

Northern Region - DJ Basin

Wells Ranch

BB Section 07

SLW Ranch State BB07-621

Original Drilling

Plan 1

Anticollision Summary Report

26 September, 2017

Noble Energy, Inc.

Anticollision Summary Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well SLW Ranch State BB07-621
Project:	Wells Ranch	TVD Reference:	WELL @ 4647.0ft
Reference Site:	BB Section 07	MD Reference:	WELL @ 4647.0ft
Site Error:	0.0 ft	North Reference:	Grid
Reference Well:	SLW Ranch State BB07-621	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Original Drilling	Database:	EDMP
Reference Design:	Plan 1	Offset TVD Reference:	Offset Datum

Reference	Plan 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:	2.00 Sigma	Casing Method:	Not applied

Survey Tool Program	Date	9/26/2017		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.0	17,808.9	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
Summary						
Offset Well - Wellbore - Design						
B Section 12						
SLW Ranch B12-62-1HN - Original Drilling - As Drilled	6,600.0	10,779.0	516.3	406.2	4.689	SF
SLW Ranch B12-62-1HN - Original Drilling - As Drilled	6,621.5	10,779.0	515.6	405.6	4.690	CC, ES
SLW Ranch B12-63-1HN - Original Drilling - As Drilled	6,539.3	10,812.0	420.6	318.5	4.120	CC
SLW Ranch B12-63-1HN - Original Drilling - As Drilled	6,550.0	10,812.0	420.7	318.0	4.093	ES
SLW Ranch B12-63-1HN - Original Drilling - As Drilled	6,600.0	10,812.0	426.6	321.5	4.060	SF
SLW Ranch B12-64-1HN - Original Drilling - As Drilled	6,479.5	10,993.0	979.3	850.6	7.610	CC
SLW Ranch B12-64-1HN - Original Drilling - As Drilled	6,500.0	10,993.0	979.5	850.2	7.572	ES
SLW Ranch B12-64-1HN - Original Drilling - As Drilled	6,600.0	10,993.0	988.6	857.0	7.513	SF
SLW Ranch B12-65-1HN - Original Drilling - As Drilled	6,309.9	10,974.0	1,609.4	1,532.4	20.911	CC, ES
SLW Ranch B12-65-1HN - Original Drilling - As Drilled	6,450.0	10,974.0	1,616.0	1,538.0	20.706	SF
SLW Ranch B12-65HN - Original Drilling - As Drilled	6,154.4	10,992.0	2,150.7	2,074.3	28.141	CC, ES
SLW Ranch B12-65HN - Original Drilling - As Drilled	6,450.0	10,992.0	2,171.1	2,092.5	27.656	SF
SLW Ranch B12-66-1HN - Original Drilling - As Drilled	6,081.5	11,132.0	2,468.3	2,390.9	31.888	CC
SLW Ranch B12-66-1HN - Original Drilling - As Drilled	6,100.0	11,132.0	2,468.3	2,390.7	31.809	ES
SLW Ranch B12-66-1HN - Original Drilling - As Drilled	6,450.0	11,132.0	2,495.2	2,414.9	31.073	SF
SLW Ranch B12-67-1HN - Original Drilling - Original Drill	5,953.3	11,201.9	3,074.0	2,939.1	22.781	CC, ES
SLW Ranch B12-67-1HN - Original Drilling - Original Drill	6,400.0	11,248.3	3,113.3	2,972.6	22.123	SF
SLW Ranch B12-79HN - Original Drilling - As Drilled	6,168.2	6,678.0	4,879.6	4,834.3	107.686	CC, ES
SLW Ranch B12-79HN - Original Drilling - As Drilled	6,400.0	6,678.0	4,927.2	4,880.9	106.420	SF
SLW Ranch B13-69HN - Original Drilling - As Drilled	6,648.0	10,833.0	694.8	570.7	5.597	CC, ES, SF
Thomson B12-12 - Wellbore #1 - Wellbore #1	6,043.8	5,849.6	4,374.8	4,332.4	103.262	CC
Thomson B12-12 - Wellbore #1 - Wellbore #1	6,050.0	5,853.9	4,374.8	4,332.4	103.163	ES
Thomson B12-12 - Wellbore #1 - Wellbore #1	6,400.0	6,141.3	4,470.0	4,425.4	100.332	SF
Trebor B12-05 - Wellbore #1 - As Drilled	6,032.8	6,078.3	4,457.4	4,413.8	102.177	CC, ES
Trebor B12-05 - Wellbore #1 - As Drilled	6,500.0	6,516.1	4,604.2	4,557.6	98.865	SF
Trebor B12-06 - Wellbore #1 - As Drilled	4,000.7	3,933.6	3,761.9	3,734.4	136.439	CC
Trebor B12-06 - Wellbore #1 - As Drilled	4,100.0	4,012.0	3,762.2	3,734.0	133.273	ES
Trebor B12-06 - Wellbore #1 - As Drilled	6,400.0	6,187.1	3,950.7	3,906.0	88.320	SF
Trebor B12-07 - Wellbore #1 - As Drilled	100.0	37.5	2,760.8	2,760.6	10,000.000	CC
Trebor B12-07 - Wellbore #1 - As Drilled	2,400.0	2,354.3	2,774.0	2,757.6	169.368	ES
Trebor B12-07 - Wellbore #1 - As Drilled	6,350.0	6,123.7	3,150.7	3,106.4	71.188	SF
Trebor B12-19 - Wellbore #1 - As Drilled	5,155.4	5,120.7	4,550.7	4,514.4	125.469	CC
Trebor B12-19 - Wellbore #1 - As Drilled	5,300.0	5,240.7	4,551.1	4,513.8	122.101	ES
Trebor B12-19 - Wellbore #1 - As Drilled	6,800.0	6,800.0	4,934.6	4,887.0	103.647	SF
Trebor B12-8 - Wellbore #1 - As Drilled	0.0	0.0	1,895.5			
Trebor B12-8 - Wellbore #1 - As Drilled	2,000.0	1,963.5	1,904.3	1,890.6	139.670	ES
Trebor B12-8 - Wellbore #1 - As Drilled	6,800.0	6,552.4	2,802.4	2,755.8	60.025	SF

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

Noble Energy, Inc.
Anticollision Summary Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well SLW Ranch State BB07-621
Project:	Wells Ranch	TVD Reference:	WELL @ 4647.0ft
Reference Site:	BB Section 07	MD Reference:	WELL @ 4647.0ft
Site Error:	0.0 ft	North Reference:	Grid
Reference Well:	SLW Ranch State BB07-621	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Original Drilling	Database:	EDMP
Reference Design:	Plan 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
Offset Well - Wellbore - Design						

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Summary						
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Offset Well - Wellbore - Design						
BB Section 07						
Skurich 11-07 - Original Drilling - Original Drilling - As Dri	828.0	792.1	3,238.2	3,232.9	607.678	CC
Skurich 11-07 - Original Drilling - Original Drilling - As Dri	1,900.0	1,848.7	3,239.8	3,227.0	251.942	ES
Skurich 11-07 - Original Drilling - Original Drilling - As Dri	9,700.0	6,569.7	4,662.6	4,599.2	73.514	SF
Skurich 13-07 - Original Drilling - Original Drilling - As Dri	100.0	60.9	649.3	649.1	2,794.043	CC
Skurich 13-07 - Original Drilling - Original Drilling - As Dri	2,245.4	2,216.9	658.0	642.6	42.777	ES
Skurich 13-07 - Original Drilling - Original Drilling - As Dri	7,800.0	6,509.5	1,381.7	1,331.0	27.275	SF
Skurich 21-07 - Original Drilling - Original Drilling - As Dri	2,223.4	2,232.8	3,721.5	3,706.1	242.367	CC, ES
Skurich 21-07 - Original Drilling - Original Drilling - As Dri	14,100.0	14,100.0	6,639.0	6,528.8	60.250	SF
Skurich 23-07 - Original Drilling - Original Drilling - As Dri	8,939.9	6,550.0	1,490.4	1,322.3	8.864	CC, ES
Skurich 23-07 - Original Drilling - Original Drilling - As Dri	9,000.0	6,550.0	1,491.7	1,323.0	8.846	SF
Skurich 33-07 - Original Drilling - Original Drilling - As Dri	10,279.2	6,578.5	1,608.4	1,534.6	21.787	CC
Skurich 33-07 - Original Drilling - Original Drilling - As Dri	10,300.0	6,578.3	1,608.5	1,534.5	21.733	ES
Skurich 33-07 - Original Drilling - Original Drilling - As Dri	10,500.0	6,576.3	1,623.5	1,547.9	21.502	SF
Skurich 43-07 - Original Drilling - Original Drilling - As Drill	11,611.7	6,624.8	1,317.2	1,228.0	14.773	CC, ES
Skurich 43-07 - Original Drilling - Original Drilling - As Drill	11,700.0	6,679.5	1,320.0	1,230.0	14.660	SF
Skurich-SLW 7B - Original Drilling - Original Drilling - As	8,253.2	6,561.6	749.7	693.6	13.355	CC, ES
Skurich-SLW 7B - Original Drilling - Original Drilling - As	8,300.0	6,562.2	751.2	694.8	13.319	SF
Skurich-SLW 7D - Original Drilling - Original Drilling - As	2,200.0	2,193.0	2,817.9	2,766.4	54.702	CC
Skurich-SLW 7D - Original Drilling - Original Drilling - As	2,300.0	2,293.0	2,819.7	2,765.8	52.356	ES
Skurich-SLW 7D - Original Drilling - Original Drilling - As	9,000.0	6,553.0	3,503.7	3,335.5	20.835	SF
Skurich-SLW Ranch 7A - Original Drilling - Original Drillin	10,878.2	6,623.4	671.7	591.1	8.336	CC, ES
Skurich-SLW Ranch 7A - Original Drilling - Original Drillin	10,900.0	6,624.3	672.1	591.4	8.327	SF
SLW Ranch 12-07 - Original Drilling - Original Drilling - A	0.0	0.0	1,818.3			
SLW Ranch 12-07 - Original Drilling - Original Drilling - A	2,100.0	2,079.8	1,828.4	1,814.0	126.976	ES
SLW Ranch 12-07 - Original Drilling - Original Drilling - A	8,400.0	6,570.2	2,891.3	2,837.3	53.502	SF
SLW Ranch 14-07 - Original Drilling - Original Drilling - A	7,523.4	6,532.5	81.6	-77.9	0.512	Level 1, CC, ES, SF
SLW Ranch 22-07 - Original Drilling - Original Drilling - A	2,236.1	2,264.2	2,675.0	2,659.5	172.436	CC, ES
SLW Ranch 22-07 - Original Drilling - Original Drilling - A	9,700.0	6,533.5	2,972.3	2,906.8	45.414	SF
SLW Ranch 24-07 - Original Drilling - Original Drilling - A	8,982.0	6,538.3	140.9	80.7	2.340	CC, ES, SF
SLW Ranch 31-07 - Original Drilling - Original Drilling - A	10,140.3	6,613.8	4,170.8	4,098.4	57.572	CC
SLW Ranch 31-07 - Original Drilling - Original Drilling - A	10,200.0	6,614.3	4,171.2	4,098.2	57.096	ES
SLW Ranch 31-07 - Original Drilling - Original Drilling - A	11,600.0	6,627.7	4,418.2	4,333.4	52.071	SF
SLW Ranch 32-07 - Original Drilling - Original Drilling - A	9,979.3	6,459.2	2,966.6	2,896.7	42.439	CC
SLW Ranch 32-07 - Original Drilling - Original Drilling - A	10,000.0	6,459.1	2,966.7	2,896.6	42.316	ES
SLW Ranch 32-07 - Original Drilling - Original Drilling - A	10,800.0	6,452.9	3,077.9	3,001.3	40.183	SF
SLW Ranch 34-07 - Original Drilling - Original Drilling - A	10,333.0	6,627.6	87.6	13.1	1.176	Level 2, CC, ES, SF
SLW Ranch 41-07 - Original Drilling - Original Drilling - A	11,550.1	6,576.6	4,201.8	4,113.7	47.666	CC
SLW Ranch 41-07 - Original Drilling - Original Drilling - A	11,600.0	6,576.8	4,202.1	4,113.4	47.379	ES
SLW Ranch 41-07 - Original Drilling - Original Drilling - A	12,800.0	6,581.6	4,383.3	4,284.3	44.274	SF
SLW Ranch 42-07 - Original Drilling - Original Drilling - A	11,501.3	6,542.5	2,836.4	2,749.0	32.455	CC, ES
SLW Ranch 42-07 - Original Drilling - Original Drilling - A	12,100.0	6,542.1	2,898.8	2,806.4	31.365	SF
SLW Ranch 44-07 - Original Drilling - Original Drilling - A	11,562.2	6,601.8	155.8	67.4	1.763	CC, ES, SF
SLW Ranch BB07-79HNL - Original Drilling - APD - Rev	6,872.7	7,051.0	18.0	5.6	1.447	Level 3, CC, ES, SF
SLW Ranch State BB06-690 - Original Drilling - Plan 1	1,910.8	1,925.8	2,485.3	2,472.0	187.045	CC
SLW Ranch State BB06-690 - Original Drilling - Plan 1	2,000.0	2,011.0	2,485.3	2,471.4	178.641	ES
SLW Ranch State BB06-690 - Original Drilling - Plan 1	13,500.0	12,849.2	4,993.1	4,829.3	30.485	SF
SLW Ranch State BB07-615 - Original Drilling - Plan 1	2,000.0	2,000.0	21.9	8.0	1.576	CC, ES
SLW Ranch State BB07-615 - Original Drilling - Plan 1	17,808.9	17,980.2	358.8	81.2	1.292	Level 3, SF
SLW Ranch State BB07-627 - Original Drilling - Plan 1	2,200.0	2,200.0	25.5	10.2	1.666	CC, ES
SLW Ranch State BB07-627 - Original Drilling - Plan 1	17,808.9	17,888.5	430.4	158.4	1.582	SF
SLW Ranch State BB07-633 - Original Drilling - Plan 1	2,200.0	2,199.0	47.4	32.1	3.095	CC, ES
SLW Ranch State BB07-633 - Original Drilling - Plan 1	17,808.9	17,693.1	838.2	557.2	2.983	SF
SLW Ranch State BB07-639 - Original Drilling - Plan 1	2,200.0	2,199.0	69.3	54.0	4.527	CC, ES

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Reference Design:	Plan 1	Offset TVD Reference:	Offset Datum

Summary						
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BB Section 07						
SLW Ranch State BB07-639 - Original Drilling - Plan 1	17,808.9	17,867.1	1,201.7	922.0	4.297	SF
SLW Ranch State BB07-646 - Original Drilling - Plan 1	2,000.0	2,000.0	91.1	77.2	6.568	CC, ES
SLW Ranch State BB07-646 - Original Drilling - Plan 1	17,808.9	17,711.4	1,646.8	1,365.8	5.861	SF
SLW Ranch State BB07-650 - Original Drilling - Plan 1	2,000.0	2,000.0	113.0	99.1	8.143	CC, ES
SLW Ranch State BB07-650 - Original Drilling - Plan 1	17,808.9	17,804.1	2,063.4	1,782.7	7.351	SF
SLW Ranch State BB07-653 - Original Drilling - Plan 1	3,139.1	3,836.0	2,296.4	2,272.6	96.633	CC
SLW Ranch State BB07-653 - Original Drilling - Plan 1	17,808.9	17,872.1	2,484.5	2,204.0	8.858	ES, SF
SLW Ranch State BB07-660 - Original Drilling - Plan 1	2,200.0	2,214.0	2,377.5	2,362.1	154.816	CC, ES
SLW Ranch State BB07-660 - Original Drilling - Plan 1	17,808.9	17,880.3	2,969.2	2,688.7	10.583	SF
SLW Ranch State BB07-668 - Original Drilling - Plan 1	2,200.0	2,214.0	2,398.1	2,382.8	156.160	CC, ES
SLW Ranch State BB07-668 - Original Drilling - Plan 1	17,808.9	17,833.3	3,453.7	3,172.5	12.285	SF
SLW Ranch State BB07-673 - Original Drilling - Plan 1	2,200.0	2,214.0	2,418.8	2,403.4	157.506	CC, ES
SLW Ranch State BB07-673 - Original Drilling - Plan 1	17,808.9	17,847.4	3,843.9	3,563.5	13.711	SF
SLW Ranch State BB07-678 - Original Drilling - Plan 1	2,200.0	2,215.0	2,440.4	2,425.0	158.874	CC, ES
SLW Ranch State BB07-678 - Original Drilling - Plan 1	17,808.9	17,808.3	4,145.2	3,865.2	14.804	SF
SLW Ranch State BB07-685 - Original Drilling - Plan 1	2,110.8	2,125.8	2,464.5	2,449.8	167.418	CC
SLW Ranch State BB07-685 - Original Drilling - Plan 1	2,200.0	2,200.0	2,464.6	2,449.3	161.015	ES
SLW Ranch State BB07-685 - Original Drilling - Plan 1	17,808.9	17,178.4	4,574.3	4,302.5	16.828	SF

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

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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	12,866.6	6,595.0	4,256.1	4,043.4	20.012	CC
State 11-08 - Original Drilling - Original Drilling - As Drille	12,900.0	6,595.0	4,256.2	4,043.2	19.977	ES
State 11-08 - Original Drilling - Original Drilling - As Drille	13,600.0	6,595.0	4,318.7	4,099.0	19.656	SF
State 5519 08-34 - Original Drilling - Original Drilling - As	15,502.6	6,653.3	58.4	-77.1	0.431	Level 1, CC, ES, SF
State 5519 08-43 - Original Drilling - Original Drilling - As	16,856.6	6,671.8	1,195.1	1,042.9	7.855	CC, ES
State 5519 08-43 - Original Drilling - Original Drilling - As	16,900.0	6,674.3	1,195.8	1,043.4	7.843	SF
State 5519 12-08 - Original Drilling - Original Drilling - As	12,876.4	6,548.2	2,736.7	2,633.2	26.436	CC
State 5519 12-08 - Original Drilling - Original Drilling - As	12,900.0	6,548.1	2,736.8	2,633.1	26.373	ES
State 5519 12-08 - Original Drilling - Original Drilling - As	13,300.0	6,547.1	2,769.3	2,662.1	25.838	SF
State 5519 13-08 - Original Drilling - Original Drilling - As	12,767.6	6,590.0	1,421.8	1,210.4	6.725	CC, ES
State 5519 13-08 - Original Drilling - Original Drilling - As	12,800.0	6,590.0	1,422.2	1,210.5	6.718	SF
State 5519 14-08 - Original Drilling - Original Drilling - As	12,565.4	6,607.1	274.5	174.3	2.741	CC, ES, SF
State 5519 21-08 - Original Drilling - Original Drilling - As	14,026.4	6,725.4	3,880.7	3,762.7	32.897	CC
State 5519 21-08 - Original Drilling - Original Drilling - As	14,100.0	6,726.0	3,881.4	3,762.6	32.678	ES
State 5519 21-08 - Original Drilling - Original Drilling - As	14,800.0	6,732.0	3,956.9	3,832.1	31.701	SF
State 5519 23-08 - Original Drilling - Original Drilling - As	14,181.8	6,643.0	1,360.4	1,240.9	11.379	CC
State 5519 23-08 - Original Drilling - Original Drilling - As	14,200.0	6,642.7	1,360.6	1,240.8	11.364	ES
State 5519 23-08 - Original Drilling - Original Drilling - As	14,300.0	6,640.7	1,365.6	1,245.2	11.346	SF
State 5519 24-08 - Original Drilling - Original Drilling - As	14,085.6	6,631.3	261.9	143.4	2.209	CC, ES
State 5519 24-08 - Original Drilling - Original Drilling - As	14,100.0	6,631.6	262.3	143.5	2.209	SF
State 5519 31-08 - Original Drilling - Original Drilling - As	15,726.6	6,733.7	3,764.0	3,625.0	27.082	CC
State 5519 31-08 - Original Drilling - Original Drilling - As	15,800.0	6,739.7	3,764.7	3,624.9	26.927	ES
State 5519 31-08 - Original Drilling - Original Drilling - As	16,400.0	6,788.2	3,823.3	3,678.3	26.375	SF
State 5519 32-08 - Original Drilling - Original Drilling - As	15,458.5	6,729.2	2,664.5	2,529.2	19.697	CC
State 5519 32-08 - Original Drilling - Original Drilling - As	15,500.0	6,729.8	2,664.8	2,529.1	19.636	ES
State 5519 32-08 - Original Drilling - Original Drilling - As	15,800.0	6,670.5	2,686.2	2,548.3	19.479	SF
State 5519 33-08 - Original Drilling - Original Drilling - As	15,458.7	6,691.1	1,316.2	1,181.0	9.735	CC, ES
State 5519 33-08 - Original Drilling - Original Drilling - As	15,500.0	6,691.4	1,316.9	1,181.3	9.715	SF
State 5519 41-08 - Original Drilling - Original Drilling - As	16,793.5	6,597.5	4,285.0	4,134.0	28.375	CC
State 5519 41-08 - Original Drilling - Original Drilling - As	16,800.0	6,597.5	4,285.0	4,133.9	28.362	ES
State 5519 41-08 - Original Drilling - Original Drilling - As	17,500.0	6,598.9	4,342.7	4,185.3	27.599	SF
State 5519 42-08 - Original Drilling - Original Drilling - As	16,857.7	6,600.0	2,785.9	2,634.1	18.354	CC
State 5519 42-08 - Original Drilling - Original Drilling - As	16,900.0	6,600.0	2,786.2	2,634.0	18.302	ES
State 5519 42-08 - Original Drilling - Original Drilling - As	17,200.0	6,600.0	2,806.8	2,652.2	18.155	SF
State 5519 44-08 - Original Drilling - Original Drilling - As	16,742.6	6,659.0	140.9	-9.8	0.935	Level 1, CC, ES, SF
State 5519 8A - Original Drilling - Original Drilling - As Dr	16,010.4	6,646.6	680.0	538.4	4.804	CC, ES, SF
State 5519 8D - Original Drilling - Original Drilling - As Dr	13,484.8	6,738.7	3,476.2	3,364.6	31.138	CC
State 5519 8D - Original Drilling - Original Drilling - As Dr	13,500.0	6,738.5	3,476.2	3,364.4	31.092	ES
State 5519 8D - Original Drilling - Original Drilling - As Dr	14,200.0	6,728.9	3,548.8	3,431.1	30.153	SF
State Lease 5519 22-08 - Original Drilling - Original Drillin	14,259.5	6,553.6	3,097.0	2,977.0	25.813	CC
State Lease 5519 22-08 - Original Drilling - Original Drillin	14,300.0	6,551.4	3,097.3	2,976.9	25.723	ES
State Lease 5519 22-08 - Original Drilling - Original Drillin	14,700.0	6,530.1	3,128.0	3,004.2	25.270	SF

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

Noble Energy, Inc.
Anticollision Summary Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well SLW Ranch State BB07-621
Project:	Wells Ranch	TVD Reference:	WELL @ 4647.0ft
Reference Site:	BB Section 07	MD Reference:	WELL @ 4647.0ft
Site Error:	0.0 ft	North Reference:	Grid
Reference Well:	SLW Ranch State BB07-621	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Original Drilling	Database:	EDMP
Reference Design:	Plan 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
Offset Well - Wellbore - Design						
BB Section 09						
70 Ranch 11-09 - Original Drilling - Original Drilling - As D	17,808.9	6,604.7	4,457.1	4,294.4	27.384	CC, ES, SF
70 Ranch 22-09 - Original Drilling - Original Drilling - As D	17,808.9	6,694.2	3,367.9	3,217.2	22.362	CC, ES, SF
70 Ranch 31-09 - Original Drilling - Original Drilling - As D	17,808.9	6,386.0	4,880.6	4,740.4	34.825	CC, ES, SF
70 Ranch 41-09 - Original Drilling - Original Drilling - As D	17,808.9	6,555.8	5,944.6	5,819.9	47.640	CC, ES, SF
70 Ranch 44-09 - Original Drilling - Original Drilling - As D	17,808.9	6,513.2	4,260.5	4,207.1	79.767	CC, ES, SF
70 Ranch USX BB09-05 - Original Drilling - Original Drilling	17,808.9	6,654.3	2,897.4	2,734.2	17.749	CC, ES, SF
70 Ranch USX BB09-07 - Original Drilling - Original Drilling	17,808.9	6,643.9	4,112.4	3,986.6	32.678	CC, ES, SF
70 Ranch USX BB09-08 - Original Drilling - Original Drilling	17,808.9	6,625.8	5,053.9	4,948.1	47.738	CC, ES, SF
70 Ranch USX BB09-09 - Original Drilling - Original Drilling	17,808.9	6,602.4	4,505.9	4,426.7	56.888	CC, ES, SF
70 Ranch USX BB09-10 - Original Drilling - Original Drilling	17,808.9	6,609.7	3,338.3	3,240.9	34.284	CC, ES, SF
70 Ranch USX BB09-11 - Original Drilling - Original Drilling	17,808.9	6,630.3	2,210.5	2,087.9	18.033	CC, ES, SF
70 Ranch USX BB09-15 - Original Drilling - Original Drilling	17,808.9	6,623.6	2,654.7	2,602.7	51.048	CC, ES, SF
70 Ranch USX BB09-63HN - Original Drilling - Original Drilling	17,808.9	10,902.0	633.2	387.0	2.572	CC, ES, SF
70 Ranch USX BB09-99HZ - Original Drilling - Original Drilling	17,808.9	9,217.7	3,655.4	3,484.2	21.355	CC, ES, SF
National Hog Farm 13-09 - Original Drilling - Original Drilling	17,808.9	6,622.3	1,586.1	1,424.0	9.788	CC, ES, SF
National Hog Farm 14-09 - Original Drilling - Original Drilling	17,641.2	6,645.9	481.0	319.3	2.975	CC, ES, SF
National Hog Farm 21-09 - Original Drilling - Original Drilling	17,808.9	6,746.0	4,605.7	4,450.0	29.580	CC, ES, SF
National Hog Farm 24-09 - Original Drilling - Original Drilling	17,808.9	6,706.0	1,739.7	1,684.7	31.653	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

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well SLW Ranch State BB07-621
Project:	Wells Ranch	TVD Reference:	WELL @ 4647.0ft
Reference Site:	BB Section 07	MD Reference:	WELL @ 4647.0ft
Site Error:	0.0 ft	North Reference:	Grid
Reference Well:	SLW Ranch State BB07-621	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Original Drilling	Database:	EDMP
Reference Design:	Plan 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
BB Section 17						
70 Ranch BB18-622 - Original Drilling - APD - Rev 0	16,481.7	6,965.3	5,008.7	4,884.3	40.263	CC
70 Ranch BB18-622 - Original Drilling - APD - Rev 0	16,900.0	6,605.1	5,010.7	4,881.1	38.671	ES
70 Ranch BB18-622 - Original Drilling - APD - Rev 0	17,808.9	6,228.0	5,074.3	4,934.6	36.305	SF
70 Ranch BB18-622 - Original Drilling - Original Drilling -	16,703.2	6,748.6	4,973.2	4,822.5	32.994	CC
70 Ranch BB18-622 - Original Drilling - Original Drilling -	16,800.0	6,707.5	4,973.8	4,822.0	32.775	ES
70 Ranch BB18-622 - Original Drilling - Original Drilling -	17,808.9	6,202.0	5,050.3	4,889.4	31.381	SF
70 Ranch State BB18-611 - Original Drilling - APD - Rev	16,447.8	6,864.6	5,734.5	5,610.5	46.255	CC
70 Ranch State BB18-611 - Original Drilling - APD - Rev	16,800.0	6,578.2	5,736.5	5,608.1	44.695	ES
70 Ranch State BB18-611 - Original Drilling - APD - Rev	17,808.9	6,217.6	5,812.5	5,672.8	41.617	SF
70 Ranch State BB18-611 - Original Drilling - Original Dri	16,413.6	6,887.0	5,717.8	5,569.1	38.434	CC
70 Ranch State BB18-611 - Original Drilling - Original Dri	16,500.0	6,868.0	5,718.3	5,568.7	38.221	ES
70 Ranch State BB18-611 - Original Drilling - Original Dri	17,808.9	6,313.4	5,827.9	5,667.0	36.226	SF
70 Ranch State BB18-611 - Original Drilling - ST01 - ST0	7,050.0	16,361.6	5,739.6	5,596.8	40.167	ES
70 Ranch State BB18-611 - Original Drilling - ST01 - ST0	7,076.7	16,334.9	5,739.5	5,596.9	40.237	CC
70 Ranch State BB18-611 - Original Drilling - ST01 - ST0	14,900.0	14,900.0	5,790.5	5,600.4	30.458	SF
70 Ranch State BB18-615 - Original Drilling - APD - Rev	16,571.0	6,779.7	5,487.5	5,362.1	43.741	CC
70 Ranch State BB18-615 - Original Drilling - APD - Rev	16,800.0	6,594.7	5,488.6	5,360.3	42.771	ES
70 Ranch State BB18-615 - Original Drilling - APD - Rev	17,808.9	6,250.0	5,566.5	5,427.0	39.888	SF
70 Ranch State BB18-615 - Original Drilling - Original Dr	12,989.0	10,222.7	5,464.7	5,330.9	40.841	CC
70 Ranch State BB18-615 - Original Drilling - Original Dr	15,900.0	15,900.0	5,491.7	5,314.7	31.022	ES, SF
70 Ranch State BB18-627 - Original Drilling - 3D Plannin	16,553.3	6,988.2	4,577.9	4,452.7	36.570	CC
70 Ranch State BB18-627 - Original Drilling - 3D Plannin	16,600.0	6,988.2	4,578.1	4,452.4	36.398	ES
70 Ranch State BB18-627 - Original Drilling - 3D Plannin	17,808.9	6,643.7	4,701.2	4,562.6	33.925	SF
70 Ranch State BB18-627 - Original Drilling - APD - Rev	16,879.6	6,707.0	4,637.3	4,508.1	35.887	CC
70 Ranch State BB18-627 - Original Drilling - APD - Rev	17,000.0	6,619.6	4,637.9	4,507.2	35.470	ES
70 Ranch State BB18-627 - Original Drilling - APD - Rev	17,808.9	6,336.4	4,698.5	4,558.8	33.640	SF
70 Ranch State BB18-627 - Original Drilling - Original Dr	15,815.0	7,578.4	4,606.4	4,465.8	32.759	CC
70 Ranch State BB18-627 - Original Drilling - Original Dr	16,200.0	7,258.0	4,607.2	4,463.0	31.937	ES
70 Ranch State BB18-627 - Original Drilling - Original Dr	17,600.0	6,766.6	4,760.0	4,601.9	30.124	SF
70 Ranch State BB18-634 - Original Drilling - APD - Rev	16,671.0	6,920.0	4,083.5	3,956.9	32.232	CC
70 Ranch State BB18-634 - Original Drilling - APD - Rev	16,900.0	6,718.0	4,084.3	3,954.8	31.528	ES
70 Ranch State BB18-634 - Original Drilling - APD - Rev	17,808.9	6,299.2	4,150.0	4,010.5	29.750	SF
70 Ranch State BB18-634 - Original Drilling - Original Dr	16,600.0	6,600.0	4,065.1	3,705.6	11.308	ES, SF
70 Ranch State BB18-634 - Original Drilling - Original Dr	17,383.0	5,895.0	4,024.1	3,869.3	25.990	CC
70 Ranch State BB18-647 - Original Drilling - APD - Rev	7,852.8	15,730.5	3,553.2	3,525.1	126.291	CC
70 Ranch State BB18-647 - Original Drilling - APD - Rev	16,900.0	6,704.3	3,580.0	3,450.5	27.635	ES
70 Ranch State BB18-647 - Original Drilling - APD - Rev	17,808.9	6,299.2	3,658.7	3,519.8	26.334	SF
70 Ranch State BB18-647 - Original Drilling - Original Dr	7,839.1	15,740.3	3,541.6	3,399.1	24.848	CC
70 Ranch State BB18-647 - Original Drilling - Original Dr	13,400.0	13,400.0	3,558.2	3,387.2	20.807	ES
70 Ranch State BB18-647 - Original Drilling - Original Dr	15,000.0	15,000.0	3,583.1	3,390.4	18.592	SF
70 Ranch State BB18-655 - Original Drilling - APD - Rev	7,491.8	16,085.0	2,845.5	2,819.5	109.367	CC
70 Ranch State BB18-655 - Original Drilling - APD - Rev	16,800.0	6,793.1	2,899.0	2,770.7	22.594	ES
70 Ranch State BB18-655 - Original Drilling - APD - Rev	17,500.0	6,397.6	2,945.5	2,809.6	21.671	SF
70 Ranch State BB18-655 - Original Drilling - Original Dr	7,492.2	16,252.0	2,815.4	2,669.8	19.341	CC
70 Ranch State BB18-655 - Original Drilling - Original Dr	7,500.0	16,252.0	2,815.4	2,669.8	19.334	ES
70 Ranch State BB18-655 - Original Drilling - Original Dr	17,300.0	6,768.8	2,891.7	2,734.6	18.411	SF
70 Ranch State BB18-662 - Original Drilling - APD - Rev	16,725.4	6,769.2	2,366.2	2,238.9	18.585	CC
70 Ranch State BB18-662 - Original Drilling - APD - Rev	16,800.0	6,706.3	2,366.5	2,238.2	18.445	ES
70 Ranch State BB18-662 - Original Drilling - APD - Rev	17,300.0	6,446.9	2,399.7	2,266.1	17.963	SF
70 Ranch State BB18-662 - Original Drilling - Original Dr	16,408.0	7,089.8	2,350.9	2,204.7	16.084	CC
70 Ranch State BB18-662 - Original Drilling - Original Dr	16,808.0	6,651.0	2,353.0	2,203.0	15.689	ES
70 Ranch State BB18-662 - Original Drilling - Original Dr	17,200.0	6,461.0	2,375.6	2,221.8	15.452	SF
70 Ranch State BB18-675 - Original Drilling - APD - Rev	7,482.2	15,897.5	1,682.3	1,656.2	64.393	CC

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

Noble Energy, Inc.

Anticollision Summary Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well SLW Ranch State BB07-621
Project:	Wells Ranch	TVD Reference:	WELL @ 4647.0ft
Reference Site:	BB Section 07	MD Reference:	WELL @ 4647.0ft
Site Error:	0.0 ft	North Reference:	Grid
Reference Well:	SLW Ranch State BB07-621	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Original Drilling	Database:	EDMP
Reference Design:	Plan 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
BB Section 17						
70 Ranch State BB18-675 - Original Drilling - APD - Rev	16,400.0	6,984.4	1,740.7	1,617.2	14.097	ES
70 Ranch State BB18-675 - Original Drilling - APD - Rev	17,000.0	6,517.9	1,766.3	1,636.0	13.559	SF
70 Ranch State BB18-675 - Original Drilling - Original Dr	7,481.9	15,876.5	1,664.9	1,525.0	11.903	CC, ES
70 Ranch State BB18-675 - Original Drilling - Original Dr	12,600.0	12,600.0	1,695.1	1,543.4	11.178	SF
70 Ranch State BB18-681 - Original Drilling - APD - Rev	16,700.2	6,742.2	1,016.8	889.7	8.004	CC, ES
70 Ranch State BB18-681 - Original Drilling - APD - Rev	16,900.0	6,599.4	1,024.4	895.0	7.919	SF
70 Ranch State BB18-681 - Original Drilling - Original Dr	15,871.0	7,615.0	1,002.9	860.6	7.050	CC
70 Ranch State BB18-681 - Original Drilling - Original Dr	15,900.0	7,590.6	1,003.0	860.4	7.038	ES
70 Ranch State BB18-681 - Original Drilling - Original Dr	16,800.0	6,697.0	1,023.0	873.7	6.853	SF
70 Ranch State BB18-689 - Original Drilling - As Drilled -	7,466.6	15,865.7	746.0	720.0	28.722	CC
70 Ranch State BB18-689 - Original Drilling - As Drilled -	16,300.0	7,033.0	808.2	685.9	6.610	ES
70 Ranch State BB18-689 - Original Drilling - As Drilled -	16,700.0	6,673.1	819.7	692.9	6.461	SF
70 Ranch State BB18-689 - Original Drilling - As Drilled -	7,500.0	15,839.7	740.0	597.8	5.206	SF
70 Ranch State BB18-689 - Original Drilling - As Drilled -	10,772.2	12,546.6	720.2	587.1	5.409	CC, ES
National Hog Farm 17-11 - Original Drilling - Original Drill	12,847.0	6,578.7	1,437.1	1,326.5	12.994	CC, ES
National Hog Farm 17-11 - Original Drilling - Original Drill	13,000.0	6,575.2	1,445.3	1,333.0	12.876	SF
National Hog Farm 17-12 - Original Drilling - Original Drill	12,839.5	6,514.1	2,697.0	2,593.9	26.148	CC
National Hog Farm 17-12 - Original Drilling - Original Drill	12,900.0	6,509.9	2,697.7	2,593.8	25.964	ES
National Hog Farm 17-12 - Original Drilling - Original Drill	13,400.0	6,482.0	2,754.6	2,645.9	25.344	SF
National Hog Farm 17-21 - Original Drilling - Original Drill	14,222.7	6,619.6	1,390.3	1,270.3	11.585	CC, ES
National Hog Farm 17-21 - Original Drilling - Original Drill	14,400.0	6,616.8	1,401.6	1,279.8	11.507	SF
National Hog Farm 17-22 - Original Drilling - Original Drill	14,154.4	6,501.8	2,734.8	2,616.0	23.008	CC
National Hog Farm 17-22 - Original Drilling - Original Drill	14,200.0	6,502.4	2,735.2	2,615.7	22.897	ES
National Hog Farm 17-22 - Original Drilling - Original Drill	14,600.0	6,507.1	2,770.9	2,647.4	22.430	SF
National Hog Farm 31-17 - Original Drilling - Original Drill	15,258.1	6,717.1	1,439.7	1,307.2	10.863	CC, ES
National Hog Farm 31-17 - Original Drilling - Original Drill	15,400.0	6,702.8	1,446.6	1,312.6	10.789	SF
National Hog Farm 32-17 - Original Drilling - Original Drill	15,469.2	6,589.2	2,551.3	2,416.3	18.899	CC
National Hog Farm 32-17 - Original Drilling - Original Drill	15,500.0	6,588.3	2,551.5	2,416.1	18.844	ES
National Hog Farm 32-17 - Original Drilling - Original Drill	15,800.0	6,579.5	2,572.7	2,434.2	18.576	SF
National Hog Farm 41-17 - Original Drilling - Original Drill	16,548.6	6,596.9	1,110.1	949.0	6.888	CC, ES
National Hog Farm 41-17 - Original Drilling - Original Drill	16,600.0	6,597.2	1,111.3	949.5	6.867	SF
National Hog Farm 42-17 - Original Drilling - Original Drill	16,745.6	6,565.7	2,696.7	2,546.3	17.929	CC
National Hog Farm 42-17 - Original Drilling - Original Drill	16,800.0	6,565.7	2,697.3	2,546.2	17.848	ES
National Hog Farm 42-17 - Original Drilling - Original Drill	17,100.0	6,565.7	2,720.0	2,565.9	17.649	SF
Peterson Champlin K Unit 1 - Original Drilling - Original D	16,434.0	6,567.0	4,700.3	4,445.2	18.424	CC
Peterson Champlin K Unit 1 - Original Drilling - Original D	16,500.0	6,567.0	4,700.8	4,444.8	18.366	ES
Peterson Champlin K Unit 1 - Original Drilling - Original D	17,200.0	6,567.0	4,762.5	4,499.2	18.085	SF

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

Noble Energy, Inc.
Anticollision Summary Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well SLW Ranch State BB07-621
Project:	Wells Ranch	TVD Reference:	WELL @ 4647.0ft
Reference Site:	BB Section 07	MD Reference:	WELL @ 4647.0ft
Site Error:	0.0 ft	North Reference:	Grid
Reference Well:	SLW Ranch State BB07-621	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Original Drilling	Database:	EDMP
Reference Design:	Plan 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
Offset Well - Wellbore - Design						
BB Section 18						
Christensen 15-18 - Original Drilling - Original Drilling - A	10,110.8	6,316.1	4,795.9	4,724.7	67.376	CC
Christensen 15-18 - Original Drilling - Original Drilling - A	10,200.0	6,317.5	4,796.8	4,724.6	66.441	ES
Christensen 15-18 - Original Drilling - Original Drilling - A	12,200.0	6,352.0	5,232.4	5,141.5	57.615	SF
Christensen 16-18 - Original Drilling - Original Drilling - A	11,790.9	6,505.0	4,863.1	4,664.9	24.531	CC
Christensen 16-18 - Original Drilling - Original Drilling - A	11,800.0	6,505.0	4,863.1	4,664.8	24.518	ES
Christensen 16-18 - Original Drilling - Original Drilling - A	12,900.0	6,505.0	4,988.4	4,778.3	23.744	SF
DKW Green State BB 18-01 - Original Drilling - Original D	11,408.7	6,570.0	1,523.0	1,327.9	7.805	CC, ES
DKW Green State BB 18-01 - Original Drilling - Original D	11,500.0	6,570.0	1,525.7	1,329.5	7.775	SF
DKW Green State BB18-02 - Original Drilling - Original D	10,010.3	6,618.5	1,301.9	1,231.0	18.361	CC, ES
DKW Green State BB18-02 - Original Drilling - Original D	10,200.0	6,574.8	1,315.6	1,242.8	18.075	SF
DKW Green State BB18-07 - Original Drilling - Original D	10,233.9	6,487.2	2,612.1	2,539.1	35.751	CC, ES
DKW Green State BB18-07 - Original Drilling - Original D	10,900.0	6,467.3	2,695.8	2,616.2	33.860	SF
DKW Green State BB18-08 - Original Drilling - Original D	11,488.1	6,447.3	2,645.7	2,558.6	30.362	CC
DKW Green State BB18-08 - Original Drilling - Original D	11,500.0	6,447.0	2,645.7	2,558.4	30.311	ES
DKW Green State BB18-08 - Original Drilling - Original D	12,100.0	6,430.8	2,715.6	2,622.4	29.124	SF
Odle BB18-13 - Original Drilling - Original Drilling - As Dr	7,586.3	6,501.5	5,244.0	5,175.9	77.026	CC
Odle BB18-13 - Original Drilling - Original Drilling - As Dr	7,600.0	6,501.4	5,244.0	5,175.9	76.946	ES
Odle BB18-13 - Original Drilling - Original Drilling - As Dr	10,300.0	6,487.6	5,906.6	5,817.6	66.339	SF
Odle BB18-14 - Original Drilling - Original Drilling - As Dr	8,928.9	6,526.7	5,123.2	5,063.6	85.911	CC
Odle BB18-14 - Original Drilling - Original Drilling - As Dr	9,000.0	6,526.4	5,123.7	5,063.4	84.921	ES
Odle BB18-14 - Original Drilling - Original Drilling - As Dr	11,600.0	6,512.3	5,779.7	5,696.4	69.351	SF
Peterson 14W-434 - Original Drilling - Original Drilling - A	6,214.6	6,010.1	6,023.5	5,977.8	131.582	CC, ES
Peterson 14W-434 - Original Drilling - Original Drilling - A	6,600.0	6,100.0	6,127.1	6,079.9	129.653	SF
Robin Green State BB18-04 - Original Drilling - Original D	7,602.5	6,514.3	1,327.3	1,231.3	13.819	CC, ES
Robin Green State BB18-04 - Original Drilling - Original D	7,700.0	6,514.9	1,330.9	1,234.3	13.770	SF
Robin Green State BB18-05 - Original Drilling - Original D	7,618.1	6,532.1	2,610.9	2,561.5	52.869	CC, ES
Robin Green State BB18-05 - Original Drilling - Original D	8,600.0	6,535.7	2,789.7	2,733.6	49.705	SF
SLW Green State BB18-09 - Original Drilling - Original D	11,373.9	6,537.1	3,931.9	3,846.0	45.743	CC
SLW Green State BB18-09 - Original Drilling - Original D	11,400.0	6,537.2	3,932.0	3,845.8	45.576	ES
SLW Green State BB18-09 - Original Drilling - Original D	12,600.0	6,550.0	4,119.1	4,021.1	42.031	SF
SLW Green State BB18-10 - Original Drilling - Original D	10,372.3	6,505.8	3,953.7	3,879.1	53.008	CC
SLW Green State BB18-10 - Original Drilling - Original D	10,400.0	6,505.9	3,953.8	3,878.8	52.780	ES
SLW Green State BB18-10 - Original Drilling - Original D	11,800.0	6,513.2	4,204.2	4,115.9	47.633	SF
SLW Green State BB18-11 - Original Drilling - Original Dr	9,054.9	6,530.6	3,806.8	3,745.9	62.554	CC
SLW Green State BB18-11 - Original Drilling - Original Dr	9,100.0	6,528.7	3,807.1	3,745.8	62.095	ES
SLW Green State BB18-11 - Original Drilling - Original Dr	10,600.0	6,449.9	4,108.6	4,033.9	54.966	SF
SLW Green State BB18-12 - Original Drilling - Original D	7,545.2	6,539.8	3,702.3	3,653.3	75.537	CC, ES
SLW Green State BB18-12 - Original Drilling - Original D	9,400.0	6,610.8	4,141.3	4,078.8	66.313	SF
SLW Ranch State B14-653 - Original Drilling - Plan 1	7,784.6	5,865.7	2,969.4	2,920.1	60.271	CC
SLW Ranch State B14-653 - Original Drilling - Plan 1	7,800.0	5,865.8	2,969.5	2,920.1	60.145	ES
SLW Ranch State B14-653 - Original Drilling - Plan 1	9,000.0	5,871.1	3,208.9	3,150.5	54.914	SF
SLW Ranch State B14-653 - Original Drilling - Prelim - R	8,002.8	5,868.3	2,970.9	2,920.1	58.434	CC, ES
SLW Ranch State B14-653 - Original Drilling - Prelim - R	9,200.0	5,898.6	3,203.0	3,142.5	52.964	SF
SLW Ranch State B14-658 - Original Drilling - Plan 1	7,719.5	5,998.1	2,581.2	2,532.4	52.897	CC, ES
SLW Ranch State B14-658 - Original Drilling - Plan 1	8,600.0	5,963.2	2,727.0	2,671.9	49.526	SF
SLW Ranch State B14-658 - Original Drilling - Prelim - R	7,734.6	6,054.8	2,644.1	2,594.9	53.734	CC, ES
SLW Ranch State B14-658 - Original Drilling - Prelim - R	8,700.0	5,977.0	2,812.6	2,756.6	50.253	SF
SLW Ranch State B14-667 - Original Drilling - Plan 1	7,065.9	6,909.3	2,211.5	2,163.2	45.783	CC, ES
SLW Ranch State B14-667 - Original Drilling - Plan 1	8,200.0	6,226.9	2,321.0	2,268.3	44.055	SF
SLW Ranch State B14-667 - Original Drilling - Prelim - R	7,059.9	6,735.2	2,192.8	2,144.7	45.605	CC, ES
SLW Ranch State B14-667 - Original Drilling - Prelim - R	8,000.0	6,239.0	2,292.9	2,241.5	44.583	SF
SLW Ranch State B14-672 - Original Drilling - Plan 1	7,079.3	6,868.3	1,831.3	1,782.6	37.609	CC, ES
SLW Ranch State B14-672 - Original Drilling - Plan 1	7,900.0	6,320.1	1,887.7	1,836.4	36.842	SF

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

Noble Energy, Inc.

Anticollision Summary Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well SLW Ranch State BB07-621
Project:	Wells Ranch	TVD Reference:	WELL @ 4647.0ft
Reference Site:	BB Section 07	MD Reference:	WELL @ 4647.0ft
Site Error:	0.0 ft	North Reference:	Grid
Reference Well:	SLW Ranch State BB07-621	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Original Drilling	Database:	EDMP
Reference Design:	Plan 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
Offset Well - Wellbore - Design						
BB Section 18						
SLW Ranch State B14-672 - Original Drilling - Prelim - R	7,078.2	6,810.1	1,845.4	1,796.8	37.988	CC, ES
SLW Ranch State B14-672 - Original Drilling - Prelim - R	7,800.0	6,338.7	1,894.9	1,844.3	37.414	SF
SLW Ranch State B14-679 - Original Drilling - Plan 1	6,900.0	7,101.6	1,353.6	1,304.1	27.364	SF
SLW Ranch State B14-679 - Original Drilling - Plan 1	7,017.6	6,987.2	1,350.6	1,301.3	27.400	CC, ES
SLW Ranch State B14-679 - Original Drilling - Prelim - R	6,900.0	7,093.9	1,441.5	1,392.1	29.183	SF
SLW Ranch State B14-679 - Original Drilling - Prelim - R	7,017.7	6,979.2	1,438.5	1,389.3	29.225	CC, ES
SLW Ranch State B14-685 - Original Drilling - Plan 1	7,050.0	7,037.3	1,038.6	989.0	20.928	SF
SLW Ranch State B14-685 - Original Drilling - Plan 1	7,058.1	7,030.8	1,038.6	989.0	20.928	CC, ES
SLW Ranch State B14-685 - Original Drilling - Prelim - R	7,072.8	7,302.4	1,078.3	1,028.0	21.418	CC, ES
SLW Ranch State B14-685 - Original Drilling - Prelim - R	7,700.0	6,761.4	1,096.5	1,045.2	21.351	SF
SLW State PC BB18-65HN - Original Drilling - Original D	7,201.0	6,418.0	3,135.9	3,088.4	66.009	CC
SLW State PC BB18-65HN - Original Drilling - Original D	9,700.0	8,892.0	3,167.6	3,063.8	30.517	ES
SLW State PC BB18-65HN - Original Drilling - Original D	12,200.0	10,986.0	3,297.7	3,112.5	17.804	SF
SLW State PC BB18-65HN - Original Drilling - Plan A - R	7,370.1	6,592.1	3,124.0	3,098.2	121.304	CC
SLW State PC BB18-65HN - Original Drilling - Plan A - R	7,400.0	6,612.4	3,124.0	3,098.2	120.759	ES
SLW State PC BB18-65HN - Original Drilling - Plan A - R	12,700.0	10,948.7	3,416.6	3,340.0	44.603	SF
SLW State PC BB18-67HN - Original Drilling - Original D	7,375.9	6,549.4	2,040.9	1,992.1	41.822	CC
SLW State PC BB18-67HN - Original Drilling - Original D	11,700.0	10,895.0	2,133.1	1,954.5	11.943	ES
SLW State PC BB18-67HN - Original Drilling - Original D	11,900.0	10,895.0	2,143.7	1,963.3	11.886	SF
SLW State PC BB18-67HN - Original Drilling - Plan B - R	7,509.7	6,679.1	2,055.0	2,028.6	77.801	CC
SLW State PC BB18-67HN - Original Drilling - Plan B - R	7,600.0	6,755.0	2,055.4	2,028.6	76.552	ES
SLW State PC BB18-67HN - Original Drilling - Plan B - R	12,100.0	10,870.1	2,177.9	2,106.7	30.571	SF
State 18-01 - Original Drilling - Original Drilling - As Drille	8,953.2	6,510.7	1,380.9	1,321.0	23.050	CC, ES
State 18-01 - Original Drilling - Original Drilling - As Drille	9,200.0	6,505.1	1,402.8	1,340.5	22.524	SF
State SLW 18-24 - Original Drilling - Original Drilling - As	8,908.0	6,508.9	2,634.9	2,575.5	44.354	CC, ES
State SLW 18-24 - Original Drilling - Original Drilling - As	9,700.0	6,470.7	2,751.2	2,684.6	41.310	SF
Vince State B13-63HN - Original Drilling - Original Drilling	6,400.0	9,340.6	4,597.9	4,498.5	46.257	SF
Vince State B13-63HN - Original Drilling - Original Drilling	9,288.2	6,620.0	4,363.3	4,300.5	69.471	CC
Vince State B13-63HN - Original Drilling - Original Drilling	9,300.0	6,620.0	4,363.3	4,300.4	69.338	ES
Vince State B13-63HN - Original Drilling - Plan A - Rev 1	9,243.0	6,600.7	4,458.7	4,418.5	110.827	CC
Vince State B13-63HN - Original Drilling - Plan A - Rev 1	9,400.0	6,491.7	4,459.8	4,417.9	106.452	ES
Vince State B13-63HN - Original Drilling - Plan A - Rev 1	11,900.0	5,980.5	5,038.2	4,973.7	78.112	SF

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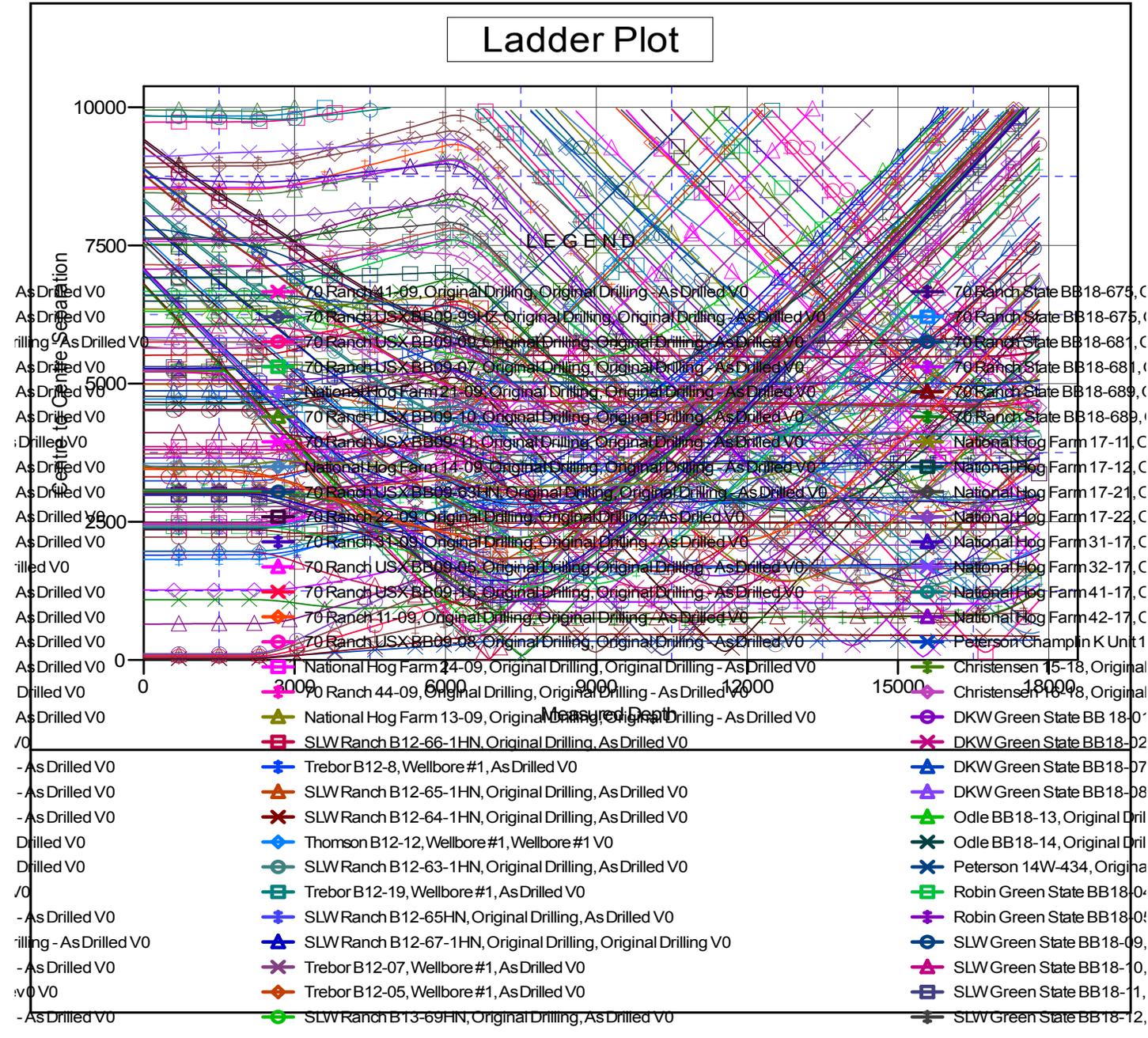
Noble Energy, Inc.

Anticollision Summary Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well SLW Ranch State BB07-621
Project:	Wells Ranch	TVD Reference:	WELL @ 4647.0ft
Reference Site:	BB Section 07	MD Reference:	WELL @ 4647.0ft
Site Error:	0.0 ft	North Reference:	Grid
Reference Well:	SLW Ranch State BB07-621	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Original Drilling	Database:	EDMP
Reference Design:	Plan 1	Offset TVD Reference:	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 BB07-621
 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

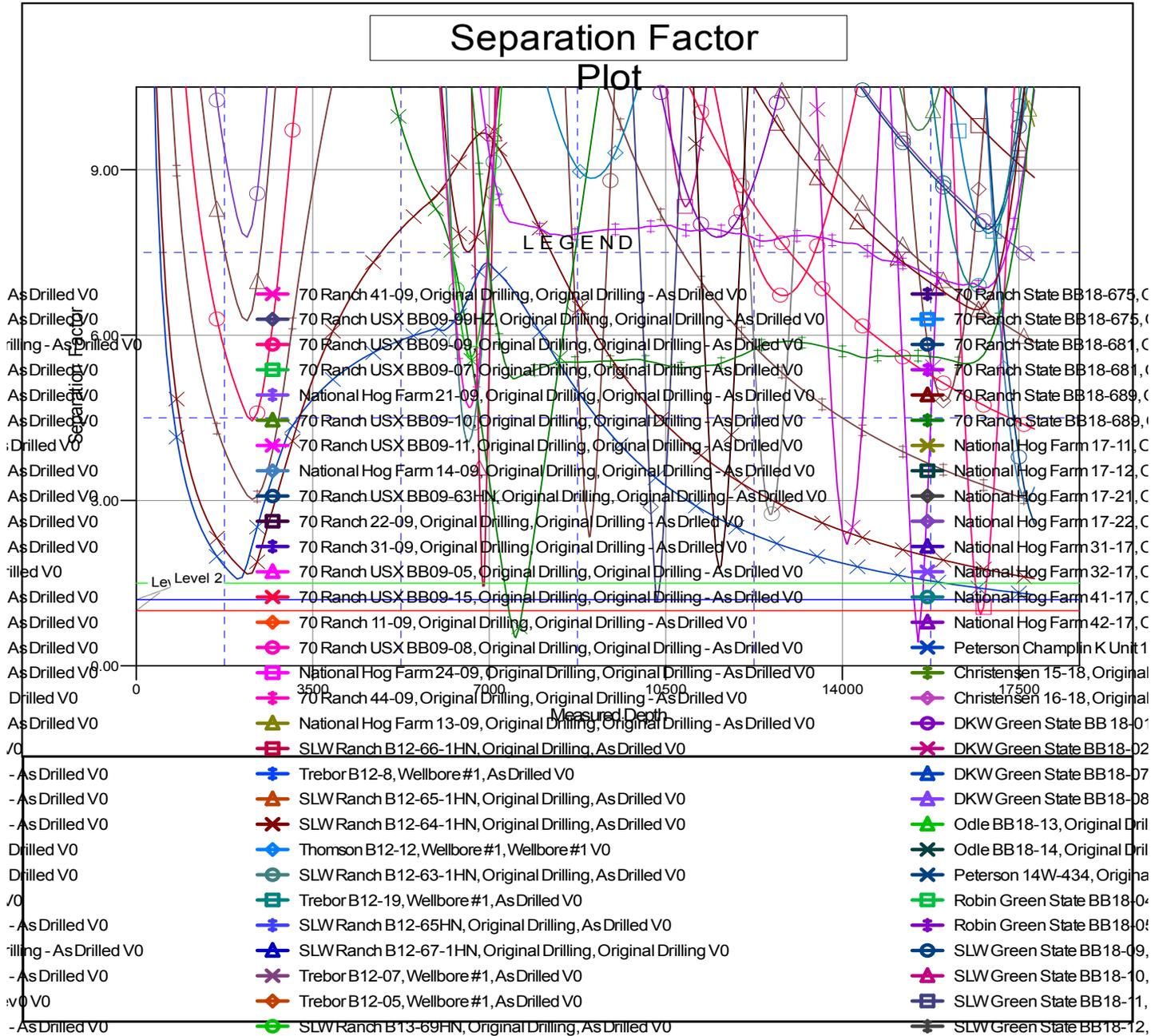
Noble Energy, Inc.

Anticollision Summary Report

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Project:	Wells Ranch	TVD Reference:	WELL @ 4647.0ft
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Reference Wellbore	Original Drilling	Database:	EDMP
Reference Design:	Plan 1	Offset TVD Reference:	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 BB07-621
 Coordinate System is US State Plane 1983, Colorado Northern Zone
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