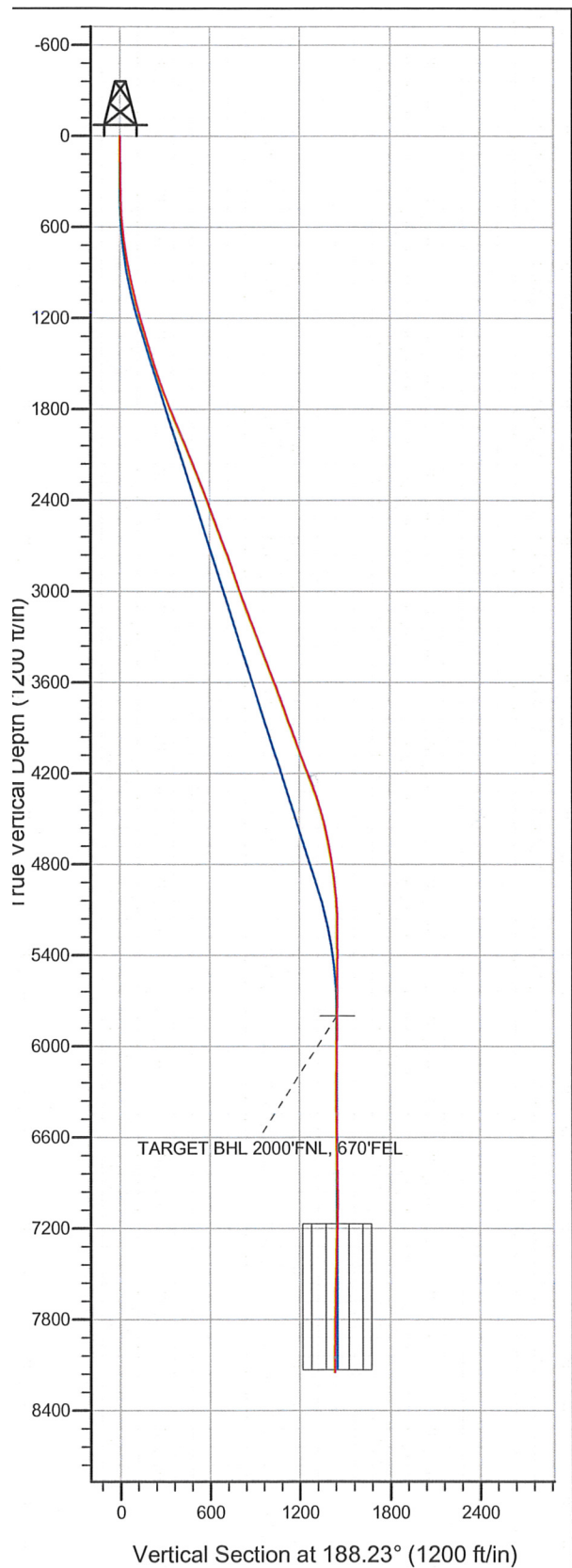
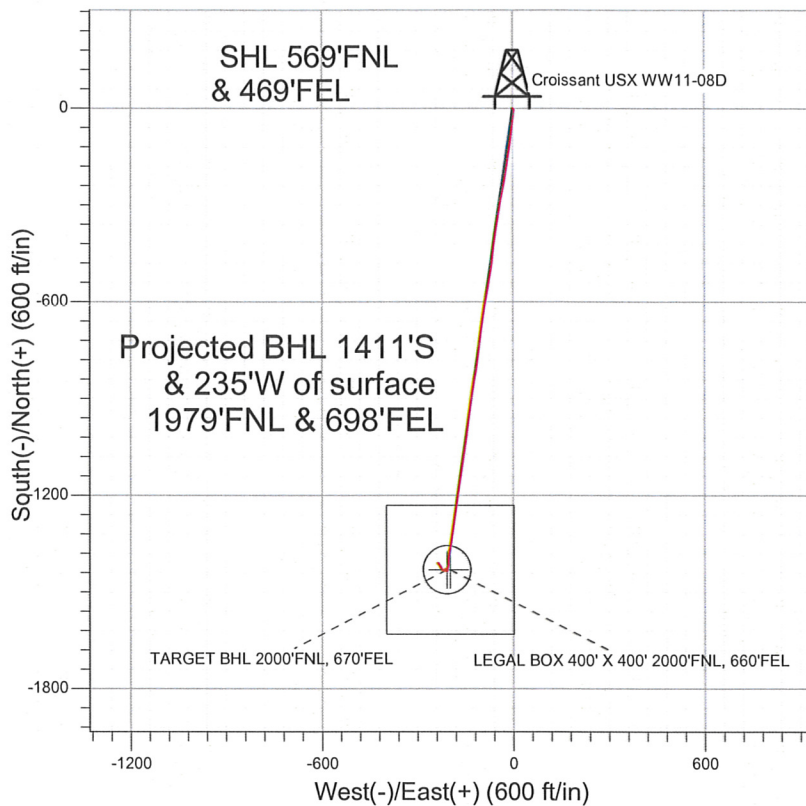


Surface Location: Croissant USX WW11-02D Pad Sec.11-T1N-R66W  
North American Datum 1983 US State Plane 1983 Wyoming Western Zone  
Ground Elevation: 5076.0  
+N/-S +E/-W Northing Easting Latitude Longitude Slot  
0.0 0.0 217048.99 4121358.63 40.071590 -104.736530  
Original Well EleWELL @ 5089.0ft (Original Well Elev)



## NOBLE ENERGY INC WELD COUNTY CO



### LEGEND

- Croissant USX WW11-08D, Wellbore #1, Noble Croissant USX WW11-08D Plan #1 (7-05-11)
- Wellbore #1
- Survey #1

## Final Survey Plot

Projected Final Survey -  
8388'MD & 8146'TVD @ 1430' VS  
0.9 deg Inc 320.0 deg AZ

Project: SEC.11-T1N-R66W  
Site: Croissant USX WW11-02D Pad Sec.11-T1N-R66W  
Well: Croissant USX WW11-08D  
Plan: Wellbore #1



**Directional**

**NOBLE ENERGY INC WELD  
COUNTY CO**

**SEC.11-T1N-R66W**

**Croissant USX WW11-02D Pad Sec.11-T1N-R66W**

**Croissant USX WW11-08D**

**Wellbore #1**

**Survey: Survey #1**

**Standard Survey Report**

**20 September, 2011**



**Company:** NOBLE ENERGY INC WELD COUNTY CO  
**Project:** SEC.11-T1N-R66W  
**Site:** Croissant USX WW11-02D Pad  
 Sec.11-T1N-R66W  
**Well:** Croissant USX WW11-08D  
**Wellbore:** Wellbore #1  
**Design:** Wellbore #1

**Local Co-ordinate Reference:** Well Croissant USX WW11-08D  
**TVD Reference:** WELL @ 5089.0ft (Original Well Elev)  
**MD Reference:** WELL @ 5089.0ft (Original Well Elev)  
**North Reference:** True  
**Survey Calculation Method:** Minimum Curvature  
**Database:** Landmark

<b>Project</b>	SEC.11-T1N-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>	Wyoming Western Zone		Using geodetic scale factor

**Site** Croissant USX WW11-02D Pad Sec.11-T1N-R66W

<b>Site Position:</b>		<b>Northing:</b>	217,092.74 ft	<b>Latitude:</b>	40.071710
<b>From:</b>	Lat/Long	<b>Easting:</b>	4,121,355.93 ft	<b>Longitude:</b>	-104.736530
<b>Position Uncertainty:</b>	0.0 ft	<b>Slot Radius:</b>	"	<b>Grid Convergence:</b>	3.45 °

**Well** Croissant USX WW11-08D

<b>Well Position</b>	<b>+N/-S</b>	0.0 ft	<b>Northing:</b>	217,048.99 ft	<b>Latitude:</b>	40.071590
	<b>+E/-W</b>	0.0 ft	<b>Easting:</b>	4,121,358.63 ft	<b>Longitude:</b>	-104.736530
<b>Position Uncertainty</b>		0.0 ft	<b>Wellhead Elevation:</b>	ft	<b>Ground Level:</b>	5,076.0 ft

**Wellbore** Wellbore #1

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	7/5/2011	8.81	66.79	52,954

**Design** Wellbore #1

**Audit Notes:**

<b>Version:</b>	1.0	<b>Phase:</b>	ACTUAL	<b>Tie On Depth:</b>	0.0
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Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	5,800.0	0.0	0.0	188.23

**Survey Program** Date 9/20/2011

From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
346.0	8,388.0	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
346.0	1.30	131.90	346.0	-2.6	2.9	2.2	0.38	0.38	0.00
474.0	2.90	172.80	473.9	-6.8	4.4	6.1	1.64	1.25	31.95
601.0	5.70	185.00	600.5	-16.3	4.3	15.5	2.31	2.20	9.61
728.0	8.00	189.40	726.6	-31.3	2.3	30.6	1.86	1.81	3.46
856.0	10.70	187.90	852.9	-51.8	-0.8	51.4	2.12	2.11	-1.17
983.0	13.20	188.00	977.1	-77.9	-4.5	77.7	1.97	1.97	0.08
1,112.0	15.00	188.50	1,102.2	-109.0	-9.0	109.1	1.40	1.40	0.39
1,216.0	15.70	186.10	1,202.5	-136.3	-12.5	136.7	0.91	0.67	-2.31
1,279.0	15.20	186.70	1,263.3	-153.0	-14.3	153.4	0.83	-0.79	0.95
1,408.0	17.10	190.80	1,387.2	-188.4	-19.9	189.3	1.72	1.47	3.18
1,536.0	18.80	189.60	1,508.9	-227.2	-26.8	228.7	1.36	1.33	-0.94



Company: NOBLE ENERGY INC WELD COUNTY CO  
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Sec.11-T1N-R66W  
Well: Croissant USX WW11-08D  
Wellbore: Wellbore #1  
Design: Wellbore #1

Local Co-ordinate Reference: Well Croissant USX WW11-08D  
TVD Reference: WELL @ 5089.0ft (Original Well Elev)  
MD Reference: WELL @ 5089.0ft (Original Well Elev)  
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)
1,664.0	19.60	190.50	1,629.8	-268.7	-34.2	270.8	0.67	0.63	0.70
1,793.0	21.70	189.30	1,750.5	-313.5	-42.0	316.3	1.66	1.63	-0.93
1,921.0	23.00	189.90	1,868.9	-361.5	-50.1	364.9	1.03	1.02	0.47
2,050.0	22.70	187.70	1,987.8	-411.0	-57.8	415.0	0.70	-0.23	-1.71
2,178.0	22.40	185.90	2,106.0	-459.7	-63.6	464.1	0.59	-0.23	-1.41
2,306.0	22.00	189.10	2,224.5	-507.6	-69.9	512.4	0.99	-0.31	2.50
2,435.0	21.60	191.20	2,344.3	-554.8	-78.3	560.3	0.68	-0.31	1.63
2,563.0	20.80	188.50	2,463.6	-600.4	-86.3	606.5	0.99	-0.63	-2.11
2,692.0	20.10	188.40	2,584.5	-645.0	-92.9	651.6	0.54	-0.54	-0.08
2,820.0	20.70	188.00	2,704.5	-689.1	-99.2	696.2	0.48	0.47	-0.31
2,948.0	19.60	188.00	2,824.6	-732.8	-105.4	740.3	0.86	-0.86	0.00
3,077.0	19.30	186.00	2,946.3	-775.4	-110.6	783.3	0.57	-0.23	-1.55
3,205.0	19.40	191.10	3,067.0	-817.3	-116.9	825.6	1.32	0.08	3.98
3,334.0	21.10	188.00	3,188.1	-861.3	-124.3	870.2	1.56	1.32	-2.40
3,462.0	21.60	188.40	3,307.3	-907.5	-130.9	916.8	0.41	0.39	0.31
3,590.0	21.80	187.90	3,426.2	-954.3	-137.6	964.2	0.21	0.16	-0.39
3,719.0	21.60	186.80	3,546.1	-1,001.6	-143.7	1,011.9	0.35	-0.16	-0.85
3,847.0	19.60	187.20	3,665.9	-1,046.3	-149.2	1,056.9	1.57	-1.56	0.31
3,976.0	19.50	188.80	3,787.4	-1,089.0	-155.2	1,100.0	0.42	-0.08	1.24
4,104.0	20.70	190.10	3,907.6	-1,132.4	-162.5	1,144.0	1.00	0.94	1.02
4,232.0	20.90	187.90	4,027.3	-1,177.3	-169.6	1,189.5	0.63	0.16	-1.72
4,361.0	21.30	189.20	4,147.7	-1,223.2	-176.5	1,235.9	0.48	0.31	1.01
4,489.0	20.10	188.40	4,267.4	-1,267.9	-183.4	1,281.1	0.96	-0.94	-0.63
4,618.0	18.00	187.70	4,389.3	-1,309.6	-189.3	1,323.2	1.64	-1.63	-0.54
4,746.0	14.20	189.30	4,512.3	-1,344.7	-194.5	1,358.7	2.99	-2.97	1.25
4,874.0	11.20	187.70	4,637.1	-1,372.6	-198.7	1,386.9	2.36	-2.34	-1.25
5,003.0	9.50	188.00	4,764.0	-1,395.5	-201.9	1,410.0	1.32	-1.32	0.23
5,131.0	7.90	183.00	4,890.6	-1,414.8	-203.8	1,429.4	1.38	-1.25	-3.91
5,260.0	4.30	190.90	5,018.8	-1,428.4	-205.2	1,443.0	2.86	-2.79	6.12
5,388.0	0.70	200.50	5,146.7	-1,433.8	-206.4	1,448.6	2.82	-2.81	7.50
5,516.0	0.30	215.50	5,274.7	-1,434.8	-206.8	1,449.6	0.33	-0.31	11.72
5,645.0	0.20	245.60	5,403.7	-1,435.2	-207.2	1,450.1	0.13	-0.08	23.33
5,773.0	0.40	281.90	5,531.7	-1,435.2	-207.9	1,450.2	0.21	0.16	28.36
5,902.0	0.50	334.40	5,660.6	-1,434.6	-208.5	1,449.7	0.32	0.08	40.70
6,030.0	0.50	352.90	5,788.6	-1,433.5	-208.9	1,448.7	0.13	0.00	14.45
6,041.4	0.51	355.11	5,800.0	-1,433.4	-208.9	1,448.6	0.22	0.13	19.41
TARGET BHL 2000'FNL, 670'FEL									
6,158.0	0.70	11.50	5,916.6	-1,432.2	-208.8	1,447.3	0.22	0.16	14.06
6,287.0	0.70	5.60	6,045.6	-1,430.7	-208.5	1,445.8	0.06	0.00	-4.57
6,415.0	0.70	334.80	6,173.6	-1,429.2	-208.8	1,444.3	0.29	0.00	-24.06
6,544.0	0.50	271.60	6,302.6	-1,428.4	-209.7	1,443.7	0.50	-0.16	-48.99
6,672.0	0.70	233.90	6,430.6	-1,428.9	-210.9	1,444.4	0.34	0.16	-29.45
6,800.0	0.80	255.30	6,558.6	-1,429.6	-212.4	1,445.2	0.23	0.08	16.72
6,929.0	1.20	211.70	6,687.6	-1,430.9	-214.0	1,446.8	0.64	0.31	-33.80
7,057.0	1.50	209.90	6,815.5	-1,433.5	-215.5	1,449.6	0.24	0.23	-1.41
7,186.0	0.60	257.10	6,944.5	-1,435.2	-217.0	1,451.4	0.91	-0.70	36.59
7,314.0	1.30	334.20	7,072.5	-1,434.0	-218.3	1,450.5	1.02	0.55	60.23
7,411.2	1.73	311.67	7,169.6	-1,432.0	-219.9	1,448.8	0.75	0.44	-23.18
LEGAL BOX 400' X 400' 2000'FNL, 660'FEL									
7,411.3	1.73	311.65	7,169.8	-1,432.0	-219.9	1,448.8	0.75	0.54	-17.00
TARGET CIRCLE 2000'FNL, 670'FEL									
7,442.0	1.90	306.90	7,200.5	-1,431.4	-220.6	1,448.3	0.75	0.56	-15.47
7,571.0	1.10	326.40	7,329.4	-1,429.1	-223.0	1,446.3	0.73	-0.62	15.12

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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)
7,699.0	1.60	346.00	7,457.4	-1,426.3	-224.1	1,443.7	0.53	0.39	15.31
7,828.0	2.20	331.60	7,586.3	-1,422.4	-225.7	1,440.1	0.59	0.47	-11.16
7,956.0	2.00	325.20	7,714.2	-1,418.4	-228.2	1,436.5	0.24	-0.16	-5.00
8,084.0	1.50	310.50	7,842.2	-1,415.5	-230.7	1,434.0	0.52	-0.39	-11.48
8,213.0	1.20	323.50	7,971.1	-1,413.3	-232.8	1,432.1	0.33	-0.23	10.08
8,353.0	1.10	322.80	8,111.1	-1,411.1	-234.5	1,430.1	0.07	-0.07	-0.50
8,388.0	0.90	320.00	8,146.1	-1,410.6	-234.9	1,429.7	0.59	-0.57	-8.00

Checked By: \_\_\_\_\_ Approved By: \_\_\_\_\_ Date: \_\_\_\_\_