

Well Name: **Booth USX EE25-03D**

Surface Location: Booth USX EE25-02D Pad Sec.25-T7N-R65W  
North American Datum 1983 US State Plane 1983 Colorado Northern Zone

Ground Elevation: 4820.0

+N/-S +E/-W  
0.0 0.0

Northing  
1442862.15

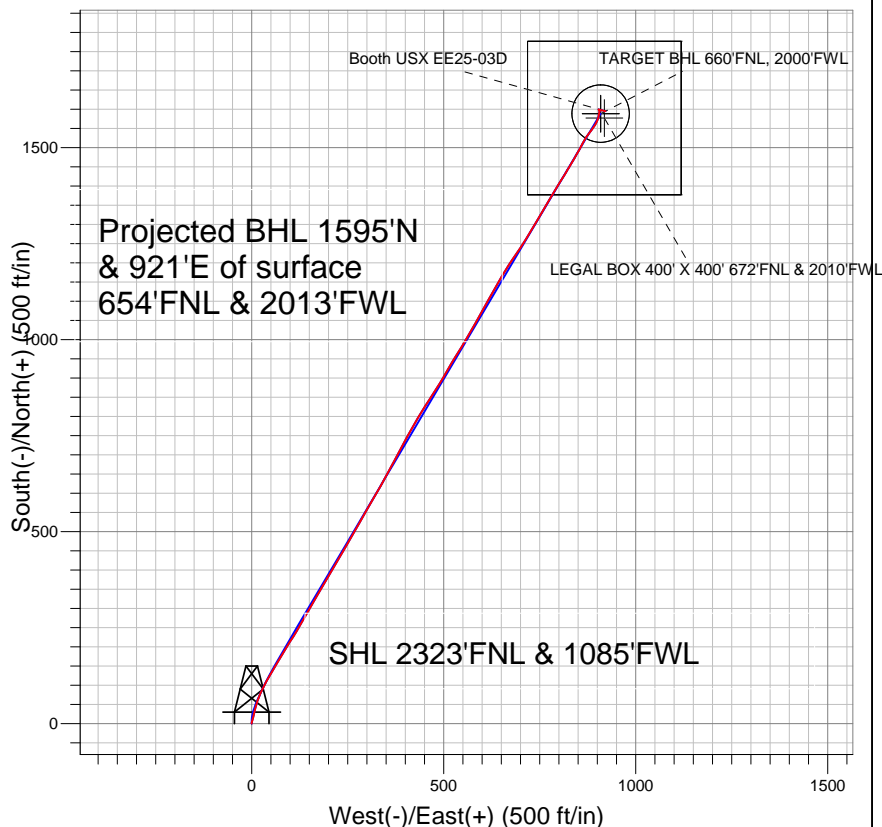
Easting  
3245494.87

Latitude  
40.545700

Longitude  
-104.616630

Slot

## NOBLE ENERGY INC WELD COUNTY CO

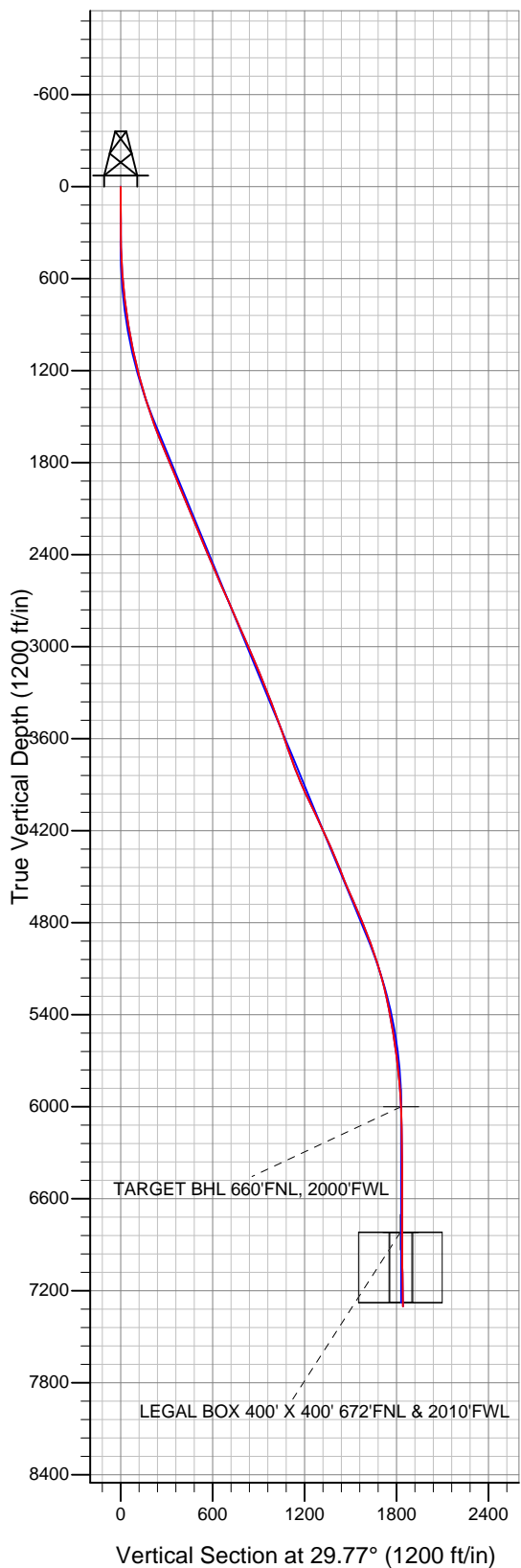


### LEGEND

- Booth USX EE25-03D, Wellbore #1, Noble Booth USX EE25-03D Plan #1 (7-22-11) V0
- Wellbore #1
- Survey #1

## Final Survey Plot

Projected Final Survey -  
7635'MD & 7302'TVD @ 1842'VS  
3.8 deg Inc 103.4 deg AZ



Project: SEC.25-T7N-R65W  
Site: Booth USX EE25-02D Pad Sec.25-T7N-R65W  
Well: Booth USX EE25-03D  
Plan: Wellbore #1



## **Directional**

# **NOBLE ENERGY INC WELD COUNTY CO**

**SEC.25-T7N-R65W**

**Booth USX EE25-02D Pad Sec.25-T7N-R65W**

**Booth USX EE25-03D**

**Wellbore #1**

**Survey: Survey #1**

## **Standard Survey Report**

**16 November, 2011**



<b>Company:</b>	NOBLE ENERGY INC WELD COUNTY CO	<b>Local Co-ordinate Reference:</b>	Well Booth USX EE25-03D
<b>Project:</b>	SEC.25-T7N-R65W	<b>TVD Reference:</b>	WELL @ 4833.0ft (Original Well Elev)
<b>Site:</b>	Booth USX EE25-02D Pad Sec.25-T7N-R65W	<b>MD Reference:</b>	WELL @ 4833.0ft (Original Well Elev)
<b>Well:</b>	Booth USX EE25-03D	<b>North Reference:</b>	True
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Wellbore #1	<b>Database:</b>	Landmark

<b>Project</b>	SEC.25-T7N-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		Booth USX EE25-02D Pad Sec.25-T7N-R65W			
Site Position:		Northing:	1,442,876.90ft	Latitude:	40.545740
From:	Lat/Long	Easting:	3,245,511.39ft	Longitude:	-104.616570
Position Uncertainty:	0.0 ft	Slot Radius:	"	Grid Convergence:	0.57 °

Well	Booth USX EE25-03D					
Well Position	+N/-S	0.0 ft	Northing:	1,442,862.15 ft	Latitude:	40.545700
	+E/-W	0.0 ft	Easting:	3,245,494.87 ft	Longitude:	-104.616630
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,820.0 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	7/22/2011	8.78	67.19	53,213

<b>Design</b>	Wellbore #1				
<b>Audit Notes:</b>					
<b>Version:</b>	1.0	<b>Phase:</b>	ACTUAL	<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	29.77	

<b>Survey Program</b>	<b>Date</b>	11/16/2011			
<b>From (ft)</b>	<b>To (ft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>	
129.0	7,635.0	Survey #1 (Wellbore #1)	MWD	MWD - Standard	

<b>Survey</b>										
<b>Measured Depth (ft)</b>	<b>Inclination (°)</b>	<b>Azimuth (°)</b>	<b>Vertical Depth (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Vertical Section (ft)</b>	<b>Dogleg Rate (°/100ft)</b>	<b>Build Rate (°/100ft)</b>	<b>Turn Rate (°/100ft)</b>	
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00	
129.0	0.30	331.90	129.0	0.3	-0.2	0.2	0.23	0.23	0.00	
220.0	0.40	1.20	220.0	0.8	-0.3	0.6	0.22	0.11	32.20	
311.0	0.40	3.90	311.0	1.5	-0.2	1.2	0.02	0.00	2.97	
402.0	1.30	21.40	402.0	2.7	0.2	2.5	1.02	0.99	19.23	
493.0	2.60	18.30	492.9	5.7	1.2	5.5	1.43	1.43	-3.41	
584.0	4.60	13.20	583.7	11.2	2.7	11.0	2.22	2.20	-5.60	
678.0	6.60	12.30	677.3	20.1	4.7	19.8	2.13	2.13	-0.96	
704.0	7.00	13.40	703.1	23.1	5.4	22.7	1.62	1.54	4.23	
773.0	7.70	13.40	771.5	31.7	7.4	31.2	1.01	1.01	0.00	
867.0	8.60	15.50	864.6	44.6	10.7	44.1	1.01	0.96	2.23	
961.0	9.90	16.90	957.4	59.1	15.0	58.7	1.40	1.38	1.49	
1,055.0	12.00	23.70	1,049.7	75.8	21.3	76.3	2.62	2.23	7.23	

<b>Company:</b>	NOBLE ENERGY INC WELD COUNTY CO	<b>Local Co-ordinate Reference:</b>	Well Booth USX EE25-03D
<b>Project:</b>	SEC.25-T7N-R65W	<b>TVD Reference:</b>	WELL @ 4833.0ft (Original Well Elev)
<b>Site:</b>	Booth USX EE25-02D Pad Sec.25-T7N-R65W	<b>MD Reference:</b>	WELL @ 4833.0ft (Original Well Elev)
<b>Well:</b>	Booth USX EE25-03D	<b>North Reference:</b>	True
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Wellbore #1	<b>Database:</b>	Landmark

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)
1,148.0	13.50	27.10	1,140.4	94.3	30.1	96.8	1.80	1.61	3.66
1,241.0	14.40	30.20	1,230.6	114.0	40.8	119.2	1.26	0.97	3.33
1,335.0	16.00	29.30	1,321.3	135.4	53.1	143.9	1.72	1.70	-0.96
1,429.0	17.90	30.80	1,411.2	159.1	66.8	171.3	2.07	2.02	1.60
1,524.0	18.90	31.80	1,501.4	184.7	82.4	201.2	1.10	1.05	1.05
1,617.0	20.80	31.80	1,588.9	211.5	99.0	232.8	2.04	2.04	0.00
1,710.0	22.70	30.80	1,675.2	241.0	116.9	267.2	2.08	2.04	-1.08
1,803.0	22.60	30.60	1,761.1	271.8	135.2	303.0	0.14	-0.11	-0.22
1,897.0	22.90	29.90	1,847.7	303.2	153.5	339.4	0.43	0.32	-0.74
1,991.0	22.40	28.80	1,934.5	334.7	171.3	375.6	0.70	-0.53	-1.17
2,084.0	22.50	30.40	2,020.4	365.6	188.8	411.1	0.67	0.11	1.72
2,178.0	22.80	31.30	2,107.2	396.7	207.4	447.3	0.49	0.32	0.96
2,271.0	22.60	30.80	2,193.0	427.4	225.9	483.2	0.30	-0.22	-0.54
2,365.0	22.00	28.60	2,280.0	458.4	243.6	518.8	1.09	-0.64	-2.34
2,458.0	23.40	30.90	2,365.8	489.5	261.4	554.7	1.78	1.51	2.47
2,552.0	23.90	30.00	2,451.9	522.1	280.5	592.4	0.66	0.53	-0.96
2,646.0	23.20	29.50	2,538.0	554.7	299.1	630.0	0.77	-0.74	-0.53
2,740.0	23.40	29.50	2,624.4	587.0	317.4	667.2	0.21	0.21	0.00
2,833.0	24.40	29.30	2,709.4	619.8	335.9	704.8	1.08	1.08	-0.22
2,927.0	23.50	29.00	2,795.3	653.2	354.5	743.0	0.97	-0.96	-0.32
3,020.0	23.50	28.10	2,880.6	685.7	372.2	780.1	0.39	0.00	-0.97
3,115.0	23.70	28.60	2,967.6	719.2	390.3	818.1	0.30	0.21	0.53
3,208.0	23.90	27.40	3,052.7	752.3	407.9	855.6	0.56	0.22	-1.29
3,301.0	21.70	32.00	3,138.5	783.7	425.7	891.6	3.04	-2.37	4.95
3,395.0	22.00	30.60	3,225.7	813.6	443.9	926.6	0.64	0.32	-1.49
3,488.0	22.30	33.40	3,311.9	843.3	462.5	961.6	1.18	0.32	3.01
3,581.0	20.70	32.50	3,398.4	871.9	481.0	995.6	1.76	-1.72	-0.97
3,675.0	19.30	30.60	3,486.7	899.3	497.8	1,027.8	1.64	-1.49	-2.02
3,768.0	19.20	29.50	3,574.5	925.8	513.2	1,058.4	0.40	-0.11	-1.18
3,861.0	19.80	32.30	3,662.2	952.4	529.1	1,089.5	1.19	0.65	3.01
3,955.0	20.00	31.10	3,750.6	979.6	545.9	1,121.4	0.48	0.21	-1.28
4,049.0	21.90	30.20	3,838.3	1,008.6	563.1	1,155.0	2.05	2.02	-0.96
4,142.0	23.40	29.70	3,924.2	1,039.6	580.9	1,190.8	1.63	1.61	-0.54
4,235.0	25.50	28.80	4,008.8	1,073.2	599.7	1,229.3	2.29	2.26	-0.97
4,330.0	26.80	29.70	4,094.1	1,109.7	620.2	1,271.2	1.43	1.37	0.95
4,423.0	25.40	29.00	4,177.6	1,145.4	640.3	1,312.1	1.54	-1.51	-0.75
4,517.0	23.30	30.90	4,263.3	1,179.0	659.6	1,350.9	2.38	-2.23	2.02
4,610.0	22.70	34.80	4,348.9	1,209.5	679.3	1,387.1	1.76	-0.65	4.19
4,703.0	22.70	34.60	4,434.7	1,239.0	699.7	1,422.9	0.08	0.00	-0.22
4,796.0	22.10	31.10	4,520.6	1,268.7	718.9	1,458.3	1.57	-0.65	-3.76
4,890.0	23.30	30.00	4,607.4	1,300.0	737.4	1,494.5	1.35	1.28	-1.17
4,984.0	24.20	30.20	4,693.4	1,332.7	756.3	1,532.4	0.96	0.96	0.21
5,077.0	21.90	31.50	4,779.0	1,364.0	775.0	1,568.8	2.53	-2.47	1.40
5,172.0	21.30	32.20	4,867.3	1,393.7	793.5	1,603.7	0.69	-0.63	0.74
5,265.0	20.80	30.20	4,954.1	1,422.3	810.8	1,637.1	0.94	-0.54	-2.15
5,358.0	17.40	31.50	5,042.0	1,448.4	826.3	1,667.5	3.68	-3.66	1.40
5,452.0	16.10	30.40	5,132.0	1,471.6	840.3	1,694.6	1.42	-1.38	-1.17
5,547.0	14.40	27.60	5,223.6	1,493.5	852.4	1,719.6	1.95	-1.79	-2.95
5,641.0	11.70	28.30	5,315.2	1,512.2	862.4	1,740.8	2.88	-2.87	0.74
5,734.0	10.00	33.90	5,406.5	1,527.2	871.3	1,758.3	2.15	-1.83	6.02
5,828.0	9.70	38.00	5,499.1	1,540.2	880.8	1,774.3	0.81	-0.32	4.36
5,923.0	8.50	34.30	5,592.9	1,552.3	889.6	1,789.2	1.40	-1.26	-3.89
6,016.0	6.90	29.00	5,685.1	1,562.9	896.2	1,801.6	1.88	-1.72	-5.70
6,110.0	6.30	20.90	5,778.5	1,572.7	900.8	1,812.4	1.18	-0.64	-8.62

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<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Wellbore #1	<b>Database:</b>	Landmark

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)
6,204.0	4.80	10.70	5,872.0	1,581.3	903.4	1,821.2	1.90	-1.60	-10.85
6,298.0	3.20	9.70	5,965.8	1,587.8	904.5	1,827.4	1.70	-1.70	-1.06
6,332.2	2.79	8.48	6,000.0	1,589.6	904.8	1,829.0	1.20	-1.19	-3.55
<b>TARGET BHL 660'FNL, 2000'FWL</b>									
6,391.0	2.10	5.30	6,058.7	1,592.1	905.1	1,831.4	1.20	-1.18	-5.42
6,484.0	0.80	31.80	6,151.7	1,594.3	905.6	1,833.6	1.54	-1.40	28.49
6,577.0	0.60	29.50	6,244.7	1,595.3	906.2	1,834.7	0.22	-0.22	-2.47
6,671.0	0.50	339.60	6,338.7	1,596.1	906.3	1,835.5	0.50	-0.11	-53.09
6,764.0	0.60	342.20	6,431.7	1,596.9	906.0	1,836.0	0.11	0.11	2.80
6,857.0	0.70	329.60	6,524.7	1,597.9	905.6	1,836.6	0.19	0.11	-13.55
6,950.0	0.60	310.60	6,617.7	1,598.7	904.9	1,837.0	0.25	-0.11	-20.43
7,044.0	0.40	290.20	6,711.6	1,599.1	904.3	1,837.1	0.28	-0.21	-21.70
7,138.0	0.40	224.80	6,805.6	1,599.0	903.7	1,836.7	0.46	0.00	-69.57
7,150.4	0.40	203.84	6,818.0	1,598.9	903.7	1,836.6	1.18	0.02	-169.05
<b>TARGET CIRCLE 660'FNL &amp; 2000'FWL</b>									
7,150.6	0.40	203.45	6,818.3	1,598.9	903.7	1,836.6	1.18	0.23	-164.26
<b>LEGAL BOX 400' X 400' 672'FNL &amp; 2010'FWL</b>									
7,231.0	1.10	146.10	6,898.6	1,598.0	904.0	1,836.0	1.18	0.87	-71.37
7,325.0	1.10	76.33	6,992.6	1,597.5	905.4	1,836.2	1.34	0.00	-74.22
7,418.0	2.90	95.60	7,085.6	1,597.5	908.6	1,837.8	2.04	1.94	20.72
7,511.0	3.50	104.80	7,178.4	1,596.5	913.7	1,839.5	0.85	0.65	9.89
7,583.0	3.80	103.40	7,250.3	1,595.4	918.1	1,840.7	0.43	0.42	-1.94
7,635.0	3.80	103.40	7,302.2	1,594.6	921.5	1,841.7	0.00	0.00	0.00

Checked By: _____	Approved By: _____	Date: _____
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