

ENSIGN

Directional

Well Name: NEI PC C18-20D

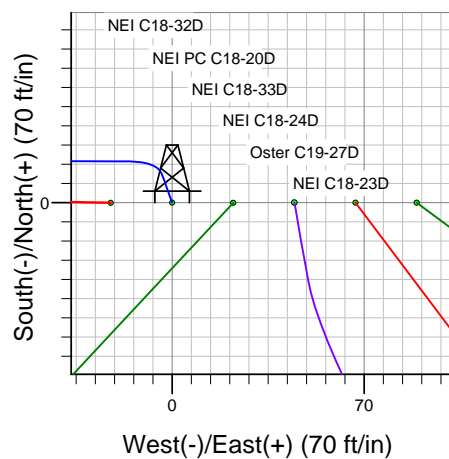
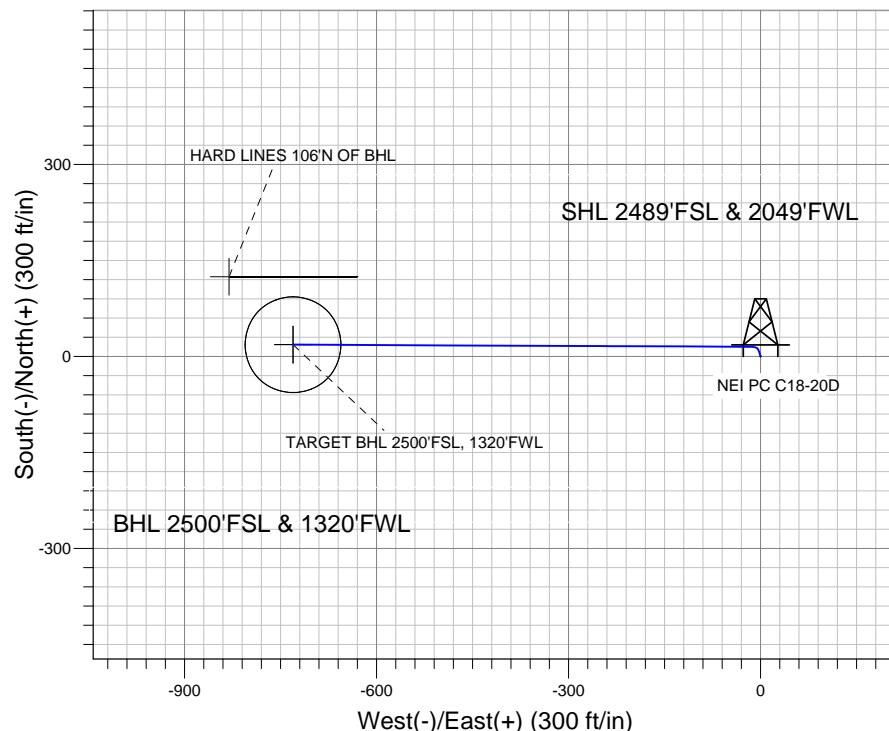
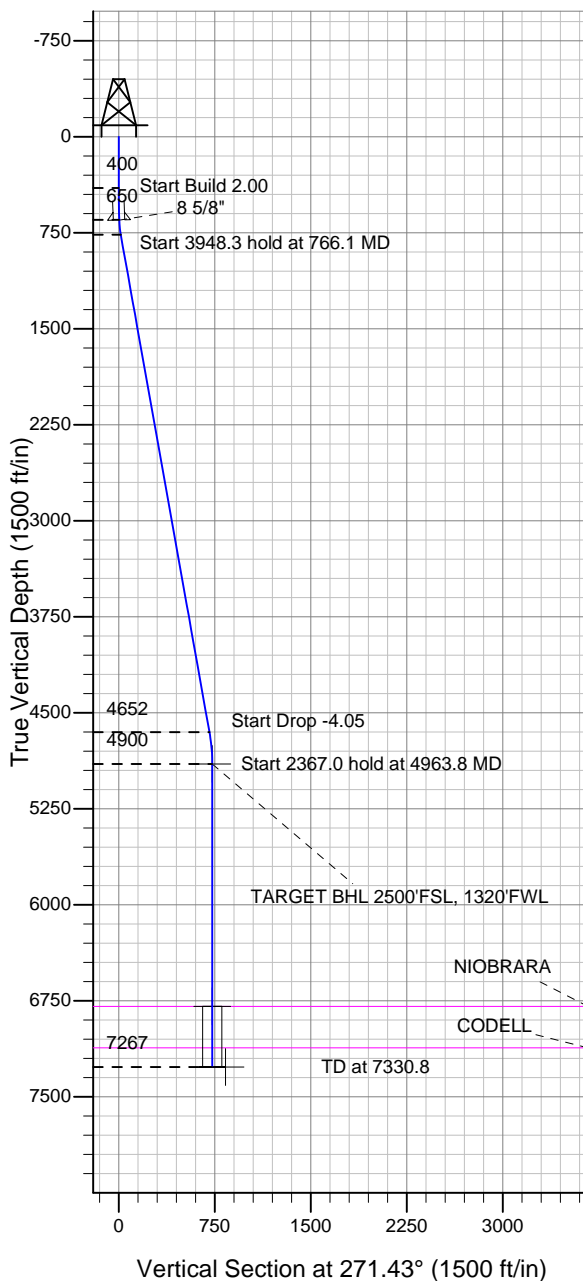
Surface Location: NEI C18-32D Pad Sec.18-T4N-R64W
North American Datum 1983 US State Plane 1983 Colorado Northern Zone

Ground Elevation: 4834.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1357747.39	3252444.91	40.311880	-104.594750	

Original Well Elev WELL @ 4847.0ft (Original Well Elev)

NOBLE ENERGY INC WELD COUNTY CO



NEI C18-32D Pad Sec.18-T4N-R64W
NEI PC C18-20D
Noble NEI PC C18-20D Plan #1 (6-21-11)
13:33, July 20 2011



Azimuths to True North
Magnetic North: 8.75°

Magnetic Field
Strength: 53093.3snT
Dip Angle: 67.00°
Date: 7/20/2011
Model: IGRF2010

WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
TARGET BHL 2500'FSL, 1320'FWL	4900.0	18.3	-730.8	40.311930	-104.597370	Point
TARGET CIRCLE 2550'FSL, 1320'FWL	6793.0	18.3	-730.8	40.311930	-104.597370	Circle (Radius: 75.0)
HARD LINES 106'N OF BHL	7267.0	124.6	-830.8	40.312222	-104.597729	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	400.0	0.00	0.00	400.0	0.0	0.0	0.00	0.00	0.0	
3	650.0	5.00	340.00	649.7	10.2	-3.7	2.00	340.00	4.0	
4	766.1	10.11	270.26	764.9	15.1	-15.7	8.26	-98.72	16.0	
5	4714.4	10.11	270.26	4651.9	18.2	-708.8	0.00	0.00	709.0	
6	4963.8	0.00	0.00	4900.0	18.3	-730.8	4.05	180.00	731.0	TARGET BHL 2500'FSL, 1320'FWL
7	7330.8	0.00	0.00	7267.0	18.3	-730.8	0.00	0.00	731.0	



Directional

NOBLE ENERGY INC WELD COUNTY CO

SEC.18-T4N-R64W

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

NEI PC C18-20D

Wellbore #1

Plan: Noble NEI PC C18-20D Plan #1 (6-21-11)

Standard Planning Report

20 July, 2011



Database:	Landmark	Local Co-ordinate Reference:	Well NEI PC C18-20D
Company:	NOBLE ENERGY INC WELD COUNTY CO	TVD Reference:	WELL @ 4847.0ft (Original Well Elev)
Project:	SEC.18-T4N-R64W	MD Reference:	WELL @ 4847.0ft (Original Well Elev)
Site:	NEI C18-32D Pad Sec.18-T4N-R64W	North Reference:	True
Well:	NEI PC C18-20D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Noble NEI PC C18-20D 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 C18-32D 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 PC C18-20D					
Well Position	+N/-S	0.0 ft	Northing:	1,357,747.39 ft	Latitude:	40.311880
	+E/-W	22.4 ft	Easting:	3,252,444.91 ft	Longitude:	-104.594750
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,834.0 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	7/20/2011	8.75	67.00	53,093

Design	Noble NEI PC C18-20D 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	271.43

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	
400.0	0.00	0.00	400.0	0.0	0.0	0.00	0.00	0.00	0.00	
650.0	5.00	340.00	649.7	10.2	-3.7	2.00	2.00	0.00	340.00	
766.1	10.11	270.26	764.9	15.1	-15.7	8.26	4.40	-60.07	-98.72	
4,714.4	10.11	270.26	4,651.9	18.2	-708.8	0.00	0.00	0.00	0.00	
4,963.8	0.00	0.00	4,900.0	18.3	-730.8	4.05	-4.05	0.00	180.00	TARGET BHL 250C
7,330.8	0.00	0.00	7,267.0	18.3	-730.8	0.00	0.00	0.00	0.00	

Database:	Landmark	Local Co-ordinate Reference:	Well NEI PC C18-20D
Company:	NOBLE ENERGY INC WELD COUNTY CO	TVD Reference:	WELL @ 4847.0ft (Original Well Elev)
Project:	SEC.18-T4N-R64W	MD Reference:	WELL @ 4847.0ft (Original Well Elev)
Site:	NEI C18-32D Pad Sec.18-T4N-R64W	North Reference:	True
Well:	NEI PC C18-20D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Noble NEI PC C18-20D 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	0.80	340.00	440.0	0.3	-0.1	0.1	2.00	2.00	0.00
480.0	1.60	340.00	480.0	1.0	-0.4	0.4	2.00	2.00	0.00
520.0	2.40	340.00	520.0	2.4	-0.9	0.9	2.00	2.00	0.00
560.0	3.20	340.00	559.9	4.2	-1.5	1.6	2.00	2.00	0.00
600.0	4.00	340.00	599.8	6.6	-2.4	2.5	2.00	2.00	0.00
640.0	4.80	340.00	639.7	9.4	-3.4	3.7	2.00	2.00	0.00
650.0	5.00	340.00	649.7	10.2	-3.7	4.0	2.00	2.00	0.00
650.3	5.00	339.70	650.0	10.3	-3.7	4.0	8.26	-1.23	-93.77
8 5/8"									
680.0	5.23	312.05	679.6	12.4	-5.2	5.5	8.26	0.79	-93.17
720.0	7.04	285.67	719.3	14.3	-8.9	9.3	8.26	4.53	-65.93
760.0	9.68	271.73	758.9	15.0	-14.6	15.0	8.26	6.58	-34.87
766.1	10.11	270.26	764.9	15.1	-15.7	16.0	8.26	7.15	-24.13
800.0	10.11	270.26	798.3	15.1	-21.6	22.0	0.00	0.00	0.00
840.0	10.11	270.26	837.7	15.1	-28.7	29.0	0.00	0.00	0.00
880.0	10.11	270.26	877.1	15.1	-35.7	36.0	0.00	0.00	0.00
920.0	10.11	270.26	916.4	15.2	-42.7	43.1	0.00	0.00	0.00
960.0	10.11	270.26	955.8	15.2	-49.7	50.1	0.00	0.00	0.00
1,000.0	10.11	270.26	995.2	15.2	-56.7	57.1	0.00	0.00	0.00
1,040.0	10.11	270.26	1,034.6	15.3	-63.8	64.1	0.00	0.00	0.00
1,080.0	10.11	270.26	1,074.0	15.3	-70.8	71.1	0.00	0.00	0.00
1,120.0	10.11	270.26	1,113.3	15.3	-77.8	78.2	0.00	0.00	0.00
1,160.0	10.11	270.26	1,152.7	15.4	-84.8	85.2	0.00	0.00	0.00
1,200.0	10.11	270.26	1,192.1	15.4	-91.9	92.2	0.00	0.00	0.00
1,240.0	10.11	270.26	1,231.5	15.4	-98.9	99.2	0.00	0.00	0.00
1,280.0	10.11	270.26	1,270.8	15.5	-105.9	106.2	0.00	0.00	0.00
1,320.0	10.11	270.26	1,310.2	15.5	-112.9	113.3	0.00	0.00	0.00
1,360.0	10.11	270.26	1,349.6	15.5	-119.9	120.3	0.00	0.00	0.00
1,400.0	10.11	270.26	1,389.0	15.6	-127.0	127.3	0.00	0.00	0.00
1,440.0	10.11	270.26	1,428.4	15.6	-134.0	134.3	0.00	0.00	0.00
1,480.0	10.11	270.26	1,467.7	15.6	-141.0	141.4	0.00	0.00	0.00
1,520.0	10.11	270.26	1,507.1	15.6	-148.0	148.4	0.00	0.00	0.00
1,560.0	10.11	270.26	1,546.5	15.7	-155.0	155.4	0.00	0.00	0.00
1,600.0	10.11	270.26	1,585.9	15.7	-162.1	162.4	0.00	0.00	0.00
1,640.0	10.11	270.26	1,625.3	15.7	-169.1	169.4	0.00	0.00	0.00
1,680.0	10.11	270.26	1,664.6	15.8	-176.1	176.5	0.00	0.00	0.00
1,720.0	10.11	270.26	1,704.0	15.8	-183.1	183.5	0.00	0.00	0.00
1,760.0	10.11	270.26	1,743.4	15.8	-190.2	190.5	0.00	0.00	0.00
1,800.0	10.11	270.26	1,782.8	15.9	-197.2	197.5	0.00	0.00	0.00
1,840.0	10.11	270.26	1,822.2	15.9	-204.2	204.5	0.00	0.00	0.00
1,880.0	10.11	270.26	1,861.5	15.9	-211.2	211.6	0.00	0.00	0.00
1,920.0	10.11	270.26	1,900.9	16.0	-218.2	218.6	0.00	0.00	0.00
1,960.0	10.11	270.26	1,940.3	16.0	-225.3	225.6	0.00	0.00	0.00

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Project:	SEC.18-T4N-R64W	MD Reference:	WELL @ 4847.0ft (Original Well Elev)
Site:	NEI C18-32D Pad Sec.18-T4N-R64W	North Reference:	True
Well:	NEI PC C18-20D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Noble NEI PC C18-20D 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)
2,000.0	10.11	270.26	1,979.7	16.0	-232.3	232.6	0.00	0.00	0.00
2,040.0	10.11	270.26	2,019.0	16.1	-239.3	239.6	0.00	0.00	0.00
2,080.0	10.11	270.26	2,058.4	16.1	-246.3	246.7	0.00	0.00	0.00
2,120.0	10.11	270.26	2,097.8	16.1	-253.4	253.7	0.00	0.00	0.00
2,160.0	10.11	270.26	2,137.2	16.2	-260.4	260.7	0.00	0.00	0.00
2,200.0	10.11	270.26	2,176.6	16.2	-267.4	267.7	0.00	0.00	0.00
2,240.0	10.11	270.26	2,215.9	16.2	-274.4	274.7	0.00	0.00	0.00
2,280.0	10.11	270.26	2,255.3	16.2	-281.4	281.8	0.00	0.00	0.00
2,320.0	10.11	270.26	2,294.7	16.3	-288.5	288.8	0.00	0.00	0.00
2,360.0	10.11	270.26	2,334.1	16.3	-295.5	295.8	0.00	0.00	0.00
2,400.0	10.11	270.26	2,373.5	16.3	-302.5	302.8	0.00	0.00	0.00
2,440.0	10.11	270.26	2,412.8	16.4	-309.5	309.8	0.00	0.00	0.00
2,480.0	10.11	270.26	2,452.2	16.4	-316.6	316.9	0.00	0.00	0.00
2,520.0	10.11	270.26	2,491.6	16.4	-323.6	323.9	0.00	0.00	0.00
2,560.0	10.11	270.26	2,531.0	16.5	-330.6	330.9	0.00	0.00	0.00
2,600.0	10.11	270.26	2,570.3	16.5	-337.6	337.9	0.00	0.00	0.00
2,640.0	10.11	270.26	2,609.7	16.5	-344.6	345.0	0.00	0.00	0.00
2,680.0	10.11	270.26	2,649.1	16.6	-351.7	352.0	0.00	0.00	0.00
2,720.0	10.11	270.26	2,688.5	16.6	-358.7	359.0	0.00	0.00	0.00
2,760.0	10.11	270.26	2,727.9	16.6	-365.7	366.0	0.00	0.00	0.00
2,800.0	10.11	270.26	2,767.2	16.7	-372.7	373.0	0.00	0.00	0.00
2,840.0	10.11	270.26	2,806.6	16.7	-379.8	380.1	0.00	0.00	0.00
2,880.0	10.11	270.26	2,846.0	16.7	-386.8	387.1	0.00	0.00	0.00
2,920.0	10.11	270.26	2,885.4	16.7	-393.8	394.1	0.00	0.00	0.00
2,960.0	10.11	270.26	2,924.8	16.8	-400.8	401.1	0.00	0.00	0.00
3,000.0	10.11	270.26	2,964.1	16.8	-407.8	408.1	0.00	0.00	0.00
3,040.0	10.11	270.26	3,003.5	16.8	-414.9	415.2	0.00	0.00	0.00
3,080.0	10.11	270.26	3,042.9	16.9	-421.9	422.2	0.00	0.00	0.00
3,120.0	10.11	270.26	3,082.3	16.9	-428.9	429.2	0.00	0.00	0.00
3,160.0	10.11	270.26	3,121.7	16.9	-435.9	436.2	0.00	0.00	0.00
3,200.0	10.11	270.26	3,161.0	17.0	-443.0	443.2	0.00	0.00	0.00
3,240.0	10.11	270.26	3,200.4	17.0	-450.0	450.3	0.00	0.00	0.00
3,280.0	10.11	270.26	3,239.8	17.0	-457.0	457.3	0.00	0.00	0.00
3,320.0	10.11	270.26	3,279.2	17.1	-464.0	464.3	0.00	0.00	0.00
3,360.0	10.11	270.26	3,318.5	17.1	-471.0	471.3	0.00	0.00	0.00
3,400.0	10.11	270.26	3,357.9	17.1	-478.1	478.3	0.00	0.00	0.00
3,440.0	10.11	270.26	3,397.3	17.2	-485.1	485.4	0.00	0.00	0.00
3,480.0	10.11	270.26	3,436.7	17.2	-492.1	492.4	0.00	0.00	0.00
3,520.0	10.11	270.26	3,476.1	17.2	-499.1	499.4	0.00	0.00	0.00
3,560.0	10.11	270.26	3,515.4	17.3	-506.2	506.4	0.00	0.00	0.00
3,600.0	10.11	270.26	3,554.8	17.3	-513.2	513.4	0.00	0.00	0.00
3,640.0	10.11	270.26	3,594.2	17.3	-520.2	520.5	0.00	0.00	0.00
3,680.0	10.11	270.26	3,633.6	17.3	-527.2	527.5	0.00	0.00	0.00
3,720.0	10.11	270.26	3,673.0	17.4	-534.2	534.5	0.00	0.00	0.00
3,760.0	10.11	270.26	3,712.3	17.4	-541.3	541.5	0.00	0.00	0.00
3,800.0	10.11	270.26	3,751.7	17.4	-548.3	548.6	0.00	0.00	0.00
3,840.0	10.11	270.26	3,791.1	17.5	-555.3	555.6	0.00	0.00	0.00
3,880.0	10.11	270.26	3,830.5	17.5	-562.3	562.6	0.00	0.00	0.00
3,920.0	10.11	270.26	3,869.8	17.5	-569.4	569.6	0.00	0.00	0.00
3,960.0	10.11	270.26	3,909.2	17.6	-576.4	576.6	0.00	0.00	0.00
4,000.0	10.11	270.26	3,948.6	17.6	-583.4	583.7	0.00	0.00	0.00
4,040.0	10.11	270.26	3,988.0	17.6	-590.4	590.7	0.00	0.00	0.00
4,080.0	10.11	270.26	4,027.4	17.7	-597.4	597.7	0.00	0.00	0.00
4,120.0	10.11	270.26	4,066.7	17.7	-604.5	604.7	0.00	0.00	0.00

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Project:	SEC.18-T4N-R64W	MD Reference:	WELL @ 4847.0ft (Original Well Elev)
Site:	NEI C18-32D Pad Sec.18-T4N-R64W	North Reference:	True
Well:	NEI PC C18-20D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Noble NEI PC C18-20D 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	10.11	270.26	4,106.1	17.7	-611.5	611.7	0.00	0.00	0.00
4,200.0	10.11	270.26	4,145.5	17.8	-618.5	618.8	0.00	0.00	0.00
4,240.0	10.11	270.26	4,184.9	17.8	-625.5	625.8	0.00	0.00	0.00
4,280.0	10.11	270.26	4,224.3	17.8	-632.6	632.8	0.00	0.00	0.00
4,320.0	10.11	270.26	4,263.6	17.9	-639.6	639.8	0.00	0.00	0.00
4,360.0	10.11	270.26	4,303.0	17.9	-646.6	646.8	0.00	0.00	0.00
4,400.0	10.11	270.26	4,342.4	17.9	-653.6	653.9	0.00	0.00	0.00
4,440.0	10.11	270.26	4,381.8	17.9	-660.6	660.9	0.00	0.00	0.00
4,480.0	10.11	270.26	4,421.2	18.0	-667.7	667.9	0.00	0.00	0.00
4,520.0	10.11	270.26	4,460.5	18.0	-674.7	674.9	0.00	0.00	0.00
4,560.0	10.11	270.26	4,499.9	18.0	-681.7	681.9	0.00	0.00	0.00
4,600.0	10.11	270.26	4,539.3	18.1	-688.7	689.0	0.00	0.00	0.00
4,640.0	10.11	270.26	4,578.7	18.1	-695.8	696.0	0.00	0.00	0.00
4,680.0	10.11	270.26	4,618.0	18.1	-702.8	703.0	0.00	0.00	0.00
4,714.4	10.11	270.26	4,651.9	18.2	-708.8	709.0	0.00	0.00	0.00
4,720.0	9.88	270.26	4,657.4	18.2	-709.8	710.0	4.05	-4.05	0.00
4,760.0	8.26	270.26	4,696.9	18.2	-716.1	716.3	4.05	-4.05	0.00
4,800.0	6.64	270.26	4,736.6	18.2	-721.3	721.5	4.05	-4.05	0.00
4,840.0	5.02	270.26	4,776.4	18.2	-725.3	725.6	4.05	-4.05	0.00
4,880.0	3.40	270.26	4,816.3	18.2	-728.3	728.5	4.05	-4.05	0.00
4,920.0	1.77	270.26	4,856.2	18.3	-730.1	730.3	4.05	-4.05	0.00
4,960.0	0.15	270.26	4,896.2	18.3	-730.8	731.0	4.05	-4.05	0.00
4,963.8	0.00	0.00	4,900.0	18.3	-730.8	731.0	4.05	-4.05	0.00
TARGET BHL 2500'FSL, 1320'FWL									
5,000.0	0.00	0.00	4,936.2	18.3	-730.8	731.0	0.00	0.00	0.00
5,040.0	0.00	0.00	4,976.2	18.3	-730.8	731.0	0.00	0.00	0.00
5,080.0	0.00	0.00	5,016.2	18.3	-730.8	731.0	0.00	0.00	0.00
5,120.0	0.00	0.00	5,056.2	18.3	-730.8	731.0	0.00	0.00	0.00
5,160.0	0.00	0.00	5,096.2	18.3	-730.8	731.0	0.00	0.00	0.00
5,200.0	0.00	0.00	5,136.2	18.3	-730.8	731.0	0.00	0.00	0.00
5,240.0	0.00	0.00	5,176.2	18.3	-730.8	731.0	0.00	0.00	0.00
5,280.0	0.00	0.00	5,216.2	18.3	-730.8	731.0	0.00	0.00	0.00
5,320.0	0.00	0.00	5,256.2	18.3	-730.8	731.0	0.00	0.00	0.00
5,360.0	0.00	0.00	5,296.2	18.3	-730.8	731.0	0.00	0.00	0.00
5,400.0	0.00	0.00	5,336.2	18.3	-730.8	731.0	0.00	0.00	0.00
5,440.0	0.00	0.00	5,376.2	18.3	-730.8	731.0	0.00	0.00	0.00
5,480.0	0.00	0.00	5,416.2	18.3	-730.8	731.0	0.00	0.00	0.00
5,520.0	0.00	0.00	5,456.2	18.3	-730.8	731.0	0.00	0.00	0.00
5,560.0	0.00	0.00	5,496.2	18.3	-730.8	731.0	0.00	0.00	0.00
5,600.0	0.00	0.00	5,536.2	18.3	-730.8	731.0	0.00	0.00	0.00
5,640.0	0.00	0.00	5,576.2	18.3	-730.8	731.0	0.00	0.00	0.00
5,680.0	0.00	0.00	5,616.2	18.3	-730.8	731.0	0.00	0.00	0.00
5,720.0	0.00	0.00	5,656.2	18.3	-730.8	731.0	0.00	0.00	0.00
5,760.0	0.00	0.00	5,696.2	18.3	-730.8	731.0	0.00	0.00	0.00
5,800.0	0.00	0.00	5,736.2	18.3	-730.8	731.0	0.00	0.00	0.00
5,840.0	0.00	0.00	5,776.2	18.3	-730.8	731.0	0.00	0.00	0.00
5,880.0	0.00	0.00	5,816.2	18.3	-730.8	731.0	0.00	0.00	0.00
5,920.0	0.00	0.00	5,856.2	18.3	-730.8	731.0	0.00	0.00	0.00
5,960.0	0.00	0.00	5,896.2	18.3	-730.8	731.0	0.00	0.00	0.00
6,000.0	0.00	0.00	5,936.2	18.3	-730.8	731.0	0.00	0.00	0.00
6,040.0	0.00	0.00	5,976.2	18.3	-730.8	731.0	0.00	0.00	0.00
6,080.0	0.00	0.00	6,016.2	18.3	-730.8	731.0	0.00	0.00	0.00
6,120.0	0.00	0.00	6,056.2	18.3	-730.8	731.0	0.00	0.00	0.00
6,160.0	0.00	0.00	6,096.2	18.3	-730.8	731.0	0.00	0.00	0.00

Database:	Landmark	Local Co-ordinate Reference:	Well NEI PC C18-20D
Company:	NOBLE ENERGY INC WELD COUNTY CO	TVD Reference:	WELL @ 4847.0ft (Original Well Elev)
Project:	SEC.18-T4N-R64W	MD Reference:	WELL @ 4847.0ft (Original Well Elev)
Site:	NEI C18-32D Pad Sec.18-T4N-R64W	North Reference:	True
Well:	NEI PC C18-20D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Noble NEI PC C18-20D 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)
6,200.0	0.00	0.00	6,136.2	18.3	-730.8	731.0	0.00	0.00	0.00
6,240.0	0.00	0.00	6,176.2	18.3	-730.8	731.0	0.00	0.00	0.00
6,280.0	0.00	0.00	6,216.2	18.3	-730.8	731.0	0.00	0.00	0.00
6,320.0	0.00	0.00	6,256.2	18.3	-730.8	731.0	0.00	0.00	0.00
6,360.0	0.00	0.00	6,296.2	18.3	-730.8	731.0	0.00	0.00	0.00
6,400.0	0.00	0.00	6,336.2	18.3	-730.8	731.0	0.00	0.00	0.00
6,440.0	0.00	0.00	6,376.2	18.3	-730.8	731.0	0.00	0.00	0.00
6,480.0	0.00	0.00	6,416.2	18.3	-730.8	731.0	0.00	0.00	0.00
6,520.0	0.00	0.00	6,456.2	18.3	-730.8	731.0	0.00	0.00	0.00
6,560.0	0.00	0.00	6,496.2	18.3	-730.8	731.0	0.00	0.00	0.00
6,600.0	0.00	0.00	6,536.2	18.3	-730.8	731.0	0.00	0.00	0.00
6,640.0	0.00	0.00	6,576.2	18.3	-730.8	731.0	0.00	0.00	0.00
6,680.0	0.00	0.00	6,616.2	18.3	-730.8	731.0	0.00	0.00	0.00
6,720.0	0.00	0.00	6,656.2	18.3	-730.8	731.0	0.00	0.00	0.00
6,760.0	0.00	0.00	6,696.2	18.3	-730.8	731.0	0.00	0.00	0.00
6,800.0	0.00	0.00	6,736.2	18.3	-730.8	731.0	0.00	0.00	0.00
6,840.0	0.00	0.00	6,776.2	18.3	-730.8	731.0	0.00	0.00	0.00
6,856.8	0.00	0.00	6,793.0	18.3	-730.8	731.0	0.00	0.00	0.00
NIORARA - TARGET CIRCLE 2550'FSL, 1320'FWL									
6,880.0	0.00	0.00	6,816.2	18.3	-730.8	731.0	0.00	0.00	0.00
6,920.0	0.00	0.00	6,856.2	18.3	-730.8	731.0	0.00	0.00	0.00
6,960.0	0.00	0.00	6,896.2	18.3	-730.8	731.0	0.00	0.00	0.00
7,000.0	0.00	0.00	6,936.2	18.3	-730.8	731.0	0.00	0.00	0.00
7,040.0	0.00	0.00	6,976.2	18.3	-730.8	731.0	0.00	0.00	0.00
7,080.0	0.00	0.00	7,016.2	18.3	-730.8	731.0	0.00	0.00	0.00
7,120.0	0.00	0.00	7,056.2	18.3	-730.8	731.0	0.00	0.00	0.00
7,160.0	0.00	0.00	7,096.2	18.3	-730.8	731.0	0.00	0.00	0.00
7,180.8	0.00	0.00	7,117.0	18.3	-730.8	731.0	0.00	0.00	0.00
CODELL									
7,200.0	0.00	0.00	7,136.2	18.3	-730.8	731.0	0.00	0.00	0.00
7,240.0	0.00	0.00	7,176.2	18.3	-730.8	731.0	0.00	0.00	0.00
7,280.0	0.00	0.00	7,216.2	18.3	-730.8	731.0	0.00	0.00	0.00
7,320.0	0.00	0.00	7,256.2	18.3	-730.8	731.0	0.00	0.00	0.00
7,330.8	0.00	0.00	7,267.0	18.3	-730.8	731.0	0.00	0.00	0.00
HARD LINES 106'N OF BHL									

Database:	Landmark	Local Co-ordinate Reference:	Well NEI PC C18-20D
Company:	NOBLE ENERGY INC WELD COUNTY CO	TVD Reference:	WELL @ 4847.0ft (Original Well Elev)
Project:	SEC.18-T4N-R64W	MD Reference:	WELL @ 4847.0ft (Original Well Elev)
Site:	NEI C18-32D Pad Sec.18-T4N-R64W	North Reference:	True
Well:	NEI PC C18-20D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Noble NEI PC C18-20D 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)		
HARD LINES 106'N C	0.00	0.00	7,267.0	124.6	-830.8	1,357,863.51	3,251,612.94	40.312222	-104.597729
- plan misses target center by 146.0ft at 7330.8ft MD (7267.0 TVD, 18.3 N, -730.8 E)									
- Polygon									
Point 1			7,267.0	0.0	0.0	1,357,863.51	3,251,612.94		
Point 2			7,267.0	0.0	200.0	1,357,865.55	3,251,812.92		
TARGET BHL 2500'F:	0.00	0.00	4,900.0	18.3	-730.8	1,357,758.18	3,251,714.04	40.311930	-104.597370
- plan hits target center									
- Point									
TARGET CIRCLE 25'	0.00	0.00	6,793.0	18.3	-730.8	1,357,758.18	3,251,714.04	40.311930	-104.597370
- plan hits target center									
- Circle (radius 75.0)									

Casing Points					
	Measured Depth	Vertical Depth		Casing Diameter	Hole Diameter
	(ft)	(ft)	Name	(")	(")
	650.3	650.0	8 5/8"	8-5/8	12-1/4

Formations					
	Measured Depth	Vertical Depth			
	(ft)	(ft)	Name	Lithology	Dip
					(°)
					Dip Direction
					(°)
	6,856.8	6,793.0	NIOBRARA		0.00
	7,180.8	7,117.0	CODELL		0.00