

Well Name: **Booth N25-22D**

Surface Location: Booth N25-20D Pad Sec.25-T5N-R67W
 North American Datum 1983 US State Plane 1983 Colorado Northern Zone

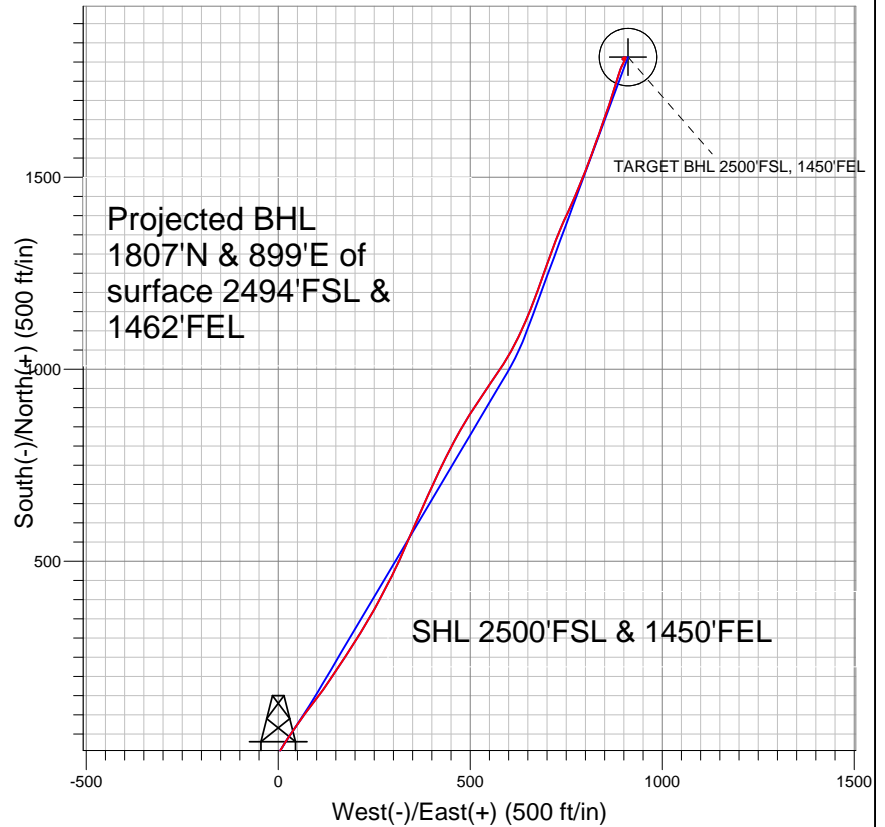
Ground Elevation: 4926.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.0	0.0	1376558.91	3183759.08	40° 21' 54.648 N	104° 50' 25.944 W

Original Well Elev WELL @ 4939.0ft (Original Well Elev)

Slot

NOBLE ENERGY INC WELD COUNTY CO

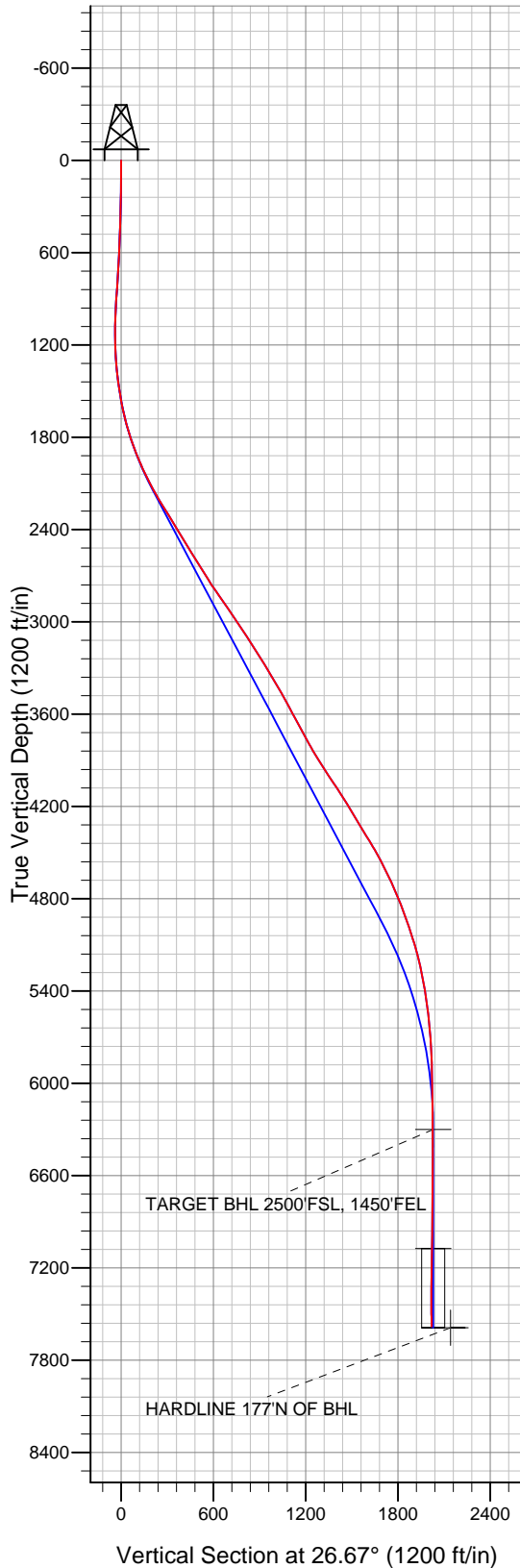


LEGEND

- + Booth N25-22D, Wellbore #1, PLAN 3 6-14-11 TIED TO SURVEYS V0
- Wellbore #1
- Survey #1

Final Survey Plot

Projected Final Survey -
 8100'MD & 7581'TVD @ 2018'VS
 0.6 deg Inc 75.0 deg AZ



Project: SEC.25-T5N-R67W
 Site: Booth N25-20D Pad Sec.25-T5N-R67W
 Well: Booth N25-22D
 Plan: Wellbore #1



Directional

NOBLE ENERGY INC WELD COUNTY CO

SEC.25-T5N-R67W

Booth N25-20D Pad Sec.25-T5N-R67W

Booth N25-22D

Wellbore #1

Survey: Survey #1

Standard Survey Report

17 June, 2011



Company:	NOBLE ENERGY INC WELD COUNTY CO	Local Co-ordinate Reference:	Well Booth N25-22D
Project:	SEC.25-T5N-R67W	TVD Reference:	WELL @ 4939.0ft (Original Well Elev)
Site:	Booth N25-20D Pad Sec.25-T5N-R67W	MD Reference:	WELL @ 4939.0ft (Original Well Elev)
Well:	Booth N25-22D	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	Landmark

Project	SEC.25-T5N-R67W, Weld County, Colorado		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Northern Zone		Using geodetic scale factor

Site	Booth N25-20D Pad Sec.25-T5N-R67W		
Site Position:		Northing:	1,376,551.07 ft
From:	Lat/Long	Easting:	3,183,683.90 ft
Position Uncertainty:	0.0 ft	Slot Radius:	"
		Latitude:	40° 21' 54.576 N
		Longitude:	104° 50' 26.916 W
		Grid Convergence:	0.43 °

Well	Booth N25-22D		
Well Position	+N-S	0.0 ft	Northing: 1,376,558.91 ft
	+E-W	0.0 ft	Easting: 3,183,759.08 ft
Position Uncertainty	0.0 ft	Wellhead Elevation:	ft
		Latitude:	40° 21' 54.648 N
		Longitude:	104° 50' 25.944 W
		Ground Level:	4,926.0 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	12/31/2009	9.06	67.07	53,277

Design	Wellbore #1			
Audit Notes:				
Version:	1.0	Phase:	ACTUAL	Tie On Depth: 0.0
Vertical Section:	Depth From (TVD) (ft)	+N-S (ft)	+E-W (ft)	Direction (°)
	0.0	0.0	0.0	26.67

Survey Program	Date	6/17/2011		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
830.0	8,100.0	Survey #1 (Wellbore #1)	MWD	MWD - Standard

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
830.0	3.70	202.90	829.4	-24.7	-10.4	-26.7	0.45	0.45	0.00
912.0	4.30	205.10	911.2	-29.9	-12.8	-32.4	0.76	0.73	2.68
994.0	2.60	195.00	993.1	-34.5	-14.5	-37.3	2.19	-2.07	-12.32
1,075.0	1.30	173.30	1,074.0	-37.2	-14.9	-39.9	1.82	-1.60	-26.79
1,157.0	0.70	32.60	1,156.0	-37.7	-14.5	-40.2	2.31	-0.73	-171.59
1,239.0	2.90	15.80	1,238.0	-35.3	-13.7	-37.6	2.73	2.68	-20.49
1,320.0	4.60	22.90	1,318.8	-30.3	-11.9	-32.4	2.17	2.10	8.77
1,402.0	6.90	18.70	1,400.4	-22.6	-9.0	-24.2	2.85	2.80	-5.12
1,484.0	8.70	23.60	1,481.6	-12.2	-5.0	-13.2	2.34	2.20	5.98
1,566.0	10.30	29.60	1,562.5	-0.2	1.1	0.4	2.29	1.95	7.32
1,647.0	12.40	31.20	1,641.9	13.6	9.2	16.3	2.62	2.59	1.98
1,729.0	15.40	31.50	1,721.5	30.4	19.5	35.9	3.66	3.66	0.37

Company:	NOBLE ENERGY INC WELD COUNTY CO	Local Co-ordinate Reference:	Well Booth N25-22D
Project:	SEC.25-T5N-R67W	TVD Reference:	WELL @ 4939.0ft (Original Well Elev)
Site:	Booth N25-20D Pad Sec.25-T5N-R67W	MD Reference:	WELL @ 4939.0ft (Original Well Elev)
Well:	Booth N25-22D	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	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)
1,811.0	18.50	35.00	1,799.9	50.3	32.6	59.6	3.98	3.78	4.27
1,892.0	20.90	34.50	1,876.2	72.8	48.2	86.6	2.97	2.96	-0.62
1,974.0	23.60	35.90	1,952.1	98.1	66.1	117.3	3.36	3.29	1.71
2,056.0	25.80	37.70	2,026.6	125.5	86.6	151.1	2.84	2.68	2.20
2,137.0	27.70	37.00	2,098.9	154.5	108.8	186.9	2.38	2.35	-0.86
2,219.0	29.60	33.40	2,170.9	186.6	131.4	225.8	3.13	2.32	-4.39
2,301.0	32.00	33.00	2,241.3	221.8	154.4	267.5	2.94	2.93	-0.49
2,382.0	31.90	34.40	2,310.0	257.4	178.1	310.0	0.92	-0.12	1.73
2,464.0	31.70	31.30	2,379.7	293.7	201.6	353.0	2.01	-0.24	-3.78
2,546.0	31.60	31.70	2,449.5	330.4	224.1	395.8	0.28	-0.12	0.49
2,627.0	31.40	30.00	2,518.6	366.7	245.8	438.0	1.12	-0.25	-2.10
2,709.0	31.60	26.80	2,588.5	404.4	266.1	480.8	2.05	0.24	-3.90
2,791.0	31.50	27.50	2,658.4	442.6	285.7	523.8	0.46	-0.12	0.85
2,872.0	33.10	25.90	2,726.8	481.3	305.1	567.0	2.24	1.98	-1.98
2,954.0	34.30	24.20	2,795.1	522.5	324.4	612.5	1.86	1.46	-2.07
3,036.0	35.30	23.10	2,862.4	565.4	343.2	659.2	1.44	1.22	-1.34
3,117.0	35.00	22.90	2,928.6	608.3	361.4	705.8	0.40	-0.37	-0.25
3,199.0	33.00	25.40	2,996.6	650.1	380.1	751.6	2.98	-2.44	3.05
3,281.0	33.00	24.50	3,065.4	690.6	399.0	796.2	0.60	0.00	-1.10
3,362.0	32.70	25.40	3,133.4	730.4	417.5	840.1	0.71	-0.37	1.11
3,444.0	32.90	25.80	3,202.4	770.5	436.7	884.5	0.36	0.24	0.49
3,526.0	31.50	29.30	3,271.7	809.2	456.9	928.2	2.84	-1.71	4.27
3,608.0	31.60	29.20	3,341.6	846.7	477.8	971.1	0.14	0.12	-0.12
3,689.0	30.80	31.70	3,410.9	882.9	499.1	1,012.9	1.88	-0.99	3.09
3,771.0	29.30	33.60	3,481.9	917.4	521.2	1,053.8	2.17	-1.83	2.32
3,853.0	27.50	34.50	3,554.0	949.7	543.0	1,092.4	2.26	-2.20	1.10
3,934.0	29.00	35.20	3,625.4	981.2	565.0	1,130.4	1.90	1.85	0.86
4,016.0	28.40	31.40	3,697.3	1,014.1	586.6	1,169.5	2.34	-0.73	-4.63
4,098.0	28.50	29.60	3,769.4	1,047.8	606.4	1,208.5	1.05	0.12	-2.20
4,179.0	30.20	25.90	3,840.0	1,082.9	624.8	1,248.1	3.07	2.10	-4.57
4,261.0	32.40	23.60	3,910.1	1,121.6	642.7	1,290.7	3.05	2.68	-2.80
4,343.0	33.20	21.30	3,979.0	1,162.6	659.6	1,335.0	1.81	0.98	-2.80
4,424.0	34.20	20.10	4,046.4	1,204.7	675.5	1,379.7	1.48	1.23	-1.48
4,506.0	33.10	19.40	4,114.6	1,247.4	690.8	1,424.8	1.42	-1.34	-0.85
4,588.0	31.70	19.60	4,183.9	1,288.8	705.5	1,468.4	1.71	-1.71	0.24
4,669.0	31.20	20.30	4,253.0	1,328.6	719.9	1,510.4	0.76	-0.62	0.86
4,751.0	30.70	23.10	4,323.3	1,367.7	735.5	1,552.4	1.86	-0.61	3.41
4,833.0	32.00	25.50	4,393.3	1,406.6	753.1	1,595.0	2.20	1.59	2.93
4,914.0	30.60	22.90	4,462.5	1,445.0	770.3	1,637.0	2.40	-1.73	-3.21
4,996.0	27.60	22.90	4,534.2	1,481.7	785.9	1,676.8	3.66	-3.66	0.00
5,078.0	27.00	20.70	4,607.1	1,516.6	799.8	1,714.3	1.43	-0.73	-2.68
5,159.0	25.90	19.90	4,679.6	1,550.5	812.3	1,750.1	1.43	-1.36	-0.99
5,241.0	22.80	21.10	4,754.3	1,582.1	824.2	1,783.7	3.83	-3.78	1.46
5,323.0	22.10	19.10	4,830.1	1,611.5	834.9	1,814.8	1.26	-0.85	-2.44
5,404.0	19.60	19.00	4,905.8	1,638.8	844.3	1,843.4	3.09	-3.09	-0.12
5,486.0	19.20	18.60	4,983.1	1,664.6	853.1	1,870.4	0.51	-0.49	-0.49
5,568.0	18.10	19.30	5,060.8	1,689.4	861.6	1,896.4	1.37	-1.34	0.85
5,650.0	15.70	17.80	5,139.2	1,712.0	869.2	1,920.0	2.97	-2.93	-1.83
5,731.0	13.00	16.60	5,217.7	1,731.1	875.2	1,939.8	3.35	-3.33	-1.48
5,813.0	11.10	16.60	5,297.9	1,747.5	880.1	1,956.6	2.32	-2.32	0.00
5,895.0	9.90	17.60	5,378.5	1,761.8	884.5	1,971.4	1.48	-1.46	1.22
5,976.0	8.30	21.50	5,458.5	1,773.9	888.7	1,984.1	2.12	-1.98	4.81
6,058.0	6.20	18.10	5,539.8	1,783.6	892.3	1,994.3	2.61	-2.56	-4.15
6,140.0	6.40	22.10	5,621.3	1,792.0	895.4	2,003.3	0.59	0.24	4.88

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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)
6,221.0	4.90	31.50	5,702.0	1,799.2	898.9	2,011.2	2.17	-1.85	11.60
6,303.0	2.10	32.00	5,783.8	1,803.4	901.5	2,016.2	3.41	-3.41	0.61
6,385.0	1.70	36.00	5,865.7	1,805.7	903.0	2,018.9	0.51	-0.49	4.88
6,466.0	0.90	11.40	5,946.7	1,807.3	903.8	2,020.7	1.18	-0.99	-30.37
6,548.0	1.10	18.50	6,028.7	1,808.7	904.2	2,022.1	0.29	0.24	8.66
6,630.0	0.70	350.70	6,110.7	1,809.9	904.4	2,023.3	0.71	-0.49	-33.90
6,711.0	0.50	29.60	6,191.7	1,810.7	904.5	2,024.0	0.55	-0.25	48.02
6,793.0	0.70	331.40	6,273.7	1,811.5	904.4	2,024.7	0.74	0.24	-70.98
6,819.3	0.51	332.71	6,300.0	1,811.7	904.3	2,024.8	0.74	-0.74	4.98
TARGET BHL 2500'FSL, 1450'FEL									
6,875.0	0.10	352.50	6,355.7	1,812.0	904.2	2,025.0	0.74	-0.73	35.53
6,956.0	0.20	354.30	6,436.7	1,812.2	904.1	2,025.2	0.12	0.12	2.22
7,038.0	0.20	282.00	6,518.7	1,812.4	904.0	2,025.3	0.29	0.00	-88.17
7,120.0	0.20	305.00	6,600.7	1,812.5	903.7	2,025.3	0.10	0.00	28.05
7,201.0	0.70	266.10	6,681.7	1,812.5	903.1	2,025.0	0.69	0.62	-48.02
7,283.0	0.90	259.90	6,763.7	1,812.4	902.0	2,024.4	0.27	0.24	-7.56
7,365.0	0.60	242.40	6,845.7	1,812.1	901.0	2,023.7	0.46	-0.37	-21.34
7,446.0	1.10	261.70	6,926.7	1,811.7	899.8	2,022.9	0.70	0.62	23.83
7,528.0	1.20	224.50	7,008.6	1,811.0	898.4	2,021.6	0.90	0.12	-45.37
7,593.1	1.67	215.72	7,073.7	1,809.8	897.4	2,020.0	0.80	0.73	-13.50
TARGET CIRCLE 2500'FSL, 1450'FEL									
7,610.0	1.80	214.20	7,090.6	1,809.3	897.1	2,019.5	0.80	0.75	-8.96
7,692.0	0.90	188.30	7,172.6	1,807.6	896.3	2,017.6	1.30	-1.10	-31.59
7,773.0	0.30	106.00	7,253.6	1,807.0	896.4	2,017.1	1.12	-0.74	-101.61
7,855.0	0.50	105.30	7,335.6	1,806.8	897.0	2,017.2	0.24	0.24	-0.85
7,937.0	0.20	100.60	7,417.6	1,806.7	897.4	2,017.3	0.37	-0.37	-5.73
8,018.0	0.40	63.30	7,498.6	1,806.8	897.8	2,017.5	0.33	0.25	-46.05
8,049.0	0.60	71.80	7,529.6	1,806.9	898.1	2,017.7	0.69	0.65	27.42
8,100.0	0.60	75.00	7,580.6	1,807.0	898.6	2,018.1	0.07	0.00	6.27
HARDLINE 177'N OF BHL									

Checked By: _____	Approved By: _____	Date: _____
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