

Well Name: Brandt USX WW13-17D

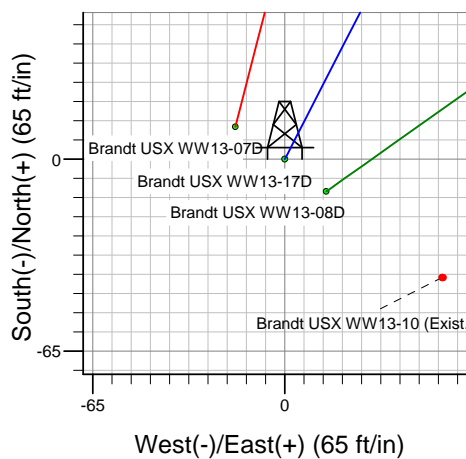
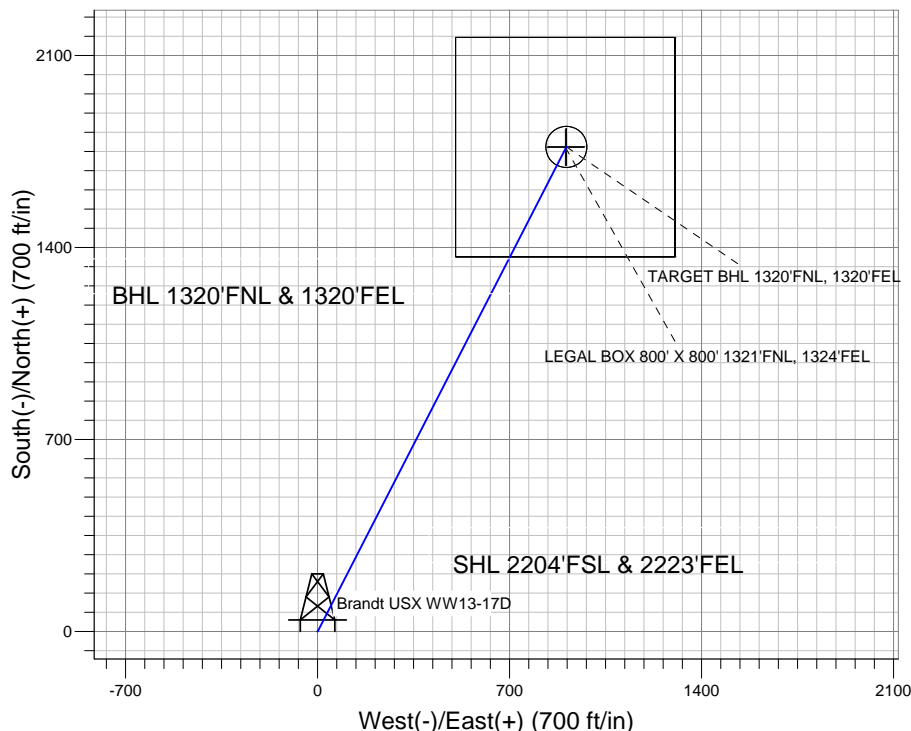
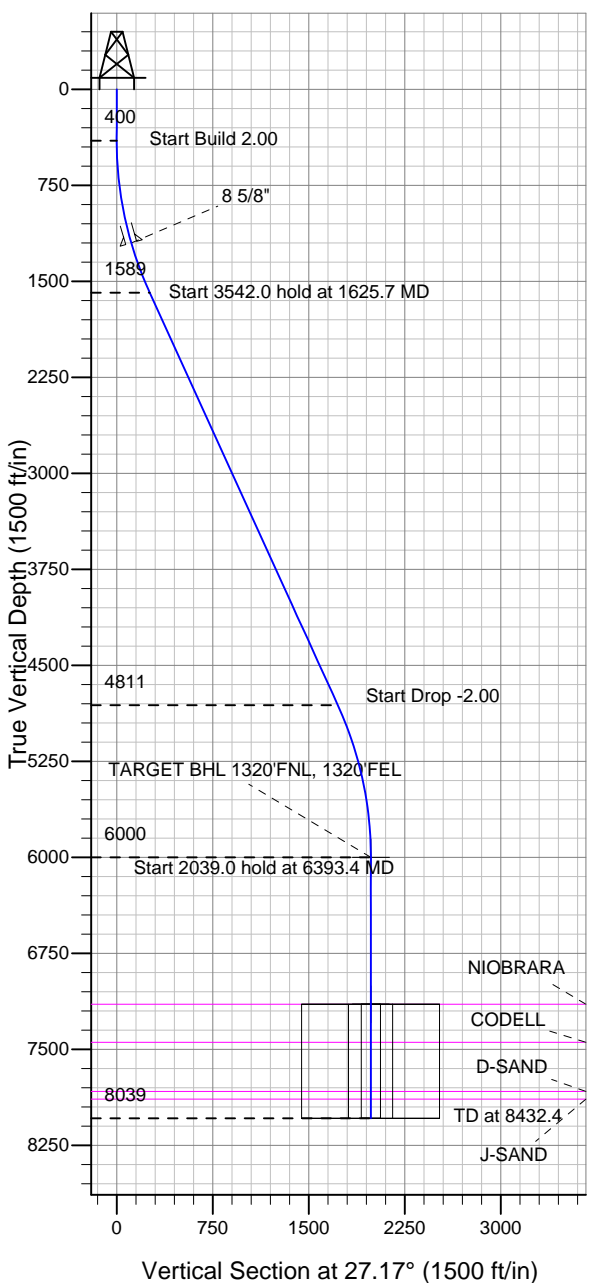
Surface Location: Brandt USX WW13-07D Pad Sec.13-T1N-R66W
North American Datum 1983 US State Plane 1983 Colorado Northern Zone

Ground Elevation: 5047.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1262047.62	3217247.90	40.050100	-104.723960	

Original Well Elev WELL @ 5060.0ft (Original Well Elev)

NOBLE ENERGY INC WELD COUNTY CO



Brandt USX WW13-07D Pad Sec.13-T1N-R66W
Brandt USX WW13-17D
Noble Brandt USX WW13-17D Plan #2 (7-12-11)
14:33, July 12 2011



Azimuths to True North
Magnetic North: 8.80°

Magnetic Field
Strength: 52941.9snT
Dip Angle: 66.77°
Date: 7/12/2011
Model: IGRF2010

WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
TARGET BHL 1320'FNL, 1320'FEL	6000.0	1766.8	907.0	40.054950	-104.720720	Point
LEGAL BOX 800' X 800' 1321'FNL, 1324'FEL	7148.0	1765.8	903.0	40.054947	-104.720734	Rectangle (Sides: L800.0 W800.0)
TARGET CIRCLE 1320'FNL, 1320'FEL	7148.0	1766.8	907.0	40.054950	-104.720720	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	1625.7	24.51	27.17	1588.6	229.7	117.9	2.00	27.17	258.2	
4	5167.7	24.51	27.17	4811.4	1537.1	789.1	0.00	0.00	1727.8	
5	6393.4	0.00	0.00	6000.0	1766.8	907.0	2.00	180.00	1986.0	TARGET BHL 1320'FNL, 1320'FEL
6	8432.4	0.00	0.00	8039.0	1766.8	907.0	0.00	0.00	1986.0	



Directional

NOBLE ENERGY INC WELD COUNTY CO

SEC.13-T1N-R66W

Brandt USX WW13-07D Pad Sec.13-T1N-R66W

Brandt USX WW13-17D

Wellbore #1

Plan: Noble Brandt USX WW13-17D Plan #2 (7-12-11)

Standard Planning Report

12 July, 2011



Database:	Landmark	Local Co-ordinate Reference:	Well Brandt USX WW13-17D
Company:	NOBLE ENERGY INC WELD COUNTY CO	TVD Reference:	WELL @ 5060.0ft (Original Well Elev)
Project:	SEC.13-T1N-R66W	MD Reference:	WELL @ 5060.0ft (Original Well Elev)
Site:	Brandt USX WW13-07D Pad Sec.13-T1N-R66W	North Reference:	True
Well:	Brandt USX WW13-17D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Noble Brandt USX WW13-17D Plan #2 (7-12-1		

Project	SEC.13-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:	Colorado Northern Zone		Using geodetic scale factor

Site						Brandt USX WW13-07D Pad Sec.13-T1N-R66W											
Site Position:						Northing:			1,262,058.41 ft			Latitude:			40.050130		
From:			Lat/Long			Easting:			3,217,231.01 ft			Longitude:			-104.724020		
Position Uncertainty:			0.0 ft			Slot Radius:			"			Grid Convergence:			0.50 °		

Well	Brandt USX WW13-17D					
Well Position	+N/-S	-10.9 ft	Northing:	1,262,047.62 ft	Latitude:	40.050100
	+E/-W	16.8 ft	Easting:	3,217,247.90 ft	Longitude:	-104.723960
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	5,047.0 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	7/12/2011	8.80	66.77	52,942

Design	Noble Brandt USX WW13-17D Plan #2 (7-12-11)			
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	27.17

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	
1,625.7	24.51	27.17	1,588.6	229.7	117.9	2.00	2.00	0.00	27.17	
5,167.7	24.51	27.17	4,811.4	1,537.1	789.1	0.00	0.00	0.00	0.00	
6,393.4	0.00	0.00	6,000.0	1,766.8	907.0	2.00	-2.00	0.00	180.00	TARGET BHL 132C
8,432.4	0.00	0.00	8,039.0	1,766.8	907.0	0.00	0.00	0.00	0.00	

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Company:	NOBLE ENERGY INC WELD COUNTY CO	TVD Reference:	WELL @ 5060.0ft (Original Well Elev)
Project:	SEC.13-T1N-R66W	MD Reference:	WELL @ 5060.0ft (Original Well Elev)
Site:	Brandt USX WW13-07D Pad Sec.13-T1N-R66W	North Reference:	True
Well:	Brandt USX WW13-17D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Noble Brandt USX WW13-17D Plan #2 (7-12-1		

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	27.17	440.0	0.2	0.1	0.3	2.00	2.00	0.00
480.0	1.60	27.17	480.0	1.0	0.5	1.1	2.00	2.00	0.00
520.0	2.40	27.17	520.0	2.2	1.1	2.5	2.00	2.00	0.00
560.0	3.20	27.17	559.9	4.0	2.0	4.5	2.00	2.00	0.00
600.0	4.00	27.17	599.8	6.2	3.2	7.0	2.00	2.00	0.00
640.0	4.80	27.17	639.7	8.9	4.6	10.0	2.00	2.00	0.00
680.0	5.60	27.17	679.6	12.2	6.2	13.7	2.00	2.00	0.00
720.0	6.40	27.17	719.3	15.9	8.2	17.9	2.00	2.00	0.00
760.0	7.20	27.17	759.1	20.1	10.3	22.6	2.00	2.00	0.00
800.0	8.00	27.17	798.7	24.8	12.7	27.9	2.00	2.00	0.00
840.0	8.80	27.17	838.3	30.0	15.4	33.7	2.00	2.00	0.00
880.0	9.60	27.17	877.8	35.7	18.3	40.1	2.00	2.00	0.00
920.0	10.40	27.17	917.1	41.9	21.5	47.1	2.00	2.00	0.00
960.0	11.20	27.17	956.4	48.5	24.9	54.6	2.00	2.00	0.00
1,000.0	12.00	27.17	995.6	55.7	28.6	62.6	2.00	2.00	0.00
1,040.0	12.80	27.17	1,034.7	63.3	32.5	71.2	2.00	2.00	0.00
1,080.0	13.60	27.17	1,073.6	71.5	36.7	80.3	2.00	2.00	0.00
1,120.0	14.40	27.17	1,112.4	80.1	41.1	90.0	2.00	2.00	0.00
1,160.0	15.20	27.17	1,151.1	89.2	45.8	100.2	2.00	2.00	0.00
1,200.0	16.00	27.17	1,189.6	98.7	50.7	111.0	2.00	2.00	0.00
1,210.8	16.22	27.17	1,200.0	101.4	52.0	114.0	2.00	2.00	0.00
8 5/8"									
1,240.0	16.80	27.17	1,228.0	108.8	55.8	122.3	2.00	2.00	0.00
1,280.0	17.60	27.17	1,266.2	119.3	61.2	134.1	2.00	2.00	0.00
1,320.0	18.40	27.17	1,304.3	130.3	66.9	146.5	2.00	2.00	0.00
1,360.0	19.20	27.17	1,342.1	141.8	72.8	159.3	2.00	2.00	0.00
1,400.0	20.00	27.17	1,379.8	153.7	78.9	172.8	2.00	2.00	0.00
1,440.0	20.80	27.17	1,417.3	166.1	85.3	186.7	2.00	2.00	0.00
1,480.0	21.60	27.17	1,454.6	179.0	91.9	201.2	2.00	2.00	0.00
1,520.0	22.40	27.17	1,491.7	192.3	98.7	216.2	2.00	2.00	0.00
1,560.0	23.20	27.17	1,528.6	206.1	105.8	231.7	2.00	2.00	0.00
1,600.0	24.00	27.17	1,565.2	220.3	113.1	247.7	2.00	2.00	0.00
1,625.7	24.51	27.17	1,588.6	229.7	117.9	258.2	2.00	2.00	0.00
1,640.0	24.51	27.17	1,601.7	235.0	120.6	264.2	0.00	0.00	0.00
1,680.0	24.51	27.17	1,638.1	249.8	128.2	280.8	0.00	0.00	0.00
1,720.0	24.51	27.17	1,674.4	264.5	135.8	297.4	0.00	0.00	0.00
1,760.0	24.51	27.17	1,710.8	279.3	143.4	314.0	0.00	0.00	0.00
1,800.0	24.51	27.17	1,747.2	294.1	151.0	330.5	0.00	0.00	0.00
1,840.0	24.51	27.17	1,783.6	308.8	158.5	347.1	0.00	0.00	0.00
1,880.0	24.51	27.17	1,820.0	323.6	166.1	363.7	0.00	0.00	0.00
1,920.0	24.51	27.17	1,856.4	338.4	173.7	380.3	0.00	0.00	0.00
1,960.0	24.51	27.17	1,892.8	353.1	181.3	396.9	0.00	0.00	0.00

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Company:	NOBLE ENERGY INC WELD COUNTY CO	TVD Reference:	WELL @ 5060.0ft (Original Well Elev)
Project:	SEC.13-T1N-R66W	MD Reference:	WELL @ 5060.0ft (Original Well Elev)
Site:	Brandt USX WW13-07D Pad Sec.13-T1N-R66W	North Reference:	True
Well:	Brandt USX WW13-17D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Noble Brandt USX WW13-17D Plan #2 (7-12-1		

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	24.51	27.17	1,929.2	367.9	188.9	413.5	0.00	0.00	0.00	
2,040.0	24.51	27.17	1,965.6	382.7	196.4	430.1	0.00	0.00	0.00	
2,080.0	24.51	27.17	2,002.0	397.4	204.0	446.7	0.00	0.00	0.00	
2,120.0	24.51	27.17	2,038.4	412.2	211.6	463.3	0.00	0.00	0.00	
2,160.0	24.51	27.17	2,074.8	426.9	219.2	479.9	0.00	0.00	0.00	
2,200.0	24.51	27.17	2,111.2	441.7	226.8	496.5	0.00	0.00	0.00	
2,240.0	24.51	27.17	2,147.6	456.5	234.3	513.1	0.00	0.00	0.00	
2,280.0	24.51	27.17	2,184.0	471.2	241.9	529.7	0.00	0.00	0.00	
2,320.0	24.51	27.17	2,220.4	486.0	249.5	546.3	0.00	0.00	0.00	
2,360.0	24.51	27.17	2,256.8	500.8	257.1	562.9	0.00	0.00	0.00	
2,400.0	24.51	27.17	2,293.2	515.5	264.6	579.5	0.00	0.00	0.00	
2,440.0	24.51	27.17	2,329.5	530.3	272.2	596.1	0.00	0.00	0.00	
2,480.0	24.51	27.17	2,365.9	545.1	279.8	612.7	0.00	0.00	0.00	
2,520.0	24.51	27.17	2,402.3	559.8	287.4	629.3	0.00	0.00	0.00	
2,560.0	24.51	27.17	2,438.7	574.6	295.0	645.9	0.00	0.00	0.00	
2,600.0	24.51	27.17	2,475.1	589.4	302.5	662.5	0.00	0.00	0.00	
2,640.0	24.51	27.17	2,511.5	604.1	310.1	679.1	0.00	0.00	0.00	
2,680.0	24.51	27.17	2,547.9	618.9	317.7	695.7	0.00	0.00	0.00	
2,720.0	24.51	27.17	2,584.3	633.6	325.3	712.3	0.00	0.00	0.00	
2,760.0	24.51	27.17	2,620.7	648.4	332.9	728.9	0.00	0.00	0.00	
2,800.0	24.51	27.17	2,657.1	663.2	340.4	745.5	0.00	0.00	0.00	
2,840.0	24.51	27.17	2,693.5	677.9	348.0	762.0	0.00	0.00	0.00	
2,880.0	24.51	27.17	2,729.9	692.7	355.6	778.6	0.00	0.00	0.00	
2,920.0	24.51	27.17	2,766.3	707.5	363.2	795.2	0.00	0.00	0.00	
2,960.0	24.51	27.17	2,802.7	722.2	370.8	811.8	0.00	0.00	0.00	
3,000.0	24.51	27.17	2,839.1	737.0	378.3	828.4	0.00	0.00	0.00	
3,040.0	24.51	27.17	2,875.5	751.8	385.9	845.0	0.00	0.00	0.00	
3,080.0	24.51	27.17	2,911.9	766.5	393.5	861.6	0.00	0.00	0.00	
3,120.0	24.51	27.17	2,948.3	781.3	401.1	878.2	0.00	0.00	0.00	
3,160.0	24.51	27.17	2,984.7	796.1	408.7	894.8	0.00	0.00	0.00	
3,200.0	24.51	27.17	3,021.0	810.8	416.2	911.4	0.00	0.00	0.00	
3,240.0	24.51	27.17	3,057.4	825.6	423.8	928.0	0.00	0.00	0.00	
3,280.0	24.51	27.17	3,093.8	840.3	431.4	944.6	0.00	0.00	0.00	
3,320.0	24.51	27.17	3,130.2	855.1	439.0	961.2	0.00	0.00	0.00	
3,360.0	24.51	27.17	3,166.6	869.9	446.6	977.8	0.00	0.00	0.00	
3,400.0	24.51	27.17	3,203.0	884.6	454.1	994.4	0.00	0.00	0.00	
3,440.0	24.51	27.17	3,239.4	899.4	461.7	1,011.0	0.00	0.00	0.00	
3,480.0	24.51	27.17	3,275.8	914.2	469.3	1,027.6	0.00	0.00	0.00	
3,520.0	24.51	27.17	3,312.2	928.9	476.9	1,044.2	0.00	0.00	0.00	
3,560.0	24.51	27.17	3,348.6	943.7	484.4	1,060.8	0.00	0.00	0.00	
3,600.0	24.51	27.17	3,385.0	958.5	492.0	1,077.4	0.00	0.00	0.00	
3,640.0	24.51	27.17	3,421.4	973.2	499.6	1,094.0	0.00	0.00	0.00	
3,680.0	24.51	27.17	3,457.8	988.0	507.2	1,110.6	0.00	0.00	0.00	
3,720.0	24.51	27.17	3,494.2	1,002.8	514.8	1,127.2	0.00	0.00	0.00	
3,760.0	24.51	27.17	3,530.6	1,017.5	522.3	1,143.8	0.00	0.00	0.00	
3,800.0	24.51	27.17	3,567.0	1,032.3	529.9	1,160.4	0.00	0.00	0.00	
3,840.0	24.51	27.17	3,603.4	1,047.0	537.5	1,177.0	0.00	0.00	0.00	
3,880.0	24.51	27.17	3,639.8	1,061.8	545.1	1,193.5	0.00	0.00	0.00	
3,920.0	24.51	27.17	3,676.1	1,076.6	552.7	1,210.1	0.00	0.00	0.00	
3,960.0	24.51	27.17	3,712.5	1,091.3	560.2	1,226.7	0.00	0.00	0.00	
4,000.0	24.51	27.17	3,748.9	1,106.1	567.8	1,243.3	0.00	0.00	0.00	
4,040.0	24.51	27.17	3,785.3	1,120.9	575.4	1,259.9	0.00	0.00	0.00	
4,080.0	24.51	27.17	3,821.7	1,135.6	583.0	1,276.5	0.00	0.00	0.00	

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Site:	Brandt USX WW13-07D Pad Sec.13-T1N-R66W	North Reference:	True
Well:	Brandt USX WW13-17D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Noble Brandt USX WW13-17D Plan #2 (7-12-1)		

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	24.51	27.17	3,858.1	1,150.4	590.6	1,293.1	0.00	0.00	0.00
4,160.0	24.51	27.17	3,894.5	1,165.2	598.1	1,309.7	0.00	0.00	0.00
4,200.0	24.51	27.17	3,930.9	1,179.9	605.7	1,326.3	0.00	0.00	0.00
4,240.0	24.51	27.17	3,967.3	1,194.7	613.3	1,342.9	0.00	0.00	0.00
4,280.0	24.51	27.17	4,003.7	1,209.5	620.9	1,359.5	0.00	0.00	0.00
4,320.0	24.51	27.17	4,040.1	1,224.2	628.5	1,376.1	0.00	0.00	0.00
4,360.0	24.51	27.17	4,076.5	1,239.0	636.0	1,392.7	0.00	0.00	0.00
4,400.0	24.51	27.17	4,112.9	1,253.8	643.6	1,409.3	0.00	0.00	0.00
4,440.0	24.51	27.17	4,149.3	1,268.5	651.2	1,425.9	0.00	0.00	0.00
4,480.0	24.51	27.17	4,185.7	1,283.3	658.8	1,442.5	0.00	0.00	0.00
4,520.0	24.51	27.17	4,222.1	1,298.0	666.3	1,459.1	0.00	0.00	0.00
4,560.0	24.51	27.17	4,258.5	1,312.8	673.9	1,475.7	0.00	0.00	0.00
4,600.0	24.51	27.17	4,294.9	1,327.6	681.5	1,492.3	0.00	0.00	0.00
4,640.0	24.51	27.17	4,331.3	1,342.3	689.1	1,508.9	0.00	0.00	0.00
4,680.0	24.51	27.17	4,367.6	1,357.1	696.7	1,525.5	0.00	0.00	0.00
4,720.0	24.51	27.17	4,404.0	1,371.9	704.2	1,542.1	0.00	0.00	0.00
4,760.0	24.51	27.17	4,440.4	1,386.6	711.8	1,558.7	0.00	0.00	0.00
4,800.0	24.51	27.17	4,476.8	1,401.4	719.4	1,575.3	0.00	0.00	0.00
4,840.0	24.51	27.17	4,513.2	1,416.2	727.0	1,591.9	0.00	0.00	0.00
4,880.0	24.51	27.17	4,549.6	1,430.9	734.6	1,608.5	0.00	0.00	0.00
4,920.0	24.51	27.17	4,586.0	1,445.7	742.1	1,625.1	0.00	0.00	0.00
4,960.0	24.51	27.17	4,622.4	1,460.5	749.7	1,641.6	0.00	0.00	0.00
5,000.0	24.51	27.17	4,658.8	1,475.2	757.3	1,658.2	0.00	0.00	0.00
5,040.0	24.51	27.17	4,695.2	1,490.0	764.9	1,674.8	0.00	0.00	0.00
5,080.0	24.51	27.17	4,731.6	1,504.7	772.5	1,691.4	0.00	0.00	0.00
5,120.0	24.51	27.17	4,768.0	1,519.5	780.0	1,708.0	0.00	0.00	0.00
5,160.0	24.51	27.17	4,804.4	1,534.3	787.6	1,724.6	0.00	0.00	0.00
5,167.7	24.51	27.17	4,811.4	1,537.1	789.1	1,727.8	0.00	0.00	0.00
5,200.0	23.87	27.17	4,840.9	1,548.9	795.1	1,741.1	2.00	-2.00	0.00
5,240.0	23.07	27.17	4,877.5	1,563.1	802.4	1,757.0	2.00	-2.00	0.00
5,280.0	22.27	27.17	4,914.5	1,576.8	809.4	1,772.4	2.00	-2.00	0.00
5,320.0	21.47	27.17	4,951.6	1,590.0	816.2	1,787.3	2.00	-2.00	0.00
5,360.0	20.67	27.17	4,988.9	1,602.8	822.8	1,801.7	2.00	-2.00	0.00
5,400.0	19.87	27.17	5,026.4	1,615.1	829.1	1,815.5	2.00	-2.00	0.00
5,440.0	19.07	27.17	5,064.1	1,627.0	835.2	1,828.9	2.00	-2.00	0.00
5,480.0	18.27	27.17	5,102.0	1,638.4	841.1	1,841.7	2.00	-2.00	0.00
5,520.0	17.47	27.17	5,140.1	1,649.3	846.7	1,853.9	2.00	-2.00	0.00
5,560.0	16.67	27.17	5,178.3	1,659.8	852.0	1,865.7	2.00	-2.00	0.00
5,600.0	15.87	27.17	5,216.7	1,669.7	857.2	1,876.9	2.00	-2.00	0.00
5,640.0	15.07	27.17	5,255.3	1,679.2	862.0	1,887.6	2.00	-2.00	0.00
5,680.0	14.27	27.17	5,294.0	1,688.2	866.6	1,897.7	2.00	-2.00	0.00
5,720.0	13.47	27.17	5,332.8	1,696.8	871.0	1,907.3	2.00	-2.00	0.00
5,760.0	12.67	27.17	5,371.8	1,704.8	875.2	1,916.3	2.00	-2.00	0.00
5,800.0	11.87	27.17	5,410.9	1,712.4	879.0	1,924.8	2.00	-2.00	0.00
5,840.0	11.07	27.17	5,450.1	1,719.4	882.7	1,932.8	2.00	-2.00	0.00
5,880.0	10.27	27.17	5,489.4	1,726.0	886.1	1,940.2	2.00	-2.00	0.00
5,920.0	9.47	27.17	5,528.8	1,732.1	889.2	1,947.0	2.00	-2.00	0.00
5,960.0	8.67	27.17	5,568.3	1,737.7	892.1	1,953.3	2.00	-2.00	0.00
6,000.0	7.87	27.17	5,607.9	1,742.8	894.7	1,959.1	2.00	-2.00	0.00
6,040.0	7.07	27.17	5,647.5	1,747.5	897.1	1,964.3	2.00	-2.00	0.00
6,080.0	6.27	27.17	5,687.3	1,751.6	899.2	1,968.9	2.00	-2.00	0.00
6,120.0	5.47	27.17	5,727.1	1,755.2	901.0	1,973.0	2.00	-2.00	0.00
6,160.0	4.67	27.17	5,766.9	1,758.4	902.7	1,976.5	2.00	-2.00	0.00

Database:	Landmark	Local Co-ordinate Reference:	Well Brandt USX WW13-17D
Company:	NOBLE ENERGY INC WELD COUNTY CO	TVD Reference:	WELL @ 5060.0ft (Original Well Elev)
Project:	SEC.13-T1N-R66W	MD Reference:	WELL @ 5060.0ft (Original Well Elev)
Site:	Brandt USX WW13-07D Pad Sec.13-T1N-R66W	North Reference:	True
Well:	Brandt USX WW13-17D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Noble Brandt USX WW13-17D Plan #2 (7-12-1)		

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)
6,200.0	3.87	27.17	5,806.8	1,761.0	904.0	1,979.5	2.00	-2.00	0.00
6,240.0	3.07	27.17	5,846.7	1,763.2	905.1	1,981.9	2.00	-2.00	0.00
6,280.0	2.27	27.17	5,886.7	1,764.8	906.0	1,983.8	2.00	-2.00	0.00
6,320.0	1.47	27.17	5,926.6	1,766.0	906.6	1,985.1	2.00	-2.00	0.00
6,360.0	0.67	27.17	5,966.6	1,766.7	906.9	1,985.8	2.00	-2.00	0.00
6,393.4	0.00	0.00	6,000.0	1,766.8	907.0	1,986.0	2.00	-2.00	0.00
TARGET BHL 1320'FNL, 1320'FEL									
6,400.0	0.00	0.00	6,006.6	1,766.8	907.0	1,986.0	0.00	0.00	0.00
6,440.0	0.00	0.00	6,046.6	1,766.8	907.0	1,986.0	0.00	0.00	0.00
6,480.0	0.00	0.00	6,086.6	1,766.8	907.0	1,986.0	0.00	0.00	0.00
6,520.0	0.00	0.00	6,126.6	1,766.8	907.0	1,986.0	0.00	0.00	0.00
6,560.0	0.00	0.00	6,166.6	1,766.8	907.0	1,986.0	0.00	0.00	0.00
6,600.0	0.00	0.00	6,206.6	1,766.8	907.0	1,986.0	0.00	0.00	0.00
6,640.0	0.00	0.00	6,246.6	1,766.8	907.0	1,986.0	0.00	0.00	0.00
6,680.0	0.00	0.00	6,286.6	1,766.8	907.0	1,986.0	0.00	0.00	0.00
6,720.0	0.00	0.00	6,326.6	1,766.8	907.0	1,986.0	0.00	0.00	0.00
6,760.0	0.00	0.00	6,366.6	1,766.8	907.0	1,986.0	0.00	0.00	0.00
6,800.0	0.00	0.00	6,406.6	1,766.8	907.0	1,986.0	0.00	0.00	0.00
6,840.0	0.00	0.00	6,446.6	1,766.8	907.0	1,986.0	0.00	0.00	0.00
6,880.0	0.00	0.00	6,486.6	1,766.8	907.0	1,986.0	0.00	0.00	0.00
6,920.0	0.00	0.00	6,526.6	1,766.8	907.0	1,986.0	0.00	0.00	0.00
6,960.0	0.00	0.00	6,566.6	1,766.8	907.0	1,986.0	0.00	0.00	0.00
7,000.0	0.00	0.00	6,606.6	1,766.8	907.0	1,986.0	0.00	0.00	0.00
7,040.0	0.00	0.00	6,646.6	1,766.8	907.0	1,986.0	0.00	0.00	0.00
7,080.0	0.00	0.00	6,686.6	1,766.8	907.0	1,986.0	0.00	0.00	0.00
7,120.0	0.00	0.00	6,726.6	1,766.8	907.0	1,986.0	0.00	0.00	0.00
7,160.0	0.00	0.00	6,766.6	1,766.8	907.0	1,986.0	0.00	0.00	0.00
7,200.0	0.00	0.00	6,806.6	1,766.8	907.0	1,986.0	0.00	0.00	0.00
7,240.0	0.00	0.00	6,846.6	1,766.8	907.0	1,986.0	0.00	0.00	0.00
7,280.0	0.00	0.00	6,886.6	1,766.8	907.0	1,986.0	0.00	0.00	0.00
7,320.0	0.00	0.00	6,926.6	1,766.8	907.0	1,986.0	0.00	0.00	0.00
7,360.0	0.00	0.00	6,966.6	1,766.8	907.0	1,986.0	0.00	0.00	0.00
7,400.0	0.00	0.00	7,006.6	1,766.8	907.0	1,986.0	0.00	0.00	0.00
7,440.0	0.00	0.00	7,046.6	1,766.8	907.0	1,986.0	0.00	0.00	0.00
7,480.0	0.00	0.00	7,086.6	1,766.8	907.0	1,986.0	0.00	0.00	0.00
7,520.0	0.00	0.00	7,126.6	1,766.8	907.0	1,986.0	0.00	0.00	0.00
7,541.4	0.00	0.00	7,148.0	1,766.8	907.0	1,986.0	0.00	0.00	0.00
NIOBRARA - TARGET CIRCLE 1320'FNL, 1320'FEL - LEGAL BOX 800' X 800' 1321'FNL, 1324'FEL									
7,560.0	0.00	0.00	7,166.6	1,766.8	907.0	1,986.0	0.00	0.00	0.00
7,600.0	0.00	0.00	7,206.6	1,766.8	907.0	1,986.0	0.00	0.00	0.00
7,640.0	0.00	0.00	7,246.6	1,766.8	907.0	1,986.0	0.00	0.00	0.00
7,680.0	0.00	0.00	7,286.6	1,766.8	907.0	1,986.0	0.00	0.00	0.00
7,720.0	0.00	0.00	7,326.6	1,766.8	907.0	1,986.0	0.00	0.00	0.00
7,760.0	0.00	0.00	7,366.6	1,766.8	907.0	1,986.0	0.00	0.00	0.00
7,800.0	0.00	0.00	7,406.6	1,766.8	907.0	1,986.0	0.00	0.00	0.00
7,837.4	0.00	0.00	7,444.0	1,766.8	907.0	1,986.0	0.00	0.00	0.00
CODELL									
7,840.0	0.00	0.00	7,446.6	1,766.8	907.0	1,986.0	0.00	0.00	0.00
7,880.0	0.00	0.00	7,486.6	1,766.8	907.0	1,986.0	0.00	0.00	0.00
7,920.0	0.00	0.00	7,526.6	1,766.8	907.0	1,986.0	0.00	0.00	0.00
7,960.0	0.00	0.00	7,566.6	1,766.8	907.0	1,986.0	0.00	0.00	0.00
8,000.0	0.00	0.00	7,606.6	1,766.8	907.0	1,986.0	0.00	0.00	0.00
8,040.0	0.00	0.00	7,646.6	1,766.8	907.0	1,986.0	0.00	0.00	0.00

Database:	Landmark	Local Co-ordinate Reference:	Well Brandt USX WW13-17D
Company:	NOBLE ENERGY INC WELD COUNTY CO	TVD Reference:	WELL @ 5060.0ft (Original Well Elev)
Project:	SEC.13-T1N-R66W	MD Reference:	WELL @ 5060.0ft (Original Well Elev)
Site:	Brandt USX WW13-07D Pad Sec.13-T1N-R66W	North Reference:	True
Well:	Brandt USX WW13-17D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Noble Brandt USX WW13-17D Plan #2 (7-12-1		

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	7,686.6	1,766.8	907.0	1,986.0	0.00	0.00	0.00
8,120.0	0.00	0.00	7,726.6	1,766.8	907.0	1,986.0	0.00	0.00	0.00
8,160.0	0.00	0.00	7,766.6	1,766.8	907.0	1,986.0	0.00	0.00	0.00
8,200.0	0.00	0.00	7,806.6	1,766.8	907.0	1,986.0	0.00	0.00	0.00
8,221.4	0.00	0.00	7,828.0	1,766.8	907.0	1,986.0	0.00	0.00	0.00
D-SAND									
8,240.0	0.00	0.00	7,846.6	1,766.8	907.0	1,986.0	0.00	0.00	0.00
8,280.0	0.00	0.00	7,886.6	1,766.8	907.0	1,986.0	0.00	0.00	0.00
8,282.4	0.00	0.00	7,889.0	1,766.8	907.0	1,986.0	0.00	0.00	0.00
J-SAND									
8,320.0	0.00	0.00	7,926.6	1,766.8	907.0	1,986.0	0.00	0.00	0.00
8,360.0	0.00	0.00	7,966.6	1,766.8	907.0	1,986.0	0.00	0.00	0.00
8,400.0	0.00	0.00	8,006.6	1,766.8	907.0	1,986.0	0.00	0.00	0.00
8,432.4	0.00	0.00	8,039.0	1,766.8	907.0	1,986.0	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 132'	0.00	0.00	7,148.0	1,766.8	907.0	1,263,822.25	3,218,139.37	40.054950	-104.720720
- plan hits target center									
- Circle (radius 75.0)									
LEGAL BOX 800' X 800'	0.00	0.00	7,148.0	1,765.8	903.0	1,263,821.19	3,218,135.38	40.054947	-104.720734
- plan misses target center by 4.1ft at 7541.4ft MD (7148.0 TVD, 1766.8 N, 907.0 E)									
- Rectangle (sides W800.0 H800.0 D891.0)									
TARGET BHL 1320'F	0.00	0.00	6,000.0	1,766.8	907.0	1,263,822.25	3,218,139.37	40.054950	-104.720720
- plan hits target center									
- Point									

Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
1,210.8	1,200.0	8 5/8"	8-5/8	12-1/4

Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
7,541.4	7,148.0	NIOBRARA		0.00	
7,837.4	7,444.0	CODELL		0.00	
8,221.4	7,828.0	D-SAND		0.00	
8,282.4	7,889.0	J-SAND		0.00	