

# ENSIGN

## Directional

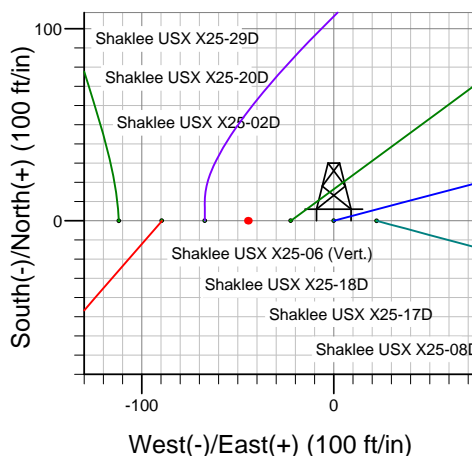
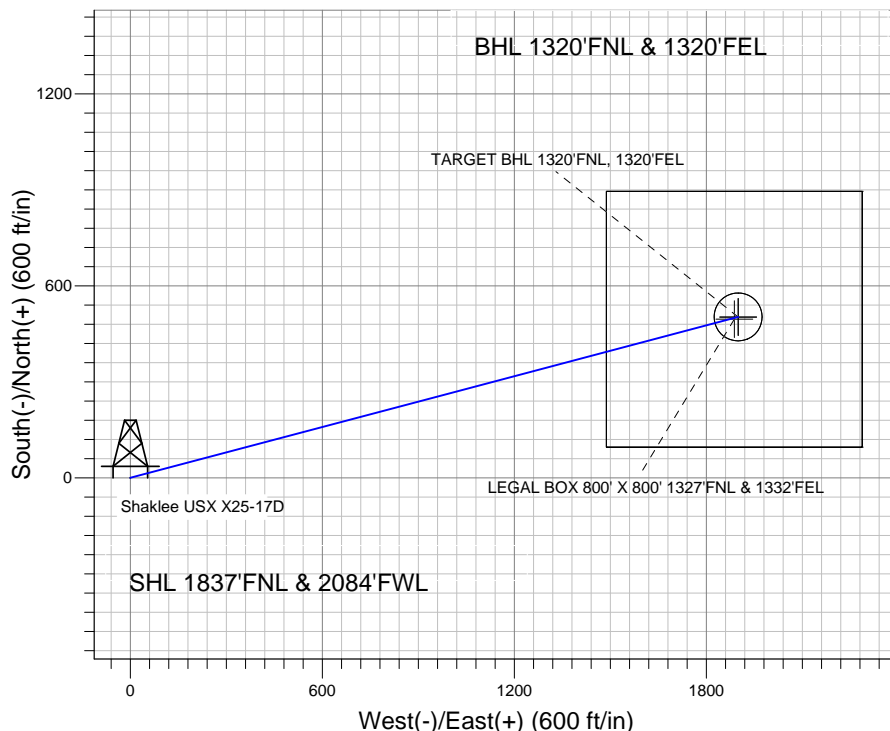
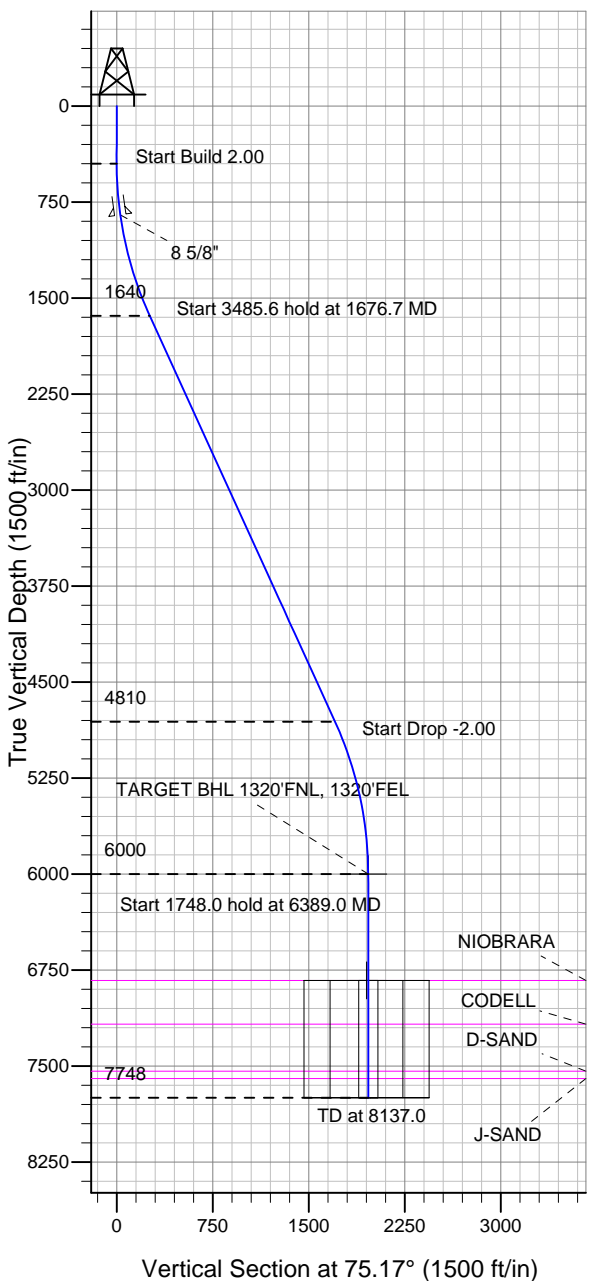
### Well Name: Shaklee USX X25-17D

Surface Location: Shaklee USX X25-02D Pad Sec.25-T2N-R65W  
North American Datum 1983 US State Plane 1983 Colorado Northern Zone

Ground Elevation: 4903.0

+N/-S +E/-W Northing Easting Latitude Longitude Slot  
0.0 0.0 1284773.71 3247732.69 40.111700 -104.614260  
Original Well Elev WELL @ 4916.0ft (Original Well Elev)

## NOBLE ENERGY INC WELD COUNTY CO



Shaklee USX X25-02D Pad Sec.25-T2N-R65W  
Shaklee USX X25-17D  
Noble Shaklee USX X25-17D Plan #1 (4-19-11)  
12:17, April 26 2011



Azimuths to True North  
Magnetic North: 8.78°

Magnetic Field  
Strength: 53009.8snT  
Dip Angle: 66.85°  
Date: 4/26/2011  
Model: IGRF2010

### WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
TARGET BHL 1320'FNL, 1320'FEL	6000.0	502.8	1899.2	40.113080	-104.607470	Point
LEGAL BOX 800' X 800' 1327'FNL & 1332'FEL	6831.0	495.8	1887.2	40.113061	-104.607513	Rectangle (Sides: L800.0 W800.0)
TARGET CIRCLE 1320'FNL & 1320'FEL	6831.0	502.8	1899.2	40.113080	-104.607470	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	450.0	0.00	0.00	450.0	0.0	0.0	0.00	0.00	0.0	
3	1676.7	24.53	75.17	1639.5	66.2	250.0	2.00	75.17	258.6	
4	5162.3	24.53	75.17	4810.5	436.6	1649.1	0.00	0.00	1706.0	
5	6389.0	0.00	0.00	6000.0	502.8	1899.2	2.00	180.00	1964.6	TARGET BHL 1320'FNL, 1320'FEL
6	8137.0	0.00	0.00	7748.0	502.8	1899.2	0.00	0.00	1964.6	



## **Directional**

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

**SEC.25-T2N-R65W**

**Shaklee USX X25-02D Pad Sec.25-T2N-R65W**

**Shaklee USX X25-17D**

**Wellbore #1**

**Plan: Noble Shaklee USX X25-17D Plan #1 (4-19-11)**

### **Standard Planning Report**

**26 April, 2011**



<b>Database:</b>	Landmark	<b>Local Co-ordinate Reference:</b>	Well Shaklee USX X25-17D
<b>Company:</b>	NOBLE ENERGY INC WELD COUNTY CO	<b>TVD Reference:</b>	WELL @ 4916.0ft (Original Well Elev)
<b>Project:</b>	SEC.25-T2N-R65W	<b>MD Reference:</b>	WELL @ 4916.0ft (Original Well Elev)
<b>Site:</b>	Shaklee USX X25-02D Pad Sec.25-T2N-R65W	<b>North Reference:</b>	True
<b>Well:</b>	Shaklee USX X25-17D	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Noble Shaklee USX X25-17D Plan #1 (4-19-11)		

<b>Project</b>	SEC.25-T2N-R65W, 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

Site						Shaklee USX X25-02D Pad Sec.25-T2N-R65W											
Site Position:						Northing:			1,284,773.06 ft			Latitude:			40.111700		
From:			Lat/Long			Easting:			3,247,665.57 ft			Longitude:			-104.614500		
Position Uncertainty:			0.0 ft			Slot Radius:			"			Grid Convergence:			0.57 °		

Well	Shaklee USX X25-17D					
Well Position	+N/-S	0.0 ft	Northing:	1,284,773.71 ft	Latitude:	40.111700
	+E/-W	67.1 ft	Easting:	3,247,732.69 ft	Longitude:	-104.614260
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,903.0 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	4/26/2011	8.78	66.85	53,010

<b>Design</b>	Noble Shaklee USX X25-17D Plan #1 (4-19-11)			
<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	75.17

<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	
450.0	0.00	0.00	450.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,676.7	24.53	75.17	1,639.5	66.2	250.0	2.00	2.00	0.00	75.17	
5,162.3	24.53	75.17	4,810.5	436.6	1,649.1	0.00	0.00	0.00	0.00	
6,389.0	0.00	0.00	6,000.0	502.8	1,899.2	2.00	-2.00	0.00	180.00	TARGET BHL 132C
8,137.0	0.00	0.00	7,748.0	502.8	1,899.2	0.00	0.00	0.00	0.00	

<b>Database:</b>	Landmark	<b>Local Co-ordinate Reference:</b>	Well Shaklee USX X25-17D
<b>Company:</b>	NOBLE ENERGY INC WELD COUNTY CO	<b>TVD Reference:</b>	WELL @ 4916.0ft (Original Well Elev)
<b>Project:</b>	SEC.25-T2N-R65W	<b>MD Reference:</b>	WELL @ 4916.0ft (Original Well Elev)
<b>Site:</b>	Shaklee USX X25-02D Pad Sec.25-T2N-R65W	<b>North Reference:</b>	True
<b>Well:</b>	Shaklee USX X25-17D	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Noble Shaklee USX X25-17D Plan #1 (4-19-11)		

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
450.0	0.00	0.00	450.0	0.0	0.0	0.0	0.00	0.00	0.00
480.0	0.60	75.17	480.0	0.0	0.2	0.2	2.00	2.00	0.00
520.0	1.40	75.17	520.0	0.2	0.8	0.9	2.00	2.00	0.00
560.0	2.20	75.17	560.0	0.5	2.0	2.1	2.00	2.00	0.00
600.0	3.00	75.17	599.9	1.0	3.8	3.9	2.00	2.00	0.00
640.0	3.80	75.17	639.9	1.6	6.1	6.3	2.00	2.00	0.00
680.0	4.60	75.17	679.8	2.4	8.9	9.2	2.00	2.00	0.00
720.0	5.40	75.17	719.6	3.3	12.3	12.7	2.00	2.00	0.00
760.0	6.20	75.17	759.4	4.3	16.2	16.8	2.00	2.00	0.00
800.0	7.00	75.17	799.1	5.5	20.6	21.4	2.00	2.00	0.00
840.0	7.80	75.17	838.8	6.8	25.6	26.5	2.00	2.00	0.00
851.3	8.03	75.17	850.0	7.2	27.1	28.1	2.00	2.00	0.00
<b>8 5/8"</b>									
880.0	8.60	75.17	878.4	8.2	31.1	32.2	2.00	2.00	0.00
920.0	9.40	75.17	917.9	9.8	37.2	38.5	2.00	2.00	0.00
960.0	10.20	75.17	957.3	11.6	43.8	45.3	2.00	2.00	0.00
1,000.0	11.00	75.17	996.6	13.5	50.9	52.6	2.00	2.00	0.00
1,040.0	11.80	75.17	1,035.8	15.5	58.5	60.5	2.00	2.00	0.00
1,080.0	12.60	75.17	1,074.9	17.7	66.7	69.0	2.00	2.00	0.00
1,120.0	13.40	75.17	1,113.9	20.0	75.4	78.0	2.00	2.00	0.00
1,160.0	14.20	75.17	1,152.8	22.4	84.6	87.5	2.00	2.00	0.00
1,200.0	15.00	75.17	1,191.5	25.0	94.4	97.6	2.00	2.00	0.00
1,240.0	15.80	75.17	1,230.0	27.7	104.6	108.2	2.00	2.00	0.00
1,280.0	16.60	75.17	1,268.4	30.6	115.4	119.4	2.00	2.00	0.00
1,320.0	17.40	75.17	1,306.7	33.6	126.7	131.1	2.00	2.00	0.00
1,360.0	18.20	75.17	1,344.8	36.7	138.5	143.3	2.00	2.00	0.00
1,400.0	19.00	75.17	1,382.7	39.9	150.9	156.1	2.00	2.00	0.00
1,440.0	19.80	75.17	1,420.4	43.3	163.7	169.4	2.00	2.00	0.00
1,480.0	20.60	75.17	1,458.0	46.9	177.1	183.2	2.00	2.00	0.00
1,520.0	21.40	75.17	1,495.3	50.6	190.9	197.5	2.00	2.00	0.00
1,560.0	22.20	75.17	1,532.4	54.4	205.3	212.4	2.00	2.00	0.00
1,600.0	23.00	75.17	1,569.4	58.3	220.2	227.7	2.00	2.00	0.00
1,640.0	23.80	75.17	1,606.1	62.4	235.5	243.6	2.00	2.00	0.00
1,676.7	24.53	75.17	1,639.5	66.2	250.0	258.6	2.00	2.00	0.00
1,680.0	24.53	75.17	1,642.6	66.5	251.4	260.0	0.00	0.00	0.00
1,720.0	24.53	75.17	1,678.9	70.8	267.4	276.6	0.00	0.00	0.00
1,760.0	24.53	75.17	1,715.3	75.1	283.5	293.2	0.00	0.00	0.00
1,800.0	24.53	75.17	1,751.7	79.3	299.5	309.8	0.00	0.00	0.00
1,840.0	24.53	75.17	1,788.1	83.6	315.6	326.5	0.00	0.00	0.00
1,880.0	24.53	75.17	1,824.5	87.8	331.6	343.1	0.00	0.00	0.00
1,920.0	24.53	75.17	1,860.9	92.1	347.7	359.7	0.00	0.00	0.00

<b>Database:</b>	Landmark	<b>Local Co-ordinate Reference:</b>	Well Shaklee USX X25-17D
<b>Company:</b>	NOBLE ENERGY INC WELD COUNTY CO	<b>TVD Reference:</b>	WELL @ 4916.0ft (Original Well Elev)
<b>Project:</b>	SEC.25-T2N-R65W	<b>MD Reference:</b>	WELL @ 4916.0ft (Original Well Elev)
<b>Site:</b>	Shaklee USX X25-02D Pad Sec.25-T2N-R65W	<b>North Reference:</b>	True
<b>Well:</b>	Shaklee USX X25-17D	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Noble Shaklee USX X25-17D Plan #1 (4-19-11)		

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)	
1,960.0	24.53	75.17	1,897.3	96.3	363.7	376.3	0.00	0.00	0.00	
2,000.0	24.53	75.17	1,933.7	100.6	379.8	392.9	0.00	0.00	0.00	
2,040.0	24.53	75.17	1,970.1	104.8	395.9	409.5	0.00	0.00	0.00	
2,080.0	24.53	75.17	2,006.4	109.1	411.9	426.1	0.00	0.00	0.00	
2,120.0	24.53	75.17	2,042.8	113.3	428.0	442.7	0.00	0.00	0.00	
2,160.0	24.53	75.17	2,079.2	117.6	444.0	459.3	0.00	0.00	0.00	
2,200.0	24.53	75.17	2,115.6	121.8	460.1	475.9	0.00	0.00	0.00	
2,240.0	24.53	75.17	2,152.0	126.1	476.1	492.5	0.00	0.00	0.00	
2,280.0	24.53	75.17	2,188.4	130.3	492.2	509.2	0.00	0.00	0.00	
2,320.0	24.53	75.17	2,224.8	134.6	508.3	525.8	0.00	0.00	0.00	
2,360.0	24.53	75.17	2,261.2	138.8	524.3	542.4	0.00	0.00	0.00	
2,400.0	24.53	75.17	2,297.6	143.1	540.4	559.0	0.00	0.00	0.00	
2,440.0	24.53	75.17	2,333.9	147.3	556.4	575.6	0.00	0.00	0.00	
2,480.0	24.53	75.17	2,370.3	151.6	572.5	592.2	0.00	0.00	0.00	
2,520.0	24.53	75.17	2,406.7	155.8	588.5	608.8	0.00	0.00	0.00	
2,560.0	24.53	75.17	2,443.1	160.1	604.6	625.4	0.00	0.00	0.00	
2,600.0	24.53	75.17	2,479.5	164.3	620.6	642.0	0.00	0.00	0.00	
2,640.0	24.53	75.17	2,515.9	168.6	636.7	658.6	0.00	0.00	0.00	
2,680.0	24.53	75.17	2,552.3	172.8	652.8	675.2	0.00	0.00	0.00	
2,720.0	24.53	75.17	2,588.7	177.1	668.8	691.9	0.00	0.00	0.00	
2,760.0	24.53	75.17	2,625.1	181.3	684.9	708.5	0.00	0.00	0.00	
2,800.0	24.53	75.17	2,661.4	185.6	700.9	725.1	0.00	0.00	0.00	
2,840.0	24.53	75.17	2,697.8	189.8	717.0	741.7	0.00	0.00	0.00	
2,880.0	24.53	75.17	2,734.2	194.1	733.0	758.3	0.00	0.00	0.00	
2,920.0	24.53	75.17	2,770.6	198.3	749.1	774.9	0.00	0.00	0.00	
2,960.0	24.53	75.17	2,807.0	202.6	765.1	791.5	0.00	0.00	0.00	
3,000.0	24.53	75.17	2,843.4	206.8	781.2	808.1	0.00	0.00	0.00	
3,040.0	24.53	75.17	2,879.8	211.1	797.3	824.7	0.00	0.00	0.00	
3,080.0	24.53	75.17	2,916.2	215.3	813.3	841.3	0.00	0.00	0.00	
3,120.0	24.53	75.17	2,952.6	219.6	829.4	857.9	0.00	0.00	0.00	
3,160.0	24.53	75.17	2,988.9	223.8	845.4	874.6	0.00	0.00	0.00	
3,200.0	24.53	75.17	3,025.3	228.1	861.5	891.2	0.00	0.00	0.00	
3,240.0	24.53	75.17	3,061.7	232.3	877.5	907.8	0.00	0.00	0.00	
3,280.0	24.53	75.17	3,098.1	236.6	893.6	924.4	0.00	0.00	0.00	
3,320.0	24.53	75.17	3,134.5	240.8	909.7	941.0	0.00	0.00	0.00	
3,360.0	24.53	75.17	3,170.9	245.1	925.7	957.6	0.00	0.00	0.00	
3,400.0	24.53	75.17	3,207.3	249.3	941.8	974.2	0.00	0.00	0.00	
3,440.0	24.53	75.17	3,243.7	253.6	957.8	990.8	0.00	0.00	0.00	
3,480.0	24.53	75.17	3,280.0	257.8	973.9	1,007.4	0.00	0.00	0.00	
3,520.0	24.53	75.17	3,316.4	262.1	989.9	1,024.0	0.00	0.00	0.00	
3,560.0	24.53	75.17	3,352.8	266.3	1,006.0	1,040.6	0.00	0.00	0.00	
3,600.0	24.53	75.17	3,389.2	270.6	1,022.0	1,057.3	0.00	0.00	0.00	
3,640.0	24.53	75.17	3,425.6	274.8	1,038.1	1,073.9	0.00	0.00	0.00	
3,680.0	24.53	75.17	3,462.0	279.1	1,054.2	1,090.5	0.00	0.00	0.00	
3,720.0	24.53	75.17	3,498.4	283.3	1,070.2	1,107.1	0.00	0.00	0.00	
3,760.0	24.53	75.17	3,534.8	287.6	1,086.3	1,123.7	0.00	0.00	0.00	
3,800.0	24.53	75.17	3,571.2	291.8	1,102.3	1,140.3	0.00	0.00	0.00	
3,840.0	24.53	75.17	3,607.5	296.1	1,118.4	1,156.9	0.00	0.00	0.00	
3,880.0	24.53	75.17	3,643.9	300.3	1,134.4	1,173.5	0.00	0.00	0.00	
3,920.0	24.53	75.17	3,680.3	304.6	1,150.5	1,190.1	0.00	0.00	0.00	
3,960.0	24.53	75.17	3,716.7	308.9	1,166.5	1,206.7	0.00	0.00	0.00	
4,000.0	24.53	75.17	3,753.1	313.1	1,182.6	1,223.3	0.00	0.00	0.00	
4,040.0	24.53	75.17	3,789.5	317.4	1,198.7	1,240.0	0.00	0.00	0.00	

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<b>Project:</b>	SEC.25-T2N-R65W	<b>MD Reference:</b>	WELL @ 4916.0ft (Original Well Elev)
<b>Site:</b>	Shaklee USX X25-02D Pad Sec.25-T2N-R65W	<b>North Reference:</b>	True
<b>Well:</b>	Shaklee USX X25-17D	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Noble Shaklee USX X25-17D Plan #1 (4-19-11)		

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)
4,080.0	24.53	75.17	3,825.9	321.6	1,214.7	1,256.6	0.00	0.00	0.00
4,120.0	24.53	75.17	3,862.3	325.9	1,230.8	1,273.2	0.00	0.00	0.00
4,160.0	24.53	75.17	3,898.7	330.1	1,246.8	1,289.8	0.00	0.00	0.00
4,200.0	24.53	75.17	3,935.0	334.4	1,262.9	1,306.4	0.00	0.00	0.00
4,240.0	24.53	75.17	3,971.4	338.6	1,278.9	1,323.0	0.00	0.00	0.00
4,280.0	24.53	75.17	4,007.8	342.9	1,295.0	1,339.6	0.00	0.00	0.00
4,320.0	24.53	75.17	4,044.2	347.1	1,311.0	1,356.2	0.00	0.00	0.00
4,360.0	24.53	75.17	4,080.6	351.4	1,327.1	1,372.8	0.00	0.00	0.00
4,400.0	24.53	75.17	4,117.0	355.6	1,343.2	1,389.4	0.00	0.00	0.00
4,440.0	24.53	75.17	4,153.4	359.9	1,359.2	1,406.0	0.00	0.00	0.00
4,480.0	24.53	75.17	4,189.8	364.1	1,375.3	1,422.7	0.00	0.00	0.00
4,520.0	24.53	75.17	4,226.2	368.4	1,391.3	1,439.3	0.00	0.00	0.00
4,560.0	24.53	75.17	4,262.5	372.6	1,407.4	1,455.9	0.00	0.00	0.00
4,600.0	24.53	75.17	4,298.9	376.9	1,423.4	1,472.5	0.00	0.00	0.00
4,640.0	24.53	75.17	4,335.3	381.1	1,439.5	1,489.1	0.00	0.00	0.00
4,680.0	24.53	75.17	4,371.7	385.4	1,455.6	1,505.7	0.00	0.00	0.00
4,720.0	24.53	75.17	4,408.1	389.6	1,471.6	1,522.3	0.00	0.00	0.00
4,760.0	24.53	75.17	4,444.5	393.9	1,487.7	1,538.9	0.00	0.00	0.00
4,800.0	24.53	75.17	4,480.9	398.1	1,503.7	1,555.5	0.00	0.00	0.00
4,840.0	24.53	75.17	4,517.3	402.4	1,519.8	1,572.1	0.00	0.00	0.00
4,880.0	24.53	75.17	4,553.7	406.6	1,535.8	1,588.7	0.00	0.00	0.00
4,920.0	24.53	75.17	4,590.0	410.9	1,551.9	1,605.4	0.00	0.00	0.00
4,960.0	24.53	75.17	4,626.4	415.1	1,567.9	1,622.0	0.00	0.00	0.00
5,000.0	24.53	75.17	4,662.8	419.4	1,584.0	1,638.6	0.00	0.00	0.00
5,040.0	24.53	75.17	4,699.2	423.6	1,600.1	1,655.2	0.00	0.00	0.00
5,080.0	24.53	75.17	4,735.6	427.9	1,616.1	1,671.8	0.00	0.00	0.00
5,120.0	24.53	75.17	4,772.0	432.1	1,632.2	1,688.4	0.00	0.00	0.00
5,160.0	24.53	75.17	4,808.4	436.4	1,648.2	1,705.0	0.00	0.00	0.00
5,162.3	24.53	75.17	4,810.5	436.6	1,649.1	1,706.0	0.00	0.00	0.00
5,200.0	23.78	75.17	4,844.9	440.6	1,664.1	1,721.4	2.00	-2.00	0.00
5,240.0	22.98	75.17	4,881.6	444.6	1,679.4	1,737.3	2.00	-2.00	0.00
5,280.0	22.18	75.17	4,918.5	448.6	1,694.3	1,752.6	2.00	-2.00	0.00
5,320.0	21.38	75.17	4,955.7	452.4	1,708.6	1,767.5	2.00	-2.00	0.00
5,360.0	20.58	75.17	4,993.0	456.0	1,722.4	1,781.8	2.00	-2.00	0.00
5,400.0	19.78	75.17	5,030.6	459.6	1,735.8	1,795.6	2.00	-2.00	0.00
5,440.0	18.98	75.17	5,068.3	463.0	1,748.6	1,808.9	2.00	-2.00	0.00
5,480.0	18.18	75.17	5,106.2	466.2	1,760.9	1,821.6	2.00	-2.00	0.00
5,520.0	17.38	75.17	5,144.3	469.3	1,772.7	1,833.8	2.00	-2.00	0.00
5,560.0	16.58	75.17	5,182.5	472.3	1,784.0	1,845.5	2.00	-2.00	0.00
5,600.0	15.78	75.17	5,221.0	475.2	1,794.8	1,856.6	2.00	-2.00	0.00
5,640.0	14.98	75.17	5,259.5	477.9	1,805.1	1,867.3	2.00	-2.00	0.00
5,680.0	14.18	75.17	5,298.2	480.5	1,814.8	1,877.3	2.00	-2.00	0.00
5,720.0	13.38	75.17	5,337.1	482.9	1,824.0	1,886.8	2.00	-2.00	0.00
5,760.0	12.58	75.17	5,376.1	485.2	1,832.7	1,895.8	2.00	-2.00	0.00
5,800.0	11.78	75.17	5,415.2	487.4	1,840.8	1,904.3	2.00	-2.00	0.00
5,840.0	10.98	75.17	5,454.4	489.4	1,848.5	1,912.2	2.00	-2.00	0.00
5,880.0	10.18	75.17	5,493.7	491.3	1,855.6	1,919.5	2.00	-2.00	0.00
5,920.0	9.38	75.17	5,533.1	493.0	1,862.1	1,926.3	2.00	-2.00	0.00
5,960.0	8.58	75.17	5,572.6	494.6	1,868.2	1,932.5	2.00	-2.00	0.00
6,000.0	7.78	75.17	5,612.2	496.1	1,873.7	1,938.2	2.00	-2.00	0.00
6,040.0	6.98	75.17	5,651.9	497.4	1,878.6	1,943.4	2.00	-2.00	0.00
6,080.0	6.18	75.17	5,691.6	498.6	1,883.1	1,948.0	2.00	-2.00	0.00
6,120.0	5.38	75.17	5,731.4	499.6	1,887.0	1,952.0	2.00	-2.00	0.00

<b>Database:</b>	Landmark	<b>Local Co-ordinate Reference:</b>	Well Shaklee USX X25-17D
<b>Company:</b>	NOBLE ENERGY INC WELD COUNTY CO	<b>TVD Reference:</b>	WELL @ 4916.0ft (Original Well Elev)
<b>Project:</b>	SEC.25-T2N-R65W	<b>MD Reference:</b>	WELL @ 4916.0ft (Original Well Elev)
<b>Site:</b>	Shaklee USX X25-02D Pad Sec.25-T2N-R65W	<b>North Reference:</b>	True
<b>Well:</b>	Shaklee USX X25-17D	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Noble Shaklee USX X25-17D Plan #1 (4-19-11)		

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)
6,160.0	4.58	75.17	5,771.3	500.5	1,890.3	1,955.5	2.00	-2.00	0.00
6,200.0	3.78	75.17	5,811.2	501.2	1,893.1	1,958.4	2.00	-2.00	0.00
6,240.0	2.98	75.17	5,851.1	501.8	1,895.4	1,960.7	2.00	-2.00	0.00
6,280.0	2.18	75.17	5,891.0	502.3	1,897.2	1,962.5	2.00	-2.00	0.00
6,320.0	1.38	75.17	5,931.0	502.6	1,898.4	1,963.8	2.00	-2.00	0.00
6,360.0	0.58	75.17	5,971.0	502.8	1,899.0	1,964.5	2.00	-2.00	0.00
6,389.0	0.00	0.00	6,000.0	502.8	1,899.2	1,964.6	2.00	-2.00	-259.42
TARGET BHL 1320'FNL, 1320'FEL									
6,400.0	0.00	0.00	6,011.0	502.8	1,899.2	1,964.6	0.00	0.00	0.00
6,440.0	0.00	0.00	6,051.0	502.8	1,899.2	1,964.6	0.00	0.00	0.00
6,480.0	0.00	0.00	6,091.0	502.8	1,899.2	1,964.6	0.00	0.00	0.00
6,520.0	0.00	0.00	6,131.0	502.8	1,899.2	1,964.6	0.00	0.00	0.00
6,560.0	0.00	0.00	6,171.0	502.8	1,899.2	1,964.6	0.00	0.00	0.00
6,600.0	0.00	0.00	6,211.0	502.8	1,899.2	1,964.6	0.00	0.00	0.00
6,640.0	0.00	0.00	6,251.0	502.8	1,899.2	1,964.6	0.00	0.00	0.00
6,680.0	0.00	0.00	6,291.0	502.8	1,899.2	1,964.6	0.00	0.00	0.00
6,720.0	0.00	0.00	6,331.0	502.8	1,899.2	1,964.6	0.00	0.00	0.00
6,760.0	0.00	0.00	6,371.0	502.8	1,899.2	1,964.6	0.00	0.00	0.00
6,800.0	0.00	0.00	6,411.0	502.8	1,899.2	1,964.6	0.00	0.00	0.00
6,840.0	0.00	0.00	6,451.0	502.8	1,899.2	1,964.6	0.00	0.00	0.00
6,880.0	0.00	0.00	6,491.0	502.8	1,899.2	1,964.6	0.00	0.00	0.00
6,920.0	0.00	0.00	6,531.0	502.8	1,899.2	1,964.6	0.00	0.00	0.00
6,960.0	0.00	0.00	6,571.0	502.8	1,899.2	1,964.6	0.00	0.00	0.00
7,000.0	0.00	0.00	6,611.0	502.8	1,899.2	1,964.6	0.00	0.00	0.00
7,040.0	0.00	0.00	6,651.0	502.8	1,899.2	1,964.6	0.00	0.00	0.00
7,080.0	0.00	0.00	6,691.0	502.8	1,899.2	1,964.6	0.00	0.00	0.00
7,120.0	0.00	0.00	6,731.0	502.8	1,899.2	1,964.6	0.00	0.00	0.00
7,160.0	0.00	0.00	6,771.0	502.8	1,899.2	1,964.6	0.00	0.00	0.00
7,200.0	0.00	0.00	6,811.0	502.8	1,899.2	1,964.6	0.00	0.00	0.00
7,220.0	0.00	0.00	6,831.0	502.8	1,899.2	1,964.6	0.00	0.00	0.00
NIOBRARA - LEGAL BOX 800' X 800' 1327'FNL & 1332'FEL - TARGET CIRCLE 1320'FNL & 1320'FEL									
7,240.0	0.00	0.00	6,851.0	502.8	1,899.2	1,964.6	0.00	0.00	0.00
7,280.0	0.00	0.00	6,891.0	502.8	1,899.2	1,964.6	0.00	0.00	0.00
7,320.0	0.00	0.00	6,931.0	502.8	1,899.2	1,964.6	0.00	0.00	0.00
7,360.0	0.00	0.00	6,971.0	502.8	1,899.2	1,964.6	0.00	0.00	0.00
7,400.0	0.00	0.00	7,011.0	502.8	1,899.2	1,964.6	0.00	0.00	0.00
7,440.0	0.00	0.00	7,051.0	502.8	1,899.2	1,964.6	0.00	0.00	0.00
7,480.0	0.00	0.00	7,091.0	502.8	1,899.2	1,964.6	0.00	0.00	0.00
7,520.0	0.00	0.00	7,131.0	502.8	1,899.2	1,964.6	0.00	0.00	0.00
7,560.0	0.00	0.00	7,171.0	502.8	1,899.2	1,964.6	0.00	0.00	0.00
7,562.0	0.00	0.00	7,173.0	502.8	1,899.2	1,964.6	0.00	0.00	0.00
CODELL									
7,600.0	0.00	0.00	7,211.0	502.8	1,899.2	1,964.6	0.00	0.00	0.00
7,640.0	0.00	0.00	7,251.0	502.8	1,899.2	1,964.6	0.00	0.00	0.00
7,680.0	0.00	0.00	7,291.0	502.8	1,899.2	1,964.6	0.00	0.00	0.00
7,720.0	0.00	0.00	7,331.0	502.8	1,899.2	1,964.6	0.00	0.00	0.00
7,760.0	0.00	0.00	7,371.0	502.8	1,899.2	1,964.6	0.00	0.00	0.00
7,800.0	0.00	0.00	7,411.0	502.8	1,899.2	1,964.6	0.00	0.00	0.00
7,840.0	0.00	0.00	7,451.0	502.8	1,899.2	1,964.6	0.00	0.00	0.00
7,880.0	0.00	0.00	7,491.0	502.8	1,899.2	1,964.6	0.00	0.00	0.00
7,920.0	0.00	0.00	7,531.0	502.8	1,899.2	1,964.6	0.00	0.00	0.00
7,929.0	0.00	0.00	7,540.0	502.8	1,899.2	1,964.6	0.00	0.00	0.00



<b>Database:</b>	Landmark	<b>Local Co-ordinate Reference:</b>	Well Shaklee USX X25-17D
<b>Company:</b>	NOBLE ENERGY INC WELD COUNTY CO	<b>TVD Reference:</b>	WELL @ 4916.0ft (Original Well Elev)
<b>Project:</b>	SEC.25-T2N-R65W	<b>MD Reference:</b>	WELL @ 4916.0ft (Original Well Elev)
<b>Site:</b>	Shaklee USX X25-02D Pad Sec.25-T2N-R65W	<b>North Reference:</b>	True
<b>Well:</b>	Shaklee USX X25-17D	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Noble Shaklee USX X25-17D Plan #1 (4-19-11)		

**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)
<b>D-SAND</b>									
7,960.0	0.00	0.00	7,571.0	502.8	1,899.2	1,964.6	0.00	0.00	0.00
7,987.0	0.00	0.00	7,598.0	502.8	1,899.2	1,964.6	0.00	0.00	0.00
<b>J-SAND</b>									
8,000.0	0.00	0.00	7,611.0	502.8	1,899.2	1,964.6	0.00	0.00	0.00
8,040.0	0.00	0.00	7,651.0	502.8	1,899.2	1,964.6	0.00	0.00	0.00
8,080.0	0.00	0.00	7,691.0	502.8	1,899.2	1,964.6	0.00	0.00	0.00
8,120.0	0.00	0.00	7,731.0	502.8	1,899.2	1,964.6	0.00	0.00	0.00
8,137.0	0.00	0.00	7,748.0	502.8	1,899.2	1,964.6	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 1320'F	0.00	0.00	6,000.0	502.8	1,899.2	1,285,295.46	3,249,626.66	40.113080	-104.607470
- plan hits target center									
- Point									
LEGAL BOX 800' X 800'	0.00	0.00	6,831.0	495.8	1,887.2	1,285,288.32	3,249,614.76	40.113061	-104.607513
- plan misses target center by 13.9ft at 7220.0ft MD (6831.0 TVD, 502.8 N, 1899.2 E)									
- Rectangle (sides W800.0 H800.0 D917.0)									
TARGET CIRCLE 1320'F	0.00	0.00	6,831.0	502.8	1,899.2	1,285,295.46	3,249,626.66	40.113080	-104.607470
- plan hits target center									
- Circle (radius 75.0)									

**Casing Points**

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
851.3	850.0	8 5/8"	8-5/8	12-1/4

**Formations**

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
7,220.0	6,831.0	NIOBRARA		0.00	
7,562.0	7,173.0	CODELL		0.00	
7,929.0	7,540.0	D-SAND		0.00	
7,987.0	7,598.0	J-SAND		0.00	