

Well Name: Oster C19-27D

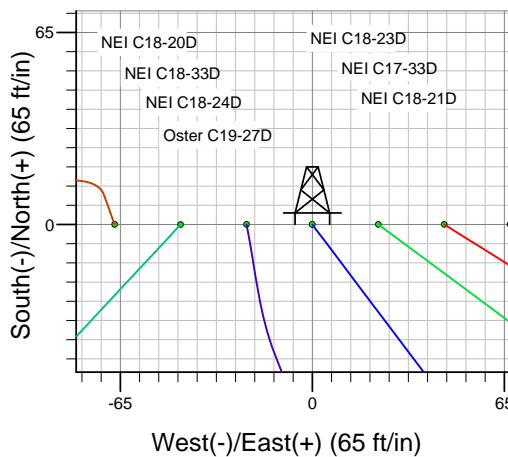
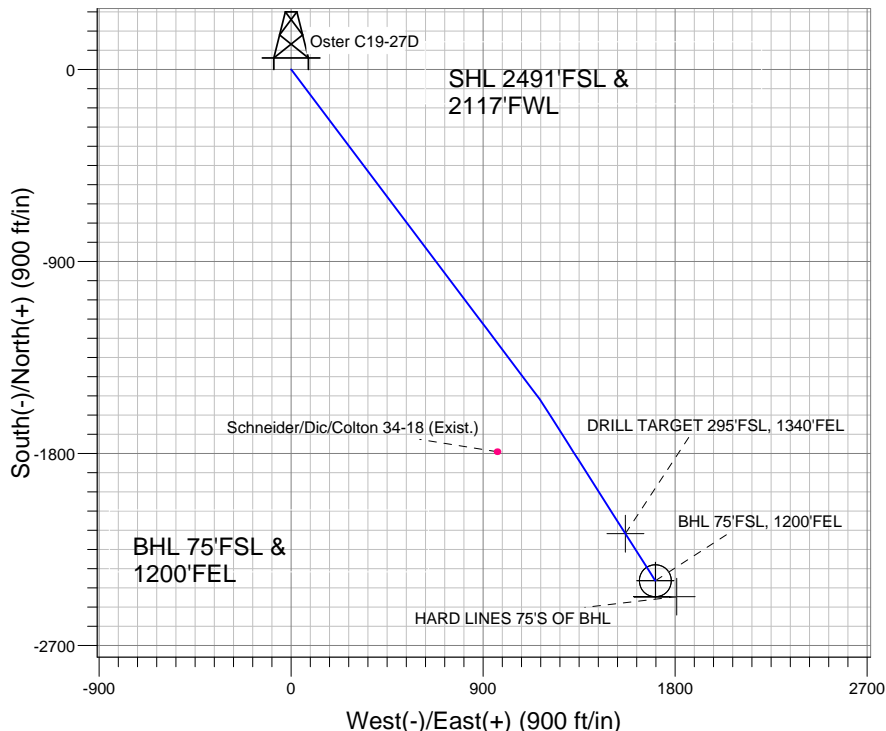
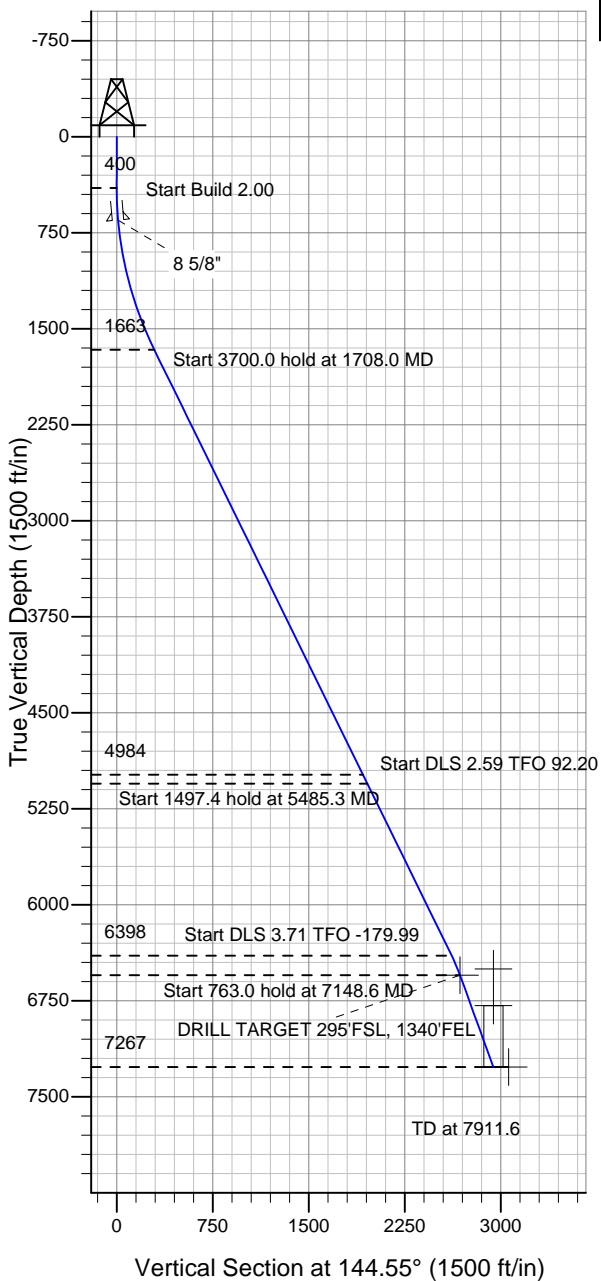
Surface Location: NEI C18-32 Pad Sec.18-T4N-R64W
North American Datum 1983 , US State Plane 1983 , Colorado Northern Zone

Ground Elevation: 4834.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1357748.08	3252511.75	40.311880	-104.594510	

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

NOBLE ENERGY INC WELD COUNTY CO



NEI C18-32 Pad Sec.18-T4N-R64W
Oster C19-27D
Noble Oster C19-27D Plan #1 (6-21-11)
17:24, 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
BHL 75'FSL, 1200'FEL	6500.0	-2397.1	1706.9	40.305300	-104.588390	Point
DRILL TARGET 295'FSL, 1340'FEL	6550.0	-2176.9	1566.8	40.305904	-104.588892	Point
TARGET CIRCLE 75'FSL & 1200'FEL	6787.0	-2397.1	1706.9	40.305300	-104.588390	Circle (Radius: 75.0)
HARD LINES 75'S OF BHL	7267.0	-2472.1	1806.9	40.305094	-104.588032	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	1708.0	26.16	143.00	1663.0	-234.4	176.6	2.00	143.00	293.3	
4	5408.0	26.16	143.00	4984.0	-1537.1	1158.3	0.00	0.00	1924.0	
5	5485.3	26.15	147.54	5053.4	-1565.1	1177.7	2.59	92.20	1958.1	
6	6982.7	26.15	147.54	6397.5	-2122.1	1531.9	0.00	0.00	2617.2	
7	7148.6	20.00	147.54	6550.0	-2176.9	1566.8	3.71	-179.99	2682.1	DRILL TARGET 295'FSL, 1340'FEL
8	7911.6	20.00	147.54	7267.0	-2397.1	1706.9	0.00	0.00	2942.7	



Directional

NOBLE ENERGY INC WELD COUNTY CO

SEC.18-T4N-R64W

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

Oster C19-27D

Wellbore #1

Plan: Noble Oster C19-27D Plan #1 (6-21-11)

Standard Planning Report

12 July, 2011



Database:	Landmark	Local Co-ordinate Reference:	Well Oster C19-27D
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 C18-32 Pad Sec.18-T4N-R64W	North Reference:	True
Well:	Oster C19-27D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Noble Oster C19-27D 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	Oster C19-27D					
Well Position	+N/-S	0.0 ft	Northing:	1,357,748.08 ft	Latitude:	40.311880
	+E/-W	89.2 ft	Easting:	3,252,511.75 ft	Longitude:	-104.594510
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	6/21/2011	8.76	67.01	53,102

Design	Noble Oster C19-27D 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	144.55

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	
1,708.0	26.16	143.00	1,663.0	-234.4	176.6	2.00	2.00	0.00	143.00	
5,408.0	26.16	143.00	4,984.0	-1,537.1	1,158.3	0.00	0.00	0.00	0.00	
5,485.3	26.15	147.54	5,053.4	-1,565.1	1,177.7	2.59	-0.01	5.88	92.20	
6,982.7	26.15	147.54	6,397.5	-2,122.1	1,531.9	0.00	0.00	0.00	0.00	
7,148.6	20.00	147.54	6,550.0	-2,176.9	1,566.8	3.71	-3.71	0.00	-179.99	DRILL TARGET 29
7,911.6	20.00	147.54	7,267.0	-2,397.1	1,706.9	0.00	0.00	0.00	0.00	

Database:	Landmark	Local Co-ordinate Reference:	Well Oster C19-27D
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 C18-32 Pad Sec.18-T4N-R64W	North Reference:	True
Well:	Oster C19-27D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Noble Oster C19-27D 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	143.00	440.0	-0.2	0.2	0.3	2.00	2.00	0.00
480.0	1.60	143.00	480.0	-0.9	0.7	1.1	2.00	2.00	0.00
520.0	2.40	143.00	520.0	-2.0	1.5	2.5	2.00	2.00	0.00
560.0	3.20	143.00	559.9	-3.6	2.7	4.5	2.00	2.00	0.00
600.0	4.00	143.00	599.8	-5.6	4.2	7.0	2.00	2.00	0.00
640.0	4.80	143.00	639.7	-8.0	6.0	10.0	2.00	2.00	0.00
650.3	5.01	143.00	650.0	-8.7	6.6	10.9	2.00	2.00	0.00
8 5/8"									
680.0	5.60	143.00	679.6	-10.9	8.2	13.7	2.00	2.00	0.00
720.0	6.40	143.00	719.3	-14.3	10.7	17.8	2.00	2.00	0.00
760.0	7.20	143.00	759.1	-18.0	13.6	22.6	2.00	2.00	0.00
800.0	8.00	143.00	798.7	-22.3	16.8	27.9	2.00	2.00	0.00
840.0	8.80	143.00	838.3	-26.9	20.3	33.7	2.00	2.00	0.00
880.0	9.60	143.00	877.8	-32.0	24.1	40.1	2.00	2.00	0.00
920.0	10.40	143.00	917.1	-37.6	28.3	47.0	2.00	2.00	0.00
960.0	11.20	143.00	956.4	-43.6	32.8	54.5	2.00	2.00	0.00
1,000.0	12.00	143.00	995.6	-50.0	37.7	62.6	2.00	2.00	0.00
1,040.0	12.80	143.00	1,034.7	-56.9	42.8	71.2	2.00	2.00	0.00
1,080.0	13.60	143.00	1,073.6	-64.2	48.3	80.3	2.00	2.00	0.00
1,120.0	14.40	143.00	1,112.4	-71.9	54.2	90.0	2.00	2.00	0.00
1,160.0	15.20	143.00	1,151.1	-80.0	60.3	100.2	2.00	2.00	0.00
1,200.0	16.00	143.00	1,189.6	-88.6	66.8	110.9	2.00	2.00	0.00
1,240.0	16.80	143.00	1,228.0	-97.6	73.6	122.2	2.00	2.00	0.00
1,280.0	17.60	143.00	1,266.2	-107.1	80.7	134.0	2.00	2.00	0.00
1,320.0	18.40	143.00	1,304.3	-117.0	88.1	146.4	2.00	2.00	0.00
1,360.0	19.20	143.00	1,342.1	-127.3	95.9	159.3	2.00	2.00	0.00
1,400.0	20.00	143.00	1,379.8	-138.0	104.0	172.7	2.00	2.00	0.00
1,440.0	20.80	143.00	1,417.3	-149.1	112.4	186.6	2.00	2.00	0.00
1,480.0	21.60	143.00	1,454.6	-160.7	121.1	201.1	2.00	2.00	0.00
1,520.0	22.40	143.00	1,491.7	-172.6	130.1	216.1	2.00	2.00	0.00
1,560.0	23.20	143.00	1,528.6	-185.0	139.4	231.6	2.00	2.00	0.00
1,600.0	24.00	143.00	1,565.2	-197.8	149.1	247.6	2.00	2.00	0.00
1,640.0	24.80	143.00	1,601.6	-211.0	159.0	264.1	2.00	2.00	0.00
1,680.0	25.60	143.00	1,637.8	-224.6	169.2	281.1	2.00	2.00	0.00
1,708.0	26.16	143.00	1,663.0	-234.4	176.6	293.3	2.00	2.00	0.00
1,720.0	26.16	143.00	1,673.8	-238.6	179.8	298.6	0.00	0.00	0.00
1,760.0	26.16	143.00	1,709.7	-252.7	190.4	316.3	0.00	0.00	0.00
1,800.0	26.16	143.00	1,745.6	-266.8	201.0	333.9	0.00	0.00	0.00
1,840.0	26.16	143.00	1,781.5	-280.8	211.6	351.5	0.00	0.00	0.00
1,880.0	26.16	143.00	1,817.4	-294.9	222.2	369.1	0.00	0.00	0.00
1,920.0	26.16	143.00	1,853.3	-309.0	232.9	386.8	0.00	0.00	0.00
1,960.0	26.16	143.00	1,889.2	-323.1	243.5	404.4	0.00	0.00	0.00
2,000.0	26.16	143.00	1,925.1	-337.2	254.1	422.0	0.00	0.00	0.00

Database:	Landmark	Local Co-ordinate Reference:	Well Oster C19-27D
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 C18-32 Pad Sec.18-T4N-R64W	North Reference:	True
Well:	Oster C19-27D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Noble Oster C19-27D 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	26.16	143.00	1,961.0	-351.3	264.7	439.7	0.00	0.00	0.00
2,080.0	26.16	143.00	1,996.9	-365.3	275.3	457.3	0.00	0.00	0.00
2,120.0	26.16	143.00	2,032.8	-379.4	285.9	474.9	0.00	0.00	0.00
2,160.0	26.16	143.00	2,068.7	-393.5	296.5	492.5	0.00	0.00	0.00
2,200.0	26.16	143.00	2,104.6	-407.6	307.1	510.2	0.00	0.00	0.00
2,240.0	26.16	143.00	2,140.5	-421.7	317.8	527.8	0.00	0.00	0.00
2,280.0	26.16	143.00	2,176.4	-435.8	328.4	545.4	0.00	0.00	0.00
2,320.0	26.16	143.00	2,212.3	-449.8	339.0	563.1	0.00	0.00	0.00
2,360.0	26.16	143.00	2,248.2	-463.9	349.6	580.7	0.00	0.00	0.00
2,400.0	26.16	143.00	2,284.1	-478.0	360.2	598.3	0.00	0.00	0.00
2,440.0	26.16	143.00	2,320.0	-492.1	370.8	615.9	0.00	0.00	0.00
2,480.0	26.16	143.00	2,355.9	-506.2	381.4	633.6	0.00	0.00	0.00
2,520.0	26.16	143.00	2,391.9	-520.3	392.0	651.2	0.00	0.00	0.00
2,560.0	26.16	143.00	2,427.8	-534.4	402.7	668.8	0.00	0.00	0.00
2,600.0	26.16	143.00	2,463.7	-548.4	413.3	686.5	0.00	0.00	0.00
2,640.0	26.16	143.00	2,499.6	-562.5	423.9	704.1	0.00	0.00	0.00
2,680.0	26.16	143.00	2,535.5	-576.6	434.5	721.7	0.00	0.00	0.00
2,720.0	26.16	143.00	2,571.4	-590.7	445.1	739.4	0.00	0.00	0.00
2,760.0	26.16	143.00	2,607.3	-604.8	455.7	757.0	0.00	0.00	0.00
2,800.0	26.16	143.00	2,643.2	-618.9	466.3	774.6	0.00	0.00	0.00
2,840.0	26.16	143.00	2,679.1	-632.9	477.0	792.2	0.00	0.00	0.00
2,880.0	26.16	143.00	2,715.0	-647.0	487.6	809.9	0.00	0.00	0.00
2,920.0	26.16	143.00	2,750.9	-661.1	498.2	827.5	0.00	0.00	0.00
2,960.0	26.16	143.00	2,786.8	-675.2	508.8	845.1	0.00	0.00	0.00
3,000.0	26.16	143.00	2,822.7	-689.3	519.4	862.8	0.00	0.00	0.00
3,040.0	26.16	143.00	2,858.6	-703.4	530.0	880.4	0.00	0.00	0.00
3,080.0	26.16	143.00	2,894.5	-717.4	540.6	898.0	0.00	0.00	0.00
3,120.0	26.16	143.00	2,930.4	-731.5	551.2	915.6	0.00	0.00	0.00
3,160.0	26.16	143.00	2,966.3	-745.6	561.9	933.3	0.00	0.00	0.00
3,200.0	26.16	143.00	3,002.2	-759.7	572.5	950.9	0.00	0.00	0.00
3,240.0	26.16	143.00	3,038.1	-773.8	583.1	968.5	0.00	0.00	0.00
3,280.0	26.16	143.00	3,074.0	-787.9	593.7	986.2	0.00	0.00	0.00
3,320.0	26.16	143.00	3,109.9	-801.9	604.3	1,003.8	0.00	0.00	0.00
3,360.0	26.16	143.00	3,145.8	-816.0	614.9	1,021.4	0.00	0.00	0.00
3,400.0	26.16	143.00	3,181.7	-830.1	625.5	1,039.0	0.00	0.00	0.00
3,440.0	26.16	143.00	3,217.6	-844.2	636.2	1,056.7	0.00	0.00	0.00
3,480.0	26.16	143.00	3,253.5	-858.3	646.8	1,074.3	0.00	0.00	0.00
3,520.0	26.16	143.00	3,289.4	-872.4	657.4	1,091.9	0.00	0.00	0.00
3,560.0	26.16	143.00	3,325.3	-886.5	668.0	1,109.6	0.00	0.00	0.00
3,600.0	26.16	143.00	3,361.2	-900.5	678.6	1,127.2	0.00	0.00	0.00
3,640.0	26.16	143.00	3,397.1	-914.6	689.2	1,144.8	0.00	0.00	0.00
3,680.0	26.16	143.00	3,433.0	-928.7	699.8	1,162.4	0.00	0.00	0.00
3,720.0	26.16	143.00	3,468.9	-942.8	710.4	1,180.1	0.00	0.00	0.00
3,760.0	26.16	143.00	3,504.8	-956.9	721.1	1,197.7	0.00	0.00	0.00
3,800.0	26.16	143.00	3,540.7	-971.0	731.7	1,215.3	0.00	0.00	0.00
3,840.0	26.16	143.00	3,576.6	-985.0	742.3	1,233.0	0.00	0.00	0.00
3,880.0	26.16	143.00	3,612.5	-999.1	752.9	1,250.6	0.00	0.00	0.00
3,920.0	26.16	143.00	3,648.4	-1,013.2	763.5	1,268.2	0.00	0.00	0.00
3,960.0	26.16	143.00	3,684.3	-1,027.3	774.1	1,285.8	0.00	0.00	0.00
4,000.0	26.16	143.00	3,720.2	-1,041.4	784.7	1,303.5	0.00	0.00	0.00
4,040.0	26.16	143.00	3,756.2	-1,055.5	795.3	1,321.1	0.00	0.00	0.00
4,080.0	26.16	143.00	3,792.1	-1,069.5	806.0	1,338.7	0.00	0.00	0.00
4,120.0	26.16	143.00	3,828.0	-1,083.6	816.6	1,356.4	0.00	0.00	0.00
4,160.0	26.16	143.00	3,863.9	-1,097.7	827.2	1,374.0	0.00	0.00	0.00

Database:	Landmark	Local Co-ordinate Reference:	Well Oster C19-27D
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 C18-32 Pad Sec.18-T4N-R64W	North Reference:	True
Well:	Oster C19-27D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Noble Oster C19-27D 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)
4,200.0	26.16	143.00	3,899.8	-1,111.8	837.8	1,391.6	0.00	0.00	0.00
4,240.0	26.16	143.00	3,935.7	-1,125.9	848.4	1,409.2	0.00	0.00	0.00
4,280.0	26.16	143.00	3,971.6	-1,140.0	859.0	1,426.9	0.00	0.00	0.00
4,320.0	26.16	143.00	4,007.5	-1,154.0	869.6	1,444.5	0.00	0.00	0.00
4,360.0	26.16	143.00	4,043.4	-1,168.1	880.3	1,462.1	0.00	0.00	0.00
4,400.0	26.16	143.00	4,079.3	-1,182.2	890.9	1,479.8	0.00	0.00	0.00
4,440.0	26.16	143.00	4,115.2	-1,196.3	901.5	1,497.4	0.00	0.00	0.00
4,480.0	26.16	143.00	4,151.1	-1,210.4	912.1	1,515.0	0.00	0.00	0.00
4,520.0	26.16	143.00	4,187.0	-1,224.5	922.7	1,532.6	0.00	0.00	0.00
4,560.0	26.16	143.00	4,222.9	-1,238.6	933.3	1,550.3	0.00	0.00	0.00
4,600.0	26.16	143.00	4,258.8	-1,252.6	943.9	1,567.9	0.00	0.00	0.00
4,640.0	26.16	143.00	4,294.7	-1,266.7	954.5	1,585.5	0.00	0.00	0.00
4,680.0	26.16	143.00	4,330.6	-1,280.8	965.2	1,603.2	0.00	0.00	0.00
4,720.0	26.16	143.00	4,366.5	-1,294.9	975.8	1,620.8	0.00	0.00	0.00
4,760.0	26.16	143.00	4,402.4	-1,309.0	986.4	1,638.4	0.00	0.00	0.00
4,800.0	26.16	143.00	4,438.3	-1,323.1	997.0	1,656.0	0.00	0.00	0.00
4,840.0	26.16	143.00	4,474.2	-1,337.1	1,007.6	1,673.7	0.00	0.00	0.00
4,880.0	26.16	143.00	4,510.1	-1,351.2	1,018.2	1,691.3	0.00	0.00	0.00
4,920.0	26.16	143.00	4,546.0	-1,365.3	1,028.8	1,708.9	0.00	0.00	0.00
4,960.0	26.16	143.00	4,581.9	-1,379.4	1,039.4	1,726.6	0.00	0.00	0.00
5,000.0	26.16	143.00	4,617.8	-1,393.5	1,050.1	1,744.2	0.00	0.00	0.00
5,040.0	26.16	143.00	4,653.7	-1,407.6	1,060.7	1,761.8	0.00	0.00	0.00
5,080.0	26.16	143.00	4,689.6	-1,421.6	1,071.3	1,779.4	0.00	0.00	0.00
5,120.0	26.16	143.00	4,725.5	-1,435.7	1,081.9	1,797.1	0.00	0.00	0.00
5,160.0	26.16	143.00	4,761.4	-1,449.8	1,092.5	1,814.7	0.00	0.00	0.00
5,200.0	26.16	143.00	4,797.3	-1,463.9	1,103.1	1,832.3	0.00	0.00	0.00
5,240.0	26.16	143.00	4,833.2	-1,478.0	1,113.7	1,850.0	0.00	0.00	0.00
5,280.0	26.16	143.00	4,869.1	-1,492.1	1,124.4	1,867.6	0.00	0.00	0.00
5,320.0	26.16	143.00	4,905.0	-1,506.2	1,135.0	1,885.2	0.00	0.00	0.00
5,360.0	26.16	143.00	4,940.9	-1,520.2	1,145.6	1,902.8	0.00	0.00	0.00
5,400.0	26.16	143.00	4,976.8	-1,534.3	1,156.2	1,920.5	0.00	0.00	0.00
5,408.0	26.16	143.00	4,984.0	-1,537.1	1,158.3	1,924.0	0.00	0.00	0.00
5,440.0	26.14	144.88	5,012.7	-1,548.5	1,166.6	1,938.1	2.59	-0.06	5.88
5,480.0	26.15	147.23	5,048.7	-1,563.2	1,176.5	1,955.7	2.59	0.02	5.88
5,485.3	26.15	147.54	5,053.4	-1,565.1	1,177.7	1,958.1	2.59	0.08	5.87
5,520.0	26.15	147.54	5,084.6	-1,578.0	1,185.9	1,973.3	0.00	0.00	0.00
5,560.0	26.15	147.54	5,120.5	-1,592.9	1,195.4	1,990.9	0.00	0.00	0.00
5,600.0	26.15	147.54	5,156.4	-1,607.8	1,204.8	2,008.5	0.00	0.00	0.00
5,640.0	26.15	147.54	5,192.3	-1,622.7	1,214.3	2,026.1	0.00	0.00	0.00
5,680.0	26.15	147.54	5,228.2	-1,637.5	1,223.8	2,043.8	0.00	0.00	0.00
5,720.0	26.15	147.54	5,264.1	-1,652.4	1,233.2	2,061.4	0.00	0.00	0.00
5,760.0	26.15	147.54	5,300.0	-1,667.3	1,242.7	2,079.0	0.00	0.00	0.00
5,800.0	26.15	147.54	5,335.9	-1,682.2	1,252.2	2,096.6	0.00	0.00	0.00
5,840.0	26.15	147.54	5,371.8	-1,697.1	1,261.6	2,114.2	0.00	0.00	0.00
5,880.0	26.15	147.54	5,407.7	-1,711.9	1,271.1	2,131.8	0.00	0.00	0.00
5,920.0	26.15	147.54	5,443.6	-1,726.8	1,280.5	2,149.4	0.00	0.00	0.00
5,960.0	26.15	147.54	5,479.5	-1,741.7	1,290.0	2,167.0	0.00	0.00	0.00
6,000.0	26.15	147.54	5,515.4	-1,756.6	1,299.5	2,184.6	0.00	0.00	0.00
6,040.0	26.15	147.54	5,551.3	-1,771.4	1,308.9	2,202.2	0.00	0.00	0.00
6,080.0	26.15	147.54	5,587.2	-1,786.3	1,318.4	2,219.8	0.00	0.00	0.00
6,120.0	26.15	147.54	5,623.1	-1,801.2	1,327.9	2,237.4	0.00	0.00	0.00
6,160.0	26.15	147.54	5,659.0	-1,816.1	1,337.3	2,255.0	0.00	0.00	0.00
6,200.0	26.15	147.54	5,694.9	-1,831.0	1,346.8	2,272.7	0.00	0.00	0.00
6,240.0	26.15	147.54	5,730.8	-1,845.8	1,356.2	2,290.3	0.00	0.00	0.00

Database:	Landmark	Local Co-ordinate Reference:	Well Oster C19-27D
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 C18-32 Pad Sec.18-T4N-R64W	North Reference:	True
Well:	Oster C19-27D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Noble Oster C19-27D 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	26.15	147.54	5,766.7	-1,860.7	1,365.7	2,307.9	0.00	0.00	0.00
6,320.0	26.15	147.54	5,802.6	-1,875.6	1,375.2	2,325.5	0.00	0.00	0.00
6,360.0	26.15	147.54	5,838.6	-1,890.5	1,384.6	2,343.1	0.00	0.00	0.00
6,400.0	26.15	147.54	5,874.5	-1,905.3	1,394.1	2,360.7	0.00	0.00	0.00
6,440.0	26.15	147.54	5,910.4	-1,920.2	1,403.6	2,378.3	0.00	0.00	0.00
6,480.0	26.15	147.54	5,946.3	-1,935.1	1,413.0	2,395.9	0.00	0.00	0.00
6,520.0	26.15	147.54	5,982.2	-1,950.0	1,422.5	2,413.5	0.00	0.00	0.00
6,560.0	26.15	147.54	6,018.1	-1,964.9	1,431.9	2,431.1	0.00	0.00	0.00
6,600.0	26.15	147.54	6,054.0	-1,979.7	1,441.4	2,448.7	0.00	0.00	0.00
6,640.0	26.15	147.54	6,089.9	-1,994.6	1,450.9	2,466.3	0.00	0.00	0.00
6,680.0	26.15	147.54	6,125.8	-2,009.5	1,460.3	2,483.9	0.00	0.00	0.00
6,720.0	26.15	147.54	6,161.7	-2,024.4	1,469.8	2,501.6	0.00	0.00	0.00
6,760.0	26.15	147.54	6,197.6	-2,039.2	1,479.2	2,519.2	0.00	0.00	0.00
6,800.0	26.15	147.54	6,233.5	-2,054.1	1,488.7	2,536.8	0.00	0.00	0.00
6,840.0	26.15	147.54	6,269.4	-2,069.0	1,498.2	2,554.4	0.00	0.00	0.00
6,880.0	26.15	147.54	6,305.3	-2,083.9	1,507.6	2,572.0	0.00	0.00	0.00
6,920.0	26.15	147.54	6,341.2	-2,098.7	1,517.1	2,589.6	0.00	0.00	0.00
6,960.0	26.15	147.54	6,377.1	-2,113.6	1,526.6	2,607.2	0.00	0.00	0.00
6,982.7	26.15	147.54	6,397.5	-2,122.1	1,531.9	2,617.2	0.00	0.00	0.00
7,000.0	25.51	147.54	6,413.1	-2,128.4	1,536.0	2,624.7	3.71	-3.71	0.00
7,040.0	24.03	147.54	6,449.4	-2,142.6	1,545.0	2,641.5	3.71	-3.71	0.00
7,080.0	22.54	147.54	6,486.1	-2,155.9	1,553.5	2,657.2	3.71	-3.71	0.00
7,120.0	21.06	147.54	6,523.3	-2,168.5	1,561.4	2,672.1	3.71	-3.71	0.00
7,148.6	20.00	147.54	6,550.0	-2,176.9	1,566.8	2,682.1	3.71	-3.71	0.00
DRILL TARGET 295°FSL, 1340°FEL									
7,160.0	20.00	147.54	6,560.8	-2,180.2	1,568.9	2,686.0	0.00	0.00	0.00
7,190.8	20.00	147.54	6,589.7	-2,189.1	1,574.6	2,696.5	0.00	0.00	0.00
BHL 75°FSL, 1200°FEL									
7,200.0	20.00	147.54	6,598.3	-2,191.7	1,576.2	2,699.7	0.00	0.00	0.00
7,240.0	20.00	147.54	6,635.9	-2,203.3	1,583.6	2,713.3	0.00	0.00	0.00
7,280.0	20.00	147.54	6,673.5	-2,214.8	1,590.9	2,727.0	0.00	0.00	0.00
7,320.0	20.00	147.54	6,711.1	-2,226.4	1,598.3	2,740.6	0.00	0.00	0.00
7,360.0	20.00	147.54	6,748.7	-2,237.9	1,605.6	2,754.3	0.00	0.00	0.00
7,400.0	20.00	147.54	6,786.3	-2,249.5	1,613.0	2,768.0	0.00	0.00	0.00
7,400.8	20.00	147.54	6,787.0	-2,249.7	1,613.1	2,768.2	0.00	0.00	0.00
NIOBRARA									
7,440.0	20.00	147.54	6,823.9	-2,261.0	1,620.3	2,781.6	0.00	0.00	0.00
7,460.5	20.00	147.54	6,843.2	-2,266.9	1,624.1	2,788.6	0.00	0.00	0.00
TARGET CIRCLE 75°FSL & 1200°FEL									
7,480.0	20.00	147.54	6,861.5	-2,272.6	1,627.6	2,795.3	0.00	0.00	0.00
7,520.0	20.00	147.54	6,899.0	-2,284.1	1,635.0	2,809.0	0.00	0.00	0.00
7,560.0	20.00	147.54	6,936.6	-2,295.6	1,642.3	2,822.6	0.00	0.00	0.00
7,600.0	20.00	147.54	6,974.2	-2,307.2	1,649.7	2,836.3	0.00	0.00	0.00
7,640.0	20.00	147.54	7,011.8	-2,318.7	1,657.0	2,849.9	0.00	0.00	0.00
7,680.0	20.00	147.54	7,049.4	-2,330.3	1,664.4	2,863.6	0.00	0.00	0.00
7,720.0	20.00	147.54	7,087.0	-2,341.8	1,671.7	2,877.3	0.00	0.00	0.00
7,751.9	20.00	147.54	7,117.0	-2,351.0	1,677.6	2,888.2	0.00	0.00	0.00
CODELL									
7,760.0	20.00	147.54	7,124.6	-2,353.4	1,679.0	2,890.9	0.00	0.00	0.00
7,800.0	20.00	147.54	7,162.2	-2,364.9	1,686.4	2,904.6	0.00	0.00	0.00
7,840.0	20.00	147.54	7,199.7	-2,376.4	1,693.7	2,918.2	0.00	0.00	0.00
7,880.0	20.00	147.54	7,237.3	-2,388.0	1,701.1	2,931.9	0.00	0.00	0.00
7,911.6	20.00	147.54	7,267.0	-2,397.1	1,706.9	2,942.7	0.00	0.00	0.00

Database:	Landmark	Local Co-ordinate Reference:	Well Oster C19-27D
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 C18-32 Pad Sec.18-T4N-R64W	North Reference:	True
Well:	Oster C19-27D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Noble Oster C19-27D 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)
HARD LINES 75'S OF BHL									

Targets

Target Name	- hit/miss target	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
DRILL TARGET 295'F	- plan hits target center	0.00	0.00	6,550.0	-2,176.9	1,566.8	1,355,587.39	3,254,100.63	40.305904	-104.588892
	- Point									
BHL 75'FSL, 1200'FE	- plan misses target center by 262.3ft at 7190.8ft MD (6589.7 TVD, -2189.1 N, 1574.6 E)	0.00	0.00	6,500.0	-2,397.1	1,706.9	1,355,368.69	3,254,243.01	40.305300	-104.588390
	- Point									
TARGET CIRCLE 75'	- plan misses target center by 164.2ft at 7460.5ft MD (6843.2 TVD, -2266.9 N, 1624.1 E)	0.00	0.00	6,787.0	-2,397.1	1,706.9	1,355,368.69	3,254,243.01	40.305300	-104.588390
	- Circle (radius 75.0)									
HARD LINES 75'S OF	- plan misses target center by 125.0ft at 7911.6ft MD (7267.0 TVD, -2397.1 N, 1706.9 E)	0.00	0.00	7,267.0	-2,472.1	1,806.9	1,355,294.69	3,254,343.72	40.305094	-104.588032
	- Polygon									
	Point 1			7,267.0	0.0	0.0	1,355,294.69	3,254,343.72		
	Point 2			7,267.0	0.0	-200.0	1,355,292.64	3,254,143.74		

Casing Points

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

Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
7,400.8	6,787.0	NIOBRARA		0.00	
7,751.9	7,117.0	CODELL		0.00	