

Project: Wells Ranch
Site: A Section 34
Well: Reveille A34-788
Wellbore: Reveille A34-788 OH
Design: APD - Rev 1

Northern Region - DJ Basin

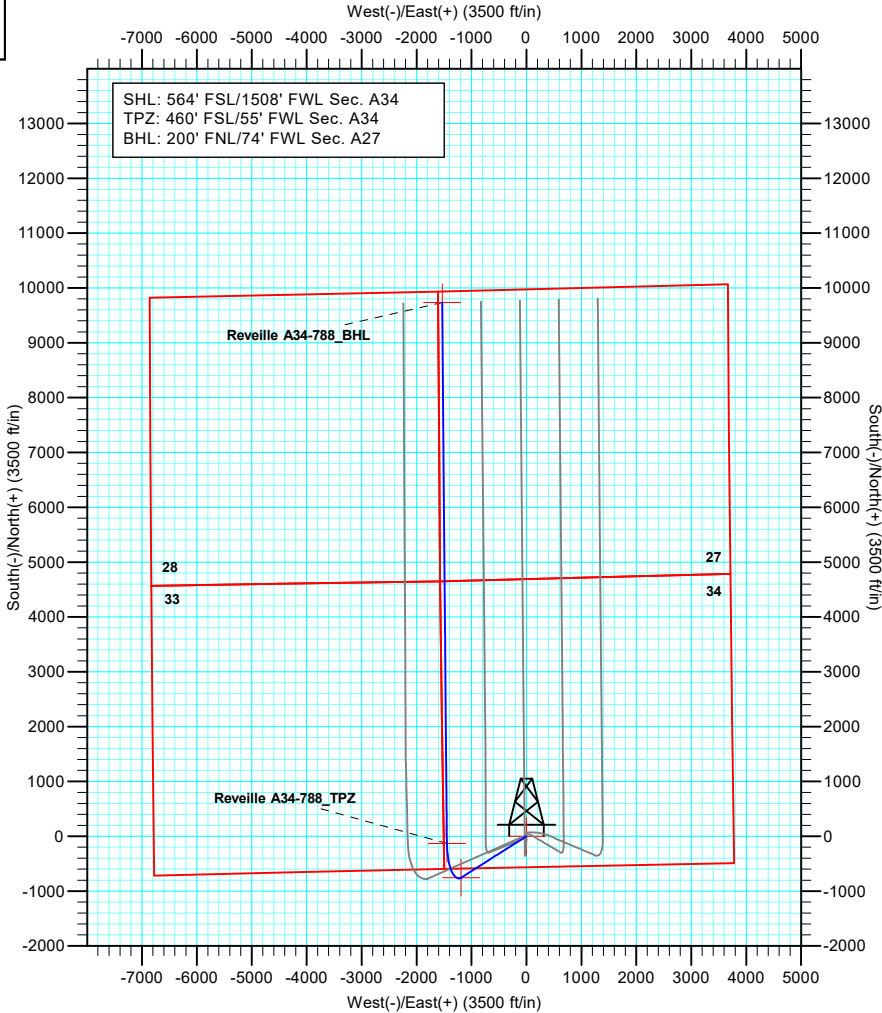
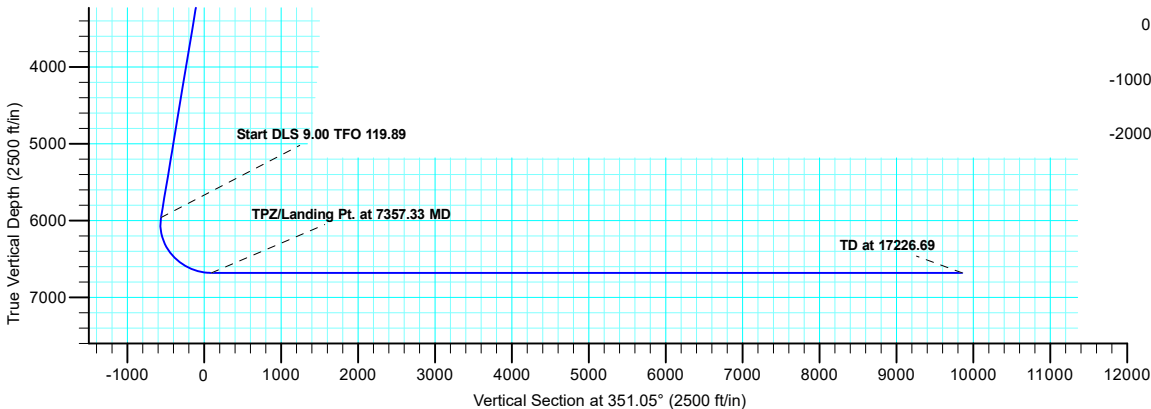
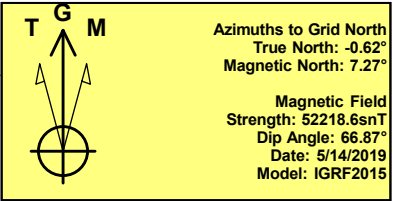
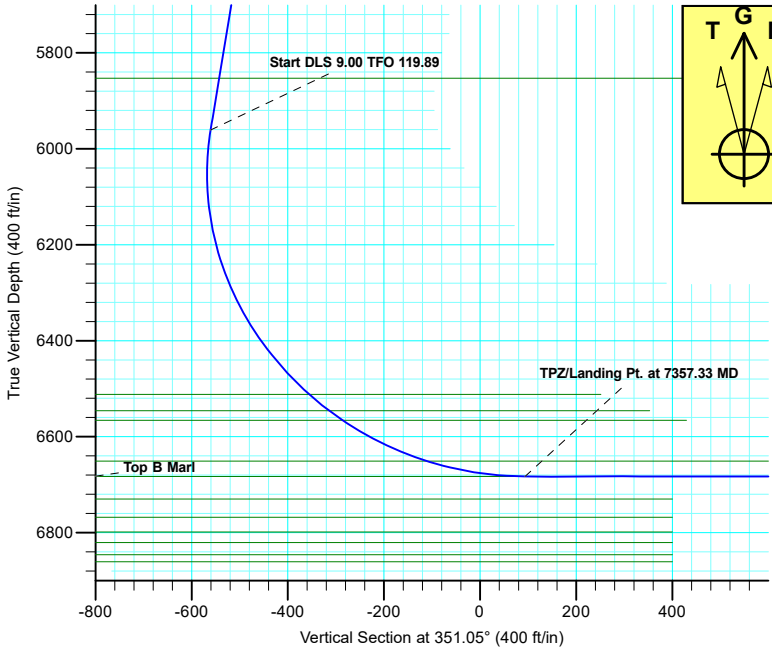
Geodetic System: US State Plane 1983
Datum: North American Datum 1983
Ellipsoid: GRS 1980
Zone: Colorado Northern Zone
System Datum: Mean Sea Level

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	2000.00	0.00	0.00	2000.00	0.00	0.00	0.00	0.00	0.00
3	3128.74	22.57	237.61	3099.76	-117.59	-185.35	2.00	237.61	-87.31
4	6227.26	22.57	237.61	5960.87	-754.83	-1189.74	0.00	0.00	-560.47
5	7357.33	90.00	359.51	6683.00	-133.64	-1449.90	9.00	119.89	93.63
6	17226.69	90.00	359.51	6683.00	9735.36	-1533.81	0.00	0.00	9855.45

WELL DETAILS: Reveille A34-788

+N/-S	+E/-W	Northing	Ground Level: Easting	4631.00 Latitude	Longitude	Slot
0.00	0.00	1403510.37	3267123.89	40.4370700	-104.5403400	



Plan: APD - Rev 1 (Reveille A34-788/Reveille A34-788 OH)

Created By: Shelly C. Peterkin Date: 10:18, July 22 2019

Northern Region - DJ Basin

Wells Ranch

A Section 34

Reveille A34-788

Reveille A34-788 OH

Plan: APD - Rev 1

Standard Planning Report

22 July, 2019

Noble Energy, Inc.

Planning Report

Database:	EDMP	Local Co-ordinate Reference:	Well Reveille A34-788
Company:	Northern Region - DJ Basin	TVD Reference:	KB @ 4661.00ft
Project:	Wells Ranch	MD Reference:	KB @ 4661.00ft
Site:	A Section 34	North Reference:	Grid
Well:	Reveille A34-788	Survey Calculation Method:	Minimum Curvature
Wellbore:	Reveille A34-788 OH		
Design:	APD - Rev 1		

Project	Wells Ranch, Weld County Colorado		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Northern Zone		

Site	A Section 34			
Site Position:		Northing:	1,403,375.63 usft	Latitude: 40.4367000
From: Map		Easting:	3,267,128.13 usft	Longitude: -104.5403300
Position Uncertainty:	0.00 ft	Slot Radius:	13.200 in	Grid Convergence: 0.62 °

Well	Reveille A34-788			
Well Position	+N/-S	134.74 ft	Northing:	1,403,510.37 usft
	+E/-W	-4.24 ft	Easting:	3,267,123.89 usft
Position Uncertainty		0.00 ft	Wellhead Elevation:	Ground Level: 4,631.00 ft

Wellbore	Reveille A34-788 OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	5/14/2019	7.89	66.87	52,218.57824286

Design	APD - Rev 1			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.00	0.00	0.00	351.05

Plan Sections										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,000.00	0.00	0.00	2,000.00	0.00	0.00	0.00	0.00	0.00	0.00	
3,128.74	22.57	237.61	3,099.76	-117.59	-185.35	2.00	2.00	0.00	237.61	
6,227.26	22.57	237.61	5,960.87	-754.83	-1,189.74	0.00	0.00	0.00	0.00	
7,357.33	90.00	359.51	6,683.00	-133.64	-1,449.90	9.00	5.97	10.79	119.89	Reveille A34-788_TP;
17,226.69	90.00	359.51	6,683.00	9,735.36	-1,533.81	0.00	0.00	0.00	0.00	Reveille A34-788_BH

Noble Energy, Inc.

Planning Report

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Project:	Wells Ranch	MD Reference:	KB @ 4661.00ft
Site:	A Section 34	North Reference:	Grid
Well:	Reveille A34-788	Survey Calculation Method:	Minimum Curvature
Wellbore:	Reveille A34-788 OH		
Design:	APD - Rev 1		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
264.00	0.00	0.00	264.00	0.00	0.00	0.00	0.00	0.00	0.00
Pierre									
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
396.00	0.00	0.00	396.00	0.00	0.00	0.00	0.00	0.00	0.00
Upper Pierre Aquifer Top									
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	0.00
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00
1,100.00	0.00	0.00	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00
1,200.00	0.00	0.00	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00
1,300.00	0.00	0.00	1,300.00	0.00	0.00	0.00	0.00	0.00	0.00
1,400.00	0.00	0.00	1,400.00	0.00	0.00	0.00	0.00	0.00	0.00
1,439.00	0.00	0.00	1,439.00	0.00	0.00	0.00	0.00	0.00	0.00
Upper Pierre Aquifer Base									
1,500.00	0.00	0.00	1,500.00	0.00	0.00	0.00	0.00	0.00	0.00
1,600.00	0.00	0.00	1,600.00	0.00	0.00	0.00	0.00	0.00	0.00
1,700.00	0.00	0.00	1,700.00	0.00	0.00	0.00	0.00	0.00	0.00
1,800.00	0.00	0.00	1,800.00	0.00	0.00	0.00	0.00	0.00	0.00
1,900.00	0.00	0.00	1,900.00	0.00	0.00	0.00	0.00	0.00	0.00
2,000.00	0.00	0.00	2,000.00	0.00	0.00	0.00	0.00	0.00	0.00
Start Build 2.00									
2,100.00	2.00	237.61	2,099.98	-0.93	-1.47	-0.69	2.00	2.00	0.00
2,200.00	4.00	237.61	2,199.84	-3.74	-5.89	-2.78	2.00	2.00	0.00
2,300.00	6.00	237.61	2,299.45	-8.41	-13.25	-6.24	2.00	2.00	0.00
2,400.00	8.00	237.61	2,398.70	-14.94	-23.54	-11.09	2.00	2.00	0.00
2,500.00	10.00	237.61	2,497.47	-23.32	-36.75	-17.31	2.00	2.00	0.00
2,600.00	12.00	237.61	2,595.62	-33.54	-52.86	-24.90	2.00	2.00	0.00
2,700.00	14.00	237.61	2,693.06	-45.59	-71.85	-33.85	2.00	2.00	0.00
2,800.00	16.00	237.61	2,789.64	-59.45	-93.71	-44.14	2.00	2.00	0.00
2,900.00	18.00	237.61	2,885.27	-75.12	-118.39	-55.77	2.00	2.00	0.00
3,000.00	20.00	237.61	2,979.82	-92.56	-145.88	-68.72	2.00	2.00	0.00
3,100.00	22.00	237.61	3,073.17	-111.75	-176.14	-82.98	2.00	2.00	0.00
3,128.74	22.57	237.61	3,099.76	-117.59	-185.35	-87.31	2.00	2.00	0.00
Start 3098.52 hold at 3128.74 MD									
3,200.00	22.57	237.61	3,165.56	-132.25	-208.45	-98.20	0.00	0.00	0.00
3,300.00	22.57	237.61	3,257.90	-152.81	-240.86	-113.47	0.00	0.00	0.00
3,400.00	22.57	237.61	3,350.24	-173.38	-273.28	-128.74	0.00	0.00	0.00
3,500.00	22.57	237.61	3,442.58	-193.95	-305.69	-144.01	0.00	0.00	0.00
3,589.26	22.57	237.61	3,525.00	-212.30	-334.63	-157.64	0.00	0.00	0.00
Parkman									
3,600.00	22.57	237.61	3,534.91	-214.51	-338.11	-159.28	0.00	0.00	0.00
3,700.00	22.57	237.61	3,627.25	-235.08	-370.52	-174.55	0.00	0.00	0.00
3,800.00	22.57	237.61	3,719.59	-255.64	-402.94	-189.82	0.00	0.00	0.00
3,900.00	22.57	237.61	3,811.93	-276.21	-435.35	-205.09	0.00	0.00	0.00
4,000.00	22.57	237.61	3,904.26	-296.78	-467.77	-220.36	0.00	0.00	0.00
4,100.00	22.57	237.61	3,996.60	-317.34	-500.18	-235.63	0.00	0.00	0.00

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Well:	Reveille A34-788	Survey Calculation Method:	Minimum Curvature
Wellbore:	Reveille A34-788 OH		
Design:	APD - Rev 1		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
4,200.00	22.57	237.61	4,088.94	-337.91	-532.60	-250.90	0.00	0.00	0.00
4,300.00	22.57	237.61	4,181.28	-358.47	-565.02	-266.17	0.00	0.00	0.00
4,343.02	22.57	237.61	4,221.00	-367.32	-578.96	-272.74	0.00	0.00	0.00
Sussex									
4,400.00	22.57	237.61	4,273.62	-379.04	-597.43	-281.44	0.00	0.00	0.00
4,500.00	22.57	237.61	4,365.95	-399.61	-629.85	-296.71	0.00	0.00	0.00
4,600.00	22.57	237.61	4,458.29	-420.17	-662.26	-311.98	0.00	0.00	0.00
4,700.00	22.57	237.61	4,550.63	-440.74	-694.68	-327.25	0.00	0.00	0.00
4,800.00	22.57	237.61	4,642.97	-461.30	-727.09	-342.52	0.00	0.00	0.00
4,900.00	22.57	237.61	4,735.31	-481.87	-759.51	-357.79	0.00	0.00	0.00
4,994.97	22.57	237.61	4,823.00	-501.40	-790.29	-372.30	0.00	0.00	0.00
Shannon									
5,000.00	22.57	237.61	4,827.64	-502.44	-791.92	-373.07	0.00	0.00	0.00
5,100.00	22.57	237.61	4,919.98	-523.00	-824.34	-388.34	0.00	0.00	0.00
5,200.00	22.57	237.61	5,012.32	-543.57	-856.75	-403.61	0.00	0.00	0.00
5,300.00	22.57	237.61	5,104.66	-564.13	-889.17	-418.88	0.00	0.00	0.00
5,400.00	22.57	237.61	5,196.99	-584.70	-921.58	-434.15	0.00	0.00	0.00
5,500.00	22.57	237.61	5,289.33	-605.26	-954.00	-449.42	0.00	0.00	0.00
5,600.00	22.57	237.61	5,381.67	-625.83	-986.42	-464.69	0.00	0.00	0.00
5,700.00	22.57	237.61	5,474.01	-646.40	-1,018.83	-479.96	0.00	0.00	0.00
5,800.00	22.57	237.61	5,566.35	-666.96	-1,051.25	-495.23	0.00	0.00	0.00
5,900.00	22.57	237.61	5,658.68	-687.53	-1,083.66	-510.50	0.00	0.00	0.00
6,000.00	22.57	237.61	5,751.02	-708.09	-1,116.08	-525.77	0.00	0.00	0.00
6,100.00	22.57	237.61	5,843.36	-728.66	-1,148.49	-541.04	0.00	0.00	0.00
6,110.44	22.57	237.61	5,853.00	-730.81	-1,151.88	-542.63	0.00	0.00	0.00
Teepee Buttes									
6,200.00	22.57	237.61	5,935.70	-749.23	-1,180.91	-556.31	0.00	0.00	0.00
6,227.26	22.57	237.61	5,960.87	-754.83	-1,189.74	-560.47	0.00	0.00	0.00
Start DLS 9.00 TFO 119.89									
6,250.00	21.62	242.43	5,981.94	-759.11	-1,197.15	-563.55	9.00	-4.18	21.19
6,300.00	20.09	254.33	6,028.68	-765.70	-1,213.59	-567.50	9.00	-3.07	23.81
6,350.00	19.45	267.53	6,075.76	-768.38	-1,230.18	-567.56	9.00	-1.27	26.40
6,400.00	19.80	280.92	6,122.88	-767.13	-1,246.82	-563.74	9.00	0.70	26.77
6,450.00	21.09	293.29	6,169.75	-761.97	-1,263.41	-556.06	9.00	2.58	24.74
6,500.00	23.16	303.92	6,216.09	-752.92	-1,279.84	-544.56	9.00	4.14	21.27
6,550.00	25.82	312.69	6,261.60	-740.04	-1,296.01	-529.33	9.00	5.33	17.53
6,600.00	28.92	319.81	6,306.01	-723.42	-1,311.83	-510.44	9.00	6.19	14.24
6,650.00	32.32	325.60	6,349.04	-703.14	-1,327.19	-488.02	9.00	6.80	11.59
6,700.00	35.94	330.38	6,390.43	-679.35	-1,342.00	-462.21	9.00	7.24	9.55
6,750.00	39.72	334.37	6,429.92	-652.18	-1,356.17	-433.17	9.00	7.55	7.99
6,800.00	43.61	337.77	6,467.27	-621.80	-1,369.61	-401.07	9.00	7.79	6.79
6,850.00	47.59	340.71	6,502.25	-588.40	-1,382.24	-366.11	9.00	7.96	5.88
6,864.62	48.77	341.49	6,512.00	-578.09	-1,385.77	-355.38	9.00	8.05	5.39
Sharon Springs									
6,900.00	51.64	343.29	6,534.65	-552.18	-1,393.98	-328.51	9.00	8.11	5.08
6,918.61	53.16	344.18	6,546.00	-538.03	-1,398.11	-313.88	9.00	8.17	4.77
Top A Chalk									
6,950.00	55.73	345.60	6,564.25	-513.37	-1,404.76	-288.49	9.00	8.21	4.53
6,953.11	55.99	345.74	6,566.00	-510.88	-1,405.40	-285.93	9.00	8.24	4.37
Top A Marl									
7,000.00	59.87	347.69	6,590.89	-472.22	-1,414.51	-246.32	9.00	8.28	4.17
7,050.00	64.04	349.62	6,614.40	-428.96	-1,423.17	-202.24	9.00	8.33	3.85
7,100.00	68.23	351.41	6,634.62	-383.87	-1,430.70	-156.53	9.00	8.38	3.58

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Planning Report

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7,148.53	72.32	353.05	6,651.00	-338.61	-1,436.86	-110.87	9.00	8.42	3.38
Top B Chalk									
7,150.00	72.44	353.10	6,651.44	-337.23	-1,437.03	-109.47	9.00	8.43	3.30
7,200.00	76.66	354.71	6,664.76	-289.32	-1,442.14	-61.35	9.00	8.45	3.23
7,250.00	80.90	356.27	6,674.49	-240.44	-1,445.99	-12.47	9.00	8.47	3.11
7,300.00	85.14	357.79	6,680.57	-190.89	-1,448.55	36.88	9.00	8.48	3.04
7,350.00	89.38	359.29	6,682.96	-140.97	-1,449.82	86.38	9.00	8.49	3.00
7,357.33	90.00	359.51	6,683.00	-133.64	-1,449.90	93.63	9.00	8.49	3.00
TPZ/Landing Pt. at 7357.33 MD - Top B Marl									
7,400.00	90.00	359.51	6,683.00	-90.97	-1,450.26	135.84	0.00	0.00	0.00
7,500.00	90.00	359.51	6,683.00	9.02	-1,451.11	234.75	0.00	0.00	0.00
7,600.00	90.00	359.51	6,683.00	109.02	-1,451.96	333.66	0.00	0.00	0.00
7,700.00	90.00	359.51	6,683.00	209.01	-1,452.81	432.57	0.00	0.00	0.00
7,800.00	90.00	359.51	6,683.00	309.01	-1,453.66	531.48	0.00	0.00	0.00
7,900.00	90.00	359.51	6,683.00	409.01	-1,454.51	630.39	0.00	0.00	0.00
8,000.00	90.00	359.51	6,683.00	509.00	-1,455.36	729.30	0.00	0.00	0.00
8,100.00	90.00	359.51	6,683.00	609.00	-1,456.21	828.21	0.00	0.00	0.00
8,200.00	90.00	359.51	6,683.00	709.00	-1,457.06	927.12	0.00	0.00	0.00
8,300.00	90.00	359.51	6,683.00	808.99	-1,457.91	1,026.03	0.00	0.00	0.00
8,400.00	90.00	359.51	6,683.00	908.99	-1,458.76	1,124.94	0.00	0.00	0.00
8,500.00	90.00	359.51	6,683.00	1,008.99	-1,459.62	1,223.85	0.00	0.00	0.00
8,600.00	90.00	359.51	6,683.00	1,108.98	-1,460.47	1,322.76	0.00	0.00	0.00
8,700.00	90.00	359.51	6,683.00	1,208.98	-1,461.32	1,421.67	0.00	0.00	0.00
8,800.00	90.00	359.51	6,683.00	1,308.97	-1,462.17	1,520.58	0.00	0.00	0.00
8,900.00	90.00	359.51	6,683.00	1,408.97	-1,463.02	1,619.49	0.00	0.00	0.00
9,000.00	90.00	359.51	6,683.00	1,508.97	-1,463.87	1,718.40	0.00	0.00	0.00
9,100.00	90.00	359.51	6,683.00	1,608.96	-1,464.72	1,817.31	0.00	0.00	0.00
9,200.00	90.00	359.51	6,683.00	1,708.96	-1,465.57	1,916.22	0.00	0.00	0.00
9,300.00	90.00	359.51	6,683.00	1,808.96	-1,466.42	2,015.13	0.00	0.00	0.00
9,400.00	90.00	359.51	6,683.00	1,908.95	-1,467.27	2,114.05	0.00	0.00	0.00
9,500.00	90.00	359.51	6,683.00	2,008.95	-1,468.12	2,212.96	0.00	0.00	0.00
9,600.00	90.00	359.51	6,683.00	2,108.95	-1,468.97	2,311.87	0.00	0.00	0.00
9,700.00	90.00	359.51	6,683.00	2,208.94	-1,469.82	2,410.78	0.00	0.00	0.00
9,800.00	90.00	359.51	6,683.00	2,308.94	-1,470.67	2,509.69	0.00	0.00	0.00
9,900.00	90.00	359.51	6,683.00	2,408.93	-1,471.52	2,608.60	0.00	0.00	0.00
10,000.00	90.00	359.51	6,683.00	2,508.93	-1,472.37	2,707.51	0.00	0.00	0.00
10,100.00	90.00	359.51	6,683.00	2,608.93	-1,473.22	2,806.42	0.00	0.00	0.00
10,200.00	90.00	359.51	6,683.00	2,708.92	-1,474.07	2,905.33	0.00	0.00	0.00
10,300.00	90.00	359.51	6,683.00	2,808.92	-1,474.92	3,004.24	0.00	0.00	0.00
10,400.00	90.00	359.51	6,683.00	2,908.92	-1,475.77	3,103.15	0.00	0.00	0.00
10,500.00	90.00	359.51	6,683.00	3,008.91	-1,476.62	3,202.06	0.00	0.00	0.00
10,600.00	90.00	359.51	6,683.00	3,108.91	-1,477.47	3,300.97	0.00	0.00	0.00
10,700.00	90.00	359.51	6,683.00	3,208.91	-1,478.32	3,399.88	0.00	0.00	0.00
10,800.00	90.00	359.51	6,683.00	3,308.90	-1,479.17	3,498.79	0.00	0.00	0.00
10,900.00	90.00	359.51	6,683.00	3,408.90	-1,480.02	3,597.70	0.00	0.00	0.00
11,000.00	90.00	359.51	6,683.00	3,508.90	-1,480.87	3,696.61	0.00	0.00	0.00
11,100.00	90.00	359.51	6,683.00	3,608.89	-1,481.72	3,795.52	0.00	0.00	0.00
11,200.00	90.00	359.51	6,683.00	3,708.89	-1,482.57	3,894.43	0.00	0.00	0.00
11,300.00	90.00	359.51	6,683.00	3,808.88	-1,483.42	3,993.34	0.00	0.00	0.00
11,400.00	90.00	359.51	6,683.00	3,908.88	-1,484.27	4,092.25	0.00	0.00	0.00
11,500.00	90.00	359.51	6,683.00	4,008.88	-1,485.12	4,191.16	0.00	0.00	0.00
11,600.00	90.00	359.51	6,683.00	4,108.87	-1,485.97	4,290.07	0.00	0.00	0.00
11,700.00	90.00	359.51	6,683.00	4,208.87	-1,486.82	4,388.98	0.00	0.00	0.00
11,800.00	90.00	359.51	6,683.00	4,308.87	-1,487.67	4,487.89	0.00	0.00	0.00

Noble Energy, Inc.

Planning Report

Database:	EDMP	Local Co-ordinate Reference:	Well Reveille A34-788
Company:	Northern Region - DJ Basin	TVD Reference:	KB @ 4661.00ft
Project:	Wells Ranch	MD Reference:	KB @ 4661.00ft
Site:	A Section 34	North Reference:	Grid
Well:	Reveille A34-788	Survey Calculation Method:	Minimum Curvature
Wellbore:	Reveille A34-788 OH		
Design:	APD - Rev 1		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
11,900.00	90.00	359.51	6,683.00	4,408.86	-1,488.52	4,586.80	0.00	0.00	0.00
12,000.00	90.00	359.51	6,683.00	4,508.86	-1,489.37	4,685.71	0.00	0.00	0.00
12,100.00	90.00	359.51	6,683.00	4,608.86	-1,490.22	4,784.62	0.00	0.00	0.00
12,200.00	90.00	359.51	6,683.00	4,708.85	-1,491.07	4,883.53	0.00	0.00	0.00
12,300.00	90.00	359.51	6,683.00	4,808.85	-1,491.92	4,982.44	0.00	0.00	0.00
12,400.00	90.00	359.51	6,683.00	4,908.84	-1,492.77	5,081.35	0.00	0.00	0.00
12,500.00	90.00	359.51	6,683.00	5,008.84	-1,493.62	5,180.26	0.00	0.00	0.00
12,600.00	90.00	359.51	6,683.00	5,108.84	-1,494.48	5,279.17	0.00	0.00	0.00
12,700.00	90.00	359.51	6,683.00	5,208.83	-1,495.33	5,378.08	0.00	0.00	0.00
12,800.00	90.00	359.51	6,683.00	5,308.83	-1,496.18	5,476.99	0.00	0.00	0.00
12,900.00	90.00	359.51	6,683.00	5,408.83	-1,497.03	5,575.91	0.00	0.00	0.00
13,000.00	90.00	359.51	6,683.00	5,508.82	-1,497.88	5,674.82	0.00	0.00	0.00
13,100.00	90.00	359.51	6,683.00	5,608.82	-1,498.73	5,773.73	0.00	0.00	0.00
13,200.00	90.00	359.51	6,683.00	5,708.82	-1,499.58	5,872.64	0.00	0.00	0.00
13,300.00	90.00	359.51	6,683.00	5,808.81	-1,500.43	5,971.55	0.00	0.00	0.00
13,400.00	90.00	359.51	6,683.00	5,908.81	-1,501.28	6,070.46	0.00	0.00	0.00
13,500.00	90.00	359.51	6,683.00	6,008.80	-1,502.13	6,169.37	0.00	0.00	0.00
13,600.00	90.00	359.51	6,683.00	6,108.80	-1,502.98	6,268.28	0.00	0.00	0.00
13,700.00	90.00	359.51	6,683.00	6,208.80	-1,503.83	6,367.19	0.00	0.00	0.00
13,800.00	90.00	359.51	6,683.00	6,308.79	-1,504.68	6,466.10	0.00	0.00	0.00
13,900.00	90.00	359.51	6,683.00	6,408.79	-1,505.53	6,565.01	0.00	0.00	0.00
14,000.00	90.00	359.51	6,683.00	6,508.79	-1,506.38	6,663.92	0.00	0.00	0.00
14,100.00	90.00	359.51	6,683.00	6,608.78	-1,507.23	6,762.83	0.00	0.00	0.00
14,200.00	90.00	359.51	6,683.00	6,708.78	-1,508.08	6,861.74	0.00	0.00	0.00
14,300.00	90.00	359.51	6,683.00	6,808.78	-1,508.93	6,960.65	0.00	0.00	0.00
14,400.00	90.00	359.51	6,683.00	6,908.77	-1,509.78	7,059.56	0.00	0.00	0.00
14,500.00	90.00	359.51	6,683.00	7,008.77	-1,510.63	7,158.47	0.00	0.00	0.00
14,600.00	90.00	359.51	6,683.00	7,108.77	-1,511.48	7,257.38	0.00	0.00	0.00
14,700.00	90.00	359.51	6,683.00	7,208.76	-1,512.33	7,356.29	0.00	0.00	0.00
14,800.00	90.00	359.51	6,683.00	7,308.76	-1,513.18	7,455.20	0.00	0.00	0.00
14,900.00	90.00	359.51	6,683.00	7,408.75	-1,514.03	7,554.11	0.00	0.00	0.00
15,000.00	90.00	359.51	6,683.00	7,508.75	-1,514.88	7,653.02	0.00	0.00	0.00
15,100.00	90.00	359.51	6,683.00	7,608.75	-1,515.73	7,751.93	0.00	0.00	0.00
15,200.00	90.00	359.51	6,683.00	7,708.74	-1,516.58	7,850.84	0.00	0.00	0.00
15,300.00	90.00	359.51	6,683.00	7,808.74	-1,517.43	7,949.75	0.00	0.00	0.00
15,400.00	90.00	359.51	6,683.00	7,908.74	-1,518.28	8,048.66	0.00	0.00	0.00
15,500.00	90.00	359.51	6,683.00	8,008.73	-1,519.13	8,147.57	0.00	0.00	0.00
15,600.00	90.00	359.51	6,683.00	8,108.73	-1,519.98	8,246.48	0.00	0.00	0.00
15,700.00	90.00	359.51	6,683.00	8,208.73	-1,520.83	8,345.39	0.00	0.00	0.00
15,800.00	90.00	359.51	6,683.00	8,308.72	-1,521.68	8,444.30	0.00	0.00	0.00
15,900.00	90.00	359.51	6,683.00	8,408.72	-1,522.53	8,543.21	0.00	0.00	0.00
16,000.00	90.00	359.51	6,683.00	8,508.71	-1,523.38	8,642.12	0.00	0.00	0.00
16,100.00	90.00	359.51	6,683.00	8,608.71	-1,524.23	8,741.03	0.00	0.00	0.00
16,200.00	90.00	359.51	6,683.00	8,708.71	-1,525.08	8,839.94	0.00	0.00	0.00
16,300.00	90.00	359.51	6,683.00	8,808.70	-1,525.93	8,938.85	0.00	0.00	0.00
16,400.00	90.00	359.51	6,683.00	8,908.70	-1,526.78	9,037.76	0.00	0.00	0.00
16,500.00	90.00	359.51	6,683.00	9,008.70	-1,527.63	9,136.68	0.00	0.00	0.00
16,600.00	90.00	359.51	6,683.00	9,108.69	-1,528.48	9,235.59	0.00	0.00	0.00
16,700.00	90.00	359.51	6,683.00	9,208.69	-1,529.33	9,334.50	0.00	0.00	0.00
16,800.00	90.00	359.51	6,683.00	9,308.69	-1,530.19	9,433.41	0.00	0.00	0.00
16,900.00	90.00	359.51	6,683.00	9,408.68	-1,531.04	9,532.32	0.00	0.00	0.00
17,000.00	90.00	359.51	6,683.00	9,508.68	-1,531.89	9,631.23	0.00	0.00	0.00
17,100.00	90.00	359.51	6,683.00	9,608.67	-1,532.74	9,730.14	0.00	0.00	0.00
17,200.00	90.00	359.51	6,683.00	9,708.67	-1,533.59	9,829.05	0.00	0.00	0.00

Noble Energy, Inc.

Planning Report

Database:	EDMP	Local Co-ordinate Reference:	Well Reveille A34-788
Company:	Northern Region - DJ Basin	TVD Reference:	KB @ 4661.00ft
Project:	Wells Ranch	MD Reference:	KB @ 4661.00ft
Site:	A Section 34	North Reference:	Grid
Well:	Reveille A34-788	Survey Calculation Method:	Minimum Curvature
Wellbore:	Reveille A34-788 OH		
Design:	APD - Rev 1		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
17,226.69	90.00	359.51	6,683.00	9,735.36	-1,533.81	9,855.45	0.00	0.00	0.00
TD at 17226.69									

Design Targets									
Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
Reveille A34-788_SHL - plan hits target center - Point	0.00	0.00	0.00	0.00	0.00	1,403,510.38	3,267,123.89	40.4370700	-104.5403400
Reveille A34-788_KOP - plan hits target center - Point	0.00	0.00	5,960.87	-754.83	-1,189.74	1,402,755.54	3,265,934.15	40.4350334	-104.5446431
Reveille A34-788_TPZ - plan hits target center - Point	0.00	0.00	6,683.00	-133.64	-1,449.90	1,403,376.73	3,265,673.99	40.4367461	-104.5455536
Reveille A34-788_BHL - plan misses target center by 0.09ft at 17226.69ft MD (6683.00 TVD, 9735.36 N, -1533.81 E) - Point	0.00	0.01	6,683.00	9,735.37	-1,533.73	1,413,245.73	3,265,590.16	40.4638372	-104.5454731

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
264.00	264.00	Pierre				
396.00	396.00	Upper Pierre Aquifer Top				
1,439.00	1,439.00	Upper Pierre Aquifer Base				
3,589.26	3,525.00	Parkman				
4,343.02	4,221.00	Sussex				
4,994.97	4,823.00	Shannon				
6,110.44	5,853.00	Teepee Buttes				
6,864.62	6,512.00	Sharon Springs				
6,918.61	6,546.00	Top A Chalk				
6,953.11	6,566.00	Top A Marl				
7,148.53	6,651.00	Top B Chalk				
7,357.33	6,683.00	Top B Marl				

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates			
		+N/-S (ft)	+E/-W (ft)	Comment	
2,000.00	2,000.00	0.00	0.00	Start Build 2.00	
3,128.74	3,099.76	-117.59	-185.35	Start 3098.52 hold at 3128.74 MD	
6,227.26	5,960.87	-754.83	-1,189.74	Start DLS 9.00 TFO 119.89	
7,357.33	6,683.00	-133.64	-1,449.90	TPZ/Landing Pt. at 7357.33 MD	
17,226.69	6,683.00	9,735.36	-1,533.81	TD at 17226.69	

Northern Region - DJ Basin

Wells Ranch

A Section 34

Reveille A34-788

Reveille A34-788 OH

APD - Rev 1

Anticollision Summary Report

22 July, 2019

Noble Energy, Inc.
Anticollision Summary Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Reveille A34-788
Project:	Wells Ranch	TVD Reference:	KB @ 4661.00ft
Reference Site:	A Section 34	MD Reference:	KB @ 4661.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Reveille A34-788	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Reveille A34-788 OH	Database:	EDMP
Reference Design:	APD - Rev 1	Offset TVD Reference:	Offset Datum

Reference	APD - Rev 1		
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	MD + Stations Interval 100.00ft	Error Model:	ISCWSA
Depth Range:	Unlimited	Scan Method:	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 10,000.00 ft	Error Surface:	Pedal Curve
Warning Levels Evaluated at:	2.00 Sigma	Casing Method:	Not applied

Survey Tool Program	Date	7/22/2019		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.00	17,226.69	APD - Rev 1 (Reveille A34-788 OH)	2_MWD+IFR1+MS	A008Mb: IFR dec & multi-station analysis

Summary						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
A Section 21						
Culbreath 23-21 - Original Drilling - Original Drilling - As D	17,226.69	6,776.23	3,824.02	3,730.77	41.007	CC, ES, SF
Culbreath 33-21 (PA) - Original Drilling - Original Drilling -	17,226.69	6,740.00	2,938.57	2,742.98	15.024	CC, ES, SF
Harper A21-618 - Harper A21-618 OH - As-Drilled	17,226.69	11,072.53	769.13	680.29	8.658	CC, ES, SF
Harper A21-626 - Harper A21-626 OH - As-Drilled	17,226.69	11,069.89	1,305.86	1,216.98	14.694	CC, ES, SF
Harper A21-631 - Harper A21-631 OH - As-Drilled	17,226.69	10,976.17	1,654.24	1,567.49	19.069	CC, ES, SF
Harper A21-637 - Harper A21-637 OH - As-Drilled	17,226.69	11,169.27	2,002.25	1,913.20	22.484	CC, ES, SF
Harper A21-643 - Harper A21-643 OH - As-Drilled	17,226.69	11,222.33	2,441.90	2,352.38	27.278	CC, ES, SF
Harper A21-649 - Harper A21-649 OH - As-Drilled	17,226.69	11,317.28	2,765.18	2,674.95	30.645	CC, ES, SF
Harper A21-656 - Harper A21-656 OH - As-Drilled	17,226.69	11,069.04	3,135.67	3,049.05	36.201	CC, ES, SF
Harper A21-664 - Harper A21-664 OH - As-Drilled	17,226.69	11,500.15	3,676.40	3,585.68	40.521	CC, ES, SF
Harper A21-669 - Harper A21-669 OH - As-Drilled	17,226.69	11,393.10	4,020.26	3,931.24	45.162	CC, ES, SF
Harper A21-674 - Harper A21-674 OH - As-Drilled	17,226.69	11,828.41	4,395.95	4,302.72	47.152	CC, ES, SF
Harper A21-681 - Harper A21-681 OH - As-Drilled	17,226.69	11,548.00	4,774.98	4,685.60	53.424	CC, ES, SF
Kona A19-616 - Kona A19-616 - Kona A19-616 - As Drille	17,226.69	6,329.00	4,013.24	3,909.93	38.845	CC, ES, SF
Kona A19-624 - Kona A19-624 - Kona A19-624 - As Drille	17,226.69	6,422.00	4,013.37	3,913.05	40.002	CC, ES, SF
Kona A19-636 - Kona A19-636 - Kona A19-636 - As Drille	17,226.69	6,327.00	3,975.45	3,877.54	40.603	CC, ES, SF
Kona A19-646 - Original Drilling - Original Drilling - As Dr	17,226.69	6,376.98	4,582.78	4,493.59	51.380	CC, ES, SF
Kona A19-662 - Original Drilling - Original Drilling - As Dr	17,226.69	6,103.46	5,243.47	5,159.10	62.151	CC, ES, SF
Kona A19-670 - Kona A19-670 - Original Drilling - As Dril	17,226.69	6,231.00	5,343.48	5,262.34	65.856	CC, ES, SF
Kona A19-685 - Original Drilling - Original Drilling - As Dr	17,226.69	5,918.44	5,401.48	5,321.33	67.389	CC, ES, SF
McKee 12-21 (PA) - Original Drilling - Original Drilling - A	17,226.69	6,776.00	5,702.93	5,496.62	27.643	CC, ES, SF
McKee 21-21 (PA) - Original Drilling - Original Drilling - A	17,226.69	6,792.00	5,526.53	5,339.70	29.579	CC, ES, SF
McKee 22-21 - Original Drilling - Original Drilling - As Dril	17,226.69	6,790.13	4,720.73	4,636.11	55.792	CC, ES, SF
McKee 31-21 - Original Drilling - Original Drilling - As Dril	17,226.69	6,951.21	5,346.62	5,282.66	83.594	CC, ES, SF
McKee 32-21 - Original Drilling - Original Drilling - As Dril	17,226.69	6,804.54	3,968.95	3,897.31	55.406	CC, ES, SF
McKee 41-21 - Original Drilling - Original Drilling - As Dril	17,226.69	6,646.45	4,926.88	4,873.68	92.612	CC, ES, SF
McKee 42-21 - Original Drilling - Original Drilling - As Dril	17,226.69	6,784.56	3,285.50	3,229.98	59.170	CC, ES, SF
Rampart A33-730 - Rampart A33-730 - APD-Rev 1	7,350.00	17,706.26	1,370.09	1,252.77	11.678	SF
Rampart A33-730 - Rampart A33-730 - APD-Rev 1	16,954.24	8,119.07	1,363.55	1,251.66	12.186	CC, ES
Rampart A33-740 - Rampart A33-740 - APD-Rev 0	7,350.00	17,501.26	2,019.69	1,902.42	17.223	ES, SF
Rampart A33-740 - Rampart A33-740 - APD-Rev 0	7,350.69	17,500.57	2,019.69	1,902.42	17.224	CC
Rampart A33-750 - Rampart A33-750 - APD-Rev 0	7,300.00	17,093.98	2,689.07	2,572.84	23.135	SF
Rampart A33-750 - Rampart A33-750 - APD-Rev 0	7,350.00	17,062.32	2,688.15	2,572.08	23.160	ES
Rampart A33-750 - Rampart A33-750 - APD-Rev 0	7,357.19	17,055.13	2,688.13	2,572.12	23.171	CC
Rampart A33-760 - Rampart A33-760 - APD-Rev 1	7,300.00	16,956.23	3,324.32	3,208.23	28.635	SF
Rampart A33-760 - Rampart A33-760 - APD-Rev 1	7,350.00	16,914.92	3,323.42	3,207.62	28.700	ES
Rampart A33-760 - Rampart A33-760 - APD-Rev 1	7,357.15	16,907.77	3,323.41	3,207.66	28.713	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 Reveille A34-788
Project:	Wells Ranch	TVD Reference:	KB @ 4661.00ft
Reference Site:	A Section 34	MD Reference:	KB @ 4661.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Reveille A34-788	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Reveille A34-788 OH	Database:	EDMP
Reference Design:	APD - Rev 1	Offset TVD Reference:	Offset Datum

Summary						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
A Section 21						
Rampart A33-770 - Rampart A33-770 - APD-Rev 0	7,300.00	16,809.40	4,011.46	3,895.08	34.467	SF
Rampart A33-770 - Rampart A33-770 - APD-Rev 0	7,350.00	16,759.48	4,010.60	3,894.59	34.570	ES
Rampart A33-770 - Rampart A33-770 - APD-Rev 0	16,913.85	7,196.26	4,009.09	3,903.75	38.060	CC
Sexton 43-21 (PA) - Original Drilling - Original Drilling - As	17,226.69	6,732.00	2,448.95	2,278.64	14.379	CC, ES, SF
Wells Trust 13-21 - Original Drilling - Original Drilling - As	17,226.69	6,807.23	5,126.28	5,023.41	49.835	CC, ES, SF
Wells Trust 14-21 - Original Drilling - Original Drilling - As	17,226.69	6,729.37	4,930.15	4,821.70	45.459	CC, ES, SF
Wells Trust 24-21 - Original Drilling - Original Drilling - As	17,226.69	6,760.22	4,105.47	3,998.06	38.223	CC, ES, SF
A Section 22						
Carpio 22-01 - Original Drilling - Original Drilling - As Drill	17,226.69	6,665.44	4,638.97	4,529.67	42.442	CC, ES, SF
Carpio 22-04-19 - Original Drilling - Original Drilling - As D	17,226.69	6,730.25	3,416.52	3,310.56	32.242	CC, ES, SF
Carpio 22-41 - Original Drilling - Original Drilling - As Drill	17,226.69	6,747.06	5,100.47	4,975.94	40.956	CC, ES, SF
Carpio 22-43 - Original Drilling - Original Drilling - As Drill	17,226.69	6,716.89	3,350.44	3,241.96	30.885	CC, ES, SF
Carpio 22-45 - Original Drilling - Original Drilling - As Drill	17,226.69	6,657.41	4,408.61	4,301.04	40.983	CC, ES, SF
Eisenstat 22-11 (PA) - Original Drilling - Original Drilling -	17,226.69	6,746.00	6,748.11	6,546.83	33.526	CC, ES, SF
Eisenstat 22-13 - Original Drilling - Original Drilling - As D	17,226.69	6,766.11	4,365.79	4,273.59	47.352	CC, ES, SF
Eisenstat 22-15 - Original Drilling - Original Drilling - As D	17,226.69	6,703.80	5,813.53	5,724.33	65.177	CC, ES, SF
Eisenstat 22-21 - Original Drilling - Original Drilling - As D	17,226.69	6,851.69	5,030.63	4,957.49	68.774	CC, ES, SF
Eisenstat 22-23 - Original Drilling - Original Drilling - As D	17,226.69	6,754.06	3,654.59	3,594.98	61.313	CC, ES, SF
Gill Land Assoc. 1 (PA) - Original Drilling - Original Drilling	17,226.69	6,747.00	5,717.70	5,508.10	27.279	CC, ES, SF
Gill Land Assoc. 22-02 (PA) - Original Drilling - Original D	17,226.69	6,757.00	3,898.83	3,710.40	20.691	CC, ES, SF
Gill Land Assoc. 22-03 - Original Drilling - Original Drilling	17,226.69	6,761.34	4,738.67	4,681.84	83.385	CC, ES, SF
Gill Land Assoc. 22-04 (PA) - Original Drilling - Original D	17,226.69	6,755.00	5,701.90	5,508.59	29.496	CC, ES, SF
Gruen 22-01 - Original Drilling - Original Drilling - As Drille	17,226.69	6,773.49	2,202.97	2,140.38	35.197	CC, ES, SF
Gruen 22-02 - Original Drilling - Original Drilling - As Drille	17,226.69	6,816.39	2,031.35	1,925.30	19.154	CC, ES, SF
Gruen 22-31 - Original Drilling - Original Drilling - As Drille	17,226.69	6,786.28	2,846.49	2,758.01	32.171	CC, ES, SF
Gruen 22-33 - Original Drilling - Original Drilling - As Drille	17,226.69	6,748.48	1,051.95	970.76	12.958	CC, ES, SF
Gruen 22-35 - Original Drilling - Original Drilling - As Drille	17,226.69	6,644.30	1,842.47	1,755.50	21.185	CC, ES, SF
Ottinger 22-01 - Original Drilling - Original Drilling - As Dr	17,226.69	6,761.57	3,931.79	3,832.27	39.507	CC, ES, SF
A Section 23						
Cecil 23-13 - Original Drilling - Original Drilling - As Drilled	17,226.69	6,631.21	9,024.55	8,919.28	85.727	CC, ES, SF
Champlin 23-02 (PA) - Original Drilling - Original Drilling -	17,226.69	6,706.00	6,247.21	6,029.46	28.691	CC, ES, SF
Champlin 23-03 - Original Drilling - Original Drilling - As D	17,226.69	6,650.05	7,019.82	6,909.92	63.878	CC, ES, SF
Champlin Amoco A 1 #308 - Original Drilling - Original Dr	17,226.69	6,681.00	6,850.12	6,629.56	31.059	CC, ES, SF
Cooper 23-1-17 - Original Drilling - Original Drilling - As Dr						Out of range
Cooper 23-1-19 - Original Drilling - Original Drilling - As D	17,226.69	6,514.79	9,107.50	9,004.87	88.736	CC, ES, SF
Cooper 23-12 - Original Drilling - Original Drilling - As Dri	17,226.69	6,608.74	9,803.56	9,701.00	95.587	CC, ES, SF
Cooper 23-1-20 - Original Drilling - Original Drilling - As D	17,226.69	6,656.36	8,561.67	8,454.60	79.967	CC, ES, SF
Cooper 23-15 - Original Drilling - Original Drilling - As Dri						Out of range
Foss 41-23D - Original Drilling - Original Drilling - As Drill						Out of range
Foss 42-23 - Original Drilling - Original Drilling - As Drilled						Out of range
J&L Farms 23-11 - Original Drilling - Original Drilling - As	17,226.69	6,715.70	7,510.86	7,415.10	78.429	CC, ES, SF
J&L Farms 23-12 - Original Drilling - Original Drilling - As	17,226.69	6,732.25	6,556.49	6,454.21	64.105	CC, ES, SF
J&L Farms 23-21 - Original Drilling - Original Drilling - As	17,226.69	6,548.87	8,872.60	8,773.24	89.301	CC, ES, SF
J&L Farms 23-22 - Original Drilling - Original Drilling - As	17,226.69	6,723.59	7,967.30	7,862.75	76.209	CC, ES, SF
McIntosh 33-23 - Original Drilling - Original Drilling - As D	17,226.69	7,019.00	8,738.76	8,627.80	78.757	CC, ES, SF
McIntosh 34-23 - Original Drilling - Original Drilling - As D	17,226.69	6,730.37	8,700.37	8,589.81	78.695	CC, ES, SF
McIntosh 43-23 - Original Drilling - Original Drilling - As D						Out of range
McIntosh 44-23 - Original Drilling - Original Drilling - As D						Out of range
Schroeder 23-31 - Original Drilling - Original Drilling - As	17,226.69	6,711.88	7,626.87	7,517.90	69.986	CC, ES, SF
Schroeder 23-33 - Original Drilling - Original Drilling - As	17,226.69	6,646.82	5,743.64	5,633.70	52.244	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 Reveille A34-788
Project:	Wells Ranch	TVD Reference:	KB @ 4661.00ft
Reference Site:	A Section 34	MD Reference:	KB @ 4661.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Reveille A34-788	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Reveille A34-788 OH	Database:	EDMP
Reference Design:	APD - Rev 1	Offset TVD Reference:	Offset Datum

Summary

Site Name Offset Well - Wellbore - Design	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
A Section 24						
Larson A23-622 - Larson A23-622 OH - As-drilled	16,400.00	17,299.00	5,555.75	5,427.39	43.280	SF
Larson A23-622 - Larson A23-622 OH - As-drilled	17,226.69	17,299.00	5,322.79	5,201.21	43.780	CC, ES
Larson A23-627 - Larson A23-627 OH - As-drilled	16,900.00	17,330.00	5,501.59	5,370.42	41.943	SF
Larson A23-627 - Larson A23-627 OH - As-drilled	17,226.69	17,330.00	5,404.40	5,275.83	42.036	CC, ES
Larson A23-633 - Larson A23-633 OH - As-drilled	17,226.69	17,260.00	5,511.25	5,377.81	41.302	CC, ES, SF
Larson A23-639 - Larson A23-639 OH - As-drilled	17,226.69	17,355.00	5,654.76	5,513.68	40.083	CC, ES, SF
Larson A23-645 - Larson A23-645 OH - As-drilled	17,226.69	18,040.00	5,814.03	5,666.42	39.389	CC, ES, SF
Larson A23-651 - Larson A23-651 OH - As-drilled	17,226.69	18,045.00	5,962.45	5,810.16	39.153	CC, ES, SF
Larson A23-656 - Larson A23-656 OH - As-drilled	17,226.69	18,030.00	6,111.04	5,955.22	39.218	CC, ES, SF
Larson A23-662 - Larson A23-662 OH - As-drilled	17,226.69	18,100.00	6,338.24	6,178.01	39.559	CC, ES, SF
Larson A23-668 - Larson A23-668 OH - As-Drilled	17,226.69	17,400.00	6,574.56	6,417.93	41.976	CC, ES, SF
Larson A23-672 - Larson A23-672 OH - As-Drilled	17,226.69	17,415.00	6,743.50	6,584.77	42.484	CC, ES, SF
Larson A23-678 - Larson A23-678 OH - As-Drilled	17,226.69	17,106.00	6,993.26	6,832.55	43.513	CC, ES, SF
Larson A23-683 - Larson A23-683 OH - As-Drilled	17,226.69	17,368.00	7,199.10	7,035.31	43.953	CC, ES, SF
Larson AA19-618 - Larson AA19-618 OH - As-Drilled						Out of range
Larson AA19-624 - Larson AA19-624 OH - As-Drilled						Out of range
Larson AA19-624 - Larson AA19-624 ST01 - As-Drilled						Out of range
Larson AA19-630 - Larson AA19-630 OH - As-Drilled						Out of range
Larson AA19-635 - Larson AA19-635 OH - As-Drilled						Out of range
Larson Farms 01-24 - Original Drilling - Original Drilling -						Out of range
Larson Farms 02-24 - Original Drilling - Original Drilling -						Out of range
Larson Farms 03-24 - Original Drilling - Original Drilling -						Out of range
Larson Farms 04-24 - Original Drilling - Original Drilling -						Out of range
Larson Farms 05-24 - Original Drilling - Original Drilling -						Out of range
Larson Farms 06-24 - Original Drilling - Original Drilling -						Out of range
Larson Farms 07-24 - Original Drilling - Original Drilling -						Out of range
Peppler 24-32 - Original Drilling - Original Drilling - As Dri						Out of range
Roth 24-21 - Original Drilling - Original Drilling - As Drilled						Out of range
A Section 25						
Fairmeadows 03-25G - Original Drilling - Original Drilling						Out of range
Fairmeadows Land Co 1 - Original Drilling - Original Drilli						Out of range
Larsen 01-25G - Original Drilling - Original Drilling - As D						Out of range
Larson A25-01 - Original Drilling - Original Drilling - As Dr						Out of range
Larson A25-02 - Original Drilling - Original Drilling - As Dr						Out of range
Larson A25-03 - Original Drilling - Original Drilling - As Dr						Out of range
Larson A25-03X - Original Drilling - Original Drilling - As D						Out of range
Larson A25-05 - Original Drilling - Original Drilling - As Dr						Out of range
Larson A25-06 - Original Drilling - Original Drilling - As Dr						Out of range
Larson A25-06X - Original Drilling - Original Drilling - As D						Out of range
Larson A25-07 - Original Drilling - Original Drilling - As Dr						Out of range
Larson A25-08 - Original Drilling - Original Drilling - As Dr						Out of range
Larson A25-10 - Original Drilling - Original Drilling - Drilled						Out of range
Larson A25-11 - Original Drilling - Original Drilling - As Dr						Out of range
Larson A25-12 - Original Drilling - Original Drilling - As Dr						Out of range
Larson A25-13 - Original Drilling - Original Drilling - As Dr						Out of range
Larson A25-14 - Original Drilling - Original Drilling - As Dr						Out of range
Larson A25-15 - Original Drilling - Original Drilling - As Dr						Out of range
Larson A25-17 - Original Drilling - Original Drilling - As D						Out of range
Larson A25-19 - Original Drilling - Original Drilling - As Dr						Out of range
Larson A25-23 - Original Drilling - Original Drilling - As Dr						Out of range
Larson A25-25 - Original Drilling - Original Drilling - As Dr						Out of range

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 Reveille A34-788
Project:	Wells Ranch	TVD Reference:	KB @ 4661.00ft
Reference Site:	A Section 34	MD Reference:	KB @ 4661.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Reveille A34-788	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Reveille A34-788 OH	Database:	EDMP
Reference Design:	APD - Rev 1	Offset TVD Reference:	Offset Datum

Summary						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
A Section 26						
Barrett 11-26 (SI) - Original Drilling - Original Drilling - As	14,293.45	6,543.01	7,055.89	6,967.13	79.491	CC
Barrett 11-26 (SI) - Original Drilling - Original Drilling - As	14,300.00	6,543.02	7,055.89	6,967.09	79.451	ES
Barrett 11-26 (SI) - Original Drilling - Original Drilling - As	16,500.00	6,545.82	7,392.86	7,291.89	73.214	SF
Barrett 12-26 (SI) - Original Drilling - Original Drilling - As	14,276.04	6,718.87	5,740.33	5,654.11	66.582	CC
Barrett 12-26 (SI) - Original Drilling - Original Drilling - As	14,300.00	6,719.13	5,740.38	5,654.01	66.461	ES
Barrett 12-26 (SI) - Original Drilling - Original Drilling - As	15,800.00	6,735.03	5,939.16	5,844.84	62.972	SF
Brown-Orr 14-26 (SI) - Original Drilling - Original Drilling - As	12,710.59	6,648.09	5,661.86	5,586.40	75.036	CC, ES
Brown-Orr 14-26 (SI) - Original Drilling - Original Drilling - As	14,400.00	6,648.19	5,908.53	5,824.29	70.134	SF
Brown-Orr 24-26 - Original Drilling - Original Drilling - As	12,692.34	6,900.16	7,346.85	7,270.21	95.859	CC
Brown-Orr 24-26 - Original Drilling - Original Drilling - As	12,700.00	6,900.32	7,346.85	7,270.16	95.796	ES
Brown-Orr 24-26 - Original Drilling - Original Drilling - As	15,400.00	6,957.79	7,829.71	7,738.24	85.605	SF
Carpio A26-04 - Original Drilling - Original Drilling - As Dr	16,896.77	6,647.76	5,833.00	5,725.72	54.370	CC
Carpio A26-04 - Original Drilling - Original Drilling - As Dr	16,900.00	6,647.77	5,833.00	5,725.70	54.359	ES
Carpio A26-04 - Original Drilling - Original Drilling - As Dr	17,226.69	6,648.38	5,842.33	5,732.89	53.384	SF
Carpio A26-05 - Original Drilling - Original Drilling - As Dr	15,368.08	6,680.07	5,946.50	5,850.94	62.224	CC
Carpio A26-05 - Original Drilling - Original Drilling - As Dr	15,400.00	6,679.88	5,946.59	5,850.81	62.086	ES
Carpio A26-05 - Original Drilling - Original Drilling - As Dr	16,800.00	6,671.81	6,116.47	6,013.17	59.208	SF
DCD Farm A26-02 - Original Drilling - Original Drilling - A	16,741.10	6,585.16	8,512.04	8,406.22	80.438	CC
DCD Farm A26-02 - Original Drilling - Original Drilling - A	16,800.00	6,585.34	8,512.25	8,406.00	80.121	ES
DCD Farm A26-02 - Original Drilling - Original Drilling - A	17,226.69	6,586.69	8,525.88	8,416.68	78.077	SF
DCD Farms 01-26 - Original Drilling - Original Drilling - As	15,530.51	6,813.21	9,808.08	9,710.64	100.653	CC
DCD Farms 01-26 - Original Drilling - Original Drilling - As	15,600.00	6,813.46	9,808.33	9,710.39	100.145	ES
DCD Farms 01-26 - Original Drilling - Original Drilling - As	17,226.69	6,819.41	9,953.67	9,845.06	91.646	SF
DCD Farms 02-26 (PA) - Original Drilling - Original Drilling - A	15,495.25	6,753.31	7,112.88	7,015.74	73.227	CC
DCD Farms 02-26 (PA) - Original Drilling - Original Drilling - A	15,500.00	6,753.38	7,112.88	7,015.71	73.202	ES
DCD Farms 02-26 (PA) - Original Drilling - Original Drilling - A	17,226.69	6,778.33	7,320.54	7,213.30	68.264	SF
DCD Farms A26-07 - Original Drilling - Original Drilling - A	15,770.31	6,661.01	8,475.09	8,376.48	85.951	CC
DCD Farms A26-07 - Original Drilling - Original Drilling - A	15,800.00	6,661.33	8,475.14	8,376.32	85.768	ES
DCD Farms A26-07 - Original Drilling - Original Drilling - A	17,226.69	6,676.86	8,599.28	8,491.28	79.625	SF
Pfeiffer 09-26 - Original Drilling - Original Drilling - As Dril	14,220.37	6,712.24	9,818.93	9,731.98	112.932	CC
Pfeiffer 09-26 - Original Drilling - Original Drilling - As Dril	14,300.00	6,711.47	9,819.25	9,731.75	112.222	ES
Pfeiffer 09-26 - Original Drilling - Original Drilling - As Dril	16,100.00	6,705.88	9,997.20	9,898.11	100.894	SF
Pfeiffer 10-26 - Wellbore #1 - Wellbore #1 - As Drilled	14,253.01	6,627.57	8,499.19	8,412.38	97.911	CC
Pfeiffer 10-26 - Wellbore #1 - Wellbore #1 - As Drilled	14,300.00	6,627.17	8,499.32	8,412.19	97.549	ES
Pfeiffer 10-26 - Wellbore #1 - Wellbore #1 - As Drilled	17,226.69	6,603.21	9,004.37	8,900.82	86.956	SF
Pfeiffer 15-26 - Wellbore #1 - Wellbore #1 - As Drilled	12,871.24	7,049.40	8,315.13	8,236.50	105.751	CC
Pfeiffer 15-26 - Wellbore #1 - Wellbore #1 - As Drilled	12,900.00	7,049.93	8,315.18	8,236.36	105.494	ES
Pfeiffer 15-26 - Wellbore #1 - Wellbore #1 - As Drilled	16,200.00	7,026.00	8,956.87	8,860.22	92.672	SF
Pfeiffer 16-26 - Original Drilling - Original Drilling - As Dril	12,745.52	6,645.00	9,854.56	9,668.97	53.098	CC
Pfeiffer 16-26 - Original Drilling - Original Drilling - As Dril	12,800.00	6,645.00	9,854.71	9,668.76	52.994	ES
Pfeiffer 16-26 - Original Drilling - Original Drilling - As Dril	14,400.00	6,645.00	9,992.48	9,796.24	50.918	SF
Sidwell 26-1G4 - Original Drilling - Original Drilling - As D	16,779.48	6,578.52	9,861.34	9,755.05	92.773	CC
Sidwell 26-1G4 - Original Drilling - Original Drilling - As D	16,900.00	6,580.20	9,862.08	9,754.90	92.015	ES
Sidwell 26-1G4 - Original Drilling - Original Drilling - As D	17,226.69	6,584.74	9,871.47	9,761.95	90.133	SF
Sidwell A26-03 (PA) - Original Drilling - Original Drilling -	16,944.28	6,910.08	7,241.36	7,121.78	60.558	CC
Sidwell A26-03 (PA) - Original Drilling - Original Drilling -	17,000.00	6,910.05	7,241.57	7,121.60	60.361	ES
Sidwell A26-03 (PA) - Original Drilling - Original Drilling -	17,226.69	6,909.89	7,246.86	7,125.34	59.633	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 Reveille A34-788
Project:	Wells Ranch	TVD Reference:	KB @ 4661.00ft
Reference Site:	A Section 34	MD Reference:	KB @ 4661.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Reveille A34-788	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Reveille A34-788 OH	Database:	EDMP
Reference Design:	APD - Rev 1	Offset TVD Reference:	Offset Datum

Summary						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
A Section 27						
Howard 02-27 (PA) - Original Drilling - Original Drilling - A	16,823.59	6,762.00	3,246.30	3,027.34	14.826	CC, ES
Howard 02-27 (PA) - Original Drilling - Original Drilling - A	17,000.00	6,762.00	3,251.09	3,031.16	14.782	SF
Howard 03-27 - Original Drilling - Original Drilling - As Dri	16,734.33	6,765.39	1,838.40	1,731.80	17.245	CC, ES
Howard 03-27 - Original Drilling - Original Drilling - As Dri	16,800.00	6,765.23	1,839.57	1,732.71	17.214	SF
Howard 04-27 (PA) - Original Drilling - Original Drilling - A	16,841.07	6,722.00	595.90	377.59	2.730	CC, ES, SF
Howard 08-27 - Original Drilling - Original Drilling - As Dri	15,431.58	6,707.18	4,544.54	4,448.44	47.289	CC, ES
Howard 08-27 - Original Drilling - Original Drilling - As Dri	16,300.00	6,706.22	4,626.77	4,526.21	46.010	SF
Howard 10-27 - Original Drilling - Original Drilling - As Dri	14,117.58	6,699.68	3,320.09	3,234.02	38.574	CC, ES
Howard 10-27 - Original Drilling - Original Drilling - As Dri	14,600.00	6,693.66	3,354.95	3,266.61	37.980	SF
Howard 15-27 - Original Drilling - Original Drilling - As Dri	12,951.31	6,750.96	3,164.29	3,088.77	41.903	CC, ES
Howard 15-27 - Original Drilling - Original Drilling - As Dri	13,400.00	6,759.05	3,195.93	3,118.27	41.155	SF
Howard 4B-27 (DA) - Original Drilling - Original Drilling - A	16,800.98	3,765.00	3,013.84	2,917.01	31.124	CC, ES
Howard 4B-27 (DA) - Original Drilling - Original Drilling - A	17,226.69	3,765.00	3,043.76	2,940.68	29.528	SF
Howard A27-01 - Original Drilling - Original Drilling - As D	16,824.49	6,716.35	4,574.55	4,467.54	42.749	CC, ES
Howard A27-01 - Original Drilling - Original Drilling - As D	17,226.69	6,715.19	4,592.20	4,482.83	41.989	SF
Howard A27-05 (SI) - Original Drilling - Original Drilling - A	15,441.39	6,710.70	610.45	514.23	6.344	CC, ES, SF
Howard A27-06 (PR) - Original Drilling - Original Drilling -	15,486.90	6,822.18	1,988.81	1,889.52	20.031	CC, ES
Howard A27-06 (PR) - Original Drilling - Original Drilling -	15,500.00	6,822.20	1,988.85	1,889.54	20.027	SF
Howard A27-07 - Original Drilling - Original Drilling - As D	15,418.72	6,747.62	3,338.19	3,242.07	34.732	CC, ES
Howard A27-07 - Original Drilling - Original Drilling - As D	15,800.00	6,745.98	3,359.89	3,261.89	34.284	SF
Howard A27-09 - Original Drilling - Original Drilling - As D	14,058.44	6,702.70	4,448.47	4,362.85	51.952	CC
Howard A27-09 - Original Drilling - Original Drilling - As D	14,100.00	6,702.39	4,448.67	4,362.78	51.798	ES
Howard A27-09 - Original Drilling - Original Drilling - As D	14,900.00	6,696.62	4,527.37	4,437.41	50.325	SF
Howard A27-16 - Original Drilling - Original Drilling - As D	12,787.63	6,699.88	4,728.73	4,652.49	62.025	CC
Howard A27-16 - Original Drilling - Original Drilling - As D	12,800.00	6,699.92	4,728.74	4,652.43	61.963	ES
Howard A27-16 - Original Drilling - Original Drilling - As D	13,900.00	6,704.62	4,857.80	4,775.83	59.267	SF
Howard A27-17D - Original Drilling - Original Drilling - As	16,231.98	6,814.82	3,990.83	3,884.66	37.590	CC, ES
Howard A27-17D - Original Drilling - Original Drilling - As	16,900.00	6,813.49	4,046.35	3,935.81	36.603	SF

Noble Energy, Inc.
Anticollision Summary Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Reveille A34-788
Project:	Wells Ranch	TVD Reference:	KB @ 4661.00ft
Reference Site:	A Section 34	MD Reference:	KB @ 4661.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Reveille A34-788	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Reveille A34-788 OH	Database:	EDMP
Reference Design:	APD - Rev 1	Offset TVD Reference:	Offset Datum

Summary

Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
A Section 28						
Ankeney 2-28 (SI) - Wellbore #1 - No Surveys	16,876.86	6,714.00	2,146.37	1,927.95	9.827	CC
Ankeney 2-28 (SI) - Wellbore #1 - No Surveys	16,900.00	6,714.00	2,146.50	1,927.84	9.816	ES
Ankeney 2-28 (SI) - Wellbore #1 - No Surveys	17,000.00	6,714.00	2,149.90	1,930.31	9.790	SF
Ankeney 28-01 (PA) - Wellbore #1 - Gyro Surveys	15,236.28	6,709.22	674.71	580.96	7.197	CC, ES
Ankeney 28-01 (PA) - Wellbore #1 - Gyro Surveys	15,300.00	6,708.71	677.71	583.22	7.172	SF
Art Rohr 1 (PA) - Wellbore #1 - No Surveys	14,063.56	6,709.00	3,402.28	3,205.67	17.305	CC
Art Rohr 1 (PA) - Wellbore #1 - No Surveys	14,100.00	6,709.00	3,402.47	3,205.53	17.277	ES
Art Rohr 1 (PA) - Wellbore #1 - No Surveys	14,500.00	6,709.00	3,430.16	3,230.00	17.137	SF
Danley 1 (TA) - Wellbore #1 - Gyro Surveys	16,942.30	6,795.11	4,439.70	4,331.63	41.082	CC
Danley 1 (TA) - Wellbore #1 - Gyro Surveys	17,000.00	6,794.46	4,440.07	4,331.48	40.889	ES
Danley 1 (TA) - Wellbore #1 - Gyro Surveys	17,226.69	6,791.85	4,448.80	4,338.28	40.257	SF
Danley 12-28 (SI) - Wellbore #1 - Gyro Surveys	15,356.22	6,769.15	4,600.90	4,505.25	48.099	CC
Danley 12-28 (SI) - Wellbore #1 - Gyro Surveys	15,400.00	6,767.59	4,601.11	4,505.07	47.908	ES
Danley 12-28 (SI) - Wellbore #1 - Gyro Surveys	16,500.00	6,729.62	4,740.75	4,636.96	45.680	SF
Danley 13-28 (PR) - Wellbore #1 - Gyro Surveys	14,033.79	6,799.64	4,637.15	4,551.60	54.206	CC
Danley 13-28 (PR) - Wellbore #1 - Gyro Surveys	14,100.00	6,798.56	4,637.62	4,551.50	53.855	ES
Danley 13-28 (PR) - Wellbore #1 - Gyro Surveys	15,300.00	6,780.06	4,806.88	4,712.39	50.876	SF
Danley 14-28 (PR) - Wellbore #1 - Gyro Surveys	12,686.11	6,756.96	4,653.07	4,577.55	61.619	CC
Danley 14-28 (PR) - Wellbore #1 - Gyro Surveys	12,700.00	6,756.56	4,653.09	4,577.46	61.527	ES
Danley 14-28 (PR) - Wellbore #1 - Gyro Surveys	14,100.00	6,714.77	4,862.95	4,777.68	57.032	SF
Dewey 21-28 (TA) - Wellbore #1 - Gyro Surveys	16,593.58	6,848.52	3,352.93	3,247.81	31.897	CC
Dewey 21-28 (TA) - Wellbore #1 - Gyro Surveys	16,600.00	6,848.40	3,352.93	3,247.75	31.878	ES
Dewey 21-28 (TA) - Wellbore #1 - Gyro Surveys	17,200.00	6,837.11	3,407.31	3,297.61	31.062	SF
Dewey 22-28 (SI) - Wellbore #1 - Gyro Surveys	15,465.21	6,909.17	3,300.73	3,204.30	34.229	CC
Dewey 22-28 (SI) - Wellbore #1 - Gyro Surveys	15,500.00	6,906.66	3,300.91	3,204.16	34.117	ES
Dewey 22-28 (SI) - Wellbore #1 - Gyro Surveys	16,100.00	6,863.41	3,360.90	3,259.71	33.211	SF
Hannan Rohr 1 (PA) - Wellbore #1 - Gyro Surveys	12,663.09	6,689.85	3,356.79	3,281.62	44.654	CC
Hannan Rohr 1 (PA) - Wellbore #1 - Gyro Surveys	12,700.00	6,689.97	3,357.00	3,281.51	44.468	ES
Hannan Rohr 1 (PA) - Wellbore #1 - Gyro Surveys	13,500.00	6,692.46	3,459.55	3,378.36	42.610	SF
Rohr A 28-25 (SI) - Wellbore #1 - Gyro Surveys	13,543.29	6,840.27	3,847.35	3,765.61	47.068	CC
Rohr A 28-25 (SI) - Wellbore #1 - Gyro Surveys	13,600.00	6,839.29	3,847.77	3,765.54	46.791	ES
Rohr A 28-25 (SI) - Wellbore #1 - Gyro Surveys	14,500.00	6,823.77	3,964.49	3,875.83	44.715	SF
Wardlaw 16-28 (SI) - Wellbore #1 - Gyro Surveys	12,712.02	6,693.20	883.68	808.10	11.692	CC, ES
Wardlaw 16-28 (SI) - Wellbore #1 - Gyro Surveys	12,800.00	6,694.35	888.05	811.55	11.608	SF
Wardlaw 20-28 - Original Drilling - Original Drilling - As D	13,323.66	6,682.00	1,216.94	1,026.38	6.386	CC, ES
Wardlaw 20-28 - Original Drilling - Original Drilling - As D	13,400.00	6,682.00	1,219.33	1,027.98	6.372	SF
Wardlaw 20-28 (SI) - Wellbore #1 - Gyro Surveys	13,356.17	6,690.15	1,208.40	1,128.13	15.054	CC, ES
Wardlaw 20-28 (SI) - Wellbore #1 - Gyro Surveys	13,500.00	6,691.44	1,216.93	1,135.31	14.910	SF
Wardlaw 33-28 (PA) - Wellbore #1 - Gyro Surveys	13,851.27	7,500.00	1,789.26	1,647.74	12.643	CC
Wardlaw 33-28 (PA) - Wellbore #1 - Gyro Surveys	14,000.00	7,500.00	1,795.43	1,645.24	11.955	ES
Wardlaw 33-28 (PA) - Wellbore #1 - Gyro Surveys	17,200.00	17,200.00	3,702.26	2,924.12	4.758	SF
Webster 09-28 (PR) - Original Drilling - Original Drilling -	14,123.57	6,697.00	929.57	732.75	4.723	CC, ES
Webster 09-28 (PR) - Original Drilling - Original Drilling -	14,200.00	6,697.00	932.71	735.04	4.719	SF
Webster 15-28 (SI) - Wellbore #1 - Gyro Surveys	12,784.33	6,709.86	2,220.95	2,144.84	29.182	CC
Webster 15-28 (SI) - Wellbore #1 - Gyro Surveys	12,800.00	6,709.96	2,221.01	2,144.75	29.126	ES
Webster 15-28 (SI) - Wellbore #1 - Gyro Surveys	13,200.00	6,712.53	2,259.51	2,180.18	28.482	SF
Webster 9-28 (PR) - Wellbore #1 - Gyro Surveys	14,163.00	6,702.91	914.59	828.25	10.593	CC, ES
Webster 9-28 (PR) - Wellbore #1 - Gyro Surveys	14,200.00	6,703.05	915.34	828.55	10.546	SF

Noble Energy, Inc.
Anticollision Summary Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Reveille A34-788
Project:	Wells Ranch	TVD Reference:	KB @ 4661.00ft
Reference Site:	A Section 34	MD Reference:	KB @ 4661.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Reveille A34-788	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Reveille A34-788 OH	Database:	EDMP
Reference Design:	APD - Rev 1	Offset TVD Reference:	Offset Datum

Summary						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
A Section 33						
Achziger 11-33 (PR) - Wellbore #1 - Gyro Surveys	8,923.92	6,690.94	3,138.91	3,086.38	59.758	CC, ES
Achziger 11-33 (PR) - Wellbore #1 - Gyro Surveys	9,900.00	6,677.32	3,287.14	3,229.58	57.103	SF
Achziger 14-33 (PA) - Wellbore #1 - No Surveys	7,340.00	6,646.78	3,371.45	3,212.99	21.277	CC, ES
Achziger 14-33 (PA) - Wellbore #1 - No Surveys	7,350.00	6,646.96	3,371.49	3,213.02	21.276	SF
Briggs 15-33 (SI) - Wellbore #1 - Gyro Surveys	7,514.26	6,735.75	2,059.78	2,011.17	42.375	CC, ES
Briggs 15-33 (SI) - Wellbore #1 - Gyro Surveys	7,600.00	6,735.48	2,061.56	2,012.89	42.356	SF
Ehrlich 19-33 (PR) - Wellbore #1 - Gyro Survey	8,089.59	6,657.06	4,161.01	4,111.29	83.687	CC
Ehrlich 19-33 (PR) - Wellbore #1 - Gyro Survey	8,100.00	6,657.02	4,161.02	4,111.27	83.644	ES
Ehrlich 19-33 (PR) - Wellbore #1 - Gyro Survey	9,800.00	6,649.72	4,498.82	4,441.98	79.149	SF
French 09-33 (SI) - Original Drilling - Original Drilling - As	8,838.93	6,645.51	701.74	649.53	13.440	CC, ES
French 09-33 (SI) - Original Drilling - Original Drilling - As	8,900.00	6,646.50	704.40	651.79	13.390	SF
Hammerbeck 16-33 (PA) - Original Drilling - Original Drilling	7,425.80	6,638.94	641.46	592.73	13.162	CC, ES, SF
Hammerbeck 20-33 - Wellbore #1 - Gyro Surveys	8,148.64	6,618.80	1,405.47	1,355.55	28.154	CC, ES
Hammerbeck 20-33 - Wellbore #1 - Gyro Surveys	8,300.00	6,620.24	1,413.60	1,363.17	28.030	SF
Noffsinger 11-33 (PR) - Wellbore #1 - Gyro Surveys	11,583.92	6,672.13	4,782.41	4,714.72	70.659	CC
Noffsinger 11-33 (PR) - Wellbore #1 - Gyro Surveys	11,600.00	6,672.11	4,782.43	4,714.63	70.531	ES
Noffsinger 11-33 (PR) - Wellbore #1 - Gyro Surveys	13,300.00	6,670.46	5,080.98	5,001.95	64.294	SF
Noffsinger 12-33 (PR) - Wellbore #1 - Gyro Surveys	9,852.87	6,704.43	4,590.75	4,533.70	80.463	CC
Noffsinger 12-33 (PR) - Wellbore #1 - Gyro Surveys	9,900.00	6,704.38	4,591.00	4,533.65	80.063	ES
Noffsinger 12-33 (PR) - Wellbore #1 - Gyro Surveys	11,700.00	6,702.26	4,948.43	4,880.38	72.721	SF
Noffsinger 21-33 (PA) - Wellbore #1 - No Surveys	11,610.07	6,687.00	3,356.71	3,178.49	18.835	CC, ES
Noffsinger 21-33 (PA) - Wellbore #1 - No Surveys	12,100.00	6,687.00	3,392.28	3,210.35	18.646	SF
Noffsinger 22-33 (PR) - Wellbore #1 - Gyro Surveys	11,638.82	6,373.78	1,815.75	1,748.67	27.068	CC, ES
Noffsinger 22-33 (PR) - Wellbore #1 - Gyro Surveys	11,900.00	6,384.66	1,834.41	1,765.24	26.521	SF
Noffsinger 31-33 (PR) - Wellbore #1 - Gyro Surveys	11,601.96	6,676.70	1,931.03	1,863.27	28.500	CC, ES
Noffsinger 31-33 (PR) - Wellbore #1 - Gyro Surveys	11,900.00	6,677.69	1,953.89	1,883.76	27.861	SF
Noffsinger 32-33 (PR) - Wellbore #1 - Gyro Surveys	9,830.98	6,758.80	2,154.26	2,097.48	37.943	CC, ES
Noffsinger 32-33 (PR) - Wellbore #1 - Gyro Surveys	10,300.00	6,768.35	2,204.71	2,144.86	36.842	SF
Sitzman 12-33 (PR) - Wellbore #1 - Gyro Surveys	8,770.24	6,718.75	4,725.53	4,673.54	90.889	CC
Sitzman 12-33 (PR) - Wellbore #1 - Gyro Surveys	8,800.00	6,718.71	4,725.63	4,673.51	90.675	ES
Sitzman 12-33 (PR) - Wellbore #1 - Gyro Surveys	10,900.00	6,716.24	5,183.29	5,120.40	82.415	SF
Sitzman 13-33 (SI) - Wellbore #1 - Gyro Surveys	7,315.85	6,654.43	4,722.06	4,673.50	97.231	CC, ES
Sitzman 13-33 (SI) - Wellbore #1 - Gyro Surveys	9,300.00	6,656.03	5,161.24	5,106.89	94.961	SF
Sughrue 41-33 (SI) - Original Drilling - Original Drilling -	11,601.33	6,643.97	644.89	576.66	9.452	CC, ES
Sughrue 41-33 (SI) - Original Drilling - Original Drilling -	11,700.00	6,644.81	652.40	583.14	9.420	SF
Webster 10-33 (PA) - Wellbore #1 - Gyro Surveys	8,871.72	6,707.78	2,004.18	1,952.23	38.581	CC, ES
Webster 10-33 (PA) - Wellbore #1 - Gyro Surveys	9,300.00	6,712.96	2,049.42	1,995.30	37.868	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 Reveille A34-788
Project:	Wells Ranch	TVD Reference:	KB @ 4661.00ft
Reference Site:	A Section 34	MD Reference:	KB @ 4661.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Reveille A34-788	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Reveille A34-788 OH	Database:	EDMP
Reference Design:	APD - Rev 1	Offset TVD Reference:	Offset Datum

Summary						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
A Section 34						
Barthol A34-05X - Original Drilling - Original Drilling - As D	10,294.65	6,689.23	479.68	420.05	8.044	CC, ES, SF
Ehlich A34-01 - Original Drilling - Original Drilling - As Dr	11,341.18	6,634.62	4,656.69	4,590.87	70.753	CC, ES
Ehlich A34-01 - Original Drilling - Original Drilling - As Dr	12,600.00	6,632.58	4,823.83	4,751.85	67.014	SF
Howard A34-03 (PA) - Original Drilling - Original Drilling -	11,481.50	6,703.00	1,882.83	1,704.91	10.582	CC, ES
Howard A34-03 (PA) - Original Drilling - Original Drilling -	11,600.00	6,703.00	1,886.55	1,708.17	10.576	SF
Howard BC A34-02 - Original Drilling - Original Drilling - A	11,356.37	6,700.00	2,992.32	2,926.05	45.150	CC, ES
Howard BC A34-02 - Original Drilling - Original Drilling - A	11,800.00	6,700.00	3,025.03	2,956.76	44.315	SF
Landwehr A34-03X - Original Drilling - Original Drilling - A	11,647.70	6,693.92	1,821.08	1,752.98	26.744	CC, ES
Landwehr A34-03X - Original Drilling - Original Drilling - A	11,800.00	6,691.82	1,827.43	1,758.81	26.630	SF
Landwehr A34-04 - Original Drilling - Original Drilling - As	11,655.17	6,681.85	332.46	264.49	4.891	CC, ES, SF
Petrikin A34-05 (PA) - Original Drilling - Original Drilling -	10,134.18	6,680.00	566.69	397.68	3.353	CC, ES, SF
Petrikin A34-06 - Original Drilling - Original Drilling - As D	10,170.82	6,643.48	1,898.63	1,840.23	32.509	CC, ES
Petrikin A34-06 - Original Drilling - Original Drilling - As D	10,400.00	6,642.90	1,912.41	1,853.24	32.320	SF
Petrikin A34-07 (PA) - Original Drilling - Original Drilling -	10,244.23	6,665.00	3,225.87	3,056.52	19.049	CC, ES
Petrikin A34-07 (PA) - Original Drilling - Original Drilling -	10,500.00	6,665.00	3,235.99	3,065.49	18.979	SF
Petrikin A34-08 - Original Drilling - Original Drilling - As D	0.00	0.00	4,163.88			
Petrikin A34-08 - Original Drilling - Original Drilling - As D	11,700.00	6,608.80	4,872.19	4,806.66	74.352	SF
Petrikin A34-09 - Original Drilling - Original Drilling - As D	1,791.15	1,799.19	3,597.59	3,585.29	292.511	CC
Petrikin A34-09 - Original Drilling - Original Drilling - As D	2,000.00	1,982.83	3,598.38	3,584.69	262.915	ES
Petrikin A34-09 - Original Drilling - Original Drilling - As D	15,000.00	15,000.00	7,634.68	7,538.29	79.207	SF
Petrikin A34-10 - Original Drilling - Original Drilling - As D	2,007.83	2,021.60	2,429.68	2,415.82	175.329	CC, ES
Petrikin A34-10 - Original Drilling - Original Drilling - As D	9,600.00	6,806.94	3,468.01	3,412.30	62.252	SF
Petrikin A34-11 - Original Drilling - Original Drilling - As D	0.00	0.00	1,482.92			
Petrikin A34-11 - Original Drilling - Original Drilling - As D	2,009.39	1,991.14	1,483.75	1,470.00	107.939	ES
Petrikin A34-11 - Original Drilling - Original Drilling - As D	9,100.00	6,657.85	1,945.51	1,892.56	36.743	SF
Petrikin A34-12 (PA) - Original Drilling - Original Drilling -	8,935.27	6,654.00	686.19	633.94	13.133	CC, ES, SF
Petrikin A34-13 - Original Drilling - Original Drilling - As D	4,419.83	4,267.09	465.25	434.29	15.024	CC, ES
Petrikin A34-13 - Original Drilling - Original Drilling - As D	7,504.52	6,658.22	630.35	581.54	12.916	SF
Petrikin A34-14 (PA) - Original Drilling - Original Drilling -	2,279.41	2,263.08	131.93	116.31	8.445	CC
Petrikin A34-14 (PA) - Original Drilling - Original Drilling -	2,300.00	2,283.76	131.98	116.22	8.373	ES
Petrikin A34-14 (PA) - Original Drilling - Original Drilling -	2,500.00	2,483.66	138.80	121.65	8.096	SF
Petrikin A34-15 - Original Drilling - Original Drilling - As D	2,012.86	2,005.04	1,781.59	1,767.77	128.919	CC, ES
Petrikin A34-15 - Original Drilling - Original Drilling - As D	7,900.00	6,685.51	3,244.00	3,194.59	65.659	SF
Petrikin A34-16 (PA) - Original Drilling - Original Drilling -	0.00	0.00	3,137.87			
Petrikin A34-16 (PA) - Original Drilling - Original Drilling -	1,900.00	1,872.77	3,144.57	3,131.62	242.760	ES
Petrikin A34-16 (PA) - Original Drilling - Original Drilling -	8,900.00	6,458.89	4,776.70	4,726.20	94.600	SF
Petrikin A34-25 - Original Drilling - Original Drilling - As D	1,896.37	1,866.50	870.24	857.32	67.326	CC
Petrikin A34-25 - Original Drilling - Original Drilling - As D	2,000.00	1,968.99	870.38	856.73	63.746	ES
Petrikin A34-25 - Original Drilling - Original Drilling - As D	8,400.00	6,662.78	1,328.93	1,278.35	26.274	SF
Reveille A33-720 - Reveille A33-720 OH - APD - Rev 1	2,000.00	2,000.00	21.86	7.99	1.576	CC
Reveille A33-720 - Reveille A33-720 OH - APD - Rev 1	2,100.00	2,100.30	22.09	7.52	1.517	ES
Reveille A33-720 - Reveille A33-720 OH - APD - Rev 1	2,200.00	2,200.60	22.78	7.55	1.495	Level 3, SF
Reveille A34-746 - Reveille A34-746 OH - APD - Rev 1	2,000.00	2,000.00	65.58	51.71	4.727	CC, ES
Reveille A34-746 - Reveille A34-746 OH - APD - Rev 1	2,100.00	2,099.91	66.56	51.99	4.569	SF
Reveille A34-757 - Reveille A34-757 OH - APD - Rev 1	2,000.00	2,000.00	43.72	29.85	3.151	CC, ES
Reveille A34-757 - Reveille A34-757 OH - APD - Rev 1	2,100.00	2,100.18	44.43	29.87	3.050	SF
Reveille A34-768 - Reveille A34-768 OH - APD - Rev 1	2,266.27	2,264.08	40.17	24.47	2.558	CC, ES
Reveille A34-768 - Reveille A34-768 OH - APD - Rev 1	2,300.00	2,297.27	40.41	24.48	2.537	SF
Reveille A34-778 - Reveille A34-778 OH - APD - Rev 1	2,228.91	2,227.67	20.04	4.58	1.296	Level 3, 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 Reveille A34-788
Project:	Wells Ranch	TVD Reference:	KB @ 4661.00ft
Reference Site:	A Section 34	MD Reference:	KB @ 4661.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Reveille A34-788	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Reveille A34-788 OH	Database:	EDMP
Reference Design:	APD - Rev 1	Offset TVD Reference:	Offset Datum

Summary						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
A Section 35						
Hoffner 13-35 - Original Drilling - Original Drilling - As Dri	2,105.40	2,274.87	4,509.55	4,494.46	298.717	CC, ES
Hoffner 13-35 - Original Drilling - Original Drilling - As Dri	10,700.00	10,700.00	5,855.81	5,781.75	79.071	SF
Hoffner 14-35 (SI) - Original Drilling - Original Drilling - As	0.00	9.59	4,231.57			
Hoffner 14-35 (SI) - Original Drilling - Original Drilling - As	1,700.00	1,686.88	4,234.20	4,222.62	365.608	ES
Hoffner 14-35 (SI) - Original Drilling - Original Drilling - As	9,400.00	6,723.28	6,045.44	5,991.99	113.102	SF
Hoffner 24-35 (SI) - Original Drilling - Original Drilling - As	1,003.20	962.21	5,725.06	5,718.50	873.562	CC
Hoffner 24-35 (SI) - Original Drilling - Original Drilling - As	2,000.00	1,958.78	5,726.66	5,713.06	421.033	ES
Hoffner 24-35 (SI) - Original Drilling - Original Drilling - As	11,500.00	6,476.13	8,110.79	8,049.90	133.190	SF
Hoffner 33-35 - Original Drilling - Original Drilling - As Dri	100.00	47.18	7,414.05	7,413.84	10,000.000	CC
Hoffner 33-35 - Original Drilling - Original Drilling - As Dri	800.00	702.92	7,416.27	7,411.35	1,508.266	ES
Hoffner 33-35 - Original Drilling - Original Drilling - As Dri	13,500.00	6,715.39	9,984.93	9,911.11	135.260	SF
Hoffner 34-35 - Original Drilling - Original Drilling - As Dri	100.00	28.11	7,258.04	7,257.86	10,000.000	CC, ES
Hoffner 34-35 - Original Drilling - Original Drilling - As Dri	12,200.00	12,200.00	9,722.02	9,636.34	113.461	SF
Hoffner 44-35 - Wellbore #1 - Wellbore #1- As Drilled	2,028.48	2,061.98	8,572.48	8,558.42	609.787	CC, ES
Hoffner 44-35 - Wellbore #1 - Wellbore #1- As Drilled	6,850.00	6,850.00	9,971.56	9,922.79	204.486	SF
Reveille A34-714 - Reveille A34-714 OH - APD - Rev 1	2,495.17	3,093.19	4,073.02	4,053.81	212.010	CC
Reveille A34-714 - Reveille A34-714 OH - APD - Rev 1	2,500.00	3,098.00	4,073.03	4,053.78	211.641	ES
Reveille A34-714 - Reveille A34-714 OH - APD - Rev 1	17,226.69	16,543.49	4,952.61	4,779.92	28.679	SF
Reveille A34-725 - Reveille A34-725 OH - APD - Rev 1	3,084.81	4,364.31	3,861.44	3,835.83	150.764	CC
Reveille A34-725 - Reveille A34-725 OH - APD - Rev 1	3,100.00	4,379.26	3,861.47	3,835.75	150.095	ES
Reveille A34-725 - Reveille A34-725 OH - APD - Rev 1	17,226.69	16,705.15	4,245.41	4,072.44	24.544	SF
Reveille A34-735 - Reveille A34-735 OH - APD - Rev 1	5,252.65	6,683.07	3,272.23	3,227.22	72.709	CC
Reveille A34-735 - Reveille A34-735 OH - APD - Rev 1	5,300.00	6,700.00	3,272.33	3,227.02	72.230	ES
Reveille A34-735 - Reveille A34-735 OH - APD - Rev 1	17,226.69	16,969.37	3,538.84	3,365.19	20.380	SF
Reveille A35-750 - Reveille A35-750 OH - APD - Rev 2	1,910.32	1,926.32	4,211.87	4,198.59	316.987	CC
Reveille A35-750 - Reveille A35-750 OH - APD - Rev 2	2,000.00	2,000.00	4,211.90	4,198.03	303.609	ES
Reveille A35-750 - Reveille A35-750 OH - APD - Rev 2	17,226.69	16,979.94	7,783.75	7,610.49	44.925	SF
Reveille A35-762 - Reveille A35-762 OH - APD - Rev 2	1,910.32	1,926.32	4,189.65	4,176.36	315.314	CC
Reveille A35-762 - Reveille A35-762 OH - APD - Rev 2	2,000.00	2,000.00	4,189.68	4,175.81	302.008	ES
Reveille A35-762 - Reveille A35-762 OH - APD - Rev 2	17,226.69	16,746.47	7,075.81	6,902.60	40.852	SF
Reveille A35-772 - Reveille A35-772 OH - APD - Rev 2	1,909.84	1,926.84	4,167.43	4,154.14	313.638	CC
Reveille A35-772 - Reveille A35-772 OH - APD - Rev 2	2,000.00	2,000.00	4,167.46	4,153.59	300.406	ES
Reveille A35-772 - Reveille A35-772 OH - APD - Rev 2	17,226.69	16,505.59	6,368.71	6,196.27	36.932	SF
Reveille A35-783 - Reveille A35-783 OH - APD - Rev 1	2,000.00	2,018.00	4,145.21	4,131.27	297.417	CC, ES
Reveille A35-783 - Reveille A35-783 OH - APD - Rev 1	17,226.69	16,482.43	5,660.90	5,488.75	32.884	SF
Sharkey 31-35 - Original Drilling - Original Drilling - As Dr	1,720.08	1,679.11	8,161.17	8,149.54	702.047	CC
Sharkey 31-35 - Original Drilling - Original Drilling - As Dr	1,800.00	1,728.65	8,161.30	8,149.22	675.387	ES
Sharkey 31-35 - Original Drilling - Original Drilling - As Dr	15,500.00	6,703.90	9,369.56	9,280.76	105.517	SF
Sharkey 32-35 - Original Drilling - Original Drilling - As Dr	100.00	24.15	7,623.90	7,623.73	10,000.000	CC
Sharkey 32-35 - Original Drilling - Original Drilling - As Dr	2,017.74	2,019.00	7,629.84	7,615.97	549.900	ES
Sharkey 32-35 - Original Drilling - Original Drilling - As Dr	14,700.00	6,593.13	9,774.04	9,693.03	120.660	SF
Wardlaw 35-21 (SI) - Original Drilling - Original Drilling - A	237.88	198.88	6,939.27	6,938.13	6,085.326	CC
Wardlaw 35-21 (SI) - Original Drilling - Original Drilling - A	2,030.54	2,065.48	6,940.62	6,926.54	493.013	ES
Wardlaw 35-21 (SI) - Original Drilling - Original Drilling - A	14,300.00	6,694.59	7,735.55	7,653.91	94.756	SF
Wardlaw 35-22 - Original Drilling - Original Drilling - As D	11,687.95	6,675.00	5,867.06	5,798.63	85.736	CC
Wardlaw 35-22 - Original Drilling - Original Drilling - As D	11,700.00	6,675.13	5,867.07	5,798.57	85.645	ES
Wardlaw 35-22 - Original Drilling - Original Drilling - As D	13,600.00	6,711.39	6,170.70	6,092.30	78.703	SF
Wardlaw 35-23 (PA) - Original Drilling - Original Drilling -	100.00	64.03	5,149.72	5,149.48	10,000.000	CC
Wardlaw 35-23 (PA) - Original Drilling - Original Drilling -	400.00	337.88	5,150.28	5,148.07	2,332.724	ES
Wardlaw 35-23 (PA) - Original Drilling - Original Drilling -	12,200.00	6,580.68	6,128.67	6,058.77	87.681	SF
Wardlaw 35-24 - Original Drilling - Original Drilling - As D	2,042.81	2,098.78	6,388.11	6,373.87	448.726	CC, ES
Wardlaw 35-24 - Original Drilling - Original Drilling - As D	13,500.00	6,835.96	7,878.64	7,802.57	103.572	SF
Wardlaw 35-25 - Original Drilling - Original Drilling - As D	835.75	798.75	6,013.72	6,008.34	1,117.937	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 Reveille A34-788
Project:	Wells Ranch	TVD Reference:	KB @ 4661.00ft
Reference Site:	A Section 34	MD Reference:	KB @ 4661.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Reveille A34-788	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Reveille A34-788 OH	Database:	EDMP
Reference Design:	APD - Rev 1	Offset TVD Reference:	Offset Datum

Summary						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
A Section 35						
Wardlaw 35-25 - Original Drilling - Original Drilling - As D	1,900.00	1,834.68	6,017.31	6,004.50	469.785	ES
Wardlaw 35-25 - Original Drilling - Original Drilling - As D	13,400.00	6,763.61	7,098.98	7,023.21	93.692	SF
A Section 36						
Devries State A36-17 (Exist.) - Wellbore #1 - Wellbore #1						Out of range
Devries State A36-21 - Wellbore #1 - Wellbore #1 - As Dr						Out of range
Devries State A36-23 - Wellbore #1 - Wellbore #1 - As Dr						Out of range
Devries State A36-25 - Wellbore #1 - Wellbore #1 - As Dr						Out of range
Scholfield A36-19 (Exist.) - Wellbore #1 - Wellbore #1 - A						Out of range
Scholfield A36-20 - Wellbore #1 - Wellbore #1 - As Drilled						Out of range
Scholfield State A36-4X - Wellbore #1 - Wellbore #1 - As						Out of range
Scholfield State A36-69HN - Original Drilling - Original Dr						Out of range
Scholfield State A36-79HN - Wellbore #1 - Original Drillin	3,255.50	9,877.17	9,814.78	9,735.54	123.862	CC
Scholfield State A36-79HN - Wellbore #1 - Original Drillin	3,300.00	9,878.48	9,814.88	9,735.37	123.437	ES
Scholfield State A36-79HN - Wellbore #1 - Original Drillin	5,200.00	10,444.02	9,998.55	9,898.74	100.174	SF
Sinjin E 36-9 (SI) - Wellbore #1 - No Surveys						Out of range
State A36-05 - Wellbore #1 - Wellbore #1 - As Drilled						Out of range
State A36-06 - Wellbore #1 - Wellbore #1 - As Drilled						Out of range
State A36-07 - Wellbore #1 - Wellbore #1 - As Drilled						Out of range
State A36-08 - Wellbore #1 - Wellbore #1 - As Drilled						Out of range
State A36-09 - Wellbore #1 - Wellbore #1 - As Drilled						Out of range
State A36-10 - Wellbore #1 - Wellbore #1 - As Drilled						Out of range
State A36-11 - Wellbore #1 - Wellbore #1 - As Drilled						Out of range
State A36-12 - Wellbore #1 - Wellbore #1 - As Drilled	1,017.71	966.74	9,826.18	9,819.58	1,489.298	CC
State A36-12 - Wellbore #1 - Wellbore #1 - As Drilled	2,029.85	2,072.99	9,829.30	9,815.23	698.439	ES
State A36-12 - Wellbore #1 - Wellbore #1 - As Drilled	3,000.00	3,135.52	9,972.30	9,951.23	473.168	SF
State A36-13 - Wellbore #1 - Wellbore #1 - As Drilled	100.00	27.77	9,733.04	9,732.87	10,000.000	CC, ES
State A36-13 - Wellbore #1 - Wellbore #1 - As Drilled	3,400.00	3,400.00	9,997.49	9,974.04	426.322	SF
State A36-14 - Wellbore #1 - Wellbore #1 - As Drilled						Out of range
State A36-15 - Wellbore #1 - Wellbore #1 - As Drilled						Out of range
State A36-16 - Wellbore #1 - Wellbore #1 - As Drilled						Out of range
State A36-3 (Exist.) - Wellbore #1 - Wellbore #1						Out of range
State A36-99HZ - Original Drilling - As Drilled						Out of range

Noble Energy, Inc.
Anticollision Summary Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Reveille A34-788
Project:	Wells Ranch	TVD Reference:	KB @ 4661.00ft
Reference Site:	A Section 34	MD Reference:	KB @ 4661.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Reveille A34-788	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Reveille A34-788 OH	Database:	EDMP
Reference Design:	APD - Rev 1	Offset TVD Reference:	Offset Datum

Summary						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
AA Section 30						
Shadow A26-622 - Original Drilling - Original Drilling - As	12,906.33	17,520.00	8,533.42	8,449.70	101.926	CC
Shadow A26-622 - Original Drilling - Original Drilling - As	13,000.00	17,520.00	8,533.94	8,449.56	101.135	ES
Shadow A26-622 - Original Drilling - Original Drilling - As	17,226.69	17,520.00	9,564.77	9,434.86	73.625	SF
Shadow A26-627 - Original Drilling - Original Drilling - As	13,299.14	17,590.00	8,396.31	8,309.75	96.996	CC
Shadow A26-627 - Original Drilling - Original Drilling - As	13,400.00	17,590.00	8,396.92	8,309.65	96.225	ES
Shadow A26-627 - Original Drilling - Original Drilling - As	17,226.69	17,590.00	9,269.50	9,135.08	68.960	SF
Shadow A26-632 - Original Drilling - Original Drilling - As	13,599.22	17,781.00	8,403.41	8,318.53	98.997	CC
Shadow A26-632 - Original Drilling - Original Drilling - As	13,700.00	17,781.00	8,404.02	8,318.11	97.826	ES
Shadow A26-632 - Original Drilling - Original Drilling - As	17,226.69	17,781.00	9,152.92	9,011.33	64.642	SF
Shadow A26-637 - Original Drilling - Original Drilling - As	13,884.94	17,626.00	8,399.34	8,315.69	100.413	CC
Shadow A26-637 - Original Drilling - Original Drilling - As	14,000.00	17,626.00	8,400.13	8,315.33	99.063	ES
Shadow A26-637 - Original Drilling - Original Drilling - As	17,226.69	17,626.00	9,039.70	8,902.65	65.962	SF
Shadow A26-646 - Original Drilling - Original Drilling - As	14,563.94	17,659.00	8,399.46	8,308.92	92.762	CC
Shadow A26-646 - Original Drilling - Original Drilling - As	14,600.00	17,659.00	8,399.54	8,308.70	92.468	ES
Shadow A26-646 - Original Drilling - Original Drilling - As	17,226.69	17,659.00	8,811.43	8,681.26	67.694	SF
Shadow A26-656 - Original Drilling - Original Drilling - As	15,207.26	17,347.00	8,772.48	8,671.70	87.049	CC
Shadow A26-656 - Original Drilling - Original Drilling - As	15,300.00	17,347.00	8,772.97	8,671.45	86.419	ES
Shadow A26-656 - Original Drilling - Original Drilling - As	17,226.69	17,347.00	9,001.91	8,879.98	73.825	SF
Shadow A26-663 - Original Drilling - Original Drilling - As	15,763.91	17,466.00	8,626.62	8,521.47	82.043	CC
Shadow A26-663 - Original Drilling - Original Drilling - As	15,800.00	17,466.00	8,626.69	8,521.29	81.848	ES
Shadow A26-663 - Original Drilling - Original Drilling - As	17,226.69	17,466.00	8,749.76	8,630.49	73.361	SF
Shadow A26-672 - Original Drilling - Original Drilling - As	16,255.74	17,710.00	8,386.97	8,283.73	81.238	CC
Shadow A26-672 - Original Drilling - Original Drilling - As	16,300.00	17,710.00	8,387.08	8,283.46	80.938	ES
Shadow A26-672 - Original Drilling - Original Drilling - As	17,226.69	17,710.00	8,442.98	8,327.65	73.207	SF
Shadow A26-676 - Original Drilling - Original Drilling - As	16,541.67	17,725.00	8,396.31	8,284.76	75.274	CC
Shadow A26-676 - Original Drilling - Original Drilling - As	16,600.00	17,725.00	8,396.51	8,284.48	74.952	ES
Shadow A26-676 - Original Drilling - Original Drilling - As	17,226.69	17,725.00	8,424.20	8,306.06	71.306	SF
Shadow A26-685 - Original Drilling - Original Drilling - As	11,900.00	17,810.00	9,949.63	9,694.12	38.941	SF
Shadow A26-685 - Original Drilling - Original Drilling - As	17,226.69	17,810.00	8,401.41	8,284.64	71.950	CC, ES
Shadow A26-690 - Original Drilling - Original Drilling - As	17,226.69	17,780.00	8,383.62	8,272.25	75.277	CC, ES, SF
Shadow State A26-614 - Original Drilling - Original Drilling	12,369.68	17,675.00	8,402.43	8,322.08	104.567	CC
Shadow State A26-614 - Original Drilling - Original Drilling	12,400.00	17,675.00	8,402.49	8,321.89	104.255	ES
Shadow State A26-614 - Original Drilling - Original Drilling	17,226.69	17,675.00	9,705.22	9,572.70	73.231	SF
Shadow State A26-618 - Original Drilling - Original Drilling	12,617.14	17,415.00	8,568.41	8,487.18	105.483	CC
Shadow State A26-618 - Original Drilling - Original Drilling	12,700.00	17,415.00	8,568.81	8,486.95	104.678	ES
Shadow State A26-618 - Original Drilling - Original Drilling	17,226.69	17,415.00	9,729.63	9,593.79	71.629	SF

Noble Energy, Inc.
Anticollision Summary Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Reveille A34-788
Project:	Wells Ranch	TVD Reference:	KB @ 4661.00ft
Reference Site:	A Section 34	MD Reference:	KB @ 4661.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Reveille A34-788	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Reveille A34-788 OH	Database:	EDMP
Reference Design:	APD - Rev 1	Offset TVD Reference:	Offset Datum

Summary						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
B Section 01						
Lucci B01-69HNL - Original Drilling - Original Drilling - As	1,867.02	1,847.23	9,731.48	9,719.89	839.654	CC
Lucci B01-69HNL - Original Drilling - Original Drilling - As	2,000.00	1,942.39	9,731.83	9,719.43	784.600	ES
Lucci B01-69HNL - Original Drilling - Original Drilling - As	3,400.00	3,449.54	9,983.12	9,960.38	439.082	SF
Lucci B01-99HZ - Original Drilling - Original Drilling - As	100.00	67.00	9,786.35	9,786.11	10,000.000	CC
Lucci B01-99HZ - Original Drilling - Original Drilling - As	500.00	424.29	9,787.55	9,785.25	4,262.986	ES
Lucci B01-99HZ - Original Drilling - Original Drilling - As	3,128.74	3,117.94	9,985.14	9,964.63	487.007	SF
Lucci BC B 01-13 (PA) - Wellbore #1 - Gyro Surveys						Out of range
Lucci BC B 1-14 (PA) - Wellbore #1 - Gyro Surveys						Out of range
Lucci BC B 1-15 (PA) - Wellbore #1 - Gyro Surveys						Out of range
Lucci BC B 1-16 (PA) - Wellbore #1 - Wellbore #1						Out of range
Lucci State B03-69HNL - Original Drilling - Original Drilling	6,913.96	17,000.00	455.31	389.23	6.890	CC
Lucci State B03-69HNL - Original Drilling - Original Drilling	7,100.00	17,000.00	491.70	371.04	4.075	ES
Lucci State B03-69HNL - Original Drilling - Original Drilling	7,400.00	17,000.00	658.30	441.23	3.033	SF
SLW Ranch B01-62-1HN - Original Drilling - As Drilled						Out of range
SLW Ranch B01-63-1HN - Original Drilling - As Drilled						Out of range
SLW Ranch B01-64-1HN - Original Drilling - As Drilled						Out of range
SLW Ranch B01-66-1HN - Original Drilling - Original Drilling						Out of range
SLW Ranch B01-67-1HN - Original Drilling - As Drilled - S						Out of range
SLW Ranch B01-68-1HN - Original Drilling - Original Drilling						Out of range
SLW Ranch B01-69-1HN - Original Drilling - As Drilled						Out of range
SLW Ranch B12-69-1HN - Wellbore #1 - Wellbore #1- As						Out of range

Noble Energy, Inc.
Anticollision Summary Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Reveille A34-788
Project:	Wells Ranch	TVD Reference:	KB @ 4661.00ft
Reference Site:	A Section 34	MD Reference:	KB @ 4661.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Reveille A34-788	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Reveille A34-788 OH	Database:	EDMP
Reference Design:	APD - Rev 1	Offset TVD Reference:	Offset Datum

Summary						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
B Section 02						
Baker B02-04 - Wellbore #1 - Original Drilling - As Drilled	201.23	178.23	4,669.61	4,668.67	4,963.188	CC
Baker B02-04 - Wellbore #1 - Original Drilling - As Drilled	2,000.00	1,972.29	4,671.66	4,658.01	342.221	ES
Baker B02-04 - Wellbore #1 - Original Drilling - As Drilled	7,150.00	6,683.42	6,033.18	5,984.39	123.660	SF
Baker B02-05 - Wellbore #1 - Wellbore #1-As Drilled	1,769.02	1,747.12	5,223.80	5,211.75	433.690	CC
Baker B02-05 - Wellbore #1 - Wellbore #1-As Drilled	1,900.00	1,852.59	5,224.06	5,211.18	405.540	ES
Baker B02-05 - Wellbore #1 - Wellbore #1-As Drilled	6,900.00	6,515.84	6,298.19	6,249.93	130.512	SF
Bucklen 01-02 - Wellbore #1 - Wellbore #1- As Drilled	2,054.57	2,021.83	6,826.01	6,811.96	485.673	CC
Bucklen 01-02 - Wellbore #1 - Wellbore #1- As Drilled	2,200.00	2,165.88	6,826.62	6,811.58	453.767	ES
Bucklen 01-02 - Wellbore #1 - Wellbore #1- As Drilled	6,800.00	6,474.54	7,331.69	7,283.20	151.205	SF
Bucklen B02-12 - Wellbore #1 - Wellbore #1-As drilled	100.00	53.26	5,830.00	5,829.78	10,000.000	CC
Bucklen B02-12 - Wellbore #1 - Wellbore #1-As drilled	2,100.00	2,100.00	5,836.37	5,821.91	403.535	ES
Bucklen B02-12 - Wellbore #1 - Wellbore #1-As drilled	6,750.00	6,290.50	6,593.77	6,546.32	138.958	SF
Buckmur B02-14 - Wellbore #1 - Wellbore #1- As Drilled	1,609.12	1,564.18	7,809.55	7,798.71	720.310	CC
Buckmur B02-14 - Wellbore #1 - Wellbore #1- As Drilled	1,800.00	1,718.07	7,810.07	7,798.01	647.622	ES
Buckmur B02-14 - Wellbore #1 - Wellbore #1- As Drilled	6,850.00	6,200.81	8,609.49	8,562.19	182.023	SF
Buckmur B02-25 - Wellbore #1 - Wellbore #1- As Drilled	2,220.58	2,328.77	6,722.58	6,706.94	429.834	CC
Buckmur B02-25 - Wellbore #1 - Wellbore #1- As Drilled	2,300.00	2,399.02	6,722.96	6,706.81	416.227	ES
Buckmur B02-25 - Wellbore #1 - Wellbore #1- As Drilled	6,850.00	6,385.27	7,503.20	7,455.21	156.343	SF
Cougar B02-67-1HN - Original Drilling - Original Drilling -	929.25	933.49	4,578.61	4,572.76	782.766	CC
Cougar B02-67-1HN - Original Drilling - Original Drilling -	1,300.00	1,277.20	4,579.57	4,571.14	543.571	ES
Cougar B02-67-1HN - Original Drilling - Original Drilling -	9,900.00	9,900.00	7,440.25	7,374.46	113.094	SF
Cougar B02-68-1HN - Original Drilling - Original Drilling -	0.00	2.95	4,623.83			
Cougar B02-68-1HN - Original Drilling - Original Drilling -	2,019.49	2,056.31	4,630.05	4,616.32	337.304	ES
Cougar B02-68-1HN - Original Drilling - Original Drilling -	6,700.00	6,073.70	5,928.80	5,886.62	140.569	SF
Cougar B02-69-1HN - Original Drilling - Original Drilling -	2,063.65	2,142.25	4,587.47	4,573.65	332.080	CC, ES
Cougar B02-69-1HN - Original Drilling - Original Drilling -	6,450.00	5,948.00	5,747.87	5,708.26	145.117	SF
Foe A35-73HN - Original Drilling - Original Drilling - As Dr	1,654.59	1,602.37	7,523.50	7,514.62	846.438	CC, ES
Foe A35-73HN - Original Drilling - Original Drilling - As Dr	14,000.00	11,176.02	9,451.33	9,306.00	65.035	SF
Foe B02-02 - Wellbore #1 - Wellbore #1- As Drilled	1,038.29	988.31	7,166.29	7,159.52	1,058.948	CC
Foe B02-02 - Wellbore #1 - Wellbore #1- As Drilled	1,600.00	1,500.00	7,167.81	7,157.24	678.444	ES
Foe B02-02 - Wellbore #1 - Wellbore #1- As Drilled	11,400.00	6,647.65	9,969.31	9,908.98	165.264	SF
Foe B02-07 - Wellbore #1 - Wellbore #1-As Drilled	2,064.98	2,119.89	7,396.22	7,381.82	513.832	CC
Foe B02-07 - Wellbore #1 - Wellbore #1-As Drilled	2,100.00	2,173.55	7,396.31	7,381.60	503.098	ES
Foe B02-07 - Wellbore #1 - Wellbore #1-As Drilled	7,150.00	6,609.10	8,673.76	8,625.10	178.265	SF
Foemeyer B02-17 - Original Drilling - Original Drilling - As	453.90	407.82	7,739.43	7,736.79	2,927.234	CC
Foemeyer B02-17 - Original Drilling - Original Drilling - As	2,037.61	2,061.82	7,740.07	7,725.98	549.351	ES
Foemeyer B02-17 - Original Drilling - Original Drilling - As	10,200.00	6,481.13	9,997.83	9,943.00	182.328	SF
Fritzler B02-03 - Wellbore #1 - Original Drilling	2,000.00	1,951.00	6,002.56	5,956.60	130.614	CC
Fritzler B02-03 - Wellbore #1 - Original Drilling	2,100.00	2,050.98	6,003.83	5,955.53	124.302	ES
Fritzler B02-03 - Wellbore #1 - Original Drilling	7,250.00	6,625.49	7,395.27	7,237.14	46.767	SF
Fritzler B02-06 - Original Drilling - Original Drilling	2,000.00	1,956.00	6,056.15	6,010.09	131.494	CC
Fritzler B02-06 - Original Drilling - Original Drilling	2,100.00	2,055.98	6,057.12	6,008.72	125.146	ES
Fritzler B02-06 - Original Drilling - Original Drilling	7,100.00	6,590.62	7,268.76	7,111.18	46.125	SF
Fritzler B2-19 - Original Drilling - Original Drilling	2,000.00	1,968.00	5,205.19	5,158.90	112.432	CC
Fritzler B2-19 - Original Drilling - Original Drilling	2,100.00	2,067.98	5,206.30	5,157.66	107.036	ES
Fritzler B2-19 - Original Drilling - Original Drilling	7,150.00	6,619.44	6,509.72	6,351.66	41.184	SF
Lonewolf B02-65HC - Original Drilling - As Drilled	3,009.64	3,668.92	5,349.25	5,326.93	239.627	CC, ES
Lonewolf B02-65HC - Original Drilling - As Drilled	6,650.00	6,165.67	5,948.96	5,902.38	127.704	SF
Lonewolf B02-65HC - Original Drilling - ST01 - ST01 As D	3,009.42	3,668.74	5,348.94	5,326.17	234.862	CC, ES
Lonewolf B02-65HC - Original Drilling - ST01 - ST01 As D	6,650.00	6,165.66	5,948.84	5,901.76	126.353	SF
Lonewolf B02-65HC - Wellbore #3 - Wellbore #3	3,009.64	3,668.92	5,349.25	5,326.93	239.621	CC, ES
Lonewolf B02-65HC - Wellbore #3 - Wellbore #3	6,650.00	6,165.67	5,948.96	5,902.38	127.702	SF
M&M 02-23 - Wellbore #1 - Wellbore #1- As Drilled	2,763.53	3,847.63	9,159.60	9,133.88	356.052	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 Reveille A34-788
Project:	Wells Ranch	TVD Reference:	KB @ 4661.00ft
Reference Site:	A Section 34	MD Reference:	KB @ 4661.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Reveille A34-788	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Reveille A34-788 OH	Database:	EDMP
Reference Design:	APD - Rev 1	Offset TVD Reference:	Offset Datum

Summary						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
B Section 02						
M&M 02-23 - Wellbore #1 - Wellbore #1- As Drilled	2,800.00	3,862.67	9,159.76	9,133.81	353.112	ES
M&M 02-23 - Wellbore #1 - Wellbore #1- As Drilled	6,750.00	6,344.50	9,838.31	9,786.54	190.027	SF
Meyer B02-01 - Original Drilling - Original Drilling - As Drill	856.44	803.65	8,468.77	8,463.30	1,548.329	CC
Meyer B02-01 - Original Drilling - Original Drilling - As Drill	2,000.00	1,924.33	8,470.50	8,457.02	628.376	ES
Meyer B02-01 - Original Drilling - Original Drilling - As Drill	8,100.00	6,500.01	9,997.77	9,948.84	204.294	SF
Meyer B02-08 - Wellbore #1 - Wellbore #1-As Drilled	428.24	374.24	8,737.76	8,735.32	3,588.011	CC
Meyer B02-08 - Wellbore #1 - Wellbore #1-As Drilled	2,000.00	1,939.22	8,743.45	8,729.91	646.041	ES
Meyer B02-08 - Wellbore #1 - Wellbore #1-As Drilled	7,000.00	6,428.75	9,986.96	9,939.19	209.057	SF
Meyer B02-09 - Wellbore #1 - Wellbore #1-As Drilled	2,087.21	2,184.25	9,172.80	9,158.09	623.634	CC
Meyer B02-09 - Wellbore #1 - Wellbore #1-As Drilled	2,100.00	2,196.78	9,172.81	9,158.02	619.928	ES
Meyer B02-09 - Wellbore #1 - Wellbore #1-As Drilled	6,200.00	5,904.48	9,995.62	9,951.59	227.052	SF
Meyer B02-16 (PA) - Wellbore #1 - Gyro Surveys	100.00	20.78	9,786.44	9,786.28	10,000.000	CC
Meyer B02-16 (PA) - Wellbore #1 - Gyro Surveys	2,100.00	2,071.91	9,794.11	9,779.76	682.583	ES
Meyer B02-16 (PA) - Wellbore #1 - Gyro Surveys	3,700.00	3,567.58	9,986.80	9,961.47	394.286	SF
Pherson 02-02 - Wellbore #1 - Wellbore #1-As Drilled	2,123.32	2,215.30	6,921.13	6,906.21	463.844	CC
Pherson 02-02 - Wellbore #1 - Wellbore #1-As Drilled	2,200.00	2,290.32	6,921.59	6,906.15	448.326	ES
Pherson 02-02 - Wellbore #1 - Wellbore #1-As Drilled	6,850.00	6,406.21	7,817.01	7,769.08	163.093	SF
Trebor B02-10 - Wellbore #1 - Wellbore #1 - As Drilled	1,584.93	1,537.63	7,915.56	7,904.74	731.912	CC
Trebor B02-10 - Wellbore #1 - Wellbore #1 - As Drilled	1,700.00	1,600.00	7,915.89	7,904.43	690.664	ES
Trebor B02-10 - Wellbore #1 - Wellbore #1 - As Drilled	6,950.00	6,259.54	9,098.09	9,050.70	191.985	SF
Trebor B02-15 - Wellbore #1 - Wellbore #1- As Drilled	1,757.76	1,706.81	8,593.76	8,581.90	724.811	CC
Trebor B02-15 - Wellbore #1 - Wellbore #1- As Drilled	2,000.00	1,916.33	8,594.23	8,580.77	638.748	ES
Trebor B02-15 - Wellbore #1 - Wellbore #1- As Drilled	6,600.00	6,926.32	9,328.36	9,278.92	188.708	SF
Wolfpack B02-62-1HN - Original Drilling - Original Drilling	316.67	286.67	5,896.63	5,895.24	4,243.793	CC
Wolfpack B02-62-1HN - Original Drilling - Original Drilling	700.00	651.83	5,896.84	5,892.91	1,500.041	ES
Wolfpack B02-62-1HN - Original Drilling - Original Drilling	6,500.00	6,500.00	6,796.45	6,746.63	136.431	SF
Wolfpack B02-63-1HN - Original Drilling - Original Drilling	1,443.66	1,413.79	5,878.88	5,870.71	719.449	CC
Wolfpack B02-63-1HN - Original Drilling - Original Drilling	1,500.00	1,449.99	5,878.96	5,870.48	693.064	ES
Wolfpack B02-63-1HN - Original Drilling - Original Drilling	6,500.00	5,955.00	6,541.08	6,495.70	144.127	SF
Wolfpack B02-64-1HN - Original Drilling - Original Drilling	2,910.04	3,264.73	5,702.49	5,681.88	276.762	CC, ES
Wolfpack B02-64-1HN - Original Drilling - Original Drilling	6,450.00	5,910.01	6,140.09	6,095.61	138.048	SF
Wolfpack B02-65-1HN - Original Drilling - Original Drilling	2,069.31	2,089.54	5,422.25	5,409.76	434.187	CC
Wolfpack B02-65-1HN - Original Drilling - Original Drilling	2,200.00	2,234.31	5,422.68	5,409.26	404.169	ES
Wolfpack B02-65-1HN - Original Drilling - Original Drilling	6,450.00	5,952.01	6,014.26	5,970.93	138.791	SF
Wolfpack B02-65HN - Original Drilling - Original Drilling -	2,581.74	2,939.83	5,342.20	5,324.97	310.049	CC
Wolfpack B02-65HN - Original Drilling - Original Drilling -	2,600.00	2,947.99	5,342.23	5,324.91	308.365	ES
Wolfpack B02-65HN - Original Drilling - Original Drilling -	6,600.00	6,062.01	6,033.02	5,988.76	136.319	SF
Wolfpack B02-66-1HN - Original Drilling - Original Drilling	3,227.68	4,045.81	5,115.67	5,090.11	200.167	CC
Wolfpack B02-66-1HN - Original Drilling - Original Drilling	3,300.00	4,080.01	5,115.97	5,089.95	196.586	ES
Wolfpack B02-66-1HN - Original Drilling - Original Drilling	6,500.00	6,108.01	5,557.72	5,510.13	116.780	SF
Wolfpack PC B03-63-1HN - Original Drilling - Original Dri	5,906.83	7,769.80	3,659.59	3,527.00	27.600	CC
Wolfpack PC B03-63-1HN - Original Drilling - Original Dri	6,200.00	8,087.76	3,666.05	3,525.84	26.147	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 Reveille A34-788
Project:	Wells Ranch	TVD Reference:	KB @ 4661.00ft
Reference Site:	A Section 34	MD Reference:	KB @ 4661.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Reveille A34-788	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Reveille A34-788 OH	Database:	EDMP
Reference Design:	APD - Rev 1	Offset TVD Reference:	Offset Datum

Summary						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
B Section 03						
Annie B3-9 - Wellbore #1 - Wellbore #1- As Drilled	407.40	359.41	5,129.60	5,127.30	2,221.736	CC
Annie B3-9 - Wellbore #1 - Wellbore #1- As Drilled	2,300.00	2,285.70	5,132.83	5,117.07	325.644	ES
Annie B3-9 - Wellbore #1 - Wellbore #1- As Drilled	6,700.00	6,437.74	5,656.72	5,608.61	117.566	SF
Clemons 2-3 - Wellbore #1 - Wellbore #1- As Drilled	2,063.15	2,060.62	2,002.74	1,988.56	141.238	CC
Clemons 2-3 - Wellbore #1 - Wellbore #1- As Drilled	2,100.00	2,097.74	2,002.82	1,988.39	138.730	ES
Clemons 2-3 - Wellbore #1 - Wellbore #1- As Drilled	6,650.00	6,299.41	2,993.86	2,947.14	64.079	SF
Clemons 42-3 - Wellbore #1 - Wellbore #1- As Drilled	1,507.05	1,480.06	4,083.67	4,073.50	401.866	CC
Clemons 42-3 - Wellbore #1 - Wellbore #1- As Drilled	2,000.00	1,952.66	4,085.58	4,072.00	300.869	ES
Clemons 42-3 - Wellbore #1 - Wellbore #1- As Drilled	6,700.00	6,393.50	4,865.66	4,817.95	101.982	SF
Schoenleber 16-3 - Wellbore #1 - Wellbore #1- As Drilled	100.00	29.95	5,835.65	5,835.47	10,000.000	CC, ES
Schoenleber 16-3 - Wellbore #1 - Wellbore #1- As Drilled	6,700.00	6,143.07	6,233.32	6,186.17	132.189	SF
Sitzman 03-01 - Wellbore #1 - Wellbore #1- As Drilled	5,831.83	5,554.11	5,325.85	5,284.13	127.669	CC
Sitzman 03-01 - Wellbore #1 - Wellbore #1- As Drilled	6,100.00	5,786.69	5,326.90	5,283.15	121.758	ES
Sitzman 03-01 - Wellbore #1 - Wellbore #1- As Drilled	6,700.00	6,466.35	5,475.98	5,427.59	113.162	SF
B Section 04						
Bauer 1 (PA) - Wellbore #1 - No Surveys	7,032.30	6,573.44	4,803.33	4,646.81	30.688	CC
Bauer 1 (PA) - Wellbore #1 - No Surveys	7,050.00	6,581.40	4,803.45	4,646.75	30.653	ES
Bauer 1 (PA) - Wellbore #1 - No Surveys	7,200.00	6,631.76	4,814.11	4,656.25	30.496	SF
Bauer 2 (PA) - Wellbore #1 - No Surveys	6,857.47	6,471.26	2,236.92	2,155.80	27.578	CC, ES
Bauer 2 (PA) - Wellbore #1 - No Surveys	7,000.00	6,554.89	2,246.95	2,164.89	27.384	SF
Bauer 21-4 (PR) - Wellbore #1 - Gyro Surveys	6,982.01	6,546.01	3,507.29	3,459.80	73.857	CC, ES
Bauer 21-4 (PR) - Wellbore #1 - Gyro Surveys	7,050.00	6,578.42	3,509.21	3,461.66	73.803	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 Reveille A34-788
Project:	Wells Ranch	TVD Reference:	KB @ 4661.00ft
Reference Site:	A Section 34	MD Reference:	KB @ 4661.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Reveille A34-788	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Reveille A34-788 OH	Database:	EDMP
Reference Design:	APD - Rev 1	Offset TVD Reference:	Offset Datum

Summary

Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
B Section 05						
Ehrlich 1 (TA) - Wellbore #1 - Gyro Surveys	7,147.63	6,704.60	9,938.86	9,890.35	204.866	CC
Ehrlich 1 (TA) - Wellbore #1 - Gyro Surveys	7,150.00	6,705.59	9,938.86	9,890.35	204.843	ES
Ehrlich 1 (TA) - Wellbore #1 - Gyro Surveys	7,600.00	6,714.11	9,989.11	9,940.11	203.883	SF
Ehrlich 5E-323 (PR) - Wellbore #1 - Permitted-PDC						Out of range
Ehrlich 5E-423 (DG) - Wellbore #1 - Permitted-PDC						Out of range
Ehrlich 5J-203 (PR) - Wellbore #1 - Permitted-PDC	7,233.51	6,400.00	9,230.73	9,182.43	191.119	CC, ES
Ehrlich 5J-203 (PR) - Wellbore #1 - Permitted-PDC	10,600.00	6,171.25	9,989.45	9,928.84	164.826	SF
Ehrlich 5J-223 (PR) - Wellbore #1 - Permitted-PDC	7,227.42	6,450.00	8,780.66	8,732.03	180.532	CC, ES
Ehrlich 5J-223 (PR) - Wellbore #1 - Permitted-PDC	11,500.00	6,200.00	9,969.30	9,903.90	152.419	SF
Ehrlich 5J-243 (PR) - Wellbore #1 - Permitted-PDC	7,238.73	6,400.00	9,729.11	9,680.74	201.170	CC, ES
Ehrlich 5J-243 (PR) - Wellbore #1 - Permitted-PDC	9,100.00	6,219.18	9,997.97	9,944.51	187.021	SF
Ehrlich 5J-303 (PR) - Wellbore #1 - Permitted-PDC	7,240.14	6,438.11	9,484.09	9,435.58	195.491	CC, ES
Ehrlich 5J-303 (PR) - Wellbore #1 - Permitted-PDC	9,900.00	6,250.00	9,980.69	9,923.32	173.984	SF
Ehrlich 5J-323 (PR) - Wellbore #1 - Permitted-PDC	7,234.52	6,465.15	8,991.64	8,943.06	185.081	CC, ES
Ehrlich 5J-323 (PR) - Wellbore #1 - Permitted-PDC	11,100.00	6,250.00	9,974.01	9,910.66	157.446	SF
Ehrlich 5M-243 (PR) - Wellbore #1 - Permitted-PDC	7,221.16	6,632.60	8,277.50	8,228.35	168.397	CC, ES
Ehrlich 5M-243 (PR) - Wellbore #1 - Permitted-PDC	12,300.00	6,350.00	9,949.39	9,879.04	141.409	SF
Ehrlich 5M-343 (PR) - Wellbore #1 - Permitted-PDC	7,229.73	6,550.00	8,530.23	8,481.12	173.693	CC, ES
Ehrlich 5M-343 (PR) - Wellbore #1 - Permitted-PDC	12,000.00	6,300.00	9,999.26	9,930.86	146.189	SF
Mininger Pfeif 41-5 (SI) - Wellbore #1 - Gyro Surveys	7,069.65	6,594.47	6,046.16	5,998.18	126.017	CC, ES
Mininger Pfeif 41-5 (SI) - Wellbore #1 - Gyro Surveys	9,700.00	6,650.44	6,944.73	6,888.94	124.472	SF
Noffsinger 21-5 (TA) - Wellbore #1 - Gyro Surveys	7,144.12	6,617.84	8,654.94	8,606.75	179.577	CC
Noffsinger 21-5 (TA) - Wellbore #1 - Gyro Surveys	7,150.00	6,619.67	8,654.96	8,606.75	179.532	ES
Noffsinger 21-5 (TA) - Wellbore #1 - Gyro Surveys	11,200.00	6,630.04	9,958.69	9,895.03	156.440	SF
Noffsinger 31-5 (TA) - Wellbore #1 - Gyro Surveys	7,147.23	6,671.92	7,343.51	7,295.65	153.438	CC
Noffsinger 31-5 (TA) - Wellbore #1 - Gyro Surveys	7,150.00	6,672.75	7,343.52	7,295.65	153.428	ES
Noffsinger 31-5 (TA) - Wellbore #1 - Gyro Surveys	11,600.00	6,694.90	9,007.98	8,943.60	139.920	SF
Snowmass 10N (DG) - Wellbore #1 - Permitted-PDC	6,506.25	16,156.48	2,427.21	2,174.03	9.587	CC, ES
Snowmass 10N (DG) - Wellbore #1 - Permitted-PDC	6,600.00	16,156.48	2,435.89	2,180.25	9.529	SF
Snowmass 1C (DG) - Wellbore #1 - Permitted-PDC	6,894.56	14,787.56	439.65	272.38	2.628	CC
Snowmass 1C (DG) - Wellbore #1 - Permitted-PDC	6,950.00	14,787.56	445.52	259.46	2.395	ES
Snowmass 1C (DG) - Wellbore #1 - Permitted-PDC	7,050.00	14,787.56	483.67	272.29	2.288	SF
Snowmass 2N (DG) - Wellbore #1 - Permitted-PDC	6,747.62	14,729.08	605.50	406.46	3.042	CC
Snowmass 2N (DG) - Wellbore #1 - Permitted-PDC	6,800.00	14,729.08	609.90	400.52	2.913	ES
Snowmass 2N (DG) - Wellbore #1 - Permitted-PDC	6,850.00	14,729.08	622.11	404.41	2.858	SF
Snowmass 3N (DG) - Wellbore #1 - Permitted-PDC	6,673.21	15,299.73	741.73	517.02	3.301	CC
Snowmass 3N (DG) - Wellbore #1 - Permitted-PDC	6,700.00	15,299.73	742.77	514.05	3.247	ES
Snowmass 3N (DG) - Wellbore #1 - Permitted-PDC	6,800.00	15,299.73	764.72	523.77	3.174	SF
Snowmass 4N (DG) - Wellbore #1 - Permitted-PDC	6,649.20	15,736.33	981.22	745.50	4.163	CC
Snowmass 4N (DG) - Wellbore #1 - Permitted-PDC	6,700.00	15,736.33	984.56	743.37	4.082	ES
Snowmass 4N (DG) - Wellbore #1 - Permitted-PDC	6,800.00	15,736.33	1,010.10	760.20	4.042	SF
Snowmass 5N (DG) - Wellbore #1 - Permitted-PDC	6,593.40	15,406.96	1,177.67	940.20	4.959	CC
Snowmass 5N (DG) - Wellbore #1 - Permitted-PDC	6,600.00	15,406.96	1,177.72	939.75	4.949	ES
Snowmass 5N (DG) - Wellbore #1 - Permitted-PDC	6,700.00	15,406.96	1,191.29	946.54	4.867	SF
Snowmass 6N (DG) - Wellbore #1 - Permitted-PDC	6,579.84	15,878.12	1,460.26	1,214.15	5.934	CC
Snowmass 6N (DG) - Wellbore #1 - Permitted-PDC	6,600.00	15,878.12	1,460.71	1,213.38	5.906	ES
Snowmass 6N (DG) - Wellbore #1 - Permitted-PDC	6,700.00	15,878.12	1,476.40	1,223.70	5.842	SF
Snowmass 7N (DG) - Wellbore #1 - Permitted-PDC	6,537.44	15,556.58	1,655.81	1,411.69	6.783	CC
Snowmass 7N (DG) - Wellbore #1 - Permitted-PDC	6,550.00	15,556.58	1,655.98	1,411.30	6.768	ES
Snowmass 7N (DG) - Wellbore #1 - Permitted-PDC	6,650.00	15,556.58	1,669.48	1,420.85	6.715	SF
Snowmass 8N (DG) - Wellbore #1 - Permitted-PDC	6,538.95	16,001.51	1,880.41	1,630.03	7.510	CC
Snowmass 8N (DG) - Wellbore #1 - Permitted-PDC	6,550.00	16,001.51	1,880.54	1,629.70	7.497	ES
Snowmass 8N (DG) - Wellbore #1 - Permitted-PDC	6,650.00	16,001.51	1,893.30	1,638.73	7.437	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 Reveille A34-788
Project:	Wells Ranch	TVD Reference:	KB @ 4661.00ft
Reference Site:	A Section 34	MD Reference:	KB @ 4661.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Reveille A34-788	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Reveille A34-788 OH	Database:	EDMP
Reference Design:	APD - Rev 1	Offset TVD Reference:	Offset Datum

Summary						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
B Section 05						
Snowmass 9N (DG) - Wellbore #1 - Permitted-PDC	6,506.59	15,681.01	2,124.54	1,877.54	8.601	CC, ES
Snowmass 9N (DG) - Wellbore #1 - Permitted-PDC	6,600.00	15,681.01	2,133.41	1,883.76	8.546	SF