

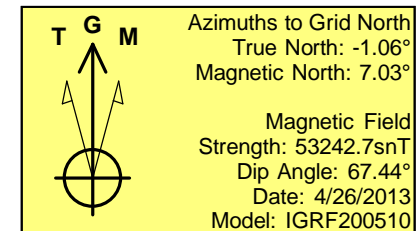
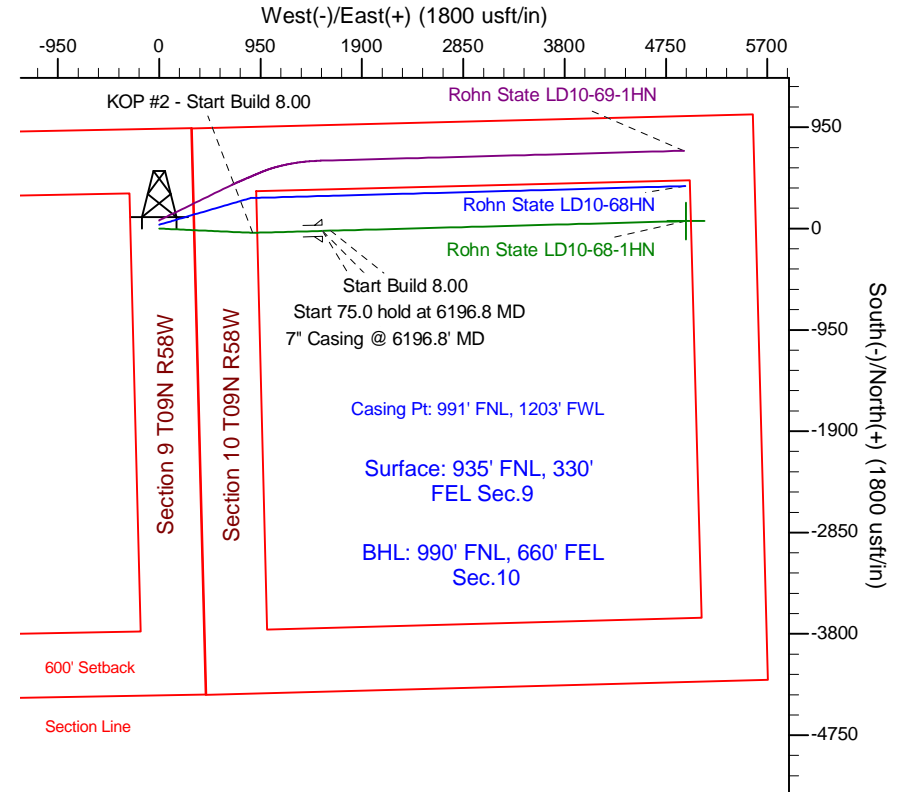
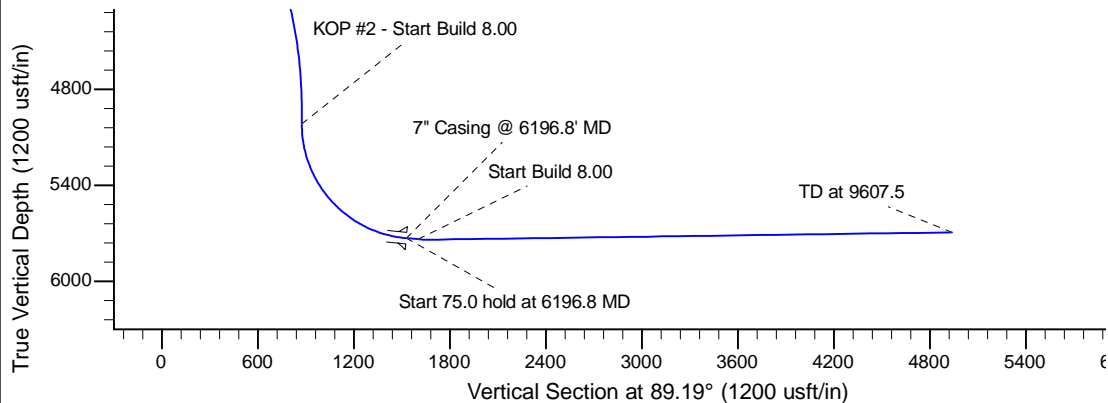
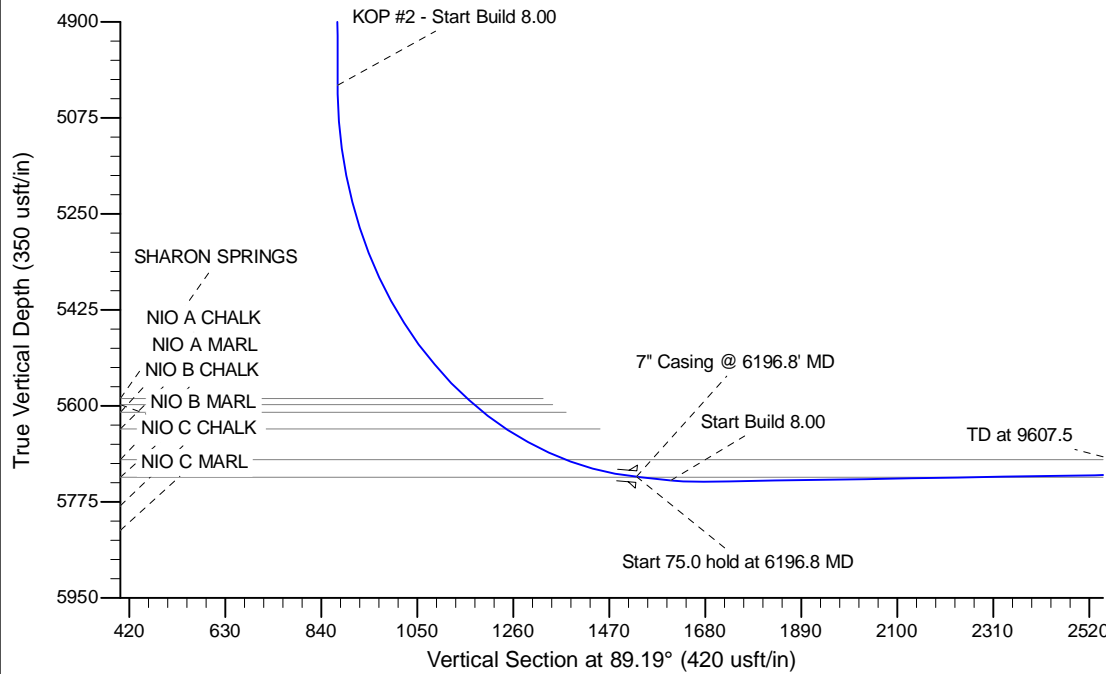
Project: Wattenberg Field  
Site: LD (Sec.9-T09N-R58W) Weld County, CO  
Well: Rohn State LD10-68-1HN  
Wellbore: Original Drilling  
Design: APD - Rev 0

# 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	VSec	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	2049.8	17.00	92.61	2037.4	-5.7	125.0	2.00	92.61	124.9	
4	4193.6	17.00	92.61	4087.6	-34.3	751.0	0.00	0.00	750.4	
5	5043.5	0.00	0.00	4925.0	-40.0	876.0	2.00	180.00	875.3	
6	5134.3	0.00	0.00	5015.9	-40.0	876.0	0.00	0.00	875.3	
7	6196.8	85.00	88.45	5729.4	-22.3	1529.5	8.00	88.45	1529.1	
8	6271.8	85.00	88.45	5735.9	-20.3	1604.2	0.00	0.00	1603.8	
9	6344.3	90.80	88.45	5738.6	-18.3	1676.6	8.00	0.00	1676.2	
10	9607.5	90.80	88.45	5693.0	69.9	4938.3	0.00	0.00	4938.8	Rohn State LD10-68-1HN BHL 990'FNL, 660'FEL



WELL DETAILS: Rohn State LD10-68-1HN				
Ground Level: 4739.0				
0.0	0.0	Northing	Eastings	Latitude
		1527766.19	3453912.87	40.770590
				Longitude
				-103.861160
Plan: APD - Rev 0 (Rohn State LD10-68-1HN/Original Drilling)				
Created By: Shailey Jewell		Date: 17:23, May 01 2013		
Checked: _____		Date: _____		
Reviewed: _____		Date: _____		
Approved: _____		Date: _____		

# **Northern Region Drilling**

**Wattenberg Field**

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

**Rohn State LD10-68-1HN**

**Original Drilling**

**Plan: APD - Rev 0**

## **Standard Planning Report**

**01 May, 2013**

# Noble Energy Inc

## Planning Report

<b>Database:</b>	EDM Production	<b>Local Co-ordinate Reference:</b>	Well Rohn State LD10-68-1HN
<b>Company:</b>	Northern Region Drilling	<b>TVD Reference:</b>	WELL @ 4769.0usft (Original Well Elev)
<b>Project:</b>	Wattenberg Field	<b>MD Reference:</b>	WELL @ 4769.0usft (Original Well Elev)
<b>Site:</b>	LD (09N-58W)	<b>North Reference:</b>	Grid
<b>Well:</b>	Rohn State LD10-68-1HN	<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 LD10-68-1HN					
Well Position	+N/-S	4,209.0 usft	Northing:	1,527,766.20 usft	Latitude:	40.770590
	+E/-W	4,571.6 usft	Easting:	3,453,912.87 usft	Longitude:	-103.861160
Position Uncertainty		0.0 usft	Wellhead Elevation:		Ground Level:	4,739.0 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	4/26/2013	8.09	67.44	53,243

<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	89.19

<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	
2,049.8	17.00	92.61	2,037.4	-5.7	125.0	2.00	2.00	0.00	92.61	
4,193.6	17.00	92.61	4,087.6	-34.3	751.0	0.00	0.00	0.00	0.00	
5,043.5	0.00	0.00	4,925.0	-40.0	876.0	2.00	-2.00	0.00	180.00	
5,134.3	0.00	0.00	5,015.9	-40.0	876.0	0.00	0.00	0.00	0.00	
6,196.8	85.00	88.45	5,729.4	-22.3	1,529.5	8.00	8.00	0.00	88.45	
6,271.8	85.00	88.45	5,735.9	-20.3	1,604.2	0.00	0.00	0.00	0.00	
6,344.3	90.80	88.45	5,738.6	-18.3	1,676.6	8.00	8.00	0.00	0.00	
9,607.5	90.80	88.45	5,693.0	69.9	4,938.3	0.00	0.00	0.00	0.00	Rohn State LD10-68-

# Noble Energy Inc

## Planning Report

<b>Database:</b>	EDM Production	<b>Local Co-ordinate Reference:</b>	Well Rohn State LD10-68-1HN
<b>Company:</b>	Northern Region Drilling	<b>TVD Reference:</b>	WELL @ 4769.0usft (Original Well Elev)
<b>Project:</b>	Wattenberg Field	<b>MD Reference:</b>	WELL @ 4769.0usft (Original Well Elev)
<b>Site:</b>	LD (09N-58W)	<b>North Reference:</b>	Grid
<b>Well:</b>	Rohn State LD10-68-1HN	<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
1,100.0	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	92.61	1,250.0	0.0	0.4	0.4	2.00	2.00	0.00
1,300.0	2.00	92.61	1,300.0	-0.1	1.7	1.7	2.00	2.00	0.00
1,350.0	3.00	92.61	1,349.9	-0.2	3.9	3.9	2.00	2.00	0.00
1,400.0	4.00	92.61	1,399.8	-0.3	7.0	7.0	2.00	2.00	0.00
1,450.0	5.00	92.61	1,449.7	-0.5	10.9	10.9	2.00	2.00	0.00
1,500.0	6.00	92.61	1,499.5	-0.7	15.7	15.7	2.00	2.00	0.00
1,550.0	7.00	92.61	1,549.1	-1.0	21.3	21.3	2.00	2.00	0.00
1,600.0	8.00	92.61	1,598.7	-1.3	27.9	27.8	2.00	2.00	0.00
1,650.0	9.00	92.61	1,648.2	-1.6	35.2	35.2	2.00	2.00	0.00
1,700.0	10.00	92.61	1,697.5	-2.0	43.5	43.4	2.00	2.00	0.00
1,750.0	11.00	92.61	1,746.6	-2.4	52.6	52.5	2.00	2.00	0.00
1,800.0	12.00	92.61	1,795.6	-2.9	62.5	62.5	2.00	2.00	0.00
1,850.0	13.00	92.61	1,844.4	-3.3	73.3	73.3	2.00	2.00	0.00
1,900.0	14.00	92.61	1,893.1	-3.9	85.0	84.9	2.00	2.00	0.00
1,950.0	15.00	92.61	1,941.5	-4.5	97.5	97.4	2.00	2.00	0.00
2,000.0	16.00	92.61	1,989.6	-5.1	110.9	110.8	2.00	2.00	0.00
2,049.8	17.00	92.61	2,037.4	-5.7	125.0	124.9	2.00	2.00	0.00
2,050.0	17.00	92.61	2,037.6	-5.7	125.0	125.0	0.00	0.00	0.00
2,100.0	17.00	92.61	2,085.4	-6.4	139.6	139.5	0.00	0.00	0.00
2,150.0	17.00	92.61	2,133.2	-7.0	154.2	154.1	0.00	0.00	0.00
2,200.0	17.00	92.61	2,181.0	-7.7	168.8	168.7	0.00	0.00	0.00
2,250.0	17.00	92.61	2,228.8	-8.4	183.4	183.3	0.00	0.00	0.00
2,300.0	17.00	92.61	2,276.7	-9.0	198.0	197.9	0.00	0.00	0.00
2,350.0	17.00	92.61	2,324.5	-9.7	212.6	212.5	0.00	0.00	0.00
2,400.0	17.00	92.61	2,372.3	-10.4	227.3	227.1	0.00	0.00	0.00
2,417.5	17.00	92.61	2,389.0	-10.6	232.4	232.2	0.00	0.00	0.00
PIERRE									
2,450.0	17.00	92.61	2,420.1	-11.0	241.9	241.7	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 LD10-68-1HN
<b>Company:</b>	Northern Region Drilling	<b>TVD Reference:</b>	WELL @ 4769.0usft (Original Well Elev)
<b>Project:</b>	Wattenberg Field	<b>MD Reference:</b>	WELL @ 4769.0usft (Original Well Elev)
<b>Site:</b>	LD (09N-58W)	<b>North Reference:</b>	Grid
<b>Well:</b>	Rohn State LD10-68-1HN	<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	17.00	92.61	2,467.9	-11.7	256.5	256.3	0.00	0.00	0.00
2,550.0	17.00	92.61	2,515.7	-12.4	271.1	270.8	0.00	0.00	0.00
2,600.0	17.00	92.61	2,563.6	-13.0	285.7	285.4	0.00	0.00	0.00
2,650.0	17.00	92.61	2,611.4	-13.7	300.3	300.0	0.00	0.00	0.00
2,700.0	17.00	92.61	2,659.2	-14.4	314.9	314.6	0.00	0.00	0.00
2,750.0	17.00	92.61	2,707.0	-15.0	329.5	329.2	0.00	0.00	0.00
2,800.0	17.00	92.61	2,754.8	-15.7	344.1	343.8	0.00	0.00	0.00
2,850.0	17.00	92.61	2,802.6	-16.4	358.7	358.4	0.00	0.00	0.00
2,900.0	17.00	92.61	2,850.5	-17.0	373.3	373.0	0.00	0.00	0.00
2,950.0	17.00	92.61	2,898.3	-17.7	387.9	387.6	0.00	0.00	0.00
3,000.0	17.00	92.61	2,946.1	-18.4	402.5	402.2	0.00	0.00	0.00
3,050.0	17.00	92.61	2,993.9	-19.0	417.1	416.7	0.00	0.00	0.00
3,100.0	17.00	92.61	3,041.7	-19.7	431.7	431.3	0.00	0.00	0.00
3,150.0	17.00	92.61	3,089.5	-20.4	446.3	445.9	0.00	0.00	0.00
3,200.0	17.00	92.61	3,137.4	-21.0	460.9	460.5	0.00	0.00	0.00
3,250.0	17.00	92.61	3,185.2	-21.7	475.5	475.1	0.00	0.00	0.00
3,300.0	17.00	92.61	3,233.0	-22.4	490.1	489.7	0.00	0.00	0.00
3,329.3	17.00	92.61	3,261.0	-22.8	498.6	498.2	0.00	0.00	0.00
<b>PARKMAN</b>									
3,350.0	17.00	92.61	3,280.8	-23.0	504.7	504.3	0.00	0.00	0.00
3,400.0	17.00	92.61	3,328.6	-23.7	519.3	518.9	0.00	0.00	0.00
3,450.0	17.00	92.61	3,376.4	-24.4	533.9	533.5	0.00	0.00	0.00
3,500.0	17.00	92.61	3,424.3	-25.0	548.5	548.0	0.00	0.00	0.00
3,550.0	17.00	92.61	3,472.1	-25.7	563.1	562.6	0.00	0.00	0.00
3,600.0	17.00	92.61	3,519.9	-26.4	577.7	577.2	0.00	0.00	0.00
3,650.0	17.00	92.61	3,567.7	-27.0	592.3	591.8	0.00	0.00	0.00
3,700.0	17.00	92.61	3,615.5	-27.7	606.9	606.4	0.00	0.00	0.00
3,750.0	17.00	92.61	3,663.3	-28.4	621.5	621.0	0.00	0.00	0.00
3,800.0	17.00	92.61	3,711.1	-29.0	636.1	635.6	0.00	0.00	0.00
3,850.0	17.00	92.61	3,759.0	-29.7	650.7	650.2	0.00	0.00	0.00
3,900.0	17.00	92.61	3,806.8	-30.4	665.3	664.8	0.00	0.00	0.00
3,950.0	17.00	92.61	3,854.6	-31.0	679.9	679.4	0.00	0.00	0.00
3,984.9	17.00	92.61	3,888.0	-31.5	690.1	689.5	0.00	0.00	0.00
<b>SUSSEX</b>									
4,000.0	17.00	92.61	3,902.4	-31.7	694.5	693.9	0.00	0.00	0.00
4,050.0	17.00	92.61	3,950.2	-32.4	709.1	708.5	0.00	0.00	0.00
4,100.0	17.00	92.61	3,998.0	-33.0	723.7	723.1	0.00	0.00	0.00
4,150.0	17.00	92.61	4,045.9	-33.7	738.3	737.7	0.00	0.00	0.00
4,193.6	17.00	92.61	4,087.6	-34.3	751.0	750.4	0.00	0.00	0.00
<b>Start Drop -2.00</b>									
4,200.0	16.87	92.61	4,093.7	-34.4	752.9	752.3	1.99	-1.99	0.00
4,250.0	15.87	92.61	4,141.7	-35.0	766.9	766.4	2.00	-2.00	0.00
4,300.0	14.87	92.61	4,189.9	-35.6	780.2	779.6	2.00	-2.00	0.00
4,350.0	13.87	92.61	4,238.3	-36.2	792.6	792.0	2.00	-2.00	0.00
4,400.0	12.87	92.61	4,286.9	-36.7	804.1	803.5	2.00	-2.00	0.00
4,439.0	12.09	92.61	4,325.0	-37.1	812.5	811.9	2.00	-2.00	0.00
<b>SHANNON</b>									
4,450.0	11.87	92.61	4,335.8	-37.2	814.8	814.2	2.00	-2.00	0.00
4,500.0	10.87	92.61	4,384.8	-37.7	824.7	824.0	2.00	-2.00	0.00
4,550.0	9.87	92.61	4,434.0	-38.1	833.7	833.0	2.00	-2.00	0.00
4,600.0	8.87	92.61	4,483.3	-38.4	841.8	841.2	2.00	-2.00	0.00
4,650.0	7.87	92.61	4,532.8	-38.8	849.1	848.4	2.00	-2.00	0.00
4,700.0	6.87	92.61	4,582.4	-39.1	855.5	854.8	2.00	-2.00	0.00

# Noble Energy Inc

## Planning Report

<b>Database:</b>	EDM Production	<b>Local Co-ordinate Reference:</b>	Well Rohn State LD10-68-1HN
<b>Company:</b>	Northern Region Drilling	<b>TVD Reference:</b>	WELL @ 4769.0usft (Original Well Elev)
<b>Project:</b>	Wattenberg Field	<b>MD Reference:</b>	WELL @ 4769.0usft (Original Well Elev)
<b>Site:</b>	LD (09N-58W)	<b>North Reference:</b>	Grid
<b>Well:</b>	Rohn State LD10-68-1HN	<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)
4,750.0	5.87	92.61	4,632.1	-39.3	861.0	860.4	2.00	-2.00	0.00
4,800.0	4.87	92.61	4,681.8	-39.5	865.7	865.0	2.00	-2.00	0.00
4,850.0	3.87	92.61	4,731.7	-39.7	869.5	868.8	2.00	-2.00	0.00
4,900.0	2.87	92.61	4,781.6	-39.8	872.4	871.8	2.00	-2.00	0.00
4,950.0	1.87	92.61	4,831.6	-39.9	874.5	873.8	2.00	-2.00	0.00
5,000.0	0.87	92.61	4,881.5	-40.0	875.7	875.0	2.00	-2.00	0.00
5,009.5	0.68	92.61	4,891.0	-40.0	875.8	875.1	2.00	-2.00	0.00
TEEPEE BUTTES									
5,043.5	0.00	0.00	4,925.0	-40.0	876.0	875.3	2.00	-2.00	0.00
5,050.0	0.00	0.00	4,931.5	-40.0	876.0	875.3	0.00	0.00	0.00
5,100.0	0.00	0.00	4,981.5	-40.0	876.0	875.3	0.00	0.00	0.00
5,134.3	0.00	0.00	5,015.8	-40.0	876.0	875.3	0.00	0.00	0.00
KOP #2 - Start Build 8.00									
5,150.0	1.25	88.45	5,031.5	-40.0	876.2	875.5	7.97	7.97	0.00
5,200.0	5.25	88.45	5,081.5	-39.9	879.0	878.4	8.00	8.00	0.00
5,250.0	9.25	88.45	5,131.0	-39.7	885.3	884.7	8.00	8.00	0.00
5,300.0	13.25	88.45	5,180.1	-39.5	895.1	894.4	8.00	8.00	0.00
5,350.0	17.25	88.45	5,228.3	-39.1	908.2	907.6	8.00	8.00	0.00
5,400.0	21.25	88.45	5,275.5	-38.7	924.7	924.0	8.00	8.00	0.00
5,450.0	25.25	88.45	5,321.4	-38.1	944.4	943.8	8.00	8.00	0.00
5,500.0	29.25	88.45	5,365.9	-37.5	967.3	966.7	8.00	8.00	0.00
5,550.0	33.25	88.45	5,408.6	-36.8	993.2	992.6	8.00	8.00	0.00
5,600.0	37.25	88.45	5,449.4	-36.0	1,022.1	1,021.5	8.00	8.00	0.00
5,650.0	41.25	88.45	5,488.1	-35.2	1,053.7	1,053.1	8.00	8.00	0.00
5,700.0	45.25	88.45	5,524.5	-34.3	1,087.9	1,087.3	8.00	8.00	0.00
5,750.0	49.25	88.45	5,558.5	-33.3	1,124.6	1,124.0	8.00	8.00	0.00
5,795.4	52.88	88.45	5,587.0	-32.3	1,159.9	1,159.3	8.00	8.00	0.00
SHARON SPRINGS									
5,800.0	53.25	88.45	5,589.8	-32.2	1,163.6	1,163.0	8.00	8.00	0.00
5,813.9	54.37	88.45	5,598.0	-31.9	1,174.8	1,174.3	8.00	8.00	0.00
NIOBRARA									
5,838.6	56.34	88.45	5,612.0	-31.4	1,195.1	1,194.5	8.00	8.00	0.00
NIO A CHALK									
5,850.0	57.25	88.45	5,618.3	-31.1	1,204.7	1,204.1	8.00	8.00	0.00
5,896.2	60.95	88.45	5,642.0	-30.0	1,244.3	1,243.8	8.00	8.00	0.00
NIO A MARL									
5,900.0	61.25	88.45	5,643.8	-29.9	1,247.6	1,247.1	8.00	8.00	0.00
5,950.0	65.25	88.45	5,666.3	-28.7	1,292.2	1,291.7	8.00	8.00	0.00
6,000.0	69.25	88.45	5,685.6	-27.5	1,338.3	1,337.8	8.00	8.00	0.00
6,037.5	72.25	88.45	5,698.0	-26.5	1,373.7	1,373.2	8.00	8.00	0.00
NIO B CHALK									
6,050.0	73.25	88.45	5,701.7	-26.2	1,385.6	1,385.1	8.00	8.00	0.00
6,100.0	77.25	88.45	5,714.4	-24.9	1,434.0	1,433.5	8.00	8.00	0.00
6,150.0	81.25	88.45	5,723.8	-23.6	1,483.0	1,482.6	8.00	8.00	0.00
6,196.8	85.00	88.45	5,729.4	-22.3	1,529.5	1,529.0	8.00	8.00	0.00
Start 75.0 hold at 6196.8 MD - 7" Casing @ 6196.8' MD									
6,200.0	85.00	88.45	5,729.6	-22.2	1,532.7	1,532.2	0.12	0.12	0.00
6,204.1	85.00	88.45	5,730.0	-22.1	1,536.8	1,536.3	0.00	0.00	0.00
NIO B MARL									
6,250.0	85.00	88.45	5,734.0	-20.9	1,582.5	1,582.0	0.00	0.00	0.00
6,271.8	85.00	88.45	5,735.9	-20.3	1,604.2	1,603.7	0.00	0.00	0.00
Start Build 8.00									
6,300.0	87.25	88.45	5,737.8	-19.5	1,632.3	1,631.9	7.99	7.99	0.00

# Noble Energy Inc

## Planning Report

<b>Database:</b>	EDM Production	<b>Local Co-ordinate Reference:</b>	Well Rohn State LD10-68-1HN
<b>Company:</b>	Northern Region Drilling	<b>TVD Reference:</b>	WELL @ 4769.0usft (Original Well Elev)
<b>Project:</b>	Wattenberg Field	<b>MD Reference:</b>	WELL @ 4769.0usft (Original Well Elev)
<b>Site:</b>	LD (09N-58W)	<b>North Reference:</b>	Grid
<b>Well:</b>	Rohn State LD10-68-1HN	<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)	
6,344.3	90.80	88.45	5,738.6	-18.3	1,676.6	1,676.2	8.00	8.00	0.00	
6,350.0	90.80	88.45	5,738.5	-18.2	1,682.3	1,681.8	0.00	0.00	0.00	
6,400.0	90.80	88.45	5,737.8	-16.8	1,732.2	1,731.8	0.00	0.00	0.00	
6,450.0	90.80	88.45	5,737.1	-15.5	1,782.2	1,781.8	0.00	0.00	0.00	
6,500.0	90.80	88.45	5,736.4	-14.1	1,832.2	1,831.8	0.00	0.00	0.00	
6,550.0	90.80	88.45	5,735.7	-12.8	1,882.2	1,881.8	0.00	0.00	0.00	
6,600.0	90.80	88.45	5,735.0	-11.4	1,932.2	1,931.8	0.00	0.00	0.00	
6,650.0	90.80	88.45	5,734.3	-10.1	1,982.1	1,981.8	0.00	0.00	0.00	
6,700.0	90.80	88.45	5,733.6	-8.7	2,032.1	2,031.8	0.00	0.00	0.00	
6,750.0	90.80	88.45	5,732.9	-7.4	2,082.1	2,081.8	0.00	0.00	0.00	
6,800.0	90.80	88.45	5,732.2	-6.0	2,132.1	2,131.8	0.00	0.00	0.00	
6,850.0	90.80	88.45	5,731.5	-4.7	2,182.0	2,181.7	0.00	0.00	0.00	
6,900.0	90.80	88.45	5,730.8	-3.3	2,232.0	2,231.7	0.00	0.00	0.00	
6,950.0	90.80	88.45	5,730.1	-2.0	2,282.0	2,281.7	0.00	0.00	0.00	
7,000.0	90.80	88.45	5,729.4	-0.6	2,332.0	2,331.7	0.00	0.00	0.00	
7,050.0	90.80	88.45	5,728.7	0.7	2,381.9	2,381.7	0.00	0.00	0.00	
7,100.0	90.80	88.45	5,728.0	2.1	2,431.9	2,431.7	0.00	0.00	0.00	
7,150.0	90.80	88.45	5,727.3	3.5	2,481.9	2,481.7	0.00	0.00	0.00	
7,200.0	90.80	88.45	5,726.6	4.8	2,531.9	2,531.7	0.00	0.00	0.00	
7,250.0	90.80	88.45	5,725.9	6.2	2,581.8	2,581.7	0.00	0.00	0.00	
7,300.0	90.80	88.45	5,725.2	7.5	2,631.8	2,631.7	0.00	0.00	0.00	
7,350.0	90.80	88.45	5,724.5	8.9	2,681.8	2,681.7	0.00	0.00	0.00	
7,400.0	90.80	88.45	5,723.8	10.2	2,731.8	2,731.7	0.00	0.00	0.00	
7,450.0	90.80	88.45	5,723.1	11.6	2,781.8	2,781.6	0.00	0.00	0.00	
7,500.0	90.80	88.45	5,722.4	12.9	2,831.7	2,831.6	0.00	0.00	0.00	
7,550.0	90.80	88.45	5,721.7	14.3	2,881.7	2,881.6	0.00	0.00	0.00	
7,600.0	90.80	88.45	5,721.0	15.6	2,931.7	2,931.6	0.00	0.00	0.00	
7,650.0	90.80	88.45	5,720.3	17.0	2,981.7	2,981.6	0.00	0.00	0.00	
7,700.0	90.80	88.45	5,719.6	18.3	3,031.6	3,031.6	0.00	0.00	0.00	
7,750.0	90.80	88.45	5,718.9	19.7	3,081.6	3,081.6	0.00	0.00	0.00	
7,800.0	90.80	88.45	5,718.2	21.0	3,131.6	3,131.6	0.00	0.00	0.00	
7,850.0	90.80	88.45	5,717.5	22.4	3,181.6	3,181.6	0.00	0.00	0.00	
7,900.0	90.80	88.45	5,716.8	23.7	3,231.5	3,231.6	0.00	0.00	0.00	
7,950.0	90.80	88.45	5,716.1	25.1	3,281.5	3,281.6	0.00	0.00	0.00	
8,000.0	90.80	88.45	5,715.4	26.4	3,331.5	3,331.5	0.00	0.00	0.00	
8,050.0	90.80	88.45	5,714.7	27.8	3,381.5	3,381.5	0.00	0.00	0.00	
8,100.0	90.80	88.45	5,714.0	29.1	3,431.5	3,431.5	0.00	0.00	0.00	
8,150.0	90.80	88.45	5,713.3	30.5	3,481.4	3,481.5	0.00	0.00	0.00	
8,200.0	90.80	88.45	5,712.7	31.8	3,531.4	3,531.5	0.00	0.00	0.00	
8,250.0	90.80	88.45	5,712.0	33.2	3,581.4	3,581.5	0.00	0.00	0.00	
8,300.0	90.80	88.45	5,711.3	34.6	3,631.4	3,631.5	0.00	0.00	0.00	
8,350.0	90.80	88.45	5,710.6	35.9	3,681.3	3,681.5	0.00	0.00	0.00	
8,400.0	90.80	88.45	5,709.9	37.3	3,731.3	3,731.5	0.00	0.00	0.00	
8,450.0	90.80	88.45	5,709.2	38.6	3,781.3	3,781.5	0.00	0.00	0.00	
8,500.0	90.80	88.45	5,708.5	40.0	3,831.3	3,831.5	0.00	0.00	0.00	
8,550.0	90.80	88.45	5,707.8	41.3	3,881.2	3,881.4	0.00	0.00	0.00	
8,600.0	90.80	88.45	5,707.1	42.7	3,931.2	3,931.4	0.00	0.00	0.00	
8,650.0	90.80	88.45	5,706.4	44.0	3,981.2	3,981.4	0.00	0.00	0.00	
8,700.0	90.80	88.45	5,705.7	45.4	4,031.2	4,031.4	0.00	0.00	0.00	
8,750.0	90.80	88.45	5,705.0	46.7	4,081.2	4,081.4	0.00	0.00	0.00	
8,800.0	90.80	88.45	5,704.3	48.1	4,131.1	4,131.4	0.00	0.00	0.00	
8,850.0	90.80	88.45	5,703.6	49.4	4,181.1	4,181.4	0.00	0.00	0.00	
8,900.0	90.80	88.45	5,702.9	50.8	4,231.1	4,231.4	0.00	0.00	0.00	
8,950.0	90.80	88.45	5,702.2	52.1	4,281.1	4,281.4	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 LD10-68-1HN
<b>Company:</b>	Northern Region Drilling	<b>TVD Reference:</b>	WELL @ 4769.0usft (Original Well Elev)
<b>Project:</b>	Wattenberg Field	<b>MD Reference:</b>	WELL @ 4769.0usft (Original Well Elev)
<b>Site:</b>	LD (09N-58W)	<b>North Reference:</b>	Grid
<b>Well:</b>	Rohn State LD10-68-1HN	<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)	
9,000.0	90.80	88.45	5,701.5	53.5	4,331.0	4,331.4	0.00	0.00	0.00	
9,050.0	90.80	88.45	5,700.8	54.8	4,381.0	4,381.4	0.00	0.00	0.00	
9,100.0	90.80	88.45	5,700.1	56.2	4,431.0	4,431.3	0.00	0.00	0.00	
9,150.0	90.80	88.45	5,699.4	57.5	4,481.0	4,481.3	0.00	0.00	0.00	
9,200.0	90.80	88.45	5,698.7	58.9	4,530.9	4,531.3	0.00	0.00	0.00	
9,250.0	90.80	88.45	5,698.0	60.2	4,580.9	4,581.3	0.00	0.00	0.00	
9,300.0	90.80	88.45	5,697.3	61.6	4,630.9	4,631.3	0.00	0.00	0.00	
9,350.0	90.80	88.45	5,696.6	62.9	4,680.9	4,681.3	0.00	0.00	0.00	
9,400.0	90.80	88.45	5,695.9	64.3	4,730.9	4,731.3	0.00	0.00	0.00	
9,450.0	90.80	88.45	5,695.2	65.7	4,780.8	4,781.3	0.00	0.00	0.00	
9,500.0	90.80	88.45	5,694.5	67.0	4,830.8	4,831.3	0.00	0.00	0.00	
9,550.0	90.80	88.45	5,693.8	68.4	4,880.8	4,881.3	0.00	0.00	0.00	
9,600.0	90.80	88.45	5,693.1	69.7	4,930.8	4,931.3	0.00	0.00	0.00	
9,607.5	90.80	88.45	5,693.0	69.9	4,938.3	4,938.8	0.00	0.00	0.00	
TD at 9607.5 - Rohn State LD10-68-1HN BHL 990'FNL, 660'FEL										

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 LD10-68-1H	0.00	0.00	5,693.0	69.9	4,938.3	1,527,836.11	3,458,851.11	40.770530	-103.843330
- plan hits target center									
- Point									

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")	
6,196.8	5,729.4	7" Casing @ 6196.8' MD	7	8-3/4	

Formations					
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
2,417.5	2,389.0	PIERRE		0.00	
3,329.3	3,261.0	PARKMAN		0.00	
3,984.9	3,888.0	SUSSEX		0.00	
4,439.0	4,325.0	SHANNON		0.00	
5,009.5	4,891.0	TEEPEE BUTTES		0.00	
5,795.4	5,587.0	SHARON SPRINGS		0.00	
5,813.9	5,598.0	NIOBRARA		0.00	
5,838.6	5,612.0	NIO A CHALK		0.00	
5,896.2	5,642.0	NIO A MARL		0.00	
6,037.5	5,698.0	NIO B CHALK		0.00	
6,204.1	5,730.0	NIO B MARL		0.00	



# Noble Energy Inc

## Planning Report

<b>Database:</b>	EDM Production	<b>Local Co-ordinate Reference:</b>	Well Rohn State LD10-68-1HN
<b>Company:</b>	Northern Region Drilling	<b>TVD Reference:</b>	WELL @ 4769.0usft (Original Well Elev)
<b>Project:</b>	Wattenberg Field	<b>MD Reference:</b>	WELL @ 4769.0usft (Original Well Elev)
<b>Site:</b>	LD (09N-58W)	<b>North Reference:</b>	Grid
<b>Well:</b>	Rohn State LD10-68-1HN	<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)	
1,200.0	1,200.0	0.0	0.0	KOP - Start Build 2.00
4,193.6	4,087.6	-34.3	751.0	Start Drop -2.00
5,134.3	5,015.8	-40.0	876.0	KOP #2 - Start Build 8.00
6,196.8	5,729.4	-22.3	1,529.5	Start 75.0 hold at 6196.8 MD
6,271.8	5,735.9	-20.3	1,604.2	Start Build 8.00
9,607.5	5,693.0	69.9	4,938.3	TD at 9607.5

# **Northern Region Drilling**

**Wattenberg Field**

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

**Rohn State LD10-68-1HN**

**Original Drilling**

**APD - Rev 0**

## **Anticollision Summary Report**

**01 May, 2013**

**Noble Energy Inc**  
Anticollision Summary Report

<b>Company:</b>	Northern Region Drilling	<b>Local Co-ordinate Reference:</b>	Well Rohn State LD10-68-1HN
<b>Project:</b>	Wattenberg Field	<b>TVD Reference:</b>	WELL @ 4769.0usft (Original Well Elev)
<b>Reference Site:</b>	LD (09N-58W)	<b>MD Reference:</b>	WELL @ 4769.0usft (Original Well Elev)
<b>Site Error:</b>	0.0 usft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Rohn State LD10-68-1HN	<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>	5/1/2013		
<b>From (usft)</b>	<b>To (usft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>
0.0	9,607.5	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 LD10-68HN - Original Drilling - APD - Rev 0	1,000.0	1,000.0	36.4	32.2	8.668	CC, ES
Rohn State LD10-68HN - Original Drilling - APD - Rev 0	9,608.2	9,648.9	329.3	77.0	1.305	Level 3, SF
Rohn State LD10-69-1HN - Original Drilling - APD - Rev	1,200.0	1,200.0	76.5	71.4	14.996	CC
Rohn State LD10-69-1HN - Original Drilling - APD - Rev	1,300.0	1,300.0	76.6	71.1	13.839	ES
Rohn State LD10-69-1HN - Original Drilling - APD - Rev	9,608.2	9,698.2	660.0	406.2	2.600	SF

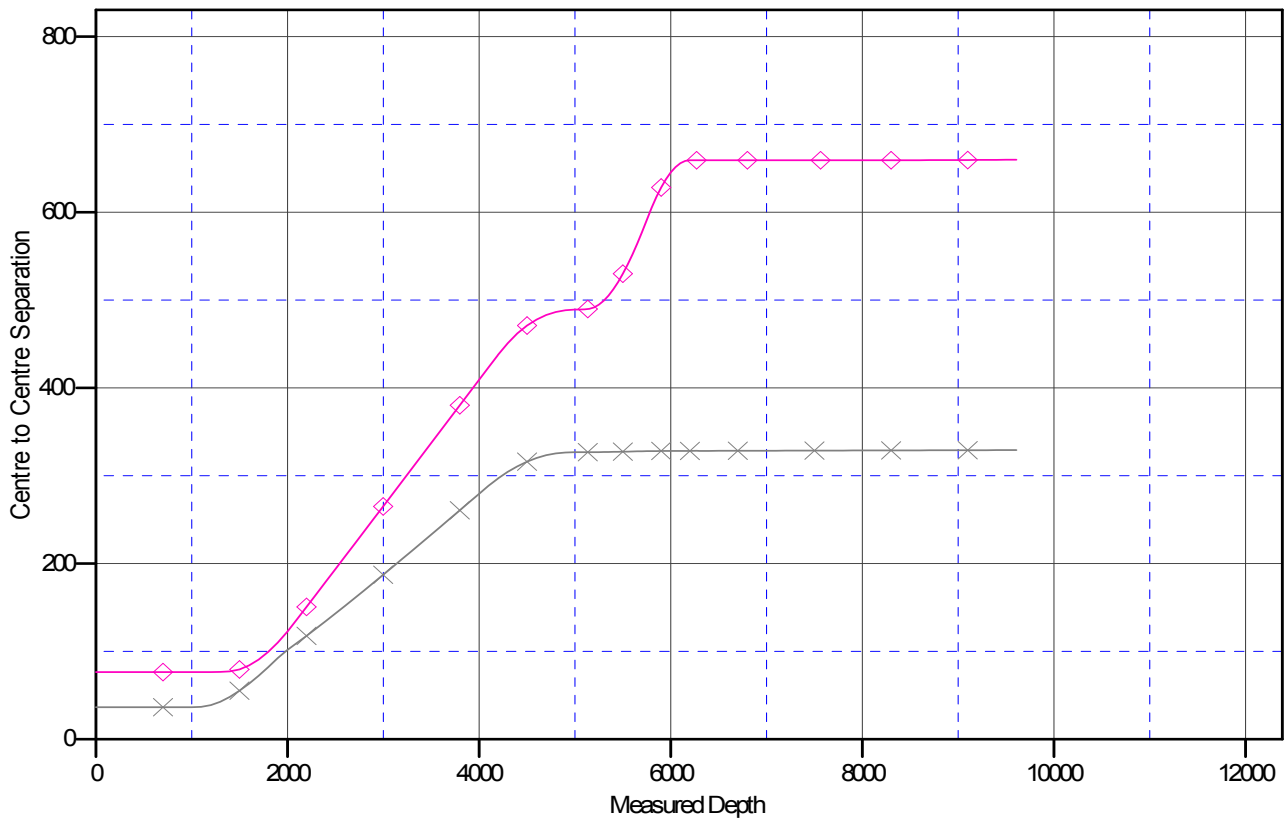
**Noble Energy Inc**  
**Anticollision Summary Report**

<b>Company:</b>	Northern Region Drilling	<b>Local Co-ordinate Reference:</b>	Well Rohn State LD10-68-1HN
<b>Project:</b>	Wattenberg Field	<b>TVD Reference:</b>	WELL @ 4769.0usft (Original Well Elev)
<b>Reference Site:</b>	LD (09N-58W)	<b>MD Reference:</b>	WELL @ 4769.0usft (Original Well Elev)
<b>Site Error:</b>	0.0 usft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Rohn State LD10-68-1HN	<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 @ 4769.0usft (Original Well Ele  
Offset Depths are relative to Offset Datum  
Central Meridian is -105.500000

Coordinates are relative to: Rohn State LD10-68-1HN  
Coordinate System is US State Plane 1983, Colorado Northern Zone  
Grid Convergence at Surface is: 1.06°

## Ladder Plot



### LEGEND

te LD10-69-1HN, Original Drilling, APD - Rev0 V0    ✕    Rohn State LD10-68-1HN, Original Drilling, APD - Rev0 V0

**Noble Energy Inc**  
**Anticollision Summary Report**

<b>Company:</b>	Northern Region Drilling	<b>Local Co-ordinate Reference:</b>	Well Rohn State LD10-68-1HN
<b>Project:</b>	Wattenberg Field	<b>TVD Reference:</b>	WELL @ 4769.0usft (Original Well Elev)
<b>Reference Site:</b>	LD (09N-58W)	<b>MD Reference:</b>	WELL @ 4769.0usft (Original Well Elev)
<b>Site Error:</b>	0.0 usft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	Rohn State LD10-68-1HN	<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 @ 4769.0usft (Original Well Ele  
Offset Depths are relative to Offset Datum  
Central Meridian is -105.500000

Coordinates are relative to: Rohn State LD10-68-1HN  
Coordinate System is US State Plane 1983, Colorado Northern Zone  
Grid Convergence at Surface is: 1.06°

