

ENSIGN

Directional

Well Name: NEI C18-23D

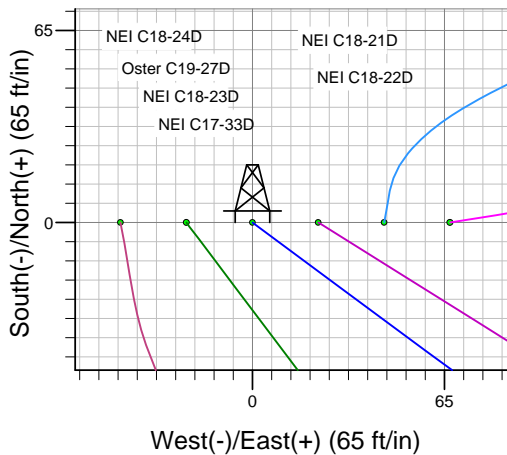
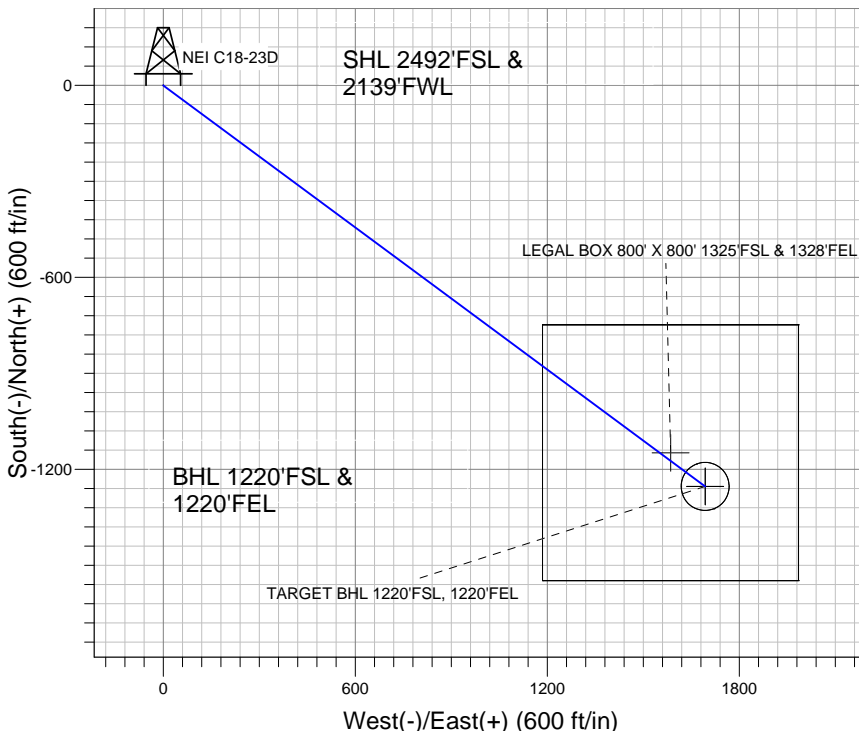
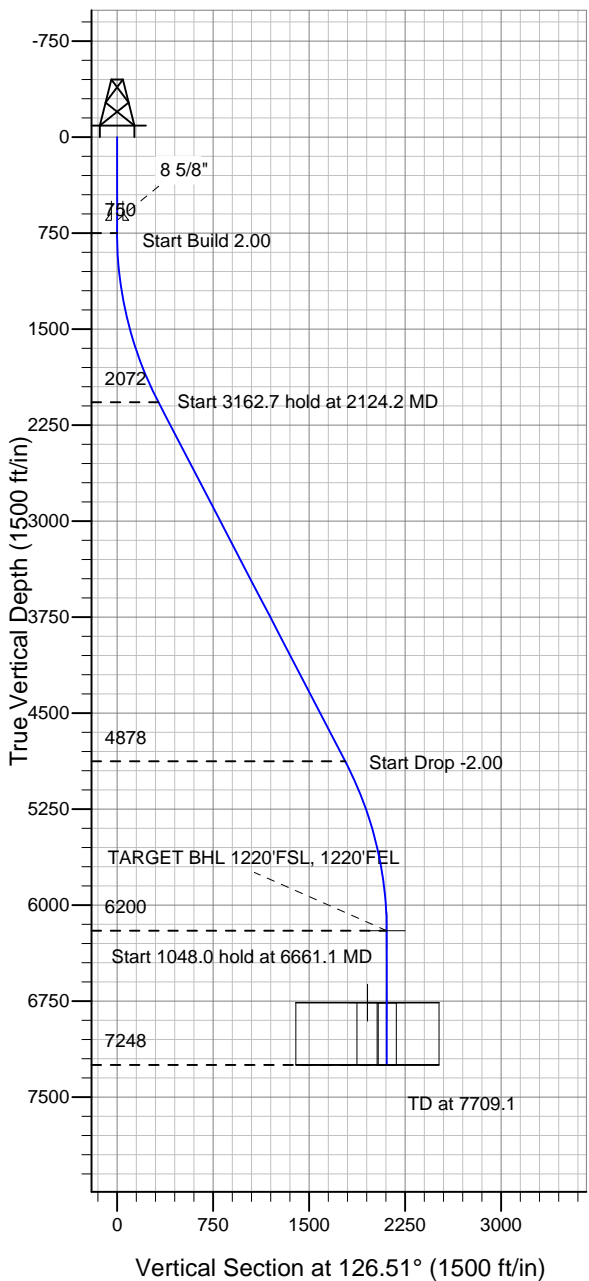
Surface Location: NEI C18-32 Pad Sec.18-T4N-R64W
North American Datum 1983 , US State Plane 1983 , Colorado Northern Zone

Ground Elevation: 4835.0

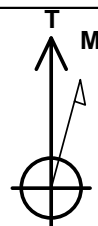
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1357748.30	3252534.06	40.311880	-104.594430	

Original Well Elev WELL @ 4848.0ft (Original Well Elev)

NOBLE ENERGY INC WELD COUNTY CO



NEI C18-32 Pad Sec.18-T4N-R64W
NEI C18-23D
Noble NEI C18-23D Plan #1 (6-21-11)
17:33, July 12 2011



Azimuths to True North
Magnetic North: 8.76°

Magnetic Field
Strength: 53101.8snT
Dip Angle: 67.01°
Date: 6/21/2011
Model: IGRF2010

WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
TARGET BHL 1220'FSL, 1220'FEL	6200.0	-1253.1	1692.9	40.308440	-104.588360	Point
LEGAL BOX 800' X 800' 1325'FSL & 1328'FEL	6763.0	-1148.1	1584.9	40.308728	-104.588747	Rectangle (Sides: L800.0 W800.0)
TARGET CIRCLE 1220'FSL & 1220'FEL	6763.0	-1253.1	1692.9	40.308440	-104.588360	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	750.0	0.00	0.00	750.0	0.0	0.0	0.00	0.00	0.0	
3	2124.2	27.48	126.51	2072.1	-192.4	259.9	2.00	126.51	323.3	
4	5286.9	27.48	126.51	4877.9	-1060.8	1433.0	0.00	0.00	1782.9	
5	6661.1	0.00	0.00	6200.0	-1253.1	1692.9	2.00	180.00	2106.3	TARGET BHL 1220'FSL, 1220'FEL
6	7709.1	0.00	0.00	7248.0	-1253.1	1692.9	0.00	0.00	2106.3	



Directional

NOBLE ENERGY INC WELD COUNTY CO

SEC.18-T4N-R64W

NEI C18-32 Pad Sec.18-T4N-R64W

NEI C18-23D

Wellbore #1

Plan: Noble NEI C18-23D Plan #1 (6-21-11)

Standard Planning Report

12 July, 2011



Database:	Landmark	Local Co-ordinate Reference:	Well NEI C18-23D
Company:	NOBLE ENERGY INC WELD COUNTY CO	TVD Reference:	WELL @ 4848.0ft (Original Well Elev)
Project:	SEC.18-T4N-R64W	MD Reference:	WELL @ 4848.0ft (Original Well Elev)
Site:	NEI C18-32 Pad Sec.18-T4N-R64W	North Reference:	True
Well:	NEI C18-23D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Noble NEI C18-23D Plan #1 (6-21-11)		

Project	SEC.18-T4N-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						NEI C18-32 Pad Sec.18-T4N-R64W											
Site Position:						Northing:			1,357,747.19ft			Latitude:			40.311880		
From:			Lat/Long			Easting:			3,252,422.52ft			Longitude:			-104.594830		
Position Uncertainty:			0.0 ft			Slot Radius:			"			Grid Convergence:			0.58 °		

Well	NEI C18-23D					
Well Position	+N/-S	0.0 ft	Northing:	1,357,748.30 ft	Latitude:	40.311880
	+E/-W	111.6 ft	Easting:	3,252,534.06 ft	Longitude:	-104.594430
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,835.0 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	6/21/2011	8.76	67.01	53,102

Design	Noble NEI C18-23D Plan #1 (6-21-11)			
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	126.51

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	
750.0	0.00	0.00	750.0	0.0	0.0	0.00	0.00	0.00	0.00	
2,124.2	27.48	126.51	2,072.1	-192.4	259.9	2.00	2.00	0.00	126.51	
5,286.9	27.48	126.51	4,877.9	-1,060.8	1,433.0	0.00	0.00	0.00	0.00	
6,661.1	0.00	0.00	6,200.0	-1,253.1	1,692.9	2.00	-2.00	0.00	180.00	TARGET BHL 122C
7,709.1	0.00	0.00	7,248.0	-1,253.1	1,692.9	0.00	0.00	0.00	0.00	

Database:	Landmark	Local Co-ordinate Reference:	Well NEI C18-23D
Company:	NOBLE ENERGY INC WELD COUNTY CO	TVD Reference:	WELL @ 4848.0ft (Original Well Elev)
Project:	SEC.18-T4N-R64W	MD Reference:	WELL @ 4848.0ft (Original Well Elev)
Site:	NEI C18-32 Pad Sec.18-T4N-R64W	North Reference:	True
Well:	NEI C18-23D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Noble NEI C18-23D Plan #1 (6-21-11)		

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
650.0	0.00	0.00	650.0	0.0	0.0	0.0	0.00	0.00	0.00
8 5/8"									
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
750.0	0.00	0.00	750.0	0.0	0.0	0.0	0.00	0.00	0.00
760.0	0.20	126.51	760.0	0.0	0.0	0.0	2.00	2.00	0.00
800.0	1.00	126.51	800.0	-0.3	0.4	0.4	2.00	2.00	0.00
840.0	1.80	126.51	840.0	-0.8	1.1	1.4	2.00	2.00	0.00
880.0	2.60	126.51	880.0	-1.8	2.4	2.9	2.00	2.00	0.00
920.0	3.40	126.51	919.9	-3.0	4.1	5.0	2.00	2.00	0.00
960.0	4.20	126.51	959.8	-4.6	6.2	7.7	2.00	2.00	0.00
1,000.0	5.00	126.51	999.7	-6.5	8.8	10.9	2.00	2.00	0.00
1,040.0	5.80	126.51	1,039.5	-8.7	11.8	14.7	2.00	2.00	0.00
1,080.0	6.60	126.51	1,079.3	-11.3	15.3	19.0	2.00	2.00	0.00
1,120.0	7.40	126.51	1,119.0	-14.2	19.2	23.9	2.00	2.00	0.00
1,160.0	8.20	126.51	1,158.6	-17.4	23.5	29.3	2.00	2.00	0.00
1,200.0	9.00	126.51	1,198.2	-21.0	28.3	35.3	2.00	2.00	0.00
1,240.0	9.80	126.51	1,237.6	-24.9	33.6	41.8	2.00	2.00	0.00
1,280.0	10.60	126.51	1,277.0	-29.1	39.3	48.9	2.00	2.00	0.00
1,320.0	11.40	126.51	1,316.2	-33.6	45.4	56.5	2.00	2.00	0.00
1,360.0	12.20	126.51	1,355.4	-38.5	52.0	64.7	2.00	2.00	0.00
1,400.0	13.00	126.51	1,394.4	-43.7	59.0	73.4	2.00	2.00	0.00
1,440.0	13.80	126.51	1,433.3	-49.2	66.5	82.7	2.00	2.00	0.00
1,480.0	14.60	126.51	1,472.1	-55.0	74.4	92.5	2.00	2.00	0.00
1,520.0	15.40	126.51	1,510.8	-61.2	82.7	102.9	2.00	2.00	0.00
1,560.0	16.20	126.51	1,549.3	-67.7	91.4	113.7	2.00	2.00	0.00
1,600.0	17.00	126.51	1,587.6	-74.5	100.6	125.2	2.00	2.00	0.00
1,640.0	17.80	126.51	1,625.8	-81.6	110.2	137.1	2.00	2.00	0.00
1,680.0	18.60	126.51	1,663.8	-89.0	120.3	149.6	2.00	2.00	0.00
1,720.0	19.40	126.51	1,701.6	-96.8	130.7	162.7	2.00	2.00	0.00
1,760.0	20.20	126.51	1,739.2	-104.8	141.6	176.2	2.00	2.00	0.00
1,800.0	21.00	126.51	1,776.6	-113.2	152.9	190.3	2.00	2.00	0.00
1,840.0	21.80	126.51	1,813.9	-121.9	164.7	204.9	2.00	2.00	0.00
1,880.0	22.60	126.51	1,850.9	-130.9	176.8	220.0	2.00	2.00	0.00
1,920.0	23.40	126.51	1,887.7	-140.2	189.4	235.6	2.00	2.00	0.00
1,960.0	24.20	126.51	1,924.3	-149.8	202.4	251.8	2.00	2.00	0.00
2,000.0	25.00	126.51	1,960.7	-159.7	215.7	268.4	2.00	2.00	0.00

Database:	Landmark	Local Co-ordinate Reference:	Well NEI C18-23D
Company:	NOBLE ENERGY INC WELD COUNTY CO	TVD Reference:	WELL @ 4848.0ft (Original Well Elev)
Project:	SEC.18-T4N-R64W	MD Reference:	WELL @ 4848.0ft (Original Well Elev)
Site:	NEI C18-32 Pad Sec.18-T4N-R64W	North Reference:	True
Well:	NEI C18-23D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Noble NEI C18-23D Plan #1 (6-21-11)		

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	25.80	126.51	1,996.8	-169.9	229.5	285.6	2.00	2.00	0.00
2,080.0	26.60	126.51	2,032.7	-180.4	243.7	303.2	2.00	2.00	0.00
2,120.0	27.40	126.51	2,068.4	-191.2	258.3	321.4	2.00	2.00	0.00
2,124.2	27.48	126.51	2,072.1	-192.4	259.9	323.3	2.00	2.00	0.00
2,160.0	27.48	126.51	2,103.9	-202.2	273.2	339.8	0.00	0.00	0.00
2,200.0	27.48	126.51	2,139.3	-213.2	288.0	358.3	0.00	0.00	0.00
2,240.0	27.48	126.51	2,174.8	-224.2	302.8	376.8	0.00	0.00	0.00
2,280.0	27.48	126.51	2,210.3	-235.1	317.7	395.2	0.00	0.00	0.00
2,320.0	27.48	126.51	2,245.8	-246.1	332.5	413.7	0.00	0.00	0.00
2,360.0	27.48	126.51	2,281.3	-257.1	347.3	432.1	0.00	0.00	0.00
2,400.0	27.48	126.51	2,316.8	-268.1	362.2	450.6	0.00	0.00	0.00
2,440.0	27.48	126.51	2,352.3	-279.1	377.0	469.1	0.00	0.00	0.00
2,480.0	27.48	126.51	2,387.7	-290.1	391.9	487.5	0.00	0.00	0.00
2,520.0	27.48	126.51	2,423.2	-301.0	406.7	506.0	0.00	0.00	0.00
2,560.0	27.48	126.51	2,458.7	-312.0	421.5	524.4	0.00	0.00	0.00
2,600.0	27.48	126.51	2,494.2	-323.0	436.4	542.9	0.00	0.00	0.00
2,640.0	27.48	126.51	2,529.7	-334.0	451.2	561.4	0.00	0.00	0.00
2,680.0	27.48	126.51	2,565.2	-345.0	466.0	579.8	0.00	0.00	0.00
2,720.0	27.48	126.51	2,600.7	-356.0	480.9	598.3	0.00	0.00	0.00
2,760.0	27.48	126.51	2,636.1	-366.9	495.7	616.7	0.00	0.00	0.00
2,800.0	27.48	126.51	2,671.6	-377.9	510.5	635.2	0.00	0.00	0.00
2,840.0	27.48	126.51	2,707.1	-388.9	525.4	653.7	0.00	0.00	0.00
2,880.0	27.48	126.51	2,742.6	-399.9	540.2	672.1	0.00	0.00	0.00
2,920.0	27.48	126.51	2,778.1	-410.9	555.1	690.6	0.00	0.00	0.00
2,960.0	27.48	126.51	2,813.6	-421.8	569.9	709.0	0.00	0.00	0.00
3,000.0	27.48	126.51	2,849.1	-432.8	584.7	727.5	0.00	0.00	0.00
3,040.0	27.48	126.51	2,884.5	-443.8	599.6	746.0	0.00	0.00	0.00
3,080.0	27.48	126.51	2,920.0	-454.8	614.4	764.4	0.00	0.00	0.00
3,120.0	27.48	126.51	2,955.5	-465.8	629.2	782.9	0.00	0.00	0.00
3,160.0	27.48	126.51	2,991.0	-476.8	644.1	801.3	0.00	0.00	0.00
3,200.0	27.48	126.51	3,026.5	-487.7	658.9	819.8	0.00	0.00	0.00
3,240.0	27.48	126.51	3,062.0	-498.7	673.8	838.3	0.00	0.00	0.00
3,280.0	27.48	126.51	3,097.5	-509.7	688.6	856.7	0.00	0.00	0.00
3,320.0	27.48	126.51	3,132.9	-520.7	703.4	875.2	0.00	0.00	0.00
3,360.0	27.48	126.51	3,168.4	-531.7	718.3	893.6	0.00	0.00	0.00
3,400.0	27.48	126.51	3,203.9	-542.7	733.1	912.1	0.00	0.00	0.00
3,440.0	27.48	126.51	3,239.4	-553.6	747.9	930.6	0.00	0.00	0.00
3,480.0	27.48	126.51	3,274.9	-564.6	762.8	949.0	0.00	0.00	0.00
3,520.0	27.48	126.51	3,310.4	-575.6	777.6	967.5	0.00	0.00	0.00
3,560.0	27.48	126.51	3,345.9	-586.6	792.5	985.9	0.00	0.00	0.00
3,600.0	27.48	126.51	3,381.3	-597.6	807.3	1,004.4	0.00	0.00	0.00
3,640.0	27.48	126.51	3,416.8	-608.6	822.1	1,022.9	0.00	0.00	0.00
3,680.0	27.48	126.51	3,452.3	-619.5	837.0	1,041.3	0.00	0.00	0.00
3,720.0	27.48	126.51	3,487.8	-630.5	851.8	1,059.8	0.00	0.00	0.00
3,760.0	27.48	126.51	3,523.3	-641.5	866.6	1,078.2	0.00	0.00	0.00
3,800.0	27.48	126.51	3,558.8	-652.5	881.5	1,096.7	0.00	0.00	0.00
3,840.0	27.48	126.51	3,594.3	-663.5	896.3	1,115.2	0.00	0.00	0.00
3,880.0	27.48	126.51	3,629.7	-674.5	911.2	1,133.6	0.00	0.00	0.00
3,920.0	27.48	126.51	3,665.2	-685.4	926.0	1,152.1	0.00	0.00	0.00
3,960.0	27.48	126.51	3,700.7	-696.4	940.8	1,170.5	0.00	0.00	0.00
4,000.0	27.48	126.51	3,736.2	-707.4	955.7	1,189.0	0.00	0.00	0.00
4,040.0	27.48	126.51	3,771.7	-718.4	970.5	1,207.5	0.00	0.00	0.00
4,080.0	27.48	126.51	3,807.2	-729.4	985.3	1,225.9	0.00	0.00	0.00
4,120.0	27.48	126.51	3,842.7	-740.4	1,000.2	1,244.4	0.00	0.00	0.00

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Site:	NEI C18-32 Pad Sec.18-T4N-R64W	North Reference:	True
Well:	NEI C18-23D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Noble NEI C18-23D Plan #1 (6-21-11)		

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)
4,160.0	27.48	126.51	3,878.1	-751.3	1,015.0	1,262.8	0.00	0.00	0.00
4,200.0	27.48	126.51	3,913.6	-762.3	1,029.9	1,281.3	0.00	0.00	0.00
4,240.0	27.48	126.51	3,949.1	-773.3	1,044.7	1,299.8	0.00	0.00	0.00
4,280.0	27.48	126.51	3,984.6	-784.3	1,059.5	1,318.2	0.00	0.00	0.00
4,320.0	27.48	126.51	4,020.1	-795.3	1,074.4	1,336.7	0.00	0.00	0.00
4,360.0	27.48	126.51	4,055.6	-806.3	1,089.2	1,355.1	0.00	0.00	0.00
4,400.0	27.48	126.51	4,091.1	-817.2	1,104.0	1,373.6	0.00	0.00	0.00
4,440.0	27.48	126.51	4,126.5	-828.2	1,118.9	1,392.1	0.00	0.00	0.00
4,480.0	27.48	126.51	4,162.0	-839.2	1,133.7	1,410.5	0.00	0.00	0.00
4,520.0	27.48	126.51	4,197.5	-850.2	1,148.6	1,429.0	0.00	0.00	0.00
4,560.0	27.48	126.51	4,233.0	-861.2	1,163.4	1,447.4	0.00	0.00	0.00
4,600.0	27.48	126.51	4,268.5	-872.1	1,178.2	1,465.9	0.00	0.00	0.00
4,640.0	27.48	126.51	4,304.0	-883.1	1,193.1	1,484.4	0.00	0.00	0.00
4,680.0	27.48	126.51	4,339.5	-894.1	1,207.9	1,502.8	0.00	0.00	0.00
4,720.0	27.48	126.51	4,374.9	-905.1	1,222.7	1,521.3	0.00	0.00	0.00
4,760.0	27.48	126.51	4,410.4	-916.1	1,237.6	1,539.7	0.00	0.00	0.00
4,800.0	27.48	126.51	4,445.9	-927.1	1,252.4	1,558.2	0.00	0.00	0.00
4,840.0	27.48	126.51	4,481.4	-938.0	1,267.3	1,576.7	0.00	0.00	0.00
4,880.0	27.48	126.51	4,516.9	-949.0	1,282.1	1,595.1	0.00	0.00	0.00
4,920.0	27.48	126.51	4,552.4	-960.0	1,296.9	1,613.6	0.00	0.00	0.00
4,960.0	27.48	126.51	4,587.9	-971.0	1,311.8	1,632.0	0.00	0.00	0.00
5,000.0	27.48	126.51	4,623.3	-982.0	1,326.6	1,650.5	0.00	0.00	0.00
5,040.0	27.48	126.51	4,658.8	-993.0	1,341.4	1,669.0	0.00	0.00	0.00
5,080.0	27.48	126.51	4,694.3	-1,003.9	1,356.3	1,687.4	0.00	0.00	0.00
5,120.0	27.48	126.51	4,729.8	-1,014.9	1,371.1	1,705.9	0.00	0.00	0.00
5,160.0	27.48	126.51	4,765.3	-1,025.9	1,386.0	1,724.3	0.00	0.00	0.00
5,200.0	27.48	126.51	4,800.8	-1,036.9	1,400.8	1,742.8	0.00	0.00	0.00
5,240.0	27.48	126.51	4,836.3	-1,047.9	1,415.6	1,761.3	0.00	0.00	0.00
5,280.0	27.48	126.51	4,871.7	-1,058.9	1,430.5	1,779.7	0.00	0.00	0.00
5,286.9	27.48	126.51	4,877.9	-1,060.8	1,433.0	1,782.9	0.00	0.00	0.00
5,320.0	26.82	126.51	4,907.3	-1,069.7	1,445.2	1,798.0	2.00	-2.00	0.00
5,360.0	26.02	126.51	4,943.1	-1,080.3	1,459.5	1,815.8	2.00	-2.00	0.00
5,400.0	25.22	126.51	4,979.2	-1,090.6	1,473.4	1,833.1	2.00	-2.00	0.00
5,440.0	24.42	126.51	5,015.5	-1,100.6	1,486.9	1,849.9	2.00	-2.00	0.00
5,480.0	23.62	126.51	5,052.0	-1,110.3	1,500.0	1,866.2	2.00	-2.00	0.00
5,520.0	22.82	126.51	5,088.8	-1,119.7	1,512.6	1,882.0	2.00	-2.00	0.00
5,560.0	22.02	126.51	5,125.8	-1,128.8	1,524.9	1,897.2	2.00	-2.00	0.00
5,600.0	21.22	126.51	5,163.0	-1,137.5	1,536.8	1,912.0	2.00	-2.00	0.00
5,640.0	20.42	126.51	5,200.3	-1,146.0	1,548.2	1,926.2	2.00	-2.00	0.00
5,680.0	19.62	126.51	5,237.9	-1,154.1	1,559.2	1,939.9	2.00	-2.00	0.00
5,720.0	18.82	126.51	5,275.7	-1,162.0	1,569.8	1,953.0	2.00	-2.00	0.00
5,760.0	18.02	126.51	5,313.6	-1,169.5	1,579.9	1,965.7	2.00	-2.00	0.00
5,800.0	17.22	126.51	5,351.8	-1,176.7	1,589.7	1,977.8	2.00	-2.00	0.00
5,840.0	16.42	126.51	5,390.1	-1,183.6	1,599.0	1,989.4	2.00	-2.00	0.00
5,880.0	15.62	126.51	5,428.5	-1,190.2	1,607.8	2,000.4	2.00	-2.00	0.00
5,920.0	14.82	126.51	5,467.1	-1,196.4	1,616.3	2,010.9	2.00	-2.00	0.00
5,960.0	14.02	126.51	5,505.8	-1,202.3	1,624.3	2,020.9	2.00	-2.00	0.00
6,000.0	13.22	126.51	5,544.7	-1,207.9	1,631.9	2,030.3	2.00	-2.00	0.00
6,040.0	12.42	126.51	5,583.7	-1,213.2	1,639.0	2,039.2	2.00	-2.00	0.00
6,080.0	11.62	126.51	5,622.8	-1,218.2	1,645.7	2,047.5	2.00	-2.00	0.00
6,120.0	10.82	126.51	5,662.1	-1,222.8	1,652.0	2,055.3	2.00	-2.00	0.00
6,160.0	10.02	126.51	5,701.4	-1,227.1	1,657.8	2,062.5	2.00	-2.00	0.00
6,200.0	9.22	126.51	5,740.8	-1,231.1	1,663.1	2,069.2	2.00	-2.00	0.00
6,240.0	8.42	126.51	5,780.4	-1,234.7	1,668.1	2,075.4	2.00	-2.00	0.00

Database:	Landmark	Local Co-ordinate Reference:	Well NEI C18-23D
Company:	NOBLE ENERGY INC WELD COUNTY CO	TVD Reference:	WELL @ 4848.0ft (Original Well Elev)
Project:	SEC.18-T4N-R64W	MD Reference:	WELL @ 4848.0ft (Original Well Elev)
Site:	NEI C18-32 Pad Sec.18-T4N-R64W	North Reference:	True
Well:	NEI C18-23D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Noble NEI C18-23D Plan #1 (6-21-11)		

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)
6,280.0	7.62	126.51	5,820.0	-1,238.1	1,672.6	2,080.9	2.00	-2.00	0.00
6,320.0	6.82	126.51	5,859.7	-1,241.1	1,676.6	2,086.0	2.00	-2.00	0.00
6,360.0	6.02	126.51	5,899.4	-1,243.7	1,680.2	2,090.4	2.00	-2.00	0.00
6,400.0	5.22	126.51	5,939.2	-1,246.1	1,683.4	2,094.4	2.00	-2.00	0.00
6,440.0	4.42	126.51	5,979.1	-1,248.1	1,686.1	2,097.7	2.00	-2.00	0.00
6,480.0	3.62	126.51	6,019.0	-1,249.7	1,688.3	2,100.5	2.00	-2.00	0.00
6,520.0	2.82	126.51	6,058.9	-1,251.1	1,690.1	2,102.8	2.00	-2.00	0.00
6,560.0	2.02	126.51	6,098.9	-1,252.1	1,691.5	2,104.5	2.00	-2.00	0.00
6,600.0	1.22	126.51	6,138.9	-1,252.7	1,692.4	2,105.6	2.00	-2.00	0.00
6,640.0	0.42	126.51	6,178.9	-1,253.1	1,692.9	2,106.2	2.00	-2.00	0.00
6,661.1	0.00	0.00	6,200.0	-1,253.1	1,692.9	2,106.3	2.00	-2.00	0.00
TARGET BHL 1220'FSL, 1220'FEL									
6,680.0	0.00	0.00	6,218.9	-1,253.1	1,692.9	2,106.3	0.00	0.00	0.00
6,720.0	0.00	0.00	6,258.9	-1,253.1	1,692.9	2,106.3	0.00	0.00	0.00
6,760.0	0.00	0.00	6,298.9	-1,253.1	1,692.9	2,106.3	0.00	0.00	0.00
6,800.0	0.00	0.00	6,338.9	-1,253.1	1,692.9	2,106.3	0.00	0.00	0.00
6,840.0	0.00	0.00	6,378.9	-1,253.1	1,692.9	2,106.3	0.00	0.00	0.00
6,880.0	0.00	0.00	6,418.9	-1,253.1	1,692.9	2,106.3	0.00	0.00	0.00
6,920.0	0.00	0.00	6,458.9	-1,253.1	1,692.9	2,106.3	0.00	0.00	0.00
6,960.0	0.00	0.00	6,498.9	-1,253.1	1,692.9	2,106.3	0.00	0.00	0.00
7,000.0	0.00	0.00	6,538.9	-1,253.1	1,692.9	2,106.3	0.00	0.00	0.00
7,040.0	0.00	0.00	6,578.9	-1,253.1	1,692.9	2,106.3	0.00	0.00	0.00
7,080.0	0.00	0.00	6,618.9	-1,253.1	1,692.9	2,106.3	0.00	0.00	0.00
7,120.0	0.00	0.00	6,658.9	-1,253.1	1,692.9	2,106.3	0.00	0.00	0.00
7,160.0	0.00	0.00	6,698.9	-1,253.1	1,692.9	2,106.3	0.00	0.00	0.00
7,200.0	0.00	0.00	6,738.9	-1,253.1	1,692.9	2,106.3	0.00	0.00	0.00
7,224.1	0.00	0.00	6,763.0	-1,253.1	1,692.9	2,106.3	0.00	0.00	0.00
NIOBRARA - LEGAL BOX 800' X 800' 1325'FSL & 1328'FEL - TARGET CIRCLE 1220'FSL & 1220'FEL									
7,240.0	0.00	0.00	6,778.9	-1,253.1	1,692.9	2,106.3	0.00	0.00	0.00
7,280.0	0.00	0.00	6,818.9	-1,253.1	1,692.9	2,106.3	0.00	0.00	0.00
7,320.0	0.00	0.00	6,858.9	-1,253.1	1,692.9	2,106.3	0.00	0.00	0.00
7,360.0	0.00	0.00	6,898.9	-1,253.1	1,692.9	2,106.3	0.00	0.00	0.00
7,400.0	0.00	0.00	6,938.9	-1,253.1	1,692.9	2,106.3	0.00	0.00	0.00
7,440.0	0.00	0.00	6,978.9	-1,253.1	1,692.9	2,106.3	0.00	0.00	0.00
7,480.0	0.00	0.00	7,018.9	-1,253.1	1,692.9	2,106.3	0.00	0.00	0.00
7,520.0	0.00	0.00	7,058.9	-1,253.1	1,692.9	2,106.3	0.00	0.00	0.00
7,559.1	0.00	0.00	7,098.0	-1,253.1	1,692.9	2,106.3	0.00	0.00	0.00
CODELL									
7,560.0	0.00	0.00	7,098.9	-1,253.1	1,692.9	2,106.3	0.00	0.00	0.00
7,600.0	0.00	0.00	7,138.9	-1,253.1	1,692.9	2,106.3	0.00	0.00	0.00
7,640.0	0.00	0.00	7,178.9	-1,253.1	1,692.9	2,106.3	0.00	0.00	0.00
7,680.0	0.00	0.00	7,218.9	-1,253.1	1,692.9	2,106.3	0.00	0.00	0.00
7,709.1	0.00	0.00	7,248.0	-1,253.1	1,692.9	2,106.3	0.00	0.00	0.00

Database:	Landmark	Local Co-ordinate Reference:	Well NEI C18-23D
Company:	NOBLE ENERGY INC WELD COUNTY CO	TVD Reference:	WELL @ 4848.0ft (Original Well Elev)
Project:	SEC.18-T4N-R64W	MD Reference:	WELL @ 4848.0ft (Original Well Elev)
Site:	NEI C18-32 Pad Sec.18-T4N-R64W	North Reference:	True
Well:	NEI C18-23D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Noble NEI C18-23D Plan #1 (6-21-11)		

Targets									
Target Name									
- hit/miss target	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- Shape	(°)	(°)	(ft)	(ft)	(ft)	(ft)	(ft)		
LEGAL BOX 800' X 800'	0.00	0.00	6,763.0	-1,148.1	1,584.9	1,356,616.51	3,254,130.53	40.308728	-104.588747
- plan misses target center by 150.7ft at 7224.1ft MD (6763.0 TVD, -1253.1 N, 1692.9 E)									
- Rectangle (sides W800.0 H800.0 D485.0)									
TARGET BHL 1220'F	0.00	0.00	6,200.0	-1,253.1	1,692.9	1,356,512.58	3,254,239.61	40.308440	-104.588360
- plan hits target center									
- Point									
TARGET CIRCLE 1220'F	0.00	0.00	6,763.0	-1,253.1	1,692.9	1,356,512.58	3,254,239.61	40.308440	-104.588360
- plan hits target center									
- Circle (radius 75.0)									

Casing Points					
	Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
	650.0	650.0	8 5/8"	8-5/8	12-1/4

Formations					
	Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)
	7,224.1	6,763.0	NIOBRARA		0.00
	7,559.1	7,098.0	CODELL		0.00