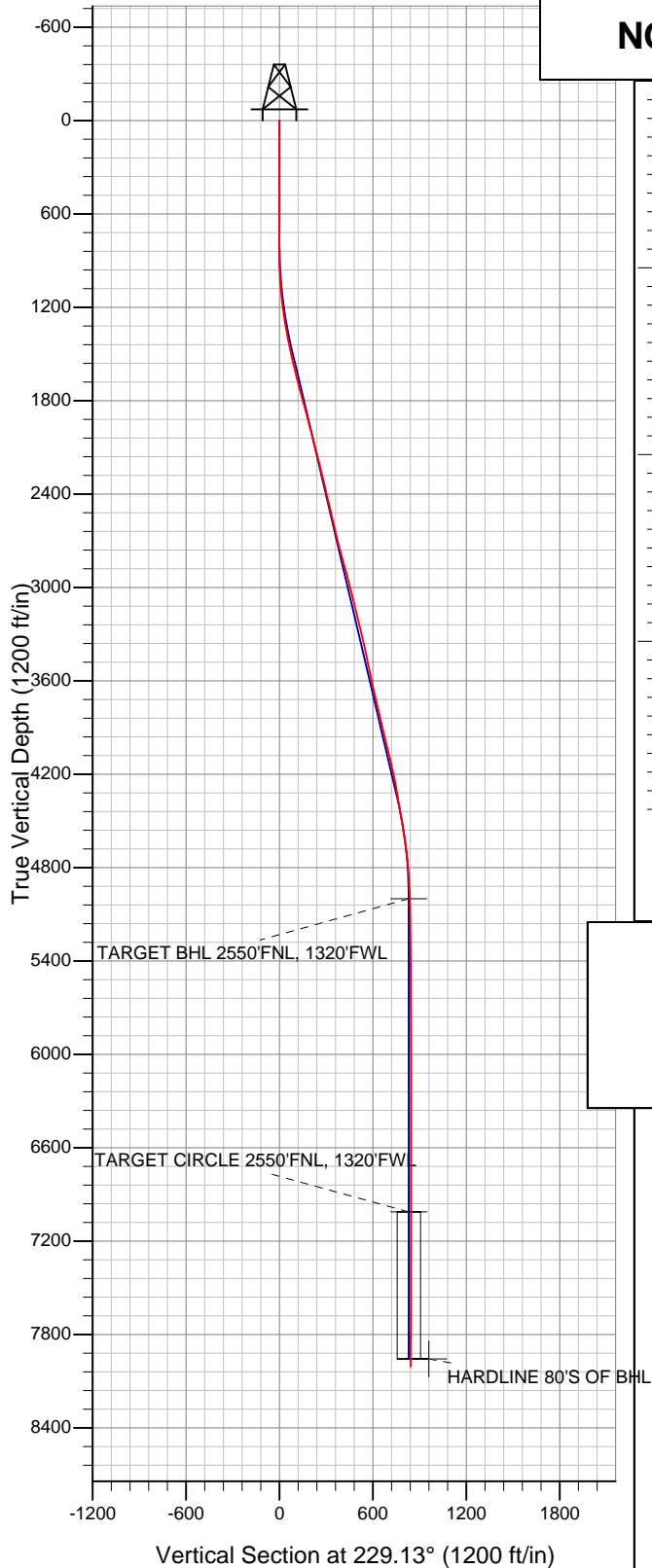
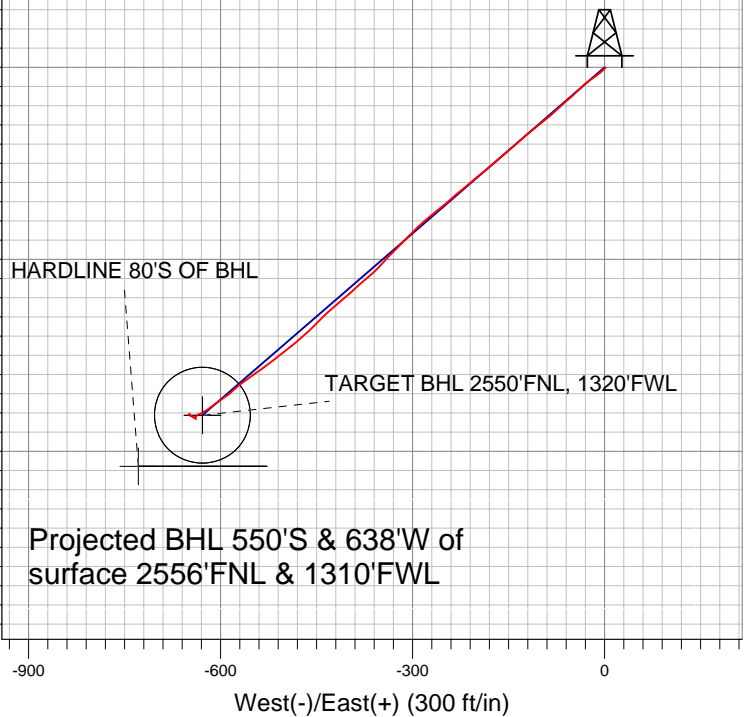


## NOBLE ENERGY INC WELD COUNTY CO



### SHL 2011'FNL & 1953'FWL



### LEGEND

- △ Pluss L11-20D, Wellbore #1, Noble Pluss L11-20D Plan #2 (06-01-10) V0
- Survey #1

## Final Survey Plot

Projected Final Survey -  
8099'MD & 8005'TVD @ 842' VS  
0.9 deg Inc 135.1 deg AZ

Project: SEC.11-T3N-R66W  
Site: Pluss Pad Sec.11-T3N-R66W  
Well: Pluss L11-20D  
Plan: Wellbore #1



# **NOBLE ENERGY INC WELD COUNTY CO**

**SEC.11-T3N-R66W**

**Pluss Pad Sec.11-T3N-R66W**

**Pluss L11-20D**

**Wellbore #1**

**Survey: Survey #1**

## **Standard Survey Report**

**06 July, 2010**

<b>Company:</b>	NOBLE ENERGY INC WELD COUNTY CO	<b>Local Co-ordinate Reference:</b>	Well Pluss L11-20D
<b>Project:</b>	SEC.11-T3N-R66W	<b>TVD Reference:</b>	WELL @ 4909.0ft (Original Well Elev)
<b>Site:</b>	Pluss Pad Sec.11-T3N-R66W	<b>MD Reference:</b>	WELL @ 4909.0ft (Original Well Elev)
<b>Well:</b>	Pluss L11-20D	<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.11-T3N-R66W, 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

Site		Pluss Pad Sec.11-T3N-R66W			
Site Position:		Northing:	1,331,596.56ft	Latitude:	40° 14' 28.248 N
From:	Lat/Long	Easting:	3,210,248.95ft	Longitude:	104° 44' 48.660 W
Position Uncertainty:	0.0 ft	Slot Radius:	"	Grid Convergence:	0.49 °

Well	Pluss L11-20D					
Well Position	+N/-S	0.0 ft	Northing:	1,331,596.55 ft	Latitude:	40° 14' 28.248 N
	+E/-W	0.0 ft	Easting:	3,210,248.95 ft	Longitude:	104° 44' 48.660 W
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,896.0 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	6/1/2010	8.98	66.96	53,159

Design	Wellbore #1			
Audit Notes:				
Version:	1.0	Phase:	ACTUAL	Tie On Depth:
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.0	0.0	0.0	0.00

Date		Survey (Wellbore)	Tool Name	Description
From ( )	To ( )			

Survey	Wellbore Data									
	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)
Main Survey	0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
	731.0	0.20	104.60	731.0	-0.3	1.2	-0.3	0.03	0.03	0.00
	816.0	0.30	186.60	816.0	-0.6	1.4	-0.6	0.40	0.12	96.47
	902.0	1.60	230.50	902.0	-1.6	0.4	-1.6	1.63	1.51	51.05
	988.0	2.90	220.20	987.9	-4.0	-1.9	-4.0	1.58	1.51	-11.98
	1,073.0	3.90	230.20	1,072.8	-7.5	-5.5	-7.5	1.36	1.18	11.76
	1,159.0	5.50	233.10	1,158.5	-11.8	-11.1	-11.8	1.88	1.86	3.37
	1,245.0	8.30	236.80	1,243.8	-17.7	-19.6	-17.7	3.29	3.26	4.30
	1,330.0	10.20	228.00	1,327.7	-26.1	-30.3	-26.1	2.78	2.24	-10.35
	1,416.0	11.40	227.00	1,412.2	-37.0	-42.2	-37.0	1.41	1.40	-1.16
	1,502.0	12.70	228.80	1,496.3	-49.0	-55.5	-49.0	1.57	1.51	2.09
	1,588.0	13.90	226.90	1,580.0	-62.3	-70.2	-62.3	1.48	1.40	-2.21
	1,673.0	14.20	230.10	1,662.5	-76.0	-85.6	-76.0	0.98	0.35	3.76

<b>Company:</b>	NOBLE ENERGY INC WELD COUNTY CO	<b>Local Co-ordinate Reference:</b>	Well Pluss L11-20D
<b>Project:</b>	SEC.11-T3N-R66W	<b>TVD Reference:</b>	WELL @ 4909.0ft (Original Well Elev)
<b>Site:</b>	Pluss Pad Sec.11-T3N-R66W	<b>MD Reference:</b>	WELL @ 4909.0ft (Original Well Elev)
<b>Well:</b>	Pluss L11-20D	<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)	
1,759.0	15.10	231.50	1,745.7	-89.7	-102.5	-89.7	1.12	1.05	1.63	
1,845.0	15.30	230.30	1,828.7	-103.9	-120.0	-103.9	0.43	0.23	-1.40	
1,930.0	14.60	227.00	1,910.8	-118.4	-136.4	-118.4	1.30	-0.82	-3.88	
2,016.0	14.50	229.70	1,994.0	-132.8	-152.6	-132.8	0.80	-0.12	3.14	
2,102.0	14.30	230.40	2,077.3	-146.5	-169.0	-146.5	0.31	-0.23	0.81	
2,187.0	13.90	230.80	2,159.8	-159.6	-185.0	-159.6	0.48	-0.47	0.47	
2,273.0	14.20	230.30	2,243.2	-172.9	-201.1	-172.9	0.38	0.35	-0.58	
2,359.0	13.90	229.80	2,326.6	-186.3	-217.1	-186.3	0.38	-0.35	-0.58	
2,444.0	13.10	229.50	2,409.3	-199.2	-232.2	-199.2	0.94	-0.94	-0.35	
2,530.0	13.10	229.10	2,493.0	-211.9	-247.0	-211.9	0.11	0.00	-0.47	
2,615.0	12.80	231.10	2,575.9	-224.1	-261.6	-224.1	0.63	-0.35	2.35	
2,701.0	13.20	230.40	2,659.7	-236.3	-276.6	-236.3	0.50	0.47	-0.81	
2,787.0	14.90	226.70	2,743.1	-250.2	-292.2	-250.2	2.23	1.98	-4.30	
2,873.0	15.40	223.80	2,826.1	-266.0	-308.1	-266.0	1.06	0.58	-3.37	
2,958.0	15.40	225.30	2,908.1	-282.1	-324.0	-282.1	0.47	0.00	1.76	
3,044.0	14.80	222.70	2,991.1	-298.2	-339.5	-298.2	1.05	-0.70	-3.02	
3,130.0	13.50	223.80	3,074.5	-313.5	-353.9	-313.5	1.54	-1.51	1.28	
3,215.0	13.20	229.70	3,157.2	-326.9	-368.2	-326.9	1.64	-0.35	6.94	
3,301.0	14.10	229.60	3,240.8	-340.1	-383.7	-340.1	1.05	1.05	-0.12	
3,386.0	13.80	226.60	3,323.2	-353.8	-398.9	-353.8	0.92	-0.35	-3.53	
3,472.0	11.90	230.40	3,407.1	-366.5	-413.2	-366.5	2.42	-2.21	4.42	
3,558.0	11.50	230.30	3,491.3	-377.6	-426.6	-377.6	0.47	-0.47	-0.12	
3,643.0	12.00	225.00	3,574.5	-389.2	-439.4	-389.2	1.40	0.59	-6.24	
3,729.0	13.10	224.80	3,658.5	-402.5	-452.6	-402.5	1.28	1.28	-0.23	
3,814.0	13.10	227.30	3,741.3	-415.8	-466.5	-415.8	0.67	0.00	2.94	
3,900.0	13.10	229.90	3,825.0	-428.7	-481.1	-428.7	0.69	0.00	3.02	
3,986.0	12.60	231.40	3,908.9	-440.9	-495.9	-440.9	0.70	-0.58	1.74	
4,071.0	14.40	232.70	3,991.5	-453.1	-511.5	-453.1	2.15	2.12	1.53	
4,157.0	13.80	232.90	4,074.9	-465.7	-528.2	-465.7	0.70	-0.70	0.23	
4,243.0	12.40	235.00	4,158.7	-477.2	-544.0	-477.2	1.72	-1.63	2.44	
4,328.0	11.10	233.90	4,241.9	-487.3	-558.0	-487.3	1.55	-1.53	-1.29	
4,414.0	9.50	232.70	4,326.5	-496.4	-570.4	-496.4	1.88	-1.86	-1.40	
4,500.0	9.60	226.90	4,411.3	-505.6	-581.3	-505.6	1.12	0.12	-6.74	
4,585.0	10.10	234.90	4,495.1	-514.8	-592.5	-514.8	1.71	0.59	9.41	
4,671.0	9.20	234.70	4,579.9	-523.1	-604.3	-523.1	1.05	-1.05	-0.23	
4,756.0	8.00	233.10	4,663.9	-530.6	-614.6	-530.6	1.44	-1.41	-1.88	
4,842.0	5.70	236.20	4,749.3	-536.5	-622.9	-536.5	2.71	-2.67	3.60	
4,928.0	3.90	244.80	4,835.0	-540.2	-629.1	-540.2	2.25	-2.09	10.00	
5,013.0	3.00	254.10	4,919.8	-542.0	-633.9	-542.0	1.24	-1.06	10.94	
5,092.9	2.23	225.45	4,999.7	-543.7	-637.0	-543.7	1.87	-0.97	-35.85	
TARGET BHL 2550'FNL, 1320'FWL										
5,099.0	2.20	222.60	5,005.7	-543.8	-637.2	-543.8	1.87	-0.46	-46.89	
5,184.0	0.70	158.70	5,090.7	-545.5	-638.1	-545.5	2.35	-1.76	-75.18	
5,270.0	0.60	199.50	5,176.7	-546.4	-638.0	-546.4	0.54	-0.12	47.44	
5,399.0	0.70	279.20	5,305.7	-546.9	-639.0	-546.9	0.65	0.08	61.78	
5,527.0	0.90	280.90	5,433.7	-546.6	-640.8	-546.6	0.16	0.16	1.33	
5,656.0	1.10	289.00	5,562.7	-546.0	-643.0	-546.0	0.19	0.16	6.28	
5,784.0	1.40	296.80	5,690.6	-544.9	-645.5	-544.9	0.27	0.23	6.09	
5,912.0	1.10	294.40	5,818.6	-543.7	-648.0	-543.7	0.24	-0.23	-1.88	
6,041.0	0.40	357.80	5,947.6	-542.7	-649.2	-542.7	0.77	-0.54	49.15	
6,169.0	0.30	15.30	6,075.6	-542.0	-649.1	-542.0	0.11	-0.08	13.67	
6,298.0	0.20	28.70	6,204.6	-541.4	-648.9	-541.4	0.09	-0.08	10.39	
6,426.0	0.20	121.70	6,332.6	-541.4	-648.6	-541.4	0.23	0.00	72.66	
6,555.0	0.20	202.40	6,461.6	-541.7	-648.5	-541.7	0.20	0.00	62.56	

<b>Company:</b>	NOBLE ENERGY INC WELD COUNTY CO	<b>Local Co-ordinate Reference:</b>	Well Pluss L11-20D
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<b>Well:</b>	Pluss L11-20D	<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)
6,683.0	0.30	190.80	6,589.6	-542.2	-648.7	-542.2	0.09	0.08	-9.06
6,811.0	0.20	138.40	6,717.6	-542.7	-648.6	-542.7	0.19	-0.08	-40.94
6,940.0	0.20	107.20	6,846.6	-543.0	-648.2	-543.0	0.08	0.00	-24.19
7,068.0	0.10	86.10	6,974.6	-543.0	-647.9	-543.0	0.09	-0.08	-16.48
7,105.5	0.17	120.93	7,012.1	-543.0	-647.8	-543.0	0.28	0.18	92.93
TARGET CIRCLE 2550'FNL, 1320'FWL									
7,196.0	0.40	141.10	7,102.6	-543.4	-647.5	-543.4	0.28	0.26	22.29
7,325.0	0.40	133.60	7,231.6	-544.0	-646.9	-544.0	0.04	0.00	-5.81
7,453.0	0.50	130.30	7,359.6	-544.7	-646.1	-544.7	0.08	0.08	-2.58
7,581.0	0.70	120.20	7,487.6	-545.4	-645.0	-545.4	0.18	0.16	-7.89
7,710.0	0.70	118.90	7,616.6	-546.2	-643.7	-546.2	0.01	0.00	-1.01
7,838.0	1.00	123.30	7,744.5	-547.2	-642.0	-547.2	0.24	0.23	3.44
7,967.0	1.10	120.00	7,873.5	-548.5	-640.0	-548.5	0.09	0.08	-2.56
8,050.0	0.91	134.27	7,956.5	-549.3	-638.9	-549.3	0.38	-0.23	17.19
HARDLINE 80'S OF BHL									
8,054.0	0.90	135.10	7,960.5	-549.4	-638.8	-549.4	0.38	-0.19	20.80
8,099.0	0.90	135.10	8,005.5	-549.9	-638.3	-549.9	0.00	0.00	0.00

Checked By: _____	Approved By: _____	Date: _____
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