

# ENSIGN

## Directional

### Well Name: Stewardson USX WW33-03D

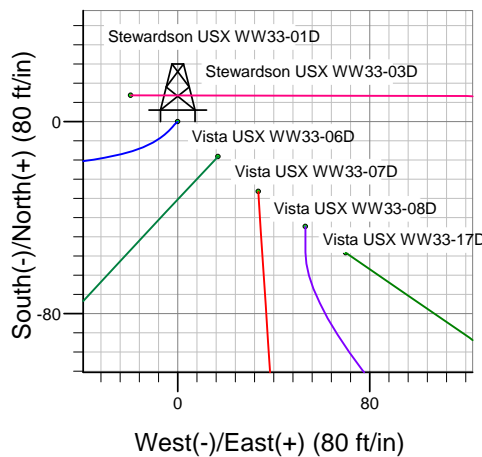
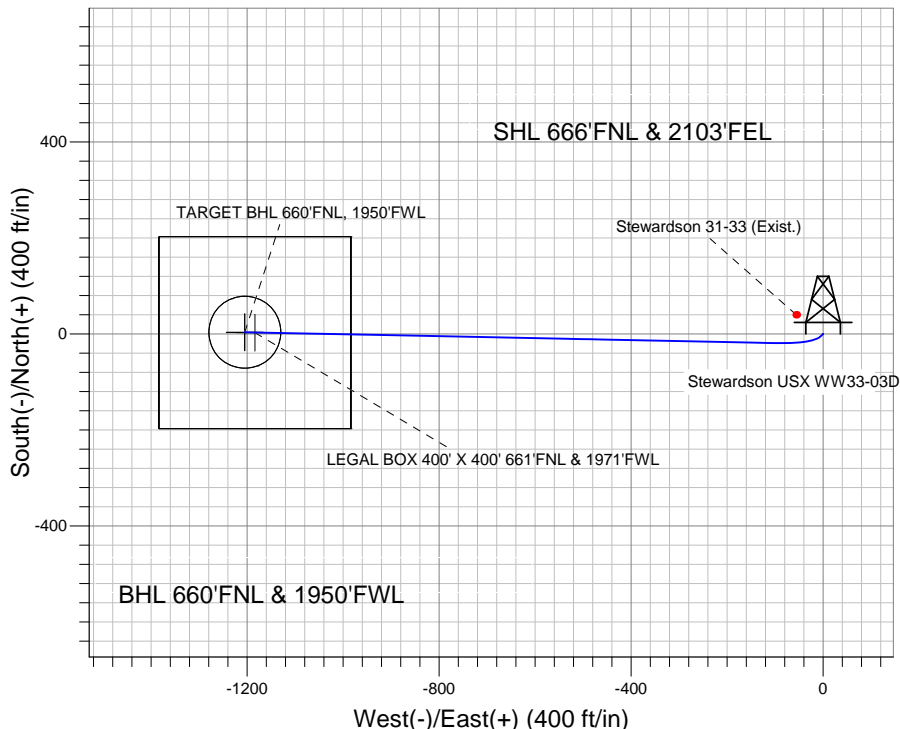
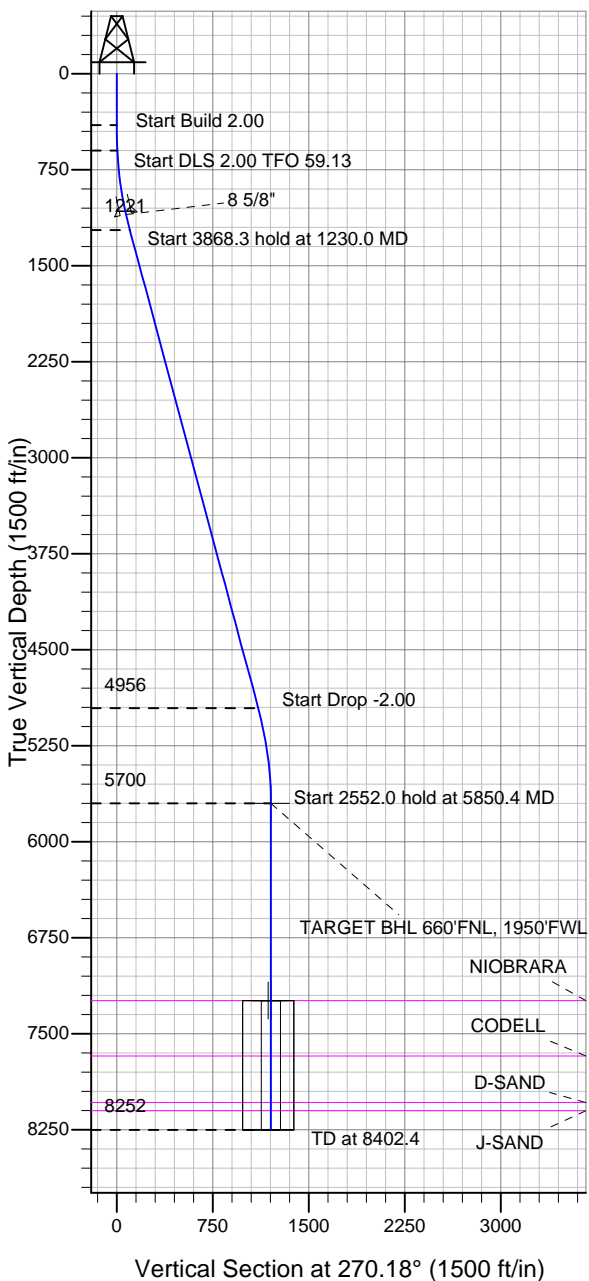
Surface Location: Stewardson USX WW33-01D Pad Sec.33-T1N-R66W  
North American Datum 1983 US State Plane 1983 Colorado Northern Zone

Ground Elevation: 5072.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1248448.02	3201613.52	40.013130	-104.780200	

Original Well Elev WELL @ 5085.0ft (Original Well Elev)

## NOBLE ENERGY INC WELD COUNTY CO



Stewardson USX WW33-01D Pad Sec.33-T1N-R66W  
Stewardson USX WW33-03D  
Noble Stewardson USX WW33-03D Plan #1 (6-16-11)  
8:33, 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 660'FNL, 1950'FWL	5700.0	3.7	-1204.5	40.013140	-104.784500	Point
LEGAL BOX 400' X 400' 661'FNL & 1971'FWL	7241.0	2.7	-1183.5	40.013137	-104.784425	Rectangle (Sides: L400.0 W400.0)
TARGET CIRCLE 660'FNL & 1950'FWL	7241.0	3.7	-1204.5	40.013140	-104.784500	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	400.0	0.00	0.00	400.0	0.0	0.0	0.00	0.00	0.0	
3	600.0	4.00	225.00	599.8	-4.9	-4.9	2.00	225.00	4.9	
4	1230.0	15.04	271.17	1220.8	-18.9	-102.6	2.00	59.13	102.5	
5	5098.3	15.04	271.17	4956.5	1.7	-1106.3	0.00	0.00	1106.3	
6	5850.4	0.00	0.00	5700.0	3.7	-1204.5	2.00	180.00	1204.5	TARGET BHL 660'FNL, 1950'FWL
7	8402.4	0.00	0.00	8252.0	3.7	-1204.5	0.00	0.00	1204.5	



## **Directional**

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

**SEC.33-T1N-R66W**

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

**Stewardson USX WW33-03D**

**Wellbore #1**

**Plan: Noble Stewardson USX WW33-03D Plan #1 (6-16-11)**

### **Standard Planning Report**

**22 June, 2011**



<b>Database:</b>	Landmark	<b>Local Co-ordinate Reference:</b>	Well Stewardson USX WW33-03D
<b>Company:</b>	NOBLE ENERGY INC WELD COUNTY CO	<b>TVD Reference:</b>	WELL @ 5085.0ft (Original Well Elev)
<b>Project:</b>	SEC.33-T1N-R66W	<b>MD Reference:</b>	WELL @ 5085.0ft (Original Well Elev)
<b>Site:</b>	Stewardson USX WW33-01D Pad Sec.33-T1N-R66W	<b>North Reference:</b>	True
<b>Well:</b>	Stewardson USX WW33-03D	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Noble Stewardson USX WW33-03D Plan #1 (6		

<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	Latitude:	40.013160
From:	Lat/Long	Easting:	3,201,593.82ft	Longitude:	-104.780270
Position Uncertainty:	0.0 ft	Slot Radius:	"	Grid Convergence:	0.47 °

Well	Stewardson USX WW33-03D					
Well Position	+N/-S	-10.9 ft	Northing:	1,248,448.02 ft	Latitude:	40.013130
	+E/-W	19.6 ft	Easting:	3,201,613.52 ft	Longitude:	-104.780200
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	5,072.0 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>	Noble Stewardson USX WW33-03D 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	270.18

<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	
400.0	0.00	0.00	400.0	0.0	0.0	0.00	0.00	0.00	0.00	
600.0	4.00	225.00	599.8	-4.9	-4.9	2.00	2.00	0.00	225.00	
1,230.0	15.04	271.17	1,220.8	-18.9	-102.6	2.00	1.75	7.33	59.13	
5,098.3	15.04	271.17	4,956.5	1.7	-1,106.3	0.00	0.00	0.00	0.00	
5,850.4	0.00	0.00	5,700.0	3.7	-1,204.5	2.00	-2.00	0.00	180.00	TARGET BHL 660'I
8,402.4	0.00	0.00	8,252.0	3.7	-1,204.5	0.00	0.00	0.00	0.00	

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<b>Project:</b>	SEC.33-T1N-R66W	<b>MD Reference:</b>	WELL @ 5085.0ft (Original Well Elev)
<b>Site:</b>	Stewardson USX WW33-01D Pad Sec.33-T1N-R66W	<b>North Reference:</b>	True
<b>Well:</b>	Stewardson USX WW33-03D	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Noble Stewardson USX WW33-03D Plan #1 (6		

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	225.00	440.0	-0.2	-0.2	0.2	2.00	2.00	0.00
480.0	1.60	225.00	480.0	-0.8	-0.8	0.8	2.00	2.00	0.00
520.0	2.40	225.00	520.0	-1.8	-1.8	1.8	2.00	2.00	0.00
560.0	3.20	225.00	559.9	-3.2	-3.2	3.1	2.00	2.00	0.00
600.0	4.00	225.00	599.8	-4.9	-4.9	4.9	2.00	2.00	0.00
640.0	4.46	233.86	639.7	-6.8	-7.2	7.2	2.00	1.16	22.15
680.0	5.01	240.92	679.6	-8.6	-10.0	9.9	2.00	1.37	17.66
720.0	5.62	246.53	719.4	-10.2	-13.3	13.3	2.00	1.52	14.01
760.0	6.27	251.00	759.2	-11.7	-17.2	17.1	2.00	1.63	11.20
800.0	6.96	254.63	798.9	-13.1	-21.6	21.5	2.00	1.71	9.05
840.0	7.66	257.59	838.6	-14.3	-26.5	26.4	2.00	1.76	7.42
880.0	8.39	260.06	878.2	-15.4	-32.0	31.9	2.00	1.81	6.16
920.0	9.12	262.13	917.8	-16.3	-38.0	37.9	2.00	1.84	5.18
960.0	9.87	263.89	957.2	-17.1	-44.5	44.5	2.00	1.86	4.41
1,000.0	10.62	265.41	996.6	-17.8	-51.6	51.6	2.00	1.88	3.79
1,040.0	11.38	266.73	1,035.8	-18.3	-59.2	59.2	2.00	1.90	3.29
1,080.0	12.14	267.88	1,075.0	-18.7	-67.4	67.3	2.00	1.91	2.89
1,105.6	12.63	268.55	1,100.0	-18.8	-72.9	72.8	2.00	1.92	2.60
8 5/8"									
1,120.0	12.91	268.90	1,114.0	-18.9	-76.0	76.0	2.00	1.93	2.45
1,160.0	13.68	269.81	1,153.0	-19.0	-85.2	85.2	2.00	1.93	2.27
1,200.0	14.46	270.62	1,191.8	-19.0	-95.0	94.9	2.00	1.94	2.03
1,230.0	15.04	271.17	1,220.8	-18.9	-102.6	102.5	2.00	1.94	1.85
1,240.0	15.04	271.17	1,230.4	-18.8	-105.2	105.1	0.00	0.00	0.00
1,280.0	15.04	271.17	1,269.1	-18.6	-115.6	115.5	0.00	0.00	0.00
1,320.0	15.04	271.17	1,307.7	-18.4	-126.0	125.9	0.00	0.00	0.00
1,360.0	15.04	271.17	1,346.3	-18.2	-136.3	136.3	0.00	0.00	0.00
1,400.0	15.04	271.17	1,385.0	-18.0	-146.7	146.7	0.00	0.00	0.00
1,440.0	15.04	271.17	1,423.6	-17.7	-157.1	157.0	0.00	0.00	0.00
1,480.0	15.04	271.17	1,462.2	-17.5	-167.5	167.4	0.00	0.00	0.00
1,520.0	15.04	271.17	1,500.8	-17.3	-177.9	177.8	0.00	0.00	0.00
1,560.0	15.04	271.17	1,539.5	-17.1	-188.2	188.2	0.00	0.00	0.00
1,600.0	15.04	271.17	1,578.1	-16.9	-198.6	198.6	0.00	0.00	0.00
1,640.0	15.04	271.17	1,616.7	-16.7	-209.0	208.9	0.00	0.00	0.00
1,680.0	15.04	271.17	1,655.4	-16.5	-219.4	219.3	0.00	0.00	0.00
1,720.0	15.04	271.17	1,694.0	-16.3	-229.7	229.7	0.00	0.00	0.00
1,760.0	15.04	271.17	1,732.6	-16.0	-240.1	240.1	0.00	0.00	0.00
1,800.0	15.04	271.17	1,771.2	-15.8	-250.5	250.5	0.00	0.00	0.00
1,840.0	15.04	271.17	1,809.9	-15.6	-260.9	260.8	0.00	0.00	0.00
1,880.0	15.04	271.17	1,848.5	-15.4	-271.3	271.2	0.00	0.00	0.00
1,920.0	15.04	271.17	1,887.1	-15.2	-281.6	281.6	0.00	0.00	0.00
1,960.0	15.04	271.17	1,925.8	-15.0	-292.0	292.0	0.00	0.00	0.00

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<b>Well:</b>	Stewardson USX WW33-03D	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Noble Stewardson USX WW33-03D Plan #1 (6		

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	15.04	271.17	1,964.4	-14.8	-302.4	302.4	0.00	0.00	0.00
2,040.0	15.04	271.17	2,003.0	-14.6	-312.8	312.7	0.00	0.00	0.00
2,080.0	15.04	271.17	2,041.7	-14.3	-323.2	323.1	0.00	0.00	0.00
2,120.0	15.04	271.17	2,080.3	-14.1	-333.5	333.5	0.00	0.00	0.00
2,160.0	15.04	271.17	2,118.9	-13.9	-343.9	343.9	0.00	0.00	0.00
2,200.0	15.04	271.17	2,157.5	-13.7	-354.3	354.3	0.00	0.00	0.00
2,240.0	15.04	271.17	2,196.2	-13.5	-364.7	364.6	0.00	0.00	0.00
2,280.0	15.04	271.17	2,234.8	-13.3	-375.1	375.0	0.00	0.00	0.00
2,320.0	15.04	271.17	2,273.4	-13.1	-385.4	385.4	0.00	0.00	0.00
2,360.0	15.04	271.17	2,312.1	-12.9	-395.8	395.8	0.00	0.00	0.00
2,400.0	15.04	271.17	2,350.7	-12.6	-406.2	406.2	0.00	0.00	0.00
2,440.0	15.04	271.17	2,389.3	-12.4	-416.6	416.5	0.00	0.00	0.00
2,480.0	15.04	271.17	2,427.9	-12.2	-427.0	426.9	0.00	0.00	0.00
2,520.0	15.04	271.17	2,466.6	-12.0	-437.3	437.3	0.00	0.00	0.00
2,560.0	15.04	271.17	2,505.2	-11.8	-447.7	447.7	0.00	0.00	0.00
2,600.0	15.04	271.17	2,543.8	-11.6	-458.1	458.1	0.00	0.00	0.00
2,640.0	15.04	271.17	2,582.5	-11.4	-468.5	468.4	0.00	0.00	0.00
2,680.0	15.04	271.17	2,621.1	-11.2	-478.8	478.8	0.00	0.00	0.00
2,720.0	15.04	271.17	2,659.7	-10.9	-489.2	489.2	0.00	0.00	0.00
2,760.0	15.04	271.17	2,698.4	-10.7	-499.6	499.6	0.00	0.00	0.00
2,800.0	15.04	271.17	2,737.0	-10.5	-510.0	509.9	0.00	0.00	0.00
2,840.0	15.04	271.17	2,775.6	-10.3	-520.4	520.3	0.00	0.00	0.00
2,880.0	15.04	271.17	2,814.2	-10.1	-530.7	530.7	0.00	0.00	0.00
2,920.0	15.04	271.17	2,852.9	-9.9	-541.1	541.1	0.00	0.00	0.00
2,960.0	15.04	271.17	2,891.5	-9.7	-551.5	551.5	0.00	0.00	0.00
3,000.0	15.04	271.17	2,930.1	-9.5	-561.9	561.8	0.00	0.00	0.00
3,040.0	15.04	271.17	2,968.8	-9.2	-572.3	572.2	0.00	0.00	0.00
3,080.0	15.04	271.17	3,007.4	-9.0	-582.6	582.6	0.00	0.00	0.00
3,120.0	15.04	271.17	3,046.0	-8.8	-593.0	593.0	0.00	0.00	0.00
3,160.0	15.04	271.17	3,084.6	-8.6	-603.4	603.4	0.00	0.00	0.00
3,200.0	15.04	271.17	3,123.3	-8.4	-613.8	613.7	0.00	0.00	0.00
3,240.0	15.04	271.17	3,161.9	-8.2	-624.2	624.1	0.00	0.00	0.00
3,280.0	15.04	271.17	3,200.5	-8.0	-634.5	634.5	0.00	0.00	0.00
3,320.0	15.04	271.17	3,239.2	-7.8	-644.9	644.9	0.00	0.00	0.00
3,360.0	15.04	271.17	3,277.8	-7.5	-655.3	655.3	0.00	0.00	0.00
3,400.0	15.04	271.17	3,316.4	-7.3	-665.7	665.6	0.00	0.00	0.00
3,440.0	15.04	271.17	3,355.1	-7.1	-676.0	676.0	0.00	0.00	0.00
3,480.0	15.04	271.17	3,393.7	-6.9	-686.4	686.4	0.00	0.00	0.00
3,520.0	15.04	271.17	3,432.3	-6.7	-696.8	696.8	0.00	0.00	0.00
3,560.0	15.04	271.17	3,470.9	-6.5	-707.2	707.2	0.00	0.00	0.00
3,600.0	15.04	271.17	3,509.6	-6.3	-717.6	717.5	0.00	0.00	0.00
3,640.0	15.04	271.17	3,548.2	-6.1	-727.9	727.9	0.00	0.00	0.00
3,680.0	15.04	271.17	3,586.8	-5.9	-738.3	738.3	0.00	0.00	0.00
3,720.0	15.04	271.17	3,625.5	-5.6	-748.7	748.7	0.00	0.00	0.00
3,760.0	15.04	271.17	3,664.1	-5.4	-759.1	759.1	0.00	0.00	0.00
3,800.0	15.04	271.17	3,702.7	-5.2	-769.5	769.4	0.00	0.00	0.00
3,840.0	15.04	271.17	3,741.3	-5.0	-779.8	779.8	0.00	0.00	0.00
3,880.0	15.04	271.17	3,780.0	-4.8	-790.2	790.2	0.00	0.00	0.00
3,920.0	15.04	271.17	3,818.6	-4.6	-800.6	800.6	0.00	0.00	0.00
3,960.0	15.04	271.17	3,857.2	-4.4	-811.0	811.0	0.00	0.00	0.00
4,000.0	15.04	271.17	3,895.9	-4.2	-821.4	821.3	0.00	0.00	0.00
4,040.0	15.04	271.17	3,934.5	-3.9	-831.7	831.7	0.00	0.00	0.00
4,080.0	15.04	271.17	3,973.1	-3.7	-842.1	842.1	0.00	0.00	0.00

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<b>Company:</b>	NOBLE ENERGY INC WELD COUNTY CO	<b>TVD Reference:</b>	WELL @ 5085.0ft (Original Well Elev)
<b>Project:</b>	SEC.33-T1N-R66W	<b>MD Reference:</b>	WELL @ 5085.0ft (Original Well Elev)
<b>Site:</b>	Stewardson USX WW33-01D Pad Sec.33-T1N-R66W	<b>North Reference:</b>	True
<b>Well:</b>	Stewardson USX WW33-03D	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Noble Stewardson USX WW33-03D Plan #1 (6		

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	15.04	271.17	4,011.8	-3.5	-852.5	852.5	0.00	0.00	0.00
4,160.0	15.04	271.17	4,050.4	-3.3	-862.9	862.9	0.00	0.00	0.00
4,200.0	15.04	271.17	4,089.0	-3.1	-873.3	873.2	0.00	0.00	0.00
4,240.0	15.04	271.17	4,127.6	-2.9	-883.6	883.6	0.00	0.00	0.00
4,280.0	15.04	271.17	4,166.3	-2.7	-894.0	894.0	0.00	0.00	0.00
4,320.0	15.04	271.17	4,204.9	-2.5	-904.4	904.4	0.00	0.00	0.00
4,360.0	15.04	271.17	4,243.5	-2.2	-914.8	914.8	0.00	0.00	0.00
4,400.0	15.04	271.17	4,282.2	-2.0	-925.1	925.1	0.00	0.00	0.00
4,440.0	15.04	271.17	4,320.8	-1.8	-935.5	935.5	0.00	0.00	0.00
4,480.0	15.04	271.17	4,359.4	-1.6	-945.9	945.9	0.00	0.00	0.00
4,520.0	15.04	271.17	4,398.0	-1.4	-956.3	956.3	0.00	0.00	0.00
4,560.0	15.04	271.17	4,436.7	-1.2	-966.7	966.7	0.00	0.00	0.00
4,600.0	15.04	271.17	4,475.3	-1.0	-977.0	977.0	0.00	0.00	0.00
4,640.0	15.04	271.17	4,513.9	-0.8	-987.4	987.4	0.00	0.00	0.00
4,680.0	15.04	271.17	4,552.6	-0.5	-997.8	997.8	0.00	0.00	0.00
4,720.0	15.04	271.17	4,591.2	-0.3	-1,008.2	1,008.2	0.00	0.00	0.00
4,760.0	15.04	271.17	4,629.8	-0.1	-1,018.6	1,018.6	0.00	0.00	0.00
4,800.0	15.04	271.17	4,668.5	0.1	-1,028.9	1,028.9	0.00	0.00	0.00
4,840.0	15.04	271.17	4,707.1	0.3	-1,039.3	1,039.3	0.00	0.00	0.00
4,880.0	15.04	271.17	4,745.7	0.5	-1,049.7	1,049.7	0.00	0.00	0.00
4,920.0	15.04	271.17	4,784.3	0.7	-1,060.1	1,060.1	0.00	0.00	0.00
4,960.0	15.04	271.17	4,823.0	0.9	-1,070.5	1,070.5	0.00	0.00	0.00
5,000.0	15.04	271.17	4,861.6	1.2	-1,080.8	1,080.8	0.00	0.00	0.00
5,040.0	15.04	271.17	4,900.2	1.4	-1,091.2	1,091.2	0.00	0.00	0.00
5,080.0	15.04	271.17	4,938.9	1.6	-1,101.6	1,101.6	0.00	0.00	0.00
5,098.3	15.04	271.17	4,956.5	1.7	-1,106.3	1,106.3	0.00	0.00	0.00
5,120.0	14.61	271.17	4,977.5	1.8	-1,111.9	1,111.9	2.00	-2.00	0.00
5,160.0	13.81	271.17	5,016.3	2.0	-1,121.7	1,121.7	2.00	-2.00	0.00
5,200.0	13.01	271.17	5,055.2	2.2	-1,131.0	1,131.0	2.00	-2.00	0.00
5,240.0	12.21	271.17	5,094.2	2.4	-1,139.7	1,139.7	2.00	-2.00	0.00
5,280.0	11.41	271.17	5,133.4	2.5	-1,147.9	1,147.9	2.00	-2.00	0.00
5,320.0	10.61	271.17	5,172.6	2.7	-1,155.5	1,155.5	2.00	-2.00	0.00
5,360.0	9.81	271.17	5,212.0	2.8	-1,162.6	1,162.6	2.00	-2.00	0.00
5,400.0	9.01	271.17	5,251.5	3.0	-1,169.2	1,169.2	2.00	-2.00	0.00
5,440.0	8.21	271.17	5,291.0	3.1	-1,175.1	1,175.1	2.00	-2.00	0.00
5,480.0	7.41	271.17	5,330.7	3.2	-1,180.6	1,180.6	2.00	-2.00	0.00
5,520.0	6.61	271.17	5,370.4	3.3	-1,185.4	1,185.5	2.00	-2.00	0.00
5,560.0	5.81	271.17	5,410.1	3.4	-1,189.8	1,189.8	2.00	-2.00	0.00
5,600.0	5.01	271.17	5,449.9	3.5	-1,193.5	1,193.5	2.00	-2.00	0.00
5,640.0	4.21	271.17	5,489.8	3.5	-1,196.8	1,196.8	2.00	-2.00	0.00
5,680.0	3.41	271.17	5,529.7	3.6	-1,199.4	1,199.4	2.00	-2.00	0.00
5,720.0	2.61	271.17	5,569.7	3.6	-1,201.5	1,201.5	2.00	-2.00	0.00
5,760.0	1.81	271.17	5,609.6	3.7	-1,203.0	1,203.1	2.00	-2.00	0.00
5,800.0	1.01	271.17	5,649.6	3.7	-1,204.0	1,204.0	2.00	-2.00	0.00
5,840.0	0.21	271.17	5,689.6	3.7	-1,204.5	1,204.5	2.00	-2.00	0.00
5,850.4	0.00	0.00	5,700.0	3.7	-1,204.5	1,204.5	2.00	-2.00	0.00
TARGET BHL 660'FNL, 1950'FWL									
5,880.0	0.00	0.00	5,729.6	3.7	-1,204.5	1,204.5	0.00	0.00	0.00
5,920.0	0.00	0.00	5,769.6	3.7	-1,204.5	1,204.5	0.00	0.00	0.00
5,960.0	0.00	0.00	5,809.6	3.7	-1,204.5	1,204.5	0.00	0.00	0.00
6,000.0	0.00	0.00	5,849.6	3.7	-1,204.5	1,204.5	0.00	0.00	0.00
6,040.0	0.00	0.00	5,889.6	3.7	-1,204.5	1,204.5	0.00	0.00	0.00
6,080.0	0.00	0.00	5,929.6	3.7	-1,204.5	1,204.5	0.00	0.00	0.00

<b>Database:</b>	Landmark	<b>Local Co-ordinate Reference:</b>	Well Stewardson USX WW33-03D
<b>Company:</b>	NOBLE ENERGY INC WELD COUNTY CO	<b>TVD Reference:</b>	WELL @ 5085.0ft (Original Well Elev)
<b>Project:</b>	SEC.33-T1N-R66W	<b>MD Reference:</b>	WELL @ 5085.0ft (Original Well Elev)
<b>Site:</b>	Stewardson USX WW33-01D Pad Sec.33-T1N-R66W	<b>North Reference:</b>	True
<b>Well:</b>	Stewardson USX WW33-03D	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Noble Stewardson USX WW33-03D Plan #1 (6		

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	5,969.6	3.7	-1,204.5	1,204.5	0.00	0.00	0.00
6,160.0	0.00	0.00	6,009.6	3.7	-1,204.5	1,204.5	0.00	0.00	0.00
6,200.0	0.00	0.00	6,049.6	3.7	-1,204.5	1,204.5	0.00	0.00	0.00
6,240.0	0.00	0.00	6,089.6	3.7	-1,204.5	1,204.5	0.00	0.00	0.00
6,280.0	0.00	0.00	6,129.6	3.7	-1,204.5	1,204.5	0.00	0.00	0.00
6,320.0	0.00	0.00	6,169.6	3.7	-1,204.5	1,204.5	0.00	0.00	0.00
6,360.0	0.00	0.00	6,209.6	3.7	-1,204.5	1,204.5	0.00	0.00	0.00
6,400.0	0.00	0.00	6,249.6	3.7	-1,204.5	1,204.5	0.00	0.00	0.00
6,440.0	0.00	0.00	6,289.6	3.7	-1,204.5	1,204.5	0.00	0.00	0.00
6,480.0	0.00	0.00	6,329.6	3.7	-1,204.5	1,204.5	0.00	0.00	0.00
6,520.0	0.00	0.00	6,369.6	3.7	-1,204.5	1,204.5	0.00	0.00	0.00
6,560.0	0.00	0.00	6,409.6	3.7	-1,204.5	1,204.5	0.00	0.00	0.00
6,600.0	0.00	0.00	6,449.6	3.7	-1,204.5	1,204.5	0.00	0.00	0.00
6,640.0	0.00	0.00	6,489.6	3.7	-1,204.5	1,204.5	0.00	0.00	0.00
6,680.0	0.00	0.00	6,529.6	3.7	-1,204.5	1,204.5	0.00	0.00	0.00
6,720.0	0.00	0.00	6,569.6	3.7	-1,204.5	1,204.5	0.00	0.00	0.00
6,760.0	0.00	0.00	6,609.6	3.7	-1,204.5	1,204.5	0.00	0.00	0.00
6,800.0	0.00	0.00	6,649.6	3.7	-1,204.5	1,204.5	0.00	0.00	0.00
6,840.0	0.00	0.00	6,689.6	3.7	-1,204.5	1,204.5	0.00	0.00	0.00
6,880.0	0.00	0.00	6,729.6	3.7	-1,204.5	1,204.5	0.00	0.00	0.00
6,920.0	0.00	0.00	6,769.6	3.7	-1,204.5	1,204.5	0.00	0.00	0.00
6,960.0	0.00	0.00	6,809.6	3.7	-1,204.5	1,204.5	0.00	0.00	0.00
7,000.0	0.00	0.00	6,849.6	3.7	-1,204.5	1,204.5	0.00	0.00	0.00
7,040.0	0.00	0.00	6,889.6	3.7	-1,204.5	1,204.5	0.00	0.00	0.00
7,080.0	0.00	0.00	6,929.6	3.7	-1,204.5	1,204.5	0.00	0.00	0.00
7,120.0	0.00	0.00	6,969.6	3.7	-1,204.5	1,204.5	0.00	0.00	0.00
7,160.0	0.00	0.00	7,009.6	3.7	-1,204.5	1,204.5	0.00	0.00	0.00
7,200.0	0.00	0.00	7,049.6	3.7	-1,204.5	1,204.5	0.00	0.00	0.00
7,240.0	0.00	0.00	7,089.6	3.7	-1,204.5	1,204.5	0.00	0.00	0.00
7,280.0	0.00	0.00	7,129.6	3.7	-1,204.5	1,204.5	0.00	0.00	0.00
7,320.0	0.00	0.00	7,169.6	3.7	-1,204.5	1,204.5	0.00	0.00	0.00
7,360.0	0.00	0.00	7,209.6	3.7	-1,204.5	1,204.5	0.00	0.00	0.00
7,391.4	0.00	0.00	7,241.0	3.7	-1,204.5	1,204.5	0.00	0.00	0.00
<b>NOBRARA - LEGAL BOX 400' X 400' 661'FNL &amp; 1971'FWL - TARGET CIRCLE 660'FNL &amp; 1950'FWL</b>									
7,400.0	0.00	0.00	7,249.6	3.7	-1,204.5	1,204.5	0.00	0.00	0.00
7,440.0	0.00	0.00	7,289.6	3.7	-1,204.5	1,204.5	0.00	0.00	0.00
7,480.0	0.00	0.00	7,329.6	3.7	-1,204.5	1,204.5	0.00	0.00	0.00
7,520.0	0.00	0.00	7,369.6	3.7	-1,204.5	1,204.5	0.00	0.00	0.00
7,560.0	0.00	0.00	7,409.6	3.7	-1,204.5	1,204.5	0.00	0.00	0.00
7,600.0	0.00	0.00	7,449.6	3.7	-1,204.5	1,204.5	0.00	0.00	0.00
7,640.0	0.00	0.00	7,489.6	3.7	-1,204.5	1,204.5	0.00	0.00	0.00
7,680.0	0.00	0.00	7,529.6	3.7	-1,204.5	1,204.5	0.00	0.00	0.00
7,720.0	0.00	0.00	7,569.6	3.7	-1,204.5	1,204.5	0.00	0.00	0.00
7,760.0	0.00	0.00	7,609.6	3.7	-1,204.5	1,204.5	0.00	0.00	0.00
7,800.0	0.00	0.00	7,649.6	3.7	-1,204.5	1,204.5	0.00	0.00	0.00
7,824.4	0.00	0.00	7,674.0	3.7	-1,204.5	1,204.5	0.00	0.00	0.00
<b>CODELL</b>									
7,840.0	0.00	0.00	7,689.6	3.7	-1,204.5	1,204.5	0.00	0.00	0.00
7,880.0	0.00	0.00	7,729.6	3.7	-1,204.5	1,204.5	0.00	0.00	0.00
7,920.0	0.00	0.00	7,769.6	3.7	-1,204.5	1,204.5	0.00	0.00	0.00
7,960.0	0.00	0.00	7,809.6	3.7	-1,204.5	1,204.5	0.00	0.00	0.00
8,000.0	0.00	0.00	7,849.6	3.7	-1,204.5	1,204.5	0.00	0.00	0.00
8,040.0	0.00	0.00	7,889.6	3.7	-1,204.5	1,204.5	0.00	0.00	0.00



<b>Database:</b>	Landmark	<b>Local Co-ordinate Reference:</b>	Well Stewardson USX WW33-03D
<b>Company:</b>	NOBLE ENERGY INC WELD COUNTY CO	<b>TVD Reference:</b>	WELL @ 5085.0ft (Original Well Elev)
<b>Project:</b>	SEC.33-T1N-R66W	<b>MD Reference:</b>	WELL @ 5085.0ft (Original Well Elev)
<b>Site:</b>	Stewardson USX WW33-01D Pad Sec.33-T1N-R66W	<b>North Reference:</b>	True
<b>Well:</b>	Stewardson USX WW33-03D	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Noble Stewardson USX WW33-03D Plan #1 (6		

**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	7,929.6	3.7	-1,204.5	1,204.5	0.00	0.00	0.00
8,120.0	0.00	0.00	7,969.6	3.7	-1,204.5	1,204.5	0.00	0.00	0.00
8,160.0	0.00	0.00	8,009.6	3.7	-1,204.5	1,204.5	0.00	0.00	0.00
8,187.4	0.00	0.00	8,037.0	3.7	-1,204.5	1,204.5	0.00	0.00	0.00
<b>D-SAND</b>									
8,200.0	0.00	0.00	8,049.6	3.7	-1,204.5	1,204.5	0.00	0.00	0.00
8,240.0	0.00	0.00	8,089.6	3.7	-1,204.5	1,204.5	0.00	0.00	0.00
8,252.4	0.00	0.00	8,102.0	3.7	-1,204.5	1,204.5	0.00	0.00	0.00
<b>J-SAND</b>									
8,280.0	0.00	0.00	8,129.6	3.7	-1,204.5	1,204.5	0.00	0.00	0.00
8,320.0	0.00	0.00	8,169.6	3.7	-1,204.5	1,204.5	0.00	0.00	0.00
8,360.0	0.00	0.00	8,209.6	3.7	-1,204.5	1,204.5	0.00	0.00	0.00
8,400.0	0.00	0.00	8,249.6	3.7	-1,204.5	1,204.5	0.00	0.00	0.00
8,402.4	0.00	0.00	8,252.0	3.7	-1,204.5	1,204.5	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 660'FN	0.00	0.00	5,700.0	3.7	-1,204.5	1,248,441.93	3,200,409.10	40.013140	-104.784500
- plan hits target center									
- Point									
LEGAL BOX 400' X 400'	0.00	0.00	7,241.0	2.7	-1,183.5	1,248,441.12	3,200,430.08	40.013137	-104.784425
- plan misses target center by 21.0ft at 7391.4ft MD (7241.0 TVD, 3.7 N, -1204.5 E)									
- Rectangle (sides W400.0 H400.0 D1,011.0)									
TARGET CIRCLE 66'	0.00	0.00	7,241.0	3.7	-1,204.5	1,248,441.93	3,200,409.10	40.013140	-104.784500
- plan hits target center									
- Circle (radius 75.0)									

**Casing Points**

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
1,105.6	1,100.0	8 5/8"	8-5/8	12-1/4

**Formations**

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
7,391.4	7,241.0	NIOBRARA		0.00	
7,824.4	7,674.0	CODELL		0.00	
8,187.4	8,037.0	D-SAND		0.00	
8,252.4	8,102.0	J-SAND		0.00	