

# ENSIGN

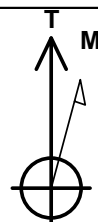
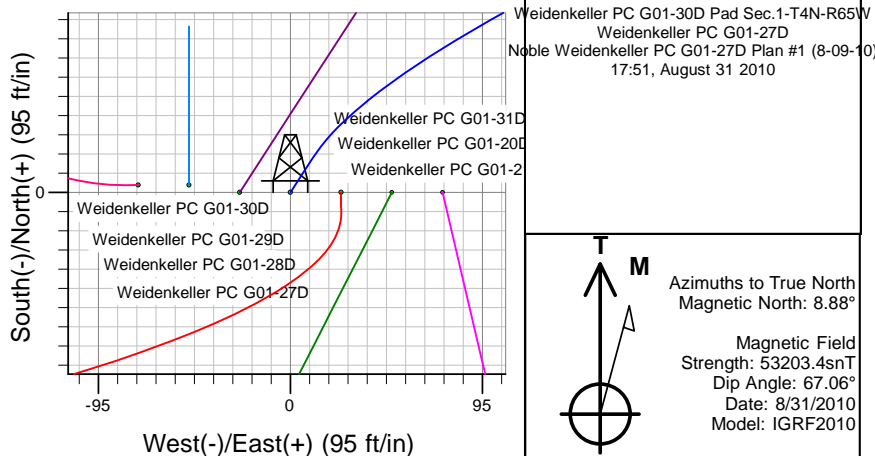
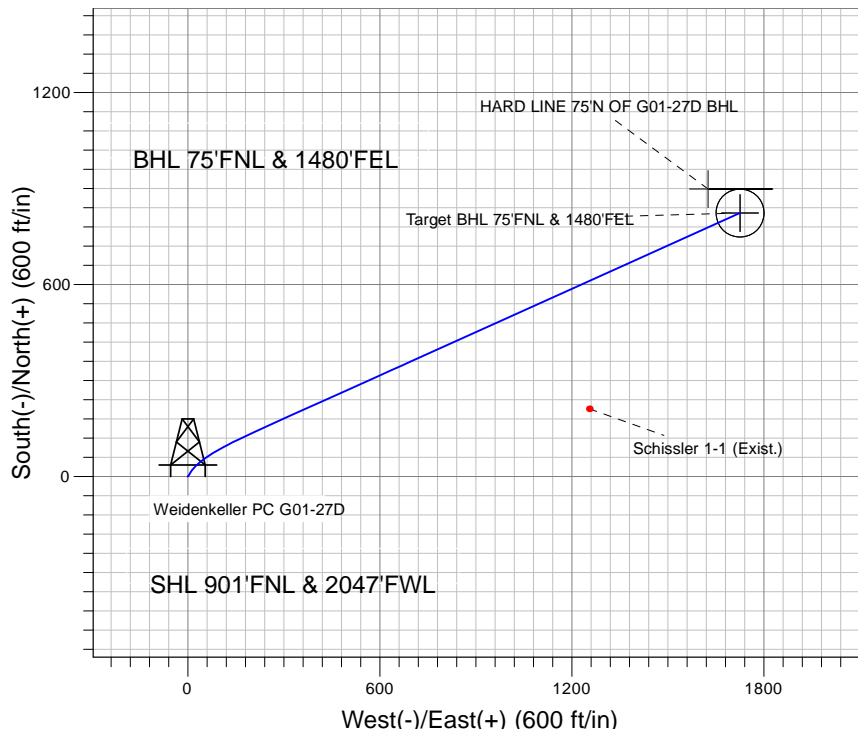
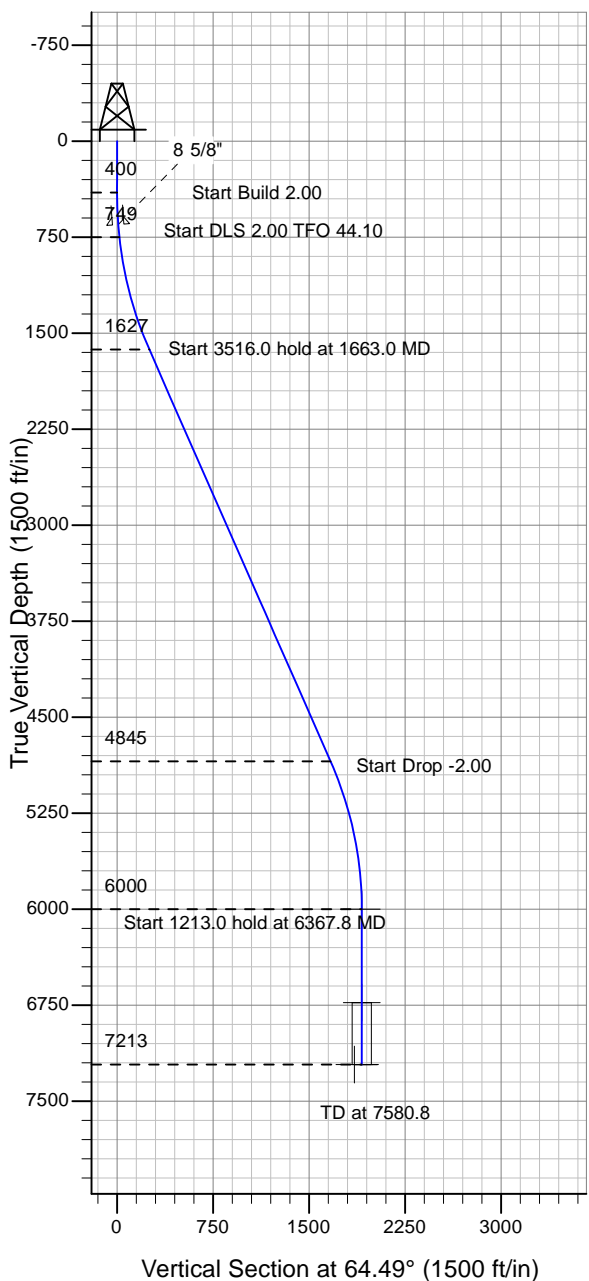
## Directional

### Well Name: Weidenkeller PC G01-27D

Surface Location: Weidenkeller PC G01-30D Pad Sec.1-T4N-R65W  
 North American Datum 1983 , US State Plane 1983 , Colorado Northern Zone  
 Ground Elevation: 4755.0

+N/-S+E/-W Northing Easting Latitude Longitude Slot  
 0.0 0.0 1370108.93 3247083.76 40° 20' 45.456 N 104° 36' 48.708 W  
 Original Well Elev WELL @ 4768.0ft (Original Well Elev)

### NOBLE ENERGY INC WELD COUNTY CO



Azimuths to True North  
 Magnetic North: 8.88°  
 Magnetic Field  
 Strength: 53203.4snT  
 Dip Angle: 67.06°  
 Date: 8/31/2010  
 Model: IGRF2010

### WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
Target BHL 75'FNL & 1480'FEL	6000.0	823.4	1725.4	40° 20' 53.592 N	104° 36' 26.424 W	Point
Target Circle 75'FNL & 1480'FEL	6728.0	823.4	1725.4	40° 20' 53.592 N	104° 36' 26.424 W	Circle (Radius: 75.0)
HARD LINE 75'N OF G01-27D BHL	7213.0	898.4	1625.4	40° 20' 54.333 N	104° 36' 27.715 W	Polygon

### 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	750.0	7.00	33.00	749.1	17.9	11.6	2.00	33.00	18.2	
4	1663.0	23.77	65.74	1627.5	141.2	211.4	2.00	44.10	251.6	
5	5179.0	23.77	65.74	4845.1	723.5	1503.7	0.00	0.00	1668.7	
6	6367.8	0.00	0.00	6000.0	823.4	1725.4	2.00	180.00	1911.8	Target BHL 75'FNL & 1480'FEL
7	7580.8	0.00	0.00	7213.0	823.4	1725.4	0.00	0.00	1911.8	



# **NOBLE ENERGY INC WELD COUNTY CO**

**SEC.1-T4N-R65W**

**Weidenkeller PC G01-30D Pad Sec.1-T4N-R65W**

**Weidenkeller PC G01-27D**

**Wellbore #1**

**Plan: Noble Weidenkeller PC G01-27D Plan #1 (8-09-10)**

## **Standard Planning Report**

**31 August, 2010**



<b>Database:</b>	EDM den0-adp01 Server Data	<b>Local Co-ordinate Reference:</b>	Well Weidenkeller PC G01-27D
<b>Company:</b>	NOBLE ENERGY INC WELD COUNTY CO	<b>TVD Reference:</b>	WELL @ 4768.0ft (Original Well Elev)
<b>Project:</b>	SEC.1-T4N-R65W	<b>MD Reference:</b>	WELL @ 4768.0ft (Original Well Elev)
<b>Site:</b>	Weidenkeller PC G01-30D Pad Sec.1-T4N-R65W	<b>North Reference:</b>	True
<b>Well:</b>	Weidenkeller PC G01-27D	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Noble Weidenkeller PC G01-27D Plan #1 (8-09-10)		

<b>Project</b>	SEC.1-T4N-R65W, 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		Weidenkeller PC G01-30D Pad Sec.1-T4N-R65W			
Site Position:		Northing:	1,370,111.83ft	Latitude:	40° 20' 45.492 N
From:	Lat/Long	Easting:	3,247,008.47ft	Longitude:	104° 36' 49.680 W
Position Uncertainty:	0.0 ft	Slot Radius:	"	Grid Convergence:	0.57 °

Well	Weidenkeller PC G01-27D					
Well Position	+N-S	-3.7 ft	Northing:	1,370,108.93 ft	Latitude:	40° 20' 45.456 N
	+E-W	75.3 ft	Easting:	3,247,083.76 ft	Longitude:	104° 36' 48.708 W
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,755.0 ft

<b>Wellbore</b>	Wellbore #1				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2010	8/31/2010	8.88	67.06	53,203

<b>Design</b>	Noble Weidenkeller PC G01-27D Plan #1 (8-09-10)			
<b>Audit Notes:</b>				
<b>Version:</b>	<b>Phase:</b>	PROTOTYPE	<b>Tie On Depth:</b>	0.0
<b>Vertical Section:</b>	<b>Depth From (TVD) (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Direction (°)</b>
	0.0	0.0	0.0	64.49

<b>Plan Sections</b>										
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	
750.0	7.00	33.00	749.1	17.9	11.6	2.00	2.00	0.00	33.00	
1,663.0	23.77	65.74	1,627.5	141.2	211.4	2.00	1.84	3.59	44.10	
5,179.0	23.77	65.74	4,845.1	723.5	1,503.7	0.00	0.00	0.00	0.00	
6,367.8	0.00	0.00	6,000.0	823.4	1,725.4	2.00	-2.00	0.00	180.00	Target BHL 75'FNL
7,580.8	0.00	0.00	7,213.0	823.4	1,725.4	0.00	0.00	0.00	0.00	

<b>Database:</b>	EDM den0-adp01 Server Data	<b>Local Co-ordinate Reference:</b>	Well Weidenkeller PC G01-27D
<b>Company:</b>	NOBLE ENERGY INC WELD COUNTY CO	<b>TVD Reference:</b>	WELL @ 4768.0ft (Original Well Elev)
<b>Project:</b>	SEC.1-T4N-R65W	<b>MD Reference:</b>	WELL @ 4768.0ft (Original Well Elev)
<b>Site:</b>	Weidenkeller PC G01-30D Pad Sec.1-T4N-R65W	<b>North Reference:</b>	True
<b>Well:</b>	Weidenkeller PC G01-27D	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Noble Weidenkeller PC G01-27D Plan #1 (8-09)		

**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	33.00	440.0	0.2	0.2	0.2	2.00	2.00	0.00
480.0	1.60	33.00	480.0	0.9	0.6	1.0	2.00	2.00	0.00
520.0	2.40	33.00	520.0	2.1	1.4	2.1	2.00	2.00	0.00
560.0	3.20	33.00	559.9	3.7	2.4	3.8	2.00	2.00	0.00
600.0	4.00	33.00	599.8	5.9	3.8	6.0	2.00	2.00	0.00
640.0	4.80	33.00	639.7	8.4	5.5	8.6	2.00	2.00	0.00
650.3	5.01	33.00	650.0	9.2	6.0	9.3	2.00	2.00	0.00
<b>8 5/8"</b>									
680.0	5.60	33.00	679.6	11.5	7.4	11.7	2.00	2.00	0.00
720.0	6.40	33.00	719.3	15.0	9.7	15.2	2.00	2.00	0.00
750.0	7.00	33.00	749.1	17.9	11.6	18.2	2.00	2.00	0.00
760.0	7.14	34.12	759.1	18.9	12.3	19.3	2.00	1.45	11.19
800.0	7.75	38.17	798.7	23.1	15.4	23.8	2.00	1.51	10.12
840.0	8.39	41.62	838.3	27.4	19.0	28.9	2.00	1.59	8.63
880.0	9.05	44.58	877.9	31.8	23.1	34.6	2.00	1.66	7.40
920.0	9.73	47.13	917.3	36.4	27.8	40.8	2.00	1.71	6.38
960.0	10.43	49.35	956.7	41.0	33.0	47.5	2.00	1.75	5.54
1,000.0	11.14	51.29	996.0	45.8	38.8	54.7	2.00	1.78	4.85
1,040.0	11.87	52.99	1,035.2	50.7	45.1	62.5	2.00	1.81	4.27
1,080.0	12.60	54.51	1,074.3	55.7	51.9	70.9	2.00	1.83	3.78
1,120.0	13.34	55.85	1,113.3	60.8	59.3	79.7	2.00	1.85	3.37
1,160.0	14.09	57.06	1,152.1	66.1	67.2	89.1	2.00	1.87	3.02
1,200.0	14.84	58.15	1,190.9	71.4	75.7	99.0	2.00	1.88	2.72
1,240.0	15.60	59.13	1,229.5	76.9	84.6	109.5	2.00	1.89	2.46
1,280.0	16.36	60.03	1,267.9	82.5	94.1	120.5	2.00	1.90	2.24
1,320.0	17.12	60.85	1,306.2	88.1	104.1	132.0	2.00	1.91	2.05
1,360.0	17.89	61.60	1,344.4	93.9	114.7	144.0	2.00	1.92	1.87
1,400.0	18.66	62.29	1,382.3	99.8	125.8	156.5	2.00	1.93	1.73
1,440.0	19.44	62.93	1,420.1	105.8	137.4	169.5	2.00	1.93	1.59
1,480.0	20.21	63.52	1,457.8	112.0	149.5	183.1	2.00	1.94	1.48
1,520.0	20.99	64.06	1,495.2	118.2	162.1	197.2	2.00	1.94	1.37
1,560.0	21.76	64.57	1,532.5	124.5	175.2	211.8	2.00	1.95	1.28
1,600.0	22.54	65.05	1,569.5	130.9	188.9	226.8	2.00	1.95	1.19
1,640.0	23.32	65.50	1,606.4	137.4	203.0	242.4	2.00	1.95	1.12
1,663.0	23.77	65.74	1,627.5	141.2	211.4	251.6	2.00	1.95	1.06
1,680.0	23.77	65.74	1,643.0	144.0	217.7	258.5	0.00	0.00	0.00
1,720.0	23.77	65.74	1,679.6	150.7	232.4	274.6	0.00	0.00	0.00
1,760.0	23.77	65.74	1,716.2	157.3	247.1	290.7	0.00	0.00	0.00
1,800.0	23.77	65.74	1,752.8	163.9	261.8	306.8	0.00	0.00	0.00
1,840.0	23.77	65.74	1,789.4	170.5	276.5	323.0	0.00	0.00	0.00
1,880.0	23.77	65.74	1,826.0	177.2	291.2	339.1	0.00	0.00	0.00
1,920.0	23.77	65.74	1,862.6	183.8	305.9	355.2	0.00	0.00	0.00

<b>Database:</b>	EDM den0-adp01 Server Data	<b>Local Co-ordinate Reference:</b>	Well Weidenkeller PC G01-27D
<b>Company:</b>	NOBLE ENERGY INC WELD COUNTY CO	<b>TVD Reference:</b>	WELL @ 4768.0ft (Original Well Elev)
<b>Project:</b>	SEC.1-T4N-R65W	<b>MD Reference:</b>	WELL @ 4768.0ft (Original Well Elev)
<b>Site:</b>	Weidenkeller PC G01-30D Pad Sec.1-T4N-R65W	<b>North Reference:</b>	True
<b>Well:</b>	Weidenkeller PC G01-27D	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Noble Weidenkeller PC G01-27D Plan #1 (8-05		

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)	
1,960.0	23.77	65.74	1,899.2	190.4	320.6	371.3	0.00	0.00	0.00	
2,000.0	23.77	65.74	1,935.8	197.0	335.3	387.4	0.00	0.00	0.00	
2,040.0	23.77	65.74	1,972.4	203.7	350.0	403.6	0.00	0.00	0.00	
2,080.0	23.77	65.74	2,009.0	210.3	364.7	419.7	0.00	0.00	0.00	
2,120.0	23.77	65.74	2,045.7	216.9	379.4	435.8	0.00	0.00	0.00	
2,160.0	23.77	65.74	2,082.3	223.5	394.1	451.9	0.00	0.00	0.00	
2,200.0	23.77	65.74	2,118.9	230.2	408.8	468.0	0.00	0.00	0.00	
2,240.0	23.77	65.74	2,155.5	236.8	423.5	484.2	0.00	0.00	0.00	
2,280.0	23.77	65.74	2,192.1	243.4	438.2	500.3	0.00	0.00	0.00	
2,320.0	23.77	65.74	2,228.7	250.0	452.9	516.4	0.00	0.00	0.00	
2,360.0	23.77	65.74	2,265.3	256.7	467.6	532.5	0.00	0.00	0.00	
2,400.0	23.77	65.74	2,301.9	263.3	482.3	548.7	0.00	0.00	0.00	
2,440.0	23.77	65.74	2,338.5	269.9	497.0	564.8	0.00	0.00	0.00	
2,480.0	23.77	65.74	2,375.1	276.5	511.7	580.9	0.00	0.00	0.00	
2,520.0	23.77	65.74	2,411.7	283.1	526.4	597.0	0.00	0.00	0.00	
2,560.0	23.77	65.74	2,448.3	289.8	541.1	613.1	0.00	0.00	0.00	
2,600.0	23.77	65.74	2,484.9	296.4	555.8	629.3	0.00	0.00	0.00	
2,640.0	23.77	65.74	2,521.5	303.0	570.5	645.4	0.00	0.00	0.00	
2,680.0	23.77	65.74	2,558.1	309.6	585.2	661.5	0.00	0.00	0.00	
2,720.0	23.77	65.74	2,594.7	316.3	599.9	677.6	0.00	0.00	0.00	
2,760.0	23.77	65.74	2,631.3	322.9	614.6	693.8	0.00	0.00	0.00	
2,800.0	23.77	65.74	2,667.9	329.5	629.3	709.9	0.00	0.00	0.00	
2,840.0	23.77	65.74	2,704.6	336.1	644.0	726.0	0.00	0.00	0.00	
2,880.0	23.77	65.74	2,741.2	342.8	658.7	742.1	0.00	0.00	0.00	
2,920.0	23.77	65.74	2,777.8	349.4	673.4	758.2	0.00	0.00	0.00	
2,960.0	23.77	65.74	2,814.4	356.0	688.1	774.4	0.00	0.00	0.00	
3,000.0	23.77	65.74	2,851.0	362.6	702.8	790.5	0.00	0.00	0.00	
3,040.0	23.77	65.74	2,887.6	369.3	717.5	806.6	0.00	0.00	0.00	
3,080.0	23.77	65.74	2,924.2	375.9	732.2	822.7	0.00	0.00	0.00	
3,120.0	23.77	65.74	2,960.8	382.5	746.9	838.8	0.00	0.00	0.00	
3,160.0	23.77	65.74	2,997.4	389.1	761.6	855.0	0.00	0.00	0.00	
3,200.0	23.77	65.74	3,034.0	395.8	776.3	871.1	0.00	0.00	0.00	
3,240.0	23.77	65.74	3,070.6	402.4	791.0	887.2	0.00	0.00	0.00	
3,280.0	23.77	65.74	3,107.2	409.0	805.7	903.3	0.00	0.00	0.00	
3,320.0	23.77	65.74	3,143.8	415.6	820.4	919.5	0.00	0.00	0.00	
3,360.0	23.77	65.74	3,180.4	422.3	835.1	935.6	0.00	0.00	0.00	
3,400.0	23.77	65.74	3,217.0	428.9	849.8	951.7	0.00	0.00	0.00	
3,440.0	23.77	65.74	3,253.6	435.5	864.5	967.8	0.00	0.00	0.00	
3,480.0	23.77	65.74	3,290.2	442.1	879.2	983.9	0.00	0.00	0.00	
3,520.0	23.77	65.74	3,326.8	448.8	893.9	1,000.1	0.00	0.00	0.00	
3,560.0	23.77	65.74	3,363.5	455.4	908.6	1,016.2	0.00	0.00	0.00	
3,600.0	23.77	65.74	3,400.1	462.0	923.4	1,032.3	0.00	0.00	0.00	
3,640.0	23.77	65.74	3,436.7	468.6	938.1	1,048.4	0.00	0.00	0.00	
3,680.0	23.77	65.74	3,473.3	475.3	952.8	1,064.6	0.00	0.00	0.00	
3,720.0	23.77	65.74	3,509.9	481.9	967.5	1,080.7	0.00	0.00	0.00	
3,760.0	23.77	65.74	3,546.5	488.5	982.2	1,096.8	0.00	0.00	0.00	
3,800.0	23.77	65.74	3,583.1	495.1	996.9	1,112.9	0.00	0.00	0.00	
3,840.0	23.77	65.74	3,619.7	501.8	1,011.6	1,129.0	0.00	0.00	0.00	
3,880.0	23.77	65.74	3,656.3	508.4	1,026.3	1,145.2	0.00	0.00	0.00	
3,920.0	23.77	65.74	3,692.9	515.0	1,041.0	1,161.3	0.00	0.00	0.00	
3,960.0	23.77	65.74	3,729.5	521.6	1,055.7	1,177.4	0.00	0.00	0.00	
4,000.0	23.77	65.74	3,766.1	528.3	1,070.4	1,193.5	0.00	0.00	0.00	
4,040.0	23.77	65.74	3,802.7	534.9	1,085.1	1,209.6	0.00	0.00	0.00	

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<b>Project:</b>	SEC.1-T4N-R65W	<b>MD Reference:</b>	WELL @ 4768.0ft (Original Well Elev)
<b>Site:</b>	Weidenkeller PC G01-30D Pad Sec.1-T4N-R65W	<b>North Reference:</b>	True
<b>Well:</b>	Weidenkeller PC G01-27D	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Noble Weidenkeller PC G01-27D Plan #1 (8-05		

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)	
4,080.0	23.77	65.74	3,839.3	541.5	1,099.8	1,225.8	0.00	0.00	0.00	
4,120.0	23.77	65.74	3,875.9	548.1	1,114.5	1,241.9	0.00	0.00	0.00	
4,160.0	23.77	65.74	3,912.5	554.8	1,129.2	1,258.0	0.00	0.00	0.00	
4,200.0	23.77	65.74	3,949.1	561.4	1,143.9	1,274.1	0.00	0.00	0.00	
4,240.0	23.77	65.74	3,985.7	568.0	1,158.6	1,290.3	0.00	0.00	0.00	
4,280.0	23.77	65.74	4,022.4	574.6	1,173.3	1,306.4	0.00	0.00	0.00	
4,320.0	23.77	65.74	4,059.0	581.3	1,188.0	1,322.5	0.00	0.00	0.00	
4,360.0	23.77	65.74	4,095.6	587.9	1,202.7	1,338.6	0.00	0.00	0.00	
4,400.0	23.77	65.74	4,132.2	594.5	1,217.4	1,354.7	0.00	0.00	0.00	
4,440.0	23.77	65.74	4,168.8	601.1	1,232.1	1,370.9	0.00	0.00	0.00	
4,480.0	23.77	65.74	4,205.4	607.8	1,246.8	1,387.0	0.00	0.00	0.00	
4,520.0	23.77	65.74	4,242.0	614.4	1,261.5	1,403.1	0.00	0.00	0.00	
4,560.0	23.77	65.74	4,278.6	621.0	1,276.2	1,419.2	0.00	0.00	0.00	
4,600.0	23.77	65.74	4,315.2	627.6	1,290.9	1,435.4	0.00	0.00	0.00	
4,640.0	23.77	65.74	4,351.8	634.3	1,305.6	1,451.5	0.00	0.00	0.00	
4,680.0	23.77	65.74	4,388.4	640.9	1,320.3	1,467.6	0.00	0.00	0.00	
4,720.0	23.77	65.74	4,425.0	647.5	1,335.0	1,483.7	0.00	0.00	0.00	
4,760.0	23.77	65.74	4,461.6	654.1	1,349.7	1,499.8	0.00	0.00	0.00	
4,800.0	23.77	65.74	4,498.2	660.8	1,364.4	1,516.0	0.00	0.00	0.00	
4,840.0	23.77	65.74	4,534.8	667.4	1,379.1	1,532.1	0.00	0.00	0.00	
4,880.0	23.77	65.74	4,571.4	674.0	1,393.8	1,548.2	0.00	0.00	0.00	
4,920.0	23.77	65.74	4,608.0	680.6	1,408.5	1,564.3	0.00	0.00	0.00	
4,960.0	23.77	65.74	4,644.6	687.3	1,423.2	1,580.4	0.00	0.00	0.00	
5,000.0	23.77	65.74	4,681.3	693.9	1,437.9	1,596.6	0.00	0.00	0.00	
5,040.0	23.77	65.74	4,717.9	700.5	1,452.6	1,612.7	0.00	0.00	0.00	
5,080.0	23.77	65.74	4,754.5	707.1	1,467.3	1,628.8	0.00	0.00	0.00	
5,120.0	23.77	65.74	4,791.1	713.8	1,482.0	1,644.9	0.00	0.00	0.00	
5,160.0	23.77	65.74	4,827.7	720.4	1,496.7	1,661.1	0.00	0.00	0.00	
5,179.0	23.77	65.74	4,845.1	723.5	1,503.7	1,668.7	0.00	0.00	0.00	
5,200.0	23.36	65.74	4,864.3	727.0	1,511.4	1,677.1	2.00	-2.00	0.00	
5,240.0	22.56	65.74	4,901.1	733.4	1,525.6	1,692.7	2.00	-2.00	0.00	
5,280.0	21.76	65.74	4,938.2	739.6	1,539.3	1,707.8	2.00	-2.00	0.00	
5,320.0	20.96	65.74	4,975.4	745.6	1,552.6	1,722.3	2.00	-2.00	0.00	
5,360.0	20.16	65.74	5,012.9	751.3	1,565.4	1,736.4	2.00	-2.00	0.00	
5,400.0	19.36	65.74	5,050.5	756.9	1,577.8	1,749.9	2.00	-2.00	0.00	
5,440.0	18.56	65.74	5,088.4	762.2	1,589.6	1,762.9	2.00	-2.00	0.00	
5,480.0	17.76	65.74	5,126.4	767.3	1,601.0	1,775.4	2.00	-2.00	0.00	
5,520.0	16.96	65.74	5,164.6	772.2	1,611.8	1,787.3	2.00	-2.00	0.00	
5,560.0	16.16	65.74	5,202.9	776.9	1,622.2	1,798.7	2.00	-2.00	0.00	
5,600.0	15.36	65.74	5,241.4	781.4	1,632.1	1,809.5	2.00	-2.00	0.00	
5,640.0	14.56	65.74	5,280.0	785.6	1,641.5	1,819.9	2.00	-2.00	0.00	
5,680.0	13.76	65.74	5,318.8	789.7	1,650.5	1,829.6	2.00	-2.00	0.00	
5,720.0	12.96	65.74	5,357.7	793.4	1,658.9	1,838.9	2.00	-2.00	0.00	
5,760.0	12.16	65.74	5,396.8	797.0	1,666.8	1,847.6	2.00	-2.00	0.00	
5,800.0	11.36	65.74	5,435.9	800.4	1,674.2	1,855.7	2.00	-2.00	0.00	
5,840.0	10.56	65.74	5,475.2	803.5	1,681.2	1,863.3	2.00	-2.00	0.00	
5,880.0	9.76	65.74	5,514.6	806.4	1,687.6	1,870.4	2.00	-2.00	0.00	
5,920.0	8.96	65.74	5,554.1	809.1	1,693.5	1,876.9	2.00	-2.00	0.00	
5,960.0	8.16	65.74	5,593.6	811.5	1,699.0	1,882.8	2.00	-2.00	0.00	
6,000.0	7.36	65.74	5,633.2	813.7	1,703.9	1,888.2	2.00	-2.00	0.00	
6,040.0	6.56	65.74	5,673.0	815.7	1,708.3	1,893.1	2.00	-2.00	0.00	
6,080.0	5.76	65.74	5,712.7	817.5	1,712.2	1,897.3	2.00	-2.00	0.00	
6,120.0	4.96	65.74	5,752.5	819.0	1,715.6	1,901.1	2.00	-2.00	0.00	

<b>Database:</b>	EDM den0-adp01 Server Data	<b>Local Co-ordinate Reference:</b>	Well Weidenkeller PC G01-27D
<b>Company:</b>	NOBLE ENERGY INC WELD COUNTY CO	<b>TVD Reference:</b>	WELL @ 4768.0ft (Original Well Elev)
<b>Project:</b>	SEC.1-T4N-R65W	<b>MD Reference:</b>	WELL @ 4768.0ft (Original Well Elev)
<b>Site:</b>	Weidenkeller PC G01-30D Pad Sec.1-T4N-R65W	<b>North Reference:</b>	True
<b>Well:</b>	Weidenkeller PC G01-27D	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Noble Weidenkeller PC G01-27D Plan #1 (8-09)		

**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)
6,160.0	4.16	65.74	5,792.4	820.3	1,718.5	1,904.3	2.00	-2.00	0.00
6,200.0	3.36	65.74	5,832.3	821.4	1,720.9	1,906.9	2.00	-2.00	0.00
6,240.0	2.56	65.74	5,872.3	822.2	1,722.8	1,908.9	2.00	-2.00	0.00
6,280.0	1.76	65.74	5,912.3	822.9	1,724.1	1,910.4	2.00	-2.00	0.00
6,320.0	0.96	65.74	5,952.2	823.2	1,725.0	1,911.4	2.00	-2.00	0.00
6,360.0	0.16	65.74	5,992.2	823.4	1,725.4	1,911.8	2.00	-2.00	0.00
6,367.8	0.00	0.00	6,000.0	823.4	1,725.4	1,911.8	2.00	-2.00	0.00
<b>Target BHL 75°FNL &amp; 1480°FEL</b>									
6,400.0	0.00	0.00	6,032.2	823.4	1,725.4	1,911.8	0.00	0.00	0.00
6,440.0	0.00	0.00	6,072.2	823.4	1,725.4	1,911.8	0.00	0.00	0.00
6,480.0	0.00	0.00	6,112.2	823.4	1,725.4	1,911.8	0.00	0.00	0.00
6,520.0	0.00	0.00	6,152.2	823.4	1,725.4	1,911.8	0.00	0.00	0.00
6,560.0	0.00	0.00	6,192.2	823.4	1,725.4	1,911.8	0.00	0.00	0.00
6,600.0	0.00	0.00	6,232.2	823.4	1,725.4	1,911.8	0.00	0.00	0.00
6,640.0	0.00	0.00	6,272.2	823.4	1,725.4	1,911.8	0.00	0.00	0.00
6,680.0	0.00	0.00	6,312.2	823.4	1,725.4	1,911.8	0.00	0.00	0.00
6,720.0	0.00	0.00	6,352.2	823.4	1,725.4	1,911.8	0.00	0.00	0.00
6,760.0	0.00	0.00	6,392.2	823.4	1,725.4	1,911.8	0.00	0.00	0.00
6,800.0	0.00	0.00	6,432.2	823.4	1,725.4	1,911.8	0.00	0.00	0.00
6,840.0	0.00	0.00	6,472.2	823.4	1,725.4	1,911.8	0.00	0.00	0.00
6,880.0	0.00	0.00	6,512.2	823.4	1,725.4	1,911.8	0.00	0.00	0.00
6,920.0	0.00	0.00	6,552.2	823.4	1,725.4	1,911.8	0.00	0.00	0.00
6,960.0	0.00	0.00	6,592.2	823.4	1,725.4	1,911.8	0.00	0.00	0.00
7,000.0	0.00	0.00	6,632.2	823.4	1,725.4	1,911.8	0.00	0.00	0.00
7,040.0	0.00	0.00	6,672.2	823.4	1,725.4	1,911.8	0.00	0.00	0.00
7,080.0	0.00	0.00	6,712.2	823.4	1,725.4	1,911.8	0.00	0.00	0.00
7,095.8	0.00	0.00	6,728.0	823.4	1,725.4	1,911.8	0.00	0.00	0.00
<b>Niobrara - Target Circle 75°FNL &amp; 1480°FEL</b>									
7,120.0	0.00	0.00	6,752.2	823.4	1,725.4	1,911.8	0.00	0.00	0.00
7,160.0	0.00	0.00	6,792.2	823.4	1,725.4	1,911.8	0.00	0.00	0.00
7,200.0	0.00	0.00	6,832.2	823.4	1,725.4	1,911.8	0.00	0.00	0.00
7,240.0	0.00	0.00	6,872.2	823.4	1,725.4	1,911.8	0.00	0.00	0.00
7,280.0	0.00	0.00	6,912.2	823.4	1,725.4	1,911.8	0.00	0.00	0.00
7,320.0	0.00	0.00	6,952.2	823.4	1,725.4	1,911.8	0.00	0.00	0.00
7,360.0	0.00	0.00	6,992.2	823.4	1,725.4	1,911.8	0.00	0.00	0.00
7,400.0	0.00	0.00	7,032.2	823.4	1,725.4	1,911.8	0.00	0.00	0.00
7,430.8	0.00	0.00	7,063.0	823.4	1,725.4	1,911.8	0.00	0.00	0.00
<b>Codell</b>									
7,440.0	0.00	0.00	7,072.2	823.4	1,725.4	1,911.8	0.00	0.00	0.00
7,480.0	0.00	0.00	7,112.2	823.4	1,725.4	1,911.8	0.00	0.00	0.00
7,520.0	0.00	0.00	7,152.2	823.4	1,725.4	1,911.8	0.00	0.00	0.00
7,560.0	0.00	0.00	7,192.2	823.4	1,725.4	1,911.8	0.00	0.00	0.00
7,580.8	0.00	0.00	7,213.0	823.4	1,725.4	1,911.8	0.00	0.00	0.00
<b>HARD LINE 75°N OF G01-27D BHL</b>									



<b>Database:</b>	EDM den0-adp01 Server Data	<b>Local Co-ordinate Reference:</b>	Well Weidenkeller PC G01-27D
<b>Company:</b>	NOBLE ENERGY INC WELD COUNTY CO	<b>TVD Reference:</b>	WELL @ 4768.0ft (Original Well Elev)
<b>Project:</b>	SEC.1-T4N-R65W	<b>MD Reference:</b>	WELL @ 4768.0ft (Original Well Elev)
<b>Site:</b>	Weidenkeller PC G01-30D Pad Sec.1-T4N-R65W	<b>North Reference:</b>	True
<b>Well:</b>	Weidenkeller PC G01-27D	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Noble Weidenkeller PC G01-27D Plan #1 (8-09		

Targets									
Target Name	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- hit/miss target	(°)	(°)	(ft)	(ft)	(ft)	(ft)	(ft)		
- Shape									
HARD LINE 75'N OF I	0.00	0.00	7,213.0	898.4	1,625.4	1,371,023.50	3,248,700.03	40° 20' 54.333 N	104° 36' 27.715 W
- plan misses target center by 125.0ft at 7580.8ft MD (7213.0 TVD, 823.4 N, 1725.4 E)									
- Polygon									
Point 1			7,213.0	0.0	0.0	1,371,023.50	3,248,700.03		
Point 2			7,213.0	0.0	200.0	1,371,025.50	3,248,900.01		
Target BHL 75'FNL &	0.00	0.00	6,000.0	823.4	1,725.4	1,370,949.51	3,248,800.74	40° 20' 53.592 N	104° 36' 26.424 W
- plan hits target center									
- Point									
Target Circle 75'FNL I	0.00	0.00	6,728.0	823.4	1,725.4	1,370,949.51	3,248,800.74	40° 20' 53.592 N	104° 36' 26.424 W
- plan hits target center									
- Circle (radius 75.0)									

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")	
650.3	650.0	8 5/8"	8-5/8	12-1/4	

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
7,095.8	6,728.0	Niobrara		0.00		
7,430.8	7,063.0	Codell		0.00		