

ENSIGN

Directional

Well Name: Ulrich PC I17-17D

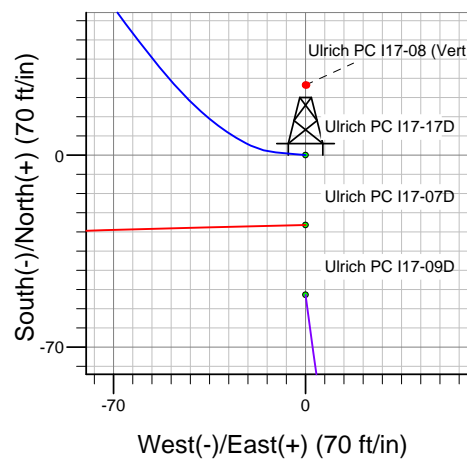
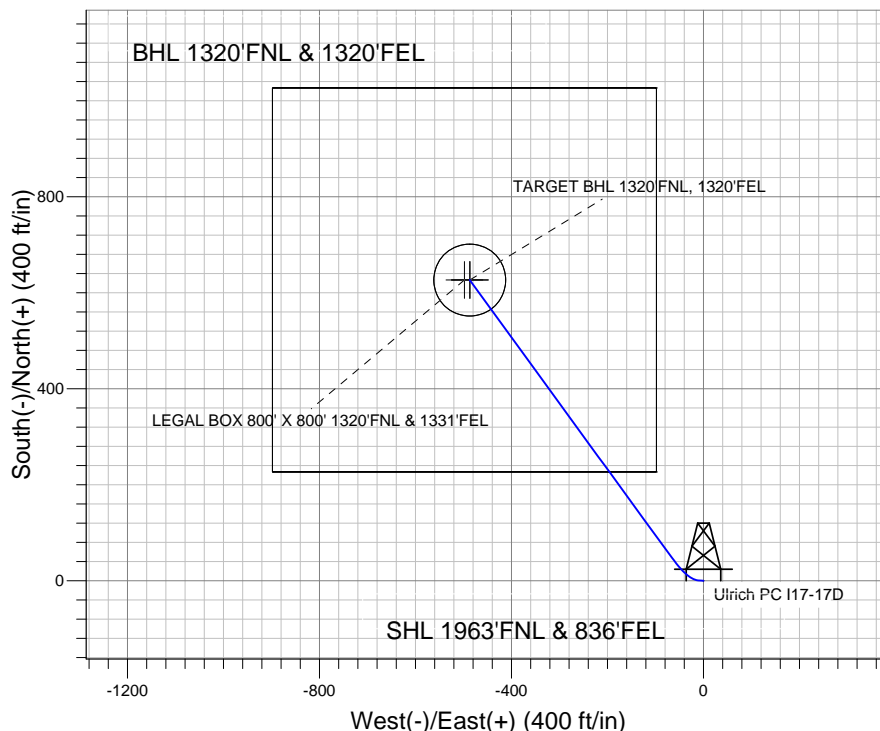
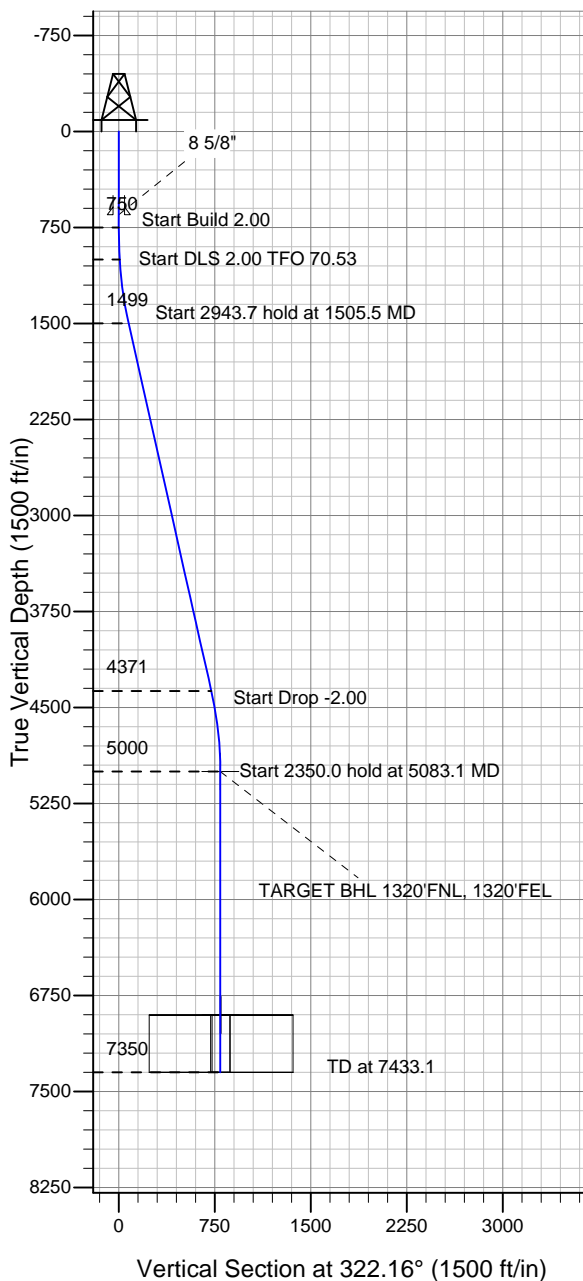
Surface Location: Ulrich PC I17-17D Pad Sec.17-T6N-R66W
North American Datum 1983 US State Plane 1983 Colorado Northern Zone

Ground Elevation: 4782.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1422104.20	3195978.77	40.489940	-104.795390	

Original Well Elev WELL @ 4795.0ft (Original Well Elev)

NOBLE ENERGY INC WELD COUNTY CO



Ulrich PC I17-17D Pad Sec.17-T6N-R66W
Ulrich PC I17-17D
Noble Ulrich PC I17-17D Plan #2 (3-24-11)
8:24, March 24 2011



Azimuths to True North
Magnetic North: 8.92°

Magnetic Field
Strength: 53199.6snT
Dip Angle: 67.13°
Date: 3/24/2011
Model: IGRF2010

WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
TARGET BHL 1320'FNL, 1320'FEL	5000.0	626.6	-486.8	40.491660	-104.797140	Point
LEGAL BOX 800' X 800' 1320'FNL & 1331'FEL	6902.0	626.6	-497.8	40.491660	-104.797180	Rectangle (Sides: L800.0 W800.0)
TARGET CIRCLE 1320'FNL, 1320'FEL	6902.0	626.6	-486.8	40.491660	-104.797140	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	750.0	0.00	0.00	750.0	0.0	0.0	0.00	0.00	0.0	
3	1000.0	5.00	275.00	999.7	1.0	-10.9	2.00	275.00	7.4	
4	1505.5	12.68	323.96	1499.4	47.8	-65.6	2.00	70.53	78.0	
5	4449.2	12.68	323.96	4371.3	570.2	-445.7	0.00	0.00	723.7	
6	5083.1	0.00	0.00	5000.0	626.6	-486.8	2.00	180.00	793.5	TARGET BHL 1320'FNL, 1320'FEL
7	7433.1	0.00	0.00	7350.0	626.6	-486.8	0.00	0.00	793.5	



Directional

NOBLE ENERGY INC WELD COUNTY CO

SEC.17-T6N-R66W

Ulrich PC I17-17D Pad Sec.17-T6N-R66W

Ulrich PC I17-17D

Wellbore #1

Plan: Noble Ulrich PC I17-17D Plan #2 (3-24-11)

Standard Planning Report

24 March, 2011



Database:	Landmark	Local Co-ordinate Reference:	Well Ulrich PC I17-17D
Company:	NOBLE ENERGY INC WELD COUNTY CO	TVD Reference:	WELL @ 4795.0ft (Original Well Elev)
Project:	SEC.17-T6N-R66W	MD Reference:	WELL @ 4795.0ft (Original Well Elev)
Site:	Ulrich PC I17-17D Pad Sec.17-T6N-R66W	North Reference:	True
Well:	Ulrich PC I17-17D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Noble Ulrich PC I17-17D Plan #2 (3-24-11)		

Project	SEC.17-T6N-R66W		
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						Ulrich PC I17-17D Pad Sec.17-T6N-R66W											
Site Position:						Northing:			1,422,104.22 ft			Latitude:			40.489940		
From:			Lat/Long			Easting:			3,195,978.77 ft			Longitude:			-104.795390		
Position Uncertainty:			0.0 ft			Slot Radius:			"			Grid Convergence:			0.46 °		

Well	Ulrich PC I17-17D					
Well Position	+N/-S	0.0 ft	Northing:	1,422,104.20 ft	Latitude:	40.489940
	+E/-W	0.0 ft	Easting:	3,195,978.77 ft	Longitude:	-104.795390
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,782.0 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	3/24/2011	8.92	67.13	53,200

Design	Noble Ulrich PC I17-17D Plan #2 (3-24-11)			
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	322.16

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	
750.0	0.00	0.00	750.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,000.0	5.00	275.00	999.7	1.0	-10.9	2.00	2.00	0.00	275.00	
1,505.5	12.68	323.96	1,499.4	47.8	-65.6	2.00	1.52	9.68	70.53	
4,449.2	12.68	323.96	4,371.3	570.2	-445.7	0.00	0.00	0.00	0.00	
5,083.1	0.00	0.00	5,000.0	626.6	-486.8	2.00	-2.00	0.00	180.00	TARGET BHL 132C
7,433.1	0.00	0.00	7,350.0	626.6	-486.8	0.00	0.00	0.00	0.00	

Database:	Landmark	Local Co-ordinate Reference:	Well Ulrich PC I17-17D
Company:	NOBLE ENERGY INC WELD COUNTY CO	TVD Reference:	WELL @ 4795.0ft (Original Well Elev)
Project:	SEC.17-T6N-R66W	MD Reference:	WELL @ 4795.0ft (Original Well Elev)
Site:	Ulrich PC I17-17D Pad Sec.17-T6N-R66W	North Reference:	True
Well:	Ulrich PC I17-17D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Noble Ulrich PC I17-17D Plan #2 (3-24-11)		

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	0.00	0.00	440.0	0.0	0.0	0.0	0.00	0.00	0.00
480.0	0.00	0.00	480.0	0.0	0.0	0.0	0.00	0.00	0.00
520.0	0.00	0.00	520.0	0.0	0.0	0.0	0.00	0.00	0.00
560.0	0.00	0.00	560.0	0.0	0.0	0.0	0.00	0.00	0.00
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	0.00
640.0	0.00	0.00	640.0	0.0	0.0	0.0	0.00	0.00	0.00
650.0	0.00	0.00	650.0	0.0	0.0	0.0	0.00	0.00	0.00
8 5/8"									
680.0	0.00	0.00	680.0	0.0	0.0	0.0	0.00	0.00	0.00
720.0	0.00	0.00	720.0	0.0	0.0	0.0	0.00	0.00	0.00
750.0	0.00	0.00	750.0	0.0	0.0	0.0	0.00	0.00	0.00
760.0	0.20	275.00	760.0	0.0	0.0	0.0	2.00	2.00	0.00
800.0	1.00	275.00	800.0	0.0	-0.4	0.3	2.00	2.00	0.00
840.0	1.80	275.00	840.0	0.1	-1.4	1.0	2.00	2.00	0.00
880.0	2.60	275.00	880.0	0.3	-2.9	2.0	2.00	2.00	0.00
920.0	3.40	275.00	919.9	0.4	-5.0	3.4	2.00	2.00	0.00
960.0	4.20	275.00	959.8	0.7	-7.7	5.2	2.00	2.00	0.00
1,000.0	5.00	275.00	999.7	1.0	-10.9	7.4	2.00	2.00	0.00
1,040.0	5.32	283.16	1,039.5	1.5	-14.4	10.0	2.00	0.80	20.40
1,080.0	5.73	290.28	1,079.3	2.6	-18.1	13.2	2.00	1.04	17.78
1,120.0	6.22	296.35	1,119.1	4.3	-21.9	16.8	2.00	1.22	15.20
1,160.0	6.77	301.50	1,158.9	6.5	-25.9	21.0	2.00	1.37	12.87
1,200.0	7.37	305.85	1,198.6	9.2	-29.9	25.7	2.00	1.49	10.87
1,240.0	8.00	309.54	1,238.2	12.5	-34.2	30.8	2.00	1.58	9.21
1,280.0	8.66	312.68	1,277.8	16.3	-38.5	36.5	2.00	1.65	7.85
1,320.0	9.34	315.37	1,317.3	20.7	-43.0	42.7	2.00	1.70	6.73
1,360.0	10.04	317.69	1,356.7	25.5	-47.6	49.4	2.00	1.74	5.81
1,400.0	10.75	319.72	1,396.1	31.0	-52.4	56.6	2.00	1.78	5.06
1,440.0	11.47	321.49	1,435.3	36.9	-57.3	64.3	2.00	1.81	4.43
1,480.0	12.20	323.05	1,474.5	43.4	-62.3	72.5	2.00	1.83	3.91
1,505.5	12.68	323.96	1,499.4	47.8	-65.6	78.0	2.00	1.85	3.54
1,520.0	12.68	323.96	1,513.5	50.4	-67.5	81.2	0.00	0.00	0.00
1,560.0	12.68	323.96	1,552.5	57.5	-72.6	90.0	0.00	0.00	0.00
1,600.0	12.68	323.96	1,591.6	64.6	-77.8	98.7	0.00	0.00	0.00
1,640.0	12.68	323.96	1,630.6	71.7	-82.9	107.5	0.00	0.00	0.00
1,680.0	12.68	323.96	1,669.6	78.8	-88.1	116.3	0.00	0.00	0.00
1,720.0	12.68	323.96	1,708.6	85.9	-93.3	125.1	0.00	0.00	0.00
1,760.0	12.68	323.96	1,747.7	93.0	-98.4	133.8	0.00	0.00	0.00
1,800.0	12.68	323.96	1,786.7	100.1	-103.6	142.6	0.00	0.00	0.00
1,840.0	12.68	323.96	1,825.7	107.2	-108.8	151.4	0.00	0.00	0.00
1,880.0	12.68	323.96	1,864.7	114.3	-113.9	160.2	0.00	0.00	0.00
1,920.0	12.68	323.96	1,903.8	121.4	-119.1	168.9	0.00	0.00	0.00
1,960.0	12.68	323.96	1,942.8	128.5	-124.3	177.7	0.00	0.00	0.00

Database:	Landmark	Local Co-ordinate Reference:	Well Ulrich PC I17-17D
Company:	NOBLE ENERGY INC WELD COUNTY CO	TVD Reference:	WELL @ 4795.0ft (Original Well Elev)
Project:	SEC.17-T6N-R66W	MD Reference:	WELL @ 4795.0ft (Original Well Elev)
Site:	Ulrich PC I17-17D Pad Sec.17-T6N-R66W	North Reference:	True
Well:	Ulrich PC I17-17D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Noble Ulrich PC I17-17D Plan #2 (3-24-11)		

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	12.68	323.96	1,981.8	135.6	-129.4	186.5	0.00	0.00	0.00
2,040.0	12.68	323.96	2,020.8	142.7	-134.6	195.2	0.00	0.00	0.00
2,080.0	12.68	323.96	2,059.9	149.8	-139.8	204.0	0.00	0.00	0.00
2,120.0	12.68	323.96	2,098.9	156.9	-144.9	212.8	0.00	0.00	0.00
2,160.0	12.68	323.96	2,137.9	164.0	-150.1	221.6	0.00	0.00	0.00
2,200.0	12.68	323.96	2,176.9	171.1	-155.3	230.3	0.00	0.00	0.00
2,240.0	12.68	323.96	2,216.0	178.2	-160.4	239.1	0.00	0.00	0.00
2,280.0	12.68	323.96	2,255.0	185.3	-165.6	247.9	0.00	0.00	0.00
2,320.0	12.68	323.96	2,294.0	192.4	-170.7	256.7	0.00	0.00	0.00
2,360.0	12.68	323.96	2,333.0	199.5	-175.9	265.4	0.00	0.00	0.00
2,400.0	12.68	323.96	2,372.1	206.6	-181.1	274.2	0.00	0.00	0.00
2,440.0	12.68	323.96	2,411.1	213.7	-186.2	283.0	0.00	0.00	0.00
2,480.0	12.68	323.96	2,450.1	220.8	-191.4	291.8	0.00	0.00	0.00
2,520.0	12.68	323.96	2,489.1	227.9	-196.6	300.5	0.00	0.00	0.00
2,560.0	12.68	323.96	2,528.2	235.0	-201.7	309.3	0.00	0.00	0.00
2,600.0	12.68	323.96	2,567.2	242.0	-206.9	318.1	0.00	0.00	0.00
2,640.0	12.68	323.96	2,606.2	249.1	-212.1	326.8	0.00	0.00	0.00
2,680.0	12.68	323.96	2,645.2	256.2	-217.2	335.6	0.00	0.00	0.00
2,684.9	12.68	323.96	2,650.0	257.1	-217.9	336.7	0.00	0.00	0.00
PIERRE SILT									
2,720.0	12.68	323.96	2,684.3	263.3	-222.4	344.4	0.00	0.00	0.00
2,760.0	12.68	323.96	2,723.3	270.4	-227.6	353.2	0.00	0.00	0.00
2,800.0	12.68	323.96	2,762.3	277.5	-232.7	361.9	0.00	0.00	0.00
2,840.0	12.68	323.96	2,801.3	284.6	-237.9	370.7	0.00	0.00	0.00
2,880.0	12.68	323.96	2,840.4	291.7	-243.1	379.5	0.00	0.00	0.00
2,920.0	12.68	323.96	2,879.4	298.8	-248.2	388.3	0.00	0.00	0.00
2,960.0	12.68	323.96	2,918.4	305.9	-253.4	397.0	0.00	0.00	0.00
3,000.0	12.68	323.96	2,957.4	313.0	-258.5	405.8	0.00	0.00	0.00
3,040.0	12.68	323.96	2,996.5	320.1	-263.7	414.6	0.00	0.00	0.00
3,080.0	12.68	323.96	3,035.5	327.2	-268.9	423.4	0.00	0.00	0.00
3,120.0	12.68	323.96	3,074.5	334.3	-274.0	432.1	0.00	0.00	0.00
3,160.0	12.68	323.96	3,113.5	341.4	-279.2	440.9	0.00	0.00	0.00
3,200.0	12.68	323.96	3,152.6	348.5	-284.4	449.7	0.00	0.00	0.00
3,240.0	12.68	323.96	3,191.6	355.6	-289.5	458.5	0.00	0.00	0.00
3,280.0	12.68	323.96	3,230.6	362.7	-294.7	467.2	0.00	0.00	0.00
3,320.0	12.68	323.96	3,269.6	369.8	-299.9	476.0	0.00	0.00	0.00
3,360.0	12.68	323.96	3,308.7	376.9	-305.0	484.8	0.00	0.00	0.00
3,400.0	12.68	323.96	3,347.7	384.0	-310.2	493.5	0.00	0.00	0.00
3,440.0	12.68	323.96	3,386.7	391.1	-315.4	502.3	0.00	0.00	0.00
3,480.0	12.68	323.96	3,425.7	398.2	-320.5	511.1	0.00	0.00	0.00
3,520.0	12.68	323.96	3,464.8	405.3	-325.7	519.9	0.00	0.00	0.00
3,560.0	12.68	323.96	3,503.8	412.4	-330.9	528.6	0.00	0.00	0.00
3,600.0	12.68	323.96	3,542.8	419.5	-336.0	537.4	0.00	0.00	0.00
3,640.0	12.68	323.96	3,581.8	426.6	-341.2	546.2	0.00	0.00	0.00
3,679.1	12.68	323.96	3,620.0	433.5	-346.2	554.8	0.00	0.00	0.00
PARKMAN									
3,680.0	12.68	323.96	3,620.9	433.7	-346.3	555.0	0.00	0.00	0.00
3,720.0	12.68	323.96	3,659.9	440.8	-351.5	563.7	0.00	0.00	0.00
3,760.0	12.68	323.96	3,698.9	447.9	-356.7	572.5	0.00	0.00	0.00
3,800.0	12.68	323.96	3,737.9	455.0	-361.8	581.3	0.00	0.00	0.00
3,840.0	12.68	323.96	3,777.0	462.1	-367.0	590.1	0.00	0.00	0.00
3,880.0	12.68	323.96	3,816.0	469.2	-372.2	598.8	0.00	0.00	0.00
3,920.0	12.68	323.96	3,855.0	476.3	-377.3	607.6	0.00	0.00	0.00
3,960.0	12.68	323.96	3,894.0	483.4	-382.5	616.4	0.00	0.00	0.00

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Company:	NOBLE ENERGY INC WELD COUNTY CO	TVD Reference:	WELL @ 4795.0ft (Original Well Elev)
Project:	SEC.17-T6N-R66W	MD Reference:	WELL @ 4795.0ft (Original Well Elev)
Site:	Ulrich PC I17-17D Pad Sec.17-T6N-R66W	North Reference:	True
Well:	Ulrich PC I17-17D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Noble Ulrich PC I17-17D Plan #2 (3-24-11)		

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)
4,000.0	12.68	323.96	3,933.1	490.5	-387.7	625.2	0.00	0.00	0.00
4,040.0	12.68	323.96	3,972.1	497.6	-392.8	633.9	0.00	0.00	0.00
4,080.0	12.68	323.96	4,011.1	504.7	-398.0	642.7	0.00	0.00	0.00
4,120.0	12.68	323.96	4,050.1	511.8	-403.2	651.5	0.00	0.00	0.00
4,160.0	12.68	323.96	4,089.2	518.9	-408.3	660.2	0.00	0.00	0.00
4,200.0	12.68	323.96	4,128.2	526.0	-413.5	669.0	0.00	0.00	0.00
4,240.0	12.68	323.96	4,167.2	533.1	-418.7	677.8	0.00	0.00	0.00
4,280.0	12.68	323.96	4,206.2	540.2	-423.8	686.6	0.00	0.00	0.00
4,320.0	12.68	323.96	4,245.3	547.3	-429.0	695.3	0.00	0.00	0.00
4,360.0	12.68	323.96	4,284.3	554.4	-434.1	704.1	0.00	0.00	0.00
4,400.0	12.68	323.96	4,323.3	561.4	-439.3	712.9	0.00	0.00	0.00
4,440.0	12.68	323.96	4,362.3	568.5	-444.5	721.7	0.00	0.00	0.00
4,449.2	12.68	323.96	4,371.3	570.2	-445.7	723.7	0.00	0.00	0.00
4,480.0	12.06	323.96	4,401.4	575.5	-449.5	730.3	2.00	-2.00	0.00
4,480.6	12.05	323.96	4,402.0	575.6	-449.6	730.4	2.00	-2.00	0.00
SUSSEX									
4,520.0	11.26	323.96	4,440.6	582.1	-454.3	738.4	2.00	-2.00	0.00
4,560.0	10.46	323.96	4,479.8	588.1	-458.7	745.9	2.00	-2.00	0.00
4,600.0	9.66	323.96	4,519.2	593.8	-462.8	752.9	2.00	-2.00	0.00
4,640.0	8.86	323.96	4,558.7	599.0	-466.6	759.3	2.00	-2.00	0.00
4,680.0	8.06	323.96	4,598.3	603.8	-470.1	765.2	2.00	-2.00	0.00
4,720.0	7.26	323.96	4,637.9	608.1	-473.2	770.5	2.00	-2.00	0.00
4,760.0	6.46	323.96	4,677.6	611.9	-476.0	775.3	2.00	-2.00	0.00
4,800.0	5.66	323.96	4,717.4	615.3	-478.5	779.5	2.00	-2.00	0.00
4,840.0	4.86	323.96	4,757.2	618.3	-480.7	783.2	2.00	-2.00	0.00
4,869.9	4.26	323.96	4,787.0	620.2	-482.1	785.6	2.00	-2.00	0.00
SHANNON									
4,880.0	4.06	323.96	4,797.1	620.8	-482.5	786.3	2.00	-2.00	0.00
4,920.0	3.26	323.96	4,837.0	622.9	-484.0	788.8	2.00	-2.00	0.00
4,960.0	2.46	323.96	4,877.0	624.5	-485.2	790.8	2.00	-2.00	0.00
5,000.0	1.66	323.96	4,917.0	625.7	-486.0	792.3	2.00	-2.00	0.00
5,040.0	0.86	323.96	4,956.9	626.4	-486.6	793.2	2.00	-2.00	0.00
5,080.0	0.06	323.96	4,996.9	626.6	-486.8	793.5	2.00	-2.00	0.00
5,083.1	0.00	0.00	5,000.0	626.6	-486.8	793.5	2.00	-2.00	0.00
TARGET BHL 1320'FNL, 1320'FEL									
5,120.0	0.00	0.00	5,036.9	626.6	-486.8	793.5	0.00	0.00	0.00
5,160.0	0.00	0.00	5,076.9	626.6	-486.8	793.5	0.00	0.00	0.00
5,200.0	0.00	0.00	5,116.9	626.6	-486.8	793.5	0.00	0.00	0.00
5,240.0	0.00	0.00	5,156.9	626.6	-486.8	793.5	0.00	0.00	0.00
5,280.0	0.00	0.00	5,196.9	626.6	-486.8	793.5	0.00	0.00	0.00
5,320.0	0.00	0.00	5,236.9	626.6	-486.8	793.5	0.00	0.00	0.00
5,360.0	0.00	0.00	5,276.9	626.6	-486.8	793.5	0.00	0.00	0.00
5,400.0	0.00	0.00	5,316.9	626.6	-486.8	793.5	0.00	0.00	0.00
5,440.0	0.00	0.00	5,356.9	626.6	-486.8	793.5	0.00	0.00	0.00
5,480.0	0.00	0.00	5,396.9	626.6	-486.8	793.5	0.00	0.00	0.00
5,520.0	0.00	0.00	5,436.9	626.6	-486.8	793.5	0.00	0.00	0.00
5,560.0	0.00	0.00	5,476.9	626.6	-486.8	793.5	0.00	0.00	0.00
5,600.0	0.00	0.00	5,516.9	626.6	-486.8	793.5	0.00	0.00	0.00
5,640.0	0.00	0.00	5,556.9	626.6	-486.8	793.5	0.00	0.00	0.00
5,680.0	0.00	0.00	5,596.9	626.6	-486.8	793.5	0.00	0.00	0.00
5,720.0	0.00	0.00	5,636.9	626.6	-486.8	793.5	0.00	0.00	0.00
5,760.0	0.00	0.00	5,676.9	626.6	-486.8	793.5	0.00	0.00	0.00
5,800.0	0.00	0.00	5,716.9	626.6	-486.8	793.5	0.00	0.00	0.00

Database:	Landmark	Local Co-ordinate Reference:	Well Ulrich PC I17-17D
Company:	NOBLE ENERGY INC WELD COUNTY CO	TVD Reference:	WELL @ 4795.0ft (Original Well Elev)
Project:	SEC.17-T6N-R66W	MD Reference:	WELL @ 4795.0ft (Original Well Elev)
Site:	Ulrich PC I17-17D Pad Sec.17-T6N-R66W	North Reference:	True
Well:	Ulrich PC I17-17D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Noble Ulrich PC I17-17D Plan #2 (3-24-11)		

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)
5,840.0	0.00	0.00	5,756.9	626.6	-486.8	793.5	0.00	0.00	0.00
5,880.0	0.00	0.00	5,796.9	626.6	-486.8	793.5	0.00	0.00	0.00
5,920.0	0.00	0.00	5,836.9	626.6	-486.8	793.5	0.00	0.00	0.00
5,960.0	0.00	0.00	5,876.9	626.6	-486.8	793.5	0.00	0.00	0.00
5,998.1	0.00	0.00	5,915.0	626.6	-486.8	793.5	0.00	0.00	0.00
TEEPEE BUTTES									
6,000.0	0.00	0.00	5,916.9	626.6	-486.8	793.5	0.00	0.00	0.00
6,040.0	0.00	0.00	5,956.9	626.6	-486.8	793.5	0.00	0.00	0.00
6,080.0	0.00	0.00	5,996.9	626.6	-486.8	793.5	0.00	0.00	0.00
6,120.0	0.00	0.00	6,036.9	626.6	-486.8	793.5	0.00	0.00	0.00
6,160.0	0.00	0.00	6,076.9	626.6	-486.8	793.5	0.00	0.00	0.00
6,200.0	0.00	0.00	6,116.9	626.6	-486.8	793.5	0.00	0.00	0.00
6,240.0	0.00	0.00	6,156.9	626.6	-486.8	793.5	0.00	0.00	0.00
6,280.0	0.00	0.00	6,196.9	626.6	-486.8	793.5	0.00	0.00	0.00
6,320.0	0.00	0.00	6,236.9	626.6	-486.8	793.5	0.00	0.00	0.00
6,360.0	0.00	0.00	6,276.9	626.6	-486.8	793.5	0.00	0.00	0.00
6,400.0	0.00	0.00	6,316.9	626.6	-486.8	793.5	0.00	0.00	0.00
6,440.0	0.00	0.00	6,356.9	626.6	-486.8	793.5	0.00	0.00	0.00
6,480.0	0.00	0.00	6,396.9	626.6	-486.8	793.5	0.00	0.00	0.00
6,520.0	0.00	0.00	6,436.9	626.6	-486.8	793.5	0.00	0.00	0.00
6,560.0	0.00	0.00	6,476.9	626.6	-486.8	793.5	0.00	0.00	0.00
6,600.0	0.00	0.00	6,516.9	626.6	-486.8	793.5	0.00	0.00	0.00
6,640.0	0.00	0.00	6,556.9	626.6	-486.8	793.5	0.00	0.00	0.00
6,680.0	0.00	0.00	6,596.9	626.6	-486.8	793.5	0.00	0.00	0.00
6,720.0	0.00	0.00	6,636.9	626.6	-486.8	793.5	0.00	0.00	0.00
6,760.0	0.00	0.00	6,676.9	626.6	-486.8	793.5	0.00	0.00	0.00
6,800.0	0.00	0.00	6,716.9	626.6	-486.8	793.5	0.00	0.00	0.00
6,840.0	0.00	0.00	6,756.9	626.6	-486.8	793.5	0.00	0.00	0.00
6,880.0	0.00	0.00	6,796.9	626.6	-486.8	793.5	0.00	0.00	0.00
6,920.0	0.00	0.00	6,836.9	626.6	-486.8	793.5	0.00	0.00	0.00
6,960.0	0.00	0.00	6,876.9	626.6	-486.8	793.5	0.00	0.00	0.00
6,985.1	0.00	0.00	6,902.0	626.6	-486.8	793.5	0.00	0.00	0.00
NIOBRARA - TARGET CIRCLE 1320'FNL, 1320'FEL - LEGAL BOX 800' X 800' 1320'FNL & 1331'FEL									
7,000.0	0.00	0.00	6,916.9	626.6	-486.8	793.5	0.00	0.00	0.00
7,040.0	0.00	0.00	6,956.9	626.6	-486.8	793.5	0.00	0.00	0.00
7,080.0	0.00	0.00	6,996.9	626.6	-486.8	793.5	0.00	0.00	0.00
7,120.0	0.00	0.00	7,036.9	626.6	-486.8	793.5	0.00	0.00	0.00
7,160.0	0.00	0.00	7,076.9	626.6	-486.8	793.5	0.00	0.00	0.00
7,200.0	0.00	0.00	7,116.9	626.6	-486.8	793.5	0.00	0.00	0.00
7,240.0	0.00	0.00	7,156.9	626.6	-486.8	793.5	0.00	0.00	0.00
7,261.1	0.00	0.00	7,178.0	626.6	-486.8	793.5	0.00	0.00	0.00
FT. HAYS									
7,280.0	0.00	0.00	7,196.9	626.6	-486.8	793.5	0.00	0.00	0.00
7,283.1	0.00	0.00	7,200.0	626.6	-486.8	793.5	0.00	0.00	0.00
CODELL									
7,320.0	0.00	0.00	7,236.9	626.6	-486.8	793.5	0.00	0.00	0.00
7,360.0	0.00	0.00	7,276.9	626.6	-486.8	793.5	0.00	0.00	0.00
7,400.0	0.00	0.00	7,316.9	626.6	-486.8	793.5	0.00	0.00	0.00
7,433.1	0.00	0.00	7,350.0	626.6	-486.8	793.5	0.00	0.00	0.00

Database:	Landmark	Local Co-ordinate Reference:	Well Ulrich PC I17-17D
Company:	NOBLE ENERGY INC WELD COUNTY CO	TVD Reference:	WELL @ 4795.0ft (Original Well Elev)
Project:	SEC.17-T6N-R66W	MD Reference:	WELL @ 4795.0ft (Original Well Elev)
Site:	Ulrich PC I17-17D Pad Sec.17-T6N-R66W	North Reference:	True
Well:	Ulrich PC I17-17D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Noble Ulrich PC I17-17D Plan #2 (3-24-11)		

Targets									
Target Name									
- hit/miss target	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- Shape	(°)	(°)	(ft)	(ft)	(ft)	(ft)	(ft)		
TARGET BHL 1320'F	0.00	0.00	5,000.0	626.6	-486.8	1,422,726.94	3,195,487.07	40.491660	-104.797140
- plan hits target center									
- Point									
TARGET CIRCLE 132	0.00	0.00	6,902.0	626.6	-486.8	1,422,726.94	3,195,487.07	40.491660	-104.797140
- plan hits target center									
- Circle (radius 75.0)									
LEGAL BOX 800' X 80	0.00	0.00	6,902.0	626.6	-497.8	1,422,726.81	3,195,476.02	40.491660	-104.797180
- plan misses target center by 11.0ft at 6985.1ft MD (6902.0 TVD, 626.6 N, -486.8 E)									
- Rectangle (sides W800.0 H800.0 D448.0)									

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")	
650.0	650.0	8 5/8"	8-5/8	12-1/4	

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
2,684.9	2,650.0	PIERRE SILT		0.00		
3,679.1	3,620.0	PARKMAN		0.00		
4,480.6	4,402.0	SUSSEX		0.00		
4,869.9	4,787.0	SHANNON		0.00		
5,998.1	5,915.0	TEEPEE BUTTES		0.00		
6,985.1	6,902.0	NIOBRARA		0.00		
7,261.1	7,178.0	FT. HAYS		0.00		
7,283.1	7,200.0	CODELL		0.00		