Project: Wells Ranch
Site: A Section 21
Well: Rampart A33-740
Wellbore: Rampart A33-740
Design: APD-Rev 0

Northern Region - DJ Basin

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

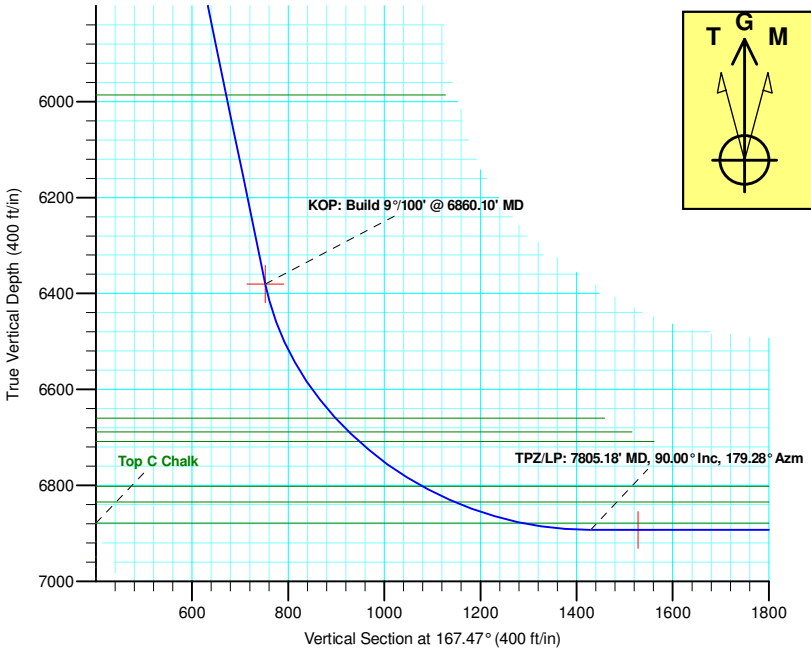
SECTION DETAILS

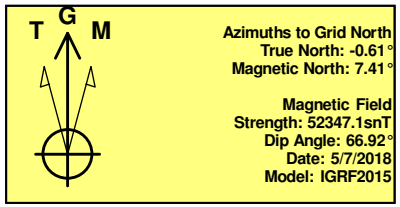
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	2000.00	0.00	0.00	2000.00	0.00	0.00	0.00	0.00	0.00
3	3433.88	28.68	99.63	3374.76	-58.77	346.46	2.00	99.63	132.55
4	6860.10	28.68	99.63	6380.70	-333.73	1967.49	0.00	0.00	752.72
5	7805.18	90.00	179.28	6893.00	-964.48	2251.08	9.00	80.90	1429.98
6	17515.21	90.00	179.28	6893.00	-10673.75	2372.73	0.00	0.00	10934.29

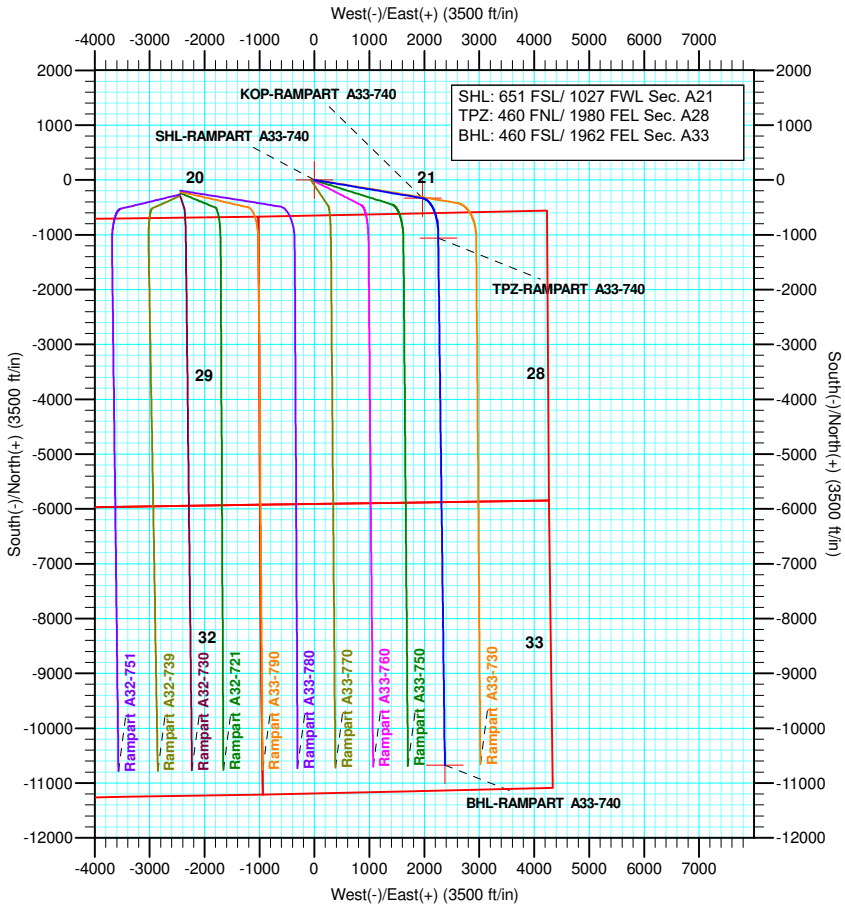
WELL DETAILS: Rampart A33-740

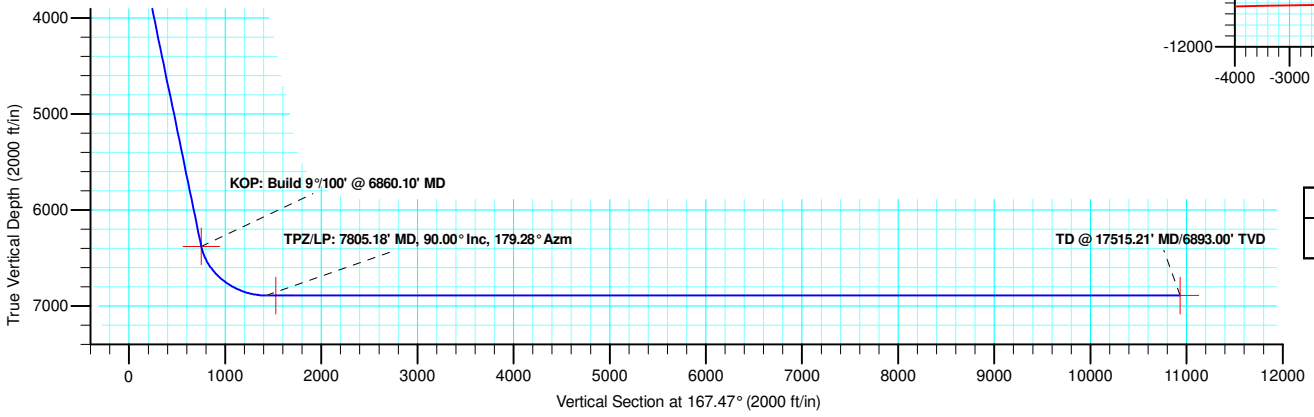
Ground Level: 4727.00

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.00	0.00	1414003.92	3261285.21	40.4660445	-104.5609150	









Plan: APD-Rev 0 (Rampart A33-740/Rampart A33-740)

Created By: Keith Noack Date: 9:45, November 01 2018

Northern Region - DJ Basin

Wells Ranch
A Section 21
Rampart A33-740

Rampart A33-740

Plan: APD-Rev 0

Standard Planning Report

01 November, 2018

Database:	EDMP	**Local Co-ordinate Reference:**	Well Rampart A33-740
Company:	Northern Region - DJ Basin	**TVD Reference:**	Well @ 4757.00ft
Project:	Wells Ranch	**MD Reference:**	Well @ 4757.00ft
Site:	A Section 21	**North Reference:**	Grid
Well:	Rampart A33-740	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Rampart A33-740		
Design:	APD-Rev 0		

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 21

Site Position:		**Northing:**	1,414,202.83 usft	**Latitude:**	40.4665920
From:	Lat/Long	**Easting:**	3,261,231.91 usft	**Longitude:**	-104.5610990
Position Uncertainty:	0.00 ft	**Slot Radius:**	13.200 in	**Grid Convergence:**	0.61 °

Well Rampart A33-740

Well Position	**+N/-S**	-198.90 ft	**Northing:**	1,414,003.92 usft	**Latitude:**	40.4660445
	+E/-W	53.31 ft	**Easting:**	3,261,285.22 usft	**Longitude:**	-104.5609150
Position Uncertainty		0.00 ft	**Wellhead Elevation:**		**Ground Level:**	4,727.00 ft

Wellbore Rampart A33-740

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	5/7/2018	8.01	66.92	52,347.05937349

Design APD-Rev 0

Audit Notes:

Version:		**Phase:**	PLAN	**Tie On Depth:**	0.00

Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.00	0.00	0.00	167.47

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	
3,433.88	28.68	99.63	3,374.76	-58.77	346.46	2.00	2.00	0.00	99.63	
6,860.10	28.68	99.63	6,380.70	-333.73	1,967.49	0.00	0.00	0.00	0.00	
7,805.18	90.00	179.28	6,893.00	-964.48	2,251.08	9.00	6.49	8.43	80.90	
17,515.21	90.00	179.28	6,893.00	-10,673.75	2,372.73	0.00	0.00	0.00	0.00	BHL-RAMPART A3

Database:	EDMP	**Local Co-ordinate Reference:**	Well Rampart A33-740
Company:	Northern Region - DJ Basin	**TVD Reference:**	Well @ 4757.00ft
Project:	Wells Ranch	**MD Reference:**	Well @ 4757.00ft
Site:	A Section 21	**North Reference:**	Grid
Well:	Rampart A33-740	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Rampart A33-740		
Design:	APD-Rev 0		

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
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00
496.00	0.00	0.00	496.00	0.00	0.00	0.00	0.00	0.00	0.00
Upper Pierre Aquifer Top									
497.00	0.00	0.00	497.00	0.00	0.00	0.00	0.00	0.00	0.00
Pierre									
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
1,500.00	0.00	0.00	1,500.00	0.00	0.00	0.00	0.00	0.00	0.00
1,533.00	0.00	0.00	1,533.00	0.00	0.00	0.00	0.00	0.00	0.00
Upper Pierre Aquifer Base									
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
Build: 2°/100'									
2,100.00	2.00	99.63	2,099.98	-0.29	1.72	0.66	2.00	2.00	0.00
2,200.00	4.00	99.63	2,199.84	-1.17	6.88	2.63	2.00	2.00	0.00
2,300.00	6.00	99.63	2,299.45	-2.62	15.47	5.92	2.00	2.00	0.00
2,400.00	8.00	99.63	2,398.70	-4.66	27.49	10.52	2.00	2.00	0.00
2,500.00	10.00	99.63	2,497.47	-7.28	42.91	16.42	2.00	2.00	0.00
2,600.00	12.00	99.63	2,595.62	-10.47	61.72	23.61	2.00	2.00	0.00
2,700.00	14.00	99.63	2,693.06	-14.23	83.90	32.10	2.00	2.00	0.00
2,800.00	16.00	99.63	2,789.64	-18.56	109.41	41.86	2.00	2.00	0.00
2,900.00	18.00	99.63	2,885.27	-23.45	138.24	52.89	2.00	2.00	0.00
3,000.00	20.00	99.63	2,979.82	-28.89	170.33	65.17	2.00	2.00	0.00
3,100.00	22.00	99.63	3,073.17	-34.89	205.67	78.68	2.00	2.00	0.00
3,200.00	24.00	99.63	3,165.21	-41.42	244.19	93.42	2.00	2.00	0.00
3,300.00	26.00	99.63	3,255.84	-48.49	285.85	109.36	2.00	2.00	0.00
3,400.00	28.00	99.63	3,344.94	-56.08	330.61	126.48	2.00	2.00	0.00
3,433.88	28.68	99.63	3,374.76	-58.77	346.46	132.55	2.00	2.00	0.00
Hold: 28.68° Inc, 99.63° Azm									
3,500.00	28.68	99.63	3,432.77	-64.07	377.75	144.52	0.00	0.00	0.00
3,600.00	28.68	99.63	3,520.50	-72.10	425.06	162.62	0.00	0.00	0.00
3,700.00	28.68	99.63	3,608.23	-80.12	472.37	180.72	0.00	0.00	0.00
3,788.64	28.68	99.63	3,686.00	-87.24	514.31	196.76	0.00	0.00	0.00
Parkman									
3,800.00	28.68	99.63	3,695.97	-88.15	519.68	198.82	0.00	0.00	0.00
3,900.00	28.68	99.63	3,783.70	-96.18	567.00	216.92	0.00	0.00	0.00
4,000.00	28.68	99.63	3,871.43	-104.20	614.31	235.02	0.00	0.00	0.00
4,100.00	28.68	99.63	3,959.17	-112.23	661.62	253.12	0.00	0.00	0.00

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Site:	A Section 21	**North Reference:**	Grid
Well:	Rampart A33-740	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Rampart A33-740		
Design:	APD-Rev 0		

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	28.68	99.63	4,046.90	-120.25	708.93	271.22	0.00	0.00	0.00
4,300.00	28.68	99.63	4,134.63	-128.28	756.25	289.32	0.00	0.00	0.00
4,379.07	28.68	99.63	4,204.00	-134.62	793.65	303.64	0.00	0.00	0.00
Sussex									
4,400.00	28.68	99.63	4,222.37	-136.30	803.56	307.42	0.00	0.00	0.00
4,500.00	28.68	99.63	4,310.10	-144.33	850.87	325.53	0.00	0.00	0.00
4,600.00	28.68	99.63	4,397.83	-152.35	898.18	343.63	0.00	0.00	0.00
4,700.00	28.68	99.63	4,485.57	-160.38	945.49	361.73	0.00	0.00	0.00
4,800.00	28.68	99.63	4,573.30	-168.40	992.81	379.83	0.00	0.00	0.00
4,900.00	28.68	99.63	4,661.03	-176.43	1,040.12	397.93	0.00	0.00	0.00
5,000.00	28.68	99.63	4,748.77	-184.45	1,087.43	416.03	0.00	0.00	0.00
5,100.00	28.68	99.63	4,836.50	-192.48	1,134.74	434.13	0.00	0.00	0.00
5,200.00	28.68	99.63	4,924.23	-200.50	1,182.06	452.23	0.00	0.00	0.00
5,300.00	28.68	99.63	5,011.97	-208.53	1,229.37	470.33	0.00	0.00	0.00
5,327.39	28.68	99.63	5,036.00	-210.73	1,242.33	475.29	0.00	0.00	0.00
Shannon									
5,400.00	28.68	99.63	5,099.70	-216.55	1,276.68	488.43	0.00	0.00	0.00
5,500.00	28.68	99.63	5,187.43	-224.58	1,323.99	506.53	0.00	0.00	0.00
5,600.00	28.68	99.63	5,275.17	-232.60	1,371.31	524.63	0.00	0.00	0.00
5,700.00	28.68	99.63	5,362.90	-240.63	1,418.62	542.73	0.00	0.00	0.00
5,800.00	28.68	99.63	5,450.63	-248.65	1,465.93	560.83	0.00	0.00	0.00
5,900.00	28.68	99.63	5,538.37	-256.68	1,513.24	578.93	0.00	0.00	0.00
6,000.00	28.68	99.63	5,626.10	-264.70	1,560.55	597.04	0.00	0.00	0.00
6,100.00	28.68	99.63	5,713.83	-272.73	1,607.87	615.14	0.00	0.00	0.00
6,200.00	28.68	99.63	5,801.57	-280.75	1,655.18	633.24	0.00	0.00	0.00
6,300.00	28.68	99.63	5,889.30	-288.78	1,702.49	651.34	0.00	0.00	0.00
6,400.00	28.68	99.63	5,977.03	-296.81	1,749.80	669.44	0.00	0.00	0.00
6,410.22	28.68	99.63	5,986.00	-297.63	1,754.64	671.29	0.00	0.00	0.00
Teepee Buttes									
6,500.00	28.68	99.63	6,064.77	-304.83	1,797.12	687.54	0.00	0.00	0.00
6,600.00	28.68	99.63	6,152.50	-312.86	1,844.43	705.64	0.00	0.00	0.00
6,700.00	28.68	99.63	6,240.23	-320.88	1,891.74	723.74	0.00	0.00	0.00
6,800.00	28.68	99.63	6,327.97	-328.91	1,939.05	741.84	0.00	0.00	0.00
6,860.10	28.68	99.63	6,380.70	-333.73	1,967.49	752.72	0.00	0.00	0.00
KOP: Build 9°/100' @ 6860.10' MD									
6,900.00	29.44	106.85	6,415.58	-338.17	1,986.32	761.15	9.00	1.91	18.12
6,950.00	30.92	115.32	6,458.82	-347.24	2,009.70	775.06	9.00	2.95	16.93
7,000.00	32.89	122.98	6,501.29	-360.13	2,032.71	792.64	9.00	3.95	15.31
7,050.00	35.28	129.78	6,542.71	-376.76	2,055.21	813.77	9.00	4.79	13.61
7,100.00	38.01	135.78	6,582.83	-397.05	2,077.06	838.31	9.00	5.46	12.00
7,150.00	41.01	141.06	6,621.41	-420.86	2,098.12	866.12	9.00	6.00	10.56
7,200.00	44.22	145.72	6,658.21	-448.04	2,118.26	897.02	9.00	6.42	9.32
7,202.50	44.39	145.94	6,660.00	-449.49	2,119.24	898.65	9.00	6.61	8.74
Sharon Springs									
7,244.09	47.20	149.39	6,689.00	-474.68	2,135.16	926.70	9.00	6.75	8.31
Top A Chalk									
7,250.00	47.60	149.86	6,693.00	-478.43	2,137.36	930.83	9.00	6.89	7.87
7,274.12	49.28	151.70	6,709.00	-494.18	2,146.17	948.12	9.00	6.96	7.62
Top A Marl									
7,300.00	51.12	153.57	6,725.56	-511.84	2,155.30	967.34	9.00	7.08	7.23
7,350.00	54.74	156.92	6,755.71	-548.06	2,171.98	1,006.32	9.00	7.24	6.71
7,400.00	58.44	159.98	6,783.24	-586.88	2,187.28	1,047.53	9.00	7.41	6.13
7,437.35	61.25	162.11	6,802.00	-617.42	2,197.76	1,079.62	9.00	7.53	5.71

Database:	EDMP	**Local Co-ordinate Reference:**	Well Rampart A33-740
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Site:	A Section 21	**North Reference:**	Grid
Well:	Rampart A33-740	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Rampart A33-740		
Design:	APD-Rev 0		

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)
Top B Chalk									
7,450.00	62.21	162.81	6,807.99	-628.04	2,201.12	1,090.72	9.00	7.59	5.50
7,500.00	66.04	165.45	6,829.81	-671.31	2,213.40	1,135.62	9.00	7.65	5.27
7,513.03	67.04	166.11	6,835.00	-682.89	2,216.34	1,147.57	9.00	7.71	5.07
Top B Marl									
7,550.00	69.90	167.93	6,848.56	-716.40	2,224.06	1,181.95	9.00	7.74	4.93
7,600.00	73.80	170.29	6,864.14	-763.05	2,233.02	1,229.43	9.00	7.80	4.73
7,650.00	77.73	172.56	6,876.43	-810.96	2,240.24	1,277.76	9.00	7.85	4.54
7,662.60	78.72	173.12	6,879.00	-823.20	2,241.77	1,290.05	9.00	7.88	4.45
Top C Chalk									
7,700.00	81.67	174.76	6,885.37	-859.84	2,245.66	1,326.66	9.00	7.89	4.39
7,750.00	85.63	176.92	6,890.90	-909.39	2,249.25	1,375.81	9.00	7.91	4.32
7,800.00	89.59	179.06	6,892.98	-959.30	2,251.00	1,424.91	9.00	7.92	4.27
7,805.18	90.00	179.28	6,893.00	-964.48	2,251.08	1,429.98	9.00	7.93	4.26
TPZ/LP: 7805.18' MD, 90.00° Inc, 179.28° Azm									
7,900.00	90.00	179.28	6,893.00	-1,059.30	2,252.27	1,522.79	0.00	0.00	0.00
8,000.00	90.00	179.28	6,893.00	-1,159.29	2,253.52	1,620.67	0.00	0.00	0.00
8,100.00	90.00	179.28	6,893.00	-1,259.28	2,254.77	1,718.56	0.00	0.00	0.00
8,200.00	90.00	179.28	6,893.00	-1,359.27	2,256.02	1,816.44	0.00	0.00	0.00
8,300.00	90.00	179.28	6,893.00	-1,459.26	2,257.28	1,914.32	0.00	0.00	0.00
8,400.00	90.00	179.28	6,893.00	-1,559.26	2,258.53	2,012.20	0.00	0.00	0.00
8,500.00	90.00	179.28	6,893.00	-1,659.25	2,259.78	2,110.08	0.00	0.00	0.00
8,600.00	90.00	179.28	6,893.00	-1,759.24	2,261.04	2,207.96	0.00	0.00	0.00
8,700.00	90.00	179.28	6,893.00	-1,859.23	2,262.29	2,305.84	0.00	0.00	0.00
8,800.00	90.00	179.28	6,893.00	-1,959.22	2,263.54	2,403.73	0.00	0.00	0.00
8,900.00	90.00	179.28	6,893.00	-2,059.22	2,264.79	2,501.61	0.00	0.00	0.00
9,000.00	90.00	179.28	6,893.00	-2,159.21	2,266.05	2,599.49	0.00	0.00	0.00
9,100.00	90.00	179.28	6,893.00	-2,259.20	2,267.30	2,697.37	0.00	0.00	0.00
9,200.00	90.00	179.28	6,893.00	-2,359.19	2,268.55	2,795.25	0.00	0.00	0.00
9,300.00	90.00	179.28	6,893.00	-2,459.19	2,269.80	2,893.13	0.00	0.00	0.00
9,400.00	90.00	179.28	6,893.00	-2,559.18	2,271.06	2,991.01	0.00	0.00	0.00
9,500.00	90.00	179.28	6,893.00	-2,659.17	2,272.31	3,088.90	0.00	0.00	0.00
9,600.00	90.00	179.28	6,893.00	-2,759.16	2,273.56	3,186.78	0.00	0.00	0.00
9,700.00	90.00	179.28	6,893.00	-2,859.15	2,274.82	3,284.66	0.00	0.00	0.00
9,800.00	90.00	179.28	6,893.00	-2,959.15	2,276.07	3,382.54	0.00	0.00	0.00
9,900.00	90.00	179.28	6,893.00	-3,059.14	2,277.32	3,480.42	0.00	0.00	0.00
10,000.00	90.00	179.28	6,893.00	-3,159.13	2,278.57	3,578.30	0.00	0.00	0.00
10,100.00	90.00	179.28	6,893.00	-3,259.12	2,279.83	3,676.18	0.00	0.00	0.00
10,200.00	90.00	179.28	6,893.00	-3,359.11	2,281.08	3,774.07	0.00	0.00	0.00
10,300.00	90.00	179.28	6,893.00	-3,459.11	2,282.33	3,871.95	0.00	0.00	0.00
10,400.00	90.00	179.28	6,893.00	-3,559.10	2,283.59	3,969.83	0.00	0.00	0.00
10,500.00	90.00	179.28	6,893.00	-3,659.09	2,284.84	4,067.71	0.00	0.00	0.00
10,600.00	90.00	179.28	6,893.00	-3,759.08	2,286.09	4,165.59	0.00	0.00	0.00
10,700.00	90.00	179.28	6,893.00	-3,859.08	2,287.34	4,263.47	0.00	0.00	0.00
10,800.00	90.00	179.28	6,893.00	-3,959.07	2,288.60	4,361.35	0.00	0.00	0.00
10,900.00	90.00	179.28	6,893.00	-4,059.06	2,289.85	4,459.23	0.00	0.00	0.00
11,000.00	90.00	179.28	6,893.00	-4,159.05	2,291.10	4,557.12	0.00	0.00	0.00
11,100.00	90.00	179.28	6,893.00	-4,259.04	2,292.36	4,655.00	0.00	0.00	0.00
11,200.00	90.00	179.28	6,893.00	-4,359.04	2,293.61	4,752.88	0.00	0.00	0.00
11,300.00	90.00	179.28	6,893.00	-4,459.03	2,294.86	4,850.76	0.00	0.00	0.00
11,400.00	90.00	179.28	6,893.00	-4,559.02	2,296.11	4,948.64	0.00	0.00	0.00
11,500.00	90.00	179.28	6,893.00	-4,659.01	2,297.37	5,046.52	0.00	0.00	0.00
11,600.00	90.00	179.28	6,893.00	-4,759.00	2,298.62	5,144.40	0.00	0.00	0.00

Database:	EDMP	**Local Co-ordinate Reference:**	Well Rampart A33-740
Company:	Northern Region - DJ Basin	**TVD Reference:**	Well @ 4757.00ft
Project:	Wells Ranch	**MD Reference:**	Well @ 4757.00ft
Site:	A Section 21	**North Reference:**	Grid
Well:	Rampart A33-740	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Rampart A33-740		
Design:	APD-Rev 0		

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)
11,700.00	90.00	179.28	6,893.00	-4,859.00	2,299.87	5,242.29	0.00	0.00	0.00
11,800.00	90.00	179.28	6,893.00	-4,958.99	2,301.13	5,340.17	0.00	0.00	0.00
11,900.00	90.00	179.28	6,893.00	-5,058.98	2,302.38	5,438.05	0.00	0.00	0.00
12,000.00	90.00	179.28	6,893.00	-5,158.97	2,303.63	5,535.93	0.00	0.00	0.00
12,100.00	90.00	179.28	6,893.00	-5,258.97	2,304.88	5,633.81	0.00	0.00	0.00
12,200.00	90.00	179.28	6,893.00	-5,358.96	2,306.14	5,731.69	0.00	0.00	0.00
12,300.00	90.00	179.28	6,893.00	-5,458.95	2,307.39	5,829.57	0.00	0.00	0.00
12,400.00	90.00	179.28	6,893.00	-5,558.94	2,308.64	5,927.46	0.00	0.00	0.00
12,500.00	90.00	179.28	6,893.00	-5,658.93	2,309.90	6,025.34	0.00	0.00	0.00
12,600.00	90.00	179.28	6,893.00	-5,758.93	2,311.15	6,123.22	0.00	0.00	0.00
12,700.00	90.00	179.28	6,893.00	-5,858.92	2,312.40	6,221.10	0.00	0.00	0.00
12,800.00	90.00	179.28	6,893.00	-5,958.91	2,313.65	6,318.98	0.00	0.00	0.00
12,900.00	90.00	179.28	6,893.00	-6,058.90	2,314.91	6,416.86	0.00	0.00	0.00
13,000.00	90.00	179.28	6,893.00	-6,158.89	2,316.16	6,514.74	0.00	0.00	0.00
13,100.00	90.00	179.28	6,893.00	-6,258.89	2,317.41	6,612.63	0.00	0.00	0.00
13,200.00	90.00	179.28	6,893.00	-6,358.88	2,318.67	6,710.51	0.00	0.00	0.00
13,300.00	90.00	179.28	6,893.00	-6,458.87	2,319.92	6,808.39	0.00	0.00	0.00
13,400.00	90.00	179.28	6,893.00	-6,558.86	2,321.17	6,906.27	0.00	0.00	0.00
13,500.00	90.00	179.28	6,893.00	-6,658.86	2,322.42	7,004.15	0.00	0.00	0.00
13,600.00	90.00	179.28	6,893.00	-6,758.85	2,323.68	7,102.03	0.00	0.00	0.00
13,700.00	90.00	179.28	6,893.00	-6,858.84	2,324.93	7,199.91	0.00	0.00	0.00
13,800.00	90.00	179.28	6,893.00	-6,958.83	2,326.18	7,297.80	0.00	0.00	0.00
13,900.00	90.00	179.28	6,893.00	-7,058.82	2,327.44	7,395.68	0.00	0.00	0.00
14,000.00	90.00	179.28	6,893.00	-7,158.82	2,328.69	7,493.56	0.00	0.00	0.00
14,100.00	90.00	179.28	6,893.00	-7,258.81	2,329.94	7,591.44	0.00	0.00	0.00
14,200.00	90.00	179.28	6,893.00	-7,358.80	2,331.19	7,689.32	0.00	0.00	0.00
14,300.00	90.00	179.28	6,893.00	-7,458.79	2,332.45	7,787.20	0.00	0.00	0.00
14,400.00	90.00	179.28	6,893.00	-7,558.79	2,333.70	7,885.08	0.00	0.00	0.00
14,500.00	90.00	179.28	6,893.00	-7,658.78	2,334.95	7,982.96	0.00	0.00	0.00
14,600.00	90.00	179.28	6,893.00	-7,758.77	2,336.21	8,080.85	0.00	0.00	0.00
14,700.00	90.00	179.28	6,893.00	-7,858.76	2,337.46	8,178.73	0.00	0.00	0.00
14,800.00	90.00	179.28	6,893.00	-7,958.75	2,338.71	8,276.61	0.00	0.00	0.00
14,900.00	90.00	179.28	6,893.00	-8,058.75	2,339.96	8,374.49	0.00	0.00	0.00
15,000.00	90.00	179.28	6,893.00	-8,158.74	2,341.22	8,472.37	0.00	0.00	0.00
15,100.00	90.00	179.28	6,893.00	-8,258.73	2,342.47	8,570.25	0.00	0.00	0.00
15,200.00	90.00	179.28	6,893.00	-8,358.72	2,343.72	8,668.13	0.00	0.00	0.00
15,300.00	90.00	179.28	6,893.00	-8,458.71	2,344.98	8,766.02	0.00	0.00	0.00
15,400.00	90.00	179.28	6,893.00	-8,558.71	2,346.23	8,863.90	0.00	0.00	0.00
15,500.00	90.00	179.28	6,893.00	-8,658.70	2,347.48	8,961.78	0.00	0.00	0.00
15,600.00	90.00	179.28	6,893.00	-8,758.69	2,348.73	9,059.66	0.00	0.00	0.00
15,700.00	90.00	179.28	6,893.00	-8,858.68	2,349.99	9,157.54	0.00	0.00	0.00
15,800.00	90.00	179.28	6,893.00	-8,958.68	2,351.24	9,255.42	0.00	0.00	0.00
15,900.00	90.00	179.28	6,893.00	-9,058.67	2,352.49	9,353.30	0.00	0.00	0.00
16,000.00	90.00	179.28	6,893.00	-9,158.66	2,353.75	9,451.19	0.00	0.00	0.00
16,100.00	90.00	179.28	6,893.00	-9,258.65	2,355.00	9,549.07	0.00	0.00	0.00
16,200.00	90.00	179.28	6,893.00	-9,358.64	2,356.25	9,646.95	0.00	0.00	0.00
16,300.00	90.00	179.28	6,893.00	-9,458.64	2,357.50	9,744.83	0.00	0.00	0.00
16,400.00	90.00	179.28	6,893.00	-9,558.63	2,358.76	9,842.71	0.00	0.00	0.00
16,500.00	90.00	179.28	6,893.00	-9,658.62	2,360.01	9,940.59	0.00	0.00	0.00
16,600.00	90.00	179.28	6,893.00	-9,758.61	2,361.26	10,038.47	0.00	0.00	0.00
16,700.00	90.00	179.28	6,893.00	-9,858.60	2,362.52	10,136.36	0.00	0.00	0.00
16,800.00	90.00	179.28	6,893.00	-9,958.60	2,363.77	10,234.24	0.00	0.00	0.00
16,900.00	90.00	179.28	6,893.00	-10,058.59	2,365.02	10,332.12	0.00	0.00	0.00
17,000.00	90.00	179.28	6,893.00	-10,158.58	2,366.27	10,430.00	0.00	0.00	0.00

Database:	EDMP	**Local Co-ordinate Reference:**	Well Rampart A33-740
Company:	Northern Region - DJ Basin	**TVD Reference:**	Well @ 4757.00ft
Project:	Wells Ranch	**MD Reference:**	Well @ 4757.00ft
Site:	A Section 21	**North Reference:**	Grid
Well:	Rampart A33-740	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Rampart A33-740		
Design:	APD-Rev 0		

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)
17,100.00	90.00	179.28	6,893.00	-10,258.57	2,367.53	10,527.88	0.00	0.00	0.00
17,200.00	90.00	179.28	6,893.00	-10,358.57	2,368.78	10,625.76	0.00	0.00	0.00
17,300.00	90.00	179.28	6,893.00	-10,458.56	2,370.03	10,723.64	0.00	0.00	0.00
17,400.00	90.00	179.28	6,893.00	-10,558.55	2,371.29	10,821.53	0.00	0.00	0.00
17,500.00	90.00	179.28	6,893.00	-10,658.54	2,372.54	10,919.41	0.00	0.00	0.00
17,515.21	90.00	179.28	6,893.00	-10,673.75	2,372.73	10,934.29	0.00	0.00	0.00
TD @ 17515.21' MD/6893.00' TVD									

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
SHL-RAMPART A33- - plan hits target center - Point	0.00	0.00	0.00	0.00	0.00	1,414,003.92	3,261,285.22	40.4660445	-104.5609150
KOP-RAMPART A33- - plan hits target center - Point	0.00	0.00	6,380.69	-333.73	1,967.49	1,413,670.19	3,263,252.70	40.4650711	-104.5538570
TPZ-RAMPART A33- - plan hits target center - Point	0.00	0.00	6,893.00	-1,064.48	2,252.33	1,412,939.45	3,263,537.55	40.4630570	-104.5528614
BHL-RAMPART A33- - plan hits target center - Point	0.00	0.00	6,893.00	-10,673.75	2,372.73	1,403,330.20	3,263,657.94	40.4366777	-104.5527976

Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
496.00	496.00	Upper Pierre Aquifer Top			
497.00	497.00	Pierre			
1,533.00	1,533.00	Upper Pierre Aquifer Base			
3,788.64	3,686.00	Parkman			
4,379.07	4,204.00	Sussex			
5,327.39	5,036.00	Shannon			
6,410.22	5,986.00	Teepee Buttes			
7,202.50	6,660.00	Sharon Springs			
7,244.09	6,689.00	Top A Chalk			
7,274.12	6,709.00	Top A Marl			
7,437.35	6,802.00	Top B Chalk			
7,513.03	6,835.00	Top B Marl			
7,662.60	6,879.00	Top C Chalk			

Database:	EDMP	**Local Co-ordinate Reference:**	Well Rampart A33-740
Company:	Northern Region - DJ Basin	**TVD Reference:**	Well @ 4757.00ft
Project:	Wells Ranch	**MD Reference:**	Well @ 4757.00ft
Site:	A Section 21	**North Reference:**	Grid
Well:	Rampart A33-740	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Rampart A33-740		
Design:	APD-Rev 0		

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates +N/-S (ft)	Local Coordinates +E/-W (ft)	Comment
2,000.00	2,000.00	0.00	0.00	Build: 2°/100'
3,433.88	3,374.76	-58.77	346.46	Hold: 28.68° Inc, 99.63° Azm
6,860.10	6,380.70	-333.73	1,967.49	KOP: Build 9°/100' @ 6860.10' MD
7,805.18	6,893.00	-964.48	2,251.08	TPZ/LP: 7805.18' MD, 90.00° Inc, 179.28° Azm
17,515.21	6,893.00	-10,673.75	2,372.73	TD @ 17515.21' MD/6893.00' TVD

Northern Region - DJ Basin

Wells Ranch
A Section 21
Rampart A33-740

Rampart A33-740
APD-Rev 0

Anticollision Summary Report

01 November, 2018

Noble Energy, Inc.

Anticollision Summary Report

Company:	Northern Region - DJ Basin	**Local Co-ordinate Reference:**	Well Rampart A33-740
Project:	Wells Ranch	**TVD Reference:**	Well @ 4757.00ft
Reference Site:	A Section 21	**MD Reference:**	Well @ 4757.00ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Rampart A33-740	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Rampart A33-740	**Database:**	EDMP
Reference Design:	APD-Rev 0	**Offset TVD Reference:**	Offset Datum

Reference	APD-Rev 0		
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	Stations	**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** 10/31/2018

From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.00	2,000.00	APD-Rev 0 (Rampart A33-740)	2_Gyro-NS-CT_OWSG	A021Ga: Continuous gyro in casing
2,000.00	17,515.21	APD-Rev 0 (Rampart A33-740)	2_MWD+IFR1+MS	A008Mb: IFR dec & multi-station analysis

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 20						
Foe 16-20 - Original Drilling - Original Drilling - As Drilled	646.01	599.05	1,701.64	1,697.68	430.329	CC
Foe 16-20 - Original Drilling - Original Drilling - As Drilled	800.00	740.13	1,702.07	1,697.09	341.499	ES
Foe 16-20 - Original Drilling - Original Drilling - As Drilled	7,250.00	6,655.59	3,863.28	3,817.20	83.845	SF
Foe 33-20 - Original Drilling - Original Drilling - As Drilled	529.69	492.70	3,137.80	3,134.63	989.711	CC
Foe 33-20 - Original Drilling - Original Drilling - As Drilled	2,000.00	1,956.24	3,143.88	3,130.45	234.186	ES
Foe 33-20 - Original Drilling - Original Drilling - As Drilled	7,350.00	6,776.95	5,372.94	5,326.25	115.080	SF
Foe 34-20 (PA) - Original Drilling - Original Drilling - As D	2,000.00	1,943.00	3,020.56	2,974.94	66.219	CC
Foe 34-20 (PA) - Original Drilling - Original Drilling - As D	2,100.00	2,042.98	3,022.25	2,974.46	63.238	ES
Foe 34-20 (PA) - Original Drilling - Original Drilling - As D	7,600.00	6,807.14	5,273.74	5,113.45	32.903	SF
Foe 43-20 - Original Drilling - Original Drilling - As Drilled	336.73	308.88	2,132.66	2,130.80	1,149.357	CC
Foe 43-20 - Original Drilling - Original Drilling - As Drilled	1,700.00	1,662.55	2,134.39	2,123.04	188.017	ES
Foe 43-20 - Original Drilling - Original Drilling - As Drilled	7,000.00	6,497.29	4,003.50	3,958.90	89.769	SF
Linda Rae 1 - Original Drilling - Original Drilling - As Drille	360.74	304.74	7,222.01	7,220.09	3,756.691	CC
Linda Rae 1 - Original Drilling - Original Drilling - As Drille	2,000.00	1,931.94	7,223.61	7,210.28	542.062	ES
Linda Rae 1 - Original Drilling - Original Drilling - As Drille	9,900.00	6,936.96	9,983.33	9,920.99	160.153	SF
Rampart A32-721 - Rampart A32-721 - APD-Rev 1	2,441.37	2,784.87	2,430.33	2,415.93	168.777	CC, ES
Rampart A32-721 - Rampart A32-721 - APD-Rev 1	17,515.21	16,840.90	4,031.39	3,851.70	22.435	SF
Rampart A32-730 - Rampart A32-730 - APD-Rev 0	2,000.00	1,979.00	2,458.41	2,444.97	182.965	CC, ES
Rampart A32-730 - Rampart A32-730 - APD-Rev 0	17,515.21	16,747.85	4,604.27	4,425.30	25.727	SF
Rampart A32-739 - Rampart A32-739 - APD-Rev 1	2,000.00	1,979.00	2,455.87	2,442.44	182.778	CC, ES
Rampart A32-739 - Rampart A32-739 - APD-Rev 1	17,515.21	16,864.05	5,226.62	5,046.54	29.025	SF
Rampart A32-751 - Rampart A32-751 - APD-Rev 0	2,000.00	1,979.00	2,453.49	2,440.06	182.603	CC, ES
Rampart A32-751 - Rampart A32-751 - APD-Rev 0	17,515.21	16,908.12	5,942.47	5,762.76	33.068	SF
Rampart A33-780 - Rampart A33-780 - APD-Rev 0	3,336.69	4,386.09	2,210.40	2,190.48	110.949	CC, ES
Rampart A33-780 - Rampart A33-780 - APD-Rev 0	17,515.21	17,269.36	2,680.86	2,500.12	14.832	SF
Rampart A33-790 - Rampart A33-790 - APD-Rev 0	2,909.40	3,629.89	2,343.37	2,326.83	141.703	CC, ES
Rampart A33-790 - Rampart A33-790 - APD-Rev 0	17,515.21	16,957.67	3,317.57	3,137.83	18.458	SF
Simmons 42-20D - Original Drilling - Original Drilling - As	1,702.92	1,706.62	3,110.06	3,098.79	275.850	CC
Simmons 42-20D - Original Drilling - Original Drilling - As	2,000.00	1,981.07	3,111.33	3,098.04	233.998	ES
Simmons 42-20D - Original Drilling - Original Drilling - As	7,100.00	6,640.90	4,857.48	4,810.89	104.253	SF
Snider 1-20EG - Original Drilling - Original Drilling - As D	1,304.87	1,249.90	4,354.81	4,346.28	510.777	CC
Snider 1-20EG - Original Drilling - Original Drilling - As D	2,021.05	1,997.57	4,355.16	4,341.57	320.380	ES
Snider 1-20EG - Original Drilling - Original Drilling - As D	9,100.00	6,780.22	6,962.58	6,912.17	138.139	SF
Stump A20-11 - Original Drilling - Original Drilling - As Dr	201.81	154.81	4,682.59	4,681.74	5,523.098	CC
Stump A20-11 - Original Drilling - Original Drilling - As Dr	2,038.42	2,054.11	4,685.58	4,671.76	338.944	ES
Stump A20-11 - Original Drilling - Original Drilling - As Dr	7,650.00	7,104.66	6,985.98	6,937.14	143.041	SF

CC - Min centre to center distance or covergent 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 Rampart A33-740
Project:	Wells Ranch	**TVD Reference:**	Well @ 4757.00ft
Reference Site:	A Section 21	**MD Reference:**	Well @ 4757.00ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Rampart A33-740	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Rampart A33-740	**Database:**	EDMP
Reference Design:	APD-Rev 0	**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 20						
Stump A20-12 - Original Drilling - Original Drilling - As Dr	2,009.52	1,980.47	5,715.80	5,702.29	422.829	CC, ES
Stump A20-12 - Original Drilling - Original Drilling - As Dr	7,650.00	7,092.92	8,072.96	8,024.29	165.863	SF
Stump A20-13 - Original Drilling - Original Drilling - As Dr	2,038.30	2,058.15	5,636.74	5,622.90	407.471	CC, ES
Stump A20-13 - Original Drilling - Original Drilling - As Dr	11,300.00	6,876.01	9,022.60	8,964.17	154.407	SF
Winter 20-19 - Original Drilling - Original Drilling - As Dril	352.99	300.00	7,273.83	7,271.94	3,862.416	CC
Winter 20-19 - Original Drilling - Original Drilling - As Dril	400.00	324.76	7,273.89	7,271.75	3,397.415	ES
Winter 20-19 - Original Drilling - Original Drilling - As Dril	7,200.00	7,200.00	9,661.64	9,611.69	193.426	SF
Winter 24-19 - Original Drilling - Original Drilling - As Dril	100.00	41.07	7,258.80	7,258.61	10,000.000	CC
Winter 24-19 - Original Drilling - Original Drilling - As Dril	500.00	388.33	7,260.13	7,257.28	2,550.765	ES
Winter 24-19 - Original Drilling - Original Drilling - As Dril	6,000.00	6,000.00	9,132.87	9,076.16	161.050	SF
Winter 39-19 - Original Drilling - Original Drilling - As Dril	2,558.71	3,900.00	6,578.74	6,552.34	249.168	CC, ES
Winter 39-19 - Original Drilling - Original Drilling - As Dril	11,500.00	6,957.09	9,992.70	9,923.87	145.178	SF
Winter 40-19 - Original Drilling - Original Drilling - As Dril	2,596.55	4,200.00	6,815.15	6,771.34	155.562	CC
Winter 40-19 - Original Drilling - Original Drilling - As Dril	2,600.00	4,200.00	6,815.16	6,771.34	155.537	ES
Winter 40-19 - Original Drilling - Original Drilling - As Dril	7,500.00	7,120.68	8,725.30	8,648.14	113.079	SF

CC - Min centre to center distance or covergent 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 Rampart A33-740
Project:	Wells Ranch	**TVD Reference:**	Well @ 4757.00ft
Reference Site:	A Section 21	**MD Reference:**	Well @ 4757.00ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Rampart A33-740	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Rampart A33-740	**Database:**	EDMP
Reference Design:	APD-Rev 0	**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 21						
Culbreath 23-21 - Original Drilling - Original Drilling - As D	4,544.36	4,292.45	1,569.13	1,540.75	55.297	CC
Culbreath 23-21 - Original Drilling - Original Drilling - As D	4,600.00	4,339.36	1,569.37	1,540.57	54.499	ES
Culbreath 23-21 - Original Drilling - Original Drilling - As D	6,860.10	6,355.48	1,931.53	1,885.72	42.161	SF
Culbreath 33-21 (PA) - Original Drilling - Original Drilling	6,803.41	6,291.96	1,664.27	1,513.44	11.034	CC
Culbreath 33-21 (PA) - Original Drilling - Original Drilling	6,860.10	6,341.70	1,664.49	1,512.38	10.942	ES
Culbreath 33-21 (PA) - Original Drilling - Original Drilling	7,000.00	6,462.29	1,682.13	1,526.89	10.836	SF
Harper A21-618 - Original Drilling - APD - Rev 1	2,167.58	2,177.87	240.70	226.21	16.621	CC, ES
Harper A21-618 - Original Drilling - APD - Rev 1	7,150.00	8,803.48	414.35	354.74	6.952	SF
Harper A21-626 - Original Drilling - APD - Rev 1	2,000.00	2,000.00	260.12	246.40	18.969	CC, ES
Harper A21-626 - Original Drilling - APD - Rev 1	7,150.00	8,863.24	935.29	873.96	15.249	SF
Harper A21-631 - Original Drilling - APD - Rev 1	2,000.00	2,000.00	279.09	265.38	20.351	CC, ES
Harper A21-631 - Original Drilling - APD - Rev 1	2,200.00	2,199.84	283.57	268.94	19.388	SF
Harper A21-637 - Original Drilling - APD - Rev 1	2,000.00	2,000.00	299.37	285.66	21.828	CC, ES
Harper A21-637 - Original Drilling - APD - Rev 1	2,100.00	2,091.24	301.88	287.66	21.237	SF
Harper A21-643 - Original Drilling - APD - Rev 1	1,911.24	1,925.24	1,603.54	1,590.40	122.017	CC
Harper A21-643 - Original Drilling - APD - Rev 1	2,000.00	2,013.32	1,603.54	1,589.77	116.470	ES
Harper A21-643 - Original Drilling - APD - Rev 1	7,100.00	8,979.34	2,058.13	1,994.68	32.435	SF
Harper A21-649 - Original Drilling - APD - Rev 1	2,000.00	2,015.00	1,625.51	1,611.73	118.005	CC
Harper A21-649 - Original Drilling - APD - Rev 1	2,100.00	2,114.98	1,625.91	1,611.60	113.613	ES
Harper A21-649 - Original Drilling - APD - Rev 1	7,150.00	9,107.88	2,445.86	2,381.76	38.158	SF
Harper A21-656 - Original Drilling - APD - Rev 1	2,000.00	2,015.00	1,649.96	1,636.19	119.780	CC
Harper A21-656 - Original Drilling - APD - Rev 1	2,100.00	2,114.98	1,650.35	1,636.04	115.320	ES
Harper A21-656 - Original Drilling - APD - Rev 1	7,150.00	9,076.04	2,784.42	2,720.12	43.307	SF
Harper A21-664 - Original Drilling - APD - Rev 2	2,000.00	2,015.00	1,671.95	1,658.17	121.376	CC
Harper A21-664 - Original Drilling - APD - Rev 2	2,100.00	2,114.98	1,672.33	1,658.02	116.856	ES
Harper A21-664 - Original Drilling - APD - Rev 2	7,200.00	9,305.74	3,327.79	3,262.28	50.797	SF
Harper A21-669 - Original Drilling - APD - Rev 1	2,000.00	2,016.00	1,693.42	1,679.64	122.903	CC
Harper A21-669 - Original Drilling - APD - Rev 1	2,100.00	2,115.98	1,693.81	1,679.50	118.328	ES
Harper A21-669 - Original Drilling - APD - Rev 1	7,200.00	9,321.06	3,680.64	3,614.89	55.981	SF
Harper A21-674 - Original Drilling - APD - Rev 1	2,000.00	2,016.00	1,715.39	1,701.62	124.498	CC
Harper A21-674 - Original Drilling - APD - Rev 1	2,100.00	2,115.98	1,715.79	1,701.47	119.863	ES
Harper A21-674 - Original Drilling - APD - Rev 1	7,250.00	9,526.03	4,072.86	4,006.26	61.150	SF
Harper A21-681 - Original Drilling - APD - Rev 1	1,909.84	1,926.84	1,739.88	1,726.74	132.383	CC
Harper A21-681 - Original Drilling - APD - Rev 1	2,000.00	2,000.00	1,739.97	1,726.24	126.813	ES
Harper A21-681 - Original Drilling - APD - Rev 1	7,300.00	9,386.30	4,532.64	4,466.74	68.777	SF
Kona A19-616 - Kona A19-616 - Kona A19-616 - As Drill	2,765.12	2,775.19	159.29	145.62	11.653	CC, ES
Kona A19-616 - Kona A19-616 - Kona A19-616 - As Drill	2,900.00	2,906.77	163.02	148.90	11.545	SF
Kona A19-624 - Kona A19-624 - Kona A19-624 - As Drill	100.00	95.68	221.83	221.57	841.265	CC
Kona A19-624 - Kona A19-624 - Kona A19-624 - As Drill	2,000.00	1,994.45	232.03	219.45	18.446	ES
Kona A19-624 - Kona A19-624 - Kona A19-624 - As Drill	2,400.00	2,394.84	238.07	224.99	18.206	SF
Kona A19-636 - Kona A19-636 - Kona A19-636 - As Drill	0.00	0.00	269.00			
Kona A19-636 - Kona A19-636 - Kona A19-636 - As Drill	2,600.00	2,574.03	316.85	303.17	23.164	SF
Kona A19-646 - Original Drilling - Original Drilling - As Dr	2,047.68	2,066.29	1,614.24	1,600.72	119.412	CC, ES
Kona A19-646 - Original Drilling - Original Drilling - As Dr	6,600.00	6,224.02	2,438.40	2,399.91	63.343	SF
Kona A19-662 - Original Drilling - Original Drilling - As Dr	2,181.22	2,212.93	1,711.61	1,697.92	124.965	CC
Kona A19-662 - Original Drilling - Original Drilling - As Dr	2,200.00	2,231.80	1,711.62	1,697.91	124.850	ES
Kona A19-662 - Original Drilling - Original Drilling - As Dr	6,700.00	5,852.00	3,250.50	3,212.67	85.913	SF
Kona A19-670 - Kona A19-670 - Original Drilling - As Dril	1,987.01	2,004.08	1,734.68	1,721.30	129.627	CC
Kona A19-670 - Kona A19-670 - Original Drilling - As Dril	2,000.00	2,010.34	1,734.70	1,721.27	129.182	ES
Kona A19-670 - Kona A19-670 - Original Drilling - As Dril	6,900.00	5,758.00	3,585.45	3,546.04	90.970	SF
Kona A19-685 - Original Drilling - Original Drilling - As Dr	2,006.87	2,023.52	1,687.14	1,673.64	125.047	CC, ES
Kona A19-685 - Original Drilling - Original Drilling - As Dr	6,900.00	5,259.22	3,686.66	3,650.41	101.694	SF
McKee 12-21 (PA) - Original Drilling - Original Drilling - A	2,000.00	1,997.00	2,430.89	2,384.16	52.027	CC

Noble Energy, Inc.

Anticollision Summary Report

Company:	Northern Region - DJ Basin	**Local Co-ordinate Reference:**	Well Rampart A33-740
Project:	Wells Ranch	**TVD Reference:**	Well @ 4757.00ft
Reference Site:	A Section 21	**MD Reference:**	Well @ 4757.00ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Rampart A33-740	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Rampart A33-740	**Database:**	EDMP
Reference Design:	APD-Rev 0	**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 21						
McKee 12-21 (PA) - Original Drilling - Original Drilling - A	2,200.00	2,196.84	2,433.32	2,382.40	47.790	ES
McKee 12-21 (PA) - Original Drilling - Original Drilling - A	7,000.00	6,498.29	3,704.84	3,551.71	24.194	SF
McKee 21-21 (PA) - Original Drilling - Original Drilling - A	3,676.04	3,600.21	3,884.66	3,802.82	47.470	CC
McKee 21-21 (PA) - Original Drilling - Original Drilling - A	4,000.00	3,884.43	3,887.76	3,798.97	43.786	ES
McKee 21-21 (PA) - Original Drilling - Original Drilling - A	7,100.00	6,595.83	4,259.86	4,102.30	27.036	SF
McKee 22-21 - Original Drilling - Original Drilling - As Dril	3,591.72	3,456.56	2,619.42	2,597.95	122.026	CC
McKee 22-21 - Original Drilling - Original Drilling - As Dril	3,600.00	3,462.73	2,619.43	2,597.91	121.741	ES
McKee 22-21 - Original Drilling - Original Drilling - As Dril	7,000.00	6,523.44	3,110.47	3,063.09	65.653	SF
McKee 31-21 - Original Drilling - Original Drilling - As Dril	5,775.05	5,440.56	4,479.18	4,440.70	116.407	CC
McKee 31-21 - Original Drilling - Original Drilling - As Dril	6,000.00	5,655.77	4,480.15	4,439.77	110.961	ES
McKee 31-21 - Original Drilling - Original Drilling - As Dril	7,250.00	6,901.37	4,617.73	4,566.77	90.619	SF
McKee 32-21 - Original Drilling - Original Drilling - As Dril	5,939.26	5,463.21	2,912.31	2,872.84	73.781	CC
McKee 32-21 - Original Drilling - Original Drilling - As Dril	6,000.00	5,503.62	2,912.58	2,872.66	72.954	ES
McKee 32-21 - Original Drilling - Original Drilling - As Dril	7,100.00	6,576.03	2,994.48	2,945.25	60.835	SF
McKee 41-21 - Original Drilling - Original Drilling - As Dril	6,893.27	6,272.29	4,658.60	4,611.33	98.546	CC
McKee 41-21 - Original Drilling - Original Drilling - As Dril	6,900.00	6,277.90	4,658.64	4,611.31	98.431	ES
McKee 41-21 - Original Drilling - Original Drilling - As Dril	7,300.00	6,588.23	4,782.99	4,732.55	94.825	SF
McKee 42-21 - Original Drilling - Original Drilling - As Dril	6,977.70	6,489.66	3,180.99	3,132.73	65.919	CC, ES
McKee 42-21 - Original Drilling - Original Drilling - As Dril	7,300.00	6,736.07	3,258.88	3,207.99	64.034	SF
Rampart A33-730 - Rampart A33-730 - APD-Rev 1	3,442.67	3,431.10	20.05	3.37	1.202	Level 3, CC, ES, SF
Rampart A33-750 - Rampart A33-750 - APD-Rev 0	2,000.00	2,000.00	22.46	8.95	1.662	CC
Rampart A33-750 - Rampart A33-750 - APD-Rev 0	2,100.00	2,100.75	22.50	8.64	1.624	ES, SF
Rampart A33-760 - Rampart A33-760 - APD-Rev 1	2,000.00	1,999.00	44.91	31.40	3.325	CC
Rampart A33-760 - Rampart A33-760 - APD-Rev 1	2,100.00	2,100.39	45.09	31.23	3.254	ES, SF
Rampart A33-770 - Rampart A33-770 - APD-Rev 0	2,000.00	2,000.00	67.45	53.94	4.993	CC, ES
Rampart A33-770 - Rampart A33-770 - APD-Rev 0	2,100.00	2,101.30	68.20	54.34	4.920	SF
Sexton 43-21 (PA) - Original Drilling - Original Drilling - A	7,029.94	6,479.23	2,417.02	2,261.72	15.563	CC
Sexton 43-21 (PA) - Original Drilling - Original Drilling - A	7,050.00	6,495.71	2,417.31	2,261.56	15.520	ES
Sexton 43-21 (PA) - Original Drilling - Original Drilling - A	7,250.00	6,646.00	2,452.60	2,292.64	15.332	SF
Wells Trust 13-21 - Original Drilling - Original Drilling - As	2,038.72	2,022.40	1,227.64	1,213.90	89.340	CC, ES
Wells Trust 13-21 - Original Drilling - Original Drilling - As	6,860.10	6,383.58	2,833.51	2,789.73	64.723	SF
Wells Trust 14-21 - Original Drilling - Original Drilling - As	2,021.94	1,983.30	582.88	569.34	43.032	CC, ES
Wells Trust 14-21 - Original Drilling - Original Drilling - As	2,500.00	2,453.62	623.97	608.44	40.193	SF
Wells Trust 24-21 - Original Drilling - Original Drilling - As	3,275.07	3,180.60	64.30	44.85	3.307	CC, ES, SF

Noble Energy, Inc.

Anticollision Summary Report

Company:	Northern Region - DJ Basin	**Local Co-ordinate Reference:**	Well Rampart A33-740
Project:	Wells Ranch	**TVD Reference:**	Well @ 4757.00ft
Reference Site:	A Section 21	**MD Reference:**	Well @ 4757.00ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Rampart A33-740	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Rampart A33-740	**Database:**	EDMP
Reference Design:	APD-Rev 0	**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 28						
Ankeney 2-28 (SI) - Wellbore #1 - No Surveys	9,749.91	6,828.00	1,349.39	1,178.93	7.916	CC, ES
Ankeney 2-28 (SI) - Wellbore #1 - No Surveys	9,900.00	6,828.00	1,357.71	1,185.24	7.872	SF
Ankenney 28-01 (PA) - Wellbore #1 - Gyro Surveys	9,613.08	6,802.93	1,374.53	1,318.76	24.648	CC, ES
Ankenney 28-01 (PA) - Wellbore #1 - Gyro Surveys	10,000.00	6,806.02	1,427.94	1,367.56	23.649	SF
Art Rohr 1 (PA) - Wellbore #1 - No Surveys	10,774.06	6,823.00	1,358.77	1,181.96	7.685	CC, ES, SF
Danley 1 (TA) - Wellbore #1 - Gyro Surveys	1,983.37	1,935.42	1,113.08	1,099.77	83.621	CC
Danley 1 (TA) - Wellbore #1 - Gyro Surveys	2,000.00	1,949.69	1,113.10	1,099.68	82.949	ES
Danley 1 (TA) - Wellbore #1 - Gyro Surveys	5,500.00	5,197.78	1,694.30	1,659.11	48.147	SF
Danley 12-28 (SI) - Wellbore #1 - Gyro Surveys	9,480.42	6,860.22	2,551.18	2,494.89	45.324	CC, ES
Danley 12-28 (SI) - Wellbore #1 - Gyro Surveys	9,700.00	6,869.93	2,560.59	2,503.91	45.180	SF
Danley 13-28 (PR) - Wellbore #1 - Gyro Surveys	10,799.94	6,872.64	2,591.88	2,527.49	40.254	CC
Danley 13-28 (PR) - Wellbore #1 - Gyro Surveys	10,800.00	6,872.64	2,591.88	2,527.49	40.254	ES
Danley 13-28 (PR) - Wellbore #1 - Gyro Surveys	11,000.00	6,875.58	2,599.59	2,534.85	40.157	SF
Danley 14-28 (PR) - Wellbore #1 - Gyro Surveys	12,148.80	6,833.35	2,613.67	2,539.83	35.393	CC, ES
Danley 14-28 (PR) - Wellbore #1 - Gyro Surveys	12,300.00	6,837.31	2,618.04	2,543.88	35.302	SF
Dewey 21-28 (TA) - Wellbore #1 - Gyro Surveys	5,136.78	4,807.16	1,251.22	1,218.20	37.888	CC
Dewey 21-28 (TA) - Wellbore #1 - Gyro Surveys	5,200.00	4,865.01	1,251.54	1,217.99	37.304	ES
Dewey 21-28 (TA) - Wellbore #1 - Gyro Surveys	8,200.00	6,884.65	1,297.19	1,246.53	25.607	SF
Dewey 22-28 (SI) - Wellbore #1 - Gyro Surveys	9,372.31	6,901.63	1,248.42	1,191.95	22.107	CC, ES, SF
Hannan Rohr 1 (PA) - Wellbore #1 - Gyro Surveys	12,100.00	6,802.07	1,320.91	1,247.25	17.933	SF
Hannan Rohr 1 (PA) - Wellbore #1 - Gyro Surveys	12,174.35	6,801.84	1,318.81	1,245.30	17.941	CC, ES
Rohr A 28-25 (SI) - Wellbore #1 - Gyro Surveys	11,293.27	6,882.11	1,803.19	1,735.14	26.497	CC, ES
Rohr A 28-25 (SI) - Wellbore #1 - Gyro Surveys	11,300.00	6,882.22	1,803.20	1,735.15	26.497	SF
Wardlaw 16-28 - Original Drilling - Original Drilling - As D	12,175.78	6,801.00	1,133.53	947.35	6.089	CC
Wardlaw 16-28 - Original Drilling - Original Drilling - As D	12,200.00	6,801.00	1,133.79	947.16	6.075	ES
Wardlaw 16-28 - Original Drilling - Original Drilling - As D	12,300.00	6,801.00	1,140.31	952.02	6.056	SF
Wardlaw 16-28 (SI) - Wellbore #1 - Gyro Surveys	12,134.69	6,808.96	1,155.17	1,081.58	15.698	CC, ES
Wardlaw 16-28 (SI) - Wellbore #1 - Gyro Surveys	12,400.00	6,810.92	1,185.24	1,107.73	15.291	SF
Wardlaw 20-28 - Original Drilling - Original Drilling - As D	11,522.75	6,796.00	823.57	642.17	4.540	CC, ES
Wardlaw 20-28 - Original Drilling - Original Drilling - As D	11,600.00	6,796.00	827.19	644.18	4.520	SF
Wardlaw 20-28 (SI) - Wellbore #1 - Gyro Surveys	11,489.10	6,808.48	832.91	763.97	12.083	CC
Wardlaw 20-28 (SI) - Wellbore #1 - Gyro Surveys	11,500.00	6,808.64	832.98	763.80	12.041	ES
Wardlaw 20-28 (SI) - Wellbore #1 - Gyro Surveys	11,600.00	6,810.10	840.25	769.10	11.808	SF
Wardlaw 33-28 (PA) - Wellbore #1 - Gyro Surveys	10,766.53	7,077.70	23.10	-59.26	0.281	Level 1, CC, SF
Wardlaw 33-28 (PA) - Wellbore #1 - Gyro Surveys	10,800.00	7,095.65	36.50	-83.84	0.303	Level 1, ES
Webster 09-28 - Original Drilling - Original Drilling - As D	10,724.00	6,811.00	1,114.16	937.92	6.322	CC, ES
Webster 09-28 - Original Drilling - Original Drilling - As D	10,800.00	6,811.00	1,116.75	939.23	6.291	SF
Webster 15-28 (SI) - Wellbore #1 - Gyro Surveys	12,058.20	6,800.04	181.75	108.94	2.496	CC, ES, SF
Webster 9-28 (PR) - Wellbore #1 - Gyro Surveys	10,684.24	6,805.96	1,129.85	1,066.55	17.848	CC
Webster 9-28 (PR) - Wellbore #1 - Gyro Surveys	10,700.00	6,805.90	1,129.96	1,066.39	17.774	ES
Webster 9-28 (PR) - Wellbore #1 - Gyro Surveys	10,900.00	6,805.13	1,150.27	1,083.67	17.273	SF

Noble Energy, Inc.

Anticollision Summary Report

Company:	Northern Region - DJ Basin	**Local Co-ordinate Reference:**	Well Rampart A33-740
Project:	Wells Ranch	**TVD Reference:**	Well @ 4757.00ft
Reference Site:	A Section 21	**MD Reference:**	Well @ 4757.00ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Rampart A33-740	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Rampart A33-740	**Database:**	EDMP
Reference Design:	APD-Rev 0	**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 29						
Amos 1 (DA) - Wellbore #1 - No Surveys	2,000.00	1,913.00	6,672.02	6,627.00	148.182	CC
Amos 1 (DA) - Wellbore #1 - No Surveys	2,100.00	2,012.98	6,673.21	6,626.01	141.373	ES
Amos 1 (DA) - Wellbore #1 - No Surveys	13,600.00	3,800.00	8,627.40	8,508.51	72.567	SF
Anderson 3-29 (SI) - Wellbore #1 - Gyro Surveys	211.84	148.84	4,506.78	4,505.92	5,257.213	CC
Anderson 3-29 (SI) - Wellbore #1 - Gyro Surveys	900.00	811.46	4,509.86	4,504.28	808.507	ES
Anderson 3-29 (SI) - Wellbore #1 - Gyro Surveys	10,800.00	6,788.50	7,206.24	7,149.77	127.600	SF
Andy 29-1 (PA) - Wellbore #1 - No Surveys	2,000.00	1,927.00	5,086.52	5,041.22	112.277	CC
Andy 29-1 (PA) - Wellbore #1 - No Surveys	2,100.00	2,026.98	5,087.81	5,040.33	107.156	ES
Andy 29-1 (PA) - Wellbore #1 - No Surveys	10,500.00	6,820.00	6,624.12	6,451.17	38.300	SF
Andy 29-2 (PA) - Wellbore #1 - Gyro Surveys	227.30	157.31	6,149.64	6,148.70	6,505.787	CC
Andy 29-2 (PA) - Wellbore #1 - Gyro Surveys	2,000.00	1,909.34	6,152.72	6,139.47	464.098	ES
Andy 29-2 (PA) - Wellbore #1 - Gyro Surveys	13,000.00	6,833.40	8,647.62	8,577.75	123.770	SF
Capehart 1 (SI) - Wellbore #1 - Gyro Surveys	999.13	917.13	4,107.21	4,100.92	652.474	CC
Capehart 1 (SI) - Wellbore #1 - Gyro Surveys	2,000.01	1,918.03	4,107.77	4,094.49	309.113	ES
Capehart 1 (SI) - Wellbore #1 - Gyro Surveys	11,000.00	6,802.33	5,570.50	5,509.43	91.209	SF
Capehart 31-29 (TA) - Wellbore #1 - Gyro Surveys	1,792.50	1,726.57	3,108.81	3,096.91	261.268	CC
Capehart 31-29 (TA) - Wellbore #1 - Gyro Surveys	2,000.00	1,913.55	3,109.51	3,096.24	234.264	ES
Capehart 31-29 (TA) - Wellbore #1 - Gyro Surveys	9,400.00	6,842.23	5,204.77	5,151.82	98.300	SF
Capehart 41-29 (TA) - Wellbore #1 - Gyro Surveys	2,026.16	1,974.30	2,060.76	2,047.22	152.176	CC, ES
Capehart 41-29 (TA) - Wellbore #1 - Gyro Surveys	8,700.00	6,861.65	3,797.00	3,745.94	74.365	SF
Capehart 42-29 (SI) - Wellbore #1 - Gyro Surveys	266.76	192.59	5,362.40	5,361.18	4,394.632	CC
Capehart 42-29 (SI) - Wellbore #1 - Gyro Surveys	2,000.00	1,924.77	5,367.52	5,354.20	403.044	ES
Capehart 42-29 (SI) - Wellbore #1 - Gyro Surveys	12,200.00	6,818.17	7,325.03	7,258.15	109.520	SF
Miller 15-29 (PR) - Wellbore #1 - Gyro Surveys	11,819.43	7,125.00	5,207.64	5,134.25	70.967	CC, ES
Miller 15-29 (PR) - Wellbore #1 - Gyro Surveys	13,000.00	7,125.00	5,339.78	5,261.61	68.315	SF
Miller 16-29 (SI) - Wellbore #1 - Gyro Surveys	12,099.27	6,745.60	3,715.54	3,642.78	51.070	CC
Miller 16-29 (SI) - Wellbore #1 - Gyro Surveys	12,100.00	6,745.62	3,715.54	3,642.78	51.068	ES
Miller 16-29 (SI) - Wellbore #1 - Gyro Surveys	12,600.00	6,763.67	3,749.08	3,674.68	50.386	SF
Miller 33-29 (SI) - Wellbore #1 - Gyro Surveys	1,337.96	1,247.01	5,013.72	5,005.08	580.080	CC
Miller 33-29 (SI) - Wellbore #1 - Gyro Surveys	2,000.00	1,898.47	5,016.28	5,003.05	379.155	ES
Miller 33-29 (SI) - Wellbore #1 - Gyro Surveys	12,200.00	6,813.91	5,447.13	5,377.47	78.199	SF
Miller 43-29 (SI) - Wellbore #1 - Gyro Surveys	10,943.64	6,886.53	3,896.86	3,831.32	59.460	CC, ES
Miller 43-29 (SI) - Wellbore #1 - Gyro Surveys	11,500.00	6,879.76	3,936.37	3,869.12	58.537	SF
Rhine 15-29 (PR) - Wellbore #1 - Gyro Surveys	11,888.67	6,615.59	5,306.48	5,235.96	75.246	CC
Rhine 15-29 (PR) - Wellbore #1 - Gyro Surveys	11,900.00	6,614.99	5,306.49	5,235.92	75.194	ES
Rhine 15-29 (PR) - Wellbore #1 - Gyro Surveys	13,000.00	6,561.41	5,421.24	5,346.65	72.683	SF
Uhrich 1 (SI) - Wellbore #1 - Gyro Surveys	1,605.85	1,524.88	7,719.16	7,708.62	732.063	CC
Uhrich 1 (SI) - Wellbore #1 - Gyro Surveys	2,003.51	1,928.23	7,719.80	7,706.47	578.906	ES
Uhrich 1 (SI) - Wellbore #1 - Gyro Surveys	14,900.00	6,775.67	8,435.50	8,349.62	98.222	SF
Uhrich 13-29 (PR) - Wellbore #1 - Gyro Surveys	223.36	144.37	6,970.87	6,969.98	7,848.128	CC
Uhrich 13-29 (PR) - Wellbore #1 - Gyro Surveys	400.00	305.27	6,971.14	6,969.08	3,368.954	ES
Uhrich 13-29 (PR) - Wellbore #1 - Gyro Surveys	14,100.00	6,844.50	8,666.29	8,587.39	109.843	SF
Uhrich 14-29 (SI) - Wellbore #1 - Gyro Surveys	12,216.24	6,586.67	6,437.40	6,364.67	88.514	CC, ES
Uhrich 14-29 (SI) - Wellbore #1 - Gyro Surveys	14,000.00	6,521.85	6,679.57	6,599.50	83.420	SF
Uhrich 19-29 (SI) - Wellbore #1 - Gyro Surveys	100.00	9.01	6,795.36	6,795.23	10,000.000	CC
Uhrich 19-29 (SI) - Wellbore #1 - Gyro Surveys	1,800.00	1,669.18	6,800.63	6,788.90	579.825	ES
Uhrich 19-29 (SI) - Wellbore #1 - Gyro Surveys	13,900.00	6,765.48	7,451.84	7,372.34	93.732	SF
Uhrich 23-29 (SI) - Wellbore #1 - Gyro Surveys	357.38	265.25	5,911.77	5,909.99	3,324.272	CC
Uhrich 23-29 (SI) - Wellbore #1 - Gyro Surveys	400.00	300.00	5,911.89	5,909.84	2,886.434	ES
Uhrich 23-29 (SI) - Wellbore #1 - Gyro Surveys	13,100.00	6,810.85	6,688.33	6,613.79	89.722	SF

CC - Min centre to center distance or covergent 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 Rampart A33-740
Project:	Wells Ranch	**TVD Reference:**	Well @ 4757.00ft
Reference Site:	A Section 21	**MD Reference:**	Well @ 4757.00ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Rampart A33-740	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Rampart A33-740	**Database:**	EDMP
Reference Design:	APD-Rev 0	**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 32						
Ehrlich 13-32 (PR) - Wellbore #1 - Gyro Surveys	15,952.24	7,016.86	7,958.47	7,854.97	76.892	CC
Ehrlich 13-32 (PR) - Wellbore #1 - Gyro Surveys	16,000.00	7,019.62	7,958.61	7,854.81	76.672	ES
Ehrlich 13-32 (PR) - Wellbore #1 - Gyro Surveys	17,515.21	7,107.13	8,109.99	7,998.09	72.476	SF
Ehrlich 14-32 (TA) - Wellbore #1 - Gyro Surveys	17,321.53	6,988.35	7,854.57	7,740.25	68.710	CC
Ehrlich 14-32 (TA) - Wellbore #1 - Gyro Surveys	17,400.00	6,986.69	7,854.96	7,740.17	68.432	ES
Ehrlich 14-32 (TA) - Wellbore #1 - Gyro Surveys	17,515.21	6,984.26	7,856.95	7,741.49	68.048	SF
Farmland 10-32 (SI) - Wellbore #1 - Gyro Surveys	16,150.83	6,849.79	5,291.18	5,186.87	50.725	CC
Farmland 10-32 (SI) - Wellbore #1 - Gyro Surveys	16,200.00	6,849.57	5,291.41	5,186.85	50.605	ES
Farmland 10-32 (SI) - Wellbore #1 - Gyro Surveys	17,000.00	6,845.92	5,358.89	5,251.11	49.721	SF
Farmland 16-32 (SI) - Wellbore #1 - Gyro Surveys	17,380.60	6,781.40	3,923.18	3,809.62	34.547	CC
Farmland 16-32 (SI) - Wellbore #1 - Gyro Surveys	17,400.00	6,781.46	3,923.23	3,809.58	34.522	ES
Farmland 16-32 (SI) - Wellbore #1 - Gyro Surveys	17,515.21	6,781.83	3,925.49	3,811.39	34.405	SF
Hoffner 1 (PR) - Wellbore #1 - Gyro Surveys	13,410.38	6,743.71	5,269.41	5,186.84	63.821	CC, ES
Hoffner 1 (PR) - Wellbore #1 - Gyro Surveys	14,400.00	6,726.97	5,361.51	5,275.02	61.996	SF
Hoffner 32-32 (SI) - Wellbore #1 - Gyro Surveys	14,745.97	6,748.50	5,283.74	5,190.85	56.883	CC, ES
Hoffner 32-32 (SI) - Wellbore #1 - Gyro Surveys	15,700.00	6,745.43	5,369.18	5,272.44	55.502	SF
Johnson 5-32 (PR) - Wellbore #1 - Gyro Surveys	15,041.86	6,941.99	7,653.77	7,558.03	79.947	CC
Johnson 5-32 (PR) - Wellbore #1 - Gyro Surveys	15,100.00	6,943.49	7,653.99	7,557.90	79.660	ES
Johnson 5-32 (PR) - Wellbore #1 - Gyro Surveys	17,100.00	6,995.11	7,925.48	7,819.79	74.989	SF
Johnson A 32-06 (PR) - Wellbore #1 - Gyro Surveys	14,908.07	6,879.67	6,412.27	6,317.63	67.754	CC, ES
Johnson A 32-06 (PR) - Wellbore #1 - Gyro Surveys	16,300.00	6,882.32	6,561.60	6,460.68	65.015	SF
Larsen 1 (PR) - Wellbore #1 - Gyro Surveys	13,455.22	6,775.56	3,973.75	3,890.65	47.817	CC, ES
Larsen 1 (PR) - Wellbore #1 - Gyro Surveys	13,900.00	6,773.42	3,998.56	3,913.95	47.257	SF
Larsen 2 (PR) - Wellbore #1 - Gyro Surveys	14,676.58	6,782.95	3,986.83	3,894.25	43.067	CC
Larsen 2 (PR) - Wellbore #1 - Gyro Surveys	14,700.00	6,782.90	3,986.90	3,894.23	43.022	ES
Larsen 2 (PR) - Wellbore #1 - Gyro Surveys	15,100.00	6,782.04	4,009.25	3,915.22	42.639	SF
Larson A32-17 (PR) - Wellbore #1 - MWD Surveys	13,982.11	6,784.82	4,393.28	4,306.33	50.528	CC
Larson A32-17 (PR) - Wellbore #1 - MWD Surveys	14,000.00	6,784.27	4,393.31	4,306.29	50.484	ES
Larson A32-17 (PR) - Wellbore #1 - MWD Surveys	14,600.00	6,766.15	4,436.48	4,347.41	49.814	SF
QC USX A32-19 (PR) - Wellbore #1 - MWD Surveys	14,013.11	6,765.62	6,973.10	6,885.76	79.836	CC, ES
QC USX A32-19 (PR) - Wellbore #1 - MWD Surveys	15,900.00	6,792.26	7,223.83	7,127.71	75.152	SF
Rubix A 32-03 (PR) - Wellbore #1 - Gyro Surveys	13,215.63	6,743.01	6,490.47	6,409.53	80.189	CC, ES
Rubix A 32-03 (PR) - Wellbore #1 - Gyro Surveys	14,900.00	6,763.19	6,705.44	6,617.00	75.818	SF
Rubix A 32-04 (SI) - Wellbore #1 - No Surveys	13,221.77	6,801.00	7,824.45	7,630.53	40.349	CC
Rubix A 32-04 (SI) - Wellbore #1 - No Surveys	13,300.00	6,801.00	7,824.84	7,630.47	40.258	ES
Rubix A 32-04 (SI) - Wellbore #1 - No Surveys	14,700.00	6,801.00	7,962.86	7,761.25	39.495	SF
Webster 11-32 (PR) - Wellbore #1 - Gyro Surveys	15,931.34	6,821.68	6,361.70	6,259.19	62.061	CC
Webster 11-32 (PR) - Wellbore #1 - Gyro Surveys	16,000.00	6,821.99	6,362.07	6,259.18	61.833	ES
Webster 11-32 (PR) - Wellbore #1 - Gyro Surveys	17,200.00	6,827.42	6,486.96	6,378.72	59.932	SF
Webster 14-32 (TA) - Wellbore #1 - Gyro Surveys	17,515.21	6,727.84	6,589.24	6,476.38	58.383	CC, ES, SF
Webster 15-32 (PR) - Wellbore #1 - Gyro Surveys	17,318.88	6,804.35	5,181.50	5,067.98	45.644	CC, ES
Webster 15-32 (PR) - Wellbore #1 - Gyro Surveys	17,515.21	6,806.12	5,185.21	5,070.72	45.289	SF
Webster 9-32 (SI) - Wellbore #1 - Gyro Surveys	15,979.90	6,701.66	3,964.27	3,862.10	38.801	CC
Webster 9-32 (SI) - Wellbore #1 - Gyro Surveys	16,000.00	6,701.88	3,964.32	3,862.07	38.769	ES
Webster 9-32 (SI) - Wellbore #1 - Gyro Surveys	16,400.00	6,706.48	3,986.47	3,882.86	38.477	SF

Noble Energy, Inc.

Anticollision Summary Report

Company:	Northern Region - DJ Basin	**Local Co-ordinate Reference:**	Well Rampart A33-740
Project:	Wells Ranch	**TVD Reference:**	Well @ 4757.00ft
Reference Site:	A Section 21	**MD Reference:**	Well @ 4757.00ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Rampart A33-740	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Rampart A33-740	**Database:**	EDMP
Reference Design:	APD-Rev 0	**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 33						
Achziger 11-33 (PR) - Wellbore #1 - Gyro Surveys	15,900.00	6,791.10	1,114.91	1,012.27	10.863	SF
Achziger 11-33 (PR) - Wellbore #1 - Gyro Surveys	15,916.64	6,791.55	1,114.78	1,012.21	10.868	CC, ES
Achziger 14-33 (PA) - Wellbore #1 - No Surveys	17,515.21	6,761.00	1,354.98	1,128.25	5.976	CC, ES, SF
Briggs 15-33 (SI) - Wellbore #1 - Gyro Surveys	17,328.83	6,768.75	39.70	-74.12	0.349	Level 1, CC, ES, SF
Ehrlich 19-33 (PR) - Wellbore #1 - Gyro Survey	16,745.49	6,772.69	2,141.38	2,032.69	19.702	CC, ES
Ehrlich 19-33 (PR) - Wellbore #1 - Gyro Survey	16,800.00	6,772.97	2,142.07	2,033.34	19.700	SF
French 09-33 - Original Drilling - Original Drilling - As Dril	16,007.28	6,793.29	1,318.46	1,215.77	12.838	CC, ES
French 09-33 - Original Drilling - Original Drilling - As Dril	16,200.00	6,790.46	1,332.47	1,226.90	12.622	SF
Hammerbeck 16-33 - Original Drilling - Original Drilling -	17,424.03	6,799.41	1,372.13	1,258.29	12.052	CC, ES
Hammerbeck 16-33 - Original Drilling - Original Drilling -	17,515.21	6,799.98	1,375.16	1,259.81	11.922	SF
Hammerbeck 20-33 - Wellbore #1 - Gyro Surveys	16,695.15	6,779.06	611.43	503.51	5.665	CC
Hammerbeck 20-33 - Wellbore #1 - Gyro Surveys	16,700.00	6,779.00	611.45	503.37	5.658	ES
Hammerbeck 20-33 - Wellbore #1 - Gyro Surveys	16,800.00	6,777.78	620.35	510.23	5.633	SF
Noffsinger 11-33 (PR) - Wellbore #1 - Gyro Surveys	13,248.65	6,807.86	2,748.75	2,666.93	33.598	CC, ES
Noffsinger 11-33 (PR) - Wellbore #1 - Gyro Surveys	13,400.00	6,808.88	2,752.91	2,670.77	33.514	SF
Noffsinger 12-33 (PR) - Wellbore #1 - Gyro Surveys	14,979.81	6,799.28	2,563.64	2,468.80	27.033	CC, ES
Noffsinger 12-33 (PR) - Wellbore #1 - Gyro Surveys	15,100.00	6,799.14	2,566.45	2,471.41	27.002	SF
Noffsinger 21-33 (PA) - Wellbore #1 - No Surveys	13,200.00	6,801.00	1,323.37	1,129.59	6.829	SF
Noffsinger 21-33 (PA) - Wellbore #1 - No Surveys	13,227.71	6,801.00	1,323.08	1,129.37	6.830	CC, ES
Noffsinger 22-33 (PR) - Wellbore #1 - Gyro Surveys	13,201.77	6,480.47	218.52	138.12	2.718	CC, ES, SF
Noffsinger 31-33 (PR) - Wellbore #1 - Gyro Surveys						Out of range
Noffsinger 32-33 (PR) - Wellbore #1 - Gyro Surveys	15,000.00	6,783.97	125.68	29.09	1.301	Level 3, ES, SF
Noffsinger 32-33 (PR) - Wellbore #1 - Gyro Surveys	15,012.52	6,784.22	125.06	29.41	1.307	Level 3, CC
Sitzman 12-33 (PR) - Wellbore #1 - Gyro Surveys	16,061.89	6,784.98	2,702.77	2,599.50	26.172	CC, ES
Sitzman 12-33 (PR) - Wellbore #1 - Gyro Surveys	16,200.00	6,784.82	2,706.30	2,602.75	26.137	SF
Sitzman 13-33 (SI) - Wellbore #1 - Gyro Surveys	17,515.21	6,761.40	2,706.57	2,591.28	23.477	CC, ES, SF
Sughroue 41-33 - Original Drilling - Original Drilling - As D	13,241.25	6,865.68	1,379.44	1,298.48	17.038	CC, ES
Sughroue 41-33 - Original Drilling - Original Drilling - As D	13,500.00	6,853.37	1,403.45	1,318.66	16.553	SF
Webster 10-33 (PA) - Wellbore #1 - Gyro Surveys	15,970.79	6,765.87	20.79	-82.01	0.202	Level 1, CC, ES, SF

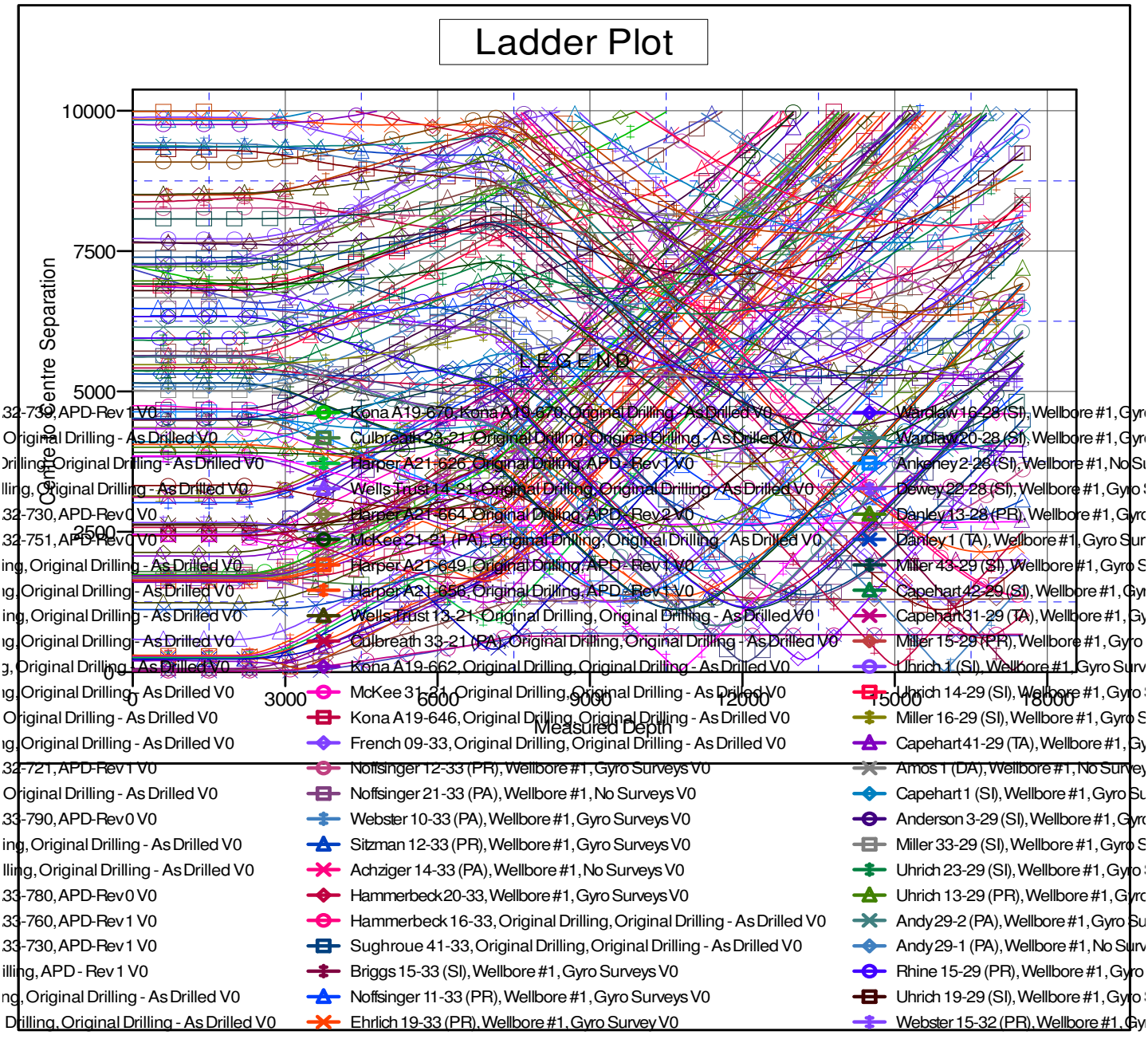
Noble Energy, Inc.

Anticollision Summary Report

Company:	Northern Region - DJ Basin	**Local Co-ordinate Reference:**	Well Rampart A33-740
Project:	Wells Ranch	**TVD Reference:**	Well @ 4757.00ft
Reference Site:	A Section 21	**MD Reference:**	Well @ 4757.00ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Rampart A33-740	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Rampart A33-740	**Database:**	EDMP
Reference Design:	APD-Rev 0	**Offset TVD Reference:**	Offset Datum

Reference Depths are relative to Well @ 4757.00ft
Offset Depths are relative to Offset Datum
Central Meridian is -105.5000000

Coordinates are relative to: Rampart A33-740
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 0.61°



CC - Min centre to center distance or covergent 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 Rampart A33-740
Project:	Wells Ranch	**TVD Reference:**	Well @ 4757.00ft
Reference Site:	A Section 21	**MD Reference:**	Well @ 4757.00ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Rampart A33-740	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Rampart A33-740	**Database:**	EDMP
Reference Design:	APD-Rev 0	**Offset TVD Reference:**	Offset Datum

Reference Depths are relative to Well @ 4757.00ft	Coordinates are relative to: Rampart A33-740
Offset Depths are relative to Offset Datum	Coordinate System is US State Plane 1983, Colorado Northern Zone
Central Meridian is -105.5000000	Grid Convergence at Surface is: 0.61°