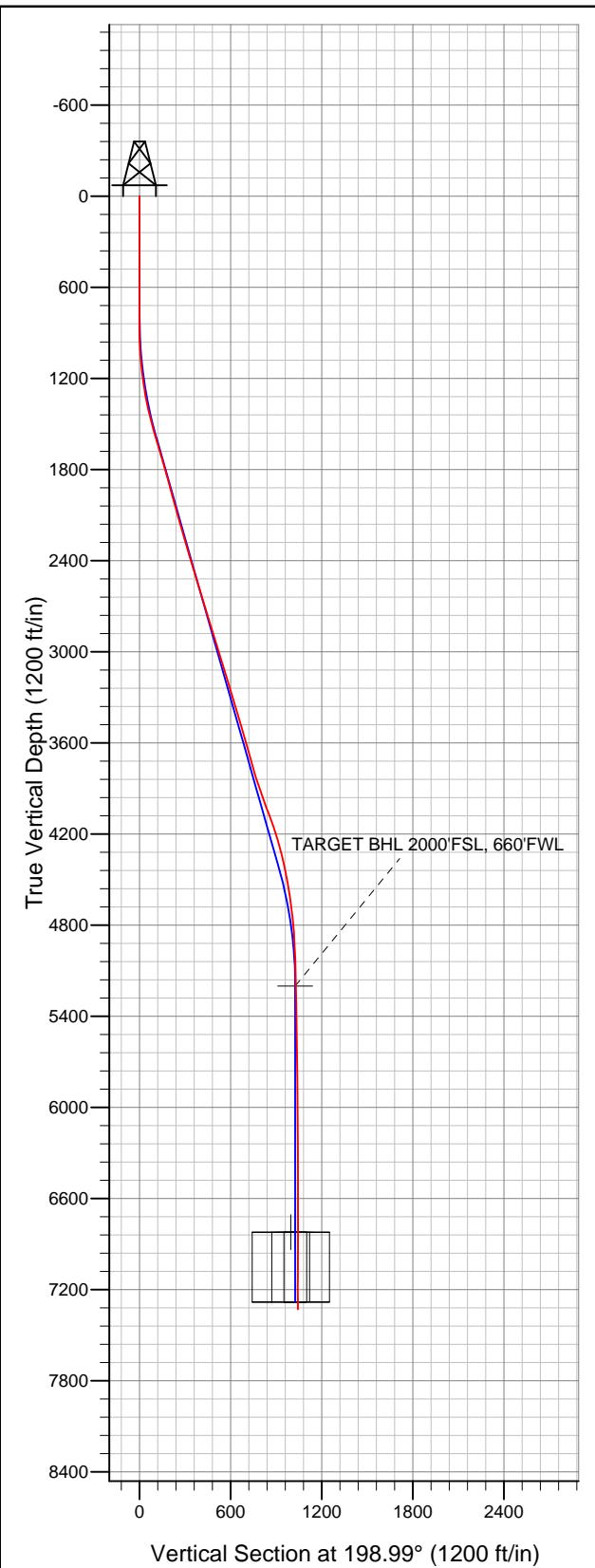
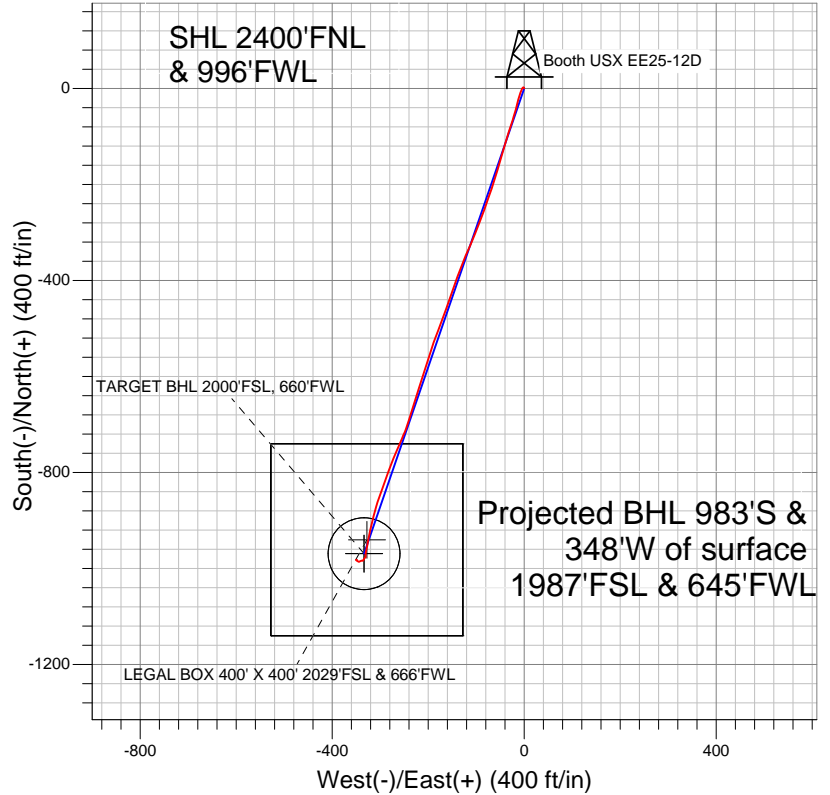




Well Name: **Booth USX EE25-12D**  
Surface Location: Booth USX EE25-02D Pad Sec.25-T7N-R65W  
North American Datum 1983 US State Plane 1983Colorado Northern Zone  
Ground Elevation: 4818.0  
+N/-S +E/-W Northing Easting Latitude Longitude Slot  
0.0 0.0 1442792.05 3245406.63 40.545510 -104.616950  
Original Well EleWELL @ 4831.0ft (Original Well Elev)



## NOBLE ENERGY INC WELD COUNTY CO



### LEGEND

- Booth USX EE25-12D, Wellbore #1, Noble Booth USX EE25-12D Plan #1 (7-22-11) V0
- Wellbore #1

## Final Survey Plot

Projected Final Survey -  
7470'MD & 7328'TVD @ 1042'VS  
0.5 deg Inc 143.4 deg AZ

Project: SEC.25-T7N-R65W  
Site: Booth USX EE25-02D Pad Sec.25-T7N-R65W  
Well: Booth USX EE25-12D  
Plan: Wellbore #1



# **NOBLE ENERGY INC WELD COUNTY CO**

**SEC.25-T7N-R65W**

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

**Booth USX EE25-12D**

**Wellbore #1**

**Survey: Survey #1**

## **Standard Survey Report**

**27 October, 2011**



<b>Company:</b>	NOBLE ENERGY INC WELD COUNTY CO	<b>Local Co-ordinate Reference:</b>	Well Booth USX EE25-12D
<b>Project:</b>	SEC.25-T7N-R65W	<b>TVD Reference:</b>	WELL @ 4831.0ft (Original Well Elev)
<b>Site:</b>	Booth USX EE25-02D Pad Sec.25-T7N-R65W	<b>MD Reference:</b>	WELL @ 4831.0ft (Original Well Elev)
<b>Well:</b>	Booth USX EE25-12D	<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

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

<b>Well</b>	Booth USX EE25-12D		
<b>Well Position</b>	<b>+N/-S</b>	0.0 ft	<b>Northing:</b>
	<b>+E/-W</b>	0.0 ft	<b>Easting:</b>
<b>Position Uncertainty</b>	0.0 ft	<b>Wellhead Elevation:</b>	ft
		<b>Latitude:</b>	40.545510
		<b>Longitude:</b>	-104.616950
		<b>Ground Level:</b>	4,818.0 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>
<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	199.51

<b>Survey Program</b>	<b>Date</b>	10/27/2011		
<b>From (ft)</b>	<b>To (ft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>
773.0	7,470.0	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
773.0	0.40	335.60	773.0	2.5	-1.1	-1.9	0.05	0.05	0.00
867.0	0.80	242.60	867.0	2.5	-1.8	-1.7	0.97	0.43	-98.94
961.0	2.60	215.00	960.9	0.4	-3.6	0.8	2.05	1.91	-29.36
1,056.0	4.10	199.70	1,055.8	-4.6	-6.0	6.3	1.82	1.58	-16.11
1,149.0	6.60	200.60	1,148.4	-12.7	-9.0	15.0	2.69	2.69	0.97
1,243.0	8.50	194.20	1,241.6	-24.5	-12.6	27.3	2.21	2.02	-6.81
1,337.0	11.20	193.50	1,334.2	-40.1	-16.5	43.3	2.88	2.87	-0.74
1,430.0	12.90	197.20	1,425.1	-58.8	-21.6	62.7	2.01	1.83	3.98
1,524.0	15.20	198.60	1,516.3	-80.5	-28.7	85.5	2.47	2.45	1.49
1,618.0	16.30	197.40	1,606.8	-104.8	-36.6	111.0	1.22	1.17	-1.28
1,711.0	16.60	195.10	1,696.0	-130.1	-43.9	137.3	0.77	0.32	-2.47
1,805.0	16.30	196.90	1,786.1	-155.6	-51.2	163.8	0.63	-0.32	1.91

<b>Company:</b>	NOBLE ENERGY INC WELD COUNTY CO	<b>Local Co-ordinate Reference:</b>	Well Booth USX EE25-12D
<b>Project:</b>	SEC.25-T7N-R65W	<b>TVD Reference:</b>	WELL @ 4831.0ft (Original Well Elev)
<b>Site:</b>	Booth USX EE25-02D Pad Sec.25-T7N-R65W	<b>MD Reference:</b>	WELL @ 4831.0ft (Original Well Elev)
<b>Well:</b>	Booth USX EE25-12D	<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)	
1,898.0	15.60	196.30	1,875.5	-180.1	-58.6	189.3	0.77	-0.75	-0.65	
1,991.0	15.00	199.70	1,965.2	-203.5	-66.1	213.9	1.16	-0.65	3.66	
2,088.0	15.70	198.80	2,058.8	-227.7	-74.6	239.5	0.76	0.72	-0.93	
2,182.0	16.30	199.70	2,149.1	-252.2	-83.1	265.4	0.69	0.64	0.96	
2,276.0	16.30	200.90	2,239.3	-276.9	-92.3	291.8	0.36	0.00	1.28	
2,369.0	16.30	201.10	2,328.6	-301.3	-101.6	317.9	0.06	0.00	0.22	
2,462.0	16.90	203.40	2,417.7	-325.9	-111.7	344.5	0.96	0.65	2.47	
2,555.0	16.00	203.70	2,506.9	-350.0	-122.2	370.7	0.97	-0.97	0.32	
2,648.0	16.40	200.40	2,596.2	-374.0	-131.9	396.6	1.08	0.43	-3.55	
2,742.0	17.70	201.10	2,686.1	-399.8	-141.7	424.2	1.40	1.38	0.74	
2,835.0	17.40	199.50	2,774.8	-426.1	-151.4	452.2	0.61	-0.32	-1.72	
2,928.0	17.20	196.70	2,863.6	-452.4	-160.0	479.9	0.92	-0.22	-3.01	
3,022.0	16.70	202.50	2,953.5	-478.2	-169.2	507.2	1.87	-0.53	6.17	
3,115.0	17.10	200.20	3,042.5	-503.4	-179.0	534.3	0.84	0.43	-2.47	
3,209.0	16.90	199.90	3,132.4	-529.2	-188.5	561.7	0.23	-0.21	-0.32	
3,302.0	17.20	197.00	3,221.3	-555.0	-197.1	589.0	0.97	0.32	-3.12	
3,395.0	17.90	196.70	3,310.0	-581.9	-205.2	617.0	0.76	0.75	-0.32	
3,486.0	16.10	200.60	3,397.0	-607.1	-213.7	643.6	2.34	-1.98	4.29	
3,579.0	15.30	195.50	3,486.5	-631.0	-221.5	668.7	1.71	-0.86	-5.48	
3,673.0	15.70	198.10	3,577.1	-655.0	-228.8	693.8	0.85	0.43	2.77	
3,767.0	16.30	196.90	3,667.5	-679.7	-236.5	719.7	0.73	0.64	-1.28	
3,861.0	15.40	199.30	3,757.9	-704.1	-244.5	745.4	1.18	-0.96	2.55	
3,955.0	18.40	203.90	3,847.8	-729.5	-254.6	772.6	3.49	3.19	4.89	
4,049.0	19.80	203.20	3,936.6	-757.7	-266.9	803.3	1.51	1.49	-0.74	
4,143.0	20.30	200.60	4,024.9	-787.6	-278.9	835.5	1.09	0.53	-2.77	
4,236.0	19.40	199.00	4,112.4	-817.3	-289.6	867.1	1.13	-0.97	-1.72	
4,330.0	18.50	200.40	4,201.3	-846.0	-299.9	897.6	1.07	-0.96	1.49	
4,423.0	14.50	196.00	4,290.5	-871.1	-308.3	924.0	4.50	-4.30	-4.73	
4,517.0	12.90	193.50	4,381.8	-892.6	-314.0	946.2	1.81	-1.70	-2.66	
4,610.0	11.60	193.70	4,472.7	-911.8	-318.6	965.8	1.40	-1.40	0.22	
4,704.0	9.20	192.50	4,565.1	-928.3	-322.5	982.7	2.56	-2.55	-1.28	
4,797.0	7.80	190.20	4,657.1	-941.7	-325.2	996.3	1.55	-1.51	-2.47	
4,890.0	6.20	189.70	4,749.4	-952.9	-327.2	1,007.5	1.72	-1.72	-0.54	
4,987.0	3.90	194.40	4,846.0	-961.3	-328.9	1,015.9	2.41	-2.37	4.85	
5,080.0	3.10	187.50	4,938.9	-966.8	-330.0	1,021.5	0.97	-0.86	-7.42	
5,173.0	1.70	182.20	5,031.8	-970.7	-330.4	1,025.3	1.52	-1.51	-5.70	
5,266.0	1.50	179.50	5,124.7	-973.3	-330.4	1,027.7	0.23	-0.22	-2.90	
5,341.2	1.10	178.03	5,199.9	-975.0	-330.4	1,029.3	0.54	-0.54	-1.96	
TARGET BHL 2000'FSL, 660'FWL										
5,359.0	1.00	177.50	5,217.7	-975.3	-330.4	1,029.6	0.54	-0.54	-2.94	
5,452.0	1.10	216.40	5,310.7	-976.8	-330.8	1,031.3	0.76	0.11	41.83	
5,546.0	1.40	233.10	5,404.7	-978.3	-332.3	1,033.1	0.50	0.32	17.77	
5,640.0	0.80	195.30	5,498.7	-979.6	-333.4	1,034.7	0.97	-0.64	-40.21	
5,734.0	0.70	193.60	5,592.6	-980.8	-333.7	1,035.9	0.11	-0.11	-1.81	
5,828.0	1.40	225.90	5,686.6	-982.1	-334.7	1,037.5	0.95	0.74	34.36	
5,921.0	1.10	229.20	5,779.6	-983.5	-336.2	1,039.3	0.33	-0.32	3.55	
6,014.0	0.40	300.00	5,872.6	-983.9	-337.1	1,040.0	1.12	-0.75	76.13	
6,109.0	0.50	292.00	5,967.6	-983.6	-337.8	1,039.9	0.12	0.11	-8.42	
6,202.0	0.80	257.00	6,060.6	-983.6	-338.8	1,040.3	0.52	0.32	-37.63	
6,296.0	1.10	240.60	6,154.6	-984.2	-340.2	1,041.3	0.43	0.32	-17.45	
6,391.0	1.00	247.00	6,249.6	-985.0	-341.8	1,042.6	0.16	-0.11	6.74	
6,484.0	1.10	246.80	6,342.6	-985.6	-343.3	1,043.7	0.11	0.11	-0.22	
6,579.0	1.10	292.80	6,437.5	-985.6	-345.0	1,044.3	0.90	0.00	48.42	
6,672.0	1.90	303.20	6,530.5	-984.4	-347.1	1,043.9	0.91	0.86	11.18	

<b>Company:</b>	NOBLE ENERGY INC WELD COUNTY CO	<b>Local Co-ordinate Reference:</b>	Well Booth USX EE25-12D
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<b>Site:</b>	Booth USX EE25-02D Pad Sec.25-T7N-R65W	<b>MD Reference:</b>	WELL @ 4831.0ft (Original Well Elev)
<b>Well:</b>	Booth USX EE25-12D	<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)	
6,766.0	0.80	304.40	6,624.5	-983.2	-349.0	1,043.3	1.17	-1.17	1.28	
6,859.0	0.40	319.60	6,717.5	-982.6	-349.7	1,043.0	0.46	-0.43	16.34	
6,954.0	0.30	295.30	6,812.5	-982.2	-350.2	1,042.8	0.19	-0.11	-25.58	
6,962.5	0.28	299.00	6,821.0	-982.2	-350.2	1,042.8	0.36	-0.28	43.64	
TARGET CIRCLE 2000'FSL & 660'FWL										
6,962.6	0.28	299.06	6,821.1	-982.2	-350.2	1,042.8	0.36	-0.27	47.41	
LEGAL BOX 400' X 400' 2029'FSL & 666'FWL										
7,048.0	0.20	16.50	6,906.5	-982.0	-350.3	1,042.6	0.36	-0.09	90.69	
7,141.0	0.20	101.60	6,999.5	-981.9	-350.1	1,042.4	0.29	0.00	91.51	
7,235.0	0.40	66.70	7,093.5	-981.8	-349.7	1,042.2	0.28	0.21	-37.13	
7,328.0	0.50	108.30	7,186.5	-981.8	-349.0	1,041.9	0.36	0.11	44.73	
7,418.0	0.50	143.40	7,276.5	-982.2	-348.4	1,042.2	0.34	0.00	39.00	
7,470.0	0.50	143.40	7,328.5	-982.6	-348.1	1,042.4	0.00	0.00	0.00	

Checked By: \_\_\_\_\_ Approved By: \_\_\_\_\_ Date: \_\_\_\_\_