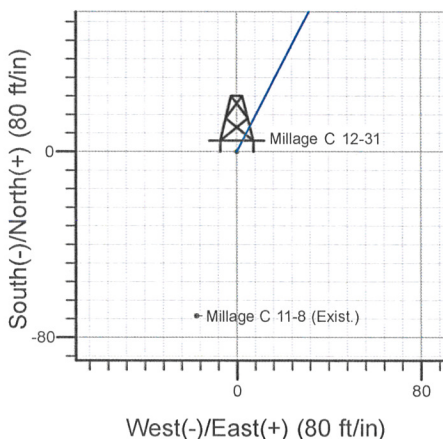
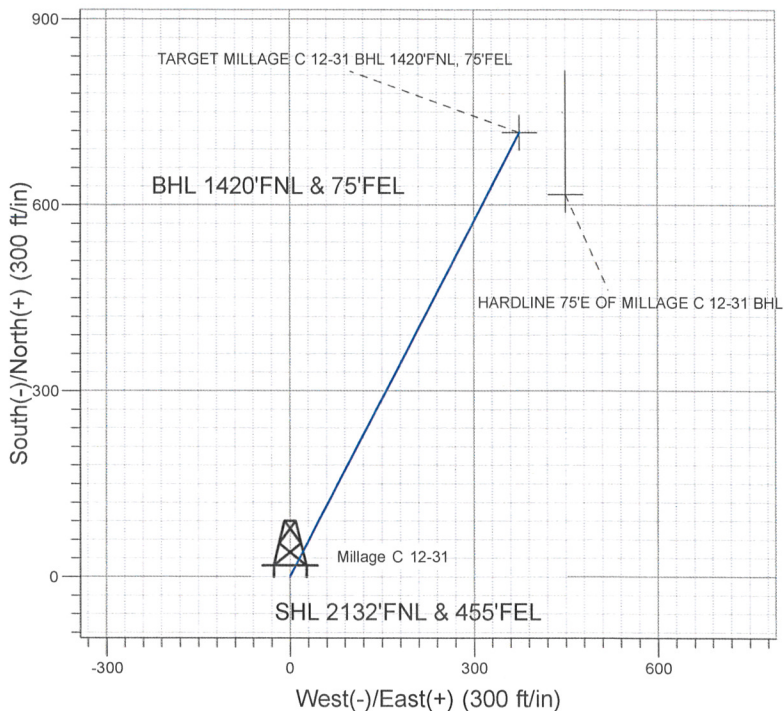
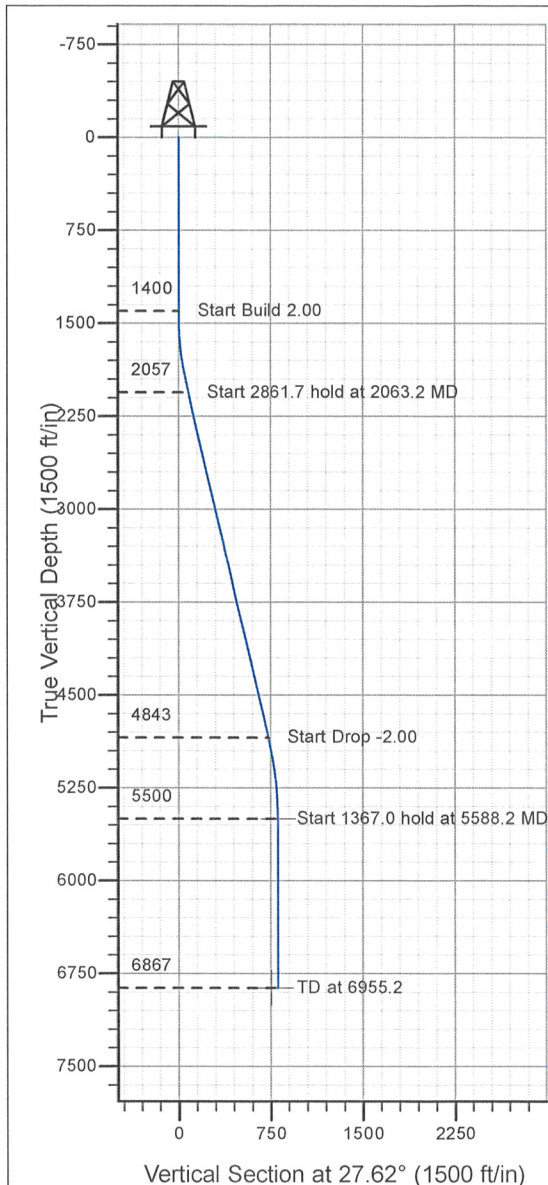


Well Name: Millage C 12-31

Surface Location: Millage Pad Sec.11-T4N-R64W
 North American Datum 1983 , US State Plane 1983 , Colorado Northern Zone
 Ground Elevation: 4623.0
 +N/-S+E/-W Northing Easting Latitude Longitude Slot
 0.0 0.0 1363988.79 3276033.35 40° 19' 41.952 N 104° 30' 35.712 W
 Original Well Elev WELL @ 4636.0ft (Original Well Elev)

NOBLE ENERGY INC WELD COUNTY CO



Azimuths to True North
 Magnetic North: 9.05°
 Magnetic Field
 Strength: 53427.5snT
 Dip Angle: 67.14°
 Date: 9/22/2008
 Model: IGRF200510

WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
TARGET MILLAGE C 12-31 BHL 1420'FNL, 75'FEL	5500.0	717.2	375.3	40° 19' 49.039 N	104° 30' 30.866 W	Point
HARDLINE 75'E OF MILLAGE C 12-31 BHL	6867.0	617.2	450.3	40° 19' 48.051 N	104° 30' 29.898 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	1400.0	0.00	0.00	1400.0	0.0	0.0	0.00	0.00	0.0	
3	2063.2	13.26	27.62	2057.3	67.7	35.4	2.00	27.62	76.4	
4	4924.9	13.26	27.62	4842.7	649.5	339.8	0.00	0.00	733.1	
5	5588.2	0.00	0.00	5500.0	717.2	375.3	2.00	180.00	809.5	TARGET MILLAGE C 12-31 BHL 1420'FNL, 75'FEL
6	6955.2	0.00	0.00	6867.0	717.2	375.3	0.00	0.00	809.5	



Directional

NOBLE ENERGY INC WELD COUNTY CO

SEC.11-T4N-R64W

Millage Pad Sec.11-T4N-R64W

Millage C 12-31

Millage C 12-31

Plan: Millage C 12-31

Standard Planning Report

22 September, 2008



Database: EDM den0-adp01 Server Data
Company: NOBLE ENERGY INC WELD COUNTY CO
Project: SEC.11-T4N-R64W
Site: Millage Pad Sec.11-T4N-R64W
Well: Millage C 12-31
Wellbore: Millage C 12-31
Design: Millage C 12-31

Local Co-ordinate Reference: Well Millage C 12-31
TVD Reference: WELL @ 4636.0ft (Original Well Elev)
MD Reference: WELL @ 4636.0ft (Original Well Elev)
North Reference: True
Survey Calculation Method: Minimum Curvature

Project SEC.11-T4N-R64W, Weld County, Colorado

Map System: US State Plane 1983
Geo Datum: North American Datum 1983
Map Zone: Colorado Northern Zone

System Datum: Mean Sea Level
 Using Well Reference Point
 Using geodetic scale factor

Site Millage Pad Sec.11-T4N-R64W

Site Position:
From: Lat/Long
Position Uncertainty: 0.0 ft

Northing: 1,363,988.80 ft
Easting: 3,276,033.35 ft
Slot Radius: "

Latitude: 40° 19' 41.952 N
Longitude: 104° 30' 35.712 W
Grid Convergence: 0.64 °

Well Millage C 12-31

Well Position +N/-S 0.0 ft
 +E/-W 0.0 ft
Position Uncertainty 0.0 ft

Northing: 1,363,988.79 ft
Easting: 3,276,033.35 ft
Wellhead Elevation: ft

Latitude: 40° 19' 41.952 N
Longitude: 104° 30' 35.712 W
Ground Level: 4,623.0 ft

Wellbore Millage C 12-31

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	9/22/2008	9.05	67.14	53,428

Design Millage C 12-31

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	27.62

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	
1,400.0	0.00	0.00	1,400.0	0.0	0.0	0.00	0.00	0.00	0.00	
2,063.2	13.26	27.62	2,057.3	67.7	35.4	2.00	2.00	0.00	27.62	
4,924.9	13.26	27.62	4,842.7	649.5	339.8	0.00	0.00	0.00	0.00	
5,588.2	0.00	0.00	5,500.0	717.2	375.3	2.00	-2.00	0.00	180.00	TARGET MILLAGE
6,955.2	0.00	0.00	6,867.0	717.2	375.3	0.00	0.00	0.00	0.00	

Database:	EDM den0-adp01 Server Data	Local Co-ordinate Reference:	Well Millage C 12-31
Company:	NOBLE ENERGY INC WELD COUNTY CO	TVD Reference:	WELL @ 4636.0ft (Original Well Elev)
Project:	SEC.11-T4N-R64W	MD Reference:	WELL @ 4636.0ft (Original Well Elev)
Site:	Millage Pad Sec.11-T4N-R64W	North Reference:	True
Well:	Millage C 12-31	Survey Calculation Method:	Minimum Curvature
Wellbore:	Millage C 12-31		
Design:	Millage C 12-31		

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
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
960.0	0.00	0.00	960.0	0.0	0.0	0.0	0.00	0.00	0.00
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.0	0.00	0.00	0.00
1,040.0	0.00	0.00	1,040.0	0.0	0.0	0.0	0.00	0.00	0.00
1,080.0	0.00	0.00	1,080.0	0.0	0.0	0.0	0.00	0.00	0.00
1,120.0	0.00	0.00	1,120.0	0.0	0.0	0.0	0.00	0.00	0.00
1,160.0	0.00	0.00	1,160.0	0.0	0.0	0.0	0.00	0.00	0.00
1,200.0	0.00	0.00	1,200.0	0.0	0.0	0.0	0.00	0.00	0.00
1,240.0	0.00	0.00	1,240.0	0.0	0.0	0.0	0.00	0.00	0.00
1,280.0	0.00	0.00	1,280.0	0.0	0.0	0.0	0.00	0.00	0.00
1,320.0	0.00	0.00	1,320.0	0.0	0.0	0.0	0.00	0.00	0.00
1,360.0	0.00	0.00	1,360.0	0.0	0.0	0.0	0.00	0.00	0.00
1,400.0	0.00	0.00	1,400.0	0.0	0.0	0.0	0.00	0.00	0.00
1,440.0	0.80	27.62	1,440.0	0.2	0.1	0.3	2.00	2.00	0.00
1,480.0	1.60	27.62	1,480.0	1.0	0.5	1.1	2.00	2.00	0.00
1,520.0	2.40	27.62	1,520.0	2.2	1.2	2.5	2.00	2.00	0.00
1,560.0	3.20	27.62	1,559.9	4.0	2.1	4.5	2.00	2.00	0.00
1,600.0	4.00	27.62	1,599.8	6.2	3.2	7.0	2.00	2.00	0.00
1,640.0	4.80	27.62	1,639.7	8.9	4.7	10.0	2.00	2.00	0.00
1,680.0	5.60	27.62	1,679.6	12.1	6.3	13.7	2.00	2.00	0.00
1,720.0	6.40	27.62	1,719.3	15.8	8.3	17.9	2.00	2.00	0.00
1,760.0	7.20	27.62	1,759.1	20.0	10.5	22.6	2.00	2.00	0.00
1,800.0	8.00	27.62	1,798.7	24.7	12.9	27.9	2.00	2.00	0.00
1,840.0	8.80	27.62	1,838.3	29.9	15.6	33.7	2.00	2.00	0.00
1,880.0	9.60	27.62	1,877.8	35.5	18.6	40.1	2.00	2.00	0.00
1,920.0	10.40	27.62	1,917.1	41.7	21.8	47.1	2.00	2.00	0.00
1,960.0	11.20	27.62	1,956.4	48.3	25.3	54.6	2.00	2.00	0.00
2,000.0	12.00	27.62	1,995.6	55.5	29.0	62.6	2.00	2.00	0.00
2,040.0	12.80	27.62	2,034.7	63.1	33.0	71.2	2.00	2.00	0.00
2,063.2	13.26	27.62	2,057.3	67.7	35.4	76.4	2.00	2.00	0.00
2,080.0	13.26	27.62	2,073.6	71.1	37.2	80.3	0.00	0.00	0.00

Database:	EDM den0-adp01 Server Data	Local Co-ordinate Reference:	Well Millage C 12-31
Company:	NOBLE ENERGY INC WELD COUNTY CO	TVD Reference:	WELL @ 4636.0ft (Original Well Elev)
Project:	SEC.11-T4N-R64W	MD Reference:	WELL @ 4636.0ft (Original Well Elev)
Site:	Millage Pad Sec.11-T4N-R64W	North Reference:	True
Well:	Millage C 12-31	Survey Calculation Method:	Minimum Curvature
Wellbore:	Millage C 12-31		
Design:	Millage C 12-31		

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)
2,120.0	13.26	27.62	2,112.6	79.3	41.5	89.5	0.00	0.00	0.00
2,160.0	13.26	27.62	2,151.5	87.4	45.7	98.6	0.00	0.00	0.00
2,200.0	13.26	27.62	2,190.4	95.5	50.0	107.8	0.00	0.00	0.00
2,240.0	13.26	27.62	2,229.4	103.7	54.2	117.0	0.00	0.00	0.00
2,280.0	13.26	27.62	2,268.3	111.8	58.5	126.2	0.00	0.00	0.00
2,320.0	13.26	27.62	2,307.2	119.9	62.7	135.3	0.00	0.00	0.00
2,360.0	13.26	27.62	2,346.2	128.1	67.0	144.5	0.00	0.00	0.00
2,400.0	13.26	27.62	2,385.1	136.2	71.3	153.7	0.00	0.00	0.00
2,440.0	13.26	27.62	2,424.0	144.3	75.5	162.9	0.00	0.00	0.00
2,480.0	13.26	27.62	2,463.0	152.5	79.8	172.1	0.00	0.00	0.00
2,520.0	13.26	27.62	2,501.9	160.6	84.0	181.2	0.00	0.00	0.00
2,560.0	13.26	27.62	2,540.8	168.7	88.3	190.4	0.00	0.00	0.00
2,600.0	13.26	27.62	2,579.8	176.8	92.5	199.6	0.00	0.00	0.00
2,623.9	13.26	27.62	2,603.0	181.7	95.1	205.1	0.00	0.00	0.00
PIERRE SILT									
2,640.0	13.26	27.62	2,618.7	185.0	96.8	208.8	0.00	0.00	0.00
2,680.0	13.26	27.62	2,657.6	193.1	101.0	218.0	0.00	0.00	0.00
2,720.0	13.26	27.62	2,696.6	201.2	105.3	227.1	0.00	0.00	0.00
2,760.0	13.26	27.62	2,735.5	209.4	109.6	236.3	0.00	0.00	0.00
2,800.0	13.26	27.62	2,774.4	217.5	113.8	245.5	0.00	0.00	0.00
2,840.0	13.26	27.62	2,813.4	225.6	118.1	254.7	0.00	0.00	0.00
2,880.0	13.26	27.62	2,852.3	233.8	122.3	263.8	0.00	0.00	0.00
2,920.0	13.26	27.62	2,891.2	241.9	126.6	273.0	0.00	0.00	0.00
2,960.0	13.26	27.62	2,930.2	250.0	130.8	282.2	0.00	0.00	0.00
3,000.0	13.26	27.62	2,969.1	258.2	135.1	291.4	0.00	0.00	0.00
3,040.0	13.26	27.62	3,008.0	266.3	139.3	300.6	0.00	0.00	0.00
3,080.0	13.26	27.62	3,047.0	274.4	143.6	309.7	0.00	0.00	0.00
3,120.0	13.26	27.62	3,085.9	282.6	147.8	318.9	0.00	0.00	0.00
3,160.0	13.26	27.62	3,124.8	290.7	152.1	328.1	0.00	0.00	0.00
3,200.0	13.26	27.62	3,163.8	298.8	156.4	337.3	0.00	0.00	0.00
3,240.0	13.26	27.62	3,202.7	307.0	160.6	346.4	0.00	0.00	0.00
3,280.0	13.26	27.62	3,241.6	315.1	164.9	355.6	0.00	0.00	0.00
3,320.0	13.26	27.62	3,280.6	323.2	169.1	364.8	0.00	0.00	0.00
3,360.0	13.26	27.62	3,319.5	331.4	173.4	374.0	0.00	0.00	0.00
3,400.0	13.26	27.62	3,358.4	339.5	177.6	383.2	0.00	0.00	0.00
3,440.0	13.26	27.62	3,397.4	347.6	181.9	392.3	0.00	0.00	0.00
3,480.0	13.26	27.62	3,436.3	355.8	186.1	401.5	0.00	0.00	0.00
3,516.7	13.26	27.62	3,472.0	363.2	190.0	409.9	0.00	0.00	0.00
PARKMAN									
3,520.0	13.26	27.62	3,475.2	363.9	190.4	410.7	0.00	0.00	0.00
3,560.0	13.26	27.62	3,514.2	372.0	194.7	419.9	0.00	0.00	0.00
3,600.0	13.26	27.62	3,553.1	380.2	198.9	429.0	0.00	0.00	0.00
3,640.0	13.26	27.62	3,592.0	388.3	203.2	438.2	0.00	0.00	0.00
3,680.0	13.26	27.62	3,631.0	396.4	207.4	447.4	0.00	0.00	0.00
3,720.0	13.26	27.62	3,669.9	404.6	211.7	456.6	0.00	0.00	0.00
3,760.0	13.26	27.62	3,708.8	412.7	215.9	465.8	0.00	0.00	0.00
3,800.0	13.26	27.62	3,747.8	420.8	220.2	474.9	0.00	0.00	0.00
3,840.0	13.26	27.62	3,786.7	428.9	224.4	484.1	0.00	0.00	0.00
3,880.0	13.26	27.62	3,825.6	437.1	228.7	493.3	0.00	0.00	0.00
3,920.0	13.26	27.62	3,864.6	445.2	232.9	502.5	0.00	0.00	0.00
3,960.0	13.26	27.62	3,903.5	453.3	237.2	511.7	0.00	0.00	0.00
4,000.0	13.26	27.62	3,942.4	461.5	241.5	520.8	0.00	0.00	0.00
4,040.0	13.26	27.62	3,981.4	469.6	245.7	530.0	0.00	0.00	0.00

Database:	EDM den0-adp01 Server Data	Local Co-ordinate Reference:	Well Millage C 12-31
Company:	NOBLE ENERGY INC WELD COUNTY CO	TVD Reference:	WELL @ 4636.0ft (Original Well Elev)
Project:	SEC.11-T4N-R64W	MD Reference:	WELL @ 4636.0ft (Original Well Elev)
Site:	Millage Pad Sec.11-T4N-R64W	North Reference:	True
Well:	Millage C 12-31	Survey Calculation Method:	Minimum Curvature
Wellbore:	Millage C 12-31		
Design:	Millage C 12-31		

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	13.26	27.62	4,020.3	477.7	250.0	539.2	0.00	0.00	0.00
4,120.0	13.26	27.62	4,059.2	485.9	254.2	548.4	0.00	0.00	0.00
4,160.0	13.26	27.62	4,098.1	494.0	258.5	557.5	0.00	0.00	0.00
4,168.1	13.26	27.62	4,106.0	495.6	259.3	559.4	0.00	0.00	0.00
SUSSEX									
4,200.0	13.26	27.62	4,137.1	502.1	262.7	566.7	0.00	0.00	0.00
4,240.0	13.26	27.62	4,176.0	510.3	267.0	575.9	0.00	0.00	0.00
4,280.0	13.26	27.62	4,214.9	518.4	271.2	585.1	0.00	0.00	0.00
4,320.0	13.26	27.62	4,253.9	526.5	275.5	594.3	0.00	0.00	0.00
4,360.0	13.26	27.62	4,292.8	534.7	279.8	603.4	0.00	0.00	0.00
4,400.0	13.26	27.62	4,331.7	542.8	284.0	612.6	0.00	0.00	0.00
4,440.0	13.26	27.62	4,370.7	550.9	288.3	621.8	0.00	0.00	0.00
4,480.0	13.26	27.62	4,409.6	559.1	292.5	631.0	0.00	0.00	0.00
4,520.0	13.26	27.62	4,448.5	567.2	296.8	640.1	0.00	0.00	0.00
4,560.0	13.26	27.62	4,487.5	575.3	301.0	649.3	0.00	0.00	0.00
4,600.0	13.26	27.62	4,526.4	583.5	305.3	658.5	0.00	0.00	0.00
4,640.0	13.26	27.62	4,565.3	591.6	309.5	667.7	0.00	0.00	0.00
4,680.0	13.26	27.62	4,604.3	599.7	313.8	676.9	0.00	0.00	0.00
4,720.0	13.26	27.62	4,643.2	607.9	318.0	686.0	0.00	0.00	0.00
4,760.0	13.26	27.62	4,682.1	616.0	322.3	695.2	0.00	0.00	0.00
4,800.0	13.26	27.62	4,721.1	624.1	326.6	704.4	0.00	0.00	0.00
4,840.0	13.26	27.62	4,760.0	632.3	330.8	713.6	0.00	0.00	0.00
4,857.5	13.26	27.62	4,777.0	635.8	332.7	717.6	0.00	0.00	0.00
SHANNON									
4,880.0	13.26	27.62	4,798.9	640.4	335.1	722.7	0.00	0.00	0.00
4,920.0	13.26	27.62	4,837.9	648.5	339.3	731.9	0.00	0.00	0.00
4,924.9	13.26	27.62	4,842.7	649.5	339.8	733.1	0.00	0.00	0.00
4,960.0	12.56	27.62	4,876.9	656.5	343.5	740.9	2.00	-2.00	0.00
5,000.0	11.76	27.62	4,916.0	663.9	347.4	749.3	2.00	-2.00	0.00
5,040.0	10.96	27.62	4,955.2	670.9	351.0	757.2	2.00	-2.00	0.00
5,080.0	10.16	27.62	4,994.5	677.4	354.4	764.5	2.00	-2.00	0.00
5,120.0	9.36	27.62	5,033.9	683.4	357.6	771.3	2.00	-2.00	0.00
5,160.0	8.56	27.62	5,073.4	688.9	360.5	777.6	2.00	-2.00	0.00
5,200.0	7.76	27.62	5,113.0	694.0	363.1	783.2	2.00	-2.00	0.00
5,240.0	6.96	27.62	5,152.7	698.5	365.5	788.4	2.00	-2.00	0.00
5,280.0	6.16	27.62	5,192.4	702.6	367.6	792.9	2.00	-2.00	0.00
5,320.0	5.36	27.62	5,232.2	706.1	369.5	796.9	2.00	-2.00	0.00
5,360.0	4.56	27.62	5,272.1	709.2	371.1	800.4	2.00	-2.00	0.00
5,400.0	3.76	27.62	5,312.0	711.8	372.4	803.3	2.00	-2.00	0.00
5,440.0	2.96	27.62	5,351.9	713.8	373.5	805.7	2.00	-2.00	0.00
5,480.0	2.16	27.62	5,391.9	715.4	374.3	807.4	2.00	-2.00	0.00
5,520.0	1.36	27.62	5,431.8	716.5	374.9	808.7	2.00	-2.00	0.00
5,560.0	0.56	27.62	5,471.8	717.1	375.2	809.4	2.00	-2.00	0.00
5,588.2	0.00	0.00	5,500.0	717.2	375.3	809.5	2.00	-2.00	0.00
TARGET MILLAGE C 12-31 BHL 1420'FNL, 75'FEL									
5,600.0	0.00	0.00	5,511.8	717.2	375.3	809.5	0.00	0.00	0.00
5,640.0	0.00	0.00	5,551.8	717.2	375.3	809.5	0.00	0.00	0.00
5,680.0	0.00	0.00	5,591.8	717.2	375.3	809.5	0.00	0.00	0.00
5,720.0	0.00	0.00	5,631.8	717.2	375.3	809.5	0.00	0.00	0.00
5,760.0	0.00	0.00	5,671.8	717.2	375.3	809.5	0.00	0.00	0.00
5,800.0	0.00	0.00	5,711.8	717.2	375.3	809.5	0.00	0.00	0.00
5,840.0	0.00	0.00	5,751.8	717.2	375.3	809.5	0.00	0.00	0.00
5,880.0	0.00	0.00	5,791.8	717.2	375.3	809.5	0.00	0.00	0.00

Database:	EDM den0-adp01 Server Data	Local Co-ordinate Reference:	Well Millage C 12-31
Company:	NOBLE ENERGY INC WELD COUNTY CO	TVD Reference:	WELL @ 4636.0ft (Original Well Elev)
Project:	SEC.11-T4N-R64W	MD Reference:	WELL @ 4636.0ft (Original Well Elev)
Site:	Millage Pad Sec.11-T4N-R64W	North Reference:	True
Well:	Millage C 12-31	Survey Calculation Method:	Minimum Curvature
Wellbore:	Millage C 12-31		
Design:	Millage C 12-31		

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)
5,920.0	0.00	0.00	5,831.8	717.2	375.3	809.5	0.00	0.00	0.00
5,938.2	0.00	0.00	5,850.0	717.2	375.3	809.5	0.00	0.00	0.00
TEEPEE BUTTES									
5,960.0	0.00	0.00	5,871.8	717.2	375.3	809.5	0.00	0.00	0.00
6,000.0	0.00	0.00	5,911.8	717.2	375.3	809.5	0.00	0.00	0.00
6,040.0	0.00	0.00	5,951.8	717.2	375.3	809.5	0.00	0.00	0.00
6,080.0	0.00	0.00	5,991.8	717.2	375.3	809.5	0.00	0.00	0.00
6,120.0	0.00	0.00	6,031.8	717.2	375.3	809.5	0.00	0.00	0.00
6,160.0	0.00	0.00	6,071.8	717.2	375.3	809.5	0.00	0.00	0.00
6,200.0	0.00	0.00	6,111.8	717.2	375.3	809.5	0.00	0.00	0.00
6,240.0	0.00	0.00	6,151.8	717.2	375.3	809.5	0.00	0.00	0.00
6,280.0	0.00	0.00	6,191.8	717.2	375.3	809.5	0.00	0.00	0.00
6,320.0	0.00	0.00	6,231.8	717.2	375.3	809.5	0.00	0.00	0.00
6,360.0	0.00	0.00	6,271.8	717.2	375.3	809.5	0.00	0.00	0.00
6,400.0	0.00	0.00	6,311.8	717.2	375.3	809.5	0.00	0.00	0.00
6,440.0	0.00	0.00	6,351.8	717.2	375.3	809.5	0.00	0.00	0.00
6,480.0	0.00	0.00	6,391.8	717.2	375.3	809.5	0.00	0.00	0.00
6,519.2	0.00	0.00	6,431.0	717.2	375.3	809.5	0.00	0.00	0.00
NIOBRARA									
6,520.0	0.00	0.00	6,431.8	717.2	375.3	809.5	0.00	0.00	0.00
6,560.0	0.00	0.00	6,471.8	717.2	375.3	809.5	0.00	0.00	0.00
6,600.0	0.00	0.00	6,511.8	717.2	375.3	809.5	0.00	0.00	0.00
6,640.0	0.00	0.00	6,551.8	717.2	375.3	809.5	0.00	0.00	0.00
6,680.0	0.00	0.00	6,591.8	717.2	375.3	809.5	0.00	0.00	0.00
6,720.0	0.00	0.00	6,631.8	717.2	375.3	809.5	0.00	0.00	0.00
6,760.0	0.00	0.00	6,671.8	717.2	375.3	809.5	0.00	0.00	0.00
6,800.0	0.00	0.00	6,711.8	717.2	375.3	809.5	0.00	0.00	0.00
6,805.2	0.00	0.00	6,717.0	717.2	375.3	809.5	0.00	0.00	0.00
CODELL									
6,840.0	0.00	0.00	6,751.8	717.2	375.3	809.5	0.00	0.00	0.00
6,880.0	0.00	0.00	6,791.8	717.2	375.3	809.5	0.00	0.00	0.00
6,920.0	0.00	0.00	6,831.8	717.2	375.3	809.5	0.00	0.00	0.00
6,955.2	0.00	0.00	6,867.0	717.2	375.3	809.5	0.00	0.00	0.00
HARDLINE 75'E OF MILLAGE C 12-31 BHL									

Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
2,623.9	2,603.0	PIERRE SILT		0.00	
3,516.7	3,472.0	PARKMAN		0.00	
4,168.1	4,106.0	SUSSEX		0.00	
4,857.5	4,777.0	SHANNON		0.00	
5,938.2	5,850.0	TEEPEE BUTTES		0.00	
6,519.2	6,431.0	NIOBRARA		0.00	
6,805.2	6,717.0	CODELL		0.00	