ENSIGN Directional

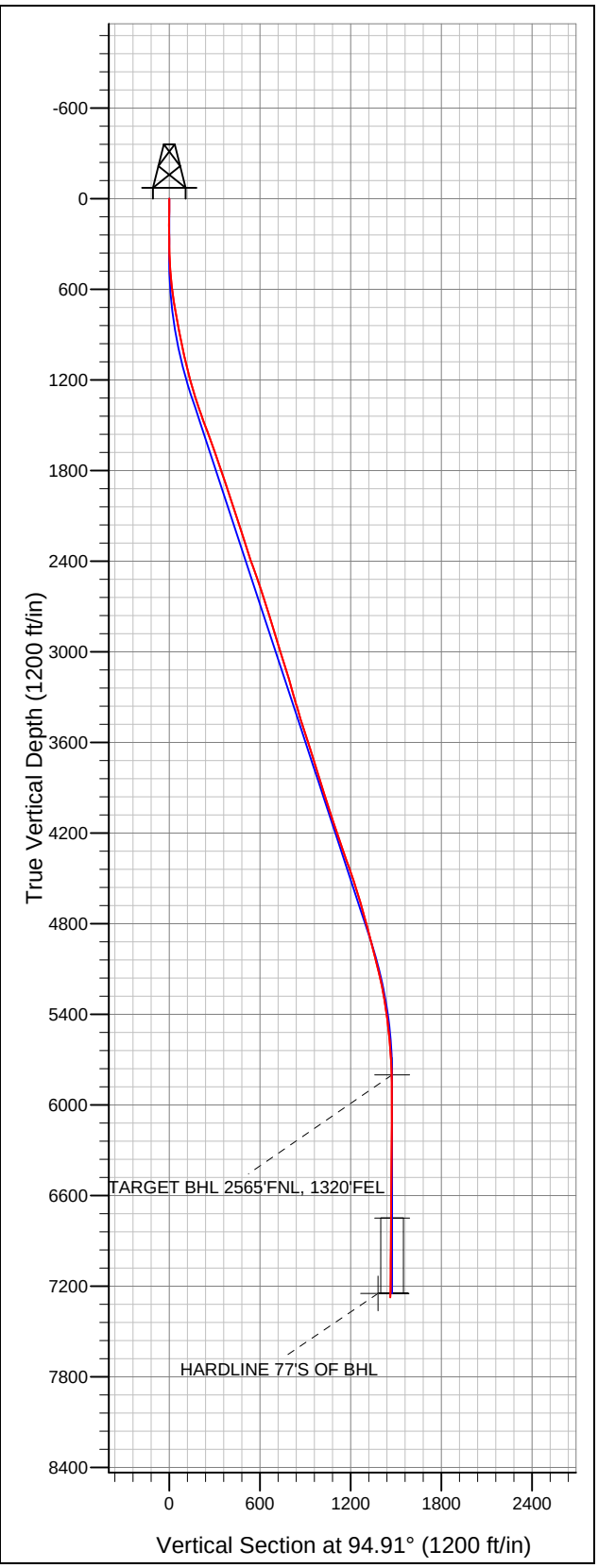
Well Name: Timmerman G13-22D

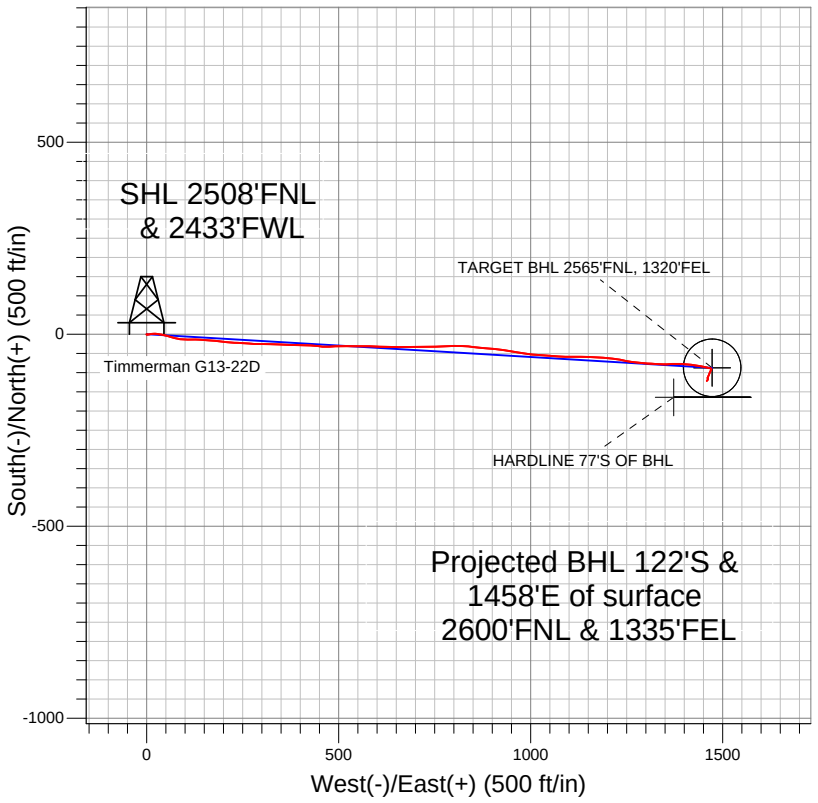
Surface Location: Timmerman G13-20D Pad Sec.13-T4N-R65W
North American Datum 1983 US State Plane 1983Colorado Northern Zone
Ground Elevation: 4775.0

+N/-S	+E/-W	Northing	Easting	Latittude	Longitude	Slot
0.0	0.0	1357997.17	3247600.86	40.312700	-104.612110	

Original Well Elev — WELL @ 4788.0ft (Original Well Elev)

NOBLE ENERGY INC WELD COUNTY CO





LEGEND

- Wellbore #1
- Timmerman G13-22D, Wellbore #1, Noble Timmerman G13-22D Plan #2 (4-27-12) R V0
- Survey #1

Final Survey Plot

Projected Final Survey -
7490'MD & 7274'TVD @ 1463'VS
3.60 deg Inc 200.20 deg AZ

Project: SEC.13-T4N-R65W
Site: Timmerman G13-20D Pad Sec.13-T4N-R65W
Well: Timmerman G13-22D
Plan: Wellbore #1

NOBLE ENERGY INC WELD COUNTY CO

SEC.13-T4N-R65W
Timmerman G13-20D Pad Sec.13-T4N-R65W
Timmerman G13-22D

Wellbore #1

Survey: Survey #1

Standard Survey Report

04 May, 2012

Company:	NOBLE ENERGY INC WELD COUNTY CO	**Local Co-ordinate Reference:**	Well Timmerman G13-22D
Project:	SEC.13-T4N-R65W	**TVD Reference:**	WELL @ 4788.0ft (Original Well Elev)
Site:	Timmerman G13-20D Pad Sec.13-T4N-R65W	**MD Reference:**	WELL @ 4788.0ft (Original Well Elev)
Well:	Timmerman G13-22D	**North Reference:**	True
Wellbore:	Wellbore #1	**Survey Calculation Method:**	Minimum Curvature
Design:	Wellbore #1	**Database:**	Landmark

Project SEC.13-T4N-R65W, Weld County, Colorado

Map System:	US State Plane 1983	**System Datum:**	Mean Sea Level
Geo Datum:	North American Datum 1983		Using Well Reference Point
Map Zone:	Colorado Northern Zone		Using geodetic scale factor

Site Timmerman G13-20D Pad Sec.13-T4N-R65W

Site Position:		**Northing:**	1,357,999.70 ft	**Latitude:**	40.312710
From:	Lat/Long	**Easting:**	3,247,489.28 ft	**Longitude:**	-104.612510
Position Uncertainty:	0.0 ft	**Slot Radius:**	"	**Grid Convergence:**	0.57 °

Well Timmerman G13-22D

Well Position	**+N/-S**	0.0 ft	**Northing:**	1,357,997.17 ft	**Latitude:**	40.312700
	+E/-W	0.0 ft	**Easting:**	3,247,600.86 ft	**Longitude:**	-104.612110
Position Uncertainty		0.0 ft	**Wellhead Elevation:**	ft	**Ground Level:**	4,775.0 ft

Wellbore Wellbore #1

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	4/27/2012	8.61	66.99	53,035

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	94.91

Survey Program **Date** 5/4/2012

From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
83.0	7,490.0	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
83.0	0.60	235.30	83.0	-0.2	-0.4	-0.3	0.72	0.72	0.00
175.0	0.30	139.60	175.0	-0.7	-0.6	-0.5	0.76	-0.33	-104.02
267.0	0.40	136.30	267.0	-1.1	-0.2	-0.1	0.11	0.11	-3.59
360.0	1.60	86.00	360.0	-1.3	1.3	1.4	1.48	1.29	-54.09
452.0	4.00	77.60	451.9	-0.5	5.7	5.7	2.64	2.61	-9.13
543.0	5.50	83.60	542.5	0.7	13.2	13.0	1.73	1.65	6.59
655.0	8.50	94.30	653.7	0.7	26.7	26.6	2.91	2.68	9.55
737.0	10.30	102.00	734.6	-1.3	40.0	39.9	2.67	2.20	9.39
765.0	10.50	104.70	762.1	-2.5	44.9	44.9	1.88	0.71	9.64
810.0	10.80	104.00	806.4	-4.5	52.9	53.1	0.73	0.67	-1.56
881.0	10.60	107.00	876.1	-8.1	65.6	66.1	0.83	-0.28	4.23
963.0	11.60	101.90	956.6	-12.0	80.9	81.6	1.71	1.22	-6.22

Company:	NOBLE ENERGY INC WELD COUNTY CO	**Local Co-ordinate Reference:**	Well Timmerman G13-22D
Project:	SEC.13-T4N-R65W	**TVD Reference:**	WELL @ 4788.0ft (Original Well Elev)
Site:	Timmerman G13-20D Pad Sec.13-T4N-R65W	**MD Reference:**	WELL @ 4788.0ft (Original Well Elev)
Well:	Timmerman G13-22D	**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)
1,044.0	12.30	90.80	1,035.9	-13.8	97.5	98.3	2.96	0.86	-13.70
1,126.0	14.20	89.20	1,115.7	-13.8	116.3	117.1	2.36	2.32	-1.95
1,208.0	15.20	93.90	1,195.0	-14.3	137.1	137.8	1.90	1.22	5.73
1,289.0	16.90	93.60	1,272.8	-15.8	159.4	160.2	2.10	2.10	-0.37
1,371.0	18.00	97.30	1,351.1	-18.2	183.9	184.8	1.90	1.34	4.51
1,453.0	19.40	93.90	1,428.7	-20.7	210.0	211.0	2.16	1.71	-4.15
1,534.0	21.00	94.10	1,504.7	-22.7	237.9	239.0	1.98	1.98	0.25
1,616.0	20.00	93.60	1,581.5	-24.6	266.6	267.7	1.24	-1.22	-0.61
1,698.0	19.60	90.10	1,658.7	-25.5	294.3	295.5	1.53	-0.49	-4.27
1,779.0	19.20	92.20	1,735.1	-26.0	321.2	322.3	0.99	-0.49	2.59
1,861.0	18.20	92.40	1,812.8	-27.1	347.5	348.6	1.22	-1.22	0.24
1,942.0	18.60	91.70	1,889.6	-28.0	373.1	374.1	0.56	0.49	-0.86
2,024.0	18.80	90.60	1,967.3	-28.5	399.3	400.3	0.49	0.24	-1.34
2,106.0	17.80	93.80	2,045.2	-29.5	425.1	426.0	1.73	-1.22	3.90
2,187.0	17.90	95.90	2,122.3	-31.6	449.8	450.9	0.80	0.12	2.59
2,269.0	18.50	88.70	2,200.2	-32.6	475.3	476.4	2.84	0.73	-8.78
2,351.0	17.60	86.90	2,278.1	-31.6	500.7	501.6	1.29	-1.10	-2.20
2,432.0	18.30	91.10	2,355.2	-31.2	525.7	526.4	1.82	0.86	5.19
2,514.0	19.70	89.20	2,432.7	-31.3	552.4	553.0	1.87	1.71	-2.32
2,596.0	19.70	91.80	2,509.9	-31.5	580.0	580.6	1.07	0.00	3.17
2,677.0	18.00	91.30	2,586.6	-32.2	606.2	606.7	2.11	-2.10	-0.62
2,759.0	17.50	91.50	2,664.7	-32.8	631.2	631.6	0.61	-0.61	0.24
2,840.0	17.80	90.60	2,741.9	-33.3	655.7	656.2	0.50	0.37	-1.11
2,922.0	17.70	91.30	2,820.0	-33.7	680.7	681.1	0.29	-0.12	0.85
3,004.0	17.10	87.40	2,898.2	-33.4	705.2	705.5	1.60	-0.73	-4.76
3,085.0	16.00	88.80	2,975.9	-32.6	728.3	728.4	1.44	-1.36	1.73
3,167.0	18.10	90.10	3,054.2	-32.4	752.3	752.3	2.60	2.56	1.59
3,249.0	17.80	85.90	3,132.3	-31.6	777.5	777.4	1.62	-0.37	-5.12
3,330.0	15.90	89.20	3,209.8	-30.5	801.0	800.7	2.63	-2.35	4.07
3,412.0	15.50	92.20	3,288.7	-30.8	823.2	822.8	1.10	-0.49	3.66
3,494.0	17.10	98.50	3,367.4	-33.0	846.1	845.8	2.91	1.95	7.68
3,575.0	17.10	94.30	3,444.9	-35.6	869.7	869.6	1.52	0.00	-5.19
3,657.0	17.60	93.90	3,523.1	-37.4	894.1	894.0	0.63	0.61	-0.49
3,739.0	17.10	98.30	3,601.4	-40.0	918.4	918.4	1.71	-0.61	5.37
3,820.0	18.00	98.90	3,678.6	-43.6	942.5	942.8	1.13	1.11	0.74
3,902.0	17.70	99.00	3,756.7	-47.5	967.4	967.9	0.37	-0.37	0.12
3,983.0	17.60	98.50	3,833.9	-51.3	991.6	992.4	0.22	-0.12	-0.62
4,065.0	18.30	94.80	3,911.9	-54.2	1,016.7	1,017.6	1.63	0.85	-4.51
4,147.0	17.10	91.70	3,990.0	-55.6	1,041.6	1,042.6	1.86	-1.46	-3.78
4,228.0	16.80	96.80	4,067.5	-57.4	1,065.1	1,066.1	1.87	-0.37	6.30
4,310.0	19.00	90.80	4,145.5	-58.9	1,090.3	1,091.3	3.50	2.68	-7.32
4,392.0	19.50	88.70	4,222.9	-58.8	1,117.3	1,118.2	1.04	0.61	-2.56
4,473.0	18.70	92.40	4,299.5	-59.1	1,143.8	1,144.6	1.79	-0.99	4.57
4,555.0	19.30	93.20	4,377.0	-60.4	1,170.4	1,171.3	0.80	0.73	0.98
4,637.0	18.90	94.10	4,454.5	-62.1	1,197.2	1,198.1	0.61	-0.49	1.10
4,718.0	19.30	99.20	4,531.0	-65.1	1,223.5	1,224.6	2.12	0.49	6.30
4,800.0	16.90	101.70	4,609.0	-69.7	1,248.6	1,250.0	3.08	-2.93	3.05
4,881.0	16.10	95.40	4,686.6	-73.2	1,271.3	1,272.9	2.42	-0.99	-7.78
4,963.0	14.80	96.10	4,765.7	-75.4	1,293.0	1,294.7	1.60	-1.59	0.85
5,045.0	15.50	92.20	4,844.8	-76.9	1,314.4	1,316.1	1.51	0.85	-4.76
5,126.0	13.90	94.80	4,923.2	-78.1	1,334.9	1,336.7	2.14	-1.98	3.21
5,208.0	14.20	88.50	5,002.7	-78.7	1,354.8	1,356.5	1.90	0.37	-7.68
5,290.0	14.20	87.10	5,082.2	-77.9	1,374.9	1,376.5	0.42	0.00	-1.71
5,371.0	13.10	90.30	5,160.9	-77.5	1,394.0	1,395.5	1.65	-1.36	3.95

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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)
5,453.0	11.30	98.20	5,241.1	-78.7	1,411.2	1,412.8	2.99	-2.20	9.63
5,535.0	9.20	99.60	5,321.8	-80.9	1,425.6	1,427.3	2.58	-2.56	1.71
5,616.0	7.70	100.40	5,401.9	-83.0	1,437.4	1,439.2	1.86	-1.85	0.99
5,698.0	6.30	98.70	5,483.3	-84.6	1,447.2	1,449.1	1.73	-1.71	-2.07
5,779.0	5.10	100.10	5,563.9	-85.9	1,455.1	1,457.2	1.49	-1.48	1.73
5,861.0	4.50	106.10	5,645.6	-87.5	1,461.8	1,463.9	0.95	-0.73	7.32
5,943.0	2.60	99.90	5,727.4	-88.7	1,466.7	1,469.0	2.36	-2.32	-7.56
6,015.7	1.70	111.98	5,800.1	-89.4	1,469.4	1,471.6	1.38	-1.24	16.61
TARGET BHL 2565'FNL, 1320'FEL									
6,024.0	1.60	114.20	5,808.4	-89.4	1,469.6	1,471.9	1.38	-1.15	26.80
6,106.0	0.10	160.70	5,890.4	-90.0	1,470.7	1,473.0	1.87	-1.83	56.71
6,188.0	0.40	187.60	5,972.4	-90.3	1,470.6	1,473.0	0.38	0.37	32.80
6,269.0	0.70	190.80	6,053.4	-91.1	1,470.5	1,472.9	0.37	0.37	3.95
6,351.0	1.00	204.50	6,135.3	-92.2	1,470.1	1,472.6	0.44	0.37	16.71
6,433.0	1.10	204.20	6,217.3	-93.6	1,469.5	1,472.1	0.12	0.12	-0.37
6,514.0	1.30	210.50	6,298.3	-95.1	1,468.7	1,471.5	0.30	0.25	7.78
6,596.0	1.50	205.40	6,380.3	-96.9	1,467.8	1,470.7	0.29	0.24	-6.22
6,678.0	1.30	204.30	6,462.3	-98.7	1,466.9	1,470.0	0.25	-0.24	-1.34
6,759.0	1.40	205.00	6,543.2	-100.4	1,466.1	1,469.4	0.13	0.12	0.86
6,841.0	1.40	199.10	6,625.2	-102.3	1,465.4	1,468.8	0.18	0.00	-7.20
6,922.0	1.60	200.50	6,706.2	-104.3	1,464.7	1,468.2	0.25	0.25	1.73
6,963.3	1.60	198.18	6,747.5	-105.4	1,464.3	1,467.9	0.16	0.00	-5.61
TARGET CIRCLE 2565'FNL, 1320'FEL									
7,004.0	1.60	195.90	6,788.2	-106.5	1,464.0	1,467.7	0.16	0.00	-5.61
7,086.0	1.70	206.10	6,870.1	-108.7	1,463.1	1,467.0	0.38	0.12	12.44
7,167.0	1.60	211.70	6,951.1	-110.7	1,462.0	1,466.1	0.23	-0.12	6.91
7,249.0	1.80	208.60	7,033.1	-112.8	1,460.8	1,465.1	0.27	0.24	-3.78
7,331.0	2.50	150.00	7,115.0	-115.5	1,461.0	1,465.6	2.67	0.85	-71.46
7,445.0	3.30	230.20	7,228.9	-119.7	1,459.8	1,464.7	3.32	0.70	70.35
7,469.1	3.34	213.46	7,252.9	-120.8	1,458.9	1,463.8	4.02	0.18	-69.51
HARDLINE 77'S OF BHL									
7,490.0	3.60	200.20	7,273.8	-121.9	1,458.3	1,463.4	4.02	1.22	-63.39

Checked By: _____ Approved By: _____ Date: _____