

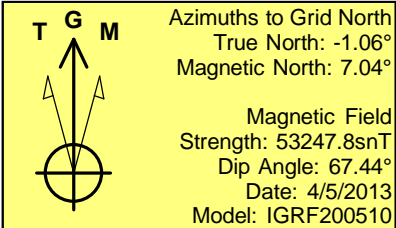
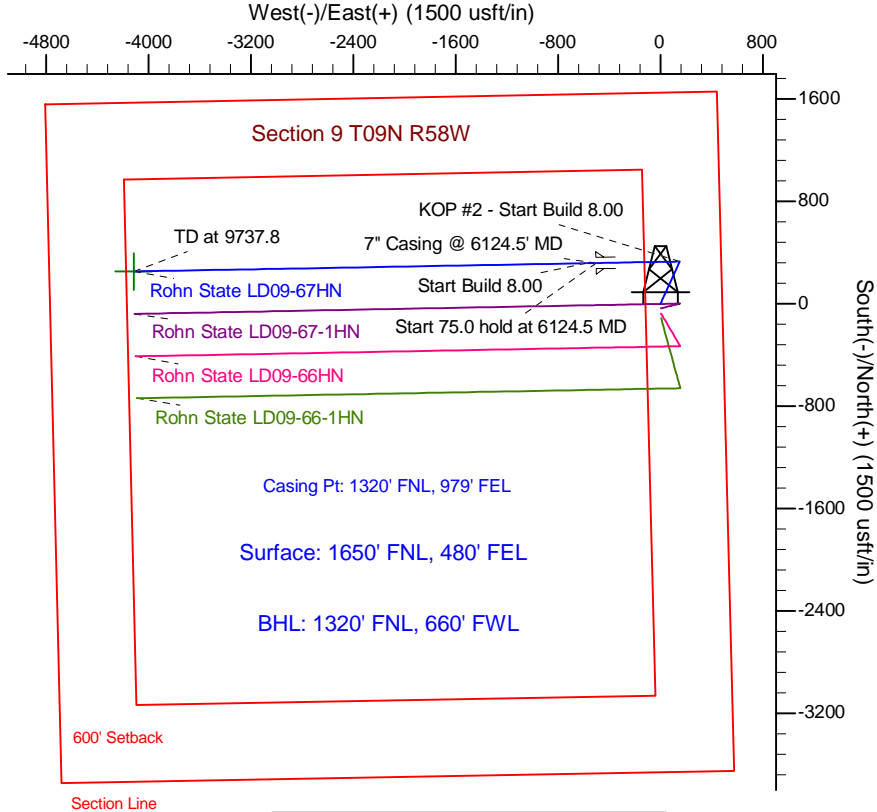
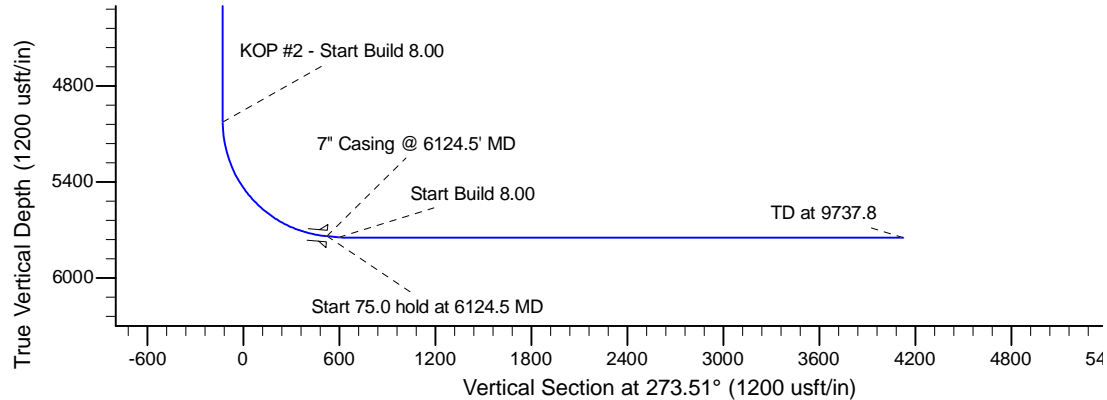
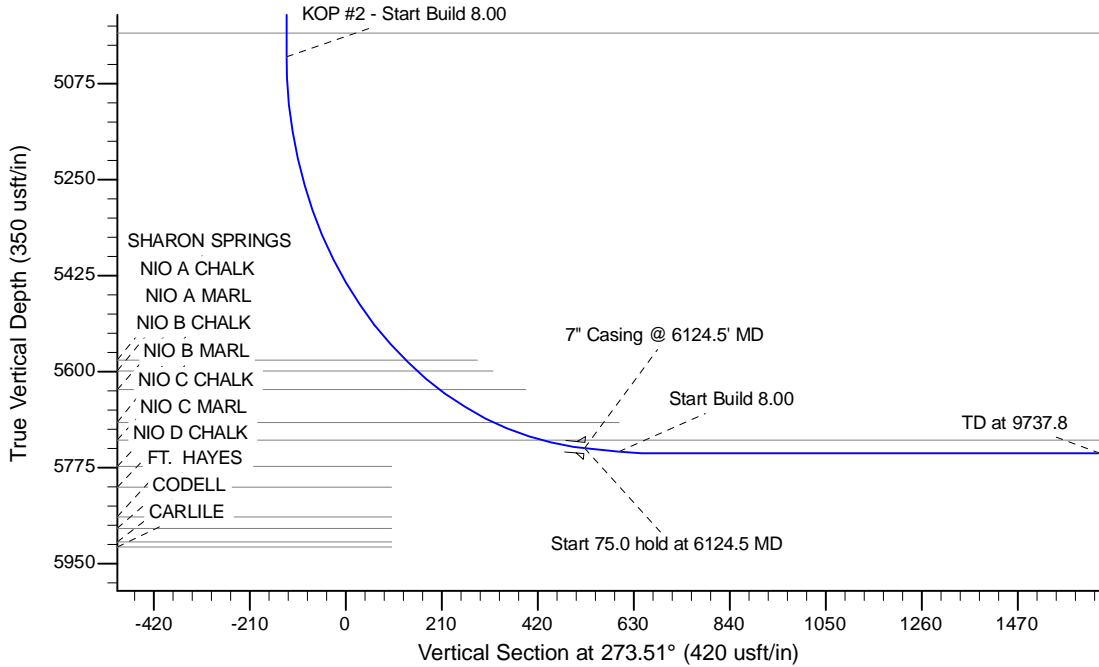
Project: Wattenberg Field  
Site: LD (Sec.9-T09N-R58W) Weld County, CO  
Well: Rohn State LD09-67HN  
Wellbore: Original Drilling  
Design: APD - Rev 0

# Northern Region Drilling

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	1500.0	0.00	0.00	1500.0	0.0	0.0	0.00	0.00	0.0	
3	2152.0	13.04	24.44	2146.4	67.2	30.6	2.00	24.44	-26.4	
4	3103.8	13.04	24.44	3073.6	262.8	119.4	0.00	0.00	-103.1	
5	3755.8	0.00	0.00	3720.0	330.0	150.0	2.00	180.00	-129.5	
6	5062.0	0.00	0.00	5026.3	330.0	150.0	0.00	0.00	-129.5	
7	6124.5	85.00	268.96	5739.7	318.1	-503.7	8.00	268.96	522.2	
8	6199.5	85.00	268.96	5746.3	316.7	-578.4	0.00	0.00	596.7	
9	6262.0	90.00	268.96	5749.0	315.6	-640.8	8.00	0.00	658.9	
10	9737.8	90.00	268.96	5749.0	252.3	-4115.9	0.00	0.00	4123.7	Rohn State LD09-67HN BHL 1320'FNL, 660'FWL



WELL DETAILS: Rohn State LD09-67HN				
Ground Level: 4729.0				
0.0	0.0	Northing 1527049.51	Easting 3453779.28	Latitude 40.768630 Longitude -103.861690
Plan: APD - Rev 0 (Rohn State LD09-67HN/Original Drilling)				
Created By: Shailey Jewell		Date: 14:16, April 05 2013		
Checked: _____		Date: _____		
Reviewed: _____		Date: _____		
Approved: _____		Date: _____		

# **Northern Region Drilling**

**Wattenberg Field**

**LD (09N-58W)**

**Rohn State LD09-67HN**

**Original Drilling**

**Plan: APD - Rev 0**

## **Standard Planning Report**

**05 April, 2013**

# Noble Energy Inc

## Planning Report

<b>Database:</b>	EDM Production	<b>Local Co-ordinate Reference:</b>	Well Rohn State LD09-67HN
<b>Company:</b>	Northern Region Drilling	<b>TVD Reference:</b>	WELL @ 4759.0usft (Original Well Elev)
<b>Project:</b>	Wattenberg Field	<b>MD Reference:</b>	WELL @ 4759.0usft (Original Well Elev)
<b>Site:</b>	LD (09N-58W)	<b>North Reference:</b>	Grid
<b>Well:</b>	Rohn State LD09-67HN	<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		LD (09N-58W)			
Site Position:		Northing:	1,523,557.18 usft	Latitude:	40.759270
From:	Lat/Long	Easting:	3,449,341.23 usft	Longitude:	-103.877940
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "	Grid Convergence:	1.05 °

Well	Rohn State LD09-67HN					
Well Position	+N/-S	3,492.3 usft	Northing:	1,527,049.51 usft	Latitude:	40.768630
	+E/-W	4,438.1 usft	Easting:	3,453,779.28 usft	Longitude:	-103.861690
Position Uncertainty		0.0 usft	Wellhead Elevation:		Ground Level:	4,729.0 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	4/5/2013	8.10	67.44	53,248

<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	273.51

<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	
1,500.0	0.00	0.00	1,500.0	0.0	0.0	0.00	0.00	0.00	0.00	
2,152.0	13.04	24.44	2,146.4	67.2	30.6	2.00	2.00	0.00	24.44	
3,103.8	13.04	24.44	3,073.6	262.8	119.4	0.00	0.00	0.00	0.00	
3,755.8	0.00	0.00	3,720.0	330.0	150.0	2.00	-2.00	0.00	180.00	
5,062.0	0.00	0.00	5,026.3	330.0	150.0	0.00	0.00	0.00	0.00	
6,124.5	85.00	268.96	5,739.7	318.1	-503.7	8.00	8.00	0.00	268.96	
6,199.5	85.00	268.96	5,746.3	316.7	-578.4	0.00	0.00	0.00	0.00	
6,262.0	90.00	268.96	5,749.0	315.6	-640.8	8.00	8.00	0.00	0.00	
9,737.8	90.00	268.96	5,749.0	252.3	-4,115.9	0.00	0.00	0.00	0.00	Rohn State LD09-67H-

# Noble Energy Inc

## Planning Report

<b>Database:</b>	EDM Production	<b>Local Co-ordinate Reference:</b>	Well Rohn State LD09-67HN
<b>Company:</b>	Northern Region Drilling	<b>TVD Reference:</b>	WELL @ 4759.0usft (Original Well Elev)
<b>Project:</b>	Wattenberg Field	<b>MD Reference:</b>	WELL @ 4759.0usft (Original Well Elev)
<b>Site:</b>	LD (09N-58W)	<b>North Reference:</b>	Grid
<b>Well:</b>	Rohn State LD09-67HN	<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
1,071.0	0.00	0.00	1,071.0	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
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
KOP - Start Build 2.00									
1,550.0	1.00	24.44	1,550.0	0.4	0.2	-0.2	2.00	2.00	0.00
1,600.0	2.00	24.44	1,600.0	1.6	0.7	-0.6	2.00	2.00	0.00
1,650.0	3.00	24.44	1,649.9	3.6	1.6	-1.4	2.00	2.00	0.00
1,700.0	4.00	24.44	1,699.8	6.4	2.9	-2.5	2.00	2.00	0.00
1,750.0	5.00	24.44	1,749.7	9.9	4.5	-3.9	2.00	2.00	0.00
1,800.0	6.00	24.44	1,799.5	14.3	6.5	-5.6	2.00	2.00	0.00
1,850.0	7.00	24.44	1,849.1	19.4	8.8	-7.6	2.00	2.00	0.00
1,900.0	8.00	24.44	1,898.7	25.4	11.5	-10.0	2.00	2.00	0.00
1,950.0	9.00	24.44	1,948.2	32.1	14.6	-12.6	2.00	2.00	0.00
2,000.0	10.00	24.44	1,997.5	39.6	18.0	-15.6	2.00	2.00	0.00
2,050.0	11.00	24.44	2,046.6	47.9	21.8	-18.8	2.00	2.00	0.00
2,100.0	12.00	24.44	2,095.6	57.0	25.9	-22.4	2.00	2.00	0.00
2,150.0	13.00	24.44	2,144.4	66.8	30.4	-26.2	2.00	2.00	0.00
2,152.0	13.04	24.44	2,146.4	67.2	30.6	-26.4	2.00	2.00	0.00
2,200.0	13.04	24.44	2,193.1	77.1	35.1	-30.3	0.00	0.00	0.00
2,250.0	13.04	24.44	2,241.9	87.4	39.7	-34.3	0.00	0.00	0.00
2,300.0	13.04	24.44	2,290.6	97.7	44.4	-38.3	0.00	0.00	0.00
2,350.0	13.04	24.44	2,339.3	107.9	49.1	-42.4	0.00	0.00	0.00
2,400.0	13.04	24.44	2,388.0	118.2	53.7	-46.4	0.00	0.00	0.00
2,450.0	13.04	24.44	2,436.7	128.5	58.4	-50.4	0.00	0.00	0.00

# Noble Energy Inc

## Planning Report

<b>Database:</b>	EDM Production	<b>Local Co-ordinate Reference:</b>	Well Rohn State LD09-67HN
<b>Company:</b>	Northern Region Drilling	<b>TVD Reference:</b>	WELL @ 4759.0usft (Original Well Elev)
<b>Project:</b>	Wattenberg Field	<b>MD Reference:</b>	WELL @ 4759.0usft (Original Well Elev)
<b>Site:</b>	LD (09N-58W)	<b>North Reference:</b>	Grid
<b>Well:</b>	Rohn State LD09-67HN	<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	13.04	24.44	2,485.4	138.7	63.1	-54.5	0.00	0.00	0.00
2,550.0	13.04	24.44	2,534.1	149.0	67.7	-58.5	0.00	0.00	0.00
2,600.0	13.04	24.44	2,582.8	159.3	72.4	-62.5	0.00	0.00	0.00
2,650.0	13.04	24.44	2,631.5	169.5	77.1	-66.5	0.00	0.00	0.00
2,700.0	13.04	24.44	2,680.3	179.8	81.7	-70.6	0.00	0.00	0.00
2,750.0	13.04	24.44	2,729.0	190.1	86.4	-74.6	0.00	0.00	0.00
2,800.0	13.04	24.44	2,777.7	200.4	91.1	-78.6	0.00	0.00	0.00
2,850.0	13.04	24.44	2,826.4	210.6	95.7	-82.7	0.00	0.00	0.00
2,900.0	13.04	24.44	2,875.1	220.9	100.4	-86.7	0.00	0.00	0.00
2,950.0	13.04	24.44	2,923.8	231.2	105.1	-90.7	0.00	0.00	0.00
3,000.0	13.04	24.44	2,972.5	241.4	109.7	-94.8	0.00	0.00	0.00
3,050.0	13.04	24.44	3,021.2	251.7	114.4	-98.8	0.00	0.00	0.00
3,100.0	13.04	24.44	3,069.9	262.0	119.1	-102.8	0.00	0.00	0.00
3,103.8	13.04	24.44	3,073.6	262.8	119.4	-103.1	0.00	0.00	0.00
Start Drop -2.00									
3,150.0	12.12	24.44	3,118.7	271.9	123.6	-106.7	2.00	-2.00	0.00
3,200.0	11.12	24.44	3,167.7	281.1	127.8	-110.3	2.00	-2.00	0.00
3,210.5	10.91	24.44	3,178.0	282.9	128.6	-111.0	2.00	-2.00	0.00
PARKMAN									
3,250.0	10.12	24.44	3,216.9	289.5	131.6	-113.6	2.00	-2.00	0.00
3,300.0	9.12	24.44	3,266.2	297.1	135.0	-116.6	2.00	-2.00	0.00
3,350.0	8.12	24.44	3,315.6	303.9	138.1	-119.3	2.00	-2.00	0.00
3,400.0	7.12	24.44	3,365.1	309.9	140.9	-121.6	2.00	-2.00	0.00
3,450.0	6.12	24.44	3,414.8	315.2	143.3	-123.7	2.00	-2.00	0.00
3,500.0	5.12	24.44	3,464.6	319.6	145.3	-125.5	2.00	-2.00	0.00
3,550.0	4.12	24.44	3,514.4	323.3	146.9	-126.9	2.00	-2.00	0.00
3,600.0	3.12	24.44	3,564.3	326.1	148.2	-128.0	2.00	-2.00	0.00
3,642.7	2.26	24.44	3,607.0	328.0	149.1	-128.7	2.00	-2.00	0.00
SUSSEX									
3,650.0	2.12	24.44	3,614.3	328.2	149.2	-128.8	2.00	-2.00	0.00
3,700.0	1.12	24.44	3,664.2	329.5	149.8	-129.3	2.00	-2.00	0.00
3,750.0	0.12	24.44	3,714.2	330.0	150.0	-129.5	2.00	-2.00	0.00
3,755.8	0.00	0.00	3,720.0	330.0	150.0	-129.5	2.00	-2.00	0.00
3,800.0	0.00	0.00	3,764.2	330.0	150.0	-129.5	0.00	0.00	0.00
3,850.0	0.00	0.00	3,814.2	330.0	150.0	-129.5	0.00	0.00	0.00
3,900.0	0.00	0.00	3,864.2	330.0	150.0	-129.5	0.00	0.00	0.00
3,950.0	0.00	0.00	3,914.2	330.0	150.0	-129.5	0.00	0.00	0.00
4,000.0	0.00	0.00	3,964.2	330.0	150.0	-129.5	0.00	0.00	0.00
4,050.0	0.00	0.00	4,014.2	330.0	150.0	-129.5	0.00	0.00	0.00
4,100.0	0.00	0.00	4,064.2	330.0	150.0	-129.5	0.00	0.00	0.00
4,150.0	0.00	0.00	4,114.2	330.0	150.0	-129.5	0.00	0.00	0.00
4,200.0	0.00	0.00	4,164.2	330.0	150.0	-129.5	0.00	0.00	0.00
4,250.0	0.00	0.00	4,214.2	330.0	150.0	-129.5	0.00	0.00	0.00
4,300.0	0.00	0.00	4,264.2	330.0	150.0	-129.5	0.00	0.00	0.00
4,329.8	0.00	0.00	4,294.0	330.0	150.0	-129.5	0.00	0.00	0.00
SHANNON									
4,350.0	0.00	0.00	4,314.2	330.0	150.0	-129.5	0.00	0.00	0.00
4,400.0	0.00	0.00	4,364.2	330.0	150.0	-129.5	0.00	0.00	0.00
4,450.0	0.00	0.00	4,414.2	330.0	150.0	-129.5	0.00	0.00	0.00
4,500.0	0.00	0.00	4,464.2	330.0	150.0	-129.5	0.00	0.00	0.00
4,550.0	0.00	0.00	4,514.2	330.0	150.0	-129.5	0.00	0.00	0.00
4,600.0	0.00	0.00	4,564.2	330.0	150.0	-129.5	0.00	0.00	0.00
4,650.0	0.00	0.00	4,614.2	330.0	150.0	-129.5	0.00	0.00	0.00

# Noble Energy Inc

## Planning Report

<b>Database:</b>	EDM Production	<b>Local Co-ordinate Reference:</b>	Well Rohn State LD09-67HN
<b>Company:</b>	Northern Region Drilling	<b>TVD Reference:</b>	WELL @ 4759.0usft (Original Well Elev)
<b>Project:</b>	Wattenberg Field	<b>MD Reference:</b>	WELL @ 4759.0usft (Original Well Elev)
<b>Site:</b>	LD (09N-58W)	<b>North Reference:</b>	Grid
<b>Well:</b>	Rohn State LD09-67HN	<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)
4,700.0	0.00	0.00	4,664.2	330.0	150.0	-129.5	0.00	0.00	0.00
4,750.0	0.00	0.00	4,714.2	330.0	150.0	-129.5	0.00	0.00	0.00
4,800.0	0.00	0.00	4,764.2	330.0	150.0	-129.5	0.00	0.00	0.00
4,850.0	0.00	0.00	4,814.2	330.0	150.0	-129.5	0.00	0.00	0.00
4,900.0	0.00	0.00	4,864.2	330.0	150.0	-129.5	0.00	0.00	0.00
4,950.0	0.00	0.00	4,914.2	330.0	150.0	-129.5	0.00	0.00	0.00
5,000.0	0.00	0.00	4,964.2	330.0	150.0	-129.5	0.00	0.00	0.00
5,018.8	0.00	0.00	4,983.0	330.0	150.0	-129.5	0.00	0.00	0.00
TEEPEE BUTTES									
5,050.0	0.00	0.00	5,014.2	330.0	150.0	-129.5	0.00	0.00	0.00
5,062.0	0.00	0.00	5,026.2	330.0	150.0	-129.5	0.00	0.00	0.00
KOP #2 - Start Build 8.00									
5,100.0	3.04	268.96	5,064.2	330.0	149.0	-128.5	7.99	7.99	0.00
5,150.0	7.04	268.96	5,114.0	329.9	144.6	-124.2	8.00	8.00	0.00
5,200.0	11.04	268.96	5,163.4	329.8	136.8	-116.3	8.00	8.00	0.00
5,250.0	15.04	268.96	5,212.1	329.6	125.5	-105.1	8.00	8.00	0.00
5,300.0	19.04	268.96	5,259.9	329.3	110.8	-90.5	8.00	8.00	0.00
5,350.0	23.04	268.96	5,306.5	329.0	92.9	-72.6	8.00	8.00	0.00
5,400.0	27.04	268.96	5,351.8	328.6	71.7	-51.5	8.00	8.00	0.00
5,450.0	31.04	268.96	5,395.5	328.1	47.5	-27.3	8.00	8.00	0.00
5,500.0	35.04	268.96	5,437.4	327.6	20.2	-0.2	8.00	8.00	0.00
5,550.0	39.04	268.96	5,477.3	327.1	-9.9	29.9	8.00	8.00	0.00
5,600.0	43.04	268.96	5,515.1	326.5	-42.7	62.6	8.00	8.00	0.00
5,650.0	47.04	268.96	5,550.4	325.8	-78.1	97.8	8.00	8.00	0.00
5,693.4	50.51	268.96	5,579.0	325.2	-110.7	130.4	8.00	8.00	0.00
SHARON SPRINGS									
5,700.0	51.04	268.96	5,583.1	325.2	-115.8	135.5	8.00	8.00	0.00
5,725.8	53.10	268.96	5,599.0	324.8	-136.1	155.7	8.00	8.00	0.00
NIO A CHALK									
5,750.0	55.04	268.96	5,613.2	324.4	-155.7	175.3	8.00	8.00	0.00
5,785.8	57.90	268.96	5,633.0	323.9	-185.6	205.1	8.00	8.00	0.00
NIO A MARL									
5,800.0	59.04	268.96	5,640.4	323.7	-197.7	217.1	8.00	8.00	0.00
5,850.0	63.04	268.96	5,664.6	322.9	-241.4	260.7	8.00	8.00	0.00
5,900.0	67.04	268.96	5,685.7	322.0	-286.7	305.9	8.00	8.00	0.00
5,919.3	68.58	268.96	5,693.0	321.7	-304.6	323.7	8.00	8.00	0.00
NIO B CHALK									
5,950.0	71.04	268.96	5,703.6	321.2	-333.4	352.4	8.00	8.00	0.00
6,000.0	75.04	268.96	5,718.2	320.3	-381.2	400.1	8.00	8.00	0.00
6,028.6	77.32	268.96	5,725.0	319.8	-408.9	427.7	8.00	8.00	0.00
NIO B MARL									
6,050.0	79.04	268.96	5,729.4	319.4	-429.9	448.6	8.00	8.00	0.00
6,100.0	83.04	268.96	5,737.2	318.5	-479.3	497.9	8.00	8.00	0.00
6,124.5	85.00	268.96	5,739.7	318.1	-503.6	522.1	8.00	8.00	0.00
Start 75.0 hold at 6124.5 MD - 7" Casing @ 6124.5' MD									
6,150.0	85.00	268.96	5,742.0	317.6	-529.0	547.5	0.01	0.01	0.00
6,199.5	85.00	268.96	5,746.3	316.7	-578.3	596.6	0.00	0.00	0.00
Start Build 8.00									
6,200.0	85.04	268.96	5,746.3	316.7	-578.8	597.1	7.42	7.42	0.00
6,250.0	89.04	268.96	5,748.9	315.8	-628.7	646.9	8.00	8.00	0.00
6,262.0	90.00	268.96	5,749.0	315.6	-640.8	658.9	8.00	8.00	0.00
6,300.0	90.00	268.96	5,749.0	314.9	-678.7	696.7	0.00	0.00	0.00
6,350.0	90.00	268.96	5,749.0	314.0	-728.7	746.6	0.00	0.00	0.00

# Noble Energy Inc

## Planning Report

<b>Database:</b>	EDM Production	<b>Local Co-ordinate Reference:</b>	Well Rohn State LD09-67HN
<b>Company:</b>	Northern Region Drilling	<b>TVD Reference:</b>	WELL @ 4759.0usft (Original Well Elev)
<b>Project:</b>	Wattenberg Field	<b>MD Reference:</b>	WELL @ 4759.0usft (Original Well Elev)
<b>Site:</b>	LD (09N-58W)	<b>North Reference:</b>	Grid
<b>Well:</b>	Rohn State LD09-67HN	<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)
6,400.0	90.00	268.96	5,749.0	313.1	-778.7	796.4	0.00	0.00	0.00
6,450.0	90.00	268.96	5,749.0	312.2	-828.7	846.3	0.00	0.00	0.00
6,500.0	90.00	268.96	5,749.0	311.3	-878.7	896.1	0.00	0.00	0.00
6,550.0	90.00	268.96	5,749.0	310.3	-928.7	945.9	0.00	0.00	0.00
6,600.0	90.00	268.96	5,749.0	309.4	-978.7	995.8	0.00	0.00	0.00
6,650.0	90.00	268.96	5,749.0	308.5	-1,028.7	1,045.6	0.00	0.00	0.00
6,700.0	90.00	268.96	5,749.0	307.6	-1,078.7	1,095.5	0.00	0.00	0.00
6,750.0	90.00	268.96	5,749.0	306.7	-1,128.7	1,145.3	0.00	0.00	0.00
6,800.0	90.00	268.96	5,749.0	305.8	-1,178.7	1,195.2	0.00	0.00	0.00
6,850.0	90.00	268.96	5,749.0	304.9	-1,228.6	1,245.0	0.00	0.00	0.00
6,900.0	90.00	268.96	5,749.0	304.0	-1,278.6	1,294.8	0.00	0.00	0.00
6,950.0	90.00	268.96	5,749.0	303.1	-1,328.6	1,344.7	0.00	0.00	0.00
7,000.0	90.00	268.96	5,749.0	302.1	-1,378.6	1,394.5	0.00	0.00	0.00
7,050.0	90.00	268.96	5,749.0	301.2	-1,428.6	1,444.4	0.00	0.00	0.00
7,100.0	90.00	268.96	5,749.0	300.3	-1,478.6	1,494.2	0.00	0.00	0.00
7,150.0	90.00	268.96	5,749.0	299.4	-1,528.6	1,544.0	0.00	0.00	0.00
7,200.0	90.00	268.96	5,749.0	298.5	-1,578.6	1,593.9	0.00	0.00	0.00
7,250.0	90.00	268.96	5,749.0	297.6	-1,628.6	1,643.7	0.00	0.00	0.00
7,300.0	90.00	268.96	5,749.0	296.7	-1,678.6	1,693.6	0.00	0.00	0.00
7,350.0	90.00	268.96	5,749.0	295.8	-1,728.6	1,743.4	0.00	0.00	0.00
7,400.0	90.00	268.96	5,749.0	294.9	-1,778.6	1,793.3	0.00	0.00	0.00
7,450.0	90.00	268.96	5,749.0	293.9	-1,828.5	1,843.1	0.00	0.00	0.00
7,500.0	90.00	268.96	5,749.0	293.0	-1,878.5	1,892.9	0.00	0.00	0.00
7,550.0	90.00	268.96	5,749.0	292.1	-1,928.5	1,942.8	0.00	0.00	0.00
7,600.0	90.00	268.96	5,749.0	291.2	-1,978.5	1,992.6	0.00	0.00	0.00
7,650.0	90.00	268.96	5,749.0	290.3	-2,028.5	2,042.5	0.00	0.00	0.00
7,700.0	90.00	268.96	5,749.0	289.4	-2,078.5	2,092.3	0.00	0.00	0.00
7,750.0	90.00	268.96	5,749.0	288.5	-2,128.5	2,142.2	0.00	0.00	0.00
7,800.0	90.00	268.96	5,749.0	287.6	-2,178.5	2,192.0	0.00	0.00	0.00
7,850.0	90.00	268.96	5,749.0	286.7	-2,228.5	2,241.8	0.00	0.00	0.00
7,900.0	90.00	268.96	5,749.0	285.7	-2,278.5	2,291.7	0.00	0.00	0.00
7,950.0	90.00	268.96	5,749.0	284.8	-2,328.5	2,341.5	0.00	0.00	0.00
8,000.0	90.00	268.96	5,749.0	283.9	-2,378.5	2,391.4	0.00	0.00	0.00
8,050.0	90.00	268.96	5,749.0	283.0	-2,428.4	2,441.2	0.00	0.00	0.00
8,100.0	90.00	268.96	5,749.0	282.1	-2,478.4	2,491.1	0.00	0.00	0.00
8,150.0	90.00	268.96	5,749.0	281.2	-2,528.4	2,540.9	0.00	0.00	0.00
8,200.0	90.00	268.96	5,749.0	280.3	-2,578.4	2,590.7	0.00	0.00	0.00
8,250.0	90.00	268.96	5,749.0	279.4	-2,628.4	2,640.6	0.00	0.00	0.00
8,300.0	90.00	268.96	5,749.0	278.5	-2,678.4	2,690.4	0.00	0.00	0.00
8,350.0	90.00	268.96	5,749.0	277.5	-2,728.4	2,740.3	0.00	0.00	0.00
8,400.0	90.00	268.96	5,749.0	276.6	-2,778.4	2,790.1	0.00	0.00	0.00
8,450.0	90.00	268.96	5,749.0	275.7	-2,828.4	2,840.0	0.00	0.00	0.00
8,500.0	90.00	268.96	5,749.0	274.8	-2,878.4	2,889.8	0.00	0.00	0.00
8,550.0	90.00	268.96	5,749.0	273.9	-2,928.4	2,939.6	0.00	0.00	0.00
8,600.0	90.00	268.96	5,749.0	273.0	-2,978.4	2,989.5	0.00	0.00	0.00
8,650.0	90.00	268.96	5,749.0	272.1	-3,028.3	3,039.3	0.00	0.00	0.00
8,700.0	90.00	268.96	5,749.0	271.2	-3,078.3	3,089.2	0.00	0.00	0.00
8,750.0	90.00	268.96	5,749.0	270.3	-3,128.3	3,139.0	0.00	0.00	0.00
8,800.0	90.00	268.96	5,749.0	269.3	-3,178.3	3,188.8	0.00	0.00	0.00
8,850.0	90.00	268.96	5,749.0	268.4	-3,228.3	3,238.7	0.00	0.00	0.00
8,900.0	90.00	268.96	5,749.0	267.5	-3,278.3	3,288.5	0.00	0.00	0.00
8,950.0	90.00	268.96	5,749.0	266.6	-3,328.3	3,338.4	0.00	0.00	0.00
9,000.0	90.00	268.96	5,749.0	265.7	-3,378.3	3,388.2	0.00	0.00	0.00
9,050.0	90.00	268.96	5,749.0	264.8	-3,428.3	3,438.1	0.00	0.00	0.00

# Noble Energy Inc

## Planning Report

<b>Database:</b>	EDM Production	<b>Local Co-ordinate Reference:</b>	Well Rohn State LD09-67HN
<b>Company:</b>	Northern Region Drilling	<b>TVD Reference:</b>	WELL @ 4759.0usft (Original Well Elev)
<b>Project:</b>	Wattenberg Field	<b>MD Reference:</b>	WELL @ 4759.0usft (Original Well Elev)
<b>Site:</b>	LD (09N-58W)	<b>North Reference:</b>	Grid
<b>Well:</b>	Rohn State LD09-67HN	<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)	
9,100.0	90.00	268.96	5,749.0	263.9	-3,478.3	3,487.9	0.00	0.00	0.00	
9,150.0	90.00	268.96	5,749.0	263.0	-3,528.3	3,537.7	0.00	0.00	0.00	
9,200.0	90.00	268.96	5,749.0	262.1	-3,578.3	3,587.6	0.00	0.00	0.00	
9,250.0	90.00	268.96	5,749.0	261.1	-3,628.2	3,637.4	0.00	0.00	0.00	
9,300.0	90.00	268.96	5,749.0	260.2	-3,678.2	3,687.3	0.00	0.00	0.00	
9,350.0	90.00	268.96	5,749.0	259.3	-3,728.2	3,737.1	0.00	0.00	0.00	
9,400.0	90.00	268.96	5,749.0	258.4	-3,778.2	3,787.0	0.00	0.00	0.00	
9,450.0	90.00	268.96	5,749.0	257.5	-3,828.2	3,836.8	0.00	0.00	0.00	
9,500.0	90.00	268.96	5,749.0	256.6	-3,878.2	3,886.6	0.00	0.00	0.00	
9,550.0	90.00	268.96	5,749.0	255.7	-3,928.2	3,936.5	0.00	0.00	0.00	
9,600.0	90.00	268.96	5,749.0	254.8	-3,978.2	3,986.3	0.00	0.00	0.00	
9,650.0	90.00	268.96	5,749.0	253.9	-4,028.2	4,036.2	0.00	0.00	0.00	
9,700.0	90.00	268.96	5,749.0	252.9	-4,078.2	4,086.0	0.00	0.00	0.00	
9,737.8	90.00	268.96	5,749.0	252.3	-4,115.9	4,123.7	0.00	0.00	0.00	
TD at 9737.8 - Rohn State LD09-67HN BHL 1320'FNL, 660'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									
Rohn State LD09-67HN	0.00	0.00	5,749.0	252.3	-4,115.9	1,527,301.76	3,449,663.35	40.769530	-103.876530
- plan hits target center									
- Point									

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")	
6,124.5	5,739.7	7" Casing @ 6124.5' MD	7	8-3/4	

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
1,071.0	1,071.0	PIERRE		0.00		
3,210.5	3,178.0	PARKMAN		0.00		
3,642.7	3,607.0	SUSSEX		0.00		
4,329.8	4,294.0	SHANNON		0.00		
5,018.8	4,983.0	TEEPEE BUTTES		0.00		
5,693.4	5,579.0	SHARON SPRINGS		0.00		
5,725.8	5,599.0	NIO A CHALK		0.00		
5,785.8	5,633.0	NIO A MARL		0.00		
5,919.3	5,693.0	NIO B CHALK		0.00		
6,028.6	5,725.0	NIO B MARL		0.00		



# Noble Energy Inc

## Planning Report

<b>Database:</b>	EDM Production	<b>Local Co-ordinate Reference:</b>	Well Rohn State LD09-67HN
<b>Company:</b>	Northern Region Drilling	<b>TVD Reference:</b>	WELL @ 4759.0usft (Original Well Elev)
<b>Project:</b>	Wattenberg Field	<b>MD Reference:</b>	WELL @ 4759.0usft (Original Well Elev)
<b>Site:</b>	LD (09N-58W)	<b>North Reference:</b>	Grid
<b>Well:</b>	Rohn State LD09-67HN	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Original Drilling		
<b>Design:</b>	APD - Rev 0		

Plan Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
1,500.0	1,500.0	0.0	0.0	KOP - Start Build 2.00
3,103.8	3,073.6	262.8	119.4	Start Drop -2.00
5,062.0	5,026.2	330.0	150.0	KOP #2 - Start Build 8.00
6,124.5	5,739.7	318.1	-503.6	Start 75.0 hold at 6124.5 MD
6,199.5	5,746.3	316.7	-578.3	Start Build 8.00
9,737.8	5,749.0	252.3	-4,115.9	TD at 9737.8

# **Northern Region Drilling**

**Wattenberg Field**

**LD (09N-58W)**

**Rohn State LD09-67HN**

**Original Drilling**

**APD - Rev 0**

## **Anticollision Summary Report**

**08 April, 2013**

**Noble Energy Inc**  
Anticollision Summary Report

<b>Company:</b>	Northern Region Drilling	<b>Local Co-ordinate Reference:</b>	Well Rohn State LD09-67HN
<b>Project:</b>	Wattenberg Field	<b>TVD Reference:</b>	WELL @ 4759.0usft (Original Well Elev)
<b>Reference Site:</b>	LD (09N-58W)	<b>MD Reference:</b>	WELL @ 4759.0usft (Original Well Elev)
<b>Site Error:</b>	0.0 usft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Rohn State LD09-67HN	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 usft	<b>Output errors are at</b>	2.54 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>	4/5/2013		
<b>From (usft)</b>	<b>To (usft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>
0.0	9,737.8	APD - Rev 0 (Original Drilling)	MWD	MWD - Standard

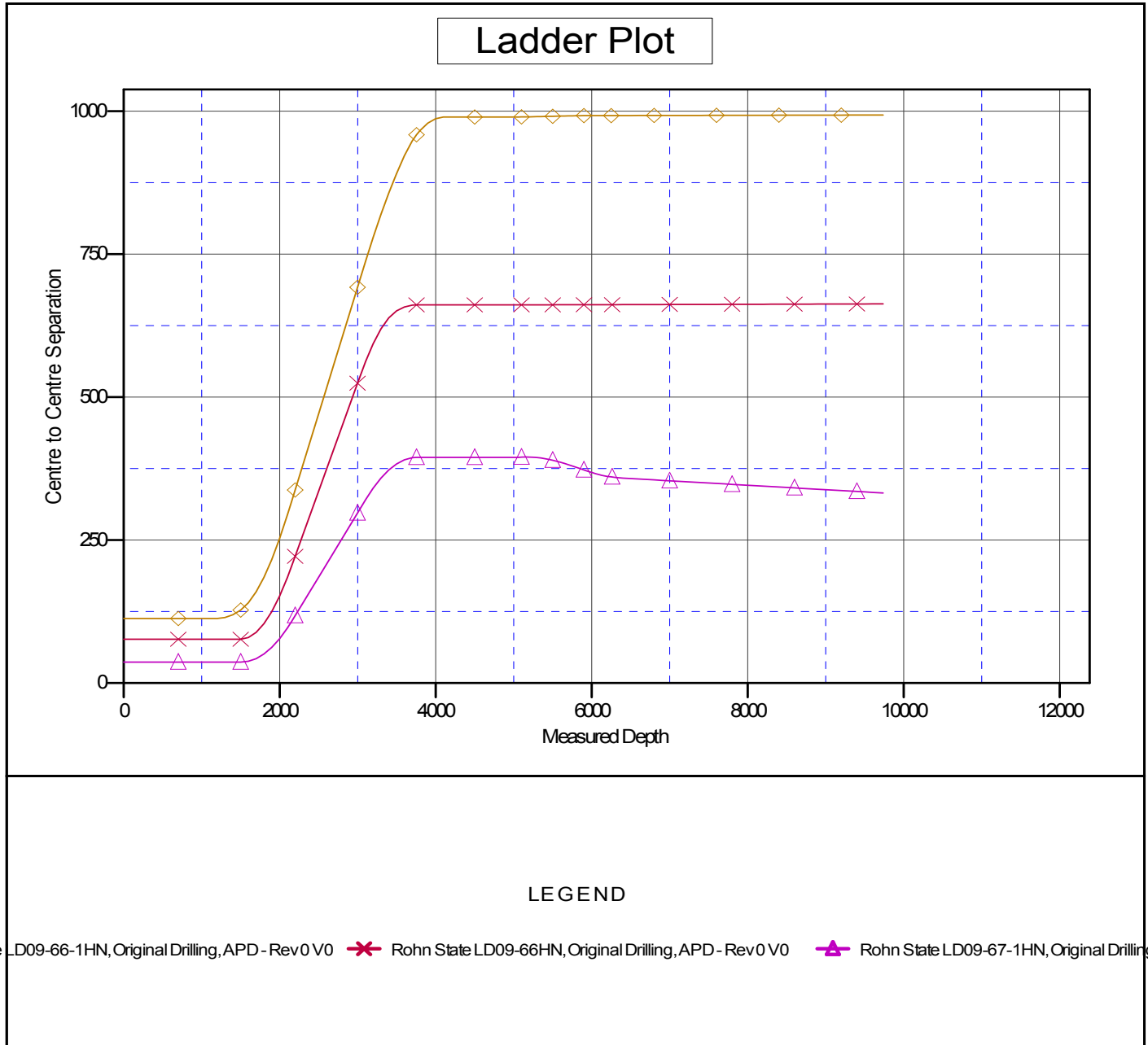
<b>Summary</b>						
Site Name	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
LD (09N-58W)						
Rohn State LD09-66-1HN - Original Drilling - APD - Rev	1,200.0	1,198.0	113.0	107.9	22.163	CC, ES
Rohn State LD09-66-1HN - Original Drilling - APD - Rev	9,737.8	9,678.3	993.4	761.0	4.274	SF
Rohn State LD09-66HN - Original Drilling - APD - Rev 0	1,500.0	1,499.0	76.6	70.1	11.873	CC, ES
Rohn State LD09-66HN - Original Drilling - APD - Rev 0	9,737.8	9,717.1	663.1	429.9	2.843	SF
Rohn State LD09-67-1HN - Original Drilling - APD - Rev	1,500.0	1,500.0	36.5	30.1	5.664	CC, ES
Rohn State LD09-67-1HN - Original Drilling - APD - Rev	9,737.8	9,524.9	332.4	102.3	1.445	Level 3, SF

**Noble Energy Inc**  
Anticollision Summary Report

<b>Company:</b>	Northern Region Drilling	<b>Local Co-ordinate Reference:</b>	Well Rohn State LD09-67HN
<b>Project:</b>	Wattenberg Field	<b>TVD Reference:</b>	WELL @ 4759.0usft (Original Well Elev)
<b>Reference Site:</b>	LD (09N-58W)	<b>MD Reference:</b>	WELL @ 4759.0usft (Original Well Elev)
<b>Site Error:</b>	0.0 usft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Rohn State LD09-67HN	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 usft	<b>Output errors are at</b>	2.54 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 @ 4759.0usft (Original Well Ele)  
Offset Depths are relative to Offset Datum  
Central Meridian is -105.500000

Coordinates are relative to: Rohn State LD09-67HN  
Coordinate System is US State Plane 1983, Colorado Northern Zone  
Grid Convergence at Surface is: 1.06°



## Anticollision Summary Report

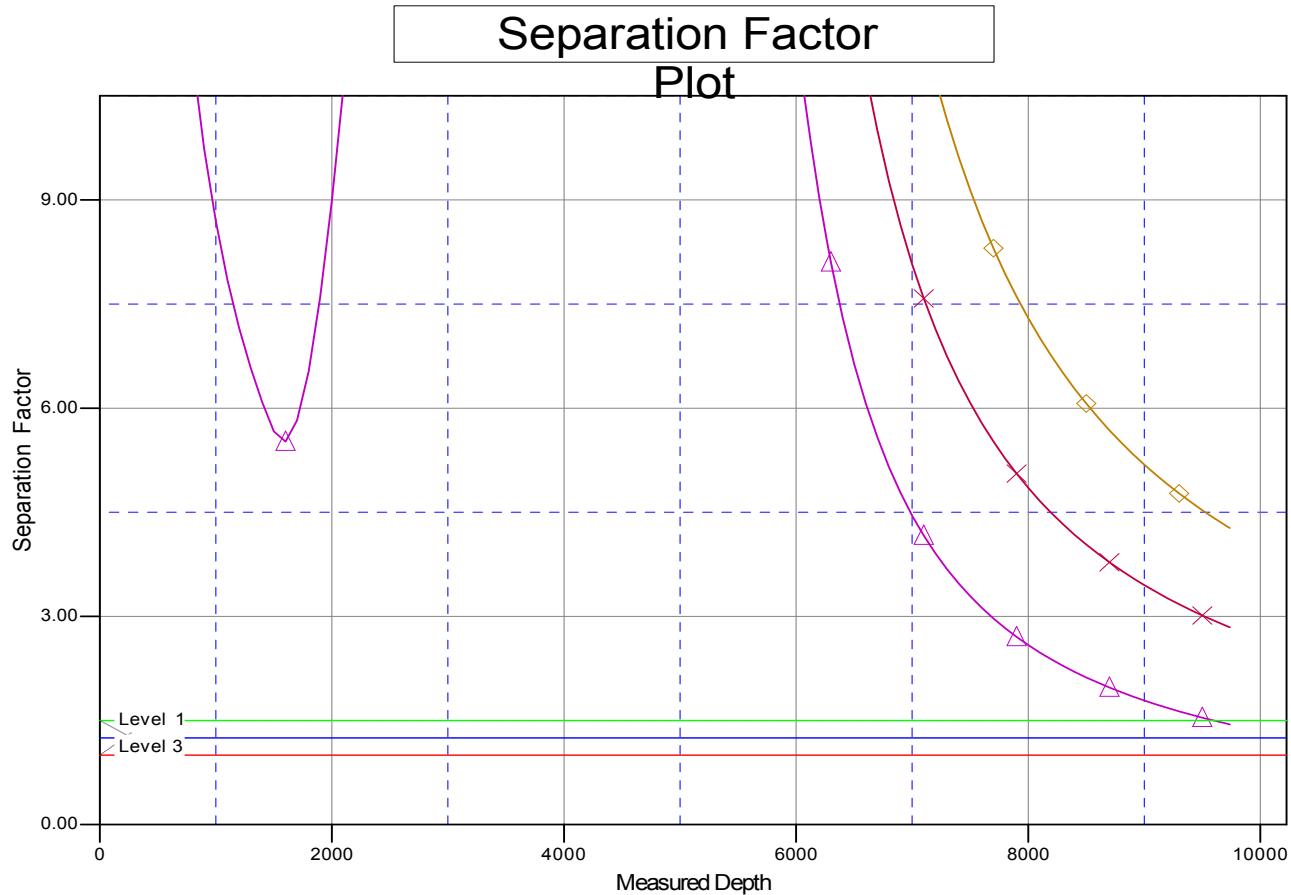
<b>Company:</b>	Northern Region Drilling	<b>Local Co-ordinate Reference:</b>	Well Rohn State LD09-67HN
<b>Project:</b>	Wattenberg Field	<b>TVD Reference:</b>	WELL @ 4759.0usft (Original Well Elev)
<b>Reference Site:</b>	LD (09N-58W)	<b>MD Reference:</b>	WELL @ 4759.0usft (Original Well Elev)
<b>Site Error:</b>	0.0 usft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Rohn State LD09-67HN	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 usft	<b>Output errors are at</b>	2.54 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

Offset Depths are relative to Offset Datum

Central Meridian is -105.500000

Coordinate System is US State Plane 1983, Colorado Northern Zone

Grid Convergence at Surface is: 1.06°



## LEGEND

te LD09-66-1HN, Original Drilling, APD - Rev 0 V0 ✖ Rohn State LD09-66HN, Original Drilling, APD - Rev 0 V0 ✖ Rohn State LD09-67-1HN, Original Drilling,