<b>Reference Design:</b>	Plan 1	<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
<b>Offset Well - Wellbore - Design</b>						
BB Section 18						
Christensen 15-18 - Original Drilling - Original Drilling - A	10,284.5	6,372.4	4,463.4	4,391.3	61.894	CC
Christensen 15-18 - Original Drilling - Original Drilling - A	10,300.0	6,372.6	4,463.4	4,391.1	61.742	ES
Christensen 15-18 - Original Drilling - Original Drilling - A	12,100.0	6,413.9	4,818.4	4,728.9	53.809	SF
Christensen 16-18 - Original Drilling - Original Drilling - A	11,967.9	6,567.0	4,526.9	4,326.9	22.625	CC
Christensen 16-18 - Original Drilling - Original Drilling - A	12,000.0	6,567.0	4,527.1	4,326.6	22.581	ES
Christensen 16-18 - Original Drilling - Original Drilling - A	12,900.0	6,567.0	4,621.9	4,411.7	21.980	SF
DKW Green State BB 18-01 - Original Drilling - Original D	11,581.4	6,632.0	1,187.2	990.3	6.029	CC
DKW Green State BB 18-01 - Original Drilling - Original D	11,600.0	6,632.0	1,187.4	990.2	6.021	ES
DKW Green State BB 18-01 - Original Drilling - Original D	11,700.0	6,632.0	1,193.1	994.8	6.015	SF
DKW Green State BB18-02 - Original Drilling - Original D	10,179.0	6,635.9	965.6	894.1	13.500	CC
DKW Green State BB18-02 - Original Drilling - Original D	10,200.0	6,634.8	965.8	894.0	13.449	ES
DKW Green State BB18-02 - Original Drilling - Original D	10,300.0	6,629.6	973.1	900.2	13.339	SF
DKW Green State BB18-07 - Original Drilling - Original D	10,404.7	6,554.9	2,278.1	2,204.2	30.810	CC, ES
DKW Green State BB18-07 - Original Drilling - Original D	10,900.0	6,547.4	2,331.3	2,252.3	29.485	SF
DKW Green State BB18-08 - Original Drilling - Original D	11,659.6	6,508.6	2,312.7	2,224.7	26.281	CC
DKW Green State BB18-08 - Original Drilling - Original D	11,700.0	6,507.3	2,313.1	2,224.6	26.132	ES
DKW Green State BB18-08 - Original Drilling - Original D	12,100.0	6,494.2	2,354.2	2,261.6	25.403	SF
Odle BB18-13 - Original Drilling - Original Drilling - As Dr	7,751.2	6,562.0	4,907.7	4,837.2	69.589	CC
Odle BB18-13 - Original Drilling - Original Drilling - As Dr	7,800.0	6,561.7	4,907.9	4,837.1	69.334	ES
Odle BB18-13 - Original Drilling - Original Drilling - As Dr	10,200.0	6,549.4	5,484.9	5,395.6	61.409	SF
Odle BB18-14 - Original Drilling - Original Drilling - As Dr	9,097.9	6,585.0	4,787.5	4,727.0	79.109	CC
Odle BB18-14 - Original Drilling - Original Drilling - As Dr	9,100.0	6,585.0	4,787.5	4,727.0	79.082	ES
Odle BB18-14 - Original Drilling - Original Drilling - As Dr	11,500.0	6,577.9	5,356.6	5,274.5	65.270	SF
Peterson 14W-434 - Original Drilling - Original Drilling - A	6,348.6	6,010.1	5,817.9	5,770.8	123.560	CC
Peterson 14W-434 - Original Drilling - Original Drilling - A	6,350.0	6,010.1	5,817.9	5,770.8	123.544	ES
Peterson 14W-434 - Original Drilling - Original Drilling - A	6,650.0	6,100.0	5,882.5	5,834.1	121.508	SF
Robin Green State BB18-04 - Original Drilling - Original D	7,772.6	6,575.8	991.2	893.3	10.119	CC, ES
Robin Green State BB18-04 - Original Drilling - Original D	7,800.0	6,575.9	991.6	893.5	10.105	SF
Robin Green State BB18-05 - Original Drilling - Original D	7,786.5	6,593.2	2,274.2	2,223.8	45.134	CC
Robin Green State BB18-05 - Original Drilling - Original D	7,800.0	6,593.2	2,274.2	2,223.8	45.065	ES
Robin Green State BB18-05 - Original Drilling - Original D	8,500.0	6,595.7	2,383.5	2,328.2	43.139	SF
SLW Green State BB18-09 - Original Drilling - Original D	11,549.4	6,590.4	3,596.1	3,509.3	41.452	CC
SLW Green State BB18-09 - Original Drilling - Original D	11,600.0	6,590.8	3,596.4	3,509.1	41.160	ES
SLW Green State BB18-09 - Original Drilling - Original D	12,600.0	6,599.7	3,746.5	3,649.2	38.506	SF
SLW Green State BB18-10 - Original Drilling - Original D	10,545.5	6,558.0	3,618.9	3,543.5	47.981	CC
SLW Green State BB18-10 - Original Drilling - Original D	10,600.0	6,558.5	3,619.3	3,543.2	47.581	ES
SLW Green State BB18-10 - Original Drilling - Original D	11,800.0	6,569.2	3,830.2	3,742.6	43.713	SF
SLW Green State BB18-11 - Original Drilling - Original Dr	9,222.6	6,594.5	3,471.5	3,409.7	56.227	CC, ES
SLW Green State BB18-11 - Original Drilling - Original Dr	10,600.0	6,545.2	3,734.5	3,660.2	50.265	SF
SLW Green State BB18-12 - Original Drilling - Original D	7,714.3	6,598.2	3,365.6	3,315.6	67.277	CC, ES
SLW Green State BB18-12 - Original Drilling - Original D	9,300.0	6,659.0	3,720.0	3,658.6	60.588	SF
SLW Ranch State B14-653 - Original Drilling - Plan 1	7,944.4	5,996.4	2,662.3	2,611.3	52.222	CC, ES
SLW Ranch State B14-653 - Original Drilling - Plan 1	8,900.0	5,932.0	2,827.0	2,769.0	48.789	SF
SLW Ranch State B14-653 - Original Drilling - Prelim - R	8,175.3	5,934.0	2,666.1	2,613.8	50.924	CC
SLW Ranch State B14-653 - Original Drilling - Prelim - R	8,200.0	5,934.4	2,666.2	2,613.7	50.736	ES
SLW Ranch State B14-653 - Original Drilling - Prelim - R	9,100.0	5,950.0	2,822.0	2,762.1	47.131	SF
SLW Ranch State B14-658 - Original Drilling - Plan 1	7,862.8	6,133.4	2,267.8	2,217.4	45.048	CC, ES
SLW Ranch State B14-658 - Original Drilling - Plan 1	8,600.0	6,032.6	2,380.2	2,324.9	43.039	SF
SLW Ranch State B14-658 - Original Drilling - Prelim - R	7,866.9	6,186.0	2,327.7	2,277.1	45.986	CC, ES
SLW Ranch State B14-658 - Original Drilling - Prelim - R	8,700.0	6,050.0	2,463.7	2,407.5	43.831	SF
SLW Ranch State B14-667 - Original Drilling - Plan 1	7,212.0	6,912.2	1,876.4	1,827.1	38.059	CC, ES
SLW Ranch State B14-667 - Original Drilling - Plan 1	8,200.0	6,300.0	1,967.1	1,914.2	37.189	SF
SLW Ranch State B14-667 - Original Drilling - Prelim - R	7,196.6	6,774.0	1,858.0	1,808.8	37.785	CC, ES

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

**Noble Energy, Inc.**  
Anticollision Summary Report

<b>Company:</b>	Northern Region - DJ Basin	<b>Local Co-ordinate Reference:</b>	Well SLW Ranch State BB07-615
<b>Project:</b>	Wells Ranch	<b>TVD Reference:</b>	WELL @ 4647.0ft
<b>Reference Site:</b>	BB Section 07	<b>MD Reference:</b>	WELL @ 4647.0ft
<b>Site Error:</b>	0.0 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	SLW Ranch State BB07-615	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Original Drilling	<b>Database:</b>	EDMP
<b>Reference Design:</b>	Plan 1	<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
BB Section 18						
SLW Ranch State B14-667 - Original Drilling - Prelim - R	7,900.0	6,350.0	1,918.4	1,867.1	37.450	SF
SLW Ranch State B14-672 - Original Drilling - Plan 1	7,217.5	6,905.3	1,494.1	1,444.3	30.042	CC, ES
SLW Ranch State B14-672 - Original Drilling - Plan 1	7,800.0	6,461.5	1,522.5	1,471.4	29.796	SF
SLW Ranch State B14-672 - Original Drilling - Prelim - R	7,211.2	6,856.5	1,508.4	1,458.8	30.389	CC, ES
SLW Ranch State B14-672 - Original Drilling - Prelim - R	7,700.0	6,486.7	1,532.1	1,481.5	30.265	SF
SLW Ranch State B14-679 - Original Drilling - Plan 1	7,050.0	7,113.0	1,019.3	968.9	20.213	SF
SLW Ranch State B14-679 - Original Drilling - Plan 1	7,150.0	7,015.6	1,016.9	966.6	20.232	ES
SLW Ranch State B14-679 - Original Drilling - Plan 1	7,157.5	7,008.2	1,016.9	966.6	20.237	CC
SLW Ranch State B14-679 - Original Drilling - Prelim - R	7,100.0	7,056.9	1,105.3	1,055.0	21.976	SF
SLW Ranch State B14-679 - Original Drilling - Prelim - R	7,159.1	6,998.7	1,104.6	1,054.4	22.004	CC, ES
SLW Ranch State B14-685 - Original Drilling - Plan 1	7,206.5	7,046.5	699.9	649.3	13.838	CC, ES, SF
SLW Ranch State B14-685 - Original Drilling - Prelim - R	7,150.0	7,393.1	741.0	689.5	14.399	SF
SLW Ranch State B14-685 - Original Drilling - Prelim - R	7,217.8	7,325.6	739.8	688.5	14.416	CC, ES
SLW State PC BB18-65HN - Original Drilling - Original D	7,601.0	6,705.0	2,804.1	2,753.6	55.629	CC
SLW State PC BB18-65HN - Original Drilling - Original D	9,400.0	9,400.0	2,825.1	2,714.2	25.477	ES
SLW State PC BB18-65HN - Original Drilling - Original D	12,300.0	10,986.0	2,956.0	2,770.8	15.958	SF
SLW State PC BB18-65HN - Original Drilling - Plan A - R	7,599.5	6,664.1	2,791.7	2,764.6	103.338	CC
SLW State PC BB18-65HN - Original Drilling - Plan A - R	7,600.0	6,664.5	2,791.7	2,764.6	103.331	ES
SLW State PC BB18-65HN - Original Drilling - Plan A - R	12,700.0	10,948.7	3,046.1	2,970.2	40.119	SF
SLW State PC BB18-67HN - Original Drilling - Original D	7,713.5	6,738.2	1,710.8	1,658.6	32.760	CC
SLW State PC BB18-67HN - Original Drilling - Original D	11,900.0	10,895.0	1,800.0	1,620.4	10.025	ES
SLW State PC BB18-67HN - Original Drilling - Original D	12,000.0	10,895.0	1,804.9	1,624.5	10.003	SF
SLW State PC BB18-67HN - Original Drilling - Plan B - R	7,761.2	6,766.2	1,723.4	1,695.5	61.724	CC
SLW State PC BB18-67HN - Original Drilling - Plan B - R	7,800.0	6,798.0	1,723.5	1,695.4	61.302	ES
SLW State PC BB18-67HN - Original Drilling - Plan B - R	12,200.0	10,870.1	1,836.6	1,765.2	25.732	SF
State 18-01 - Original Drilling - Original Drilling - As Drille	9,122.4	6,581.3	1,046.8	985.9	17.199	CC, ES
State 18-01 - Original Drilling - Original Drilling - As Drille	9,300.0	6,577.6	1,061.7	999.1	16.940	SF
State SLW 18-24 - Original Drilling - Original Drilling - As	9,074.4	6,580.4	2,299.7	2,239.4	38.132	CC
State SLW 18-24 - Original Drilling - Original Drilling - As	9,100.0	6,579.1	2,299.8	2,239.2	37.968	ES
State SLW 18-24 - Original Drilling - Original Drilling - As	9,700.0	6,546.8	2,383.0	2,316.9	36.015	SF
Vince State B13-63HN - Original Drilling - Original Drilling	6,600.0	9,346.2	4,255.8	4,155.2	42.285	SF
Vince State B13-63HN - Original Drilling - Original Drilling	9,458.5	6,620.0	4,030.4	3,966.8	63.315	CC
Vince State B13-63HN - Original Drilling - Original Drilling	9,500.0	6,620.0	4,030.6	3,966.5	62.894	ES
Vince State B13-63HN - Original Drilling - Plan A - Rev 1	9,338.0	6,682.5	4,125.9	4,085.6	102.411	CC
Vince State B13-63HN - Original Drilling - Plan A - Rev 1	9,500.0	6,566.0	4,126.9	4,084.9	98.276	ES
Vince State B13-63HN - Original Drilling - Plan A - Rev 1	11,800.0	6,003.9	4,627.0	4,563.7	73.078	SF

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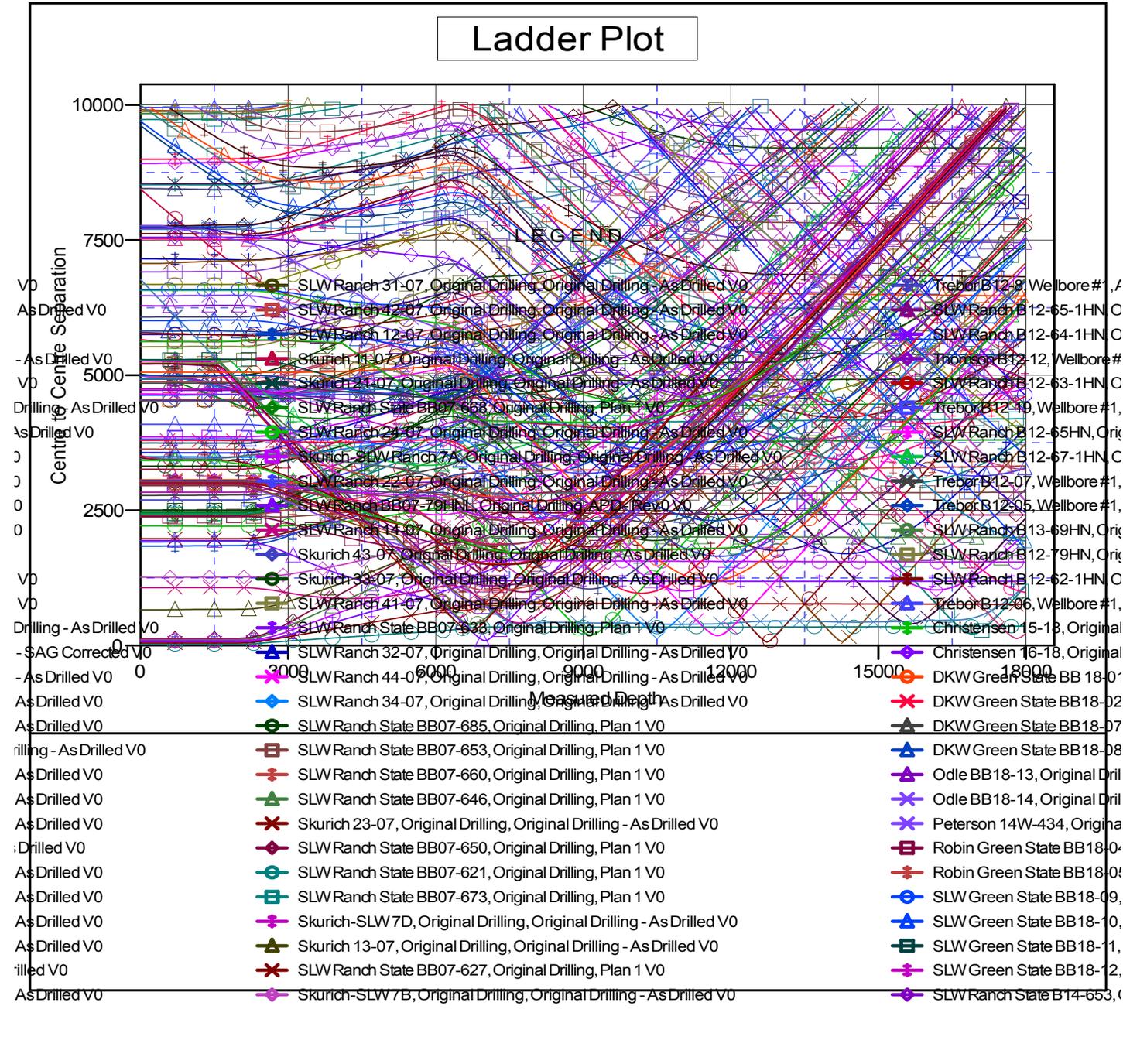
# Noble Energy, Inc.

## Anticollision Summary Report

<b>Company:</b>	Northern Region - DJ Basin	<b>Local Co-ordinate Reference:</b>	Well SLW Ranch State BB07-615
<b>Project:</b>	Wells Ranch	<b>TVD Reference:</b>	WELL @ 4647.0ft
<b>Reference Site:</b>	BB Section 07	<b>MD Reference:</b>	WELL @ 4647.0ft
<b>Site Error:</b>	0.0 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	SLW Ranch State BB07-615	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Original Drilling	<b>Database:</b>	EDMP
<b>Reference Design:</b>	Plan 1	<b>Offset TVD Reference:</b>	Offset Datum

Reference Depths are relative to WELL @ 4647.0ft  
 Offset Depths are relative to Offset Datum  
 Central Meridian is -105.5000000

Coordinates are relative to: SLW Ranch State BB07-615  
 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

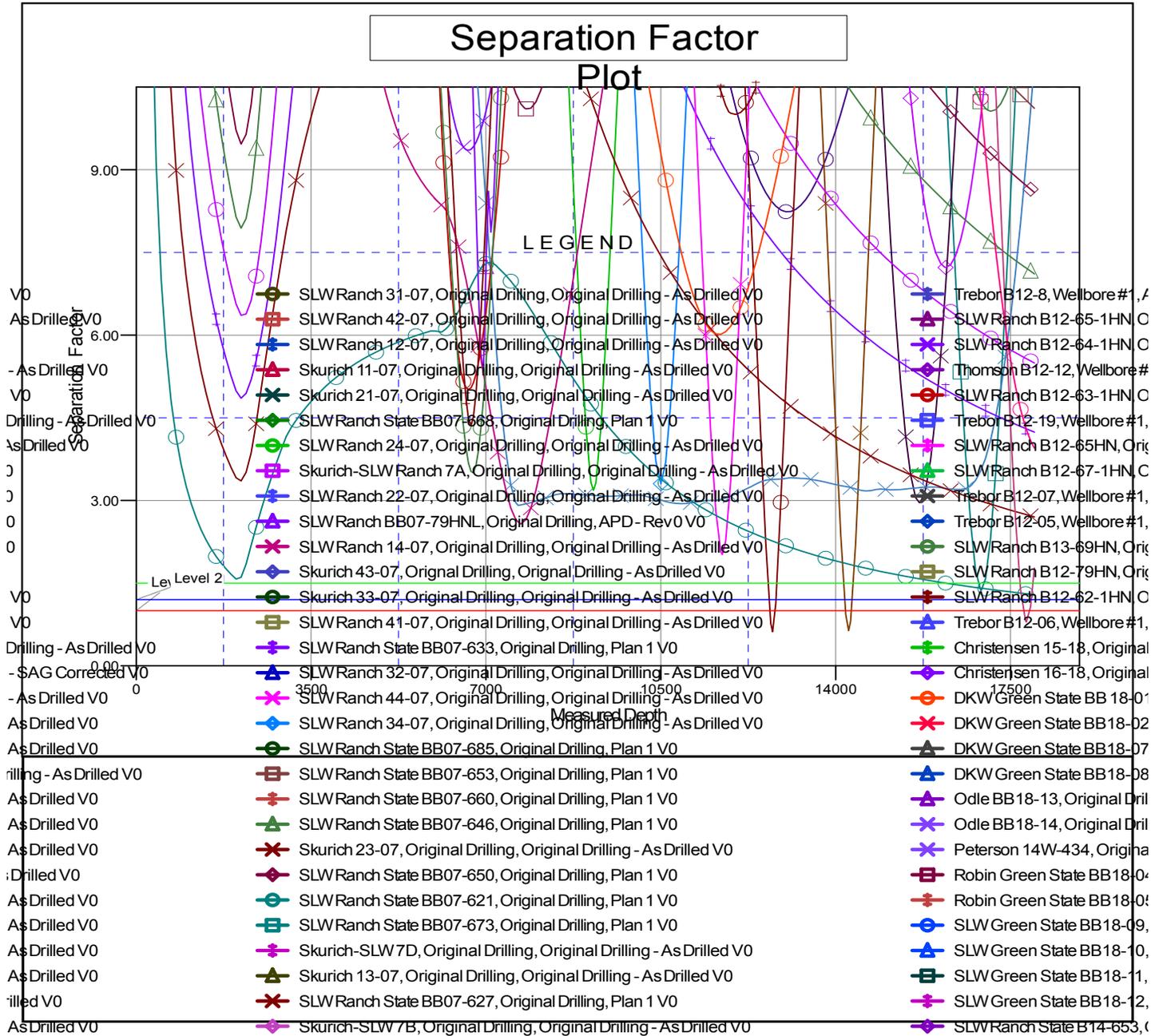
# Noble Energy, Inc.

## Anticollision Summary Report

<b>Company:</b>	Northern Region - DJ Basin	<b>Local Co-ordinate Reference:</b>	Well SLW Ranch State BB07-615
<b>Project:</b>	Wells Ranch	<b>TVD Reference:</b>	WELL @ 4647.0ft
<b>Reference Site:</b>	BB Section 07	<b>MD Reference:</b>	WELL @ 4647.0ft
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<b>Reference Well:</b>	SLW Ranch State BB07-615	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Original Drilling	<b>Database:</b>	EDMP
<b>Reference Design:</b>	Plan 1	<b>Offset TVD Reference:</b>	Offset Datum

Reference Depths are relative to WELL @ 4647.0ft  
 Offset Depths are relative to Offset Datum  
 Central Meridian is -105.5000000

Coordinates are relative to: SLW Ranch State BB07-615  
 Coordinate System is US State Plane 1983, Colorado Northern Zone  
 Grid Convergence at Surface is: 0.65°



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