

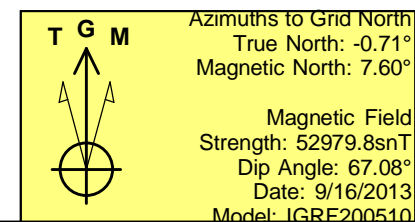
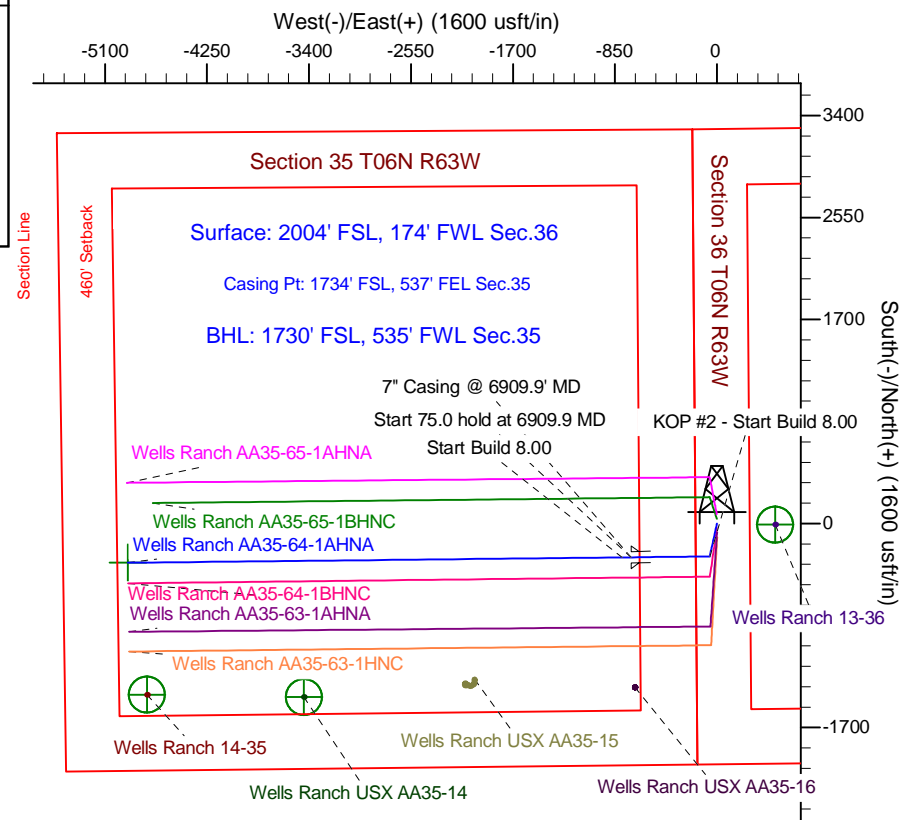
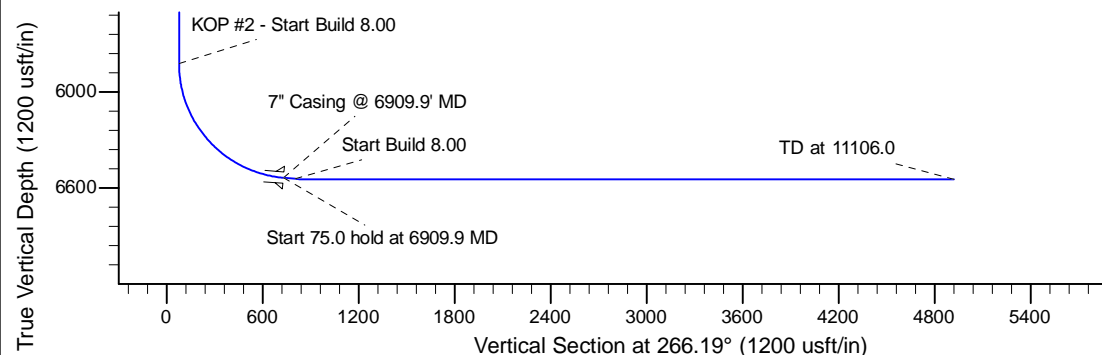
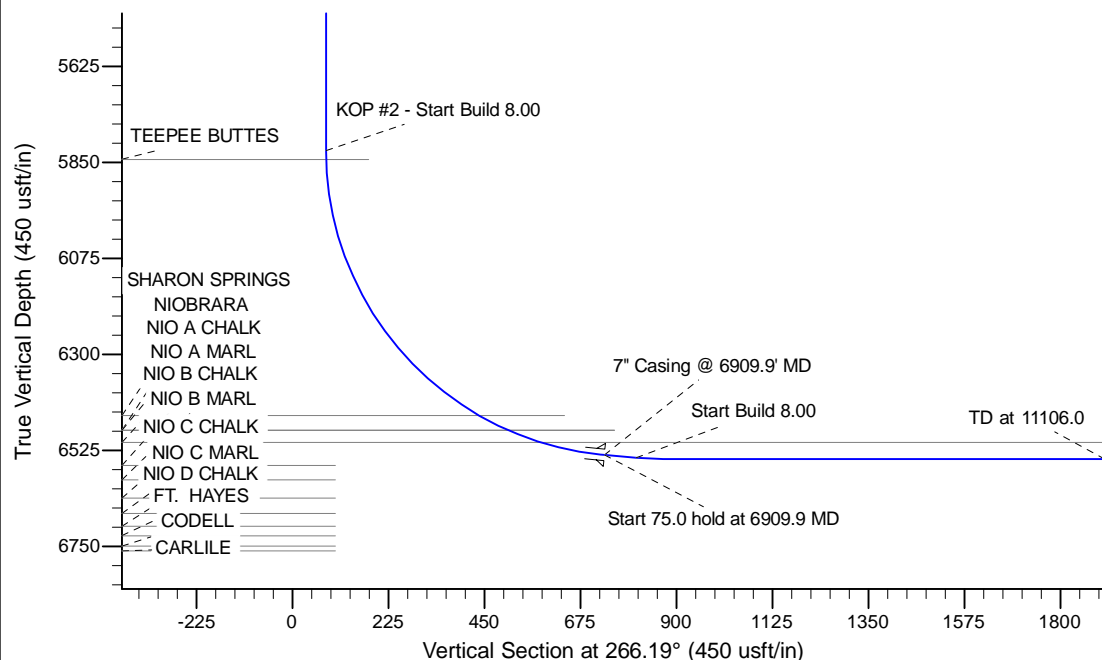
Project: Wattenberg Field
 Site: AA (Sec.36-T06N-R63W) Weld County, CO
 Well: Wells Ranch AA35-64-1AHNA
 Wellbore: Original Drilling
 Design: APD - Rev 0

Northern Region Drilling - Working

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	VFace	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	1800.0	0.00	0.00	1800.0	0.0	0.0	0.00	0.00	0.0	
3	2401.5	12.03	192.35	2397.0	-61.4	-13.5	2.00	192.35	17.5	
4	3143.7	12.03	192.35	3123.0	-212.6	-46.5	0.00	0.00	60.6	
5	3745.1	0.00	0.00	3720.0	-274.0	-60.0	2.00	180.00	78.1	
6	5847.4	0.00	0.00	5822.3	-274.0	-60.0	0.00	0.00	78.1	
7	6909.9	85.00	269.38	6535.7	-281.1	-713.7	8.00	269.38	730.8	
8	6984.9	85.00	269.38	6542.3	-281.9	-788.4	0.00	0.00	805.4	
9	7047.4	90.00	269.38	6545.0	-282.6	-850.9	8.00	0.00	867.8	
10	11106.0	90.00	269.38	6545.0	-326.7	-4909.3	0.00	0.00	4920.1	Wells Ranch AA35-64-1AHNA BHL 1730'FSL, 535'FWL



WELL DETAILS: Wells Ranch AA35-64-1AHNA

	Ground Level: 4773.0		
0.0	0.0	1405459.77	3307809.80
		40.441120	-104.394100

Plan: APD - Rev 0 (Wells Ranch AA35-64-1AHNA/Original Drilling)

Created By: Shailey Jewell Date: 13:23, September 16 2013
 Checked: _____ Date: _____
 Reviewed: _____ Date: _____
 Approved: _____ Date: _____

Northern Region Drilling - Working

Wattenberg Field

AA (06N-63W)

Wells Ranch AA35-64-1AHNA

Original Drilling

Plan: APD - Rev 0

Standard Planning Report

16 September, 2013

Noble Energy Inc

Planning Report

Database:	EDM Production	Local Co-ordinate Reference:	Well Wells Ranch AA35-64-1AHNA
Company:	Northern Region Drilling - Working	TVD Reference:	WELL @ 4797.0usft (Original Well Elev)
Project:	Wattenberg Field	MD Reference:	WELL @ 4797.0usft (Original Well Elev)
Site:	AA (06N-63W)	North Reference:	Grid
Well:	Wells Ranch AA35-64-1AHNA	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Drilling		
Design:	APD - Rev 0		

Project	Wattenberg Field, Weld County CO		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Northern Zone		Using geodetic scale factor

Site		AA (06N-63W)			
Site Position:		Northing:	1,427,844.88 usft	Latitude:	40.502740
From:	Lat/Long	Easting:	3,302,558.01 usft	Longitude:	-104.411980
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.70 °

Well	Wells Ranch AA35-64-1AHNA					
Well Position	+N/-S	-22,385.9 usft	Northing:	1,405,459.77 usft	Latitude:	40.441120
	+E/-W	5,252.0 usft	Easting:	3,307,809.81 usft	Longitude:	-104.394100
Position Uncertainty		0.0 usft	Wellhead Elevation:		Ground Level:	4,773.0 usft

Wellbore	Original Drilling				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	9/16/2013	8.31	67.08	52,980

Design	APD - Rev 0			
Audit Notes:				
Version:	Phase:	PROTOTYPE	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.0	0.0	0.0	266.19

Plan Sections										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,800.0	0.00	0.00	1,800.0	0.0	0.0	0.00	0.00	0.00	0.00	
2,401.5	12.03	192.35	2,397.0	-61.4	-13.5	2.00	2.00	0.00	192.35	
3,143.7	12.03	192.35	3,123.0	-212.6	-46.5	0.00	0.00	0.00	0.00	
3,745.1	0.00	0.00	3,720.0	-274.0	-60.0	2.00	-2.00	0.00	180.00	
5,847.4	0.00	0.00	5,822.3	-274.0	-60.0	0.00	0.00	0.00	0.00	
6,909.9	85.00	269.38	6,535.7	-281.1	-713.7	8.00	8.00	0.00	269.38	
6,984.9	85.00	269.38	6,542.3	-281.9	-788.4	0.00	0.00	0.00	0.00	
7,047.4	90.00	269.38	6,545.0	-282.6	-850.9	8.00	8.00	0.00	0.00	
11,106.0	90.00	269.38	6,545.0	-326.7	-4,909.3	0.00	0.00	0.00	0.00	Wells Ranch AA35-64

Noble Energy Inc

Planning Report

Database:	EDM Production	Local Co-ordinate Reference:	Well Wells Ranch AA35-64-1AHNA
Company:	Northern Region Drilling - Working	TVD Reference:	WELL @ 4797.0usft (Original Well Elev)
Project:	Wattenberg Field	MD Reference:	WELL @ 4797.0usft (Original Well Elev)
Site:	AA (06N-63W)	North Reference:	Grid
Well:	Wells Ranch AA35-64-1AHNA	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Drilling		
Design:	APD - Rev 0		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
50.0	0.00	0.00	50.0	0.0	0.0	0.0	0.00	0.00	0.00
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	0.00
150.0	0.00	0.00	150.0	0.0	0.0	0.0	0.00	0.00	0.00
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	0.00
250.0	0.00	0.00	250.0	0.0	0.0	0.0	0.00	0.00	0.00
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	0.00
350.0	0.00	0.00	350.0	0.0	0.0	0.0	0.00	0.00	0.00
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	0.00
450.0	0.00	0.00	450.0	0.0	0.0	0.0	0.00	0.00	0.00
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	0.00
550.0	0.00	0.00	550.0	0.0	0.0	0.0	0.00	0.00	0.00
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	0.00
650.0	0.00	0.00	650.0	0.0	0.0	0.0	0.00	0.00	0.00
700.0	0.00	0.00	700.0	0.0	0.0	0.0	0.00	0.00	0.00
750.0	0.00	0.00	750.0	0.0	0.0	0.0	0.00	0.00	0.00
800.0	0.00	0.00	800.0	0.0	0.0	0.0	0.00	0.00	0.00
850.0	0.00	0.00	850.0	0.0	0.0	0.0	0.00	0.00	0.00
900.0	0.00	0.00	900.0	0.0	0.0	0.0	0.00	0.00	0.00
950.0	0.00	0.00	950.0	0.0	0.0	0.0	0.00	0.00	0.00
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.0	0.00	0.00	0.00
1,050.0	0.00	0.00	1,050.0	0.0	0.0	0.0	0.00	0.00	0.00
1,100.0	0.00	0.00	1,100.0	0.0	0.0	0.0	0.00	0.00	0.00
1,150.0	0.00	0.00	1,150.0	0.0	0.0	0.0	0.00	0.00	0.00
1,200.0	0.00	0.00	1,200.0	0.0	0.0	0.0	0.00	0.00	0.00
1,250.0	0.00	0.00	1,250.0	0.0	0.0	0.0	0.00	0.00	0.00
1,300.0	0.00	0.00	1,300.0	0.0	0.0	0.0	0.00	0.00	0.00
1,350.0	0.00	0.00	1,350.0	0.0	0.0	0.0	0.00	0.00	0.00
1,400.0	0.00	0.00	1,400.0	0.0	0.0	0.0	0.00	0.00	0.00
1,450.0	0.00	0.00	1,450.0	0.0	0.0	0.0	0.00	0.00	0.00
1,500.0	0.00	0.00	1,500.0	0.0	0.0	0.0	0.00	0.00	0.00
1,550.0	0.00	0.00	1,550.0	0.0	0.0	0.0	0.00	0.00	0.00
1,600.0	0.00	0.00	1,600.0	0.0	0.0	0.0	0.00	0.00	0.00
1,650.0	0.00	0.00	1,650.0	0.0	0.0	0.0	0.00	0.00	0.00
1,700.0	0.00	0.00	1,700.0	0.0	0.0	0.0	0.00	0.00	0.00
1,750.0	0.00	0.00	1,750.0	0.0	0.0	0.0	0.00	0.00	0.00
1,800.0	0.00	0.00	1,800.0	0.0	0.0	0.0	0.00	0.00	0.00
KOP - Start Build 2.00									
1,850.0	1.00	192.35	1,850.0	-0.4	-0.1	0.1	2.00	2.00	0.00
1,900.0	2.00	192.35	1,900.0	-1.7	-0.4	0.5	2.00	2.00	0.00
1,950.0	3.00	192.35	1,949.9	-3.8	-0.8	1.1	2.00	2.00	0.00
2,000.0	4.00	192.35	1,999.8	-6.8	-1.5	1.9	2.00	2.00	0.00
2,050.0	5.00	192.35	2,049.7	-10.6	-2.3	3.0	2.00	2.00	0.00
2,100.0	6.00	192.35	2,099.5	-15.3	-3.4	4.4	2.00	2.00	0.00
2,150.0	7.00	192.35	2,149.1	-20.9	-4.6	5.9	2.00	2.00	0.00
2,200.0	8.00	192.35	2,198.7	-27.2	-6.0	7.8	2.00	2.00	0.00
2,250.0	9.00	192.35	2,248.2	-34.5	-7.5	9.8	2.00	2.00	0.00
2,300.0	10.00	192.35	2,297.5	-42.5	-9.3	12.1	2.00	2.00	0.00
2,350.0	11.00	192.35	2,346.6	-51.4	-11.3	14.6	2.00	2.00	0.00
2,400.0	12.00	192.35	2,395.6	-61.2	-13.4	17.4	2.00	2.00	0.00
2,401.5	12.03	192.35	2,397.0	-61.4	-13.5	17.5	2.00	2.00	0.00
2,450.0	12.03	192.35	2,444.5	-71.3	-15.6	20.3	0.00	0.00	0.00
2,468.9	12.03	192.35	2,463.0	-75.2	-16.5	21.4	0.00	0.00	0.00
PIERRE									

Noble Energy Inc

Planning Report

Database:	EDM Production	Local Co-ordinate Reference:	Well Wells Ranch AA35-64-1AHNA
Company:	Northern Region Drilling - Working	TVD Reference:	WELL @ 4797.0usft (Original Well Elev)
Project:	Wattenberg Field	MD Reference:	WELL @ 4797.0usft (Original Well Elev)
Site:	AA (06N-63W)	North Reference:	Grid
Well:	Wells Ranch AA35-64-1AHNA	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Drilling		
Design:	APD - Rev 0		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
2,500.0	12.03	192.35	2,493.4	-81.5	-17.8	23.2	0.00	0.00	0.00
2,550.0	12.03	192.35	2,542.3	-91.7	-20.1	26.1	0.00	0.00	0.00
2,600.0	12.03	192.35	2,591.2	-101.9	-22.3	29.0	0.00	0.00	0.00
2,650.0	12.03	192.35	2,640.1	-112.0	-24.5	31.9	0.00	0.00	0.00
2,700.0	12.03	192.35	2,689.0	-122.2	-26.8	34.8	0.00	0.00	0.00
2,750.0	12.03	192.35	2,737.9	-132.4	-29.0	37.7	0.00	0.00	0.00
2,800.0	12.03	192.35	2,786.8	-142.6	-31.2	40.6	0.00	0.00	0.00
2,850.0	12.03	192.35	2,835.7	-152.8	-33.5	43.5	0.00	0.00	0.00
2,900.0	12.03	192.35	2,884.6	-162.9	-35.7	46.4	0.00	0.00	0.00
2,950.0	12.03	192.35	2,933.5	-173.1	-37.9	49.3	0.00	0.00	0.00
3,000.0	12.03	192.35	2,982.4	-183.3	-40.1	52.2	0.00	0.00	0.00
3,050.0	12.03	192.35	3,031.4	-193.5	-42.4	55.1	0.00	0.00	0.00
3,100.0	12.03	192.35	3,080.3	-203.7	-44.6	58.0	0.00	0.00	0.00
3,143.7	12.03	192.35	3,123.0	-212.6	-46.5	60.6	0.00	0.00	0.00
Start Drop -2.00									
3,150.0	11.90	192.35	3,129.2	-213.8	-46.8	60.9	2.01	-2.01	0.00
3,200.0	10.90	192.35	3,178.2	-223.5	-48.9	63.7	2.00	-2.00	0.00
3,250.0	9.90	192.35	3,227.3	-232.3	-50.9	66.2	2.00	-2.00	0.00
3,300.0	8.90	192.35	3,276.7	-240.3	-52.6	68.5	2.00	-2.00	0.00
3,350.0	7.90	192.35	3,326.1	-247.4	-54.2	70.5	2.00	-2.00	0.00
3,400.0	6.90	192.35	3,375.7	-253.7	-55.6	72.3	2.00	-2.00	0.00
3,450.0	5.90	192.35	3,425.4	-259.2	-56.8	73.8	2.00	-2.00	0.00
3,500.0	4.90	192.35	3,475.2	-263.8	-57.8	75.1	2.00	-2.00	0.00
3,550.0	3.90	192.35	3,525.0	-267.5	-58.6	76.2	2.00	-2.00	0.00
3,600.0	2.90	192.35	3,574.9	-270.4	-59.2	77.0	2.00	-2.00	0.00
3,617.1	2.56	192.35	3,592.0	-271.2	-59.4	77.3	2.00	-2.00	0.00
PARKMAN									
3,650.0	1.90	192.35	3,624.9	-272.5	-59.7	77.6	2.00	-2.00	0.00
3,700.0	0.90	192.35	3,674.9	-273.7	-59.9	78.0	2.00	-2.00	0.00
3,745.1	0.00	0.00	3,720.0	-274.0	-60.0	78.1	2.00	-2.00	0.00
3,750.0	0.00	0.00	3,724.9	-274.0	-60.0	78.1	0.00	0.00	0.00
3,800.0	0.00	0.00	3,774.9	-274.0	-60.0	78.1	0.00	0.00	0.00
3,850.0	0.00	0.00	3,824.9	-274.0	-60.0	78.1	0.00	0.00	0.00
3,900.0	0.00	0.00	3,874.9	-274.0	-60.0	78.1	0.00	0.00	0.00
3,950.0	0.00	0.00	3,924.9	-274.0	-60.0	78.1	0.00	0.00	0.00
4,000.0	0.00	0.00	3,974.9	-274.0	-60.0	78.1	0.00	0.00	0.00
4,050.0	0.00	0.00	4,024.9	-274.0	-60.0	78.1	0.00	0.00	0.00
4,100.0	0.00	0.00	4,074.9	-274.0	-60.0	78.1	0.00	0.00	0.00
4,150.0	0.00	0.00	4,124.9	-274.0	-60.0	78.1	0.00	0.00	0.00
4,200.0	0.00	0.00	4,174.9	-274.0	-60.0	78.1	0.00	0.00	0.00
4,250.0	0.00	0.00	4,224.9	-274.0	-60.0	78.1	0.00	0.00	0.00
4,300.0	0.00	0.00	4,274.9	-274.0	-60.0	78.1	0.00	0.00	0.00
4,328.1	0.00	0.00	4,303.0	-274.0	-60.0	78.1	0.00	0.00	0.00
SUSSEX									
4,350.0	0.00	0.00	4,324.9	-274.0	-60.0	78.1	0.00	0.00	0.00
4,400.0	0.00	0.00	4,374.9	-274.0	-60.0	78.1	0.00	0.00	0.00
4,450.0	0.00	0.00	4,424.9	-274.0	-60.0	78.1	0.00	0.00	0.00
4,500.0	0.00	0.00	4,474.9	-274.0	-60.0	78.1	0.00	0.00	0.00
4,550.0	0.00	0.00	4,524.9	-274.0	-60.0	78.1	0.00	0.00	0.00
4,600.0	0.00	0.00	4,574.9	-274.0	-60.0	78.1	0.00	0.00	0.00
4,650.0	0.00	0.00	4,624.9	-274.0	-60.0	78.1	0.00	0.00	0.00
4,700.0	0.00	0.00	4,674.9	-274.0	-60.0	78.1	0.00	0.00	0.00
4,750.0	0.00	0.00	4,724.9	-274.0	-60.0	78.1	0.00	0.00	0.00

Noble Energy Inc

Planning Report

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Company:	Northern Region Drilling - Working	TVD Reference:	WELL @ 4797.0usft (Original Well Elev)
Project:	Wattenberg Field	MD Reference:	WELL @ 4797.0usft (Original Well Elev)
Site:	AA (06N-63W)	North Reference:	Grid
Well:	Wells Ranch AA35-64-1AHNA	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Drilling		
Design:	APD - Rev 0		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
4,800.0	0.00	0.00	4,774.9	-274.0	-60.0	78.1	0.00	0.00	0.00
4,850.0	0.00	0.00	4,824.9	-274.0	-60.0	78.1	0.00	0.00	0.00
4,900.0	0.00	0.00	4,874.9	-274.0	-60.0	78.1	0.00	0.00	0.00
4,920.1	0.00	0.00	4,895.0	-274.0	-60.0	78.1	0.00	0.00	0.00
SHANNON									
4,950.0	0.00	0.00	4,924.9	-274.0	-60.0	78.1	0.00	0.00	0.00
5,000.0	0.00	0.00	4,974.9	-274.0	-60.0	78.1	0.00	0.00	0.00
5,050.0	0.00	0.00	5,024.9	-274.0	-60.0	78.1	0.00	0.00	0.00
5,100.0	0.00	0.00	5,074.9	-274.0	-60.0	78.1	0.00	0.00	0.00
5,150.0	0.00	0.00	5,124.9	-274.0	-60.0	78.1	0.00	0.00	0.00
5,200.0	0.00	0.00	5,174.9	-274.0	-60.0	78.1	0.00	0.00	0.00
5,250.0	0.00	0.00	5,224.9	-274.0	-60.0	78.1	0.00	0.00	0.00
5,300.0	0.00	0.00	5,274.9	-274.0	-60.0	78.1	0.00	0.00	0.00
5,350.0	0.00	0.00	5,324.9	-274.0	-60.0	78.1	0.00	0.00	0.00
5,400.0	0.00	0.00	5,374.9	-274.0	-60.0	78.1	0.00	0.00	0.00
5,450.0	0.00	0.00	5,424.9	-274.0	-60.0	78.1	0.00	0.00	0.00
5,500.0	0.00	0.00	5,474.9	-274.0	-60.0	78.1	0.00	0.00	0.00
5,550.0	0.00	0.00	5,524.9	-274.0	-60.0	78.1	0.00	0.00	0.00
5,600.0	0.00	0.00	5,574.9	-274.0	-60.0	78.1	0.00	0.00	0.00
5,650.0	0.00	0.00	5,624.9	-274.0	-60.0	78.1	0.00	0.00	0.00
5,700.0	0.00	0.00	5,674.9	-274.0	-60.0	78.1	0.00	0.00	0.00
5,750.0	0.00	0.00	5,724.9	-274.0	-60.0	78.1	0.00	0.00	0.00
5,800.0	0.00	0.00	5,774.9	-274.0	-60.0	78.1	0.00	0.00	0.00
5,847.4	0.00	0.00	5,822.3	-274.0	-60.0	78.1	0.00	0.00	0.00
KOP #2 - Start Build 8.00									
5,850.0	0.21	269.38	5,824.9	-274.0	-60.0	78.1	8.06	8.06	0.00
5,868.1	1.66	269.38	5,843.0	-274.0	-60.3	78.4	8.00	8.00	0.00
TEEPEE BUTTES									
5,900.0	4.21	269.38	5,874.8	-274.0	-61.9	80.0	8.00	8.00	0.00
5,950.0	8.21	269.38	5,924.5	-274.1	-67.3	85.4	8.00	8.00	0.00
6,000.0	12.21	269.38	5,973.7	-274.2	-76.2	94.2	8.00	8.00	0.00
6,050.0	16.21	269.38	6,022.2	-274.3	-88.5	106.5	8.00	8.00	0.00
6,100.0	20.21	269.38	6,069.7	-274.5	-104.1	122.1	8.00	8.00	0.00
6,150.0	24.21	269.38	6,116.0	-274.7	-123.0	141.0	8.00	8.00	0.00
6,200.0	28.21	269.38	6,160.8	-274.9	-145.1	163.0	8.00	8.00	0.00
6,250.0	32.21	269.38	6,204.0	-275.2	-170.2	188.1	8.00	8.00	0.00
6,300.0	36.21	269.38	6,245.4	-275.5	-198.3	216.2	8.00	8.00	0.00
6,350.0	40.21	269.38	6,284.6	-275.8	-229.2	247.0	8.00	8.00	0.00
6,400.0	44.21	269.38	6,321.7	-276.2	-262.8	280.6	8.00	8.00	0.00
6,450.0	48.21	269.38	6,356.3	-276.6	-298.9	316.6	8.00	8.00	0.00
6,500.0	52.21	269.38	6,388.2	-277.0	-337.3	355.0	8.00	8.00	0.00
6,550.0	56.21	269.38	6,417.5	-277.5	-377.9	395.4	8.00	8.00	0.00
Wells Ranch 13-36									
6,598.4	60.08	269.38	6,443.0	-277.9	-418.9	436.5	8.00	8.00	0.00
SHARON SPRINGS									
6,600.0	60.21	269.38	6,443.8	-277.9	-420.3	437.9	8.00	8.00	0.00
6,650.0	64.21	269.38	6,467.1	-278.4	-464.6	482.0	8.00	8.00	0.00
6,676.0	66.29	269.38	6,478.0	-278.7	-488.2	505.6	8.00	8.00	0.00
NIOBRARA - NIO A CHALK									
6,700.0	68.21	269.38	6,487.3	-278.9	-510.3	527.7	8.00	8.00	0.00
6,750.0	72.21	269.38	6,504.2	-279.4	-557.3	574.7	8.00	8.00	0.00
6,755.9	72.68	269.38	6,506.0	-279.5	-563.0	580.3	8.00	8.00	0.00
NIO A MARL									

Noble Energy Inc

Planning Report

Database:	EDM Production	Local Co-ordinate Reference:	Well Wells Ranch AA35-64-1AHNA
Company:	Northern Region Drilling - Working	TVD Reference:	WELL @ 4797.0usft (Original Well Elev)
Project:	Wattenberg Field	MD Reference:	WELL @ 4797.0usft (Original Well Elev)
Site:	AA (06N-63W)	North Reference:	Grid
Well:	Wells Ranch AA35-64-1AHNA	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Drilling		
Design:	APD - Rev 0		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
6,800.0	76.21	269.38	6,517.8	-279.9	-605.4	622.7	8.00	8.00	0.00
6,850.0	80.21	269.38	6,528.0	-280.5	-654.4	671.6	8.00	8.00	0.00
6,900.0	84.21	269.38	6,534.8	-281.0	-703.9	721.0	8.00	8.00	0.00
6,909.9	85.00	269.38	6,535.7	-281.1	-713.8	730.8	7.98	7.98	0.00
Start 75.0 hold at 6909.9 MD - 7" Casing @ 6909.9' MD									
6,950.0	85.00	269.38	6,539.2	-281.5	-753.7	770.7	0.00	0.00	0.00
6,984.9	85.00	269.38	6,542.3	-281.9	-788.5	805.4	0.00	0.00	0.00
Start Build 8.00									
7,000.0	86.21	269.38	6,543.4	-282.1	-803.5	820.5	8.01	8.01	0.00
7,047.4	90.00	269.38	6,545.0	-282.6	-850.9	867.8	8.00	8.00	0.00
7,050.0	90.00	269.38	6,545.0	-282.6	-853.5	870.4	0.00	0.00	0.00
7,100.0	90.00	269.38	6,545.0	-283.2	-903.5	920.3	0.00	0.00	0.00
7,150.0	90.00	269.38	6,545.0	-283.7	-953.5	970.2	0.00	0.00	0.00
7,200.0	90.00	269.38	6,545.0	-284.3	-1,003.5	1,020.1	0.00	0.00	0.00
7,250.0	90.00	269.38	6,545.0	-284.8	-1,053.5	1,070.1	0.00	0.00	0.00
7,300.0	90.00	269.38	6,545.0	-285.3	-1,103.5	1,120.0	0.00	0.00	0.00
7,350.0	90.00	269.38	6,545.0	-285.9	-1,153.5	1,169.9	0.00	0.00	0.00
7,400.0	90.00	269.38	6,545.0	-286.4	-1,203.5	1,219.8	0.00	0.00	0.00
7,450.0	90.00	269.38	6,545.0	-287.0	-1,253.5	1,269.7	0.00	0.00	0.00
7,500.0	90.00	269.38	6,545.0	-287.5	-1,303.5	1,319.7	0.00	0.00	0.00
7,550.0	90.00	269.38	6,545.0	-288.1	-1,353.5	1,369.6	0.00	0.00	0.00
7,600.0	90.00	269.38	6,545.0	-288.6	-1,403.5	1,419.5	0.00	0.00	0.00
7,650.0	90.00	269.38	6,545.0	-289.1	-1,453.4	1,469.4	0.00	0.00	0.00
7,700.0	90.00	269.38	6,545.0	-289.7	-1,503.4	1,519.4	0.00	0.00	0.00
7,750.0	90.00	269.38	6,545.0	-290.2	-1,553.4	1,569.3	0.00	0.00	0.00
7,800.0	90.00	269.38	6,545.0	-290.8	-1,603.4	1,619.2	0.00	0.00	0.00
7,850.0	90.00	269.38	6,545.0	-291.3	-1,653.4	1,669.1	0.00	0.00	0.00
7,900.0	90.00	269.38	6,545.0	-291.9	-1,703.4	1,719.1	0.00	0.00	0.00
7,950.0	90.00	269.38	6,545.0	-292.4	-1,753.4	1,769.0	0.00	0.00	0.00
8,000.0	90.00	269.38	6,545.0	-292.9	-1,803.4	1,818.9	0.00	0.00	0.00
8,050.0	90.00	269.38	6,545.0	-293.5	-1,853.4	1,868.8	0.00	0.00	0.00
8,100.0	90.00	269.38	6,545.0	-294.0	-1,903.4	1,918.7	0.00	0.00	0.00
8,150.0	90.00	269.38	6,545.0	-294.6	-1,953.4	1,968.7	0.00	0.00	0.00
8,200.0	90.00	269.38	6,545.0	-295.1	-2,003.4	2,018.6	0.00	0.00	0.00
8,250.0	90.00	269.38	6,545.0	-295.7	-2,053.4	2,068.5	0.00	0.00	0.00
8,300.0	90.00	269.38	6,545.0	-296.2	-2,103.4	2,118.4	0.00	0.00	0.00
8,350.0	90.00	269.38	6,545.0	-296.7	-2,153.4	2,168.4	0.00	0.00	0.00
8,400.0	90.00	269.38	6,545.0	-297.3	-2,203.4	2,218.3	0.00	0.00	0.00
8,450.0	90.00	269.38	6,545.0	-297.8	-2,253.4	2,268.2	0.00	0.00	0.00
8,500.0	90.00	269.38	6,545.0	-298.4	-2,303.4	2,318.1	0.00	0.00	0.00
8,550.0	90.00	269.38	6,545.0	-298.9	-2,353.4	2,368.1	0.00	0.00	0.00
8,600.0	90.00	269.38	6,545.0	-299.5	-2,403.4	2,418.0	0.00	0.00	0.00
8,650.0	90.00	269.38	6,545.0	-300.0	-2,453.4	2,467.9	0.00	0.00	0.00
8,700.0	90.00	269.38	6,545.0	-300.6	-2,503.4	2,517.8	0.00	0.00	0.00
8,750.0	90.00	269.38	6,545.0	-301.1	-2,553.4	2,567.7	0.00	0.00	0.00
8,800.0	90.00	269.38	6,545.0	-301.6	-2,603.4	2,617.7	0.00	0.00	0.00
8,850.0	90.00	269.38	6,545.0	-302.2	-2,653.4	2,667.6	0.00	0.00	0.00
8,900.0	90.00	269.38	6,545.0	-302.7	-2,703.4	2,717.5	0.00	0.00	0.00
8,950.0	90.00	269.38	6,545.0	-303.3	-2,753.4	2,767.4	0.00	0.00	0.00
9,000.0	90.00	269.38	6,545.0	-303.8	-2,803.4	2,817.4	0.00	0.00	0.00
9,050.0	90.00	269.38	6,545.0	-304.4	-2,853.4	2,867.3	0.00	0.00	0.00
9,100.0	90.00	269.38	6,545.0	-304.9	-2,903.4	2,917.2	0.00	0.00	0.00
9,150.0	90.00	269.38	6,545.0	-305.4	-2,953.4	2,967.1	0.00	0.00	0.00
9,200.0	90.00	269.38	6,545.0	-306.0	-3,003.4	3,017.0	0.00	0.00	0.00

Noble Energy Inc

Planning Report

Database:	EDM Production	Local Co-ordinate Reference:	Well Wells Ranch AA35-64-1AHNA
Company:	Northern Region Drilling - Working	TVD Reference:	WELL @ 4797.0usft (Original Well Elev)
Project:	Wattenberg Field	MD Reference:	WELL @ 4797.0usft (Original Well Elev)
Site:	AA (06N-63W)	North Reference:	Grid
Well:	Wells Ranch AA35-64-1AHNA	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Drilling		
Design:	APD - Rev 0		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
9,250.0	90.00	269.38	6,545.0	-306.5	-3,053.4	3,067.0	0.00	0.00	0.00
9,300.0	90.00	269.38	6,545.0	-307.1	-3,103.4	3,116.9	0.00	0.00	0.00
9,350.0	90.00	269.38	6,545.0	-307.6	-3,153.3	3,166.8	0.00	0.00	0.00
9,400.0	90.00	269.38	6,545.0	-308.2	-3,203.3	3,216.7	0.00	0.00	0.00
9,450.0	90.00	269.38	6,545.0	-308.7	-3,253.3	3,266.7	0.00	0.00	0.00
9,500.0	90.00	269.38	6,545.0	-309.2	-3,303.3	3,316.6	0.00	0.00	0.00
9,550.0	90.00	269.38	6,545.0	-309.8	-3,353.3	3,366.5	0.00	0.00	0.00
9,600.0	90.00	269.38	6,545.0	-310.3	-3,403.3	3,416.4	0.00	0.00	0.00
9,650.0	90.00	269.38	6,545.0	-310.9	-3,453.3	3,466.4	0.00	0.00	0.00
9,651.4	90.00	269.38	6,545.0	-310.9	-3,454.7	3,467.7	0.00	0.00	0.00
Wells Ranch USX AA35-14									
9,700.0	90.00	269.38	6,545.0	-311.4	-3,503.3	3,516.3	0.00	0.00	0.00
9,750.0	90.00	269.38	6,545.0	-312.0	-3,553.3	3,566.2	0.00	0.00	0.00
9,800.0	90.00	269.38	6,545.0	-312.5	-3,603.3	3,616.1	0.00	0.00	0.00
9,850.0	90.00	269.38	6,545.0	-313.0	-3,653.3	3,666.0	0.00	0.00	0.00
9,900.0	90.00	269.38	6,545.0	-313.6	-3,703.3	3,716.0	0.00	0.00	0.00
9,950.0	90.00	269.38	6,545.0	-314.1	-3,753.3	3,765.9	0.00	0.00	0.00
10,000.0	90.00	269.38	6,545.0	-314.7	-3,803.3	3,815.8	0.00	0.00	0.00
10,050.0	90.00	269.38	6,545.0	-315.2	-3,853.3	3,865.7	0.00	0.00	0.00
10,100.0	90.00	269.38	6,545.0	-315.8	-3,903.3	3,915.7	0.00	0.00	0.00
10,150.0	90.00	269.38	6,545.0	-316.3	-3,953.3	3,965.6	0.00	0.00	0.00
10,200.0	90.00	269.38	6,545.0	-316.9	-4,003.3	4,015.5	0.00	0.00	0.00
10,250.0	90.00	269.38	6,545.0	-317.4	-4,053.3	4,065.4	0.00	0.00	0.00
10,300.0	90.00	269.38	6,545.0	-317.9	-4,103.3	4,115.3	0.00	0.00	0.00
10,350.0	90.00	269.38	6,545.0	-318.5	-4,153.3	4,165.3	0.00	0.00	0.00
10,400.0	90.00	269.38	6,545.0	-319.0	-4,203.3	4,215.2	0.00	0.00	0.00
10,450.0	90.00	269.38	6,545.0	-319.6	-4,253.3	4,265.1	0.00	0.00	0.00
10,500.0	90.00	269.38	6,545.0	-320.1	-4,303.3	4,315.0	0.00	0.00	0.00
10,550.0	90.00	269.38	6,545.0	-320.7	-4,353.3	4,365.0	0.00	0.00	0.00
10,600.0	90.00	269.38	6,545.0	-321.2	-4,403.3	4,414.9	0.00	0.00	0.00
10,650.0	90.00	269.38	6,545.0	-321.7	-4,453.3	4,464.8	0.00	0.00	0.00
10,700.0	90.00	269.38	6,545.0	-322.3	-4,503.3	4,514.7	0.00	0.00	0.00
10,750.0	90.00	269.38	6,545.0	-322.8	-4,553.3	4,564.7	0.00	0.00	0.00
10,800.0	90.00	269.38	6,545.0	-323.4	-4,603.3	4,614.6	0.00	0.00	0.00
10,850.0	90.00	269.38	6,545.0	-323.9	-4,653.3	4,664.5	0.00	0.00	0.00
10,900.0	90.00	269.38	6,545.0	-324.5	-4,703.3	4,714.4	0.00	0.00	0.00
10,950.0	90.00	269.38	6,545.0	-325.0	-4,753.3	4,764.3	0.00	0.00	0.00
10,959.7	90.00	269.38	6,545.0	-325.1	-4,763.0	4,774.1	0.00	0.00	0.00
Wells Ranch 14-35									
11,000.0	90.00	269.38	6,545.0	-325.5	-4,803.3	4,814.3	0.00	0.00	0.00
11,050.0	90.00	269.38	6,545.0	-326.1	-4,853.2	4,864.2	0.00	0.00	0.00
11,100.0	90.00	269.38	6,545.0	-326.6	-4,903.2	4,914.1	0.00	0.00	0.00
11,106.0	90.00	269.38	6,545.0	-326.7	-4,909.2	4,920.1	0.00	0.00	0.00
TD at 11106.0 - Wells Ranch AA35-64-1AHNA BHL 1730°FSL, 535°FWL									

Noble Energy Inc

Planning Report

Database:	EDM Production	Local Co-ordinate Reference:	Well Wells Ranch AA35-64-1AHNA
Company:	Northern Region Drilling - Working	TVD Reference:	WELL @ 4797.0usft (Original Well Elev)
Project:	Wattenberg Field	MD Reference:	WELL @ 4797.0usft (Original Well Elev)
Site:	AA (06N-63W)	North Reference:	Grid
Well:	Wells Ranch AA35-64-1AHNA	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Drilling		
Design:	APD - Rev 0		

Design Targets									
Target Name									
- hit/miss target	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- Shape	(°)	(°)	(usft)	(usft)	(usft)	(usft)	(usft)		
Wells Ranch AA35-64-1/ - plan hits target center - Point	0.00	0.00	6,545.0	-326.7	-4,909.3	1,405,133.09	3,302,900.72	40.440390	-104.411750
Wells Ranch USX AA35- - plan misses target center by 1203.4usft at 9651.4usft MD (6545.0 TVD, -310.9 N, -3454.7 E) - Circle (radius 150.0)	0.00	0.00	6,946.0	-1,445.4	-3,442.4	1,404,014.43	3,304,367.58	40.437270	-104.406530
Wells Ranch 14-35 - plan misses target center by 1410.6usft at 10959.7usft MD (6545.0 TVD, -325.1 N, -4763.0 E) - Circle (radius 150.0)	0.00	0.00	7,428.0	-1,425.1	-4,751.0	1,404,034.76	3,303,058.96	40.437370	-104.411230
Wells Ranch 13-36 - plan misses target center by 1567.9usft at 6550.0usft MD (6417.5 TVD, -277.5 N, -377.9 E) - Circle (radius 150.0)	0.00	0.00	7,699.0	-8.5	484.5	1,405,451.26	3,308,294.26	40.441080	-104.392360

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")	
6,909.9	6,535.7	7" Casing @ 6909.9' MD	7	8-3/4	

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
2,468.9	2,463.0	PIERRE		0.00		
3,617.1	3,592.0	PARKMAN		0.00		
4,328.1	4,303.0	SUSSEX		0.00		
4,920.1	4,895.0	SHANNON		0.00		
5,868.1	5,843.0	TEEPEE BUTTES		0.00		
6,598.4	6,443.0	SHARON SPRINGS		0.00		
6,676.0	6,478.0	NIOBRARA		0.00		
6,676.0	6,478.0	NIO A CHALK		0.00		
6,755.9	6,506.0	NIO A MARL		0.00		

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
1,800.0	1,800.0	0.0	0.0	KOP - Start Build 2.00	
3,143.7	3,123.0	-212.6	-46.5	Start Drop -2.00	
5,847.4	5,822.3	-274.0	-60.0	KOP #2 - Start Build 8.00	
6,909.9	6,535.7	-281.1	-713.8	Start 75.0 hold at 6909.9 MD	
6,984.9	6,542.3	-281.9	-788.5	Start Build 8.00	
11,106.0	6,545.0	-326.7	-4,909.2	TD at 11106.0	

Northern Region Drilling - Working

Wattenberg Field

AA (06N-63W)

Wells Ranch AA35-64-1AHNA

Original Drilling

APD - Rev 0

Anticollision Summary Report

16 September, 2013

Noble Energy Inc
Anticollision Summary Report

Company:	Northern Region Drilling - Working	Local Co-ordinate Reference:	Well Wells Ranch AA35-64-1AHNA
Project:	Wattenberg Field	TVD Reference:	WELL @ 4797.0usft (Original Well Elev)
Reference Site:	AA (06N-63W)	MD Reference:	WELL @ 4797.0usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Wells Ranch AA35-64-1AHNA	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	Original Drilling	Database:	EDM Production
Reference Design:	APD - Rev 0	Offset TVD Reference:	Offset Datum

Reference	APD - Rev 0		
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	Stations	Error Model:	ISCWSA
Depth Range:	Unlimited	Scan Method:	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 10,000.0 usft	Error Surface:	Elliptical Conic
Warning Levels Evaluated at:	2.00 Sigma	Casing Method:	Not applied

Survey Tool Program	Date	9/16/2013		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
0.0	11,106.0	APD - Rev 0 (Original Drilling)	MWD	MWD - Standard

Summary						
Site Name	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning
AA (06N-63W)						
Wells Ranch 13-36 - Wellbore #1 - Wellbore #1 - As Drill	1,800.0	1,773.0	484.6	478.7	82.139	CC, ES
Wells Ranch 13-36 - Wellbore #1 - Wellbore #1 - As Drill	5,900.0	5,847.8	607.5	587.9	30.962	SF
Wells Ranch 14-35 - Wellbore #1 - Wellbore #1 - As Drill	10,959.7	6,509.0	1,100.0	961.6	7.949	CC
Wells Ranch 14-35 - Wellbore #1 - Wellbore #1 - As Drill	11,000.0	6,509.0	1,100.8	961.2	7.890	ES
Wells Ranch 14-35 - Wellbore #1 - Wellbore #1 - As Drill	11,106.0	6,509.0	1,109.7	967.2	7.789	SF
Wells Ranch AA35-63-1AHNA - Original Drilling - APD - R	1,200.0	1,198.0	72.9	67.7	14.254	CC, ES
Wells Ranch AA35-63-1AHNA - Original Drilling - APD - R	11,106.0	11,172.2	575.6	305.4	2.130	SF
Wells Ranch AA35-63-1HNC - Original Drilling - APD - R	1,000.0	997.0	112.9	108.7	26.826	CC, ES
Wells Ranch AA35-63-1HNC - Original Drilling - APD - R	11,106.0	11,316.4	747.8	480.6	2.798	SF
Wells Ranch AA35-64-1BHNC - Original Drilling - APD -	1,500.0	1,499.0	36.4	30.0	5.637	CC
Wells Ranch AA35-64-1BHNC - Original Drilling - APD -	11,106.0	11,233.8	204.6	-24.5	0.893	Level 1, ES, SF
Wells Ranch AA35-65-1AHNA - Original Drilling - APD - R	1,166.0	1,168.0	76.5	71.5	15.404	CC
Wells Ranch AA35-65-1AHNA - Original Drilling - APD - R	1,200.0	1,201.9	76.5	71.4	14.944	ES
Wells Ranch AA35-65-1AHNA - Original Drilling - APD - R	11,106.0	11,118.7	666.7	396.2	2.465	SF
Wells Ranch AA35-65-1BHNC - Wellbore #1 - APD - Rev	1,466.3	1,467.3	40.1	33.8	6.347	CC
Wells Ranch AA35-65-1BHNC - Wellbore #1 - APD - Rev	1,500.0	1,501.0	40.1	33.6	6.199	ES
Wells Ranch AA35-65-1BHNC - Wellbore #1 - APD - Rev	10,900.0	11,001.7	508.5	255.8	2.012	SF
Wells Ranch USX AA35-14 - Wellbore #1 - Wellbore #1 -	9,651.4	6,506.0	1,134.6	1,032.6	11.129	CC
Wells Ranch USX AA35-14 - Wellbore #1 - Wellbore #1 -	9,700.0	6,506.0	1,135.6	1,032.3	10.993	ES
Wells Ranch USX AA35-14 - Wellbore #1 - Wellbore #1 -	10,000.0	6,506.0	1,186.9	1,075.3	10.632	SF
Wells Ranch USX AA35-15 - Wellbore #1 - Wellbore #1 -	8,227.9	6,467.7	1,007.2	940.5	15.104	CC, ES
Wells Ranch USX AA35-15 - Wellbore #1 - Wellbore #1 -	8,600.0	6,467.3	1,073.8	996.9	13.977	SF
Wells Ranch USX AA35-16 - Wellbore #1 - Wellbore #1 -	6,888.5	6,461.3	1,085.3	1,052.4	33.005	CC
Wells Ranch USX AA35-16 - Wellbore #1 - Wellbore #1 -	6,909.9	6,463.5	1,085.5	1,052.1	32.569	ES
Wells Ranch USX AA35-16 - Wellbore #1 - Wellbore #1 -	7,900.0	6,477.2	1,483.0	1,425.1	25.613	SF

Noble Energy Inc

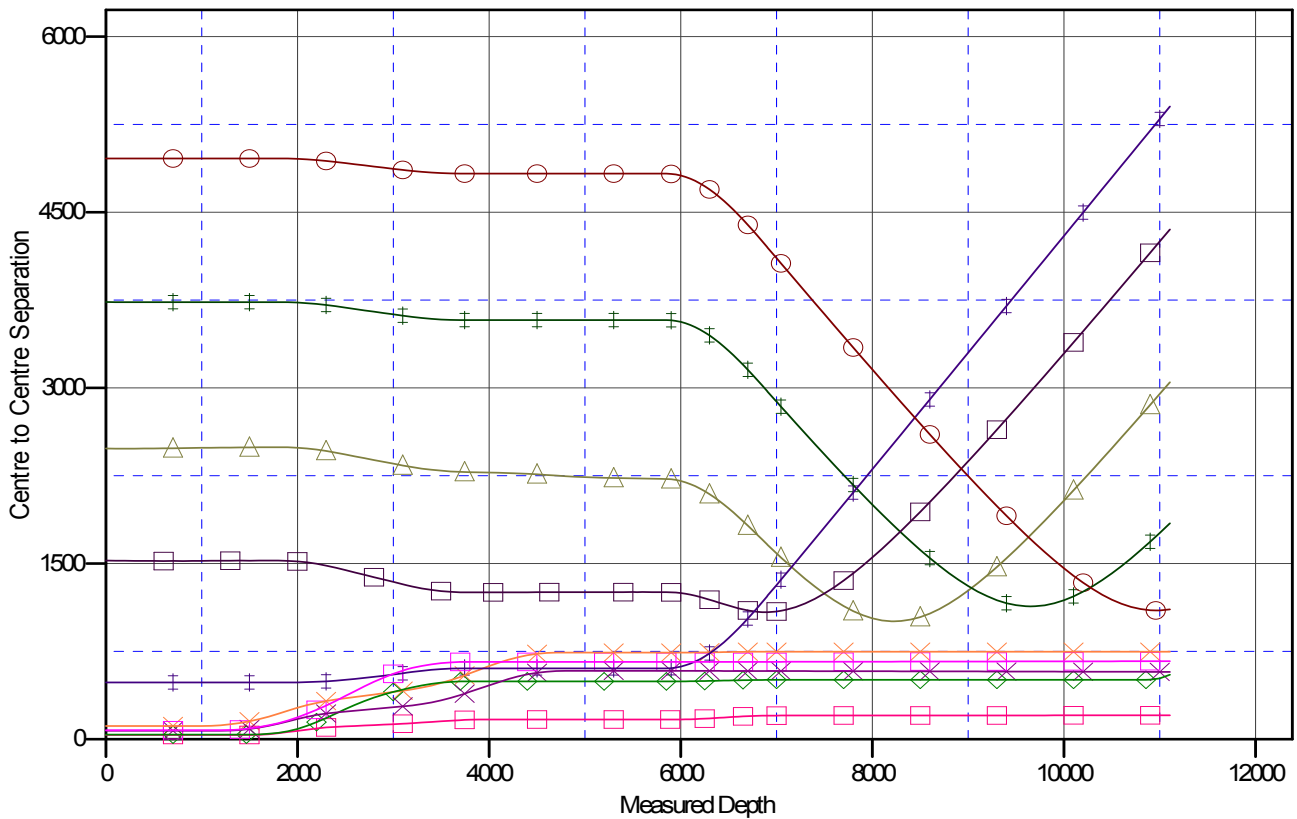
Anticollision Summary Report

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Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Wells Ranch AA35-64-1AHNA	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	Original Drilling	Database:	EDM Production
Reference Design:	APD - Rev 0	Offset TVD Reference:	Offset Datum

Reference Depths are relative to WELL @ 4797.0usft (Original Well Ele
Offset Depths are relative to Offset Datum
Central Meridian is -105.500000

Coordinates are relative to: Wells Ranch AA35-64-1AHNA
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 0.71°

Ladder Plot



LEGEND

13C, Original Drilling, APD - Rev0 V0	Wells Ranch 13-36, Wellbore #1, Wellbore #1 - As Drilled V0	Wells Ranch AA35-63-1AHNA, Original Drilling, APD - Rev0 V0
15 Wellbore #1, Wellbore #1 - As Drilled V0	Wells Ranch AA35-64-1BHNC, Original Drilling, APD - Rev0 V0	Wells Ranch AA35-65-1AHNA, Original Drilling, APD - Rev0 V0
14 Wellbore #1, Wellbore #1 - As Drilled V0	Wells Ranch 14-35, Wellbore #1, Wellbore #1 - As Drilled V0	
16 Wellbore #1, Wellbore #1 - As Drilled V0	Wells Ranch AA35-65-1BHNC, Wellbore #1, APD - Rev0 V0	

Noble Energy Inc
Anticollision Summary Report

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