

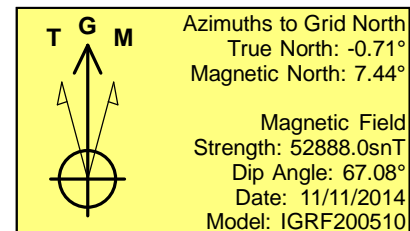
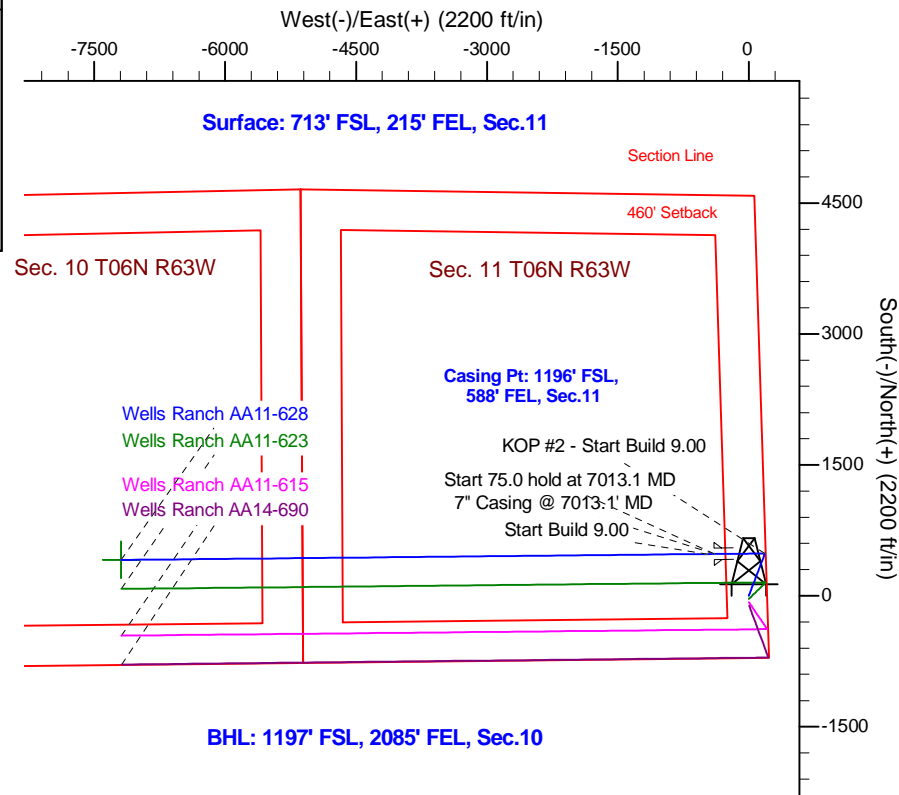
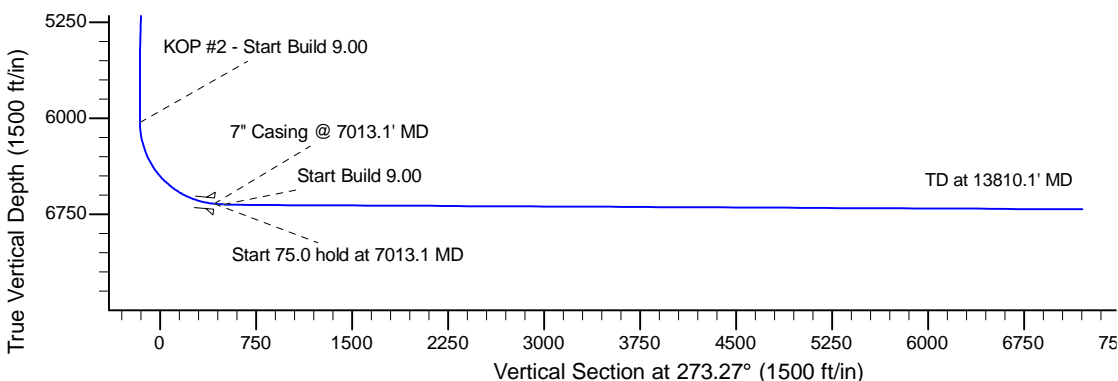
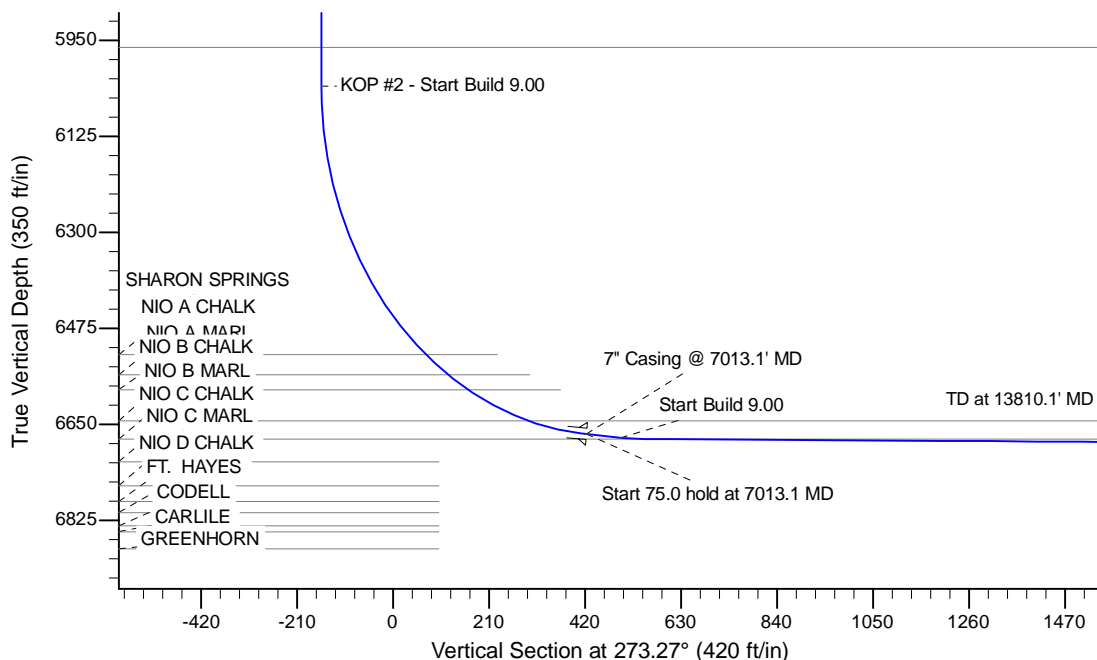
Project: Wattenberg Field  
 Site: AA (Sec.11-T06N-R63W) Weld County, CO  
 Well: Wells Ranch AA11-628  
 Wellbore: Original Drilling  
 Design: APD - Rev 0

# 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	VSec	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	1500.0	0.00	0.00	1500.0	0.0	0.0	0.00	0.00	0.0	
3	1900.5	8.01	20.88	1899.2	26.1	10.0	2.00	20.88	-8.5	
4	5224.5	8.01	20.88	5190.8	458.9	175.0	0.00	0.00	-148.6	
5	5625.0	0.00	0.00	5590.0	485.0	185.0	2.00	180.00	-157.1	
6	6068.7	0.00	0.00	6033.6	485.0	185.0	0.00	0.00	-157.1	
7	7013.1	85.00	269.42	6667.8	479.1	-396.1	9.00	269.42	422.8	
8	7088.1	85.00	269.42	6674.4	478.4	-470.8	0.00	0.00	497.3	
9	7140.3	89.70	269.42	6676.8	477.9	-523.0	9.00	0.00	549.4	
10	13810.1	89.70	269.42	6711.7	410.6	-7192.3	0.00	0.00	7204.0	Wells Ranch AA11-628 BHL 1197'FSL, 2085'FEL



WELL DETAILS: Wells Ranch AA11-628					
Ground Level: 4834.0					
0.0	0.0	Northing	Easting	Latitude	Longitude
		1425375.10	3307305.53	40.495800	-104.395020
Plan: APD - Rev 0 (Wells Ranch AA11-628/Original Drilling)					
Created By: Shailey Jewell			Date: 15:04, November 11 2014		
Checked: _____			Date: _____		
Reviewed: _____			Date: _____		
Approved: _____			Date: _____		

# **Northern Region Drilling - Working**

**Wattenberg Field**

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

**Wells Ranch AA11-628**

**Original Drilling**

**Plan: APD - Rev 0**

## **Standard Planning Report**

**11 November, 2014**

# Noble Energy Inc

## Planning Report

<b>Database:</b>	EDM01P	<b>Local Co-ordinate Reference:</b>	Well Wells Ranch AA11-628
<b>Company:</b>	Northern Region Drilling - Working	<b>TVD Reference:</b>	WELL @ 4858.0ft (Original Well Elev)
<b>Project:</b>	Wattenberg Field	<b>MD Reference:</b>	WELL @ 4858.0ft (Original Well Elev)
<b>Site:</b>	AA (06N-63W)	<b>North Reference:</b>	Grid
<b>Well:</b>	Wells Ranch AA11-628	<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 ft	Slot Radius:	13-3/16 "	Grid Convergence:	0.70 °

Well	Wells Ranch AA11-628					
Well Position	+N/-S	-2,469.9 ft	Northing:	1,425,375.11 usft	Latitude:	40.495800
	+E/-W	4,747.7 ft	Easting:	3,307,305.53 usft	Longitude:	-104.395020
Position Uncertainty		0.0 ft	Wellhead Elevation:	0.0 ft	Ground Level:	4,834.0 ft

<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	11/11/2014	8.16	67.08	52,888

<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) (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Direction (°)</b>
	0.0	0.0	0.0	273.27

<b>Plan Sections</b>										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	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	
1,500.0	0.00	0.00	1,500.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,900.5	8.01	20.88	1,899.2	26.1	10.0	2.00	2.00	0.00	20.88	
5,224.5	8.01	20.88	5,190.8	458.9	175.0	0.00	0.00	0.00	0.00	
5,625.0	0.00	0.00	5,590.0	485.0	185.0	2.00	-2.00	0.00	180.00	
6,068.7	0.00	0.00	6,033.6	485.0	185.0	0.00	0.00	0.00	0.00	
7,013.1	85.00	269.42	6,667.8	479.1	-396.1	9.00	9.00	0.00	269.42	
7,088.1	85.00	269.42	6,674.4	478.4	-470.8	0.00	0.00	0.00	0.00	
7,140.3	89.70	269.42	6,676.8	477.9	-523.0	9.00	9.00	0.00	0.00	
13,810.1	89.70	269.42	6,711.7	410.6	-7,192.3	0.00	0.00	0.00	0.00	Wells Ranch AA11-62

# Noble Energy Inc

## Planning Report

<b>Database:</b>	EDM01P	<b>Local Co-ordinate Reference:</b>	Well Wells Ranch AA11-628
<b>Company:</b>	Northern Region Drilling - Working	<b>TVD Reference:</b>	WELL @ 4858.0ft (Original Well Elev)
<b>Project:</b>	Wattenberg Field	<b>MD Reference:</b>	WELL @ 4858.0ft (Original Well Elev)
<b>Site:</b>	AA (06N-63W)	<b>North Reference:</b>	Grid
<b>Well:</b>	Wells Ranch AA11-628	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Original Drilling		
<b>Design:</b>	APD - Rev 0		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	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
<b>KOP - Start Build 2.00</b>									
1,550.0	1.00	20.88	1,550.0	0.4	0.2	-0.1	2.00	2.00	0.00
1,600.0	2.00	20.88	1,600.0	1.6	0.6	-0.5	2.00	2.00	0.00
1,650.0	3.00	20.88	1,649.9	3.7	1.4	-1.2	2.00	2.00	0.00
1,700.0	4.00	20.88	1,699.8	6.5	2.5	-2.1	2.00	2.00	0.00
1,750.0	5.00	20.88	1,749.7	10.2	3.9	-3.3	2.00	2.00	0.00
1,800.0	6.00	20.88	1,799.5	14.7	5.6	-4.7	2.00	2.00	0.00
1,850.0	7.00	20.88	1,849.1	20.0	7.6	-6.5	2.00	2.00	0.00
1,900.0	8.00	20.88	1,898.7	26.0	9.9	-8.4	2.00	2.00	0.00
1,900.5	8.01	20.88	1,899.2	26.1	10.0	-8.5	2.00	2.00	0.00
1,950.0	8.01	20.88	1,948.2	32.6	12.4	-10.5	0.00	0.00	0.00
2,000.0	8.01	20.88	1,997.7	39.1	14.9	-12.7	0.00	0.00	0.00
2,050.0	8.01	20.88	2,047.2	45.6	17.4	-14.8	0.00	0.00	0.00
2,100.0	8.01	20.88	2,096.8	52.1	19.9	-16.9	0.00	0.00	0.00
2,150.0	8.01	20.88	2,146.3	58.6	22.4	-19.0	0.00	0.00	0.00
2,200.0	8.01	20.88	2,195.8	65.1	24.8	-21.1	0.00	0.00	0.00
2,250.0	8.01	20.88	2,245.3	71.6	27.3	-23.2	0.00	0.00	0.00
2,300.0	8.01	20.88	2,294.8	78.1	29.8	-25.3	0.00	0.00	0.00
2,350.0	8.01	20.88	2,344.3	84.6	32.3	-27.4	0.00	0.00	0.00
2,400.0	8.01	20.88	2,393.8	91.1	34.8	-29.5	0.00	0.00	0.00
2,450.0	8.01	20.88	2,443.3	97.7	37.3	-31.6	0.00	0.00	0.00
2,500.0	8.01	20.88	2,492.9	104.2	39.7	-33.7	0.00	0.00	0.00
2,550.0	8.01	20.88	2,542.4	110.7	42.2	-35.8	0.00	0.00	0.00

# Noble Energy Inc

## Planning Report

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<b>Company:</b>	Northern Region Drilling - Working	<b>TVD Reference:</b>	WELL @ 4858.0ft (Original Well Elev)
<b>Project:</b>	Wattenberg Field	<b>MD Reference:</b>	WELL @ 4858.0ft (Original Well Elev)
<b>Site:</b>	AA (06N-63W)	<b>North Reference:</b>	Grid
<b>Well:</b>	Wells Ranch AA11-628	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Original Drilling		
<b>Design:</b>	APD - Rev 0		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
2,551.7	8.01	20.88	2,544.0	110.9	42.3	-35.9	0.00	0.00	0.00
<b>PIERRE</b>									
2,600.0	8.01	20.88	2,591.9	117.2	44.7	-37.9	0.00	0.00	0.00
2,650.0	8.01	20.88	2,641.4	123.7	47.2	-40.1	0.00	0.00	0.00
2,700.0	8.01	20.88	2,690.9	130.2	49.7	-42.2	0.00	0.00	0.00
2,750.0	8.01	20.88	2,740.4	136.7	52.1	-44.3	0.00	0.00	0.00
2,800.0	8.01	20.88	2,789.9	143.2	54.6	-46.4	0.00	0.00	0.00
2,850.0	8.01	20.88	2,839.4	149.7	57.1	-48.5	0.00	0.00	0.00
2,900.0	8.01	20.88	2,889.0	156.2	59.6	-50.6	0.00	0.00	0.00
2,950.0	8.01	20.88	2,938.5	162.8	62.1	-52.7	0.00	0.00	0.00
3,000.0	8.01	20.88	2,988.0	169.3	64.6	-54.8	0.00	0.00	0.00
3,050.0	8.01	20.88	3,037.5	175.8	67.0	-56.9	0.00	0.00	0.00
3,100.0	8.01	20.88	3,087.0	182.3	69.5	-59.0	0.00	0.00	0.00
3,150.0	8.01	20.88	3,136.5	188.8	72.0	-61.1	0.00	0.00	0.00
3,200.0	8.01	20.88	3,186.0	195.3	74.5	-63.2	0.00	0.00	0.00
3,250.0	8.01	20.88	3,235.5	201.8	77.0	-65.4	0.00	0.00	0.00
3,300.0	8.01	20.88	3,285.0	208.3	79.5	-67.5	0.00	0.00	0.00
3,350.0	8.01	20.88	3,334.6	214.8	81.9	-69.6	0.00	0.00	0.00
3,400.0	8.01	20.88	3,384.1	221.3	84.4	-71.7	0.00	0.00	0.00
3,450.0	8.01	20.88	3,433.6	227.9	86.9	-73.8	0.00	0.00	0.00
3,500.0	8.01	20.88	3,483.1	234.4	89.4	-75.9	0.00	0.00	0.00
3,550.0	8.01	20.88	3,532.6	240.9	91.9	-78.0	0.00	0.00	0.00
3,600.0	8.01	20.88	3,582.1	247.4	94.4	-80.1	0.00	0.00	0.00
3,650.0	8.01	20.88	3,631.6	253.9	96.8	-82.2	0.00	0.00	0.00
3,678.7	8.01	20.88	3,660.0	257.6	98.3	-83.4	0.00	0.00	0.00
<b>PARKMAN</b>									
3,700.0	8.01	20.88	3,681.1	260.4	99.3	-84.3	0.00	0.00	0.00
3,750.0	8.01	20.88	3,730.7	266.9	101.8	-86.4	0.00	0.00	0.00
3,800.0	8.01	20.88	3,780.2	273.4	104.3	-88.5	0.00	0.00	0.00
3,850.0	8.01	20.88	3,829.7	279.9	106.8	-90.6	0.00	0.00	0.00
3,900.0	8.01	20.88	3,879.2	286.4	109.3	-92.8	0.00	0.00	0.00
3,950.0	8.01	20.88	3,928.7	292.9	111.7	-94.9	0.00	0.00	0.00
4,000.0	8.01	20.88	3,978.2	299.5	114.2	-97.0	0.00	0.00	0.00
4,050.0	8.01	20.88	4,027.7	306.0	116.7	-99.1	0.00	0.00	0.00
4,100.0	8.01	20.88	4,077.2	312.5	119.2	-101.2	0.00	0.00	0.00
4,150.0	8.01	20.88	4,126.8	319.0	121.7	-103.3	0.00	0.00	0.00
4,200.0	8.01	20.88	4,176.3	325.5	124.2	-105.4	0.00	0.00	0.00
4,250.0	8.01	20.88	4,225.8	332.0	126.6	-107.5	0.00	0.00	0.00
4,300.0	8.01	20.88	4,275.3	338.5	129.1	-109.6	0.00	0.00	0.00
4,311.8	8.01	20.88	4,287.0	340.1	129.7	-110.1	0.00	0.00	0.00
<b>SUSSEX</b>									
4,350.0	8.01	20.88	4,324.8	345.0	131.6	-111.7	0.00	0.00	0.00
4,400.0	8.01	20.88	4,374.3	351.5	134.1	-113.8	0.00	0.00	0.00
4,450.0	8.01	20.88	4,423.8	358.0	136.6	-115.9	0.00	0.00	0.00
4,500.0	8.01	20.88	4,473.3	364.6	139.1	-118.1	0.00	0.00	0.00
4,550.0	8.01	20.88	4,522.9	371.1	141.5	-120.2	0.00	0.00	0.00
4,600.0	8.01	20.88	4,572.4	377.6	144.0	-122.3	0.00	0.00	0.00
4,650.0	8.01	20.88	4,621.9	384.1	146.5	-124.4	0.00	0.00	0.00
4,700.0	8.01	20.88	4,671.4	390.6	149.0	-126.5	0.00	0.00	0.00
4,750.0	8.01	20.88	4,720.9	397.1	151.5	-128.6	0.00	0.00	0.00
4,800.0	8.01	20.88	4,770.4	403.6	154.0	-130.7	0.00	0.00	0.00
4,850.0	8.01	20.88	4,819.9	410.1	156.4	-132.8	0.00	0.00	0.00
4,900.0	8.01	20.88	4,869.4	416.6	158.9	-134.9	0.00	0.00	0.00

# Noble Energy Inc

## Planning Report

<b>Database:</b>	EDM01P	<b>Local Co-ordinate Reference:</b>	Well Wells Ranch AA11-628
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<b>Site:</b>	AA (06N-63W)	<b>North Reference:</b>	Grid
<b>Well:</b>	Wells Ranch AA11-628	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Original Drilling		
<b>Design:</b>	APD - Rev 0		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
4,950.0	8.01	20.88	4,919.0	423.1	161.4	-137.0	0.00	0.00	0.00
5,000.0	8.01	20.88	4,968.5	429.7	163.9	-139.1	0.00	0.00	0.00
5,019.7	8.01	20.88	4,988.0	432.2	164.9	-140.0	0.00	0.00	0.00
<b>SHANNON</b>									
5,050.0	8.01	20.88	5,018.0	436.2	166.4	-141.2	0.00	0.00	0.00
5,100.0	8.01	20.88	5,067.5	442.7	168.9	-143.4	0.00	0.00	0.00
5,150.0	8.01	20.88	5,117.0	449.2	171.3	-145.5	0.00	0.00	0.00
5,200.0	8.01	20.88	5,166.5	455.7	173.8	-147.6	0.00	0.00	0.00
5,224.5	8.01	20.88	5,190.8	458.9	175.0	-148.6	0.00	0.00	0.00
<b>Start Drop -2.00</b>									
5,250.0	7.50	20.88	5,216.0	462.1	176.3	-149.6	2.00	-2.00	0.00
5,300.0	6.50	20.88	5,265.7	467.8	178.4	-151.5	2.00	-2.00	0.00
5,350.0	5.50	20.88	5,315.4	472.7	180.3	-153.1	2.00	-2.00	0.00
5,400.0	4.50	20.88	5,365.2	476.7	181.9	-154.4	2.00	-2.00	0.00
5,450.0	3.50	20.88	5,415.1	480.0	183.1	-155.4	2.00	-2.00	0.00
5,500.0	2.50	20.88	5,465.0	482.5	184.0	-156.2	2.00	-2.00	0.00
5,550.0	1.50	20.88	5,515.0	484.1	184.6	-156.8	2.00	-2.00	0.00
5,600.0	0.50	20.88	5,565.0	484.9	185.0	-157.0	2.00	-2.00	0.00
5,625.0	0.00	0.00	5,590.0	485.0	185.0	-157.1	2.00	-2.00	0.00
5,650.0	0.00	0.00	5,615.0	485.0	185.0	-157.1	0.00	0.00	0.00
5,700.0	0.00	0.00	5,665.0	485.0	185.0	-157.1	0.00	0.00	0.00
5,750.0	0.00	0.00	5,715.0	485.0	185.0	-157.1	0.00	0.00	0.00
5,800.0	0.00	0.00	5,765.0	485.0	185.0	-157.1	0.00	0.00	0.00
5,850.0	0.00	0.00	5,815.0	485.0	185.0	-157.1	0.00	0.00	0.00
5,900.0	0.00	0.00	5,865.0	485.0	185.0	-157.1	0.00	0.00	0.00
5,950.0	0.00	0.00	5,915.0	485.0	185.0	-157.1	0.00	0.00	0.00
5,998.0	0.00	0.00	5,963.0	485.0	185.0	-157.1	0.00	0.00	0.00
<b>TEEPEE BUTTES</b>									
6,000.0	0.00	0.00	5,965.0	485.0	185.0	-157.1	0.00	0.00	0.00
6,050.0	0.00	0.00	6,015.0	485.0	185.0	-157.1	0.00	0.00	0.00
6,068.7	0.00	0.00	6,033.7	485.0	185.0	-157.1	0.00	0.00	0.00
<b>KOP #2 - Start Build 9.00</b>									
6,100.0	2.82	269.42	6,065.0	485.0	184.2	-156.3	9.01	9.01	0.00
6,150.0	7.32	269.42	6,114.8	484.9	179.8	-151.9	9.00	9.00	0.00
6,200.0	11.82	269.42	6,164.0	484.9	171.5	-143.6	9.00	9.00	0.00
6,250.0	16.32	269.42	6,212.5	484.7	159.3	-131.5	9.00	9.00	0.00
6,300.0	20.82	269.42	6,259.9	484.6	143.4	-115.6	9.00	9.00	0.00
6,350.0	25.32	269.42	6,305.9	484.4	123.8	-96.0	9.00	9.00	0.00
6,400.0	29.82	269.42	6,350.2	484.1	100.7	-72.9	9.00	9.00	0.00
6,450.0	34.32	269.42	6,392.6	483.9	74.2	-46.5	9.00	9.00	0.00
6,500.0	38.82	269.42	6,432.7	483.6	44.4	-16.7	9.00	9.00	0.00
6,550.0	43.32	269.42	6,470.4	483.3	11.5	16.0	9.00	9.00	0.00
6,600.0	47.82	269.42	6,505.4	482.9	-24.2	51.6	9.00	9.00	0.00
6,626.9	50.24	269.42	6,523.0	482.7	-44.4	71.9	9.00	9.00	0.00
<b>SHARON SPRINGS</b>									
6,650.0	52.32	269.42	6,537.5	482.5	-62.5	89.9	8.99	8.99	0.00
6,688.4	55.77	269.42	6,560.0	482.2	-93.5	120.9	9.00	9.00	0.00
<b>NIO A CHALK</b>									
6,700.0	56.82	269.42	6,566.5	482.1	-103.2	130.5	8.99	8.99	0.00
6,739.4	60.37	269.42	6,587.0	481.8	-136.9	164.1	9.00	9.00	0.00
<b>NIO A MARL</b>									
6,750.0	61.32	269.42	6,592.2	481.7	-146.1	173.3	8.99	8.99	0.00
6,800.0	65.82	269.42	6,614.4	481.2	-190.9	218.0	9.00	9.00	0.00

# Noble Energy Inc

## Planning Report

<b>Database:</b>	EDM01P	<b>Local Co-ordinate Reference:</b>	Well Wells Ranch AA11-628
<b>Company:</b>	Northern Region Drilling - Working	<b>TVD Reference:</b>	WELL @ 4858.0ft (Original Well Elev)
<b>Project:</b>	Wattenberg Field	<b>MD Reference:</b>	WELL @ 4858.0ft (Original Well Elev)
<b>Site:</b>	AA (06N-63W)	<b>North Reference:</b>	Grid
<b>Well:</b>	Wells Ranch AA11-628	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Original Drilling		
<b>Design:</b>	APD - Rev 0		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
6,850.0	70.32	269.42	6,633.1	480.7	-237.2	264.2	9.00	9.00	0.00
6,885.2	73.49	269.42	6,644.0	480.4	-270.7	297.6	9.00	9.00	0.00
<b>NIO B CHALK</b>									
6,900.0	74.82	269.42	6,648.0	480.3	-284.9	311.8	8.99	8.99	0.00
6,950.0	79.32	269.42	6,659.2	479.8	-333.6	360.4	9.00	9.00	0.00
7,000.0	83.82	269.42	6,666.6	479.3	-383.1	409.8	9.00	9.00	0.00
7,013.1	85.00	269.42	6,667.8	479.1	-396.1	422.8	9.01	9.01	0.00
<b>Start 75.0 hold at 7013.1 MD - 7" Casing @ 7013.1' MD</b>									
7,050.0	85.00	269.42	6,671.0	478.8	-432.9	459.5	0.00	0.00	0.00
7,088.1	85.00	269.42	6,674.4	478.4	-470.8	497.3	0.00	0.00	0.00
<b>Start Build 9.00</b>									
7,100.0	86.07	269.42	6,675.3	478.3	-482.7	509.2	8.98	8.98	0.00
7,140.3	89.70	269.42	6,676.8	477.9	-523.0	549.4	9.00	9.00	0.00
7,150.0	89.70	269.42	6,676.8	477.8	-532.6	559.0	0.00	0.00	0.00
7,182.9	89.70	269.42	6,677.0	477.4	-565.5	591.8	0.00	0.00	0.00
<b>NIO B MARL</b>									
7,200.0	89.70	269.42	6,677.1	477.3	-582.6	608.9	0.00	0.00	0.00
7,250.0	89.70	269.42	6,677.4	476.8	-632.6	658.8	0.00	0.00	0.00
7,300.0	89.70	269.42	6,677.6	476.2	-682.6	708.7	0.00	0.00	0.00
7,350.0	89.70	269.42	6,677.9	475.7	-732.6	758.6	0.00	0.00	0.00
7,400.0	89.70	269.42	6,678.1	475.2	-782.6	808.4	0.00	0.00	0.00
7,450.0	89.70	269.42	6,678.4	474.7	-832.6	858.3	0.00	0.00	0.00
7,500.0	89.70	269.42	6,678.7	474.2	-882.6	908.2	0.00	0.00	0.00
7,550.0	89.70	269.42	6,678.9	473.7	-932.6	958.1	0.00	0.00	0.00
7,600.0	89.70	269.42	6,679.2	473.2	-982.6	1,008.0	0.00	0.00	0.00
7,650.0	89.70	269.42	6,679.4	472.7	-1,032.6	1,057.9	0.00	0.00	0.00
7,700.0	89.70	269.42	6,679.7	472.2	-1,082.6	1,107.8	0.00	0.00	0.00
7,750.0	89.70	269.42	6,680.0	471.7	-1,132.6	1,157.7	0.00	0.00	0.00
7,800.0	89.70	269.42	6,680.2	471.2	-1,182.6	1,207.5	0.00	0.00	0.00
7,850.0	89.70	269.42	6,680.5	470.7	-1,232.6	1,257.4	0.00	0.00	0.00
7,900.0	89.70	269.42	6,680.8	470.2	-1,282.6	1,307.3	0.00	0.00	0.00
7,950.0	89.70	269.42	6,681.0	469.7	-1,332.6	1,357.2	0.00	0.00	0.00
8,000.0	89.70	269.42	6,681.3	469.2	-1,382.6	1,407.1	0.00	0.00	0.00
8,050.0	89.70	269.42	6,681.5	468.7	-1,432.6	1,457.0	0.00	0.00	0.00
8,100.0	89.70	269.42	6,681.8	468.2	-1,482.6	1,506.9	0.00	0.00	0.00
8,150.0	89.70	269.42	6,682.1	467.7	-1,532.6	1,556.7	0.00	0.00	0.00
8,200.0	89.70	269.42	6,682.3	467.2	-1,582.6	1,606.6	0.00	0.00	0.00
8,250.0	89.70	269.42	6,682.6	466.7	-1,632.6	1,656.5	0.00	0.00	0.00
8,300.0	89.70	269.42	6,682.8	466.2	-1,682.6	1,706.4	0.00	0.00	0.00
8,350.0	89.70	269.42	6,683.1	465.7	-1,732.6	1,756.3	0.00	0.00	0.00
8,400.0	89.70	269.42	6,683.4	465.2	-1,782.6	1,806.2	0.00	0.00	0.00
8,450.0	89.70	269.42	6,683.6	464.6	-1,832.6	1,856.1	0.00	0.00	0.00
8,500.0	89.70	269.42	6,683.9	464.1	-1,882.6	1,906.0	0.00	0.00	0.00
8,550.0	89.70	269.42	6,684.2	463.6	-1,932.6	1,955.8	0.00	0.00	0.00
8,600.0	89.70	269.42	6,684.4	463.1	-1,982.6	2,005.7	0.00	0.00	0.00
8,650.0	89.70	269.42	6,684.7	462.6	-2,032.6	2,055.6	0.00	0.00	0.00
8,700.0	89.70	269.42	6,684.9	462.1	-2,082.5	2,105.5	0.00	0.00	0.00
8,750.0	89.70	269.42	6,685.2	461.6	-2,132.5	2,155.4	0.00	0.00	0.00
8,800.0	89.70	269.42	6,685.5	461.1	-2,182.5	2,205.3	0.00	0.00	0.00
8,850.0	89.70	269.42	6,685.7	460.6	-2,232.5	2,255.2	0.00	0.00	0.00
8,900.0	89.70	269.42	6,686.0	460.1	-2,282.5	2,305.1	0.00	0.00	0.00
8,950.0	89.70	269.42	6,686.3	459.6	-2,332.5	2,354.9	0.00	0.00	0.00
9,000.0	89.70	269.42	6,686.5	459.1	-2,382.5	2,404.8	0.00	0.00	0.00

# Noble Energy Inc

## Planning Report

<b>Database:</b>	EDM01P	<b>Local Co-ordinate Reference:</b>	Well Wells Ranch AA11-628
<b>Company:</b>	Northern Region Drilling - Working	<b>TVD Reference:</b>	WELL @ 4858.0ft (Original Well Elev)
<b>Project:</b>	Wattenberg Field	<b>MD Reference:</b>	WELL @ 4858.0ft (Original Well Elev)
<b>Site:</b>	AA (06N-63W)	<b>North Reference:</b>	Grid
<b>Well:</b>	Wells Ranch AA11-628	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Original Drilling		
<b>Design:</b>	APD - Rev 0		

Planned Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
9,050.0	89.70	269.42	6,686.8	458.6	-2,432.5	2,454.7	0.00	0.00	0.00	
9,100.0	89.70	269.42	6,687.0	458.1	-2,482.5	2,504.6	0.00	0.00	0.00	
9,150.0	89.70	269.42	6,687.3	457.6	-2,532.5	2,554.5	0.00	0.00	0.00	
9,200.0	89.70	269.42	6,687.6	457.1	-2,582.5	2,604.4	0.00	0.00	0.00	
9,250.0	89.70	269.42	6,687.8	456.6	-2,632.5	2,654.3	0.00	0.00	0.00	
9,300.0	89.70	269.42	6,688.1	456.1	-2,682.5	2,704.1	0.00	0.00	0.00	
9,350.0	89.70	269.42	6,688.3	455.6	-2,732.5	2,754.0	0.00	0.00	0.00	
9,400.0	89.70	269.42	6,688.6	455.1	-2,782.5	2,803.9	0.00	0.00	0.00	
9,450.0	89.70	269.42	6,688.9	454.6	-2,832.5	2,853.8	0.00	0.00	0.00	
9,500.0	89.70	269.42	6,689.1	454.1	-2,882.5	2,903.7	0.00	0.00	0.00	
9,550.0	89.70	269.42	6,689.4	453.6	-2,932.5	2,953.6	0.00	0.00	0.00	
9,600.0	89.70	269.42	6,689.7	453.0	-2,982.5	3,003.5	0.00	0.00	0.00	
9,650.0	89.70	269.42	6,689.9	452.5	-3,032.5	3,053.4	0.00	0.00	0.00	
9,700.0	89.70	269.42	6,690.2	452.0	-3,082.5	3,103.2	0.00	0.00	0.00	
9,750.0	89.70	269.42	6,690.4	451.5	-3,132.5	3,153.1	0.00	0.00	0.00	
9,800.0	89.70	269.42	6,690.7	451.0	-3,182.5	3,203.0	0.00	0.00	0.00	
9,850.0	89.70	269.42	6,691.0	450.5	-3,232.5	3,252.9	0.00	0.00	0.00	
9,900.0	89.70	269.42	6,691.2	450.0	-3,282.5	3,302.8	0.00	0.00	0.00	
9,950.0	89.70	269.42	6,691.5	449.5	-3,332.5	3,352.7	0.00	0.00	0.00	
10,000.0	89.70	269.42	6,691.8	449.0	-3,382.5	3,402.6	0.00	0.00	0.00	
10,050.0	89.70	269.42	6,692.0	448.5	-3,432.5	3,452.4	0.00	0.00	0.00	
10,100.0	89.70	269.42	6,692.3	448.0	-3,482.5	3,502.3	0.00	0.00	0.00	
10,150.0	89.70	269.42	6,692.5	447.5	-3,532.5	3,552.2	0.00	0.00	0.00	
10,200.0	89.70	269.42	6,692.8	447.0	-3,582.5	3,602.1	0.00	0.00	0.00	
10,250.0	89.70	269.42	6,693.1	446.5	-3,632.5	3,652.0	0.00	0.00	0.00	
10,300.0	89.70	269.42	6,693.3	446.0	-3,682.4	3,701.9	0.00	0.00	0.00	
10,350.0	89.70	269.42	6,693.6	445.5	-3,732.4	3,751.8	0.00	0.00	0.00	
10,400.0	89.70	269.42	6,693.8	445.0	-3,782.4	3,801.7	0.00	0.00	0.00	
10,450.0	89.70	269.42	6,694.1	444.5	-3,832.4	3,851.5	0.00	0.00	0.00	
10,500.0	89.70	269.42	6,694.4	444.0	-3,882.4	3,901.4	0.00	0.00	0.00	
10,550.0	89.70	269.42	6,694.6	443.5	-3,932.4	3,951.3	0.00	0.00	0.00	
10,600.0	89.70	269.42	6,694.9	443.0	-3,982.4	4,001.2	0.00	0.00	0.00	
10,650.0	89.70	269.42	6,695.2	442.5	-4,032.4	4,051.1	0.00	0.00	0.00	
10,700.0	89.70	269.42	6,695.4	442.0	-4,082.4	4,101.0	0.00	0.00	0.00	
10,750.0	89.70	269.42	6,695.7	441.4	-4,132.4	4,150.9	0.00	0.00	0.00	
10,800.0	89.70	269.42	6,695.9	440.9	-4,182.4	4,200.8	0.00	0.00	0.00	
10,850.0	89.70	269.42	6,696.2	440.4	-4,232.4	4,250.6	0.00	0.00	0.00	
10,900.0	89.70	269.42	6,696.5	439.9	-4,282.4	4,300.5	0.00	0.00	0.00	
10,950.0	89.70	269.42	6,696.7	439.4	-4,332.4	4,350.4	0.00	0.00	0.00	
11,000.0	89.70	269.42	6,697.0	438.9	-4,382.4	4,400.3	0.00	0.00	0.00	
11,050.0	89.70	269.42	6,697.2	438.4	-4,432.4	4,450.2	0.00	0.00	0.00	
11,100.0	89.70	269.42	6,697.5	437.9	-4,482.4	4,500.1	0.00	0.00	0.00	
11,150.0	89.70	269.42	6,697.8	437.4	-4,532.4	4,550.0	0.00	0.00	0.00	
11,200.0	89.70	269.42	6,698.0	436.9	-4,582.4	4,599.8	0.00	0.00	0.00	
11,250.0	89.70	269.42	6,698.3	436.4	-4,632.4	4,649.7	0.00	0.00	0.00	
11,300.0	89.70	269.42	6,698.6	435.9	-4,682.4	4,699.6	0.00	0.00	0.00	
11,350.0	89.70	269.42	6,698.8	435.4	-4,732.4	4,749.5	0.00	0.00	0.00	
11,400.0	89.70	269.42	6,699.1	434.9	-4,782.4	4,799.4	0.00	0.00	0.00	
11,450.0	89.70	269.42	6,699.3	434.4	-4,832.4	4,849.3	0.00	0.00	0.00	
11,500.0	89.70	269.42	6,699.6	433.9	-4,882.4	4,899.2	0.00	0.00	0.00	
11,550.0	89.70	269.42	6,699.9	433.4	-4,932.4	4,949.1	0.00	0.00	0.00	
11,600.0	89.70	269.42	6,700.1	432.9	-4,982.4	4,998.9	0.00	0.00	0.00	
11,650.0	89.70	269.42	6,700.4	432.4	-5,032.4	5,048.8	0.00	0.00	0.00	
11,700.0	89.70	269.42	6,700.7	431.9	-5,082.4	5,098.7	0.00	0.00	0.00	



# Noble Energy Inc

## Planning Report

<b>Database:</b>	EDM01P	<b>Local Co-ordinate Reference:</b>	Well Wells Ranch AA11-628
<b>Company:</b>	Northern Region Drilling - Working	<b>TVD Reference:</b>	WELL @ 4858.0ft (Original Well Elev)
<b>Project:</b>	Wattenberg Field	<b>MD Reference:</b>	WELL @ 4858.0ft (Original Well Elev)
<b>Site:</b>	AA (06N-63W)	<b>North Reference:</b>	Grid
<b>Well:</b>	Wells Ranch AA11-628	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Original Drilling		
<b>Design:</b>	APD - Rev 0		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
11,750.0	89.70	269.42	6,700.9	431.4	-5,132.4	5,148.6	0.00	0.00	0.00
11,800.0	89.70	269.42	6,701.2	430.9	-5,182.4	5,198.5	0.00	0.00	0.00
11,850.0	89.70	269.42	6,701.4	430.4	-5,232.4	5,248.4	0.00	0.00	0.00
11,900.0	89.70	269.42	6,701.7	429.8	-5,282.3	5,298.3	0.00	0.00	0.00
11,950.0	89.70	269.42	6,702.0	429.3	-5,332.3	5,348.1	0.00	0.00	0.00
12,000.0	89.70	269.42	6,702.2	428.8	-5,382.3	5,398.0	0.00	0.00	0.00
12,050.0	89.70	269.42	6,702.5	428.3	-5,432.3	5,447.9	0.00	0.00	0.00
12,100.0	89.70	269.42	6,702.7	427.8	-5,482.3	5,497.8	0.00	0.00	0.00
12,150.0	89.70	269.42	6,703.0	427.3	-5,532.3	5,547.7	0.00	0.00	0.00
12,200.0	89.70	269.42	6,703.3	426.8	-5,582.3	5,597.6	0.00	0.00	0.00
12,250.0	89.70	269.42	6,703.5	426.3	-5,632.3	5,647.5	0.00	0.00	0.00
12,300.0	89.70	269.42	6,703.8	425.8	-5,682.3	5,697.4	0.00	0.00	0.00
12,350.0	89.70	269.42	6,704.1	425.3	-5,732.3	5,747.2	0.00	0.00	0.00
12,400.0	89.70	269.42	6,704.3	424.8	-5,782.3	5,797.1	0.00	0.00	0.00
12,450.0	89.70	269.42	6,704.6	424.3	-5,832.3	5,847.0	0.00	0.00	0.00
12,500.0	89.70	269.42	6,704.8	423.8	-5,882.3	5,896.9	0.00	0.00	0.00
12,550.0	89.70	269.42	6,705.1	423.3	-5,932.3	5,946.8	0.00	0.00	0.00
12,600.0	89.70	269.42	6,705.4	422.8	-5,982.3	5,996.7	0.00	0.00	0.00
12,650.0	89.70	269.42	6,705.6	422.3	-6,032.3	6,046.6	0.00	0.00	0.00
12,700.0	89.70	269.42	6,705.9	421.8	-6,082.3	6,096.5	0.00	0.00	0.00
12,750.0	89.70	269.42	6,706.1	421.3	-6,132.3	6,146.3	0.00	0.00	0.00
12,800.0	89.70	269.42	6,706.4	420.8	-6,182.3	6,196.2	0.00	0.00	0.00
12,850.0	89.70	269.42	6,706.7	420.3	-6,232.3	6,246.1	0.00	0.00	0.00
12,900.0	89.70	269.42	6,706.9	419.8	-6,282.3	6,296.0	0.00	0.00	0.00
12,950.0	89.70	269.42	6,707.2	419.3	-6,332.3	6,345.9	0.00	0.00	0.00
13,000.0	89.70	269.42	6,707.5	418.8	-6,382.3	6,395.8	0.00	0.00	0.00
13,050.0	89.70	269.42	6,707.7	418.2	-6,432.3	6,445.7	0.00	0.00	0.00
13,100.0	89.70	269.42	6,708.0	417.7	-6,482.3	6,495.5	0.00	0.00	0.00
13,150.0	89.70	269.42	6,708.2	417.2	-6,532.3	6,545.4	0.00	0.00	0.00
13,200.0	89.70	269.42	6,708.5	416.7	-6,582.3	6,595.3	0.00	0.00	0.00
13,250.0	89.70	269.42	6,708.8	416.2	-6,632.3	6,645.2	0.00	0.00	0.00
13,300.0	89.70	269.42	6,709.0	415.7	-6,682.3	6,695.1	0.00	0.00	0.00
13,350.0	89.70	269.42	6,709.3	415.2	-6,732.3	6,745.0	0.00	0.00	0.00
13,400.0	89.70	269.42	6,709.6	414.7	-6,782.3	6,794.9	0.00	0.00	0.00
13,450.0	89.70	269.42	6,709.8	414.2	-6,832.3	6,844.8	0.00	0.00	0.00
13,500.0	89.70	269.42	6,710.1	413.7	-6,882.2	6,894.6	0.00	0.00	0.00
13,550.0	89.70	269.42	6,710.3	413.2	-6,932.2	6,944.5	0.00	0.00	0.00
13,600.0	89.70	269.42	6,710.6	412.7	-6,982.2	6,994.4	0.00	0.00	0.00
13,650.0	89.70	269.42	6,710.9	412.2	-7,032.2	7,044.3	0.00	0.00	0.00
13,700.0	89.70	269.42	6,711.1	411.7	-7,082.2	7,094.2	0.00	0.00	0.00
13,750.0	89.70	269.42	6,711.4	411.2	-7,132.2	7,144.1	0.00	0.00	0.00
13,800.0	89.70	269.42	6,711.6	410.7	-7,182.2	7,194.0	0.00	0.00	0.00
13,810.1	89.70	269.42	6,711.7	410.6	-7,192.3	7,204.0	0.00	0.00	0.00
TD at 13810.1 - Wells Ranch AA11-628 BHL 1197'FSL, 2085'FEL									

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## Planning Report

<b>Database:</b>	EDM01P	<b>Local Co-ordinate Reference:</b>	Well Wells Ranch AA11-628
<b>Company:</b>	Northern Region Drilling - Working	<b>TVD Reference:</b>	WELL @ 4858.0ft (Original Well Elev)
<b>Project:</b>	Wattenberg Field	<b>MD Reference:</b>	WELL @ 4858.0ft (Original Well Elev)
<b>Site:</b>	AA (06N-63W)	<b>North Reference:</b>	Grid
<b>Well:</b>	Wells Ranch AA11-628	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Original Drilling		
<b>Design:</b>	APD - Rev 0		

Design Targets									
Target Name	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- hit/miss target	(°)	(°)	(ft)	(ft)	(ft)	(usft)	(usft)		
- Shape									
Wells Ranch AA11-628 E	0.00	0.00	6,711.7	410.6	-7,192.3	1,425,785.67	3,300,113.47	40.497170	-104.420860
- plan hits target center									
- Point									

Casing Points				
Measured Depth	Vertical Depth	Name	Casing Diameter	Hole Diameter
(ft)	(ft)		(")	(")
7,013.1	6,667.8	7" Casing @ 7013.1' MD	7	8-3/4

Formations					
Measured Depth	Vertical Depth	Name	Lithology	Dip	Dip Direction
(ft)	(ft)			(°)	(°)
2,551.7	2,544.0	PIERRE		0.00	
3,678.7	3,660.0	PARKMAN		0.00	
4,311.8	4,287.0	SUSSEX		0.00	
5,019.7	4,988.0	SHANNON		0.00	
5,998.0	5,963.0	TEEPEE BUTTES		0.00	
6,626.9	6,523.0	SHARON SPRINGS		0.00	
6,688.4	6,560.0	NIO A CHALK		0.00	
6,739.4	6,587.0	NIO A MARL		0.00	
6,885.2	6,644.0	NIO B CHALK		0.00	
7,182.9	6,677.0	NIO B MARL		0.00	

Plan Annotations				
Measured Depth	Vertical Depth	Local Coordinates		Comment
(ft)	(ft)	+N/-S (ft)	+E/-W (ft)	
1,500.0	1,500.0	0.0	0.0	KOP - Start Build 2.00
5,224.5	5,190.8	458.9	175.0	Start Drop -2.00
6,068.7	6,033.7	485.0	185.0	KOP #2 - Start Build 9.00
7,013.1	6,667.8	479.1	-396.1	Start 75.0 hold at 7013.1 MD
7,088.1	6,674.4	478.4	-470.8	Start Build 9.00
13,810.1	6,711.7	410.6	-7,192.3	TD at 13810.1

# **Northern Region Drilling - Working**

**Wattenberg Field**

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

**Wells Ranch AA11-628**

**Original Drilling**

**APD - Rev 0**

## **Anticollision Summary Report**

**11 November, 2014**

**Noble Energy Inc**  
Anticollision Summary Report

<b>Company:</b>	Northern Region Drilling - Working	<b>Local Co-ordinate Reference:</b>	Well Wells Ranch AA11-628
<b>Project:</b>	Wattenberg Field	<b>TVD Reference:</b>	WELL @ 4858.0ft (Original Well Elev)
<b>Reference Site:</b>	AA (06N-63W)	<b>MD Reference:</b>	WELL @ 4858.0ft (Original Well Elev)
<b>Site Error:</b>	0.0 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Wells Ranch AA11-628	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Original Drilling	<b>Database:</b>	EDM01P
<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>	MD Interval 100.0ft	<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 ft	<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>	11/11/2014		
<b>From (ft)</b>	<b>To (ft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>
0.0	13,809.8	APD - Rev 0 (Original Drilling)	MWD	MWD - Standard

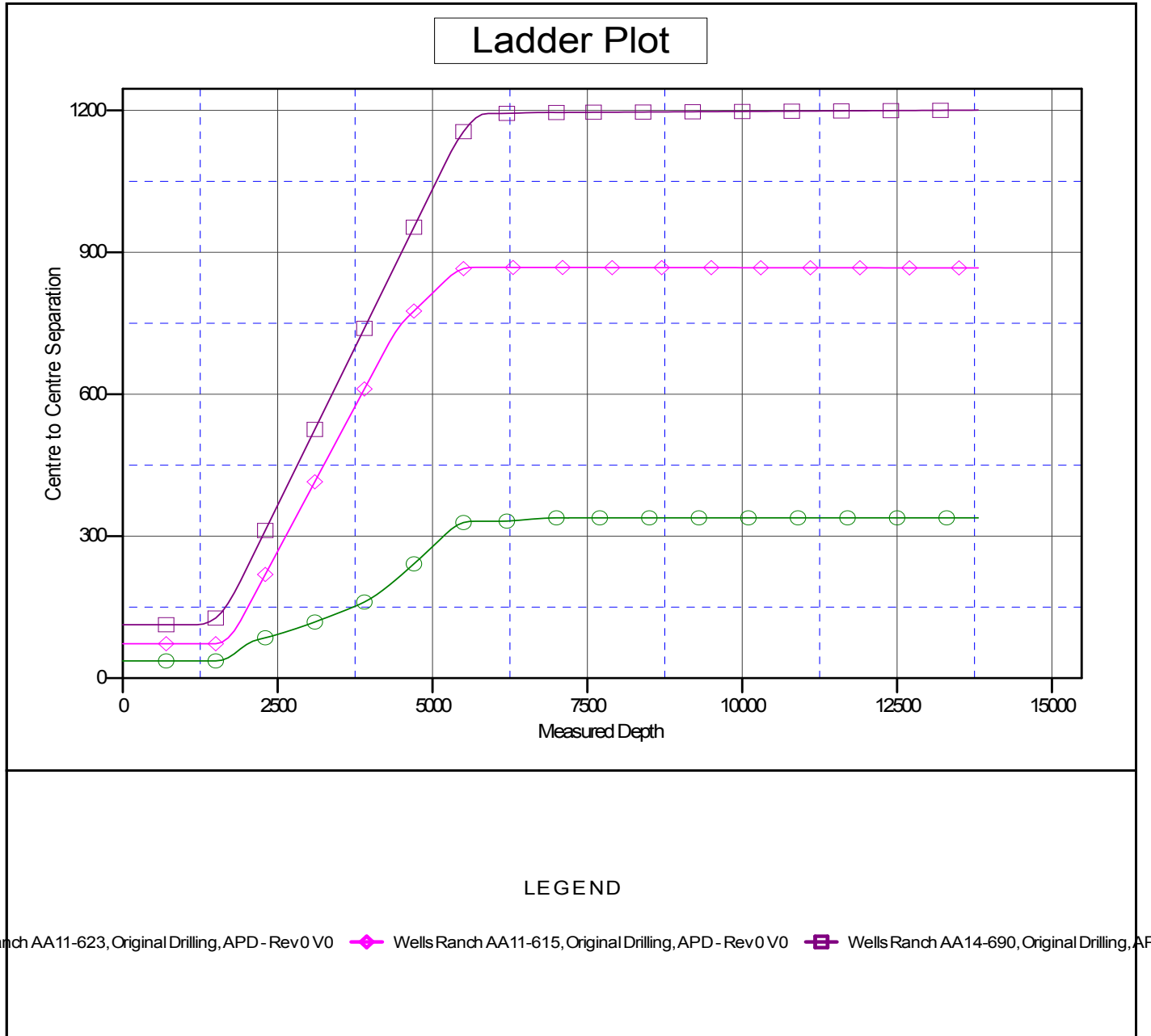
<b>Summary</b>						
<b>Site Name</b>	<b>Reference Measured Depth (ft)</b>	<b>Offset Measured Depth (ft)</b>	<b>Distance Between Centres (ft)</b>	<b>Distance Between Ellipses (ft)</b>	<b>Separation Factor</b>	<b>Warning</b>
<b>Offset Well - Wellbore - Design</b>						
AA (06N-63W)						
Wells Ranch AA11-615 - Original Drilling - APD - Rev 0	1,500.0	1,498.0	72.9	66.4	11.279	CC, ES
Wells Ranch AA11-615 - Original Drilling - APD - Rev 0	13,810.1	13,813.1	867.1	459.2	2.126	SF
Wells Ranch AA11-623 - Original Drilling - APD - Rev 0	1,500.0	1,499.0	36.4	30.0	5.637	CC
Wells Ranch AA11-623 - Original Drilling - APD - Rev 0	13,810.1	13,868.6	338.8	-61.2	0.847	Level 1, ES, SF
Wells Ranch AA14-690 - Original Drilling - APD - Rev 0	1,200.0	1,196.0	113.0	107.9	22.122	CC, ES
Wells Ranch AA14-690 - Original Drilling - APD - Rev 0	13,810.1	13,911.9	1,200.7	793.4	2.948	SF

**Noble Energy Inc**  
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<b>Reference Site:</b>	AA (06N-63W)	<b>MD Reference:</b>	WELL @ 4858.0ft (Original Well Elev)
<b>Site Error:</b>	0.0 ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Wells Ranch AA11-628	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Original Drilling	<b>Database:</b>	EDM01P
<b>Reference Design:</b>	APD - Rev 0	<b>Offset TVD Reference:</b>	Offset Datum

Reference Depths are relative to WELL @ 4858.0ft (Original Well Elev)  
Offset Depths are relative to Offset Datum  
Central Meridian is -105.500000

Coordinates are relative to: Wells Ranch AA11-628  
Coordinate System is US State Plane 1983, Colorado Northern Zone  
Grid Convergence at Surface is: 0.71°



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

**Noble Energy Inc**  
Anticollision Summary Report

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<b>Reference Site:</b>	AA (06N-63W)	<b>MD Reference:</b>	WELL @ 4858.0ft (Original Well Elev)
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<b>Reference Well:</b>	Wells Ranch AA11-628	<b>Survey Calculation Method:</b>	Minimum Curvature
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<b>Reference Wellbore</b>	Original Drilling	<b>Database:</b>	EDM01P
<b>Reference Design:</b>	APD - Rev 0	<b>Offset TVD Reference:</b>	Offset Datum

Reference Depths are relative to WELL @ 4858.0ft (Original Well Elev)  
Offset Depths are relative to Offset Datum  
Central Meridian is -105.500000

Coordinates are relative to: Wells Ranch AA11-628  
Coordinate System is US State Plane 1983, Colorado Northern Zone  
Grid Convergence at Surface is: 0.71°

