

ENSIGN

Directional

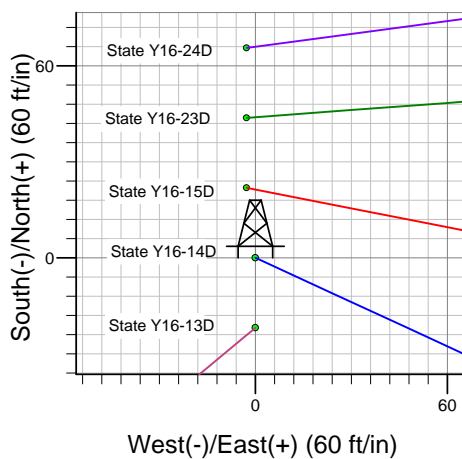
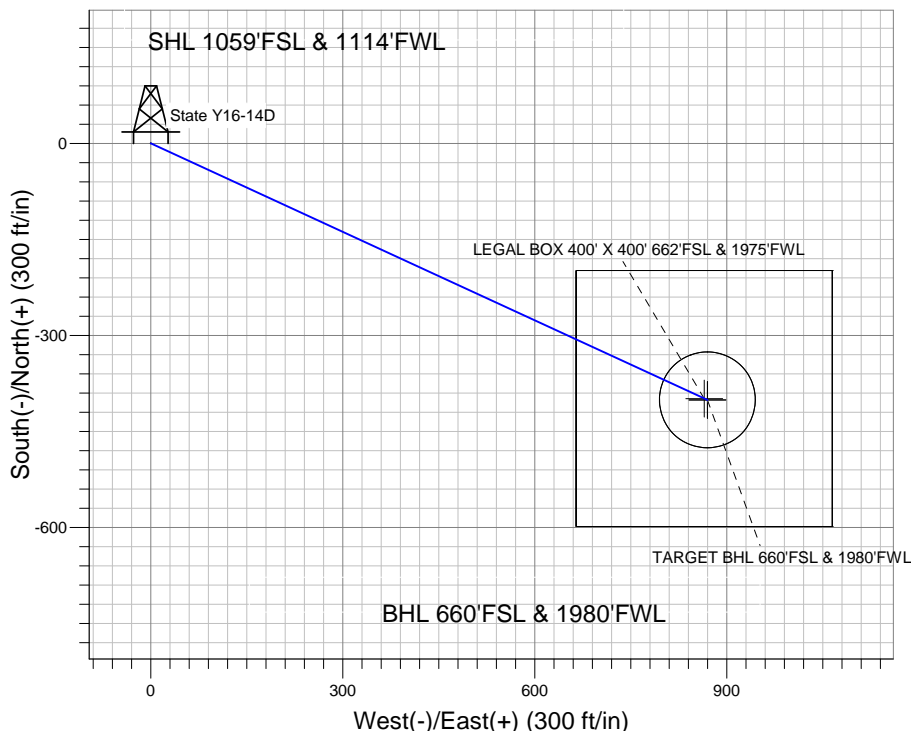
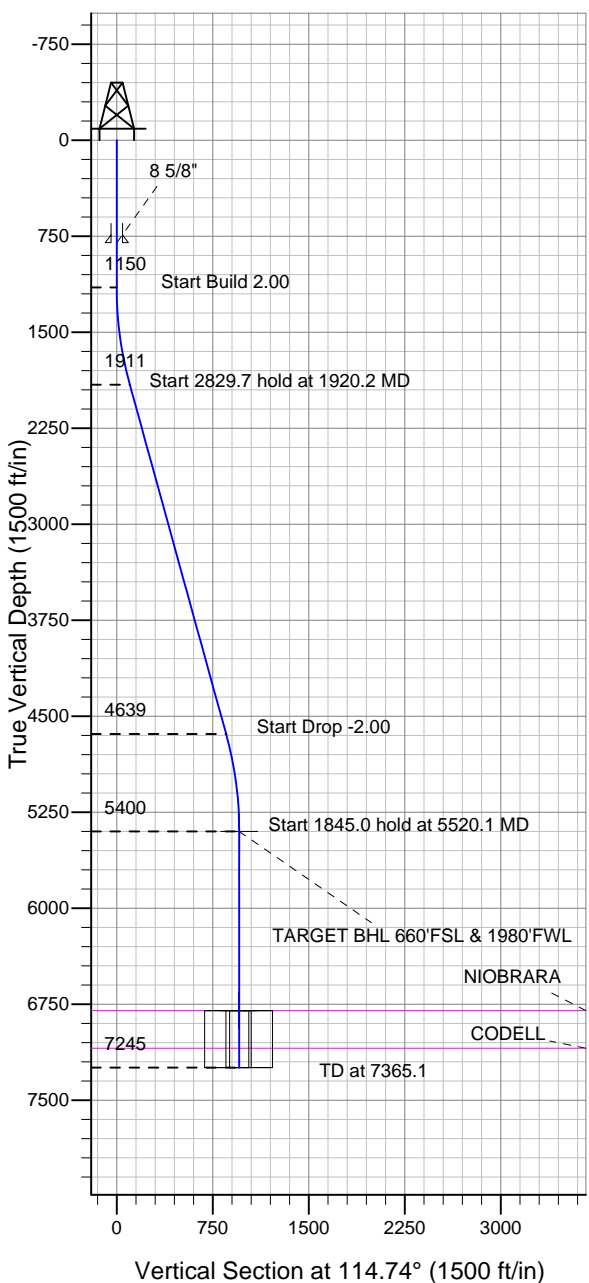
Well Name: State Y16-14D

Surface Location: State Y16-24D Pad Sec.16-T2N-R64W
North American Datum 1983 US State Plane 1983 Colorado Northern Zone

Ground Elevation: 4927.0

+N/-S +E/-W Northing Easting Latitude Longitude Slot
0.0 0.0 1293102.05 3262301.40 40.134150 -104.561860
Original Well Elev WELL @ 4940.0ft (Original Well Elev)

NOBLE ENERGY INC WELD COUNTY CO



State Y16-24D Pad Sec.16-T2N-R64W
State Y16-14D
Noble State Y16-14D Plan #1 (9-28-11)
14:06, October 03 2011



Azimuths to True North
Magnetic North: 8.69°

Magnetic Field
Strength: 52980.9snT
Dip Angle: 66.86°
Date: 10/3/2011
Model: IGRF2010

WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
TARGET BHL 660'FSL & 1980'FWL	5400.0	-400.7	869.6	40.133050	-104.558750	Point
LEGAL BOX 400' X 400' 662'FSL & 1975'FWL	6800.0	-398.7	864.6	40.133055	-104.558768	Rectangle (Sides: L400.0 W400.0)
TARGET CIRCLE 660'FSL & 1980'FWL	6800.0	-400.7	869.6	40.133050	-104.558750	Circle (Radius: 75.0)

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	1150.0	0.00	0.00	1150.0	0.0	0.0	0.00	0.00	0.0	
3	1920.2	15.40	114.74	1911.0	-43.1	93.5	2.00	114.74	102.9	
4	4749.9	15.40	114.74	4639.0	-357.6	776.1	0.00	0.00	854.6	
5	5520.1	0.00	0.00	5400.0	-400.7	869.6	2.00	180.00	957.5	TARGET BHL 660'FSL & 1980'FWL
6	7365.1	0.00	0.00	7245.0	-400.7	869.6	0.00	0.00	957.5	



Directional

NOBLE ENERGY INC WELD COUNTY CO

SEC.16-T2N-R64W

State Y16-24D Pad Sec.16-T2N-R64W

State Y16-14D

Wellbore #1

Plan: Noble State Y16-14D Plan #1 (9-28-11)

Standard Planning Report

03 October, 2011



Database:	Landmark	Local Co-ordinate Reference:	Well State Y16-14D
Company:	NOBLE ENERGY INC WELD COUNTY CO	TVD Reference:	WELL @ 4940.0ft (Original Well Elev)
Project:	SEC.16-T2N-R64W	MD Reference:	WELL @ 4940.0ft (Original Well Elev)
Site:	State Y16-24D Pad Sec.16-T2N-R64W	North Reference:	True
Well:	State Y16-14D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Noble State Y16-14D Plan #1 (9-28-11)		

Project	SEC.16-T2N-R64W, Weld County, Colorado		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		Using Well Reference Point
Map Zone:	Colorado Northern Zone		Using geodetic scale factor

Site						State Y16-24D Pad Sec.16-T2N-R64W											
Site Position:						Northing:			1,293,080.21 ft			Latitude:			40.134090		
From:			Lat/Long			Easting:			3,262,301.63ft			Longitude:			-104.561860		
Position Uncertainty:			0.0 ft			Slot Radius:			"			Grid Convergence:			0.61 °		

Well	State Y16-14D					
Well Position	+N/-S	21.8 ft	Northing:	1,293,102.05 ft	Latitude:	40.134150
	+E/-W	0.0 ft	Easting:	3,262,301.40 ft	Longitude:	-104.561860
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,927.0 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	10/3/2011	8.69	66.86	52,981

Design	Noble State Y16-14D Plan #1 (9-28-11)			
Audit Notes:				
Version:	Phase:	PROTOTYPE	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.0	0.0	0.0	114.74

Plan Sections										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,150.0	0.00	0.00	1,150.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,920.2	15.40	114.74	1,911.0	-43.1	93.5	2.00	2.00	0.00	114.74	
4,749.9	15.40	114.74	4,639.0	-357.6	776.1	0.00	0.00	0.00	0.00	
5,520.1	0.00	0.00	5,400.0	-400.7	869.6	2.00	-2.00	0.00	180.00	TARGET BHL 660'I
7,365.1	0.00	0.00	7,245.0	-400.7	869.6	0.00	0.00	0.00	0.00	

Database:	Landmark	Local Co-ordinate Reference:	Well State Y16-14D
Company:	NOBLE ENERGY INC WELD COUNTY CO	TVD Reference:	WELL @ 4940.0ft (Original Well Elev)
Project:	SEC.16-T2N-R64W	MD Reference:	WELL @ 4940.0ft (Original Well Elev)
Site:	State Y16-24D Pad Sec.16-T2N-R64W	North Reference:	True
Well:	State Y16-14D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Noble State Y16-14D Plan #1 (9-28-11)		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
40.0	0.00	0.00	40.0	0.0	0.0	0.0	0.00	0.00	0.00
80.0	0.00	0.00	80.0	0.0	0.0	0.0	0.00	0.00	0.00
120.0	0.00	0.00	120.0	0.0	0.0	0.0	0.00	0.00	0.00
160.0	0.00	0.00	160.0	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
240.0	0.00	0.00	240.0	0.0	0.0	0.0	0.00	0.00	0.00
280.0	0.00	0.00	280.0	0.0	0.0	0.0	0.00	0.00	0.00
320.0	0.00	0.00	320.0	0.0	0.0	0.0	0.00	0.00	0.00
360.0	0.00	0.00	360.0	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
440.0	0.00	0.00	440.0	0.0	0.0	0.0	0.00	0.00	0.00
480.0	0.00	0.00	480.0	0.0	0.0	0.0	0.00	0.00	0.00
520.0	0.00	0.00	520.0	0.0	0.0	0.0	0.00	0.00	0.00
560.0	0.00	0.00	560.0	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
640.0	0.00	0.00	640.0	0.0	0.0	0.0	0.00	0.00	0.00
680.0	0.00	0.00	680.0	0.0	0.0	0.0	0.00	0.00	0.00
720.0	0.00	0.00	720.0	0.0	0.0	0.0	0.00	0.00	0.00
760.0	0.00	0.00	760.0	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
8 5/8"									
840.0	0.00	0.00	840.0	0.0	0.0	0.0	0.00	0.00	0.00
880.0	0.00	0.00	880.0	0.0	0.0	0.0	0.00	0.00	0.00
920.0	0.00	0.00	920.0	0.0	0.0	0.0	0.00	0.00	0.00
960.0	0.00	0.00	960.0	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
1,040.0	0.00	0.00	1,040.0	0.0	0.0	0.0	0.00	0.00	0.00
1,080.0	0.00	0.00	1,080.0	0.0	0.0	0.0	0.00	0.00	0.00
1,120.0	0.00	0.00	1,120.0	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
1,160.0	0.20	114.74	1,160.0	0.0	0.0	0.0	2.00	2.00	0.00
1,200.0	1.00	114.74	1,200.0	-0.2	0.4	0.4	2.00	2.00	0.00
1,240.0	1.80	114.74	1,240.0	-0.6	1.3	1.4	2.00	2.00	0.00
1,280.0	2.60	114.74	1,280.0	-1.2	2.7	2.9	2.00	2.00	0.00
1,320.0	3.40	114.74	1,319.9	-2.1	4.6	5.0	2.00	2.00	0.00
1,360.0	4.20	114.74	1,359.8	-3.2	7.0	7.7	2.00	2.00	0.00
1,400.0	5.00	114.74	1,399.7	-4.6	9.9	10.9	2.00	2.00	0.00
1,440.0	5.80	114.74	1,439.5	-6.1	13.3	14.7	2.00	2.00	0.00
1,480.0	6.60	114.74	1,479.3	-7.9	17.2	19.0	2.00	2.00	0.00
1,520.0	7.40	114.74	1,519.0	-10.0	21.7	23.9	2.00	2.00	0.00
1,560.0	8.20	114.74	1,558.6	-12.3	26.6	29.3	2.00	2.00	0.00
1,600.0	9.00	114.74	1,598.2	-14.8	32.0	35.3	2.00	2.00	0.00
1,640.0	9.80	114.74	1,637.6	-17.5	38.0	41.8	2.00	2.00	0.00
1,680.0	10.60	114.74	1,677.0	-20.5	44.4	48.9	2.00	2.00	0.00
1,720.0	11.40	114.74	1,716.2	-23.7	51.3	56.5	2.00	2.00	0.00
1,760.0	12.20	114.74	1,755.4	-27.1	58.8	64.7	2.00	2.00	0.00
1,800.0	13.00	114.74	1,794.4	-30.7	66.7	73.4	2.00	2.00	0.00
1,840.0	13.80	114.74	1,833.3	-34.6	75.1	82.7	2.00	2.00	0.00
1,880.0	14.60	114.74	1,872.1	-38.7	84.0	92.5	2.00	2.00	0.00
1,920.0	15.40	114.74	1,910.8	-43.0	93.4	102.9	2.00	2.00	0.00
1,920.2	15.40	114.74	1,911.0	-43.1	93.5	102.9	2.00	2.00	0.00
1,960.0	15.40	114.74	1,949.3	-47.5	103.1	113.5	0.00	0.00	0.00
2,000.0	15.40	114.74	1,987.9	-51.9	112.7	124.1	0.00	0.00	0.00

Database:	Landmark	Local Co-ordinate Reference:	Well State Y16-14D
Company:	NOBLE ENERGY INC WELD COUNTY CO	TVD Reference:	WELL @ 4940.0ft (Original Well Elev)
Project:	SEC.16-T2N-R64W	MD Reference:	WELL @ 4940.0ft (Original Well Elev)
Site:	State Y16-24D Pad Sec.16-T2N-R64W	North Reference:	True
Well:	State Y16-14D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Noble State Y16-14D Plan #1 (9-28-11)		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
2,040.0	15.40	114.74	2,026.5	-56.4	122.4	134.7	0.00	0.00	0.00
2,080.0	15.40	114.74	2,065.0	-60.8	132.0	145.4	0.00	0.00	0.00
2,120.0	15.40	114.74	2,103.6	-65.3	141.7	156.0	0.00	0.00	0.00
2,160.0	15.40	114.74	2,142.1	-69.7	151.3	166.6	0.00	0.00	0.00
2,200.0	15.40	114.74	2,180.7	-74.2	161.0	177.2	0.00	0.00	0.00
2,240.0	15.40	114.74	2,219.3	-78.6	170.6	187.9	0.00	0.00	0.00
2,280.0	15.40	114.74	2,257.8	-83.1	180.3	198.5	0.00	0.00	0.00
2,320.0	15.40	114.74	2,296.4	-87.5	189.9	209.1	0.00	0.00	0.00
2,360.0	15.40	114.74	2,335.0	-92.0	199.6	219.7	0.00	0.00	0.00
2,400.0	15.40	114.74	2,373.5	-96.4	209.2	230.4	0.00	0.00	0.00
2,440.0	15.40	114.74	2,412.1	-100.9	218.9	241.0	0.00	0.00	0.00
2,480.0	15.40	114.74	2,450.6	-105.3	228.5	251.6	0.00	0.00	0.00
2,520.0	15.40	114.74	2,489.2	-109.7	238.2	262.2	0.00	0.00	0.00
2,560.0	15.40	114.74	2,527.8	-114.2	247.8	272.9	0.00	0.00	0.00
2,600.0	15.40	114.74	2,566.3	-118.6	257.5	283.5	0.00	0.00	0.00
2,640.0	15.40	114.74	2,604.9	-123.1	267.1	294.1	0.00	0.00	0.00
2,680.0	15.40	114.74	2,643.5	-127.5	276.8	304.7	0.00	0.00	0.00
2,720.0	15.40	114.74	2,682.0	-132.0	286.4	315.4	0.00	0.00	0.00
2,760.0	15.40	114.74	2,720.6	-136.4	296.1	326.0	0.00	0.00	0.00
2,800.0	15.40	114.74	2,759.1	-140.9	305.7	336.6	0.00	0.00	0.00
2,840.0	15.40	114.74	2,797.7	-145.3	315.4	347.2	0.00	0.00	0.00
2,880.0	15.40	114.74	2,836.3	-149.8	325.0	357.9	0.00	0.00	0.00
2,920.0	15.40	114.74	2,874.8	-154.2	334.7	368.5	0.00	0.00	0.00
2,960.0	15.40	114.74	2,913.4	-158.7	344.3	379.1	0.00	0.00	0.00
3,000.0	15.40	114.74	2,952.0	-163.1	354.0	389.7	0.00	0.00	0.00
3,040.0	15.40	114.74	2,990.5	-167.5	363.6	400.4	0.00	0.00	0.00
3,080.0	15.40	114.74	3,029.1	-172.0	373.3	411.0	0.00	0.00	0.00
3,120.0	15.40	114.74	3,067.7	-176.4	382.9	421.6	0.00	0.00	0.00
3,160.0	15.40	114.74	3,106.2	-180.9	392.6	432.2	0.00	0.00	0.00
3,200.0	15.40	114.74	3,144.8	-185.3	402.2	442.9	0.00	0.00	0.00
3,240.0	15.40	114.74	3,183.3	-189.8	411.9	453.5	0.00	0.00	0.00
3,280.0	15.40	114.74	3,221.9	-194.2	421.5	464.1	0.00	0.00	0.00
3,320.0	15.40	114.74	3,260.5	-198.7	431.2	474.7	0.00	0.00	0.00
3,360.0	15.40	114.74	3,299.0	-203.1	440.8	485.4	0.00	0.00	0.00
3,400.0	15.40	114.74	3,337.6	-207.6	450.5	496.0	0.00	0.00	0.00
3,440.0	15.40	114.74	3,376.2	-212.0	460.1	506.6	0.00	0.00	0.00
3,480.0	15.40	114.74	3,414.7	-216.5	469.8	517.2	0.00	0.00	0.00
3,520.0	15.40	114.74	3,453.3	-220.9	479.4	527.9	0.00	0.00	0.00
3,560.0	15.40	114.74	3,491.8	-225.4	489.1	538.5	0.00	0.00	0.00
3,600.0	15.40	114.74	3,530.4	-229.8	498.7	549.1	0.00	0.00	0.00
3,640.0	15.40	114.74	3,569.0	-234.2	508.4	559.7	0.00	0.00	0.00
3,680.0	15.40	114.74	3,607.5	-238.7	518.0	570.4	0.00	0.00	0.00
3,720.0	15.40	114.74	3,646.1	-243.1	527.7	581.0	0.00	0.00	0.00
3,760.0	15.40	114.74	3,684.7	-247.6	537.3	591.6	0.00	0.00	0.00
3,800.0	15.40	114.74	3,723.2	-252.0	547.0	602.2	0.00	0.00	0.00
3,840.0	15.40	114.74	3,761.8	-256.5	556.6	612.9	0.00	0.00	0.00
3,880.0	15.40	114.74	3,800.3	-260.9	566.3	623.5	0.00	0.00	0.00
3,920.0	15.40	114.74	3,838.9	-265.4	575.9	634.1	0.00	0.00	0.00
3,960.0	15.40	114.74	3,877.5	-269.8	585.6	644.7	0.00	0.00	0.00
4,000.0	15.40	114.74	3,916.0	-274.3	595.2	655.4	0.00	0.00	0.00
4,040.0	15.40	114.74	3,954.6	-278.7	604.9	666.0	0.00	0.00	0.00
4,080.0	15.40	114.74	3,993.2	-283.2	614.5	676.6	0.00	0.00	0.00
4,120.0	15.40	114.74	4,031.7	-287.6	624.2	687.2	0.00	0.00	0.00
4,160.0	15.40	114.74	4,070.3	-292.1	633.8	697.9	0.00	0.00	0.00

Database:	Landmark	Local Co-ordinate Reference:	Well State Y16-14D
Company:	NOBLE ENERGY INC WELD COUNTY CO	TVD Reference:	WELL @ 4940.0ft (Original Well Elev)
Project:	SEC.16-T2N-R64W	MD Reference:	WELL @ 4940.0ft (Original Well Elev)
Site:	State Y16-24D Pad Sec.16-T2N-R64W	North Reference:	True
Well:	State Y16-14D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Noble State Y16-14D Plan #1 (9-28-11)		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
4,200.0	15.40	114.74	4,108.9	-296.5	643.5	708.5	0.00	0.00	0.00
4,240.0	15.40	114.74	4,147.4	-300.9	653.1	719.1	0.00	0.00	0.00
4,280.0	15.40	114.74	4,186.0	-305.4	662.8	729.7	0.00	0.00	0.00
4,320.0	15.40	114.74	4,224.5	-309.8	672.4	740.4	0.00	0.00	0.00
4,360.0	15.40	114.74	4,263.1	-314.3	682.1	751.0	0.00	0.00	0.00
4,400.0	15.40	114.74	4,301.7	-318.7	691.7	761.6	0.00	0.00	0.00
4,440.0	15.40	114.74	4,340.2	-323.2	701.4	772.2	0.00	0.00	0.00
4,480.0	15.40	114.74	4,378.8	-327.6	711.0	782.9	0.00	0.00	0.00
4,520.0	15.40	114.74	4,417.4	-332.1	720.7	793.5	0.00	0.00	0.00
4,560.0	15.40	114.74	4,455.9	-336.5	730.3	804.1	0.00	0.00	0.00
4,600.0	15.40	114.74	4,494.5	-341.0	740.0	814.7	0.00	0.00	0.00
4,640.0	15.40	114.74	4,533.0	-345.4	749.6	825.4	0.00	0.00	0.00
4,680.0	15.40	114.74	4,571.6	-349.9	759.3	836.0	0.00	0.00	0.00
4,720.0	15.40	114.74	4,610.2	-354.3	768.9	846.6	0.00	0.00	0.00
4,749.9	15.40	114.74	4,639.0	-357.6	776.1	854.6	0.00	0.00	0.00
4,760.0	15.20	114.74	4,648.7	-358.7	778.6	857.2	2.00	-2.00	0.00
4,800.0	14.40	114.74	4,687.4	-363.0	787.8	867.5	2.00	-2.00	0.00
4,840.0	13.60	114.74	4,726.2	-367.1	796.6	877.1	2.00	-2.00	0.00
4,880.0	12.80	114.74	4,765.2	-370.9	804.9	886.3	2.00	-2.00	0.00
4,920.0	12.00	114.74	4,804.2	-374.5	812.7	894.9	2.00	-2.00	0.00
4,960.0	11.20	114.74	4,843.4	-377.9	820.0	902.9	2.00	-2.00	0.00
5,000.0	10.40	114.74	4,882.7	-381.0	826.8	910.4	2.00	-2.00	0.00
5,040.0	9.60	114.74	4,922.1	-383.9	833.2	917.3	2.00	-2.00	0.00
5,080.0	8.80	114.74	4,961.6	-386.6	839.0	923.7	2.00	-2.00	0.00
5,120.0	8.00	114.74	5,001.2	-389.0	844.3	929.6	2.00	-2.00	0.00
5,160.0	7.20	114.74	5,040.8	-391.2	849.1	934.9	2.00	-2.00	0.00
5,200.0	6.40	114.74	5,080.5	-393.2	853.4	939.6	2.00	-2.00	0.00
5,240.0	5.60	114.74	5,120.3	-395.0	857.2	943.8	2.00	-2.00	0.00
5,280.0	4.80	114.74	5,160.1	-396.5	860.5	947.4	2.00	-2.00	0.00
5,320.0	4.00	114.74	5,200.0	-397.8	863.3	950.5	2.00	-2.00	0.00
5,360.0	3.20	114.74	5,239.9	-398.8	865.6	953.0	2.00	-2.00	0.00
5,400.0	2.40	114.74	5,279.9	-399.6	867.3	955.0	2.00	-2.00	0.00
5,440.0	1.60	114.74	5,319.9	-400.2	868.6	956.4	2.00	-2.00	0.00
5,480.0	0.80	114.74	5,359.9	-400.6	869.4	957.2	2.00	-2.00	0.00
5,520.0	0.00	114.74	5,399.9	-400.7	869.6	957.5	2.00	-2.00	0.00
5,520.1	0.00	114.74	5,400.0	-400.7	869.6	957.5	0.00	0.00	0.00
TARGET BHL 660'FSL & 1980'FWL									
5,560.0	0.00	0.00	5,439.9	-400.7	869.6	957.5	0.01	-0.01	0.00
5,600.0	0.00	0.00	5,479.9	-400.7	869.6	957.5	0.00	0.00	0.00
5,640.0	0.00	0.00	5,519.9	-400.7	869.6	957.5	0.00	0.00	0.00
5,680.0	0.00	0.00	5,559.9	-400.7	869.6	957.5	0.00	0.00	0.00
5,720.0	0.00	0.00	5,599.9	-400.7	869.6	957.5	0.00	0.00	0.00
5,760.0	0.00	0.00	5,639.9	-400.7	869.6	957.5	0.00	0.00	0.00
5,800.0	0.00	0.00	5,679.9	-400.7	869.6	957.5	0.00	0.00	0.00
5,840.0	0.00	0.00	5,719.9	-400.7	869.6	957.5	0.00	0.00	0.00
5,880.0	0.00	0.00	5,759.9	-400.7	869.6	957.5	0.00	0.00	0.00
5,920.0	0.00	0.00	5,799.9	-400.7	869.6	957.5	0.00	0.00	0.00
5,960.0	0.00	0.00	5,839.9	-400.7	869.6	957.5	0.00	0.00	0.00
6,000.0	0.00	0.00	5,879.9	-400.7	869.6	957.5	0.00	0.00	0.00
6,040.0	0.00	0.00	5,919.9	-400.7	869.6	957.5	0.00	0.00	0.00
6,080.0	0.00	0.00	5,959.9	-400.7	869.6	957.5	0.00	0.00	0.00
6,120.0	0.00	0.00	5,999.9	-400.7	869.6	957.5	0.00	0.00	0.00
6,160.0	0.00	0.00	6,039.9	-400.7	869.6	957.5	0.00	0.00	0.00
6,200.0	0.00	0.00	6,079.9	-400.7	869.6	957.5	0.00	0.00	0.00

Database:	Landmark	Local Co-ordinate Reference:	Well State Y16-14D
Company:	NOBLE ENERGY INC WELD COUNTY CO	TVD Reference:	WELL @ 4940.0ft (Original Well Elev)
Project:	SEC.16-T2N-R64W	MD Reference:	WELL @ 4940.0ft (Original Well Elev)
Site:	State Y16-24D Pad Sec.16-T2N-R64W	North Reference:	True
Well:	State Y16-14D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Noble State Y16-14D Plan #1 (9-28-11)		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
6,240.0	0.00	0.00	6,119.9	-400.7	869.6	957.5	0.00	0.00	0.00
6,280.0	0.00	0.00	6,159.9	-400.7	869.6	957.5	0.00	0.00	0.00
6,320.0	0.00	0.00	6,199.9	-400.7	869.6	957.5	0.00	0.00	0.00
6,360.0	0.00	0.00	6,239.9	-400.7	869.6	957.5	0.00	0.00	0.00
6,400.0	0.00	0.00	6,279.9	-400.7	869.6	957.5	0.00	0.00	0.00
6,440.0	0.00	0.00	6,319.9	-400.7	869.6	957.5	0.00	0.00	0.00
6,480.0	0.00	0.00	6,359.9	-400.7	869.6	957.5	0.00	0.00	0.00
6,520.0	0.00	0.00	6,399.9	-400.7	869.6	957.5	0.00	0.00	0.00
6,560.0	0.00	0.00	6,439.9	-400.7	869.6	957.5	0.00	0.00	0.00
6,600.0	0.00	0.00	6,479.9	-400.7	869.6	957.5	0.00	0.00	0.00
6,640.0	0.00	0.00	6,519.9	-400.7	869.6	957.5	0.00	0.00	0.00
6,680.0	0.00	0.00	6,559.9	-400.7	869.6	957.5	0.00	0.00	0.00
6,720.0	0.00	0.00	6,599.9	-400.7	869.6	957.5	0.00	0.00	0.00
6,760.0	0.00	0.00	6,639.9	-400.7	869.6	957.5	0.00	0.00	0.00
6,800.0	0.00	0.00	6,679.9	-400.7	869.6	957.5	0.00	0.00	0.00
6,840.0	0.00	0.00	6,719.9	-400.7	869.6	957.5	0.00	0.00	0.00
6,880.0	0.00	0.00	6,759.9	-400.7	869.6	957.5	0.00	0.00	0.00
6,920.0	0.00	0.00	6,799.9	-400.7	869.6	957.5	0.00	0.00	0.00
6,920.1	0.00	0.00	6,800.0	-400.7	869.6	957.5	0.00	0.00	0.00
NIOBRARA - LEGAL BOX 400' X 400' 662'FSL & 1975'FWL - TARGET CIRCLE 660'FSL & 1980'FWL									
6,960.0	0.00	0.00	6,839.9	-400.7	869.6	957.5	0.00	0.00	0.00
7,000.0	0.00	0.00	6,879.9	-400.7	869.6	957.5	0.00	0.00	0.00
7,040.0	0.00	0.00	6,919.9	-400.7	869.6	957.5	0.00	0.00	0.00
7,080.0	0.00	0.00	6,959.9	-400.7	869.6	957.5	0.00	0.00	0.00
7,120.0	0.00	0.00	6,999.9	-400.7	869.6	957.5	0.00	0.00	0.00
7,160.0	0.00	0.00	7,039.9	-400.7	869.6	957.5	0.00	0.00	0.00
7,200.0	0.00	0.00	7,079.9	-400.7	869.6	957.5	0.00	0.00	0.00
7,215.1	0.00	0.00	7,095.0	-400.7	869.6	957.5	0.00	0.00	0.00
CODELL									
7,240.0	0.00	0.00	7,119.9	-400.7	869.6	957.5	0.00	0.00	0.00
7,280.0	0.00	0.00	7,159.9	-400.7	869.6	957.5	0.00	0.00	0.00
7,320.0	0.00	0.00	7,199.9	-400.7	869.6	957.5	0.00	0.00	0.00
7,360.0	0.00	0.00	7,239.9	-400.7	869.6	957.5	0.00	0.00	0.00
7,365.1	0.00	0.00	7,245.0	-400.7	869.6	957.5	0.00	0.00	0.00

Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
- hit/miss target									
- Shape									
LEGAL BOX 400' X 400'	0.00	0.00	6,800.0	-398.7	864.6	1,292,712.54	3,263,170.13	40.133055	-104.558768
- plan misses target center by 5.4ft at 6920.1ft MD (6800.0 TVD, -400.7 N, 869.6 E)									
- Rectangle (sides W400.0 H400.0 D445.0)									
TARGET CIRCLE 660'FSL	0.00	0.00	6,800.0	-400.7	869.6	1,292,710.59	3,263,175.17	40.133050	-104.558750
- plan hits target center									
- Circle (radius 75.0)									
TARGET BHL 660'FS	0.00	0.00	5,400.0	-400.7	869.6	1,292,710.59	3,263,175.17	40.133050	-104.558750
- plan hits target center									
- Point									

Database:	Landmark	Local Co-ordinate Reference:	Well State Y16-14D
Company:	NOBLE ENERGY INC WELD COUNTY CO	TVD Reference:	WELL @ 4940.0ft (Original Well Elev)
Project:	SEC.16-T2N-R64W	MD Reference:	WELL @ 4940.0ft (Original Well Elev)
Site:	State Y16-24D Pad Sec.16-T2N-R64W	North Reference:	True
Well:	State Y16-14D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Noble State Y16-14D Plan #1 (9-28-11)		

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")	
800.0	800.0	8 5/8"	8-5/8	12-1/4	

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
6,920.1	6,800.0	NIOBRARA		0.00		
7,215.1	7,095.0	CODELL		0.00		