

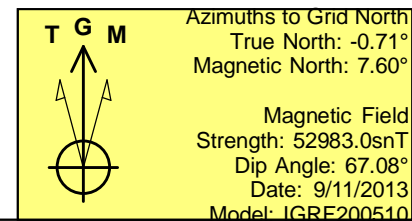
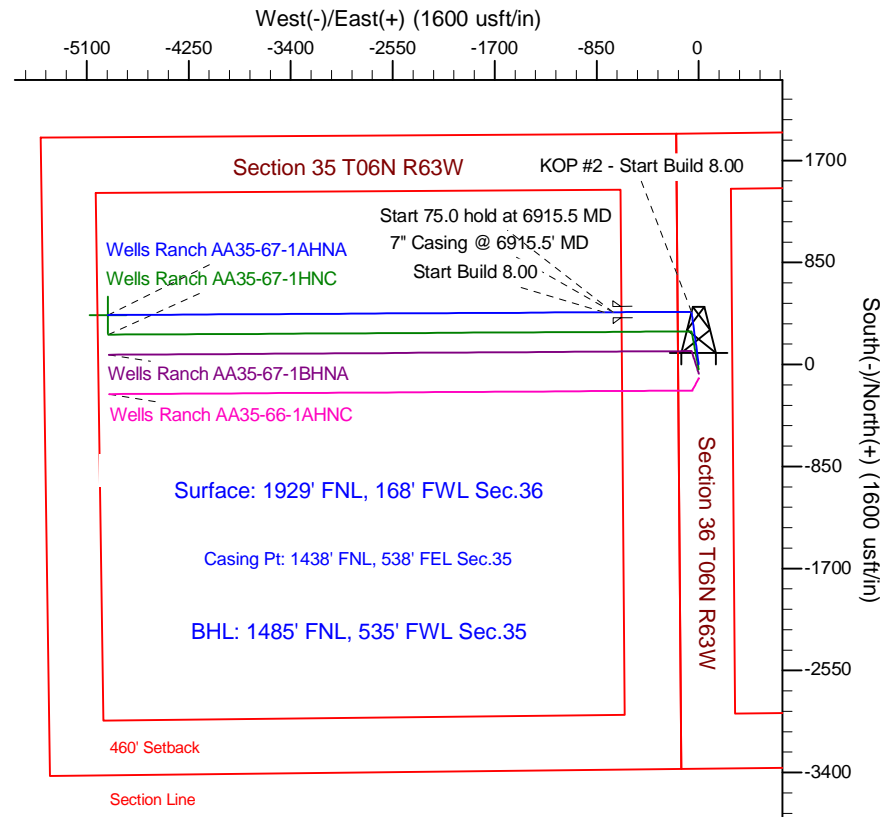
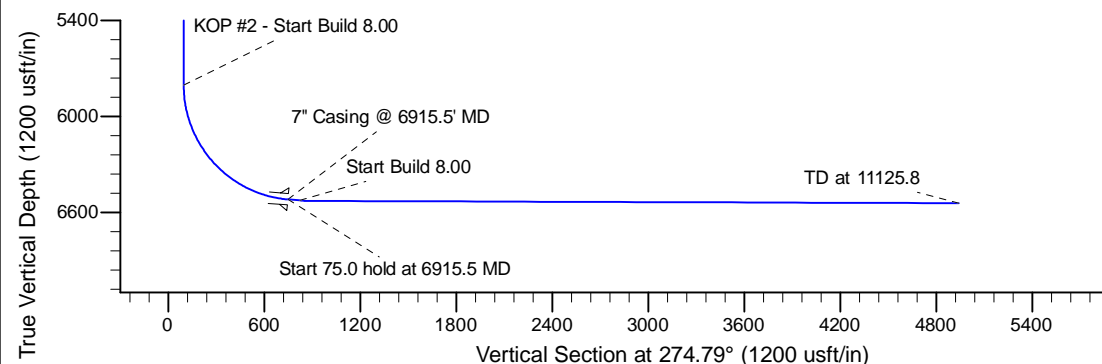
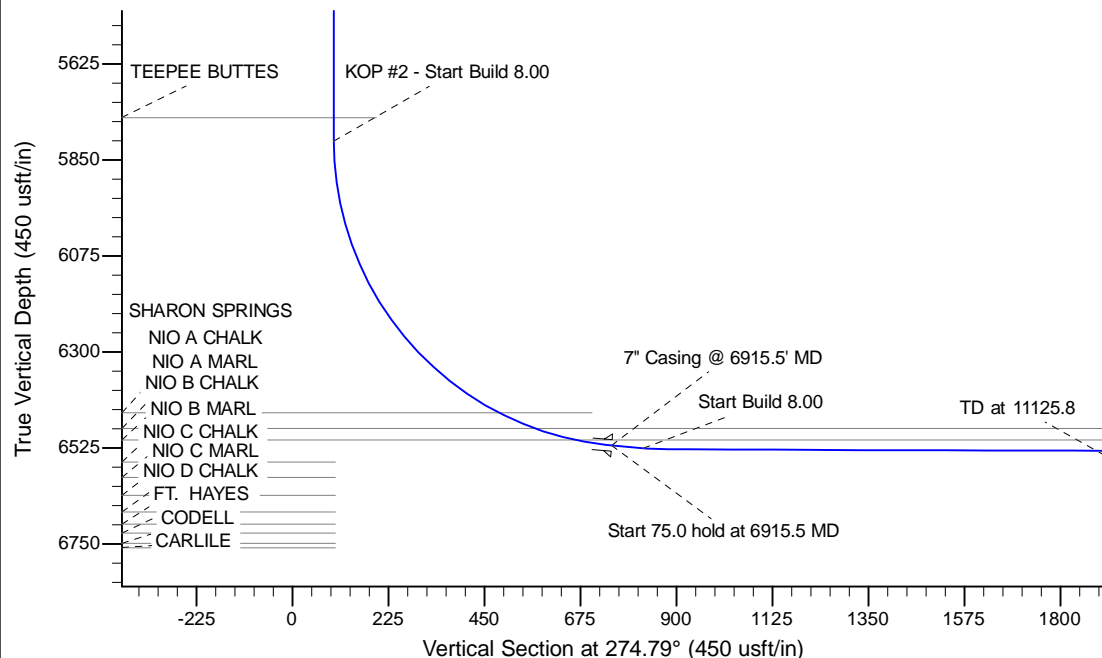
Project: Wattenberg Field  
Site: AA (Sec.36-T06N-R63W) Weld County, CO  
Well: Wells Ranch AA35-67-1AHNA  
Wellbore: Original Drilling  
Design: APD - Rev 0

# 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	VSect	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	1200.0	0.00	0.00	1200.0	0.0	0.0	0.00	0.00	0.0	
3	1902.8	14.06	352.23	1895.8	85.0	-11.6	2.00	352.23	18.6	
4	3024.8	14.06	352.23	2984.2	355.0	-48.4	0.00	0.00	77.9	
5	3727.7	0.00	0.00	3680.0	440.0	-60.0	2.00	180.00	96.5	
6	5853.0	0.00	0.00	5805.3	440.0	-60.0	0.00	0.00	96.5	
7	6915.5	85.00	269.68	6518.8	436.3	-713.8	8.00	269.68	747.7	
8	6990.5	85.00	269.68	6525.4	435.9	-788.5	0.00	0.00	822.1	
9	7050.5	89.80	269.68	6528.1	435.6	-848.4	8.00	0.00	881.8	
10	11125.8	89.80	269.68	6542.3	412.7	-4923.6	0.00	0.00	4940.9	Wells Ranch AA35-67-1AHNA BHL 1485'FNL, 535'FWL



WELL DETAILS: Wells Ranch AA35-67-1AHNA				
Ground Level: 4790.0				
0.0	0.0	Northing	Easting	Latitude
		1406822.16	3307792.81	40.444860
				Longitude
				-104.394100
Plan: APD - Rev 0 (Wells Ranch AA35-67-1AHNA/Original Drilling)				
Created By: Shailey Jewell		Date: 11:04, September 11 2013		
Checked: _____		Date: _____		
Reviewed: _____		Date: _____		
Approved: _____		Date: _____		

# **Northern Region Drilling - Working**

**Wattenberg Field**

**AA (06N-63W)**

**Wells Ranch AA35-67-1AHNA**

**Original Drilling**

**Plan: APD - Rev 0**

## **Standard Planning Report**

**11 September, 2013**

# Noble Energy Inc

## Planning Report

<b>Database:</b>	EDM Production	<b>Local Co-ordinate Reference:</b>	Well Wells Ranch AA35-67-1AHNA
<b>Company:</b>	Northern Region Drilling - Working	<b>TVD Reference:</b>	WELL @ 4814.0usft (Original Well Elev)
<b>Project:</b>	Wattenberg Field	<b>MD Reference:</b>	WELL @ 4814.0usft (Original Well Elev)
<b>Site:</b>	AA (06N-63W)	<b>North Reference:</b>	Grid
<b>Well:</b>	Wells Ranch AA35-67-1AHNA	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Original Drilling		
<b>Design:</b>	APD - Rev 0		

<b>Project</b>	Wattenberg Field, Weld County CO		
<b>Map System:</b>	US State Plane 1983	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	North American Datum 1983		
<b>Map Zone:</b>	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 AA35-67-1AHNA					
Well Position	+N/-S	-21,023.4 usft	Northing:	1,406,822.16 usft	Latitude:	40.444860
	+E/-W	5,235.0 usft	Easting:	3,307,792.82 usft	Longitude:	-104.394100
Position Uncertainty		0.0 usft	Wellhead Elevation:		Ground Level:	4,790.0 usft

<b>Wellbore</b>	Original Drilling				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF200510	9/11/2013	8.31	67.08	52,983

<b>Design</b>	APD - Rev 0			
<b>Audit Notes:</b>				
<b>Version:</b>	<b>Phase:</b>	PROTOTYPE	<b>Tie On Depth:</b>	0.0
<b>Vertical Section:</b>	<b>Depth From (TVD) (usft)</b>	<b>+N/-S (usft)</b>	<b>+E/-W (usft)</b>	<b>Direction (°)</b>
	0.0	0.0	0.0	274.79

<b>Plan Sections</b>										
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	
1,200.0	0.00	0.00	1,200.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,902.8	14.06	352.23	1,895.8	85.0	-11.6	2.00	2.00	0.00	352.23	
3,024.8	14.06	352.23	2,984.2	355.0	-48.4	0.00	0.00	0.00	0.00	
3,727.7	0.00	0.00	3,680.0	440.0	-60.0	2.00	-2.00	0.00	180.00	
5,853.0	0.00	0.00	5,805.3	440.0	-60.0	0.00	0.00	0.00	0.00	
6,915.5	85.00	269.68	6,518.8	436.3	-713.8	8.00	8.00	0.00	269.68	
6,990.5	85.00	269.68	6,525.4	435.9	-788.5	0.00	0.00	0.00	0.00	
7,050.5	89.80	269.68	6,528.1	435.6	-848.4	8.00	8.00	0.00	0.00	
11,125.8	89.80	269.68	6,542.3	412.7	-4,923.6	0.00	0.00	0.00	0.00	Wells Ranch AA35-67

# Noble Energy Inc

## Planning Report

<b>Database:</b>	EDM Production	<b>Local Co-ordinate Reference:</b>	Well Wells Ranch AA35-67-1AHNA
<b>Company:</b>	Northern Region Drilling - Working	<b>TVD Reference:</b>	WELL @ 4814.0usft (Original Well Elev)
<b>Project:</b>	Wattenberg Field	<b>MD Reference:</b>	WELL @ 4814.0usft (Original Well Elev)
<b>Site:</b>	AA (06N-63W)	<b>North Reference:</b>	Grid
<b>Well:</b>	Wells Ranch AA35-67-1AHNA	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Original Drilling		
<b>Design:</b>	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
1,060.0	0.00	0.00	1,060.0	0.0	0.0	0.0	0.00	0.00	0.00
PIERRE									
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
KOP - Start Build 2.00									
1,250.0	1.00	352.23	1,250.0	0.4	-0.1	0.1	2.00	2.00	0.00
1,300.0	2.00	352.23	1,300.0	1.7	-0.2	0.4	2.00	2.00	0.00
1,350.0	3.00	352.23	1,349.9	3.9	-0.5	0.9	2.00	2.00	0.00
1,400.0	4.00	352.23	1,399.8	6.9	-0.9	1.5	2.00	2.00	0.00
1,450.0	5.00	352.23	1,449.7	10.8	-1.5	2.4	2.00	2.00	0.00
1,500.0	6.00	352.23	1,499.5	15.5	-2.1	3.4	2.00	2.00	0.00
1,550.0	7.00	352.23	1,549.1	21.2	-2.9	4.6	2.00	2.00	0.00
1,600.0	8.00	352.23	1,598.7	27.6	-3.8	6.1	2.00	2.00	0.00
1,650.0	9.00	352.23	1,648.2	34.9	-4.8	7.7	2.00	2.00	0.00
1,700.0	10.00	352.23	1,697.5	43.1	-5.9	9.5	2.00	2.00	0.00
1,750.0	11.00	352.23	1,746.6	52.2	-7.1	11.4	2.00	2.00	0.00
1,800.0	12.00	352.23	1,795.6	62.0	-8.5	13.6	2.00	2.00	0.00
1,850.0	13.00	352.23	1,844.4	72.8	-9.9	16.0	2.00	2.00	0.00
1,900.0	14.00	352.23	1,893.1	84.3	-11.5	18.5	2.00	2.00	0.00
1,902.8	14.06	352.23	1,895.8	85.0	-11.6	18.6	2.00	2.00	0.00
1,950.0	14.06	352.23	1,941.6	96.3	-13.1	21.1	0.00	0.00	0.00
2,000.0	14.06	352.23	1,990.1	108.4	-14.8	23.8	0.00	0.00	0.00
2,050.0	14.06	352.23	2,038.6	120.4	-16.4	26.4	0.00	0.00	0.00
2,100.0	14.06	352.23	2,087.1	132.4	-18.1	29.1	0.00	0.00	0.00
2,150.0	14.06	352.23	2,135.6	144.5	-19.7	31.7	0.00	0.00	0.00
2,200.0	14.06	352.23	2,184.1	156.5	-21.3	34.3	0.00	0.00	0.00
2,250.0	14.06	352.23	2,232.6	168.5	-23.0	37.0	0.00	0.00	0.00
2,300.0	14.06	352.23	2,281.1	180.6	-24.6	39.6	0.00	0.00	0.00
2,350.0	14.06	352.23	2,329.6	192.6	-26.3	42.3	0.00	0.00	0.00
2,400.0	14.06	352.23	2,378.1	204.6	-27.9	44.9	0.00	0.00	0.00
2,450.0	14.06	352.23	2,426.6	216.7	-29.5	47.5	0.00	0.00	0.00

# Noble Energy Inc

## Planning Report

<b>Database:</b>	EDM Production	<b>Local Co-ordinate Reference:</b>	Well Wells Ranch AA35-67-1AHNA
<b>Company:</b>	Northern Region Drilling - Working	<b>TVD Reference:</b>	WELL @ 4814.0usft (Original Well Elev)
<b>Project:</b>	Wattenberg Field	<b>MD Reference:</b>	WELL @ 4814.0usft (Original Well Elev)
<b>Site:</b>	AA (06N-63W)	<b>North Reference:</b>	Grid
<b>Well:</b>	Wells Ranch AA35-67-1AHNA	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Original Drilling		
<b>Design:</b>	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	14.06	352.23	2,475.1	228.7	-31.2	50.2	0.00	0.00	0.00
2,550.0	14.06	352.23	2,523.6	240.7	-32.8	52.8	0.00	0.00	0.00
2,600.0	14.06	352.23	2,572.1	252.8	-34.5	55.5	0.00	0.00	0.00
2,650.0	14.06	352.23	2,620.6	264.8	-36.1	58.1	0.00	0.00	0.00
2,700.0	14.06	352.23	2,669.1	276.8	-37.8	60.7	0.00	0.00	0.00
2,750.0	14.06	352.23	2,717.6	288.9	-39.4	63.4	0.00	0.00	0.00
2,800.0	14.06	352.23	2,766.1	300.9	-41.0	66.0	0.00	0.00	0.00
2,850.0	14.06	352.23	2,814.6	312.9	-42.7	68.7	0.00	0.00	0.00
2,900.0	14.06	352.23	2,863.1	325.0	-44.3	71.3	0.00	0.00	0.00
2,950.0	14.06	352.23	2,911.6	337.0	-46.0	73.9	0.00	0.00	0.00
3,000.0	14.06	352.23	2,960.1	349.0	-47.6	76.6	0.00	0.00	0.00
3,024.8	14.06	352.23	2,984.2	355.0	-48.4	77.9	0.00	0.00	0.00
Start Drop -2.00									
3,050.0	13.55	352.23	3,008.6	361.0	-49.2	79.2	2.00	-2.00	0.00
3,100.0	12.55	352.23	3,057.4	372.1	-50.7	81.7	2.00	-2.00	0.00
3,150.0	11.55	352.23	3,106.3	382.5	-52.2	83.9	2.00	-2.00	0.00
3,200.0	10.55	352.23	3,155.3	392.0	-53.5	86.0	2.00	-2.00	0.00
3,250.0	9.55	352.23	3,204.6	400.6	-54.6	87.9	2.00	-2.00	0.00
3,300.0	8.55	352.23	3,253.9	408.4	-55.7	89.6	2.00	-2.00	0.00
3,350.0	7.55	352.23	3,303.4	415.4	-56.6	91.1	2.00	-2.00	0.00
3,400.0	6.55	352.23	3,353.1	421.5	-57.5	92.5	2.00	-2.00	0.00
3,450.0	5.55	352.23	3,402.8	426.7	-58.2	93.6	2.00	-2.00	0.00
3,500.0	4.55	352.23	3,452.6	431.0	-58.8	94.6	2.00	-2.00	0.00
3,550.0	3.55	352.23	3,502.5	434.5	-59.3	95.3	2.00	-2.00	0.00
3,589.6	2.76	352.23	3,542.0	436.7	-59.6	95.8	2.00	-2.00	0.00
PARKMAN									
3,600.0	2.55	352.23	3,552.4	437.2	-59.6	95.9	2.00	-2.00	0.00
3,650.0	1.55	352.23	3,602.4	439.0	-59.9	96.3	2.00	-2.00	0.00
3,700.0	0.55	352.23	3,652.3	439.9	-60.0	96.5	2.00	-2.00	0.00
3,727.7	0.00	0.00	3,680.0	440.0	-60.0	96.5	2.00	-2.00	0.00
3,750.0	0.00	0.00	3,702.3	440.0	-60.0	96.5	0.00	0.00	0.00
3,800.0	0.00	0.00	3,752.3	440.0	-60.0	96.5	0.00	0.00	0.00
3,850.0	0.00	0.00	3,802.3	440.0	-60.0	96.5	0.00	0.00	0.00
3,900.0	0.00	0.00	3,852.3	440.0	-60.0	96.5	0.00	0.00	0.00
3,950.0	0.00	0.00	3,902.3	440.0	-60.0	96.5	0.00	0.00	0.00
4,000.0	0.00	0.00	3,952.3	440.0	-60.0	96.5	0.00	0.00	0.00
4,050.0	0.00	0.00	4,002.3	440.0	-60.0	96.5	0.00	0.00	0.00
4,100.0	0.00	0.00	4,052.3	440.0	-60.0	96.5	0.00	0.00	0.00
4,150.0	0.00	0.00	4,102.3	440.0	-60.0	96.5	0.00	0.00	0.00
4,200.0	0.00	0.00	4,152.3	440.0	-60.0	96.5	0.00	0.00	0.00
4,250.0	0.00	0.00	4,202.3	440.0	-60.0	96.5	0.00	0.00	0.00
4,300.0	0.00	0.00	4,252.3	440.0	-60.0	96.5	0.00	0.00	0.00
4,350.0	0.00	0.00	4,302.3	440.0	-60.0	96.5	0.00	0.00	0.00
4,400.0	0.00	0.00	4,352.3	440.0	-60.0	96.5	0.00	0.00	0.00
4,450.0	0.00	0.00	4,402.3	440.0	-60.0	96.5	0.00	0.00	0.00
4,500.0	0.00	0.00	4,452.3	440.0	-60.0	96.5	0.00	0.00	0.00
4,510.7	0.00	0.00	4,463.0	440.0	-60.0	96.5	0.00	0.00	0.00
SUSSEX									
4,550.0	0.00	0.00	4,502.3	440.0	-60.0	96.5	0.00	0.00	0.00
4,600.0	0.00	0.00	4,552.3	440.0	-60.0	96.5	0.00	0.00	0.00
4,650.0	0.00	0.00	4,602.3	440.0	-60.0	96.5	0.00	0.00	0.00
4,700.0	0.00	0.00	4,652.3	440.0	-60.0	96.5	0.00	0.00	0.00
4,750.0	0.00	0.00	4,702.3	440.0	-60.0	96.5	0.00	0.00	0.00

# Noble Energy Inc

## Planning Report

<b>Database:</b>	EDM Production	<b>Local Co-ordinate Reference:</b>	Well Wells Ranch AA35-67-1AHNA
<b>Company:</b>	Northern Region Drilling - Working	<b>TVD Reference:</b>	WELL @ 4814.0usft (Original Well Elev)
<b>Project:</b>	Wattenberg Field	<b>MD Reference:</b>	WELL @ 4814.0usft (Original Well Elev)
<b>Site:</b>	AA (06N-63W)	<b>North Reference:</b>	Grid
<b>Well:</b>	Wells Ranch AA35-67-1AHNA	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Original Drilling		
<b>Design:</b>	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	4,752.3	440.0	-60.0	96.5	0.00	0.00	0.00
4,850.0	0.00	0.00	4,802.3	440.0	-60.0	96.5	0.00	0.00	0.00
4,900.0	0.00	0.00	4,852.3	440.0	-60.0	96.5	0.00	0.00	0.00
4,929.7	0.00	0.00	4,882.0	440.0	-60.0	96.5	0.00	0.00	0.00
<b>SHANNON</b>									
4,950.0	0.00	0.00	4,902.3	440.0	-60.0	96.5	0.00	0.00	0.00
5,000.0	0.00	0.00	4,952.3	440.0	-60.0	96.5	0.00	0.00	0.00
5,050.0	0.00	0.00	5,002.3	440.0	-60.0	96.5	0.00	0.00	0.00
5,100.0	0.00	0.00	5,052.3	440.0	-60.0	96.5	0.00	0.00	0.00
5,150.0	0.00	0.00	5,102.3	440.0	-60.0	96.5	0.00	0.00	0.00
5,200.0	0.00	0.00	5,152.3	440.0	-60.0	96.5	0.00	0.00	0.00
5,250.0	0.00	0.00	5,202.3	440.0	-60.0	96.5	0.00	0.00	0.00
5,300.0	0.00	0.00	5,252.3	440.0	-60.0	96.5	0.00	0.00	0.00
5,350.0	0.00	0.00	5,302.3	440.0	-60.0	96.5	0.00	0.00	0.00
5,400.0	0.00	0.00	5,352.3	440.0	-60.0	96.5	0.00	0.00	0.00
5,450.0	0.00	0.00	5,402.3	440.0	-60.0	96.5	0.00	0.00	0.00
5,500.0	0.00	0.00	5,452.3	440.0	-60.0	96.5	0.00	0.00	0.00
5,550.0	0.00	0.00	5,502.3	440.0	-60.0	96.5	0.00	0.00	0.00
5,600.0	0.00	0.00	5,552.3	440.0	-60.0	96.5	0.00	0.00	0.00
5,650.0	0.00	0.00	5,602.3	440.0	-60.0	96.5	0.00	0.00	0.00
5,700.0	0.00	0.00	5,652.3	440.0	-60.0	96.5	0.00	0.00	0.00
5,750.0	0.00	0.00	5,702.3	440.0	-60.0	96.5	0.00	0.00	0.00
5,798.7	0.00	0.00	5,751.0	440.0	-60.0	96.5	0.00	0.00	0.00
<b>TEEPEE BUTTES</b>									
5,800.0	0.00	0.00	5,752.3	440.0	-60.0	96.5	0.00	0.00	0.00
5,850.0	0.00	0.00	5,802.3	440.0	-60.0	96.5	0.00	0.00	0.00
5,853.0	0.00	0.00	5,805.3	440.0	-60.0	96.5	0.00	0.00	0.00
<b>KOP #2 - Start Build 8.00</b>									
5,900.0	3.76	269.68	5,852.3	440.0	-61.5	98.1	8.00	8.00	0.00
5,950.0	7.76	269.68	5,902.0	440.0	-66.6	103.1	8.00	8.00	0.00
6,000.0	11.76	269.68	5,951.3	439.9	-75.0	111.5	8.00	8.00	0.00
6,050.0	15.76	269.68	5,999.9	439.8	-86.9	123.4	8.00	8.00	0.00
6,100.0	19.76	269.68	6,047.5	439.8	-102.2	138.5	8.00	8.00	0.00
6,150.0	23.76	269.68	6,093.9	439.7	-120.7	157.0	8.00	8.00	0.00
6,200.0	27.76	269.68	6,138.9	439.5	-142.4	178.6	8.00	8.00	0.00
6,250.0	31.76	269.68	6,182.3	439.4	-167.2	203.4	8.00	8.00	0.00
6,300.0	35.76	269.68	6,223.9	439.2	-195.0	231.0	8.00	8.00	0.00
6,350.0	39.76	269.68	6,263.4	439.1	-225.6	261.5	8.00	8.00	0.00
6,400.0	43.76	269.68	6,300.7	438.9	-258.9	294.7	8.00	8.00	0.00
6,450.0	47.76	269.68	6,335.6	438.7	-294.7	330.4	8.00	8.00	0.00
6,500.0	51.76	269.68	6,367.9	438.5	-332.9	368.4	8.00	8.00	0.00
6,550.0	55.76	269.68	6,397.4	438.2	-373.2	408.5	8.00	8.00	0.00
6,600.0	59.76	269.68	6,424.1	438.0	-415.5	450.6	8.00	8.00	0.00
6,637.3	62.74	269.68	6,442.0	437.8	-448.2	483.2	8.00	8.00	0.00
<b>SHARON SPRINGS</b>									
6,650.0	63.76	269.68	6,447.7	437.8	-459.5	494.5	8.00	8.00	0.00
6,700.0	67.76	269.68	6,468.3	437.5	-505.1	539.9	8.00	8.00	0.00
6,729.9	70.15	269.68	6,479.0	437.3	-533.0	567.7	8.00	8.00	0.00
<b>NIO A CHALK</b>									
6,750.0	71.76	269.68	6,485.6	437.2	-552.0	586.6	8.00	8.00	0.00
6,800.0	75.76	269.68	6,499.5	437.0	-600.0	634.4	8.00	8.00	0.00
6,828.5	78.04	269.68	6,506.0	436.8	-627.8	662.1	8.00	8.00	0.00
<b>NIO A MARL</b>									

# Noble Energy Inc

## Planning Report

<b>Database:</b>	EDM Production	<b>Local Co-ordinate Reference:</b>	Well Wells Ranch AA35-67-1AHNA
<b>Company:</b>	Northern Region Drilling - Working	<b>TVD Reference:</b>	WELL @ 4814.0usft (Original Well Elev)
<b>Project:</b>	Wattenberg Field	<b>MD Reference:</b>	WELL @ 4814.0usft (Original Well Elev)
<b>Site:</b>	AA (06N-63W)	<b>North Reference:</b>	Grid
<b>Well:</b>	Wells Ranch AA35-67-1AHNA	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Original Drilling		
<b>Design:</b>	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)
6,850.0	79.76	269.68	6,510.1	436.7	-648.9	683.1	8.00	8.00	0.00
6,900.0	83.76	269.68	6,517.3	436.4	-698.3	732.4	8.00	8.00	0.00
6,915.5	85.00	269.68	6,518.8	436.3	-713.8	747.7	8.00	8.00	0.00
Start 75.0 hold at 6915.5 MD - 7" Casing @ 6915.5' MD									
6,950.0	85.00	269.68	6,521.8	436.1	-748.1	782.0	0.00	0.00	0.00
6,990.5	85.00	269.68	6,525.4	435.9	-788.5	822.1	0.00	0.00	0.00
Start Build 8.00									
7,000.0	85.76	269.68	6,526.1	435.9	-797.9	831.6	8.00	8.00	0.00
7,050.0	89.76	269.68	6,528.1	435.6	-847.9	881.3	8.00	8.00	0.00
7,050.5	89.80	269.68	6,528.1	435.6	-848.4	881.8	8.00	8.00	0.00
7,100.0	89.80	269.68	6,528.2	435.3	-897.9	931.1	0.00	0.00	0.00
7,150.0	89.80	269.68	6,528.4	435.0	-947.9	980.9	0.00	0.00	0.00
7,200.0	89.80	269.68	6,528.6	434.7	-997.9	1,030.7	0.00	0.00	0.00
7,250.0	89.80	269.68	6,528.8	434.5	-1,047.9	1,080.5	0.00	0.00	0.00
7,300.0	89.80	269.68	6,528.9	434.2	-1,097.9	1,130.3	0.00	0.00	0.00
7,350.0	89.80	269.68	6,529.1	433.9	-1,147.9	1,180.1	0.00	0.00	0.00
7,400.0	89.80	269.68	6,529.3	433.6	-1,197.9	1,229.9	0.00	0.00	0.00
7,450.0	89.80	269.68	6,529.5	433.3	-1,247.9	1,279.7	0.00	0.00	0.00
7,500.0	89.80	269.68	6,529.6	433.1	-1,297.9	1,329.5	0.00	0.00	0.00
7,550.0	89.80	269.68	6,529.8	432.8	-1,347.9	1,379.3	0.00	0.00	0.00
7,600.0	89.80	269.68	6,530.0	432.5	-1,397.9	1,429.1	0.00	0.00	0.00
7,650.0	89.80	269.68	6,530.2	432.2	-1,447.9	1,478.9	0.00	0.00	0.00
7,700.0	89.80	269.68	6,530.3	431.9	-1,497.9	1,528.7	0.00	0.00	0.00
7,750.0	89.80	269.68	6,530.5	431.7	-1,547.9	1,578.5	0.00	0.00	0.00
7,800.0	89.80	269.68	6,530.7	431.4	-1,597.9	1,628.3	0.00	0.00	0.00
7,850.0	89.80	269.68	6,530.9	431.1	-1,647.9	1,678.1	0.00	0.00	0.00
7,900.0	89.80	269.68	6,531.0	430.8	-1,697.9	1,727.9	0.00	0.00	0.00
7,950.0	89.80	269.68	6,531.2	430.5	-1,747.9	1,777.7	0.00	0.00	0.00
8,000.0	89.80	269.68	6,531.4	430.3	-1,797.9	1,827.5	0.00	0.00	0.00
8,050.0	89.80	269.68	6,531.6	430.0	-1,847.9	1,877.3	0.00	0.00	0.00
8,100.0	89.80	269.68	6,531.7	429.7	-1,897.9	1,927.1	0.00	0.00	0.00
8,150.0	89.80	269.68	6,531.9	429.4	-1,947.9	1,976.9	0.00	0.00	0.00
8,200.0	89.80	269.68	6,532.1	429.1	-1,997.9	2,026.7	0.00	0.00	0.00
8,250.0	89.80	269.68	6,532.3	428.9	-2,047.9	2,076.5	0.00	0.00	0.00
8,300.0	89.80	269.68	6,532.4	428.6	-2,097.9	2,126.3	0.00	0.00	0.00
8,350.0	89.80	269.68	6,532.6	428.3	-2,147.9	2,176.1	0.00	0.00	0.00
8,400.0	89.80	269.68	6,532.8	428.0	-2,197.9	2,225.9	0.00	0.00	0.00
8,450.0	89.80	269.68	6,533.0	427.7	-2,247.9	2,275.7	0.00	0.00	0.00
8,500.0	89.80	269.68	6,533.1	427.5	-2,297.9	2,325.5	0.00	0.00	0.00
8,550.0	89.80	269.68	6,533.3	427.2	-2,347.9	2,375.3	0.00	0.00	0.00
8,600.0	89.80	269.68	6,533.5	426.9	-2,397.9	2,425.1	0.00	0.00	0.00
8,650.0	89.80	269.68	6,533.7	426.6	-2,447.9	2,474.9	0.00	0.00	0.00
8,700.0	89.80	269.68	6,533.8	426.3	-2,497.9	2,524.7	0.00	0.00	0.00
8,750.0	89.80	269.68	6,534.0	426.1	-2,547.9	2,574.5	0.00	0.00	0.00
8,800.0	89.80	269.68	6,534.2	425.8	-2,597.9	2,624.3	0.00	0.00	0.00
8,850.0	89.80	269.68	6,534.4	425.5	-2,647.9	2,674.1	0.00	0.00	0.00
8,900.0	89.80	269.68	6,534.5	425.2	-2,697.9	2,724.0	0.00	0.00	0.00
8,950.0	89.80	269.68	6,534.7	424.9	-2,747.9	2,773.8	0.00	0.00	0.00
9,000.0	89.80	269.68	6,534.9	424.6	-2,797.9	2,823.6	0.00	0.00	0.00
9,050.0	89.80	269.68	6,535.1	424.4	-2,847.9	2,873.4	0.00	0.00	0.00
9,100.0	89.80	269.68	6,535.2	424.1	-2,897.9	2,923.2	0.00	0.00	0.00
9,150.0	89.80	269.68	6,535.4	423.8	-2,947.9	2,973.0	0.00	0.00	0.00
9,200.0	89.80	269.68	6,535.6	423.5	-2,997.9	3,022.8	0.00	0.00	0.00

# Noble Energy Inc

## Planning Report

<b>Database:</b>	EDM Production	<b>Local Co-ordinate Reference:</b>	Well Wells Ranch AA35-67-1AHNA
<b>Company:</b>	Northern Region Drilling - Working	<b>TVD Reference:</b>	WELL @ 4814.0usft (Original Well Elev)
<b>Project:</b>	Wattenberg Field	<b>MD Reference:</b>	WELL @ 4814.0usft (Original Well Elev)
<b>Site:</b>	AA (06N-63W)	<b>North Reference:</b>	Grid
<b>Well:</b>	Wells Ranch AA35-67-1AHNA	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Original Drilling		
<b>Design:</b>	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	89.80	269.68	6,535.8	423.2	-3,047.9	3,072.6	0.00	0.00	0.00	
9,300.0	89.80	269.68	6,535.9	423.0	-3,097.9	3,122.4	0.00	0.00	0.00	
9,350.0	89.80	269.68	6,536.1	422.7	-3,147.9	3,172.2	0.00	0.00	0.00	
9,400.0	89.80	269.68	6,536.3	422.4	-3,197.8	3,222.0	0.00	0.00	0.00	
9,450.0	89.80	269.68	6,536.5	422.1	-3,247.8	3,271.8	0.00	0.00	0.00	
9,500.0	89.80	269.68	6,536.6	421.8	-3,297.8	3,321.6	0.00	0.00	0.00	
9,550.0	89.80	269.68	6,536.8	421.6	-3,347.8	3,371.4	0.00	0.00	0.00	
9,600.0	89.80	269.68	6,537.0	421.3	-3,397.8	3,421.2	0.00	0.00	0.00	
9,650.0	89.80	269.68	6,537.1	421.0	-3,447.8	3,471.0	0.00	0.00	0.00	
9,700.0	89.80	269.68	6,537.3	420.7	-3,497.8	3,520.8	0.00	0.00	0.00	
9,750.0	89.80	269.68	6,537.5	420.4	-3,547.8	3,570.6	0.00	0.00	0.00	
9,800.0	89.80	269.68	6,537.7	420.2	-3,597.8	3,620.4	0.00	0.00	0.00	
9,850.0	89.80	269.68	6,537.8	419.9	-3,647.8	3,670.2	0.00	0.00	0.00	
9,900.0	89.80	269.68	6,538.0	419.6	-3,697.8	3,720.0	0.00	0.00	0.00	
9,950.0	89.80	269.68	6,538.2	419.3	-3,747.8	3,769.8	0.00	0.00	0.00	
10,000.0	89.80	269.68	6,538.4	419.0	-3,797.8	3,819.6	0.00	0.00	0.00	
10,050.0	89.80	269.68	6,538.5	418.8	-3,847.8	3,869.4	0.00	0.00	0.00	
10,100.0	89.80	269.68	6,538.7	418.5	-3,897.8	3,919.2	0.00	0.00	0.00	
10,150.0	89.80	269.68	6,538.9	418.2	-3,947.8	3,969.0	0.00	0.00	0.00	
10,200.0	89.80	269.68	6,539.1	417.9	-3,997.8	4,018.8	0.00	0.00	0.00	
10,250.0	89.80	269.68	6,539.2	417.6	-4,047.8	4,068.6	0.00	0.00	0.00	
10,300.0	89.80	269.68	6,539.4	417.4	-4,097.8	4,118.4	0.00	0.00	0.00	
10,350.0	89.80	269.68	6,539.6	417.1	-4,147.8	4,168.2	0.00	0.00	0.00	
10,400.0	89.80	269.68	6,539.8	416.8	-4,197.8	4,218.0	0.00	0.00	0.00	
10,450.0	89.80	269.68	6,539.9	416.5	-4,247.8	4,267.8	0.00	0.00	0.00	
10,500.0	89.80	269.68	6,540.1	416.2	-4,297.8	4,317.6	0.00	0.00	0.00	
10,550.0	89.80	269.68	6,540.3	416.0	-4,347.8	4,367.4	0.00	0.00	0.00	
10,600.0	89.80	269.68	6,540.5	415.7	-4,397.8	4,417.2	0.00	0.00	0.00	
10,650.0	89.80	269.68	6,540.6	415.4	-4,447.8	4,467.0	0.00	0.00	0.00	
10,700.0	89.80	269.68	6,540.8	415.1	-4,497.8	4,516.8	0.00	0.00	0.00	
10,750.0	89.80	269.68	6,541.0	414.8	-4,547.8	4,566.6	0.00	0.00	0.00	
10,800.0	89.80	269.68	6,541.2	414.6	-4,597.8	4,616.4	0.00	0.00	0.00	
10,850.0	89.80	269.68	6,541.3	414.3	-4,647.8	4,666.2	0.00	0.00	0.00	
10,900.0	89.80	269.68	6,541.5	414.0	-4,697.8	4,716.0	0.00	0.00	0.00	
10,950.0	89.80	269.68	6,541.7	413.7	-4,747.8	4,765.8	0.00	0.00	0.00	
11,000.0	89.80	269.68	6,541.9	413.4	-4,797.8	4,815.6	0.00	0.00	0.00	
11,050.0	89.80	269.68	6,542.0	413.2	-4,847.8	4,865.4	0.00	0.00	0.00	
11,100.0	89.80	269.68	6,542.2	412.9	-4,897.8	4,915.2	0.00	0.00	0.00	
11,125.8	89.80	269.68	6,542.3	412.7	-4,923.6	4,940.9	0.00	0.00	0.00	
TD at 11125.8 - Wells Ranch AA35-67-1AHNA BHL 1485°FNL, 535°FWL										

Design Targets										
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude		Longitude
- hit/miss target										
- Shape										
Wells Ranch AA35-67-1, - plan hits target center - Point	0.00	0.00	6,542.3	412.7	-4,923.6	1,407,234.87	3,302,869.36	40.446160		-104.411770



# Noble Energy Inc

## Planning Report

<b>Database:</b>	EDM Production	<b>Local Co-ordinate Reference:</b>	Well Wells Ranch AA35-67-1AHNA
<b>Company:</b>	Northern Region Drilling - Working	<b>TVD Reference:</b>	WELL @ 4814.0usft (Original Well Elev)
<b>Project:</b>	Wattenberg Field	<b>MD Reference:</b>	WELL @ 4814.0usft (Original Well Elev)
<b>Site:</b>	AA (06N-63W)	<b>North Reference:</b>	Grid
<b>Well:</b>	Wells Ranch AA35-67-1AHNA	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Original Drilling		
<b>Design:</b>	APD - Rev 0		

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")	
6,915.5	6,518.8	7" Casing @ 6915.5' MD	7	8-3/4	

Formations					
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
1,060.0	1,060.0	PIERRE		0.00	
3,589.6	3,542.0	PARKMAN		0.00	
4,510.7	4,463.0	SUSSEX		0.00	
4,929.7	4,882.0	SHANNON		0.00	
5,798.7	5,751.0	TEEPEE BUTTES		0.00	
6,637.3	6,442.0	SHARON SPRINGS		0.00	
6,729.9	6,479.0	NIO A CHALK		0.00	
6,828.5	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	
1,200.0	1,200.0	0.0	0.0	KOP - Start Build 2.00	
3,024.8	2,984.2	85.0	-11.6	Start Drop -2.00	
5,853.0	5,805.3	355.0	-48.4	KOP #2 - Start Build 8.00	
6,915.5	6,518.8	440.0	-60.0	Start 75.0 hold at 6915.5 MD	
6,990.5	6,525.4	440.0	-60.0	Start Build 8.00	
11,125.8	6,542.3	436.3	-713.8	TD at 11125.8	

# **Northern Region Drilling - Working**

**Wattenberg Field**

**AA (06N-63W)**

**Wells Ranch AA35-67-1AHNA**

**Original Drilling**

**APD - Rev 0**

## **Anticollision Summary Report**

**11 September, 2013**

**Noble Energy Inc**  
Anticollision Summary Report

<b>Company:</b>	Northern Region Drilling - Working	<b>Local Co-ordinate Reference:</b>	Well Wells Ranch AA35-67-1AHNA
<b>Project:</b>	Wattenberg Field	<b>TVD Reference:</b>	WELL @ 4814.0usft (Original Well Elev)
<b>Reference Site:</b>	AA (06N-63W)	<b>MD Reference:</b>	WELL @ 4814.0usft (Original Well Elev)
<b>Site Error:</b>	0.0 usft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Wells Ranch AA35-67-1AHNA	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Original Drilling	<b>Database:</b>	EDM Production
<b>Reference Design:</b>	APD - Rev 0	<b>Offset TVD Reference:</b>	Offset Datum

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

<b>Survey Tool Program</b>	<b>Date</b>	9/11/2013		
<b>From (usft)</b>	<b>To (usft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>
0.0	11,125.8	APD - Rev 0 (Original Drilling)	MWD	MWD - Standard

<b>Summary</b>						
Site Name	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
AA (06N-63W)						
Wells Ranch AA35-66-1AHNC - Original Drilling - APD -	1,200.0	1,197.0	112.9	107.8	22.106	CC, ES
Wells Ranch AA35-66-1AHNC - Original Drilling - APD -	11,125.8	11,216.6	673.7	407.6	2.532	SF
Wells Ranch AA35-67-1BHNA - Original Drilling - APD - R	1,200.0	1,199.0	76.5	71.4	14.962	CC
Wells Ranch AA35-67-1BHNA - Original Drilling - APD - R	11,125.8	11,083.7	331.6	60.5	1.223	Level 2, ES, SF
Wells Ranch AA35-67-1HNC - Original Drilling - APD - R	1,200.0	1,199.0	40.1	35.0	7.838	CC
Wells Ranch AA35-67-1HNC - Original Drilling - APD - R	11,125.8	11,244.2	218.5	8.3	1.039	Level 2, ES, SF

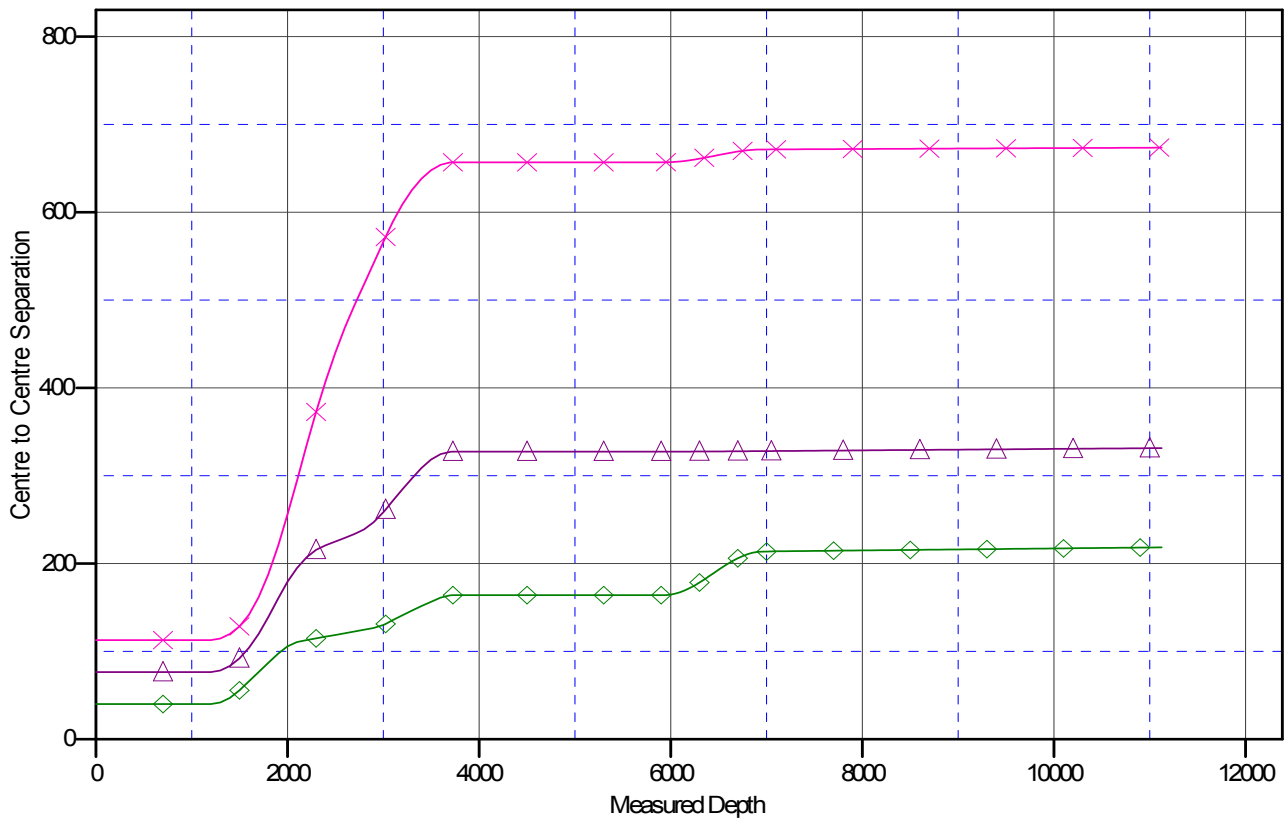
**Noble Energy Inc**  
Anticollision Summary Report

<b>Company:</b>	Northern Region Drilling - Working	<b>Local Co-ordinate Reference:</b>	Well Wells Ranch AA35-67-1AHNA
<b>Project:</b>	Wattenberg Field	<b>TVD Reference:</b>	WELL @ 4814.0usft (Original Well Elev)
<b>Reference Site:</b>	AA (06N-63W)	<b>MD Reference:</b>	WELL @ 4814.0usft (Original Well Elev)
<b>Site Error:</b>	0.0 usft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Wells Ranch AA35-67-1AHNA	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Original Drilling	<b>Database:</b>	EDM Production
<b>Reference Design:</b>	APD - Rev 0	<b>Offset TVD Reference:</b>	Offset Datum

Reference Depths are relative to WELL @ 4814.0usft (Original Well Ele  
Offset Depths are relative to Offset Datum  
Central Meridian is -105.500000

Coordinates are relative to: Wells Ranch AA35-67-1AHNA  
Coordinate System is US State Plane 1983, Colorado Northern Zone  
Grid Convergence at Surface is: 0.71°

## Ladder Plot



### LEGEND

5-67-1BHNA, Original Drilling, APD - Rev0 V0    ◆ Wells Ranch AA35-67-1HNC, Original Drilling, APD - Rev0 V0    ✕ Wells Ranch AA35-66-1AHNC, Original

**Noble Energy Inc**  
Anticollision Summary Report

<b>Company:</b>	Northern Region Drilling - Working	<b>Local Co-ordinate Reference:</b>	Well Wells Ranch AA35-67-1AHNA
<b>Project:</b>	Wattenberg Field	<b>TVD Reference:</b>	WELL @ 4814.0usft (Original Well Elev)
<b>Reference Site:</b>	AA (06N-63W)	<b>MD Reference:</b>	WELL @ 4814.0usft (Original Well Elev)
<b>Site Error:</b>	0.0 usft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Wells Ranch AA35-67-1AHNA	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Original Drilling	<b>Database:</b>	EDM Production
<b>Reference Design:</b>	APD - Rev 0	<b>Offset TVD Reference:</b>	Offset Datum

Reference Depths are relative to WELL @ 4814.0usft (Original Well Ele  
Offset Depths are relative to Offset Datum  
Central Meridian is -105.500000

Coordinates are relative to: Wells Ranch AA35-67-1AHNA  
Coordinate System is US State Plane 1983, Colorado Northern Zone  
Grid Convergence at Surface is: 0.71°

