

ENSIGN

Directional

Well Name: Croissant USX WW11-08D

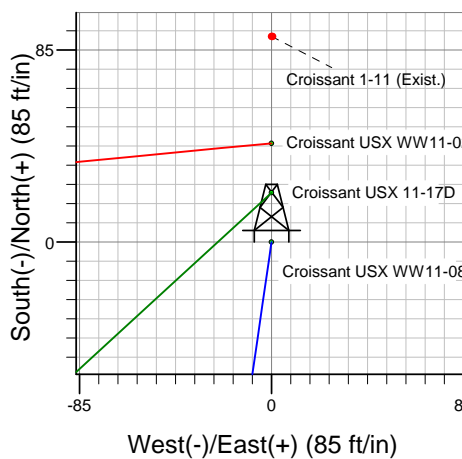
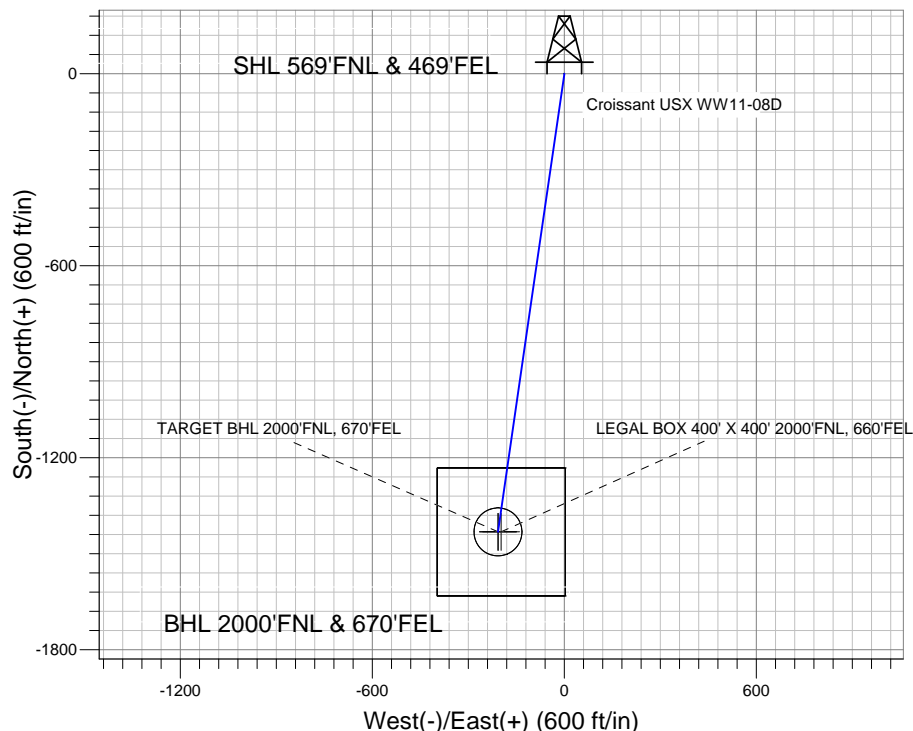
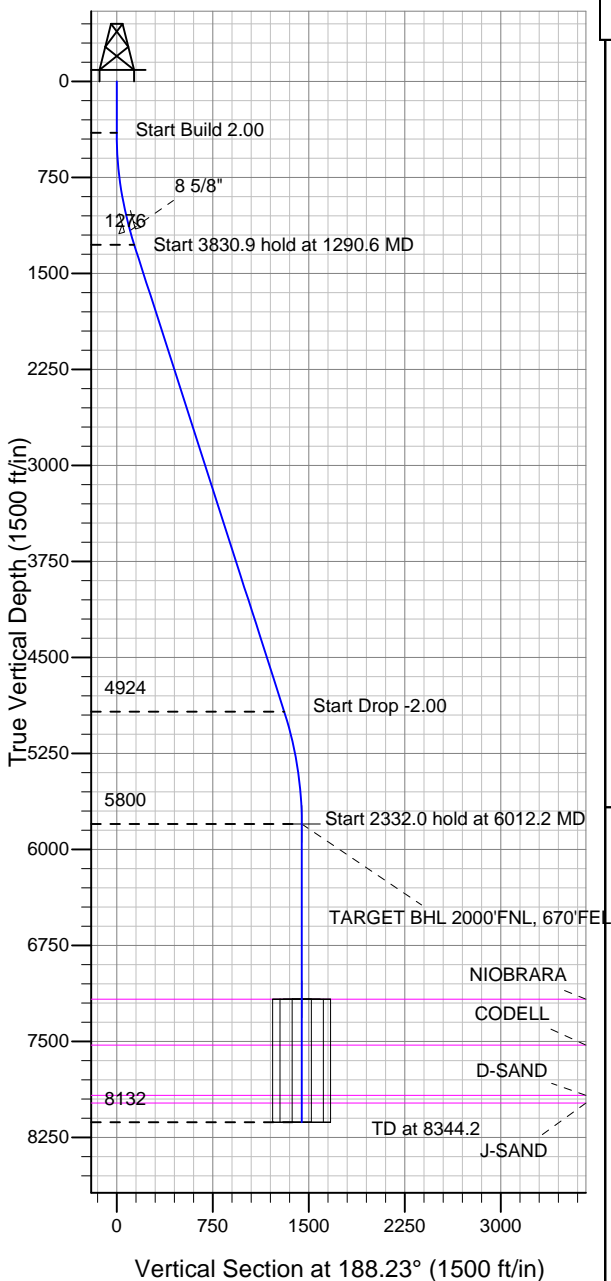
Surface Location: Croissant USX WW11-02D Pad Sec.11-T1N-R66W
North American Datum 1983 US State Plane 1983 Wyoming Western Zone

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 Elev WELL @ 5089.0ft (Original Well Elev)

NOBLE ENERGY INC WELD COUNTY CO



Croissant USX WW11-02D Pad Sec.11-T1N-R66W
Croissant USX WW11-08D
Noble Croissant USX WW11-08D Plan #1 (7-05-11)
9:23, July 06 2011



Azimuths to True North
Magnetic North: 8.81°

Magnetic Field
Strength: 52953.7snT
Dip Angle: 66.79°
Date: 7/5/2011
Model: IGRF2010

WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
TARGET BHL 2000'FNL, 670'FEL	5800.0	-1431.7	-207.1	40.067660	-104.737270	Point
LEGAL BOX 400' X 400' 2000'FNL, 660'FEL	7170.0	-1431.7	-197.1	40.067660	-104.737234	Rectangle (Sides: L400.0 W400.0)
TARGET CIRCLE 2000'FNL, 670'FEL	7170.0	-1431.7	-207.1	40.067660	-104.737270	Circle (Radius: 75.0)

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	400.0	0.00	0.00	400.0	0.0	0.0	0.00	0.00	0.0	
3	1290.6	17.81	188.23	1276.4	-135.9	-19.7	2.00	188.23	137.3	
4	5121.6	17.81	188.23	4923.6	-1295.7	-187.5	0.00	0.00	1309.2	
5	6012.2	0.00	0.00	5800.0	-1431.7	-207.1	2.00	180.00	1446.6	TARGET BHL 2000'FNL, 670'FEL
6	8344.2	0.00	0.00	8132.0	-1431.7	-207.1	0.00	0.00	1446.6	



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

Plan: Noble Croissant USX WW11-08D Plan #1 (7-05-11)

Standard Planning Report

06 July, 2011



Database:	Landmark	Local Co-ordinate Reference:	Well Croissant USX WW11-08D
Company:	NOBLE ENERGY INC WELD COUNTY CO	TVD Reference:	WELL @ 5089.0ft (Original Well Elev)
Project:	SEC.11-T1N-R66W	MD Reference:	WELL @ 5089.0ft (Original Well Elev)
Site:	Croissant USX WW11-02D Pad Sec.11-T1N-R66W	North Reference:	True
Well:	Croissant USX WW11-08D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Noble Croissant USX WW11-08D Plan #1 (7-05-11)		

Project	SEC.11-T1N-R66W, 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:	Wyoming Western Zone		Using geodetic scale factor

Site	Croissant USX WW11-02D Pad Sec.11-T1N-R66W		
Site Position:		Northing:	217,092.74 ft
From:	Lat/Long	Easting:	4,121,355.93 ft
Position Uncertainty:	0.0 ft	Slot Radius:	"
		Latitude:	40.071710
		Longitude:	-104.736530
		Grid Convergence:	3.45 °

Well	Croissant USX WW11-08D		
Well Position	+N/-S	-43.7 ft	Northing:
	+E/-W	0.1 ft	Easting:
Position Uncertainty		0.0 ft	Wellhead Elevation:
			Latitude:
			Longitude:
			Ground Level:

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	Noble Croissant USX WW11-08D Plan #1 (7-05-11)			
Audit Notes:				
Version:	Phase:	PROTOTYPE	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.0	0.0	0.0	188.23

Plan Sections										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
400.0	0.00	0.00	400.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,290.6	17.81	188.23	1,276.4	-135.9	-19.7	2.00	2.00	0.00	188.23	
5,121.6	17.81	188.23	4,923.6	-1,295.7	-187.5	0.00	0.00	0.00	0.00	
6,012.2	0.00	0.00	5,800.0	-1,431.7	-207.1	2.00	-2.00	0.00	180.00	TARGET BHL 200C
8,344.2	0.00	0.00	8,132.0	-1,431.7	-207.1	0.00	0.00	0.00	0.00	

Database:	Landmark	Local Co-ordinate Reference:	Well Croissant USX WW11-08D
Company:	NOBLE ENERGY INC WELD COUNTY CO	TVD Reference:	WELL @ 5089.0ft (Original Well Elev)
Project:	SEC.11-T1N-R66W	MD Reference:	WELL @ 5089.0ft (Original Well Elev)
Site:	Croissant USX WW11-02D Pad Sec.11-T1N-R66W	North Reference:	True
Well:	Croissant USX WW11-08D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Noble Croissant USX WW11-08D Plan #1 (7-01)		

Planned 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
40.0	0.00	0.00	40.0	0.0	0.0	0.0	0.00	0.00	0.00
80.0	0.00	0.00	80.0	0.0	0.0	0.0	0.00	0.00	0.00
120.0	0.00	0.00	120.0	0.0	0.0	0.0	0.00	0.00	0.00
160.0	0.00	0.00	160.0	0.0	0.0	0.0	0.00	0.00	0.00
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	0.00
240.0	0.00	0.00	240.0	0.0	0.0	0.0	0.00	0.00	0.00
280.0	0.00	0.00	280.0	0.0	0.0	0.0	0.00	0.00	0.00
320.0	0.00	0.00	320.0	0.0	0.0	0.0	0.00	0.00	0.00
360.0	0.00	0.00	360.0	0.0	0.0	0.0	0.00	0.00	0.00
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	0.00
440.0	0.80	188.23	440.0	-0.3	0.0	0.3	2.00	2.00	0.00
480.0	1.60	188.23	480.0	-1.1	-0.2	1.1	2.00	2.00	0.00
520.0	2.40	188.23	520.0	-2.5	-0.4	2.5	2.00	2.00	0.00
560.0	3.20	188.23	559.9	-4.4	-0.6	4.5	2.00	2.00	0.00
600.0	4.00	188.23	599.8	-6.9	-1.0	7.0	2.00	2.00	0.00
640.0	4.80	188.23	639.7	-9.9	-1.4	10.0	2.00	2.00	0.00
680.0	5.60	188.23	679.6	-13.5	-2.0	13.7	2.00	2.00	0.00
720.0	6.40	188.23	719.3	-17.7	-2.6	17.9	2.00	2.00	0.00
760.0	7.20	188.23	759.1	-22.4	-3.2	22.6	2.00	2.00	0.00
800.0	8.00	188.23	798.7	-27.6	-4.0	27.9	2.00	2.00	0.00
840.0	8.80	188.23	838.3	-33.4	-4.8	33.7	2.00	2.00	0.00
880.0	9.60	188.23	877.8	-39.7	-5.7	40.1	2.00	2.00	0.00
920.0	10.40	188.23	917.1	-46.6	-6.7	47.1	2.00	2.00	0.00
960.0	11.20	188.23	956.4	-54.0	-7.8	54.6	2.00	2.00	0.00
1,000.0	12.00	188.23	995.6	-62.0	-9.0	62.6	2.00	2.00	0.00
1,040.0	12.80	188.23	1,034.7	-70.5	-10.2	71.2	2.00	2.00	0.00
1,080.0	13.60	188.23	1,073.6	-79.5	-11.5	80.3	2.00	2.00	0.00
1,120.0	14.40	188.23	1,112.4	-89.1	-12.9	90.0	2.00	2.00	0.00
1,160.0	15.20	188.23	1,151.1	-99.2	-14.4	100.2	2.00	2.00	0.00
1,174.4	15.49	188.23	1,165.0	-103.0	-14.9	104.0	2.00	2.00	0.00
8 5/8"									
1,200.0	16.00	188.23	1,189.6	-109.8	-15.9	111.0	2.00	2.00	0.00
1,240.0	16.80	188.23	1,228.0	-121.0	-17.5	122.3	2.00	2.00	0.00
1,280.0	17.60	188.23	1,266.2	-132.7	-19.2	134.1	2.00	2.00	0.00
1,290.6	17.81	188.23	1,276.4	-135.9	-19.7	137.3	2.00	2.00	0.00
1,320.0	17.81	188.23	1,304.3	-144.8	-21.0	146.3	0.00	0.00	0.00
1,360.0	17.81	188.23	1,342.4	-156.9	-22.7	158.6	0.00	0.00	0.00
1,400.0	17.81	188.23	1,380.5	-169.0	-24.5	170.8	0.00	0.00	0.00
1,440.0	17.81	188.23	1,418.6	-181.1	-26.2	183.0	0.00	0.00	0.00
1,480.0	17.81	188.23	1,456.6	-193.2	-28.0	195.3	0.00	0.00	0.00
1,520.0	17.81	188.23	1,494.7	-205.4	-29.7	207.5	0.00	0.00	0.00
1,560.0	17.81	188.23	1,532.8	-217.5	-31.5	219.7	0.00	0.00	0.00
1,600.0	17.81	188.23	1,570.9	-229.6	-33.2	232.0	0.00	0.00	0.00
1,640.0	17.81	188.23	1,609.0	-241.7	-35.0	244.2	0.00	0.00	0.00
1,680.0	17.81	188.23	1,647.1	-253.8	-36.7	256.4	0.00	0.00	0.00
1,720.0	17.81	188.23	1,685.1	-265.9	-38.5	268.7	0.00	0.00	0.00
1,760.0	17.81	188.23	1,723.2	-278.0	-40.2	280.9	0.00	0.00	0.00
1,800.0	17.81	188.23	1,761.3	-290.1	-42.0	293.2	0.00	0.00	0.00
1,840.0	17.81	188.23	1,799.4	-302.2	-43.7	305.4	0.00	0.00	0.00
1,880.0	17.81	188.23	1,837.5	-314.4	-45.5	317.6	0.00	0.00	0.00
1,920.0	17.81	188.23	1,875.6	-326.5	-47.2	329.9	0.00	0.00	0.00
1,960.0	17.81	188.23	1,913.6	-338.6	-49.0	342.1	0.00	0.00	0.00

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Company:	NOBLE ENERGY INC WELD COUNTY CO	TVD Reference:	WELL @ 5089.0ft (Original Well Elev)
Project:	SEC.11-T1N-R66W	MD Reference:	WELL @ 5089.0ft (Original Well Elev)
Site:	Croissant USX WW11-02D Pad Sec.11-T1N-R66W	North Reference:	True
Well:	Croissant USX WW11-08D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Noble Croissant USX WW11-08D Plan #1 (7-01)		

Planned 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)
2,000.0	17.81	188.23	1,951.7	-350.7	-50.7	354.3	0.00	0.00	0.00
2,040.0	17.81	188.23	1,989.8	-362.8	-52.5	366.6	0.00	0.00	0.00
2,080.0	17.81	188.23	2,027.9	-374.9	-54.2	378.8	0.00	0.00	0.00
2,120.0	17.81	188.23	2,066.0	-387.0	-56.0	391.0	0.00	0.00	0.00
2,160.0	17.81	188.23	2,104.0	-399.1	-57.7	403.3	0.00	0.00	0.00
2,200.0	17.81	188.23	2,142.1	-411.2	-59.5	415.5	0.00	0.00	0.00
2,240.0	17.81	188.23	2,180.2	-423.3	-61.3	427.7	0.00	0.00	0.00
2,280.0	17.81	188.23	2,218.3	-435.5	-63.0	440.0	0.00	0.00	0.00
2,320.0	17.81	188.23	2,256.4	-447.6	-64.8	452.2	0.00	0.00	0.00
2,360.0	17.81	188.23	2,294.5	-459.7	-66.5	464.5	0.00	0.00	0.00
2,400.0	17.81	188.23	2,332.5	-471.8	-68.3	476.7	0.00	0.00	0.00
2,440.0	17.81	188.23	2,370.6	-483.9	-70.0	488.9	0.00	0.00	0.00
2,480.0	17.81	188.23	2,408.7	-496.0	-71.8	501.2	0.00	0.00	0.00
2,520.0	17.81	188.23	2,446.8	-508.1	-73.5	513.4	0.00	0.00	0.00
2,560.0	17.81	188.23	2,484.9	-520.2	-75.3	525.6	0.00	0.00	0.00
2,600.0	17.81	188.23	2,523.0	-532.3	-77.0	537.9	0.00	0.00	0.00
2,640.0	17.81	188.23	2,561.0	-544.4	-78.8	550.1	0.00	0.00	0.00
2,680.0	17.81	188.23	2,599.1	-556.6	-80.5	562.3	0.00	0.00	0.00
2,720.0	17.81	188.23	2,637.2	-568.7	-82.3	574.6	0.00	0.00	0.00
2,760.0	17.81	188.23	2,675.3	-580.8	-84.0	586.8	0.00	0.00	0.00
2,800.0	17.81	188.23	2,713.4	-592.9	-85.8	599.1	0.00	0.00	0.00
2,840.0	17.81	188.23	2,751.4	-605.0	-87.5	611.3	0.00	0.00	0.00
2,880.0	17.81	188.23	2,789.5	-617.1	-89.3	623.5	0.00	0.00	0.00
2,920.0	17.81	188.23	2,827.6	-629.2	-91.0	635.8	0.00	0.00	0.00
2,960.0	17.81	188.23	2,865.7	-641.3	-92.8	648.0	0.00	0.00	0.00
3,000.0	17.81	188.23	2,903.8	-653.4	-94.5	660.2	0.00	0.00	0.00
3,040.0	17.81	188.23	2,941.9	-665.5	-96.3	672.5	0.00	0.00	0.00
3,080.0	17.81	188.23	2,979.9	-677.7	-98.0	684.7	0.00	0.00	0.00
3,120.0	17.81	188.23	3,018.0	-689.8	-99.8	696.9	0.00	0.00	0.00
3,160.0	17.81	188.23	3,056.1	-701.9	-101.6	709.2	0.00	0.00	0.00
3,200.0	17.81	188.23	3,094.2	-714.0	-103.3	721.4	0.00	0.00	0.00
3,240.0	17.81	188.23	3,132.3	-726.1	-105.1	733.7	0.00	0.00	0.00
3,280.0	17.81	188.23	3,170.4	-738.2	-106.8	745.9	0.00	0.00	0.00
3,320.0	17.81	188.23	3,208.4	-750.3	-108.6	758.1	0.00	0.00	0.00
3,360.0	17.81	188.23	3,246.5	-762.4	-110.3	770.4	0.00	0.00	0.00
3,400.0	17.81	188.23	3,284.6	-774.5	-112.1	782.6	0.00	0.00	0.00
3,440.0	17.81	188.23	3,322.7	-786.6	-113.8	794.8	0.00	0.00	0.00
3,480.0	17.81	188.23	3,360.8	-798.8	-115.6	807.1	0.00	0.00	0.00
3,520.0	17.81	188.23	3,398.9	-810.9	-117.3	819.3	0.00	0.00	0.00
3,560.0	17.81	188.23	3,436.9	-823.0	-119.1	831.5	0.00	0.00	0.00
3,600.0	17.81	188.23	3,475.0	-835.1	-120.8	843.8	0.00	0.00	0.00
3,640.0	17.81	188.23	3,513.1	-847.2	-122.6	856.0	0.00	0.00	0.00
3,680.0	17.81	188.23	3,551.2	-859.3	-124.3	868.3	0.00	0.00	0.00
3,720.0	17.81	188.23	3,589.3	-871.4	-126.1	880.5	0.00	0.00	0.00
3,760.0	17.81	188.23	3,627.3	-883.5	-127.8	892.7	0.00	0.00	0.00
3,800.0	17.81	188.23	3,665.4	-895.6	-129.6	905.0	0.00	0.00	0.00
3,840.0	17.81	188.23	3,703.5	-907.7	-131.3	917.2	0.00	0.00	0.00
3,880.0	17.81	188.23	3,741.6	-919.9	-133.1	929.4	0.00	0.00	0.00
3,920.0	17.81	188.23	3,779.7	-932.0	-134.8	941.7	0.00	0.00	0.00
3,960.0	17.81	188.23	3,817.8	-944.1	-136.6	953.9	0.00	0.00	0.00
4,000.0	17.81	188.23	3,855.8	-956.2	-138.3	966.1	0.00	0.00	0.00
4,040.0	17.81	188.23	3,893.9	-968.3	-140.1	978.4	0.00	0.00	0.00
4,080.0	17.81	188.23	3,932.0	-980.4	-141.9	990.6	0.00	0.00	0.00

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Site:	Croissant USX WW11-02D Pad Sec.11-T1N-R66W	North Reference:	True
Well:	Croissant USX WW11-08D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Noble Croissant USX WW11-08D Plan #1 (7-01)		

Planned 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)
4,120.0	17.81	188.23	3,970.1	-992.5	-143.6	1,002.9	0.00	0.00	0.00
4,160.0	17.81	188.23	4,008.2	-1,004.6	-145.4	1,015.1	0.00	0.00	0.00
4,200.0	17.81	188.23	4,046.3	-1,016.7	-147.1	1,027.3	0.00	0.00	0.00
4,240.0	17.81	188.23	4,084.3	-1,028.8	-148.9	1,039.6	0.00	0.00	0.00
4,280.0	17.81	188.23	4,122.4	-1,041.0	-150.6	1,051.8	0.00	0.00	0.00
4,320.0	17.81	188.23	4,160.5	-1,053.1	-152.4	1,064.0	0.00	0.00	0.00
4,360.0	17.81	188.23	4,198.6	-1,065.2	-154.1	1,076.3	0.00	0.00	0.00
4,400.0	17.81	188.23	4,236.7	-1,077.3	-155.9	1,088.5	0.00	0.00	0.00
4,440.0	17.81	188.23	4,274.7	-1,089.4	-157.6	1,100.7	0.00	0.00	0.00
4,480.0	17.81	188.23	4,312.8	-1,101.5	-159.4	1,113.0	0.00	0.00	0.00
4,520.0	17.81	188.23	4,350.9	-1,113.6	-161.1	1,125.2	0.00	0.00	0.00
4,560.0	17.81	188.23	4,389.0	-1,125.7	-162.9	1,137.5	0.00	0.00	0.00
4,600.0	17.81	188.23	4,427.1	-1,137.8	-164.6	1,149.7	0.00	0.00	0.00
4,640.0	17.81	188.23	4,465.2	-1,150.0	-166.4	1,161.9	0.00	0.00	0.00
4,680.0	17.81	188.23	4,503.2	-1,162.1	-168.1	1,174.2	0.00	0.00	0.00
4,720.0	17.81	188.23	4,541.3	-1,174.2	-169.9	1,186.4	0.00	0.00	0.00
4,760.0	17.81	188.23	4,579.4	-1,186.3	-171.6	1,198.6	0.00	0.00	0.00
4,800.0	17.81	188.23	4,617.5	-1,198.4	-173.4	1,210.9	0.00	0.00	0.00
4,840.0	17.81	188.23	4,655.6	-1,210.5	-175.1	1,223.1	0.00	0.00	0.00
4,880.0	17.81	188.23	4,693.7	-1,222.6	-176.9	1,235.3	0.00	0.00	0.00
4,920.0	17.81	188.23	4,731.7	-1,234.7	-178.7	1,247.6	0.00	0.00	0.00
4,960.0	17.81	188.23	4,769.8	-1,246.8	-180.4	1,259.8	0.00	0.00	0.00
5,000.0	17.81	188.23	4,807.9	-1,258.9	-182.2	1,272.1	0.00	0.00	0.00
5,040.0	17.81	188.23	4,846.0	-1,271.1	-183.9	1,284.3	0.00	0.00	0.00
5,080.0	17.81	188.23	4,884.1	-1,283.2	-185.7	1,296.5	0.00	0.00	0.00
5,120.0	17.81	188.23	4,922.1	-1,295.3	-187.4	1,308.8	0.00	0.00	0.00
5,121.6	17.81	188.23	4,923.6	-1,295.7	-187.5	1,309.2	0.00	0.00	0.00
5,160.0	17.04	188.23	4,960.3	-1,307.1	-189.1	1,320.8	2.00	-2.00	0.00
5,200.0	16.24	188.23	4,998.6	-1,318.5	-190.8	1,332.2	2.00	-2.00	0.00
5,240.0	15.44	188.23	5,037.1	-1,329.3	-192.3	1,343.1	2.00	-2.00	0.00
5,280.0	14.64	188.23	5,075.7	-1,339.6	-193.8	1,353.5	2.00	-2.00	0.00
5,320.0	13.84	188.23	5,114.5	-1,349.3	-195.2	1,363.4	2.00	-2.00	0.00
5,360.0	13.04	188.23	5,153.4	-1,358.5	-196.6	1,372.7	2.00	-2.00	0.00
5,400.0	12.24	188.23	5,192.4	-1,367.2	-197.8	1,381.4	2.00	-2.00	0.00
5,440.0	11.44	188.23	5,231.6	-1,375.3	-199.0	1,389.6	2.00	-2.00	0.00
5,480.0	10.64	188.23	5,270.9	-1,382.9	-200.1	1,397.3	2.00	-2.00	0.00
5,520.0	9.84	188.23	5,310.2	-1,389.9	-201.1	1,404.4	2.00	-2.00	0.00
5,560.0	9.04	188.23	5,349.7	-1,396.4	-202.0	1,411.0	2.00	-2.00	0.00
5,600.0	8.24	188.23	5,389.2	-1,402.4	-202.9	1,417.0	2.00	-2.00	0.00
5,640.0	7.44	188.23	5,428.8	-1,407.8	-203.7	1,422.4	2.00	-2.00	0.00
5,680.0	6.64	188.23	5,468.5	-1,412.6	-204.4	1,427.3	2.00	-2.00	0.00
5,720.0	5.84	188.23	5,508.3	-1,416.9	-205.0	1,431.7	2.00	-2.00	0.00
5,760.0	5.04	188.23	5,548.1	-1,420.7	-205.6	1,435.5	2.00	-2.00	0.00
5,800.0	4.24	188.23	5,588.0	-1,423.9	-206.0	1,438.7	2.00	-2.00	0.00
5,840.0	3.44	188.23	5,627.9	-1,426.5	-206.4	1,441.4	2.00	-2.00	0.00
5,880.0	2.64	188.23	5,667.8	-1,428.6	-206.7	1,443.5	2.00	-2.00	0.00
5,920.0	1.84	188.23	5,707.8	-1,430.2	-206.9	1,445.1	2.00	-2.00	0.00
5,960.0	1.04	188.23	5,747.8	-1,431.2	-207.1	1,446.1	2.00	-2.00	0.00
6,000.0	0.24	188.23	5,787.8	-1,431.6	-207.1	1,446.5	2.00	-2.00	0.00
6,012.2	0.00	0.00	5,800.0	-1,431.7	-207.1	1,446.6	2.00	-2.00	0.00
TARGET BHL 2000'FNL, 670'FEL									
6,040.0	0.00	0.00	5,827.8	-1,431.7	-207.1	1,446.6	0.00	0.00	0.00
6,080.0	0.00	0.00	5,867.8	-1,431.7	-207.1	1,446.6	0.00	0.00	0.00

Database:	Landmark	Local Co-ordinate Reference:	Well Croissant USX WW11-08D
Company:	NOBLE ENERGY INC WELD COUNTY CO	TVD Reference:	WELL @ 5089.0ft (Original Well Elev)
Project:	SEC.11-T1N-R66W	MD Reference:	WELL @ 5089.0ft (Original Well Elev)
Site:	Croissant USX WW11-02D Pad Sec.11-T1N-R66W	North Reference:	True
Well:	Croissant USX WW11-08D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Noble Croissant USX WW11-08D Plan #1 (7-01)		

Planned 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)
6,120.0	0.00	0.00	5,907.8	-1,431.7	-207.1	1,446.6	0.00	0.00	0.00
6,160.0	0.00	0.00	5,947.8	-1,431.7	-207.1	1,446.6	0.00	0.00	0.00
6,200.0	0.00	0.00	5,987.8	-1,431.7	-207.1	1,446.6	0.00	0.00	0.00
6,240.0	0.00	0.00	6,027.8	-1,431.7	-207.1	1,446.6	0.00	0.00	0.00
6,280.0	0.00	0.00	6,067.8	-1,431.7	-207.1	1,446.6	0.00	0.00	0.00
6,320.0	0.00	0.00	6,107.8	-1,431.7	-207.1	1,446.6	0.00	0.00	0.00
6,360.0	0.00	0.00	6,147.8	-1,431.7	-207.1	1,446.6	0.00	0.00	0.00
6,400.0	0.00	0.00	6,187.8	-1,431.7	-207.1	1,446.6	0.00	0.00	0.00
6,440.0	0.00	0.00	6,227.8	-1,431.7	-207.1	1,446.6	0.00	0.00	0.00
6,480.0	0.00	0.00	6,267.8	-1,431.7	-207.1	1,446.6	0.00	0.00	0.00
6,520.0	0.00	0.00	6,307.8	-1,431.7	-207.1	1,446.6	0.00	0.00	0.00
6,560.0	0.00	0.00	6,347.8	-1,431.7	-207.1	1,446.6	0.00	0.00	0.00
6,600.0	0.00	0.00	6,387.8	-1,431.7	-207.1	1,446.6	0.00	0.00	0.00
6,640.0	0.00	0.00	6,427.8	-1,431.7	-207.1	1,446.6	0.00	0.00	0.00
6,680.0	0.00	0.00	6,467.8	-1,431.7	-207.1	1,446.6	0.00	0.00	0.00
6,720.0	0.00	0.00	6,507.8	-1,431.7	-207.1	1,446.6	0.00	0.00	0.00
6,760.0	0.00	0.00	6,547.8	-1,431.7	-207.1	1,446.6	0.00	0.00	0.00
6,800.0	0.00	0.00	6,587.8	-1,431.7	-207.1	1,446.6	0.00	0.00	0.00
6,840.0	0.00	0.00	6,627.8	-1,431.7	-207.1	1,446.6	0.00	0.00	0.00
6,880.0	0.00	0.00	6,667.8	-1,431.7	-207.1	1,446.6	0.00	0.00	0.00
6,920.0	0.00	0.00	6,707.8	-1,431.7	-207.1	1,446.6	0.00	0.00	0.00
6,960.0	0.00	0.00	6,747.8	-1,431.7	-207.1	1,446.6	0.00	0.00	0.00
7,000.0	0.00	0.00	6,787.8	-1,431.7	-207.1	1,446.6	0.00	0.00	0.00
7,040.0	0.00	0.00	6,827.8	-1,431.7	-207.1	1,446.6	0.00	0.00	0.00
7,080.0	0.00	0.00	6,867.8	-1,431.7	-207.1	1,446.6	0.00	0.00	0.00
7,120.0	0.00	0.00	6,907.8	-1,431.7	-207.1	1,446.6	0.00	0.00	0.00
7,160.0	0.00	0.00	6,947.8	-1,431.7	-207.1	1,446.6	0.00	0.00	0.00
7,200.0	0.00	0.00	6,987.8	-1,431.7	-207.1	1,446.6	0.00	0.00	0.00
7,240.0	0.00	0.00	7,027.8	-1,431.7	-207.1	1,446.6	0.00	0.00	0.00
7,280.0	0.00	0.00	7,067.8	-1,431.7	-207.1	1,446.6	0.00	0.00	0.00
7,320.0	0.00	0.00	7,107.8	-1,431.7	-207.1	1,446.6	0.00	0.00	0.00
7,360.0	0.00	0.00	7,147.8	-1,431.7	-207.1	1,446.6	0.00	0.00	0.00
7,382.2	0.00	0.00	7,170.0	-1,431.7	-207.1	1,446.6	0.00	0.00	0.00
NOBRARA - TARGET CIRCLE 2000'FNL, 670'FEL - LEGAL BOX 400' X 400' 2000'FNL, 660'FEL									
7,400.0	0.00	0.00	7,187.8	-1,431.7	-207.1	1,446.6	0.00	0.00	0.00
7,440.0	0.00	0.00	7,227.8	-1,431.7	-207.1	1,446.6	0.00	0.00	0.00
7,480.0	0.00	0.00	7,267.8	-1,431.7	-207.1	1,446.6	0.00	0.00	0.00
7,520.0	0.00	0.00	7,307.8	-1,431.7	-207.1	1,446.6	0.00	0.00	0.00
7,560.0	0.00	0.00	7,347.8	-1,431.7	-207.1	1,446.6	0.00	0.00	0.00
7,600.0	0.00	0.00	7,387.8	-1,431.7	-207.1	1,446.6	0.00	0.00	0.00
7,640.0	0.00	0.00	7,427.8	-1,431.7	-207.1	1,446.6	0.00	0.00	0.00
7,680.0	0.00	0.00	7,467.8	-1,431.7	-207.1	1,446.6	0.00	0.00	0.00
7,720.0	0.00	0.00	7,507.8	-1,431.7	-207.1	1,446.6	0.00	0.00	0.00
7,741.2	0.00	0.00	7,529.0	-1,431.7	-207.1	1,446.6	0.00	0.00	0.00
CODELL									
7,760.0	0.00	0.00	7,547.8	-1,431.7	-207.1	1,446.6	0.00	0.00	0.00
7,800.0	0.00	0.00	7,587.8	-1,431.7	-207.1	1,446.6	0.00	0.00	0.00
7,840.0	0.00	0.00	7,627.8	-1,431.7	-207.1	1,446.6	0.00	0.00	0.00
7,880.0	0.00	0.00	7,667.8	-1,431.7	-207.1	1,446.6	0.00	0.00	0.00
7,920.0	0.00	0.00	7,707.8	-1,431.7	-207.1	1,446.6	0.00	0.00	0.00
7,960.0	0.00	0.00	7,747.8	-1,431.7	-207.1	1,446.6	0.00	0.00	0.00
8,000.0	0.00	0.00	7,787.8	-1,431.7	-207.1	1,446.6	0.00	0.00	0.00
8,040.0	0.00	0.00	7,827.8	-1,431.7	-207.1	1,446.6	0.00	0.00	0.00

Database:	Landmark	Local Co-ordinate Reference:	Well Croissant USX WW11-08D
Company:	NOBLE ENERGY INC WELD COUNTY CO	TVD Reference:	WELL @ 5089.0ft (Original Well Elev)
Project:	SEC.11-T1N-R66W	MD Reference:	WELL @ 5089.0ft (Original Well Elev)
Site:	Croissant USX WW11-02D Pad Sec.11-T1N-R66W	North Reference:	True
Well:	Croissant USX WW11-08D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Noble Croissant USX WW11-08D Plan #1 (7-0)		

Planned 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)
8,080.0	0.00	0.00	7,867.8	-1,431.7	-207.1	1,446.6	0.00	0.00	0.00
8,120.0	0.00	0.00	7,907.8	-1,431.7	-207.1	1,446.6	0.00	0.00	0.00
8,134.2	0.00	0.00	7,922.0	-1,431.7	-207.1	1,446.6	0.00	0.00	0.00
D-SAND									
8,160.0	0.00	0.00	7,947.8	-1,431.7	-207.1	1,446.6	0.00	0.00	0.00
8,194.2	0.00	0.00	7,982.0	-1,431.7	-207.1	1,446.6	0.00	0.00	0.00
J-SAND									
8,200.0	0.00	0.00	7,987.8	-1,431.7	-207.1	1,446.6	0.00	0.00	0.00
8,240.0	0.00	0.00	8,027.8	-1,431.7	-207.1	1,446.6	0.00	0.00	0.00
8,280.0	0.00	0.00	8,067.8	-1,431.7	-207.1	1,446.6	0.00	0.00	0.00
8,320.0	0.00	0.00	8,107.8	-1,431.7	-207.1	1,446.6	0.00	0.00	0.00
8,344.2	0.00	0.00	8,132.0	-1,431.7	-207.1	1,446.6	0.00	0.00	0.00

Targets

Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
- hit/miss target									
- Shape									
TARGET CIRCLE 200'	0.00	0.00	7,170.0	-1,431.7	-207.1	215,603.87	4,121,237.62	40.067660	-104.737270
- plan hits target center									
- Circle (radius 75.0)									
LEGAL BOX 400' X 400'	0.00	0.00	7,170.0	-1,431.7	-197.1	215,604.44	4,121,247.67	40.067660	-104.737234
- plan misses target center by 10.0ft at 7382.2ft MD (7170.0 TVD, -1431.7 N, -207.1 E)									
- Rectangle (sides W400.0 H400.0 D962.0)									
TARGET BHL 2000'F	0.00	0.00	5,800.0	-1,431.7	-207.1	215,603.87	4,121,237.62	40.067660	-104.737270
- plan hits target center									
- Point									

Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
1,174.4	1,165.0	8 5/8"	8-5/8	12-1/4

Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
7,382.2	7,170.0	NIOBRARA		0.00	
7,741.2	7,529.0	CODELL		0.00	
8,134.2	7,922.0	D-SAND		0.00	
8,194.2	7,982.0	J-SAND		0.00	