



Well Name: **Hudson State X36-01D**

Surface Location: Hudson State X36-01D Pad Sec.36-T2N-R65W
North American Datum 1983 US State Plane 1983 Colorado Northern Zone

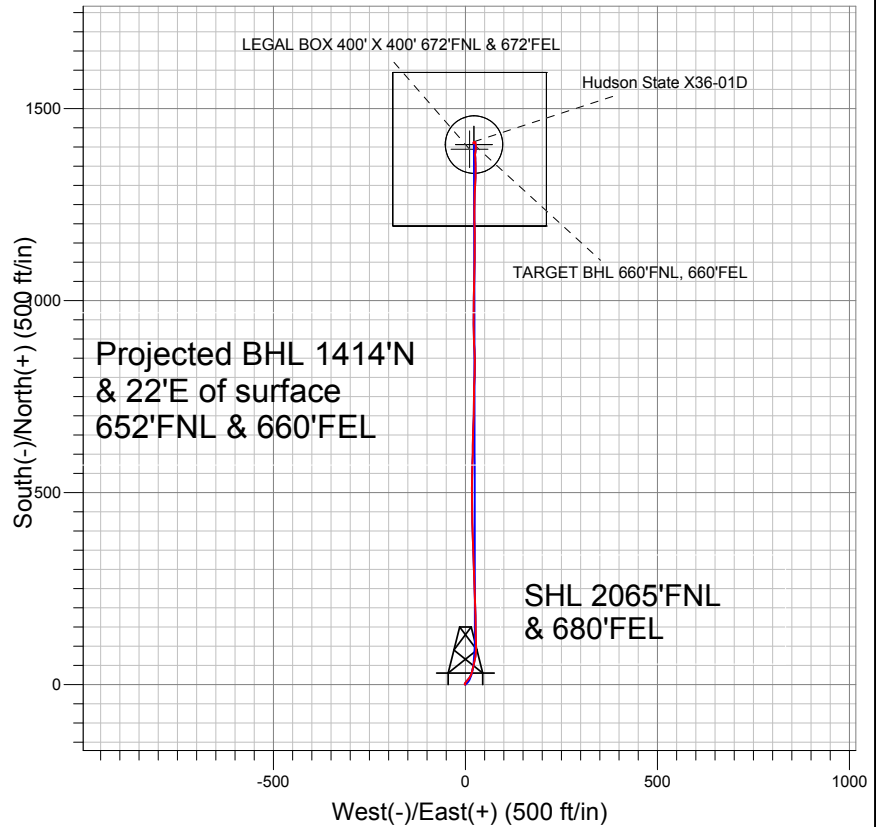
Ground Elevation: 4918.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.0	0.0	1279266.40	3250356.00	40.096510	-104.605080

Original Well Elev WELL @ 4931.0ft (Original Well Elev)

Slot

NOBLE ENERGY INC WELD COUNTY CO



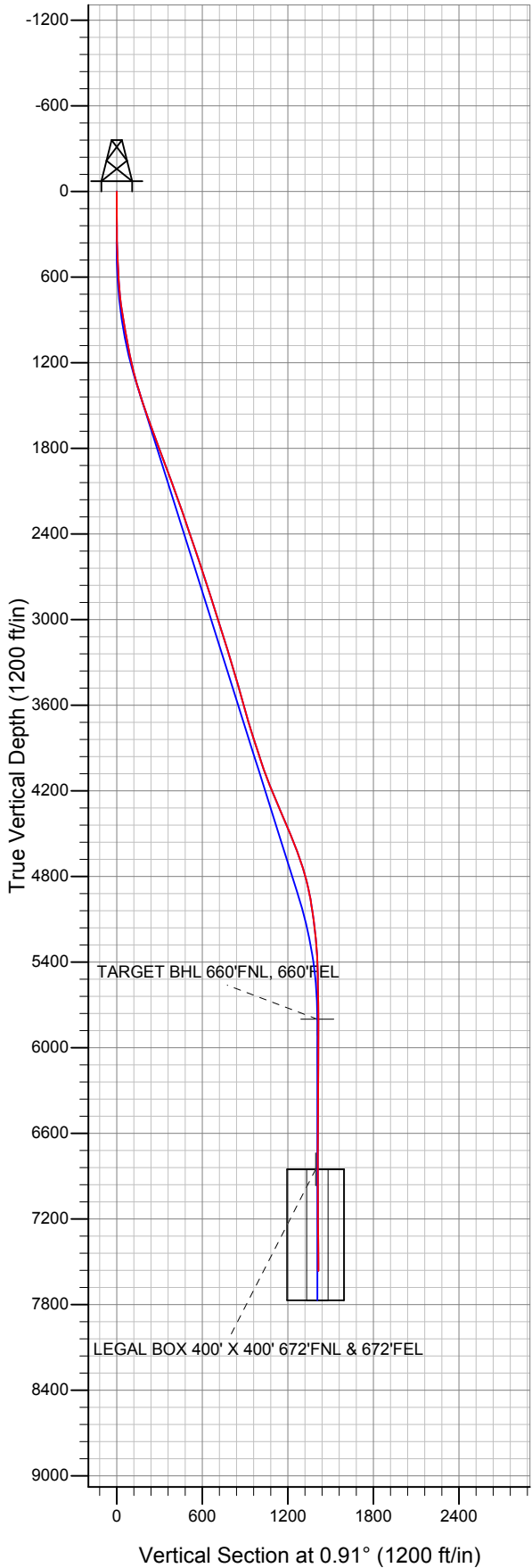
LEGEND

- ▲ Hudson State X36-01D, Wellbore #1, Noble Hudson State X36-01D Plan #1 (4-06-11) VO
- Wellbore #1
- Survey #1

Final Survey Plot

Projected Final Survey -
7783'MD & 7564'TVD @ 1414'VS
0.3 deg Inc 347.0 deg AZ

Project: SEC.36-T2N-R65W
Site: Hudson State X36-01D Pad Sec.36-T2N-R65W
Well: Hudson State X36-01D
Plan: Wellbore #1





Directional

NOBLE ENERGY INC WELD COUNTY CO

SEC.36-T2N-R65W

Hudson State X36-01D Pad Sec.36-T2N-R65W

Hudson State X36-01D

Wellbore #1

Survey: Survey #1

Standard Survey Report

08 August, 2011



Company:	NOBLE ENERGY INC WELD COUNTY CO	Local Co-ordinate Reference:	Well Hudson State X36-01D
Project:	SEC.36-T2N-R65W	TVD Reference:	WELL @ 4931.0ft (Original Well Elev)
Site:	Hudson State X36-01D Pad Sec.36-T2N-R65W	MD Reference:	WELL @ 4931.0ft (Original Well Elev)
Well:	Hudson State X36-01D	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	Landmark

Project	SEC.36-T2N-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	Hudson State X36-01D Pad Sec.36-T2N-R65W		
Site Position:		Northing:	1,279,266.41 ft
From:	Lat/Long	Easting:	3,250,356.00 ft
Position Uncertainty:	0.0 ft	Slot Radius:	"
		Latitude:	40.096510
		Longitude:	-104.605080
		Grid Convergence:	0.58 °

Well	Hudson State X36-01D		
Well Position	+N/-S	0.0 ft	Northing: 1,279,266.40 ft
	+E/-W	0.0 ft	Easting: 3,250,356.00 ft
Position Uncertainty	0.0 ft	Wellhead Elevation:	ft
		Latitude:	40.096510
		Longitude:	-104.605080
		Ground Level:	4,918.0 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	4/12/2011	8.78	66.84	53,007

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 (°)	
	5,800.0	0.0	0.0	0.91	

Survey Program	Date	8/8/2011			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
76.0	7,783.0	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	
76.0	0.40	268.90	76.0	0.0	-0.3	0.0	0.53	0.53	0.00	
165.0	0.70	277.90	165.0	0.1	-1.1	0.0	0.35	0.34	10.11	
254.0	0.40	342.90	254.0	0.4	-1.7	0.4	0.72	-0.34	73.03	
345.0	1.10	358.60	345.0	1.6	-1.9	1.6	0.79	0.77	17.25	
473.0	2.90	41.70	472.9	5.3	0.3	5.3	1.74	1.41	33.67	
601.0	4.60	40.40	600.6	11.6	5.7	11.7	1.33	1.33	-1.02	
728.0	6.30	29.80	727.1	21.5	12.5	21.7	1.55	1.34	-8.35	
856.0	9.40	12.40	853.9	37.8	18.2	38.1	3.03	2.42	-13.59	
956.0	10.20	12.60	952.4	54.4	21.9	54.8	0.80	0.80	0.20	
1,024.0	10.30	13.30	1,019.3	66.2	24.6	66.6	0.23	0.15	1.03	
1,152.0	11.40	1.70	1,145.0	90.0	27.7	90.4	1.91	0.86	-9.06	
1,281.0	14.60	356.70	1,270.7	119.0	27.1	119.4	2.63	2.48	-3.88	

Company:	NOBLE ENERGY INC WELD COUNTY CO	Local Co-ordinate Reference:	Well Hudson State X36-01D
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Site:	Hudson State X36-01D Pad Sec.36-T2N-R65W	MD Reference:	WELL @ 4931.0ft (Original Well Elev)
Well:	Hudson State X36-01D	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)
1,409.0	16.80	359.70	1,393.9	153.6	26.1	154.0	1.83	1.72	2.34
1,537.0	19.10	358.90	1,515.7	193.0	25.6	193.4	1.81	1.80	-0.63
1,666.0	19.50	356.80	1,637.4	235.6	24.0	236.0	0.62	0.31	-1.63
1,794.0	20.80	359.20	1,757.6	279.7	22.5	280.0	1.20	1.02	1.88
1,923.0	20.90	358.60	1,878.2	325.6	21.6	325.9	0.18	0.08	-0.47
2,051.0	19.80	357.20	1,998.2	370.1	20.0	370.4	0.94	-0.86	-1.09
2,179.0	19.90	358.10	2,118.6	413.5	18.2	413.8	0.25	0.08	0.70
2,308.0	19.20	358.10	2,240.1	456.7	16.7	456.9	0.54	-0.54	0.00
2,436.0	19.00	1.40	2,361.1	498.5	16.6	498.7	0.86	-0.16	2.58
2,565.0	18.90	1.70	2,483.1	540.4	17.7	540.6	0.11	-0.08	0.23
2,693.0	18.80	1.10	2,604.2	581.7	18.7	582.0	0.17	-0.08	-0.47
2,821.0	17.80	0.10	2,725.8	621.9	19.1	622.2	0.82	-0.78	-0.78
2,950.0	17.50	2.50	2,848.7	661.0	20.0	661.3	0.61	-0.23	1.86
3,078.0	17.60	2.10	2,970.7	699.6	21.6	699.8	0.12	0.08	-0.31
3,207.0	17.80	0.20	3,093.6	738.8	22.3	739.1	0.47	0.16	-1.47
3,335.0	17.50	0.50	3,215.6	777.6	22.6	777.9	0.24	-0.23	0.23
3,463.0	16.00	4.10	3,338.2	814.5	24.0	814.7	1.42	-1.17	2.81
3,592.0	16.30	356.60	3,462.1	850.3	24.2	850.5	1.63	0.23	-5.81
3,720.0	15.40	358.00	3,585.2	885.2	22.5	885.4	0.76	-0.70	1.09
3,849.0	16.40	358.30	3,709.3	920.5	21.4	920.7	0.78	0.78	0.23
3,977.0	18.10	0.80	3,831.5	958.4	21.1	958.7	1.45	1.33	1.95
4,105.0	17.70	0.90	3,953.3	997.8	21.7	998.0	0.31	-0.31	0.08
4,234.0	20.00	1.70	4,075.4	1,039.4	22.7	1,039.7	1.79	1.78	0.62
4,362.0	23.00	1.00	4,194.5	1,086.3	23.8	1,086.6	2.35	2.34	-0.55
4,491.0	22.30	359.90	4,313.5	1,136.0	24.2	1,136.3	0.63	-0.54	-0.85
4,619.0	23.40	358.90	4,431.5	1,185.7	23.6	1,185.9	0.91	0.86	-0.78
4,747.0	21.50	0.20	4,549.8	1,234.6	23.2	1,234.8	1.53	-1.48	1.02
4,876.0	20.20	2.60	4,670.3	1,280.5	24.3	1,280.7	1.21	-1.01	1.86
5,004.0	16.10	2.10	4,791.9	1,320.3	26.0	1,320.6	3.21	-3.20	-0.39
5,133.0	10.50	358.20	4,917.4	1,350.0	26.3	1,350.2	4.39	-4.34	-3.02
5,261.0	8.40	356.90	5,043.7	1,370.9	25.4	1,371.2	1.65	-1.64	-1.02
5,389.0	7.20	8.20	5,170.5	1,388.2	26.0	1,388.5	1.52	-0.94	8.83
5,518.0	4.40	357.30	5,298.8	1,401.2	27.0	1,401.4	2.32	-2.17	-8.45
5,646.0	1.10	347.60	5,426.7	1,407.3	26.5	1,407.5	2.59	-2.58	-7.58
5,775.0	1.20	329.90	5,555.6	1,409.7	25.5	1,409.9	0.28	0.08	-13.72
5,903.0	0.70	18.40	5,683.6	1,411.6	25.1	1,411.8	0.71	-0.39	37.89
6,019.3	0.42	46.71	5,799.9	1,412.5	25.6	1,412.8	0.33	-0.24	24.34
TARGET BHL 660'FNL, 660'FEL									
6,031.0	0.40	51.50	5,811.6	1,412.6	25.7	1,412.8	0.33	-0.16	40.94
6,160.0	0.50	208.60	5,940.6	1,412.4	25.8	1,412.6	0.68	0.08	121.78
6,288.0	0.30	196.40	6,068.6	1,411.6	25.4	1,411.8	0.17	-0.16	-9.53
6,417.0	0.40	305.60	6,197.6	1,411.5	25.0	1,411.7	0.44	0.08	84.65
6,545.0	0.30	245.20	6,325.6	1,411.6	24.3	1,411.8	0.28	-0.08	-47.19
6,673.0	0.20	231.10	6,453.6	1,411.3	23.8	1,411.5	0.09	-0.08	-11.02
6,802.0	0.60	241.90	6,582.6	1,410.9	23.0	1,411.1	0.31	0.31	8.37
6,930.0	0.60	222.00	6,710.6	1,410.1	22.0	1,410.2	0.16	0.00	-15.55
7,059.0	0.40	286.30	6,839.6	1,409.7	21.1	1,409.8	0.43	-0.16	49.85
7,071.4	0.36	284.79	6,852.0	1,409.7	21.0	1,409.9	0.34	-0.33	-12.20
LEGAL BOX 400' X 400' 672'FNL & 672'FEL - TARGET CIRCLE 660'FNL, 660'FEL									
7,187.0	0.10	184.80	6,967.6	1,409.7	20.7	1,409.8	0.34	-0.22	-86.48
7,315.0	0.70	11.10	7,095.6	1,410.4	20.8	1,410.5	0.62	0.47	-135.70
7,444.0	0.10	0.00	7,224.6	1,411.2	21.0	1,411.4	0.47	-0.47	-8.60
7,572.0	0.90	39.50	7,352.6	1,412.1	21.6	1,412.3	0.64	0.63	30.86
7,733.0	0.30	347.00	7,513.6	1,413.5	22.3	1,413.7	0.47	-0.37	-32.61

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Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
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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)
7,783.0	0.30	347.00	7,563.6	1,413.8	22.3	1,413.9	0.00	0.00	0.00

Checked By: _____	Approved By: _____	Date: _____
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