

# ENSIGN

## Directional

### Well Name: Vista USX WW33-17D

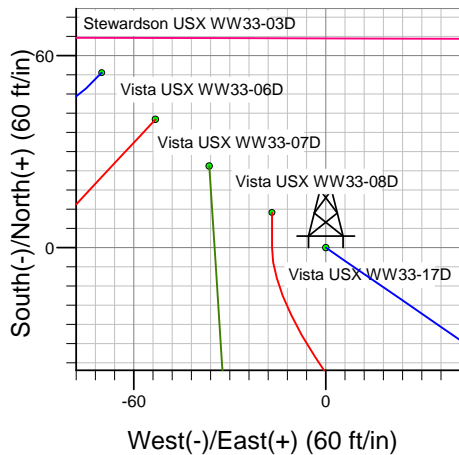
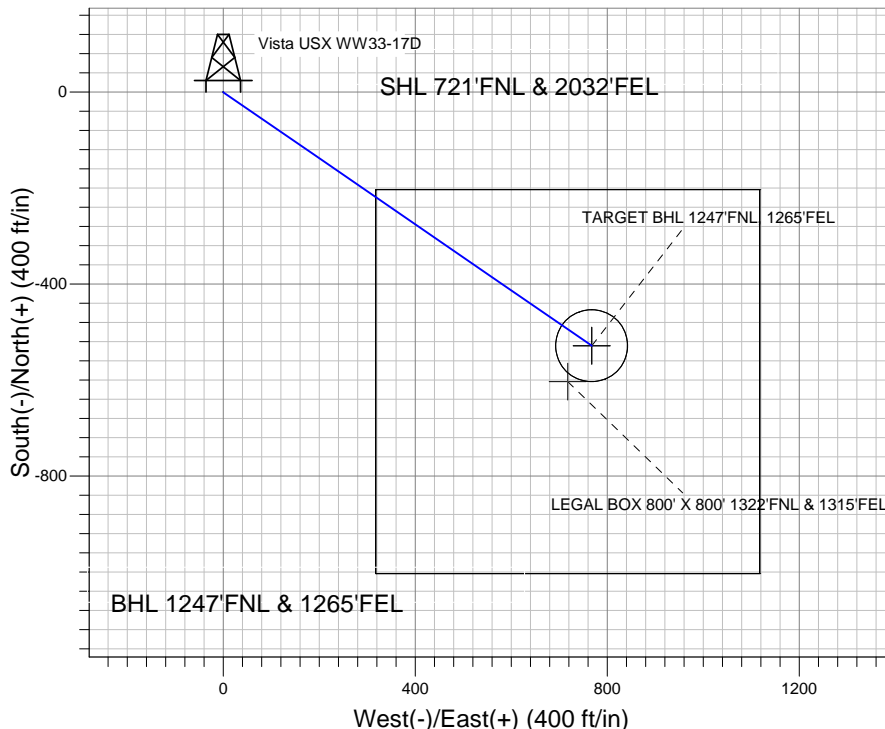
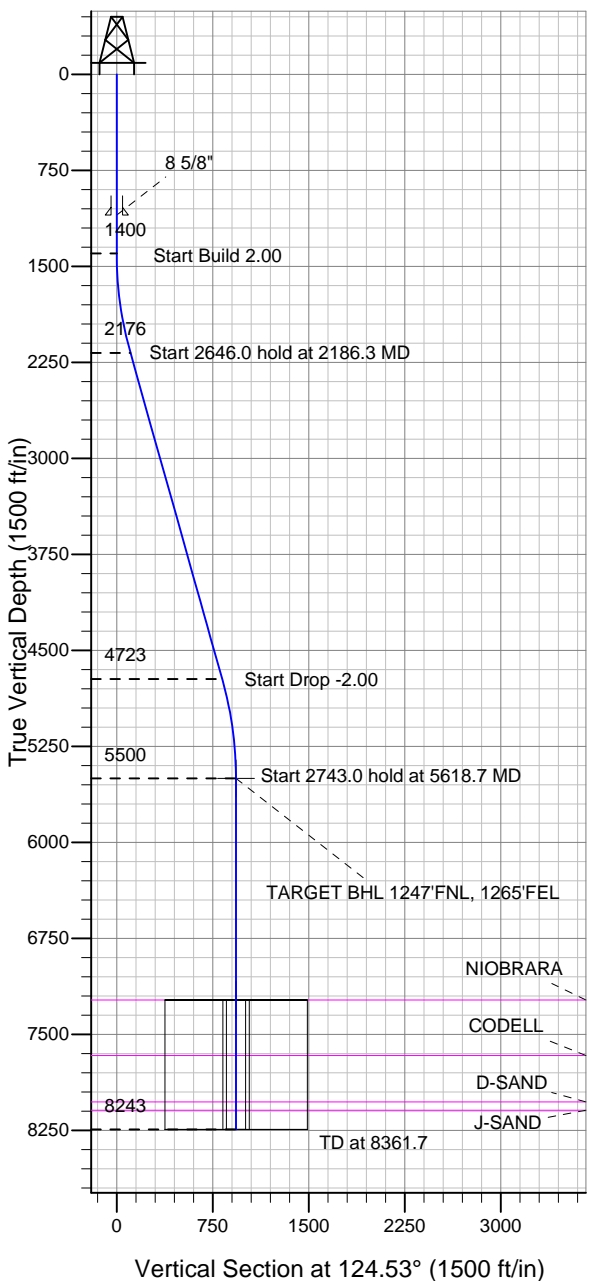
Surface Location: Stewardson USX WW33-01D Pad Sec.33-T1N-R66W  
North American Datum 1983 US State Plane 1983 Colorado Northern Zone

Ground Elevation: 5071.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1248393.95	3201683.98	40.012980	-104.779950	

Original Well Elev WELL @ 5084.0ft (Original Well Elev)

## NOBLE ENERGY INC WELD COUNTY CO



Stewardson USX WW33-01D Pad Sec.33-T1N-R66W  
Vista USX WW33-17D  
Vista USX WW33-17D Plan #1 (6-16-11)  
9:32, June 22 2011



Azimuths to True North  
Magnetic North: 8.83°

Magnetic Field  
Strength: 52921.8snT  
Dip Angle: 66.73°  
Date: 6/22/2011  
Model: IGRF2010

### WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
TARGET BHL 1247'FNL, 1265'FEL	5500.0	-528.2	767.5	40.011530	-104.777210	Point
LEGAL BOX 800' X 800' 1322'FNL & 1315'FEL	7232.0	-603.2	717.5	40.011324	-104.777389	Rectangle (Sides: L800.0 W800.0)
TARGET CIRCLE 1247'FNL & 1265'FEL	7232.0	-528.2	767.5	40.011530	-104.777210	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	1400.0	0.00	0.00	1400.0	0.0	0.0	0.00	0.00	0.0	
3	2186.3	15.73	124.53	2176.5	-60.8	88.3	2.00	124.53	107.2	
4	4832.4	15.73	124.53	4723.5	-467.4	679.2	0.00	0.00	824.5	
5	5618.7	0.00	0.00	5500.0	-528.2	767.5	2.00	180.00	931.7	TARGET BHL 1247'FNL, 1265'FEL
6	8361.7	0.00	0.00	8243.0	-528.2	767.5	0.00	0.00	931.7	



## **Directional**

### **NOBLE ENERGY INC WELD COUNTY CO**

**SEC.33-T1N-R66W**

**Stewardson USX WW33-01D Pad Sec.33-T1N-R66W**

**Vista USX WW33-17D**

**Wellbore #1**

**Plan: Vista USX WW33-17D Plan #1 (6-16-11)**

### **Standard Planning Report**

**22 June, 2011**



<b>Database:</b>	Landmark	<b>Local Co-ordinate Reference:</b>	Well Vista USX WW33-17D
<b>Company:</b>	NOBLE ENERGY INC WELD COUNTY CO	<b>TVD Reference:</b>	WELL @ 5084.0ft (Original Well Elev)
<b>Project:</b>	SEC.33-T1N-R66W	<b>MD Reference:</b>	WELL @ 5084.0ft (Original Well Elev)
<b>Site:</b>	Stewardson USX WW33-01D Pad Sec.33-T1N-R66W	<b>North Reference:</b>	True
<b>Well:</b>	Vista USX WW33-17D	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Vista USX WW33-17D Plan #1 (6-16-11)		

<b>Project</b>	SEC.33-T1N-R66W, Weld County, Colorado		
<b>Map System:</b>	US State Plane 1983	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	North American Datum 1983		Using Well Reference Point
<b>Map Zone:</b>	Colorado Northern Zone		Using geodetic scale factor

Stewardson USX WW33-01D Pad Sec.33-T1N-R66W					
Site Position:		Northing:		1,248,458.80ft	
From:		Easting:		3,201,593.82ft	
Position Uncertainty:		Slot Radius:		Grid Convergence:	
Lat/Long				40.013160	
0.0 ft		"		-104.780270	
				0.47 °	

Well	Vista USX WW33-17D					
Well Position	+N/-S	-65.6 ft	Northing:	1,248,393.95 ft	Latitude:	40.012980
	+E/-W	89.6 ft	Easting:	3,201,683.98 ft	Longitude:	-104.779950
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	5,071.0 ft

<b>Wellbore</b>	Wellbore #1				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2010	6/22/2011	8.84	66.73	52,922

<b>Design</b>	Vista USX WW33-17D Plan #1 (6-16-11)			
<b>Audit Notes:</b>				
<b>Version:</b>	<b>Phase:</b>	PROTOTYPE	<b>Tie On Depth:</b>	0.0
<b>Vertical Section:</b>	<b>Depth From (TVD) (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Direction (°)</b>
	0.0	0.0	0.0	124.53

<b>Plan Sections</b>										
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	
2,186.3	15.73	124.53	2,176.5	-60.8	88.3	2.00	2.00	0.00	124.53	
4,832.4	15.73	124.53	4,723.5	-467.4	679.2	0.00	0.00	0.00	0.00	
5,618.7	0.00	0.00	5,500.0	-528.2	767.5	2.00	-2.00	0.00	180.00	TARGET BHL 1247
8,361.7	0.00	0.00	8,243.0	-528.2	767.5	0.00	0.00	0.00	0.00	

<b>Database:</b>	Landmark	<b>Local Co-ordinate Reference:</b>	Well Vista USX WW33-17D
<b>Company:</b>	NOBLE ENERGY INC WELD COUNTY CO	<b>TVD Reference:</b>	WELL @ 5084.0ft (Original Well Elev)
<b>Project:</b>	SEC.33-T1N-R66W	<b>MD Reference:</b>	WELL @ 5084.0ft (Original Well Elev)
<b>Site:</b>	Stewardson USX WW33-01D Pad Sec.33-T1N-R66W	<b>North Reference:</b>	True
<b>Well:</b>	Vista USX WW33-17D	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Vista USX WW33-17D Plan #1 (6-16-11)		

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
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
1,100.0	0.00	0.00	1,100.0	0.0	0.0	0.0	0.00	0.00	0.00
<b>8 5/8"</b>									
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	124.53	1,440.0	-0.2	0.2	0.3	2.00	2.00	0.00
1,480.0	1.60	124.53	1,480.0	-0.6	0.9	1.1	2.00	2.00	0.00
1,520.0	2.40	124.53	1,520.0	-1.4	2.1	2.5	2.00	2.00	0.00
1,560.0	3.20	124.53	1,559.9	-2.5	3.7	4.5	2.00	2.00	0.00
1,600.0	4.00	124.53	1,599.8	-4.0	5.7	7.0	2.00	2.00	0.00
1,640.0	4.80	124.53	1,639.7	-5.7	8.3	10.0	2.00	2.00	0.00
1,680.0	5.60	124.53	1,679.6	-7.8	11.3	13.7	2.00	2.00	0.00
1,720.0	6.40	124.53	1,719.3	-10.1	14.7	17.9	2.00	2.00	0.00
1,760.0	7.20	124.53	1,759.1	-12.8	18.6	22.6	2.00	2.00	0.00
1,800.0	8.00	124.53	1,798.7	-15.8	23.0	27.9	2.00	2.00	0.00
1,840.0	8.80	124.53	1,838.3	-19.1	27.8	33.7	2.00	2.00	0.00
1,880.0	9.60	124.53	1,877.8	-22.7	33.0	40.1	2.00	2.00	0.00
1,920.0	10.40	124.53	1,917.1	-26.7	38.8	47.1	2.00	2.00	0.00
1,960.0	11.20	124.53	1,956.4	-30.9	44.9	54.6	2.00	2.00	0.00
2,000.0	12.00	124.53	1,995.6	-35.5	51.6	62.6	2.00	2.00	0.00

<b>Database:</b>	Landmark	<b>Local Co-ordinate Reference:</b>	Well Vista USX WW33-17D
<b>Company:</b>	NOBLE ENERGY INC WELD COUNTY CO	<b>TVD Reference:</b>	WELL @ 5084.0ft (Original Well Elev)
<b>Project:</b>	SEC.33-T1N-R66W	<b>MD Reference:</b>	WELL @ 5084.0ft (Original Well Elev)
<b>Site:</b>	Stewardson USX WW33-01D Pad Sec.33-T1N-R66W	<b>North Reference:</b>	True
<b>Well:</b>	Vista USX WW33-17D	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Vista USX WW33-17D Plan #1 (6-16-11)		

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	12.80	124.53	2,034.7	-40.4	58.6	71.2	2.00	2.00	0.00	
2,080.0	13.60	124.53	2,073.6	-45.5	66.2	80.3	2.00	2.00	0.00	
2,120.0	14.40	124.53	2,112.4	-51.0	74.1	90.0	2.00	2.00	0.00	
2,160.0	15.20	124.53	2,151.1	-56.8	82.6	100.2	2.00	2.00	0.00	
2,186.3	15.73	124.53	2,176.5	-60.8	88.3	107.2	2.00	2.00	0.00	
2,200.0	15.73	124.53	2,189.7	-62.9	91.4	110.9	0.00	0.00	0.00	
2,240.0	15.73	124.53	2,228.2	-69.0	100.3	121.8	0.00	0.00	0.00	
2,280.0	15.73	124.53	2,266.7	-75.2	109.3	132.6	0.00	0.00	0.00	
2,320.0	15.73	124.53	2,305.2	-81.3	118.2	143.5	0.00	0.00	0.00	
2,360.0	15.73	124.53	2,343.7	-87.5	127.1	154.3	0.00	0.00	0.00	
2,400.0	15.73	124.53	2,382.2	-93.6	136.1	165.2	0.00	0.00	0.00	
2,440.0	15.73	124.53	2,420.7	-99.8	145.0	176.0	0.00	0.00	0.00	
2,480.0	15.73	124.53	2,459.2	-105.9	153.9	186.8	0.00	0.00	0.00	
2,520.0	15.73	124.53	2,497.7	-112.1	162.8	197.7	0.00	0.00	0.00	
2,560.0	15.73	124.53	2,536.2	-118.2	171.8	208.5	0.00	0.00	0.00	
2,600.0	15.73	124.53	2,574.7	-124.4	180.7	219.4	0.00	0.00	0.00	
2,640.0	15.73	124.53	2,613.2	-130.5	189.6	230.2	0.00	0.00	0.00	
2,680.0	15.73	124.53	2,651.7	-136.7	198.6	241.1	0.00	0.00	0.00	
2,720.0	15.73	124.53	2,690.2	-142.8	207.5	251.9	0.00	0.00	0.00	
2,760.0	15.73	124.53	2,728.7	-148.9	216.4	262.7	0.00	0.00	0.00	
2,800.0	15.73	124.53	2,767.2	-155.1	225.4	273.6	0.00	0.00	0.00	
2,840.0	15.73	124.53	2,805.7	-161.2	234.3	284.4	0.00	0.00	0.00	
2,880.0	15.73	124.53	2,844.2	-167.4	243.2	295.3	0.00	0.00	0.00	
2,920.0	15.73	124.53	2,882.7	-173.5	252.2	306.1	0.00	0.00	0.00	
2,960.0	15.73	124.53	2,921.2	-179.7	261.1	316.9	0.00	0.00	0.00	
3,000.0	15.73	124.53	2,959.7	-185.8	270.0	327.8	0.00	0.00	0.00	
3,040.0	15.73	124.53	2,998.2	-192.0	279.0	338.6	0.00	0.00	0.00	
3,080.0	15.73	124.53	3,036.7	-198.1	287.9	349.5	0.00	0.00	0.00	
3,120.0	15.73	124.53	3,075.2	-204.3	296.8	360.3	0.00	0.00	0.00	
3,160.0	15.73	124.53	3,113.7	-210.4	305.8	371.2	0.00	0.00	0.00	
3,200.0	15.73	124.53	3,152.2	-216.6	314.7	382.0	0.00	0.00	0.00	
3,240.0	15.73	124.53	3,190.7	-222.7	323.6	392.8	0.00	0.00	0.00	
3,280.0	15.73	124.53	3,229.2	-228.8	332.5	403.7	0.00	0.00	0.00	
3,320.0	15.73	124.53	3,267.7	-235.0	341.5	414.5	0.00	0.00	0.00	
3,360.0	15.73	124.53	3,306.2	-241.1	350.4	425.4	0.00	0.00	0.00	
3,400.0	15.73	124.53	3,344.7	-247.3	359.3	436.2	0.00	0.00	0.00	
3,440.0	15.73	124.53	3,383.2	-253.4	368.3	447.0	0.00	0.00	0.00	
3,480.0	15.73	124.53	3,421.7	-259.6	377.2	457.9	0.00	0.00	0.00	
3,520.0	15.73	124.53	3,460.2	-265.7	386.1	468.7	0.00	0.00	0.00	
3,560.0	15.73	124.53	3,498.7	-271.9	395.1	479.6	0.00	0.00	0.00	
3,600.0	15.73	124.53	3,537.2	-278.0	404.0	490.4	0.00	0.00	0.00	
3,640.0	15.73	124.53	3,575.7	-284.2	412.9	501.3	0.00	0.00	0.00	
3,680.0	15.73	124.53	3,614.2	-290.3	421.9	512.1	0.00	0.00	0.00	
3,720.0	15.73	124.53	3,652.8	-296.5	430.8	522.9	0.00	0.00	0.00	
3,760.0	15.73	124.53	3,691.3	-302.6	439.7	533.8	0.00	0.00	0.00	
3,800.0	15.73	124.53	3,729.8	-308.8	448.7	544.6	0.00	0.00	0.00	
3,840.0	15.73	124.53	3,768.3	-314.9	457.6	555.5	0.00	0.00	0.00	
3,880.0	15.73	124.53	3,806.8	-321.0	466.5	566.3	0.00	0.00	0.00	
3,920.0	15.73	124.53	3,845.3	-327.2	475.4	577.2	0.00	0.00	0.00	
3,960.0	15.73	124.53	3,883.8	-333.3	484.4	588.0	0.00	0.00	0.00	
4,000.0	15.73	124.53	3,922.3	-339.5	493.3	598.8	0.00	0.00	0.00	
4,040.0	15.73	124.53	3,960.8	-345.6	502.2	609.7	0.00	0.00	0.00	
4,080.0	15.73	124.53	3,999.3	-351.8	511.2	620.5	0.00	0.00	0.00	

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<b>Project:</b>	SEC.33-T1N-R66W	<b>MD Reference:</b>	WELL @ 5084.0ft (Original Well Elev)
<b>Site:</b>	Stewardson USX WW33-01D Pad Sec.33-T1N-R66W	<b>North Reference:</b>	True
<b>Well:</b>	Vista USX WW33-17D	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Vista USX WW33-17D Plan #1 (6-16-11)		

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)
4,120.0	15.73	124.53	4,037.8	-357.9	520.1	631.4	0.00	0.00	0.00
4,160.0	15.73	124.53	4,076.3	-364.1	529.0	642.2	0.00	0.00	0.00
4,200.0	15.73	124.53	4,114.8	-370.2	538.0	653.0	0.00	0.00	0.00
4,240.0	15.73	124.53	4,153.3	-376.4	546.9	663.9	0.00	0.00	0.00
4,280.0	15.73	124.53	4,191.8	-382.5	555.8	674.7	0.00	0.00	0.00
4,320.0	15.73	124.53	4,230.3	-388.7	564.8	685.6	0.00	0.00	0.00
4,360.0	15.73	124.53	4,268.8	-394.8	573.7	696.4	0.00	0.00	0.00
4,400.0	15.73	124.53	4,307.3	-401.0	582.6	707.3	0.00	0.00	0.00
4,440.0	15.73	124.53	4,345.8	-407.1	591.6	718.1	0.00	0.00	0.00
4,480.0	15.73	124.53	4,384.3	-413.2	600.5	728.9	0.00	0.00	0.00
4,520.0	15.73	124.53	4,422.8	-419.4	609.4	739.8	0.00	0.00	0.00
4,560.0	15.73	124.53	4,461.3	-425.5	618.4	750.6	0.00	0.00	0.00
4,600.0	15.73	124.53	4,499.8	-431.7	627.3	761.5	0.00	0.00	0.00
4,640.0	15.73	124.53	4,538.3	-437.8	636.2	772.3	0.00	0.00	0.00
4,680.0	15.73	124.53	4,576.8	-444.0	645.1	783.2	0.00	0.00	0.00
4,720.0	15.73	124.53	4,615.3	-450.1	654.1	794.0	0.00	0.00	0.00
4,760.0	15.73	124.53	4,653.8	-456.3	663.0	804.8	0.00	0.00	0.00
4,800.0	15.73	124.53	4,692.3	-462.4	671.9	815.7	0.00	0.00	0.00
4,832.4	15.73	124.53	4,723.5	-467.4	679.2	824.5	0.00	0.00	0.00
4,840.0	15.57	124.53	4,730.8	-468.6	680.9	826.5	2.00	-2.00	0.00
4,880.0	14.77	124.53	4,769.4	-474.5	689.5	837.0	2.00	-2.00	0.00
4,920.0	13.97	124.53	4,808.2	-480.1	697.7	846.9	2.00	-2.00	0.00
4,960.0	13.17	124.53	4,847.1	-485.4	705.4	856.3	2.00	-2.00	0.00
5,000.0	12.37	124.53	4,886.1	-490.5	712.7	865.1	2.00	-2.00	0.00
5,040.0	11.57	124.53	4,925.2	-495.2	719.5	873.4	2.00	-2.00	0.00
5,080.0	10.77	124.53	4,964.4	-499.6	725.9	881.2	2.00	-2.00	0.00
5,120.0	9.97	124.53	5,003.8	-503.6	731.8	888.4	2.00	-2.00	0.00
5,160.0	9.17	124.53	5,043.2	-507.4	737.3	895.1	2.00	-2.00	0.00
5,200.0	8.37	124.53	5,082.8	-510.9	742.4	901.2	2.00	-2.00	0.00
5,240.0	7.57	124.53	5,122.4	-514.0	746.9	906.7	2.00	-2.00	0.00
5,280.0	6.77	124.53	5,162.1	-516.8	751.0	911.7	2.00	-2.00	0.00
5,320.0	5.97	124.53	5,201.8	-519.4	754.7	916.1	2.00	-2.00	0.00
5,360.0	5.17	124.53	5,241.6	-521.6	757.9	920.0	2.00	-2.00	0.00
5,400.0	4.37	124.53	5,281.5	-523.5	760.6	923.4	2.00	-2.00	0.00
5,440.0	3.57	124.53	5,321.4	-525.0	762.9	926.1	2.00	-2.00	0.00
5,480.0	2.77	124.53	5,361.3	-526.3	764.8	928.3	2.00	-2.00	0.00
5,520.0	1.97	124.53	5,401.3	-527.2	766.1	930.0	2.00	-2.00	0.00
5,560.0	1.17	124.53	5,441.3	-527.8	767.0	931.1	2.00	-2.00	0.00
5,600.0	0.37	124.53	5,481.3	-528.2	767.5	931.6	2.00	-2.00	0.00
5,618.7	0.00	0.00	5,500.0	-528.2	767.5	931.7	2.00	-2.00	-664.93
TARGET BHL 1247'FNL, 1265'FEL									
5,640.0	0.00	0.00	5,521.3	-528.2	767.5	931.7	0.00	0.00	0.00
5,680.0	0.00	0.00	5,561.3	-528.2	767.5	931.7	0.00	0.00	0.00
5,720.0	0.00	0.00	5,601.3	-528.2	767.5	931.7	0.00	0.00	0.00
5,760.0	0.00	0.00	5,641.3	-528.2	767.5	931.7	0.00	0.00	0.00
5,800.0	0.00	0.00	5,681.3	-528.2	767.5	931.7	0.00	0.00	0.00
5,840.0	0.00	0.00	5,721.3	-528.2	767.5	931.7	0.00	0.00	0.00
5,880.0	0.00	0.00	5,761.3	-528.2	767.5	931.7	0.00	0.00	0.00
5,920.0	0.00	0.00	5,801.3	-528.2	767.5	931.7	0.00	0.00	0.00
5,960.0	0.00	0.00	5,841.3	-528.2	767.5	931.7	0.00	0.00	0.00
6,000.0	0.00	0.00	5,881.3	-528.2	767.5	931.7	0.00	0.00	0.00
6,040.0	0.00	0.00	5,921.3	-528.2	767.5	931.7	0.00	0.00	0.00
6,080.0	0.00	0.00	5,961.3	-528.2	767.5	931.7	0.00	0.00	0.00

<b>Database:</b>	Landmark	<b>Local Co-ordinate Reference:</b>	Well Vista USX WW33-17D
<b>Company:</b>	NOBLE ENERGY INC WELD COUNTY CO	<b>TVD Reference:</b>	WELL @ 5084.0ft (Original Well Elev)
<b>Project:</b>	SEC.33-T1N-R66W	<b>MD Reference:</b>	WELL @ 5084.0ft (Original Well Elev)
<b>Site:</b>	Stewardson USX WW33-01D Pad Sec.33-T1N-R66W	<b>North Reference:</b>	True
<b>Well:</b>	Vista USX WW33-17D	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Vista USX WW33-17D Plan #1 (6-16-11)		

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)
6,120.0	0.00	0.00	6,001.3	-528.2	767.5	931.7	0.00	0.00	0.00
6,160.0	0.00	0.00	6,041.3	-528.2	767.5	931.7	0.00	0.00	0.00
6,200.0	0.00	0.00	6,081.3	-528.2	767.5	931.7	0.00	0.00	0.00
6,240.0	0.00	0.00	6,121.3	-528.2	767.5	931.7	0.00	0.00	0.00
6,280.0	0.00	0.00	6,161.3	-528.2	767.5	931.7	0.00	0.00	0.00
6,320.0	0.00	0.00	6,201.3	-528.2	767.5	931.7	0.00	0.00	0.00
6,360.0	0.00	0.00	6,241.3	-528.2	767.5	931.7	0.00	0.00	0.00
6,400.0	0.00	0.00	6,281.3	-528.2	767.5	931.7	0.00	0.00	0.00
6,440.0	0.00	0.00	6,321.3	-528.2	767.5	931.7	0.00	0.00	0.00
6,480.0	0.00	0.00	6,361.3	-528.2	767.5	931.7	0.00	0.00	0.00
6,520.0	0.00	0.00	6,401.3	-528.2	767.5	931.7	0.00	0.00	0.00
6,560.0	0.00	0.00	6,441.3	-528.2	767.5	931.7	0.00	0.00	0.00
6,600.0	0.00	0.00	6,481.3	-528.2	767.5	931.7	0.00	0.00	0.00
6,640.0	0.00	0.00	6,521.3	-528.2	767.5	931.7	0.00	0.00	0.00
6,680.0	0.00	0.00	6,561.3	-528.2	767.5	931.7	0.00	0.00	0.00
6,720.0	0.00	0.00	6,601.3	-528.2	767.5	931.7	0.00	0.00	0.00
6,760.0	0.00	0.00	6,641.3	-528.2	767.5	931.7	0.00	0.00	0.00
6,800.0	0.00	0.00	6,681.3	-528.2	767.5	931.7	0.00	0.00	0.00
6,840.0	0.00	0.00	6,721.3	-528.2	767.5	931.7	0.00	0.00	0.00
6,880.0	0.00	0.00	6,761.3	-528.2	767.5	931.7	0.00	0.00	0.00
6,920.0	0.00	0.00	6,801.3	-528.2	767.5	931.7	0.00	0.00	0.00
6,960.0	0.00	0.00	6,841.3	-528.2	767.5	931.7	0.00	0.00	0.00
7,000.0	0.00	0.00	6,881.3	-528.2	767.5	931.7	0.00	0.00	0.00
7,040.0	0.00	0.00	6,921.3	-528.2	767.5	931.7	0.00	0.00	0.00
7,080.0	0.00	0.00	6,961.3	-528.2	767.5	931.7	0.00	0.00	0.00
7,120.0	0.00	0.00	7,001.3	-528.2	767.5	931.7	0.00	0.00	0.00
7,160.0	0.00	0.00	7,041.3	-528.2	767.5	931.7	0.00	0.00	0.00
7,200.0	0.00	0.00	7,081.3	-528.2	767.5	931.7	0.00	0.00	0.00
7,240.0	0.00	0.00	7,121.3	-528.2	767.5	931.7	0.00	0.00	0.00
7,280.0	0.00	0.00	7,161.3	-528.2	767.5	931.7	0.00	0.00	0.00
7,320.0	0.00	0.00	7,201.3	-528.2	767.5	931.7	0.00	0.00	0.00
7,350.7	0.00	0.00	7,232.0	-528.2	767.5	931.7	0.00	0.00	0.00
<b>NIORARA - LEGAL BOX 800' X 800' 1322'FNL &amp; 1315'FEL - TARGET CIRCLE 1247'FNL &amp; 1265'FEL</b>									
7,360.0	0.00	0.00	7,241.3	-528.2	767.5	931.7	0.00	0.00	0.00
7,400.0	0.00	0.00	7,281.3	-528.2	767.5	931.7	0.00	0.00	0.00
7,440.0	0.00	0.00	7,321.3	-528.2	767.5	931.7	0.00	0.00	0.00
7,480.0	0.00	0.00	7,361.3	-528.2	767.5	931.7	0.00	0.00	0.00
7,520.0	0.00	0.00	7,401.3	-528.2	767.5	931.7	0.00	0.00	0.00
7,560.0	0.00	0.00	7,441.3	-528.2	767.5	931.7	0.00	0.00	0.00
7,600.0	0.00	0.00	7,481.3	-528.2	767.5	931.7	0.00	0.00	0.00
7,640.0	0.00	0.00	7,521.3	-528.2	767.5	931.7	0.00	0.00	0.00
7,680.0	0.00	0.00	7,561.3	-528.2	767.5	931.7	0.00	0.00	0.00
7,720.0	0.00	0.00	7,601.3	-528.2	767.5	931.7	0.00	0.00	0.00
7,760.0	0.00	0.00	7,641.3	-528.2	767.5	931.7	0.00	0.00	0.00
7,783.7	0.00	0.00	7,665.0	-528.2	767.5	931.7	0.00	0.00	0.00
<b>CODELL</b>									
7,800.0	0.00	0.00	7,681.3	-528.2	767.5	931.7	0.00	0.00	0.00
7,840.0	0.00	0.00	7,721.3	-528.2	767.5	931.7	0.00	0.00	0.00
7,880.0	0.00	0.00	7,761.3	-528.2	767.5	931.7	0.00	0.00	0.00
7,920.0	0.00	0.00	7,801.3	-528.2	767.5	931.7	0.00	0.00	0.00
7,960.0	0.00	0.00	7,841.3	-528.2	767.5	931.7	0.00	0.00	0.00
8,000.0	0.00	0.00	7,881.3	-528.2	767.5	931.7	0.00	0.00	0.00
8,040.0	0.00	0.00	7,921.3	-528.2	767.5	931.7	0.00	0.00	0.00



<b>Database:</b>	Landmark	<b>Local Co-ordinate Reference:</b>	Well Vista USX WW33-17D
<b>Company:</b>	NOBLE ENERGY INC WELD COUNTY CO	<b>TVD Reference:</b>	WELL @ 5084.0ft (Original Well Elev)
<b>Project:</b>	SEC.33-T1N-R66W	<b>MD Reference:</b>	WELL @ 5084.0ft (Original Well Elev)
<b>Site:</b>	Stewardson USX WW33-01D Pad Sec.33-T1N-R66W	<b>North Reference:</b>	True
<b>Well:</b>	Vista USX WW33-17D	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Vista USX WW33-17D Plan #1 (6-16-11)		

**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)
8,080.0	0.00	0.00	7,961.3	-528.2	767.5	931.7	0.00	0.00	0.00
8,120.0	0.00	0.00	8,001.3	-528.2	767.5	931.7	0.00	0.00	0.00
8,146.7	0.00	0.00	8,028.0	-528.2	767.5	931.7	0.00	0.00	0.00
<b>D-SAND</b>									
8,160.0	0.00	0.00	8,041.3	-528.2	767.5	931.7	0.00	0.00	0.00
8,200.0	0.00	0.00	8,081.3	-528.2	767.5	931.7	0.00	0.00	0.00
8,211.7	0.00	0.00	8,093.0	-528.2	767.5	931.7	0.00	0.00	0.00
<b>J-SAND</b>									
8,240.0	0.00	0.00	8,121.3	-528.2	767.5	931.7	0.00	0.00	0.00
8,280.0	0.00	0.00	8,161.3	-528.2	767.5	931.7	0.00	0.00	0.00
8,320.0	0.00	0.00	8,201.3	-528.2	767.5	931.7	0.00	0.00	0.00
8,360.0	0.00	0.00	8,241.3	-528.2	767.5	931.7	0.00	0.00	0.00
8,361.7	0.00	0.00	8,243.0	-528.2	767.5	931.7	0.00	0.00	0.00

**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 BHL 1247'F	0.00	0.00	5,500.0	-528.2	767.5	1,247,872.03	3,202,455.74	40.011530	-104.777210
- plan hits target center									
- Point									
LEGAL BOX 800' X 800'	0.00	0.00	7,232.0	-603.2	717.5	1,247,796.61	3,202,406.33	40.011324	-104.777389
- plan misses target center by 90.2ft at 7350.7ft MD (7232.0 TVD, -528.2 N, 767.5 E)									
- Rectangle (sides W800.0 H800.0 D1,011.0)									
TARGET CIRCLE 12' dia	0.00	0.00	7,232.0	-528.2	767.5	1,247,872.03	3,202,455.74	40.011530	-104.777210
- plan hits target center									
- Circle (radius 75.0)									

**Casing Points**

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
1,100.0	1,100.0	8 5/8"	8-5/8	12-1/4

**Formations**

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
7,350.7	7,232.0	NIOBRARA		0.00	
7,783.7	7,665.0	CODELL		0.00	
8,146.7	8,028.0	D-SAND		0.00	
8,211.7	8,093.0	J-SAND		0.00	