

# ENSIGN

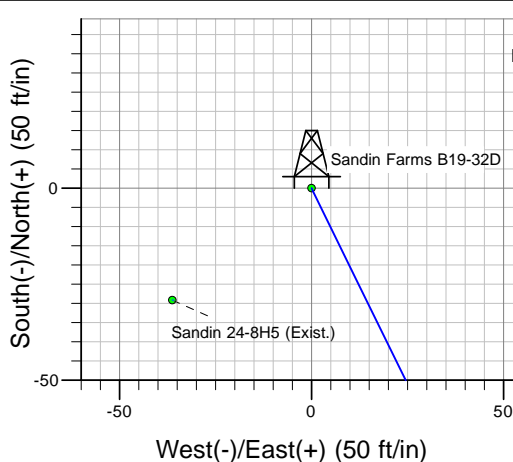
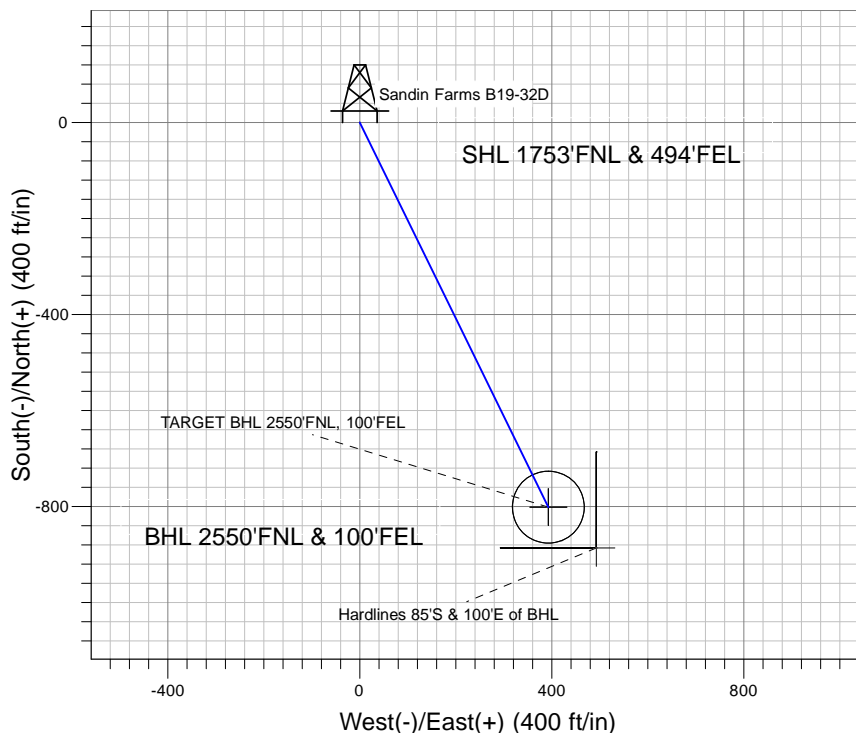
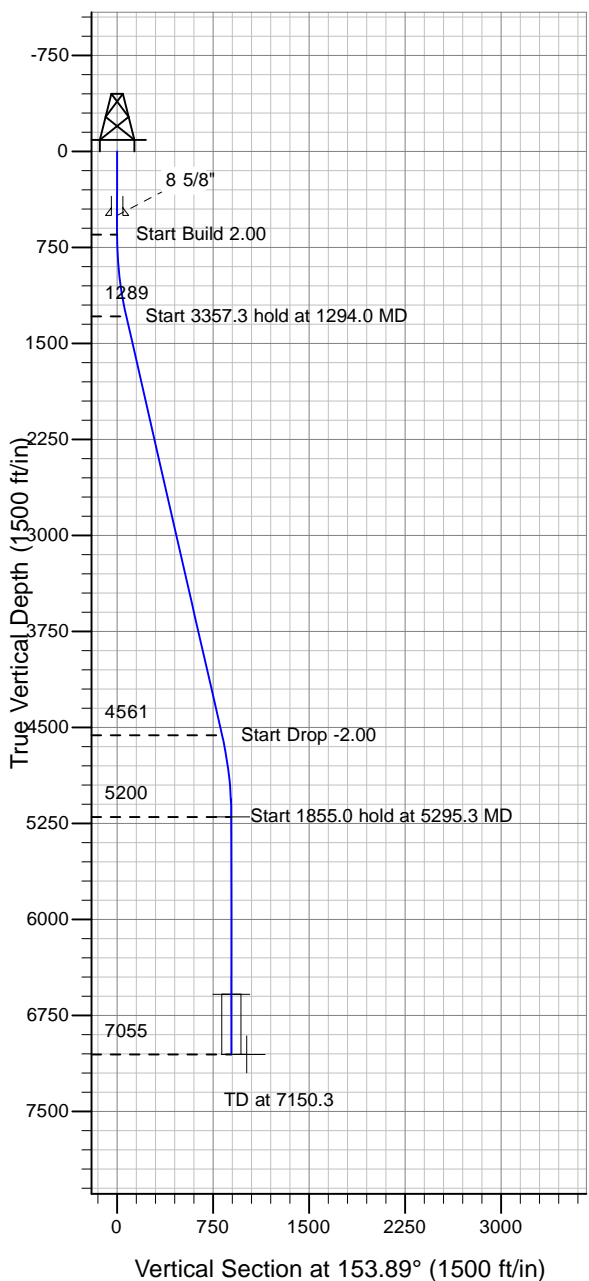
## Directional

**Well Name:** Sandin Farms B19-32D

Surface Location: Sandin Farms B19-32D Pad Sec.24-T5N-R65W  
North American Datum 1983 , US State Plane 1983 , Colorado Northern Zone  
Ground Elevation: 4632.0

+N/-S+E/-W Northing Easting Latitude Longitude Slot  
0.0 0.0 1385104.64 3249680.62 40° 23' 13.380 N 104° 36' 13.212 W  
Original Well Elev WELL @ 4645.0ft (Original Well Elev)

### NOBLE ENERGY INC WELD COUNTY CO



Sandin Farms B19-32D Pad Sec.24-T5N-R65W  
Sandin Farms B19-32D  
Noble Sandin Farms B19-32D Plan #1 (9-21-10)  
11:51, September 28 2010



Azimuths to True North  
Magnetic North: 8.88°

Magnetic Field  
Strength: 53221.0snT  
Dip Angle: 67.09°  
Date: 9/21/2010  
Model: IGRF2010

#### WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
TARGET BHL 2550'FNL, 100'FEL	5200.0	-801.5	392.8	40° 23' 5.460 N	104° 36' 8.136 W	Point
TARGET CIRCLE 2550'FNL, 100'FEL	6585.0	-801.5	392.8	40° 23' 5.460 N	104° 36' 8.136 W	Circle (Radius: 75.0)
Hardlines 85'S & 100'E of BHL	7055.0	-886.5	492.8	40° 23' 4.620 N	104° 36' 6.844 W	Polygon

#### 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	650.0	0.00	0.00	650.0	0.0	0.0	0.00	0.00	0.0	
3	1294.0	12.88	153.89	1288.6	-64.7	31.7	2.00	153.89	72.1	
4	4651.3	12.88	153.89	4561.4	-736.7	361.1	0.00	0.00	820.5	
5	5295.3	0.00	0.00	5200.0	-801.5	392.8	2.00	180.00	892.5	TARGET BHL 2550'FNL, 100'FEL
6	7150.3	0.00	0.00	7055.0	-801.5	392.8	0.00	0.00	892.5	



# **NOBLE ENERGY INC WELD COUNTY CO**

**SEC.24-T5N-R65W**

**Sandin Farms B19-32D Pad Sec.24-T5N-R65W**

**Sandin Farms B19-32D**

**Wellbore #1**

**Plan: Noble Sandin Farms B19-32D Plan #1 (9-21-10)**

## **Standard Planning Report**

**28 September, 2010**



<b>Database:</b>	EDM den0-adp01 Server Data	<b>Local Co-ordinate Reference:</b>	Well Sandin Farms B19-32D
<b>Company:</b>	NOBLE ENERGY INC WELD COUNTY CO	<b>TVD Reference:</b>	WELL @ 4645.0ft (Original Well Elev)
<b>Project:</b>	SEC.24-T5N-R65W	<b>MD Reference:</b>	WELL @ 4645.0ft (Original Well Elev)
<b>Site:</b>	Sandin Farms B19-32D Pad Sec.24-T5N-R65W	<b>North Reference:</b>	True
<b>Well:</b>	Sandin Farms B19-32D	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Noble Sandin Farms B19-32D Plan #1 (9-21-10)		

<b>Project</b>	SEC.24-T5N-R65W, Weld County, Colorado		
<b>Map System:</b>	US State Plane 1983	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	North American Datum 1983		Using Well Reference Point
<b>Map Zone:</b>	Colorado Northern Zone		Using geodetic scale factor

Site						Sandin Farms B19-32D Pad Sec.24-T5N-R65W											
<b>Site Position:</b>						<b>Northing:</b>			1,385,104.66 ft			<b>Latitude:</b>			40° 23' 13.380 N		
<b>From:</b>			Lat/Long			<b>Easting:</b>			3,249,680.62 ft			<b>Longitude:</b>			104° 36' 13.212 W		
<b>Position Uncertainty:</b>			0.0 ft			<b>Slot Radius:</b>			"			<b>Grid Convergence:</b>			0.58 °		

Well	Sandin Farms B19-32D					
Well Position	+N-S	0.0 ft	Northing:	1,385,104.64 ft	Latitude:	40° 23' 13.380 N
	+E-W	0.0 ft	Easting:	3,249,680.62 ft	Longitude:	104° 36' 13.212 W
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,632.0 ft

<b>Wellbore</b>	Wellbore #1				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2010	9/21/2010	8.88	67.09	53,221

<b>Design</b>	Noble Sandin Farms B19-32D Plan #1 (9-21-10)			
<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	153.89

<b>Plan Sections</b>										
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	
650.0	0.00	0.00	650.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,294.0	12.88	153.89	1,288.6	-64.7	31.7	2.00	2.00	0.00	153.89	
4,651.3	12.88	153.89	4,561.4	-736.7	361.1	0.00	0.00	0.00	0.00	
5,295.3	0.00	0.00	5,200.0	-801.5	392.8	2.00	-2.00	0.00	180.00	TARGET BHL 255C
7,150.3	0.00	0.00	7,055.0	-801.5	392.8	0.00	0.00	0.00	0.00	

<b>Database:</b>	EDM den0-adp01 Server Data	<b>Local Co-ordinate Reference:</b>	Well Sandin Farms B19-32D
<b>Company:</b>	NOBLE ENERGY INC WELD COUNTY CO	<b>TVD Reference:</b>	WELL @ 4645.0ft (Original Well Elev)
<b>Project:</b>	SEC.24-T5N-R65W	<b>MD Reference:</b>	WELL @ 4645.0ft (Original Well Elev)
<b>Site:</b>	Sandin Farms B19-32D Pad Sec.24-T5N-R65W	<b>North Reference:</b>	True
<b>Well:</b>	Sandin Farms B19-32D	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Noble Sandin Farms B19-32D Plan #1 (9-21-10)		

**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
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	0.00
<b>8 5/8"</b>									
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
650.0	0.00	0.00	650.0	0.0	0.0	0.0	0.00	0.00	0.00
680.0	0.60	153.89	680.0	-0.1	0.1	0.2	2.00	2.00	0.00
720.0	1.40	153.89	720.0	-0.8	0.4	0.9	2.00	2.00	0.00
760.0	2.20	153.89	760.0	-1.9	0.9	2.1	2.00	2.00	0.00
800.0	3.00	153.89	799.9	-3.5	1.7	3.9	2.00	2.00	0.00
840.0	3.80	153.89	839.9	-5.7	2.8	6.3	2.00	2.00	0.00
880.0	4.60	153.89	879.8	-8.3	4.1	9.2	2.00	2.00	0.00
920.0	5.40	153.89	919.6	-11.4	5.6	12.7	2.00	2.00	0.00
960.0	6.20	153.89	959.4	-15.0	7.4	16.8	2.00	2.00	0.00
1,000.0	7.00	153.89	999.1	-19.2	9.4	21.4	2.00	2.00	0.00
1,040.0	7.80	153.89	1,038.8	-23.8	11.7	26.5	2.00	2.00	0.00
1,080.0	8.60	153.89	1,078.4	-28.9	14.2	32.2	2.00	2.00	0.00
1,120.0	9.40	153.89	1,117.9	-34.5	16.9	38.5	2.00	2.00	0.00
1,160.0	10.20	153.89	1,157.3	-40.7	19.9	45.3	2.00	2.00	0.00
1,200.0	11.00	153.89	1,196.6	-47.3	23.2	52.6	2.00	2.00	0.00
1,240.0	11.80	153.89	1,235.8	-54.4	26.6	60.5	2.00	2.00	0.00
1,280.0	12.60	153.89	1,274.9	-62.0	30.4	69.0	2.00	2.00	0.00
1,294.0	12.88	153.89	1,288.6	-64.7	31.7	72.1	2.00	2.00	0.00
1,320.0	12.88	153.89	1,313.9	-69.9	34.3	77.9	0.00	0.00	0.00
1,360.0	12.88	153.89	1,352.9	-77.9	38.2	86.8	0.00	0.00	0.00
1,400.0	12.88	153.89	1,391.9	-85.9	42.1	95.7	0.00	0.00	0.00
1,440.0	12.88	153.89	1,430.9	-93.9	46.0	104.6	0.00	0.00	0.00
1,480.0	12.88	153.89	1,469.9	-102.0	50.0	113.5	0.00	0.00	0.00
1,520.0	12.88	153.89	1,508.9	-110.0	53.9	122.5	0.00	0.00	0.00
1,560.0	12.88	153.89	1,547.9	-118.0	57.8	131.4	0.00	0.00	0.00
1,600.0	12.88	153.89	1,586.9	-126.0	61.7	140.3	0.00	0.00	0.00
1,640.0	12.88	153.89	1,625.9	-134.0	65.7	149.2	0.00	0.00	0.00
1,680.0	12.88	153.89	1,664.9	-142.0	69.6	158.1	0.00	0.00	0.00
1,720.0	12.88	153.89	1,703.9	-150.0	73.5	167.0	0.00	0.00	0.00
1,760.0	12.88	153.89	1,742.9	-158.0	77.4	176.0	0.00	0.00	0.00
1,800.0	12.88	153.89	1,781.9	-166.0	81.4	184.9	0.00	0.00	0.00
1,840.0	12.88	153.89	1,820.9	-174.0	85.3	193.8	0.00	0.00	0.00
1,880.0	12.88	153.89	1,859.8	-182.0	89.2	202.7	0.00	0.00	0.00
1,920.0	12.88	153.89	1,898.8	-190.0	93.1	211.6	0.00	0.00	0.00

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<b>Project:</b>	SEC.24-T5N-R65W	<b>MD Reference:</b>	WELL @ 4645.0ft (Original Well Elev)
<b>Site:</b>	Sandin Farms B19-32D Pad Sec.24-T5N-R65W	<b>North Reference:</b>	True
<b>Well:</b>	Sandin Farms B19-32D	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Noble Sandin Farms B19-32D Plan #1 (9-21-10)		

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)
1,960.0	12.88	153.89	1,937.8	-198.0	97.1	220.5	0.00	0.00	0.00
2,000.0	12.88	153.89	1,976.8	-206.0	101.0	229.5	0.00	0.00	0.00
2,040.0	12.88	153.89	2,015.8	-214.0	104.9	238.4	0.00	0.00	0.00
2,080.0	12.88	153.89	2,054.8	-222.1	108.8	247.3	0.00	0.00	0.00
2,120.0	12.88	153.89	2,093.8	-230.1	112.8	256.2	0.00	0.00	0.00
2,160.0	12.88	153.89	2,132.8	-238.1	116.7	265.1	0.00	0.00	0.00
2,200.0	12.88	153.89	2,171.8	-246.1	120.6	274.0	0.00	0.00	0.00
2,240.0	12.88	153.89	2,210.8	-254.1	124.5	283.0	0.00	0.00	0.00
2,280.0	12.88	153.89	2,249.8	-262.1	128.5	291.9	0.00	0.00	0.00
2,320.0	12.88	153.89	2,288.8	-270.1	132.4	300.8	0.00	0.00	0.00
2,360.0	12.88	153.89	2,327.8	-278.1	136.3	309.7	0.00	0.00	0.00
2,400.0	12.88	153.89	2,366.8	-286.1	140.2	318.6	0.00	0.00	0.00
2,440.0	12.88	153.89	2,405.8	-294.1	144.1	327.5	0.00	0.00	0.00
2,480.0	12.88	153.89	2,444.7	-302.1	148.1	336.5	0.00	0.00	0.00
2,520.0	12.88	153.89	2,483.7	-310.1	152.0	345.4	0.00	0.00	0.00
2,560.0	12.88	153.89	2,522.7	-318.1	155.9	354.3	0.00	0.00	0.00
2,600.0	12.88	153.89	2,561.7	-326.1	159.8	363.2	0.00	0.00	0.00
2,640.0	12.88	153.89	2,600.7	-334.1	163.8	372.1	0.00	0.00	0.00
2,680.0	12.88	153.89	2,639.7	-342.2	167.7	381.0	0.00	0.00	0.00
2,720.0	12.88	153.89	2,678.7	-350.2	171.6	390.0	0.00	0.00	0.00
2,760.0	12.88	153.89	2,717.7	-358.2	175.5	398.9	0.00	0.00	0.00
2,800.0	12.88	153.89	2,756.7	-366.2	179.5	407.8	0.00	0.00	0.00
2,840.0	12.88	153.89	2,795.7	-374.2	183.4	416.7	0.00	0.00	0.00
2,880.0	12.88	153.89	2,834.7	-382.2	187.3	425.6	0.00	0.00	0.00
2,920.0	12.88	153.89	2,873.7	-390.2	191.2	434.5	0.00	0.00	0.00
2,960.0	12.88	153.89	2,912.7	-398.2	195.2	443.5	0.00	0.00	0.00
3,000.0	12.88	153.89	2,951.7	-406.2	199.1	452.4	0.00	0.00	0.00
3,040.0	12.88	153.89	2,990.7	-414.2	203.0	461.3	0.00	0.00	0.00
3,080.0	12.88	153.89	3,029.7	-422.2	206.9	470.2	0.00	0.00	0.00
3,120.0	12.88	153.89	3,068.6	-430.2	210.9	479.1	0.00	0.00	0.00
3,160.0	12.88	153.89	3,107.6	-438.2	214.8	488.0	0.00	0.00	0.00
3,200.0	12.88	153.89	3,146.6	-446.2	218.7	497.0	0.00	0.00	0.00
3,240.0	12.88	153.89	3,185.6	-454.2	222.6	505.9	0.00	0.00	0.00
3,280.0	12.88	153.89	3,224.6	-462.3	226.6	514.8	0.00	0.00	0.00
3,320.0	12.88	153.89	3,263.6	-470.3	230.5	523.7	0.00	0.00	0.00
3,360.0	12.88	153.89	3,302.6	-478.3	234.4	532.6	0.00	0.00	0.00
3,400.0	12.88	153.89	3,341.6	-486.3	238.3	541.5	0.00	0.00	0.00
3,440.0	12.88	153.89	3,380.6	-494.3	242.3	550.5	0.00	0.00	0.00
3,480.0	12.88	153.89	3,419.6	-502.3	246.2	559.4	0.00	0.00	0.00
3,520.0	12.88	153.89	3,458.6	-510.3	250.1	568.3	0.00	0.00	0.00
3,560.0	12.88	153.89	3,497.6	-518.3	254.0	577.2	0.00	0.00	0.00
3,600.0	12.88	153.89	3,536.6	-526.3	257.9	586.1	0.00	0.00	0.00
3,640.0	12.88	153.89	3,575.6	-534.3	261.9	595.0	0.00	0.00	0.00
3,680.0	12.88	153.89	3,614.6	-542.3	265.8	603.9	0.00	0.00	0.00
3,720.0	12.88	153.89	3,653.5	-550.3	269.7	612.9	0.00	0.00	0.00
3,760.0	12.88	153.89	3,692.5	-558.3	273.6	621.8	0.00	0.00	0.00
3,800.0	12.88	153.89	3,731.5	-566.3	277.6	630.7	0.00	0.00	0.00
3,840.0	12.88	153.89	3,770.5	-574.3	281.5	639.6	0.00	0.00	0.00
3,880.0	12.88	153.89	3,809.5	-582.4	285.4	648.5	0.00	0.00	0.00
3,920.0	12.88	153.89	3,848.5	-590.4	289.3	657.4	0.00	0.00	0.00
3,960.0	12.88	153.89	3,887.5	-598.4	293.3	666.4	0.00	0.00	0.00
4,000.0	12.88	153.89	3,926.5	-606.4	297.2	675.3	0.00	0.00	0.00
4,040.0	12.88	153.89	3,965.5	-614.4	301.1	684.2	0.00	0.00	0.00

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<b>Company:</b>	NOBLE ENERGY INC WELD COUNTY CO	<b>TVD Reference:</b>	WELL @ 4645.0ft (Original Well Elev)
<b>Project:</b>	SEC.24-T5N-R65W	<b>MD Reference:</b>	WELL @ 4645.0ft (Original Well Elev)
<b>Site:</b>	Sandin Farms B19-32D Pad Sec.24-T5N-R65W	<b>North Reference:</b>	True
<b>Well:</b>	Sandin Farms B19-32D	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Noble Sandin Farms B19-32D Plan #1 (9-21-10)		

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)
4,080.0	12.88	153.89	4,004.5	-622.4	305.0	693.1	0.00	0.00	0.00
4,120.0	12.88	153.89	4,043.5	-630.4	309.0	702.0	0.00	0.00	0.00
4,160.0	12.88	153.89	4,082.5	-638.4	312.9	710.9	0.00	0.00	0.00
4,200.0	12.88	153.89	4,121.5	-646.4	316.8	719.9	0.00	0.00	0.00
4,240.0	12.88	153.89	4,160.5	-654.4	320.7	728.8	0.00	0.00	0.00
4,280.0	12.88	153.89	4,199.5	-662.4	324.7	737.7	0.00	0.00	0.00
4,320.0	12.88	153.89	4,238.5	-670.4	328.6	746.6	0.00	0.00	0.00
4,360.0	12.88	153.89	4,277.4	-678.4	332.5	755.5	0.00	0.00	0.00
4,400.0	12.88	153.89	4,316.4	-686.4	336.4	764.4	0.00	0.00	0.00
4,440.0	12.88	153.89	4,355.4	-694.4	340.4	773.4	0.00	0.00	0.00
4,480.0	12.88	153.89	4,394.4	-702.4	344.3	782.3	0.00	0.00	0.00
4,520.0	12.88	153.89	4,433.4	-710.5	348.2	791.2	0.00	0.00	0.00
4,560.0	12.88	153.89	4,472.4	-718.5	352.1	800.1	0.00	0.00	0.00
4,600.0	12.88	153.89	4,511.4	-726.5	356.0	809.0	0.00	0.00	0.00
4,640.0	12.88	153.89	4,550.4	-734.5	360.0	817.9	0.00	0.00	0.00
4,651.3	12.88	153.89	4,561.4	-736.7	361.1	820.5	0.00	0.00	0.00
4,680.0	12.31	153.89	4,589.4	-742.4	363.8	826.7	2.00	-2.00	0.00
4,720.0	11.51	153.89	4,628.6	-749.8	367.5	835.0	2.00	-2.00	0.00
4,760.0	10.71	153.89	4,667.8	-756.7	370.9	842.7	2.00	-2.00	0.00
4,800.0	9.91	153.89	4,707.2	-763.1	374.0	849.8	2.00	-2.00	0.00
4,840.0	9.11	153.89	4,746.6	-769.0	376.9	856.4	2.00	-2.00	0.00
4,880.0	8.31	153.89	4,786.2	-774.5	379.6	862.5	2.00	-2.00	0.00
4,920.0	7.51	153.89	4,825.8	-779.4	382.0	868.0	2.00	-2.00	0.00
4,960.0	6.71	153.89	4,865.5	-783.9	384.2	872.9	2.00	-2.00	0.00
5,000.0	5.91	153.89	4,905.2	-787.8	386.1	877.3	2.00	-2.00	0.00
5,040.0	5.11	153.89	4,945.0	-791.3	387.8	881.2	2.00	-2.00	0.00
5,080.0	4.31	153.89	4,984.9	-794.2	389.2	884.5	2.00	-2.00	0.00
5,120.0	3.51	153.89	5,024.8	-796.6	390.4	887.2	2.00	-2.00	0.00
5,160.0	2.71	153.89	5,064.8	-798.6	391.4	889.3	2.00	-2.00	0.00
5,200.0	1.91	153.89	5,104.7	-800.0	392.1	891.0	2.00	-2.00	0.00
5,240.0	1.11	153.89	5,144.7	-801.0	392.6	892.0	2.00	-2.00	0.00
5,280.0	0.31	153.89	5,184.7	-801.4	392.8	892.5	2.00	-2.00	0.00
5,295.3	0.00	0.00	5,200.0	-801.5	392.8	892.5	2.00	-2.00	-1,006.13
TARGET BHL 2550'FNL, 100'FEL									
5,320.0	0.00	0.00	5,224.7	-801.5	392.8	892.5	0.00	0.00	0.00
5,360.0	0.00	0.00	5,264.7	-801.5	392.8	892.5	0.00	0.00	0.00
5,400.0	0.00	0.00	5,304.7	-801.5	392.8	892.5	0.00	0.00	0.00
5,440.0	0.00	0.00	5,344.7	-801.5	392.8	892.5	0.00	0.00	0.00
5,480.0	0.00	0.00	5,384.7	-801.5	392.8	892.5	0.00	0.00	0.00
5,520.0	0.00	0.00	5,424.7	-801.5	392.8	892.5	0.00	0.00	0.00
5,560.0	0.00	0.00	5,464.7	-801.5	392.8	892.5	0.00	0.00	0.00
5,600.0	0.00	0.00	5,504.7	-801.5	392.8	892.5	0.00	0.00	0.00
5,640.0	0.00	0.00	5,544.7	-801.5	392.8	892.5	0.00	0.00	0.00
5,680.0	0.00	0.00	5,584.7	-801.5	392.8	892.5	0.00	0.00	0.00
5,720.0	0.00	0.00	5,624.7	-801.5	392.8	892.5	0.00	0.00	0.00
5,760.0	0.00	0.00	5,664.7	-801.5	392.8	892.5	0.00	0.00	0.00
5,800.0	0.00	0.00	5,704.7	-801.5	392.8	892.5	0.00	0.00	0.00
5,840.0	0.00	0.00	5,744.7	-801.5	392.8	892.5	0.00	0.00	0.00
5,880.0	0.00	0.00	5,784.7	-801.5	392.8	892.5	0.00	0.00	0.00
5,920.0	0.00	0.00	5,824.7	-801.5	392.8	892.5	0.00	0.00	0.00
5,960.0	0.00	0.00	5,864.7	-801.5	392.8	892.5	0.00	0.00	0.00
6,000.0	0.00	0.00	5,904.7	-801.5	392.8	892.5	0.00	0.00	0.00
6,040.0	0.00	0.00	5,944.7	-801.5	392.8	892.5	0.00	0.00	0.00

<b>Database:</b>	EDM den0-adp01 Server Data	<b>Local Co-ordinate Reference:</b>	Well Sandin Farms B19-32D
<b>Company:</b>	NOBLE ENERGY INC WELD COUNTY CO	<b>TVD Reference:</b>	WELL @ 4645.0ft (Original Well Elev)
<b>Project:</b>	SEC.24-T5N-R65W	<b>MD Reference:</b>	WELL @ 4645.0ft (Original Well Elev)
<b>Site:</b>	Sandin Farms B19-32D Pad Sec.24-T5N-R65W	<b>North Reference:</b>	True
<b>Well:</b>	Sandin Farms B19-32D	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Noble Sandin Farms B19-32D Plan #1 (9-21-10)		

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)
6,080.0	0.00	0.00	5,984.7	-801.5	392.8	892.5	0.00	0.00	0.00
6,120.0	0.00	0.00	6,024.7	-801.5	392.8	892.5	0.00	0.00	0.00
6,160.0	0.00	0.00	6,064.7	-801.5	392.8	892.5	0.00	0.00	0.00
6,200.0	0.00	0.00	6,104.7	-801.5	392.8	892.5	0.00	0.00	0.00
6,240.0	0.00	0.00	6,144.7	-801.5	392.8	892.5	0.00	0.00	0.00
6,280.0	0.00	0.00	6,184.7	-801.5	392.8	892.5	0.00	0.00	0.00
6,320.0	0.00	0.00	6,224.7	-801.5	392.8	892.5	0.00	0.00	0.00
6,360.0	0.00	0.00	6,264.7	-801.5	392.8	892.5	0.00	0.00	0.00
6,400.0	0.00	0.00	6,304.7	-801.5	392.8	892.5	0.00	0.00	0.00
6,440.0	0.00	0.00	6,344.7	-801.5	392.8	892.5	0.00	0.00	0.00
6,480.0	0.00	0.00	6,384.7	-801.5	392.8	892.5	0.00	0.00	0.00
6,520.0	0.00	0.00	6,424.7	-801.5	392.8	892.5	0.00	0.00	0.00
6,560.0	0.00	0.00	6,464.7	-801.5	392.8	892.5	0.00	0.00	0.00
6,600.0	0.00	0.00	6,504.7	-801.5	392.8	892.5	0.00	0.00	0.00
6,640.0	0.00	0.00	6,544.7	-801.5	392.8	892.5	0.00	0.00	0.00
6,680.0	0.00	0.00	6,584.7	-801.5	392.8	892.5	0.00	0.00	0.00
6,680.3	0.00	0.00	6,585.0	-801.5	392.8	892.5	0.00	0.00	0.00
<b>Niobrara - TARGET CIRCLE 2550'FNL, 100'FEL</b>									
6,720.0	0.00	0.00	6,624.7	-801.5	392.8	892.5	0.00	0.00	0.00
6,760.0	0.00	0.00	6,664.7	-801.5	392.8	892.5	0.00	0.00	0.00
6,800.0	0.00	0.00	6,704.7	-801.5	392.8	892.5	0.00	0.00	0.00
6,840.0	0.00	0.00	6,744.7	-801.5	392.8	892.5	0.00	0.00	0.00
6,880.0	0.00	0.00	6,784.7	-801.5	392.8	892.5	0.00	0.00	0.00
6,920.0	0.00	0.00	6,824.7	-801.5	392.8	892.5	0.00	0.00	0.00
6,960.0	0.00	0.00	6,864.7	-801.5	392.8	892.5	0.00	0.00	0.00
7,000.0	0.00	0.00	6,904.7	-801.5	392.8	892.5	0.00	0.00	0.00
7,000.3	0.00	0.00	6,905.0	-801.5	392.8	892.5	0.00	0.00	0.00
<b>Codell</b>									
7,040.0	0.00	0.00	6,944.7	-801.5	392.8	892.5	0.00	0.00	0.00
7,080.0	0.00	0.00	6,984.7	-801.5	392.8	892.5	0.00	0.00	0.00
7,120.0	0.00	0.00	7,024.7	-801.5	392.8	892.5	0.00	0.00	0.00
7,150.3	0.00	0.00	7,055.0	-801.5	392.8	892.5	0.00	0.00	0.00
<b>Hardlines 85'S &amp; 100'E of BHL</b>									



<b>Database:</b>	EDM den0-adp01 Server Data	<b>Local Co-ordinate Reference:</b>	Well Sandin Farms B19-32D
<b>Company:</b>	NOBLE ENERGY INC WELD COUNTY CO	<b>TVD Reference:</b>	WELL @ 4645.0ft (Original Well Elev)
<b>Project:</b>	SEC.24-T5N-R65W	<b>MD Reference:</b>	WELL @ 4645.0ft (Original Well Elev)
<b>Site:</b>	Sandin Farms B19-32D Pad Sec.24-T5N-R65W	<b>North Reference:</b>	True
<b>Well:</b>	Sandin Farms B19-32D	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Noble Sandin Farms B19-32D Plan #1 (9-21-10)		

Targets									
Target Name	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- hit/miss target	(°)	(°)	(ft)	(ft)	(ft)	(ft)	(ft)		
- Shape									
TARGET BHL 2550'F	0.00	0.00	5,200.0	-801.5	392.8	1,384,307.22	3,250,081.49	40° 23' 5.460 N	104° 36' 8.136 W
- plan hits target center									
- Point									
TARGET CIRCLE 255'	0.00	0.00	6,585.0	-801.5	392.8	1,384,307.22	3,250,081.49	40° 23' 5.460 N	104° 36' 8.136 W
- plan hits target center									
- Circle (radius 75.0)									
Hardlines 85'S & 100'W	0.00	0.00	7,055.0	-886.5	492.8	1,384,223.20	3,250,182.34	40° 23' 4.620 N	104° 36' 6.844 W
- plan misses target center by 131.3ft at 7150.3ft MD (7055.0 TVD, -801.5 N, 392.8 E)									
- Polygon									
Point 1			7,055.0	0.0	0.0	1,384,223.20	3,250,182.34		
Point 2			7,055.0	200.0	0.0	1,384,423.18	3,250,180.32		
Point 3			7,055.0	0.0	0.0	1,384,223.20	3,250,182.34		
Point 4			7,055.0	0.0	-200.0	1,384,221.18	3,249,982.36		

Casing Points				
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
500.0	500.0	8 5/8"	8-5/8	12-1/4

Formations					
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
6,680.3	6,585.0	Niobrara		0.00	
7,000.3	6,905.0	Codell		0.00	