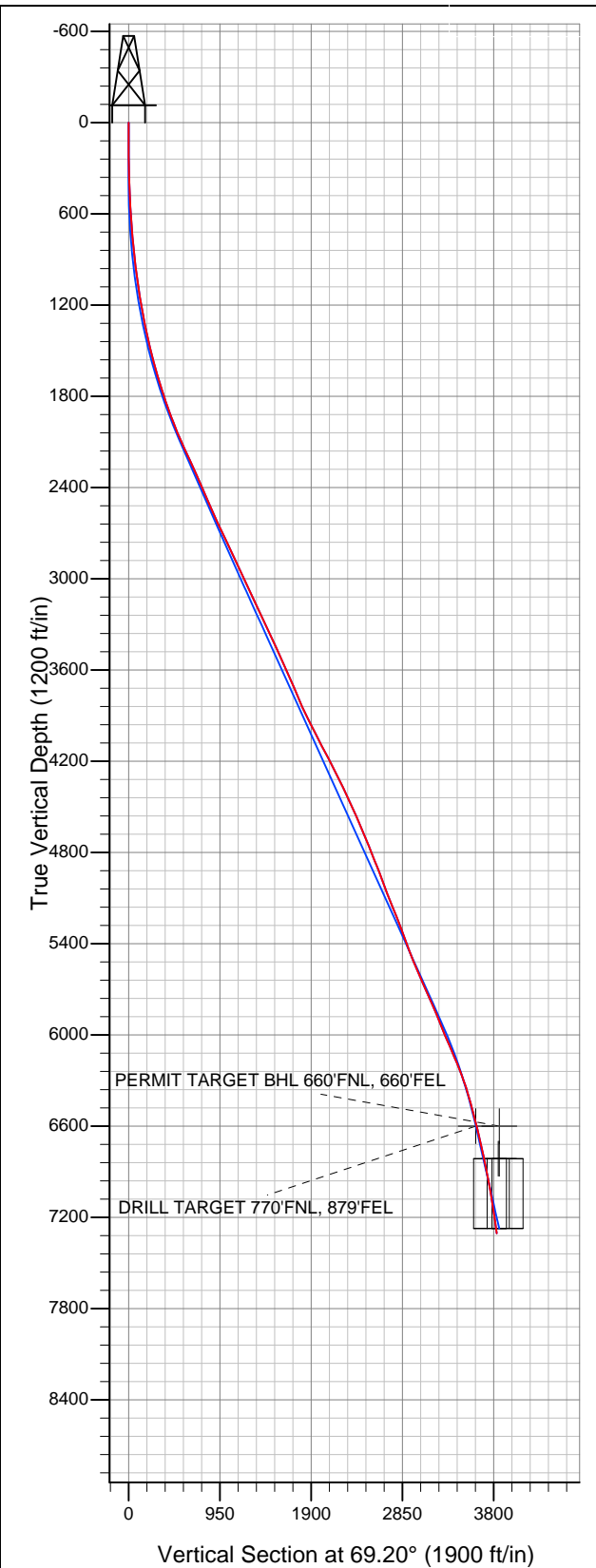


# Well Name: Booth EE25-01D

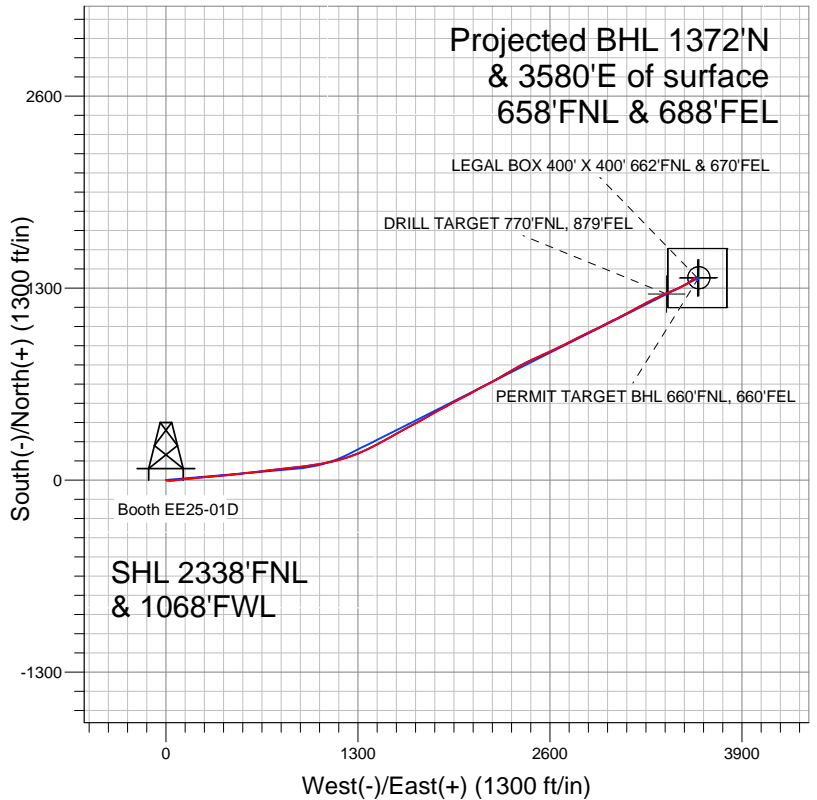
Surface Location: Booth USX EE25-02D Pad Sec.25-T7N-R65W  
 North American Datum 1983 US State Plane 1983 Colorado Northern Zone  
 Ground Elevation: 4820.0  

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1442847.38	3245475.56	40.545660	-104.616700	

 Original Well Elev WELL @ 4833.0ft (Original Well Elev)



## NOBLE ENERGY INC WELD COUNTY CO



### LEGEND

- Booth EE25-01D, Wellbore #1, Noble Booth EE25-01D Plan #1 (7-22-11) V0
- Wellbore #1
- Survey #1

## Final Survey Plot

Projected Final Survey -  
 8431'MD & 7304'TVD @ 3834'VS  
 14.3 deg Inc 48.3 deg AZ

Project: SEC.25-T7N-R65W  
 Site: Booth USX EE25-02D Pad Sec.25-T7N-R65W  
 Well: Booth EE25-01D  
 Plan: Wellbore #1



# **NOBLE ENERGY INC WELD COUNTY CO**

**SEC.25-T7N-R65W**

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

**Booth EE25-01D**

**Wellbore #1**

**Survey: Survey #1**

## **Standard Survey Report**

**14 November, 2011**



<b>Company:</b>	NOBLE ENERGY INC WELD COUNTY CO	<b>Local Co-ordinate Reference:</b>	Well Booth EE25-01D
<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 EE25-01D	<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 EE25-01D					
Well Position	+N/-S	0.0 ft	Northing:	1,442,847.38 ft	Latitude:	40.545660
	+E/-W	0.0 ft	Easting:	3,245,475.56 ft	Longitude:	-104.616700
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>	
	6,600.0	0.0	0.0	69.20	

<b>Survey Program</b>	<b>Date</b>	11/14/2011			
<b>From (ft)</b>	<b>To (ft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>	
129.0	8,431.0	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	129.20	129.0	-0.2	0.3	0.2	0.23	0.23	0.00	
220.0	1.10	120.20	220.0	-0.8	1.2	0.8	0.88	0.88	-9.89	
311.0	2.10	104.20	311.0	-1.7	3.6	2.8	1.19	1.10	-17.58	
402.0	3.50	98.10	401.8	-2.5	7.9	6.6	1.57	1.54	-6.70	
493.0	5.00	96.30	492.6	-3.3	14.6	12.5	1.65	1.65	-1.98	
584.0	6.10	89.60	583.2	-3.7	23.4	20.6	1.40	1.21	-7.36	
678.0	7.30	85.90	676.5	-3.2	34.4	31.0	1.36	1.28	-3.94	
690.0	7.60	84.00	688.4	-3.1	35.9	32.5	3.23	2.50	-15.83	
773.0	8.10	84.40	770.6	-1.9	47.2	43.4	0.61	0.60	0.48	
867.0	9.70	85.40	863.5	-0.7	61.7	57.4	1.71	1.70	1.06	
961.0	11.70	83.00	955.9	1.1	79.0	74.3	2.18	2.13	-2.55	
1,055.0	13.10	83.00	1,047.7	3.6	99.1	93.9	1.49	1.49	0.00	

<b>Company:</b>	NOBLE ENERGY INC WELD COUNTY CO	<b>Local Co-ordinate Reference:</b>	Well Booth EE25-01D
<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 EE25-01D	<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	14.50	83.70	1,138.0	6.2	121.1	115.4	1.52	1.51	0.75	
1,241.0	16.40	84.90	1,227.6	8.6	145.7	139.3	2.07	2.04	1.29	
1,335.0	18.30	84.90	1,317.3	11.1	173.7	166.3	2.02	2.02	0.00	
1,429.0	19.80	84.50	1,406.2	13.9	204.2	195.9	1.60	1.60	-0.43	
1,524.0	21.70	84.70	1,495.0	17.1	237.7	228.3	2.00	2.00	0.21	
1,617.0	24.10	84.50	1,580.7	20.5	273.7	263.2	2.58	2.58	-0.22	
1,710.0	26.10	83.70	1,664.9	24.6	313.0	301.3	2.18	2.15	-0.86	
1,803.0	27.40	85.20	1,747.9	28.6	354.6	341.7	1.58	1.40	1.61	
1,897.0	29.40	85.80	1,830.6	32.1	399.2	384.6	2.15	2.13	0.64	
1,991.0	30.90	84.20	1,911.9	36.2	446.2	430.0	1.81	1.60	-1.70	
2,084.0	32.80	82.30	1,990.9	42.0	495.0	477.6	2.31	2.04	-2.04	
2,178.0	35.70	84.50	2,068.6	48.1	547.5	528.9	3.35	3.09	2.34	
2,271.0	36.70	83.10	2,143.7	54.0	602.1	582.1	1.40	1.08	-1.51	
2,365.0	37.20	83.30	2,218.8	60.7	658.2	636.9	0.55	0.53	0.21	
2,458.0	35.90	83.30	2,293.5	67.2	713.2	690.6	1.40	-1.40	0.00	
2,552.0	36.10	83.70	2,369.5	73.4	768.1	744.1	0.33	0.21	0.43	
2,646.0	35.30	82.80	2,445.9	79.9	822.6	797.3	1.02	-0.85	-0.96	
2,740.0	35.50	83.00	2,522.5	86.6	876.6	850.2	0.25	0.21	0.21	
2,833.0	36.10	83.50	2,597.9	93.0	930.6	903.0	0.72	0.65	0.54	
2,927.0	37.50	82.30	2,673.2	100.0	986.5	957.7	1.67	1.49	-1.28	
3,020.0	37.40	80.70	2,747.0	108.3	1,042.4	1,013.0	1.05	-0.11	-1.72	
3,115.0	36.70	78.00	2,822.8	118.9	1,098.7	1,069.3	1.86	-0.74	-2.84	
3,208.0	36.80	75.40	2,897.4	131.7	1,152.8	1,124.5	1.68	0.11	-2.80	
3,301.0	36.10	72.90	2,972.2	146.8	1,206.0	1,179.5	1.77	-0.75	-2.69	
3,395.0	36.80	70.70	3,047.8	164.2	1,259.0	1,235.3	1.58	0.74	-2.34	
3,488.0	37.00	66.30	3,122.2	184.7	1,310.9	1,291.1	2.85	0.22	-4.73	
3,581.0	37.20	63.30	3,196.4	208.5	1,361.7	1,347.0	1.96	0.22	-3.23	
3,675.0	36.80	62.90	3,271.4	234.1	1,412.1	1,403.3	0.50	-0.43	-0.43	
3,768.0	37.70	62.60	3,345.5	259.9	1,462.2	1,459.2	0.99	0.97	-0.32	
3,861.0	36.30	60.80	3,419.7	286.4	1,511.5	1,514.7	1.90	-1.51	-1.94	
3,955.0	35.00	60.50	3,496.1	313.3	1,559.2	1,568.8	1.40	-1.38	-0.32	
4,049.0	34.90	61.50	3,573.2	339.4	1,606.3	1,622.1	0.62	-0.11	1.06	
4,142.0	35.10	61.00	3,649.3	365.0	1,653.1	1,675.0	0.38	0.22	-0.54	
4,235.0	34.10	61.20	3,725.9	390.6	1,699.3	1,727.3	1.08	-1.08	0.22	
4,330.0	35.40	60.60	3,803.9	416.9	1,746.6	1,780.8	1.41	1.37	-0.63	
4,423.0	37.30	60.60	3,878.8	444.0	1,794.6	1,835.3	2.04	2.04	0.00	
4,517.0	39.00	61.50	3,952.8	472.1	1,845.4	1,892.8	1.90	1.81	0.96	
4,610.0	39.00	61.70	4,025.0	499.9	1,896.9	1,950.8	0.14	0.00	0.22	
4,703.0	40.30	61.90	4,096.6	527.9	1,949.2	2,009.7	1.40	1.40	0.22	
4,796.0	40.50	62.00	4,167.5	556.3	2,002.4	2,069.5	0.23	0.22	0.11	
4,890.0	38.90	62.00	4,239.8	584.5	2,055.4	2,129.0	1.70	-1.70	0.00	
4,984.0	37.70	61.50	4,313.6	612.0	2,106.8	2,186.8	1.32	-1.28	-0.53	
5,077.0	36.80	62.20	4,387.6	638.6	2,156.4	2,242.6	1.07	-0.97	0.75	
5,172.0	35.30	62.40	4,464.4	664.6	2,205.9	2,298.1	1.58	-1.58	0.21	
5,265.0	36.10	59.60	4,539.9	690.9	2,253.3	2,351.8	1.96	0.86	-3.01	
5,358.0	36.20	58.70	4,615.0	719.0	2,300.4	2,405.8	0.58	0.11	-0.97	
5,452.0	34.30	60.50	4,691.8	746.5	2,347.2	2,459.3	2.30	-2.02	1.91	
5,547.0	31.80	61.00	4,771.4	771.8	2,392.4	2,510.6	2.65	-2.63	0.53	
5,641.0	32.60	64.20	4,850.9	794.9	2,436.9	2,560.3	2.00	0.85	3.40	
5,734.0	31.40	64.70	4,929.8	816.1	2,481.3	2,609.4	1.32	-1.29	0.54	
5,828.0	30.10	64.30	5,010.6	836.8	2,524.7	2,657.3	1.40	-1.38	-0.43	
5,923.0	31.00	65.60	5,092.4	857.2	2,568.5	2,705.5	1.18	0.95	1.37	
6,016.0	34.20	66.40	5,170.7	877.6	2,614.2	2,755.5	3.47	3.44	0.86	
6,110.0	31.70	64.20	5,249.6	898.9	2,660.7	2,806.5	2.95	-2.66	-2.34	

<b>Company:</b>	NOBLE ENERGY INC WELD COUNTY CO	<b>Local Co-ordinate Reference:</b>	Well Booth EE25-01D
<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 EE25-01D	<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)	
6,204.0	30.40	62.90	5,330.2	920.5	2,704.1	2,854.7	1.56	-1.38	-1.38	
6,298.0	30.70	62.00	5,411.1	942.6	2,746.5	2,902.2	0.58	0.32	-0.96	
6,391.0	31.70	63.80	5,490.7	964.5	2,789.3	2,950.1	1.47	1.08	1.94	
6,484.0	33.90	65.00	5,568.8	986.3	2,834.8	3,000.3	2.47	2.37	1.29	
6,577.0	35.30	64.20	5,645.4	1,009.0	2,882.5	3,052.9	1.58	1.51	-0.86	
6,671.0	35.00	62.90	5,722.2	1,033.1	2,930.9	3,106.8	0.86	-0.32	-1.38	
6,764.0	34.60	62.90	5,798.6	1,057.2	2,978.2	3,159.5	0.43	-0.43	0.00	
6,857.0	34.30	63.80	5,875.3	1,080.8	3,025.2	3,211.8	0.64	-0.32	0.97	
6,951.0	32.50	62.40	5,953.8	1,104.2	3,071.3	3,263.3	2.08	-1.91	-1.49	
7,044.0	33.80	63.10	6,031.6	1,127.5	3,116.6	3,313.8	1.46	1.40	0.75	
7,138.0	35.10	61.20	6,109.1	1,152.4	3,163.6	3,366.6	1.79	1.38	-2.02	
7,231.0	33.90	61.50	6,185.8	1,177.6	3,209.8	3,418.8	1.30	-1.29	0.32	
7,325.0	30.20	62.90	6,265.4	1,200.9	3,253.9	3,468.3	4.01	-3.94	1.49	
7,418.0	27.30	64.50	6,347.0	1,220.7	3,294.0	3,512.8	3.23	-3.12	1.72	
7,511.0	24.10	66.60	6,430.8	1,237.5	3,330.6	3,553.0	3.58	-3.44	2.26	
7,606.0	22.50	64.70	6,518.0	1,252.9	3,364.9	3,590.5	1.86	-1.68	-2.00	
7,691.2	20.39	64.70	6,597.3	1,266.3	3,393.1	3,621.6	2.47	-2.47	0.00	
<b>DRILL TARGET 770'FNL, 879'FEL</b>										
7,699.0	20.20	64.70	6,604.6	1,267.4	3,395.5	3,624.3	2.47	-2.47	0.00	
7,774.9	19.79	64.86	6,676.0	1,278.5	3,419.0	3,650.2	0.54	-0.54	0.21	
<b>PERMIT TARGET BHL 660'FNL, 660'FEL</b>										
7,792.0	19.70	64.90	6,692.0	1,280.9	3,424.2	3,655.9	0.54	-0.54	0.22	
7,886.0	20.00	68.50	6,780.5	1,293.5	3,453.5	3,687.8	1.34	0.32	3.83	
7,970.6	19.09	66.51	6,860.2	1,304.4	3,479.6	3,716.0	1.33	-1.08	-2.35	
<b>LEGAL BOX 400' X 400' 662'FNL &amp; 670'FEL</b>										
7,973.9	19.05	66.43	6,863.3	1,304.8	3,480.6	3,717.1	1.33	-1.06	-2.47	
<b>TARGET CIRCLE 660'FNL &amp; 660'FEL</b>										
7,979.0	19.00	66.30	6,868.1	1,305.5	3,482.2	3,718.8	1.33	-1.06	-2.48	
8,073.0	16.90	61.00	6,957.6	1,318.2	3,508.1	3,747.6	2.83	-2.23	-5.64	
8,167.0	14.40	56.00	7,048.1	1,331.4	3,529.8	3,772.5	3.02	-2.66	-5.32	
8,261.0	13.90	53.40	7,139.2	1,344.7	3,548.5	3,794.8	0.86	-0.53	-2.77	
8,352.0	13.90	47.50	7,227.6	1,358.6	3,565.4	3,815.4	1.56	0.00	-6.48	
8,379.0	14.30	48.30	7,253.7	1,363.0	3,570.2	3,821.6	1.65	1.48	2.96	
8,431.0	14.30	48.30	7,304.1	1,371.5	3,579.8	3,833.6	0.00	0.00	0.00	

Checked By: _____	Approved By: _____	Date: _____
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