

Well Name: Guttersen C33-33D

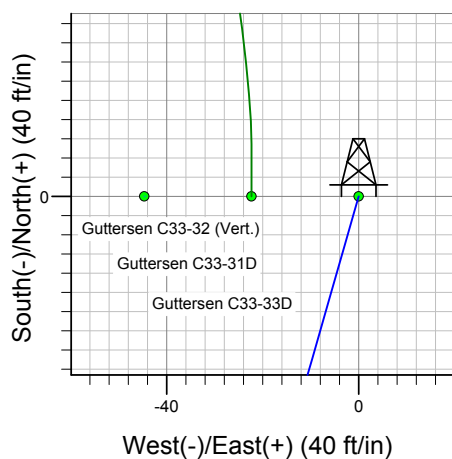
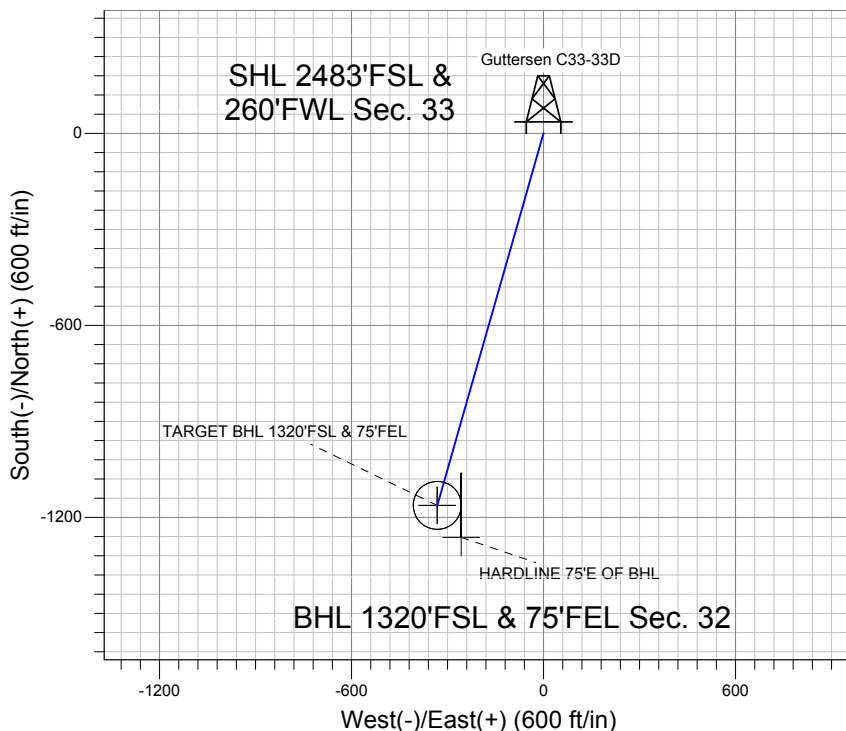
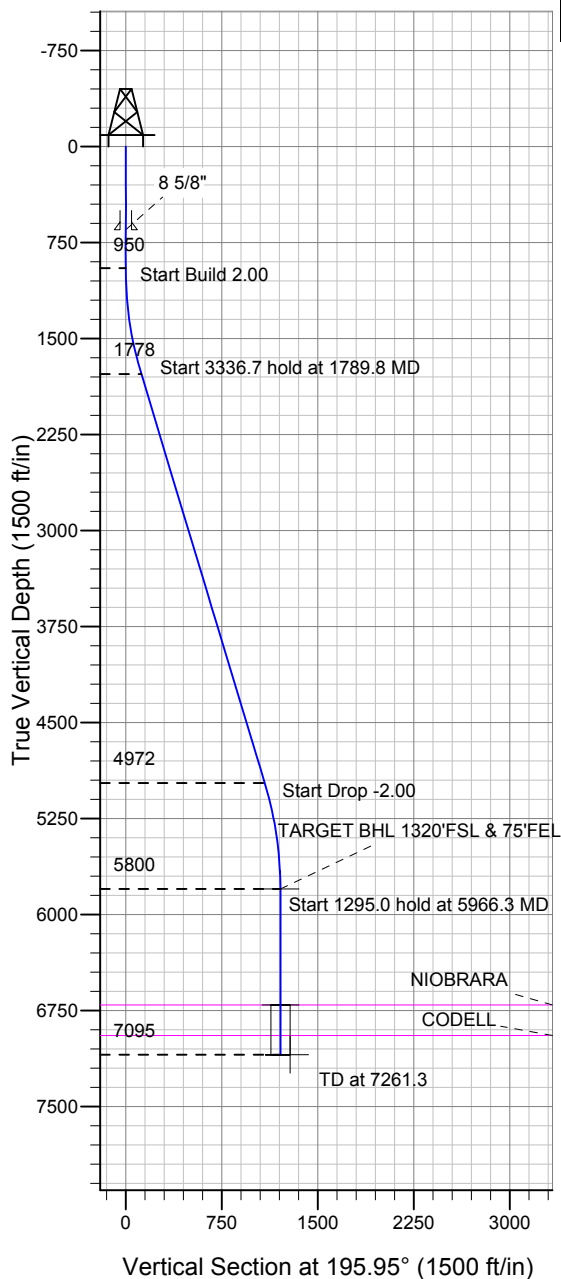
Surface Location: Guttersen C33-33D Pad Sec.33-T4N-R64W
North American Datum 1983, US State Plane 1983 Colorado Northern Zone

Ground Elevation: 4747.0

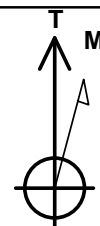
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1342051.33	3261060.74	40.268550	-104.564450	

Original Well EleWELL @ 4760.0ft (Original Well Elev)

NOBLE ENERGY INC WELD COUNTY CO



Guttersen C33-33D Pad Sec.33-T4N-R64W
Guttersen C33-33D
Noble Guttersen C33-33D Plan #1 (8-09-11)
17:32, August 12 2011



Azimuths to True North
Magnetic North: 8.72°
Magnetic Field
Strength: 53068.7snT
Dip Angle: 66.97°
Date: 8/9/2011
Model: IGRF2010

WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
TARGET BHL 1320'FSL & 75'FEL	5800.0	-1162.1	-332.1	40.265360	-104.565640	Point
TARGET CIRCLE 1320'FSL & 75'FEL	6706.0	-1162.1	-332.1	40.265360	-104.565640	Circle (Radius: 75.0)
HARDLINE 75'E OF BHL	7095.0	-1262.1	-257.1	40.265086	-104.565371	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	950.0	0.00	0.00	950.0	0.0	0.0	0.00	0.00	0.0	
3	1789.8	16.80	195.95	1777.8	-117.5	-33.6	2.00	195.95	122.2	
4	5126.5	16.80	195.95	4972.2	-1044.6	-298.5	0.00	0.00	1086.4	
5	5966.3	0.00	0.00	5800.0	-1162.1	-332.1	2.00	180.00	1208.6	TARGET BHL 1320'FSL & 75'FEL
6	7261.3	0.00	0.00	7095.0	-1162.1	-332.1	0.00	0.00	1208.6	



Directional

NOBLE ENERGY INC WELD COUNTY CO

SEC.33-T4N-R64W

Guttersen C33-33D Pad Sec.33-T4N-R64W

Guttersen C33-33D

Wellbore #1

Plan: Noble Guttersen C33-33D Plan #1 (8-09-11)

Standard Planning Report

12 August, 2011



Database:	Landmark	Local Co-ordinate Reference:	Well Guttersen C33-33D
Company:	NOBLE ENERGY INC WELD COUNTY CO	TVD Reference:	WELL @ 4760.0ft (Original Well Elev)
Project:	SEC.33-T4N-R64W	MD Reference:	WELL @ 4760.0ft (Original Well Elev)
Site:	Guttersen C33-33D Pad Sec.33-T4N-R64W	North Reference:	True
Well:	Guttersen C33-33D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Noble Guttersen C33-33D Plan #1 (8-09-11)		

Project	SEC.33-T4N-R64W, Weld County, CO		
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 Guttersen C33-33D Pad Sec.33-T4N-R64W					
Site Position:		Northing:		1,342,051.37 ft	
From:	Lat/Long	Easting:		Latitude:	40.268550
		3,261,060.74 ft		Longitude:	-104.564450
Position Uncertainty:		Slot Radius:		Grid Convergence:	
0.0 ft		"		0.60 °	

Well	Guttersen C33-33D					
Well Position	+N/-S	0.0 ft	Northing:	1,342,051.33 ft	Latitude:	40.268550
	+E/-W	0.0 ft	Easting:	3,261,060.74 ft	Longitude:	-104.564450
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,747.0 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	8/9/2011	8.73	66.97	53,069

Design	Noble Guttersen C33-33D Plan #1 (8-09-11)			
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	195.95

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	
950.0	0.00	0.00	950.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,789.8	16.80	195.95	1,777.8	-117.5	-33.6	2.00	2.00	0.00	195.95	
5,126.5	16.80	195.95	4,972.2	-1,044.6	-298.5	0.00	0.00	0.00	0.00	
5,966.3	0.00	0.00	5,800.0	-1,162.1	-332.1	2.00	-2.00	0.00	180.00	TARGET BHL 132C
7,261.3	0.00	0.00	7,095.0	-1,162.1	-332.1	0.00	0.00	0.00	0.00	

Database:	Landmark	Local Co-ordinate Reference:	Well Guttersen C33-33D
Company:	NOBLE ENERGY INC WELD COUNTY CO	TVD Reference:	WELL @ 4760.0ft (Original Well Elev)
Project:	SEC.33-T4N-R64W	MD Reference:	WELL @ 4760.0ft (Original Well Elev)
Site:	Guttersen C33-33D Pad Sec.33-T4N-R64W	North Reference:	True
Well:	Guttersen C33-33D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Noble Guttersen C33-33D Plan #1 (8-09-11)		

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
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
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
950.0	0.00	0.00	950.0	0.0	0.0	0.0	0.00	0.00	0.00
960.0	0.20	195.95	960.0	0.0	0.0	0.0	2.00	2.00	0.00
1,000.0	1.00	195.95	1,000.0	-0.4	-0.1	0.4	2.00	2.00	0.00
1,040.0	1.80	195.95	1,040.0	-1.4	-0.4	1.4	2.00	2.00	0.00
1,080.0	2.60	195.95	1,080.0	-2.8	-0.8	2.9	2.00	2.00	0.00
1,120.0	3.40	195.95	1,119.9	-4.8	-1.4	5.0	2.00	2.00	0.00
1,160.0	4.20	195.95	1,159.8	-7.4	-2.1	7.7	2.00	2.00	0.00
1,200.0	5.00	195.95	1,199.7	-10.5	-3.0	10.9	2.00	2.00	0.00
1,240.0	5.80	195.95	1,239.5	-14.1	-4.0	14.7	2.00	2.00	0.00
1,280.0	6.60	195.95	1,279.3	-18.3	-5.2	19.0	2.00	2.00	0.00
1,320.0	7.40	195.95	1,319.0	-22.9	-6.6	23.9	2.00	2.00	0.00
1,360.0	8.20	195.95	1,358.6	-28.2	-8.0	29.3	2.00	2.00	0.00
1,400.0	9.00	195.95	1,398.2	-33.9	-9.7	35.3	2.00	2.00	0.00
1,440.0	9.80	195.95	1,437.6	-40.2	-11.5	41.8	2.00	2.00	0.00
1,480.0	10.60	195.95	1,477.0	-47.0	-13.4	48.9	2.00	2.00	0.00
1,520.0	11.40	195.95	1,516.2	-54.3	-15.5	56.5	2.00	2.00	0.00
1,560.0	12.20	195.95	1,555.4	-62.2	-17.8	64.7	2.00	2.00	0.00
1,600.0	13.00	195.95	1,594.4	-70.6	-20.2	73.4	2.00	2.00	0.00
1,640.0	13.80	195.95	1,633.3	-79.5	-22.7	82.7	2.00	2.00	0.00
1,680.0	14.60	195.95	1,672.1	-88.9	-25.4	92.5	2.00	2.00	0.00
1,720.0	15.40	195.95	1,710.8	-98.9	-28.3	102.9	2.00	2.00	0.00
1,760.0	16.20	195.95	1,749.3	-109.4	-31.3	113.7	2.00	2.00	0.00
1,789.8	16.80	195.95	1,777.8	-117.5	-33.6	122.2	2.00	2.00	0.00
1,800.0	16.80	195.95	1,787.6	-120.3	-34.4	125.2	0.00	0.00	0.00
1,840.0	16.80	195.95	1,825.9	-131.5	-37.6	136.7	0.00	0.00	0.00
1,880.0	16.80	195.95	1,864.2	-142.6	-40.7	148.3	0.00	0.00	0.00
1,920.0	16.80	195.95	1,902.5	-153.7	-43.9	159.8	0.00	0.00	0.00
1,960.0	16.80	195.95	1,940.8	-164.8	-47.1	171.4	0.00	0.00	0.00

Database:	Landmark	Local Co-ordinate Reference:	Well Guttersen C33-33D
Company:	NOBLE ENERGY INC WELD COUNTY CO	TVD Reference:	WELL @ 4760.0ft (Original Well Elev)
Project:	SEC.33-T4N-R64W	MD Reference:	WELL @ 4760.0ft (Original Well Elev)
Site:	Guttersen C33-33D Pad Sec.33-T4N-R64W	North Reference:	True
Well:	Guttersen C33-33D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Noble Guttersen C33-33D Plan #1 (8-09-11)		

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	16.80	195.95	1,979.1	-175.9	-50.3	183.0	0.00	0.00	0.00
2,040.0	16.80	195.95	2,017.4	-187.0	-53.4	194.5	0.00	0.00	0.00
2,080.0	16.80	195.95	2,055.6	-198.1	-56.6	206.1	0.00	0.00	0.00
2,120.0	16.80	195.95	2,093.9	-209.3	-59.8	217.6	0.00	0.00	0.00
2,160.0	16.80	195.95	2,132.2	-220.4	-63.0	229.2	0.00	0.00	0.00
2,200.0	16.80	195.95	2,170.5	-231.5	-66.2	240.7	0.00	0.00	0.00
2,240.0	16.80	195.95	2,208.8	-242.6	-69.3	252.3	0.00	0.00	0.00
2,280.0	16.80	195.95	2,247.1	-253.7	-72.5	263.9	0.00	0.00	0.00
2,320.0	16.80	195.95	2,285.4	-264.8	-75.7	275.4	0.00	0.00	0.00
2,360.0	16.80	195.95	2,323.7	-275.9	-78.9	287.0	0.00	0.00	0.00
2,400.0	16.80	195.95	2,362.0	-287.0	-82.0	298.5	0.00	0.00	0.00
2,440.0	16.80	195.95	2,400.3	-298.2	-85.2	310.1	0.00	0.00	0.00
2,480.0	16.80	195.95	2,438.6	-309.3	-88.4	321.7	0.00	0.00	0.00
2,520.0	16.80	195.95	2,476.9	-320.4	-91.6	333.2	0.00	0.00	0.00
2,560.0	16.80	195.95	2,515.2	-331.5	-94.7	344.8	0.00	0.00	0.00
2,600.0	16.80	195.95	2,553.5	-342.6	-97.9	356.3	0.00	0.00	0.00
2,640.0	16.80	195.95	2,591.8	-353.7	-101.1	367.9	0.00	0.00	0.00
2,680.0	16.80	195.95	2,630.0	-364.8	-104.3	379.4	0.00	0.00	0.00
2,720.0	16.80	195.95	2,668.3	-376.0	-107.4	391.0	0.00	0.00	0.00
2,760.0	16.80	195.95	2,706.6	-387.1	-110.6	402.6	0.00	0.00	0.00
2,800.0	16.80	195.95	2,744.9	-398.2	-113.8	414.1	0.00	0.00	0.00
2,840.0	16.80	195.95	2,783.2	-409.3	-117.0	425.7	0.00	0.00	0.00
2,880.0	16.80	195.95	2,821.5	-420.4	-120.1	437.2	0.00	0.00	0.00
2,920.0	16.80	195.95	2,859.8	-431.5	-123.3	448.8	0.00	0.00	0.00
2,960.0	16.80	195.95	2,898.1	-442.6	-126.5	460.4	0.00	0.00	0.00
3,000.0	16.80	195.95	2,936.4	-453.8	-129.7	471.9	0.00	0.00	0.00
3,040.0	16.80	195.95	2,974.7	-464.9	-132.8	483.5	0.00	0.00	0.00
3,080.0	16.80	195.95	3,013.0	-476.0	-136.0	495.0	0.00	0.00	0.00
3,120.0	16.80	195.95	3,051.3	-487.1	-139.2	506.6	0.00	0.00	0.00
3,160.0	16.80	195.95	3,089.6	-498.2	-142.4	518.2	0.00	0.00	0.00
3,200.0	16.80	195.95	3,127.9	-509.3	-145.6	529.7	0.00	0.00	0.00
3,240.0	16.80	195.95	3,166.2	-520.4	-148.7	541.3	0.00	0.00	0.00
3,280.0	16.80	195.95	3,204.5	-531.5	-151.9	552.8	0.00	0.00	0.00
3,320.0	16.80	195.95	3,242.7	-542.7	-155.1	564.4	0.00	0.00	0.00
3,360.0	16.80	195.95	3,281.0	-553.8	-158.3	575.9	0.00	0.00	0.00
3,400.0	16.80	195.95	3,319.3	-564.9	-161.4	587.5	0.00	0.00	0.00
3,440.0	16.80	195.95	3,357.6	-576.0	-164.6	599.1	0.00	0.00	0.00
3,480.0	16.80	195.95	3,395.9	-587.1	-167.8	610.6	0.00	0.00	0.00
3,520.0	16.80	195.95	3,434.2	-598.2	-171.0	622.2	0.00	0.00	0.00
3,560.0	16.80	195.95	3,472.5	-609.3	-174.1	633.7	0.00	0.00	0.00
3,600.0	16.80	195.95	3,510.8	-620.5	-177.3	645.3	0.00	0.00	0.00
3,640.0	16.80	195.95	3,549.1	-631.6	-180.5	656.9	0.00	0.00	0.00
3,680.0	16.80	195.95	3,587.4	-642.7	-183.7	668.4	0.00	0.00	0.00
3,720.0	16.80	195.95	3,625.7	-653.8	-186.8	680.0	0.00	0.00	0.00
3,760.0	16.80	195.95	3,664.0	-664.9	-190.0	691.5	0.00	0.00	0.00
3,800.0	16.80	195.95	3,702.3	-676.0	-193.2	703.1	0.00	0.00	0.00
3,840.0	16.80	195.95	3,740.6	-687.1	-196.4	714.6	0.00	0.00	0.00
3,880.0	16.80	195.95	3,778.9	-698.3	-199.5	726.2	0.00	0.00	0.00
3,920.0	16.80	195.95	3,817.1	-709.4	-202.7	737.8	0.00	0.00	0.00
3,960.0	16.80	195.95	3,855.4	-720.5	-205.9	749.3	0.00	0.00	0.00
4,000.0	16.80	195.95	3,893.7	-731.6	-209.1	760.9	0.00	0.00	0.00
4,040.0	16.80	195.95	3,932.0	-742.7	-212.2	772.4	0.00	0.00	0.00
4,080.0	16.80	195.95	3,970.3	-753.8	-215.4	784.0	0.00	0.00	0.00
4,120.0	16.80	195.95	4,008.6	-764.9	-218.6	795.6	0.00	0.00	0.00

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Project:	SEC.33-T4N-R64W	MD Reference:	WELL @ 4760.0ft (Original Well Elev)
Site:	Guttersen C33-33D Pad Sec.33-T4N-R64W	North Reference:	True
Well:	Guttersen C33-33D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Noble Guttersen C33-33D Plan #1 (8-09-11)		

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	16.80	195.95	4,046.9	-776.1	-221.8	807.1	0.00	0.00	0.00
4,200.0	16.80	195.95	4,085.2	-787.2	-225.0	818.7	0.00	0.00	0.00
4,240.0	16.80	195.95	4,123.5	-798.3	-228.1	830.2	0.00	0.00	0.00
4,280.0	16.80	195.95	4,161.8	-809.4	-231.3	841.8	0.00	0.00	0.00
4,320.0	16.80	195.95	4,200.1	-820.5	-234.5	853.4	0.00	0.00	0.00
4,360.0	16.80	195.95	4,238.4	-831.6	-237.7	864.9	0.00	0.00	0.00
4,400.0	16.80	195.95	4,276.7	-842.7	-240.8	876.5	0.00	0.00	0.00
4,440.0	16.80	195.95	4,315.0	-853.8	-244.0	888.0	0.00	0.00	0.00
4,480.0	16.80	195.95	4,353.3	-865.0	-247.2	899.6	0.00	0.00	0.00
4,520.0	16.80	195.95	4,391.6	-876.1	-250.4	911.1	0.00	0.00	0.00
4,560.0	16.80	195.95	4,429.8	-887.2	-253.5	922.7	0.00	0.00	0.00
4,600.0	16.80	195.95	4,468.1	-898.3	-256.7	934.3	0.00	0.00	0.00
4,640.0	16.80	195.95	4,506.4	-909.4	-259.9	945.8	0.00	0.00	0.00
4,680.0	16.80	195.95	4,544.7	-920.5	-263.1	957.4	0.00	0.00	0.00
4,720.0	16.80	195.95	4,583.0	-931.6	-266.2	968.9	0.00	0.00	0.00
4,760.0	16.80	195.95	4,621.3	-942.8	-269.4	980.5	0.00	0.00	0.00
4,800.0	16.80	195.95	4,659.6	-953.9	-272.6	992.1	0.00	0.00	0.00
4,840.0	16.80	195.95	4,697.9	-965.0	-275.8	1,003.6	0.00	0.00	0.00
4,880.0	16.80	195.95	4,736.2	-976.1	-278.9	1,015.2	0.00	0.00	0.00
4,920.0	16.80	195.95	4,774.5	-987.2	-282.1	1,026.7	0.00	0.00	0.00
4,960.0	16.80	195.95	4,812.8	-998.3	-285.3	1,038.3	0.00	0.00	0.00
5,000.0	16.80	195.95	4,851.1	-1,009.4	-288.5	1,049.8	0.00	0.00	0.00
5,040.0	16.80	195.95	4,889.4	-1,020.6	-291.7	1,061.4	0.00	0.00	0.00
5,080.0	16.80	195.95	4,927.7	-1,031.7	-294.8	1,073.0	0.00	0.00	0.00
5,120.0	16.80	195.95	4,966.0	-1,042.8	-298.0	1,084.5	0.00	0.00	0.00
5,126.5	16.80	195.95	4,972.2	-1,044.6	-298.5	1,086.4	0.00	0.00	0.00
5,160.0	16.13	195.95	5,004.3	-1,053.7	-301.1	1,095.9	2.00	-2.00	0.00
5,200.0	15.33	195.95	5,042.8	-1,064.1	-304.1	1,106.7	2.00	-2.00	0.00
5,240.0	14.53	195.95	5,081.5	-1,074.0	-306.9	1,117.0	2.00	-2.00	0.00
5,280.0	13.73	195.95	5,120.2	-1,083.4	-309.6	1,126.8	2.00	-2.00	0.00
5,320.0	12.93	195.95	5,159.2	-1,092.3	-312.2	1,136.0	2.00	-2.00	0.00
5,360.0	12.13	195.95	5,198.2	-1,100.6	-314.5	1,144.7	2.00	-2.00	0.00
5,400.0	11.33	195.95	5,237.4	-1,108.5	-316.8	1,152.8	2.00	-2.00	0.00
5,440.0	10.53	195.95	5,276.7	-1,115.7	-318.9	1,160.4	2.00	-2.00	0.00
5,480.0	9.73	195.95	5,316.0	-1,122.5	-320.8	1,167.4	2.00	-2.00	0.00
5,520.0	8.93	195.95	5,355.5	-1,128.7	-322.6	1,173.9	2.00	-2.00	0.00
5,560.0	8.13	195.95	5,395.1	-1,134.4	-324.2	1,179.9	2.00	-2.00	0.00
5,600.0	7.33	195.95	5,434.7	-1,139.6	-325.7	1,185.2	2.00	-2.00	0.00
5,640.0	6.53	195.95	5,474.4	-1,144.2	-327.0	1,190.1	2.00	-2.00	0.00
5,680.0	5.73	195.95	5,514.2	-1,148.3	-328.2	1,194.3	2.00	-2.00	0.00
5,720.0	4.93	195.95	5,554.0	-1,151.9	-329.2	1,198.0	2.00	-2.00	0.00
5,760.0	4.13	195.95	5,593.9	-1,155.0	-330.1	1,201.2	2.00	-2.00	0.00
5,800.0	3.33	195.95	5,633.8	-1,157.5	-330.8	1,203.8	2.00	-2.00	0.00
5,840.0	2.53	195.95	5,673.7	-1,159.4	-331.3	1,205.8	2.00	-2.00	0.00
5,880.0	1.73	195.95	5,713.7	-1,160.8	-331.7	1,207.3	2.00	-2.00	0.00
5,920.0	0.93	195.95	5,753.7	-1,161.7	-332.0	1,208.2	2.00	-2.00	0.00
5,960.0	0.13	195.95	5,793.7	-1,162.1	-332.1	1,208.6	2.00	-2.00	0.00
5,966.3	0.00	0.00	5,800.0	-1,162.1	-332.1	1,208.6	2.00	-2.00	0.00
TARGET BHL 1320'FSL & 75'FEL									
6,000.0	0.00	0.00	5,833.7	-1,162.1	-332.1	1,208.6	0.00	0.00	0.00
6,040.0	0.00	0.00	5,873.7	-1,162.1	-332.1	1,208.6	0.00	0.00	0.00
6,080.0	0.00	0.00	5,913.7	-1,162.1	-332.1	1,208.6	0.00	0.00	0.00
6,120.0	0.00	0.00	5,953.7	-1,162.1	-332.1	1,208.6	0.00	0.00	0.00
6,160.0	0.00	0.00	5,993.7	-1,162.1	-332.1	1,208.6	0.00	0.00	0.00

Database:	Landmark	Local Co-ordinate Reference:	Well Guttersen C33-33D
Company:	NOBLE ENERGY INC WELD COUNTY CO	TVD Reference:	WELL @ 4760.0ft (Original Well Elev)
Project:	SEC.33-T4N-R64W	MD Reference:	WELL @ 4760.0ft (Original Well Elev)
Site:	Guttersen C33-33D Pad Sec.33-T4N-R64W	North Reference:	True
Well:	Guttersen C33-33D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Noble Guttersen C33-33D Plan #1 (8-09-11)		

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	6,033.7	-1,162.1	-332.1	1,208.6	0.00	0.00	0.00
6,240.0	0.00	0.00	6,073.7	-1,162.1	-332.1	1,208.6	0.00	0.00	0.00
6,280.0	0.00	0.00	6,113.7	-1,162.1	-332.1	1,208.6	0.00	0.00	0.00
6,320.0	0.00	0.00	6,153.7	-1,162.1	-332.1	1,208.6	0.00	0.00	0.00
6,360.0	0.00	0.00	6,193.7	-1,162.1	-332.1	1,208.6	0.00	0.00	0.00
6,400.0	0.00	0.00	6,233.7	-1,162.1	-332.1	1,208.6	0.00	0.00	0.00
6,440.0	0.00	0.00	6,273.7	-1,162.1	-332.1	1,208.6	0.00	0.00	0.00
6,480.0	0.00	0.00	6,313.7	-1,162.1	-332.1	1,208.6	0.00	0.00	0.00
6,520.0	0.00	0.00	6,353.7	-1,162.1	-332.1	1,208.6	0.00	0.00	0.00
6,560.0	0.00	0.00	6,393.7	-1,162.1	-332.1	1,208.6	0.00	0.00	0.00
6,600.0	0.00	0.00	6,433.7	-1,162.1	-332.1	1,208.6	0.00	0.00	0.00
6,640.0	0.00	0.00	6,473.7	-1,162.1	-332.1	1,208.6	0.00	0.00	0.00
6,680.0	0.00	0.00	6,513.7	-1,162.1	-332.1	1,208.6	0.00	0.00	0.00
6,720.0	0.00	0.00	6,553.7	-1,162.1	-332.1	1,208.6	0.00	0.00	0.00
6,760.0	0.00	0.00	6,593.7	-1,162.1	-332.1	1,208.6	0.00	0.00	0.00
6,800.0	0.00	0.00	6,633.7	-1,162.1	-332.1	1,208.6	0.00	0.00	0.00
6,840.0	0.00	0.00	6,673.7	-1,162.1	-332.1	1,208.6	0.00	0.00	0.00
6,872.3	0.00	0.00	6,706.0	-1,162.1	-332.1	1,208.6	0.00	0.00	0.00
NIORARA - TARGET CIRCLE 1320'FSL & 75'FEL									
6,880.0	0.00	0.00	6,713.7	-1,162.1	-332.1	1,208.6	0.00	0.00	0.00
6,920.0	0.00	0.00	6,753.7	-1,162.1	-332.1	1,208.6	0.00	0.00	0.00
6,960.0	0.00	0.00	6,793.7	-1,162.1	-332.1	1,208.6	0.00	0.00	0.00
7,000.0	0.00	0.00	6,833.7	-1,162.1	-332.1	1,208.6	0.00	0.00	0.00
7,040.0	0.00	0.00	6,873.7	-1,162.1	-332.1	1,208.6	0.00	0.00	0.00
7,080.0	0.00	0.00	6,913.7	-1,162.1	-332.1	1,208.6	0.00	0.00	0.00
7,111.3	0.00	0.00	6,945.0	-1,162.1	-332.1	1,208.6	0.00	0.00	0.00
CODELL									
7,120.0	0.00	0.00	6,953.7	-1,162.1	-332.1	1,208.6	0.00	0.00	0.00
7,160.0	0.00	0.00	6,993.7	-1,162.1	-332.1	1,208.6	0.00	0.00	0.00
7,200.0	0.00	0.00	7,033.7	-1,162.1	-332.1	1,208.6	0.00	0.00	0.00
7,240.0	0.00	0.00	7,073.7	-1,162.1	-332.1	1,208.6	0.00	0.00	0.00
7,261.3	0.00	0.00	7,095.0	-1,162.1	-332.1	1,208.6	0.00	0.00	0.00
HARDLINE 75'E OF BHL									

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									
TARGET CIRCLE 1320'FSL	0.00	0.00	6,706.0	-1,162.1	-332.1	1,340,885.85	3,260,740.93	40.265360	-104.565640
- plan hits target center									
- Circle (radius 75.0)									
TARGET BHL 1320'FEL	0.00	0.00	5,800.0	-1,162.1	-332.1	1,340,885.85	3,260,740.93	40.265360	-104.565640
- plan hits target center									
- Point									
HARDLINE 75'E OF BHL	0.00	0.00	7,095.0	-1,262.1	-257.1	1,340,786.66	3,260,816.98	40.265086	-104.565371
- plan misses target center by 125.0ft at 7261.3ft MD (7095.0 TVD, -1162.1 N, -332.1 E)									
- Polygon									
Point 1			7,095.0	0.0	0.0	1,340,786.66	3,260,816.98		
Point 2			7,095.0	200.0	0.0	1,340,986.64	3,260,814.87		

Database:	Landmark	Local Co-ordinate Reference:	Well Guttersen C33-33D
Company:	NOBLE ENERGY INC WELD COUNTY CO	TVD Reference:	WELL @ 4760.0ft (Original Well Elev)
Project:	SEC.33-T4N-R64W	MD Reference:	WELL @ 4760.0ft (Original Well Elev)
Site:	Guttersen C33-33D Pad Sec.33-T4N-R64W	North Reference:	True
Well:	Guttersen C33-33D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Noble Guttersen C33-33D Plan #1 (8-09-11)		

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 (°)	Dip Direction (°)
6,872.3	6,706.0	NIOBRARA		0.00	
7,111.3	6,945.0	CODELL		0.00	