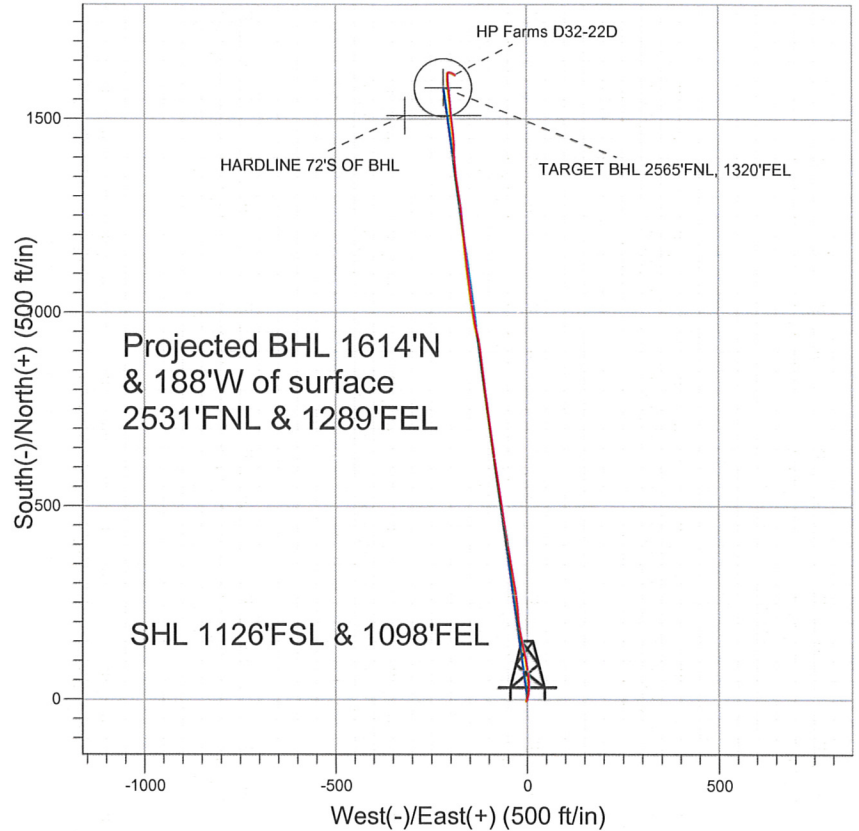


NOBLE ENERGY INC WELD COUNTY CO



LEGEND

- ✕ HP Farms D32-22D, Wellbore #1, Noble HP Farms D32-22D Plan #2 (06-22-11) V0
- Wellbore #1
- Survey #1

Final Survey Plot

Projected Final Survey -
 7550'MD & 7256'TVD @ 1625'VS
 1.8 deg Inc 120.3 deg AZ

Project: SEC.32-T3N-R64W
 Site: HP Farms D32-22D Pad Sec.32-T3N-R64W
 Well: HP Farms D32-22D
 Plan: Wellbore #1



Directional

**NOBLE ENERGY INC WELD
COUNTY CO**

SEC.32-T3N-R64W

HP Farms D32-22D Pad Sec.32-T3N-R64W

HP Farms D32-22D

Wellbore #1

Survey: Survey #1

Standard Survey Report

19 July, 2011



Company: NOBLE ENERGY INC WELD COUNTY CO
Project: SEC.32-T3N-R64W
Site: HP Farms D32-22D Pad Sec.32-T3N-R64W
Well: HP Farms D32-22D
Wellbore: Wellbore #1
Design: Wellbore #1

Local Co-ordinate Reference: Well HP Farms D32-22D
TVD Reference: WELL @ 4875.0ft (Original Well Elev)
MD Reference: WELL @ 4875.0ft (Original Well Elev)
North Reference: True
Survey Calculation Method: Minimum Curvature
Database: Landmark

Project	SEC.32-T3N-R64W, Weld County, Colorado		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Wyoming Western Zone		Using geodetic scale factor

Site HP Farms D32-22D Pad Sec.32-T3N-R64W

Site Position:
From: Lat/Long **Northing:** 258,567.66 ft **Latitude:** 40.177635
Position Uncertainty: 0.0 ft **Easting:** 4,165,675.42 ft **Longitude:** -104.569707
Slot Radius: " **Grid Convergence:** 3.56 °

Well	HP Farms D32-22D				
Well Position	+N/-S	0.0 ft	Northing:	258,567.65 ft	Latitude: 40.177635
	+E/-W	0.0 ft	Easting:	4,165,675.51 ft	Longitude: -104.569706
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level: 4,862.0 ft

Wellbore Wellbore #1

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	6/22/2011	8.70	66.91	53,055

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	352.11

Survey Program Date 7/19/2011

From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
863.0	7,550.0	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
863.0	0.40	214.30	863.0	-2.5	-1.7	-2.2	0.05	0.05	0.00
944.0	0.80	21.10	944.0	-2.2	-1.7	-1.9	1.47	0.49	205.93
1,026.0	1.70	23.80	1,026.0	-0.5	-1.0	-0.4	1.10	1.10	3.29
1,108.0	2.80	19.40	1,107.9	2.5	0.2	2.4	1.36	1.34	-5.37
1,189.0	4.70	12.70	1,188.7	7.6	1.6	7.3	2.40	2.35	-8.27
1,271.0	5.80	11.40	1,270.4	14.9	3.1	14.3	1.35	1.34	-1.59
1,353.0	7.90	3.40	1,351.8	24.6	4.3	23.8	2.81	2.56	-9.76
1,435.0	9.60	358.40	1,432.8	37.0	4.4	36.1	2.27	2.07	-6.10
1,516.0	11.40	354.90	1,512.5	51.8	3.5	50.8	2.36	2.22	-4.32
1,598.0	12.90	356.70	1,592.6	69.0	2.3	68.0	1.89	1.83	2.20
1,680.0	14.50	350.10	1,672.3	88.2	0.0	87.4	2.72	1.95	-8.05
1,761.0	14.70	346.50	1,750.7	108.2	-4.1	107.8	1.15	0.25	-4.44

Company: NOBLE ENERGY INC WELD COUNTY CO
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North Reference: True
Survey Calculation Method: Minimum Curvature
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)
1,843.0	15.10	346.60	1,829.9	128.7	-9.0	128.8	0.49	0.49	0.12
1,925.0	17.00	351.00	1,908.7	151.0	-13.4	151.4	2.75	2.32	5.37
2,007.0	17.10	350.20	1,987.1	174.7	-17.3	175.4	0.31	0.12	-0.98
2,088.0	17.80	350.20	2,064.4	198.6	-21.5	199.7	0.86	0.86	0.00
2,170.0	18.20	356.00	2,142.4	223.7	-24.5	225.0	2.24	0.49	7.07
2,252.0	19.10	352.70	2,220.1	249.8	-27.1	251.2	1.69	1.10	-4.02
2,333.0	21.30	352.60	2,296.1	277.6	-30.7	279.1	2.72	2.72	-0.12
2,415.0	22.90	351.30	2,372.1	308.1	-35.0	310.0	2.04	1.95	-1.59
2,497.0	24.10	350.30	2,447.3	340.4	-40.2	342.7	1.54	1.46	-1.22
2,579.0	24.60	350.40	2,522.0	373.7	-45.9	376.5	0.61	0.61	0.12
2,660.0	25.90	349.50	2,595.2	407.7	-51.9	411.0	1.67	1.60	-1.11
2,742.0	25.90	349.50	2,669.0	442.9	-58.5	446.8	0.00	0.00	0.00
2,824.0	26.90	352.50	2,742.5	478.9	-64.1	483.2	2.03	1.22	3.66
2,906.0	27.20	351.60	2,815.5	515.9	-69.3	520.5	0.62	0.37	-1.10
2,987.0	27.50	352.30	2,887.4	552.7	-74.5	557.7	0.54	0.37	0.86
3,069.0	27.10	351.70	2,960.3	590.0	-79.7	595.3	0.59	-0.49	-0.73
3,151.0	26.20	350.90	3,033.6	626.3	-85.3	632.1	1.18	-1.10	-0.98
3,232.0	25.90	353.10	3,106.4	661.5	-90.3	667.7	1.25	-0.37	2.72
3,314.0	24.70	352.20	3,180.5	696.3	-94.7	702.7	1.54	-1.46	-1.10
3,396.0	24.80	351.00	3,255.0	730.3	-99.8	737.0	0.62	0.12	-1.46
3,478.0	24.90	351.60	3,329.4	764.3	-105.0	771.5	0.33	0.12	0.73
3,559.0	23.70	353.10	3,403.2	797.4	-109.4	804.8	1.67	-1.48	1.85
3,641.0	20.90	351.00	3,479.1	828.2	-113.7	835.9	3.55	-3.41	-2.56
3,723.0	20.60	353.60	3,555.7	856.9	-117.6	865.0	1.18	-0.37	3.17
3,804.0	20.40	355.30	3,631.6	885.2	-120.3	893.3	0.78	-0.25	2.10
3,886.0	20.70	350.60	3,708.4	913.7	-123.9	922.1	2.04	0.37	-5.73
3,968.0	21.10	346.80	3,785.0	942.4	-129.6	951.3	1.72	0.49	-4.63
4,050.0	22.30	349.40	3,861.2	972.1	-135.8	981.5	1.87	1.46	3.17
4,131.0	23.00	350.90	3,936.0	1,002.8	-141.2	1,012.7	1.12	0.86	1.85
4,213.0	23.00	351.20	4,011.4	1,034.4	-146.1	1,044.7	0.14	0.00	0.37
4,295.0	20.30	353.40	4,087.6	1,064.4	-150.2	1,075.0	3.44	-3.29	2.68
4,376.0	19.90	354.20	4,163.7	1,092.1	-153.2	1,102.8	0.60	-0.49	0.99
4,458.0	21.50	353.10	4,240.4	1,120.9	-156.5	1,131.7	2.01	1.95	-1.34
4,540.0	20.40	352.10	4,317.0	1,150.0	-160.2	1,161.1	1.41	-1.34	-1.22
4,622.0	19.40	353.70	4,394.1	1,177.7	-163.7	1,189.0	1.39	-1.22	1.95
4,703.0	20.00	353.80	4,470.4	1,204.8	-166.7	1,216.3	0.74	0.74	0.12
4,785.0	21.10	355.30	4,547.1	1,233.4	-169.4	1,245.0	1.49	1.34	1.83
4,867.0	21.20	353.90	4,623.6	1,262.9	-172.2	1,274.6	0.63	0.12	-1.71
4,949.0	19.20	352.90	4,700.6	1,291.0	-175.4	1,302.9	2.48	-2.44	-1.22
5,030.0	18.90	348.30	4,777.1	1,317.1	-179.7	1,329.3	1.89	-0.37	-5.68
5,112.0	18.80	352.00	4,854.7	1,343.2	-184.2	1,355.8	1.46	-0.12	4.51
5,194.0	16.80	353.80	4,932.8	1,368.0	-187.4	1,380.8	2.53	-2.44	2.20
5,275.0	17.40	355.60	5,010.2	1,391.8	-189.6	1,404.6	0.99	0.74	2.22
5,357.0	19.10	358.70	5,088.1	1,417.4	-190.8	1,430.2	2.39	2.07	3.78
5,439.0	21.10	356.70	5,165.1	1,445.5	-192.0	1,458.2	2.58	2.44	-2.44
5,521.0	18.00	354.40	5,242.4	1,472.9	-194.0	1,485.6	3.89	-3.78	-2.80
5,602.0	17.20	352.00	5,319.6	1,497.2	-196.9	1,510.1	1.33	-0.99	-2.96
5,684.0	14.90	354.10	5,398.4	1,519.7	-199.7	1,532.7	2.89	-2.80	2.56
5,766.0	13.10	354.50	5,477.9	1,539.5	-201.7	1,552.6	2.20	-2.20	0.49
5,847.0	11.00	355.30	5,557.2	1,556.3	-203.2	1,569.5	2.60	-2.59	0.99
5,929.0	9.40	356.50	5,637.9	1,570.8	-204.2	1,583.9	1.97	-1.95	1.46
6,011.0	6.20	353.00	5,719.1	1,581.9	-205.2	1,595.0	3.94	-3.90	-4.27
6,093.0	5.50	353.80	5,800.7	1,590.2	-206.2	1,603.4	0.86	-0.85	0.98
6,174.0	5.00	354.50	5,881.3	1,597.5	-206.9	1,610.8	0.62	-0.62	0.86

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6,256.0	4.00	0.40	5,963.1	1,603.9	-207.2	1,617.2	1.34	-1.22	7.20
6,291.5	3.48	1.03	5,998.4	1,606.3	-207.2	1,619.5	1.47	-1.46	1.77
TARGET BHL 2565'FNL, 1320'FEL									
6,338.0	2.80	2.20	6,044.9	1,608.8	-207.1	1,622.0	1.47	-1.46	2.52
6,419.0	2.70	358.40	6,125.8	1,612.7	-207.1	1,625.9	0.26	-0.12	-4.69
6,501.0	2.20	355.70	6,207.7	1,616.2	-207.3	1,629.3	0.63	-0.61	-3.29
6,583.0	1.30	14.50	6,289.7	1,618.7	-207.2	1,631.8	1.29	-1.10	22.93
6,665.0	0.90	43.80	6,371.7	1,620.0	-206.5	1,633.0	0.83	-0.49	35.73
6,828.0	1.10	91.10	6,534.7	1,620.9	-204.0	1,633.6	0.50	0.12	29.02
6,992.0	1.30	106.70	6,698.6	1,620.4	-200.7	1,632.6	0.23	0.12	9.51
7,085.2	1.36	107.23	6,791.8	1,619.7	-198.6	1,631.7	0.06	0.06	0.57
TARGET CIRCLE 2565'FNL, 1320'FEL									
7,155.0	1.40	107.60	6,861.6	1,619.2	-197.0	1,630.9	0.06	0.06	0.53
7,318.0	1.40	123.00	7,024.5	1,617.5	-193.4	1,628.8	0.23	0.00	9.45
7,500.0	1.80	120.30	7,206.5	1,614.9	-189.1	1,625.6	0.22	0.22	-1.48
7,541.7	1.80	120.30	7,248.1	1,614.2	-188.0	1,624.7	0.00	0.00	0.00
HARDLINE 72'S OF BHL									
7,550.0	1.80	120.30	7,256.4	1,614.1	-187.8	1,624.6	0.00	0.00	0.00

Checked By: _____ Approved By: _____ Date: _____