

# ENSIGN

## Directional

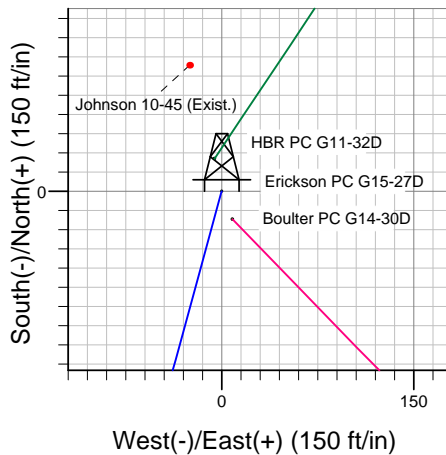
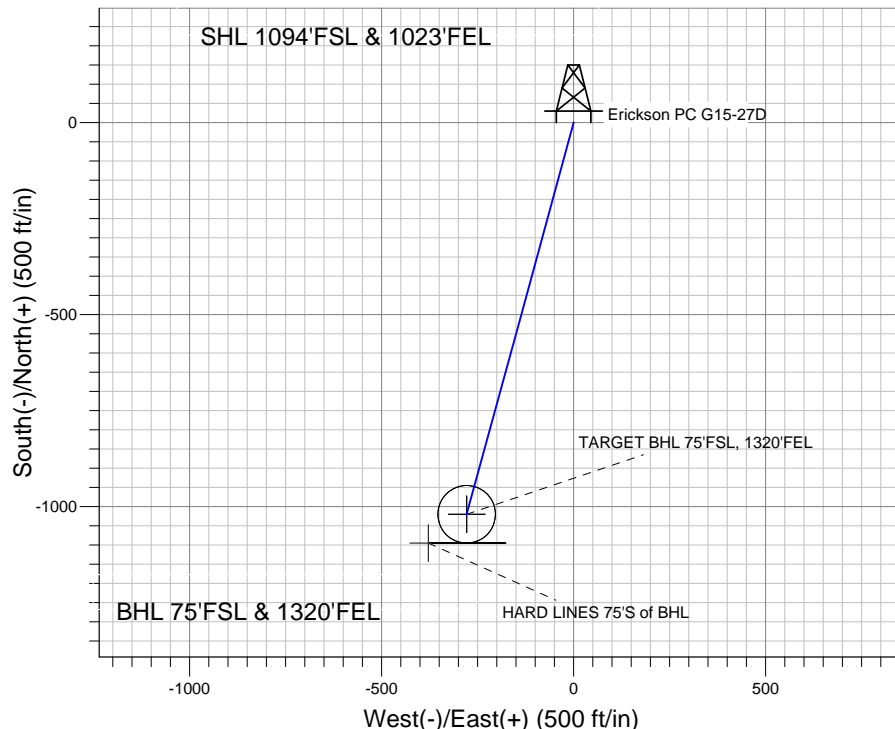
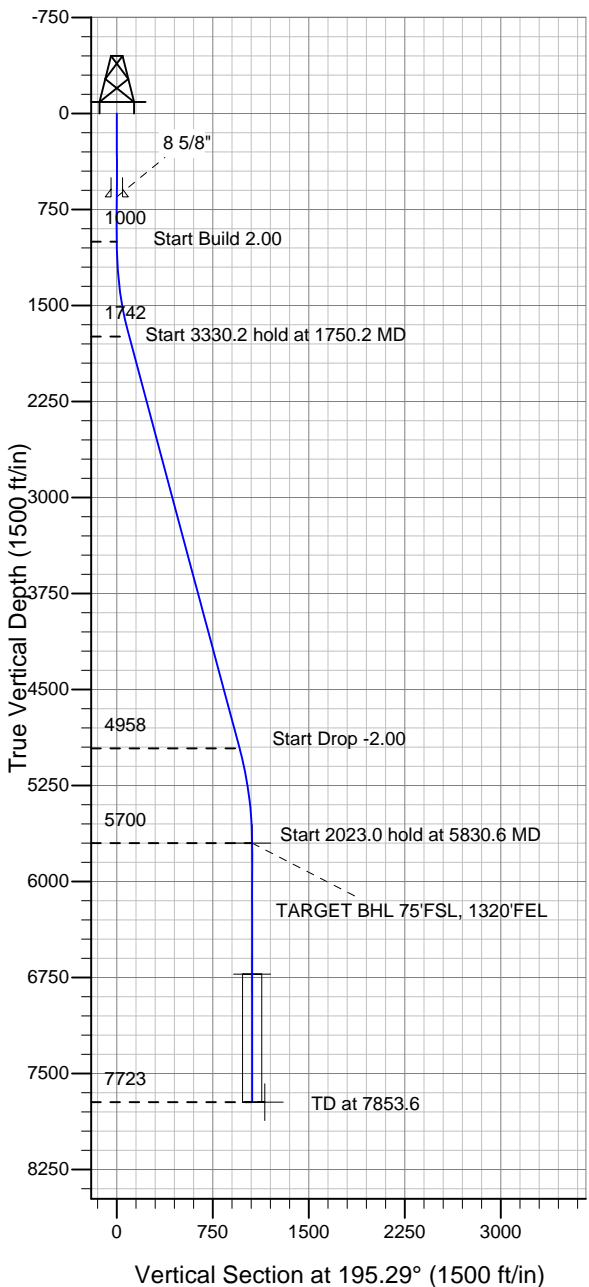
### Well Name: Erickson PC G15-27D

Surface Location: Erickson PC G15-27D Pad Sec.10-T4N-R65W  
North American Datum 1983 US State Plane 1983 Colorado Northern Zone

Ground Elevation: 4680.0

+N/-S +E/-W Northing Easting Latitude Longitude Slot  
0.0 0.0 1361572.50 3238862.41 40° 19' 21.900 N 104° 38' 35.952 W  
Original Well Elev WELL @ 4693.0ft (Original Well Elev)

### NOBLE ENERGY INC WELD COUNTY CO



Erickson PC G15-27D Pad Sec.10-T4N-R65W  
Erickson PC G15-27D  
Noble Erickson PC G15-27D Pad Sec.10-T4N-R65W  
6:42, November 03 2010



Azimuths to True North  
Magnetic North: 8.87°

Magnetic Field  
Strength: 53170.1snT  
Dip Angle: 67.03°  
Date: 11/3/2010  
Model: IGRF2010

### WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
TARGET BHL 75'FSL, 1320'FEL	5700.0	-1020.1	-278.9	40° 19' 11.820 N	104° 38' 39.552 W	Point
TARGET CIRCLE 75'FSL, 1320'FEL	6723.0	-1020.1	-278.9	40° 19' 11.820 N	104° 38' 39.552 W	Circle (Radius: 75.0)
HARD LINES 75'S of BHL	7723.0	-1095.0	-378.9	40° 19' 11.079 N	104° 38' 40.844 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	1000.0	0.00	0.00	1000.0	0.0	0.0	0.00	0.00	0.0	
3	1750.2	15.00	195.29	1741.7	-94.2	-25.8	2.00	195.29	97.7	
4	5080.4	15.00	195.29	4958.3	-925.8	-253.1	0.00	0.00	959.8	
5	5830.6	0.00	0.00	5700.0	-1020.1	-278.9	2.00	180.00	1057.5	TARGET BHL 75'FSL, 1320'FEL
6	7853.6	0.00	0.00	7723.0	-1020.1	-278.9	0.00	0.00	1057.5	



## **Directional**

### **NOBLE ENERGY INC WELD COUNTY CO**

**SEC.10-T4N-R65W**

**Erickson PC G15-27D Pad Sec.10-T4N-R65W**

**Erickson PC G15-27D**

**Wellbore #1**

**Plan: Noble Erickson PC G15-27D Pad Sec.10-T4N-R65W**

### **Standard Planning Report**

**03 November, 2010**



<b>Database:</b>	Landmark	<b>Local Co-ordinate Reference:</b>	Well Erickson PC G15-27D
<b>Company:</b>	NOBLE ENERGY INC WELD COUNTY CO	<b>TVD Reference:</b>	WELL @ 4693.0ft (Original Well Elev)
<b>Project:</b>	SEC.10-T4N-R65W	<b>MD Reference:</b>	WELL @ 4693.0ft (Original Well Elev)
<b>Site:</b>	Erickson PC G15-27D Pad Sec.10-T4N-R65W	<b>North Reference:</b>	True
<b>Well:</b>	Erickson PC G15-27D	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Noble Erickson PC G15-27D Pad Sec.10-T4N-		

<b>Project</b>	SEC.10-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 Erickson PC G15-27D Pad Sec.10-T4N-R65W					
Site Position:		Northing:	1,361,572.51 ft	Latitude:	40° 19' 21.900 N
From:	Lat/Long	Easting:	3,238,862.41 ft	Longitude:	104° 38' 35.952 W
Position Uncertainty:	0.0 ft	Slot Radius:	"	Grid Convergence:	0.55 °

Well		Erickson PC G15-27D				
Well Position	+N-S	0.0 ft	Northing:	1,361,572.50 ft	Latitude:	40° 19' 21.900 N
	+E-W	0.0 ft	Easting:	3,238,862.41 ft	Longitude:	104° 38' 35.952 W
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,680.0 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	11/3/2010	8.88	67.03	53,170

<b>Design</b>	Noble Erickson PC G15-27D Pad Sec.10-T4N-R65W			
<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	195.29

<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	
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,750.2	15.00	195.29	1,741.7	-94.2	-25.8	2.00	2.00	0.00	195.29	
5,080.4	15.00	195.29	4,958.3	-925.8	-253.1	0.00	0.00	0.00	0.00	
5,830.6	0.00	0.00	5,700.0	-1,020.1	-278.9	2.00	-2.00	0.00	180.00	TARGET BHL 75'F'
7,853.6	0.00	0.00	7,723.0	-1,020.1	-278.9	0.00	0.00	0.00	0.00	

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<b>Project:</b>	SEC.10-T4N-R65W	<b>MD Reference:</b>	WELL @ 4693.0ft (Original Well Elev)
<b>Site:</b>	Erickson PC G15-27D Pad Sec.10-T4N-R65W	<b>North Reference:</b>	True
<b>Well:</b>	Erickson PC G15-27D	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Noble Erickson PC G15-27D Pad Sec.10-T4N-		

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
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
760.0	0.00	0.00	760.0	0.0	0.0	0.0	0.00	0.00	0.00
800.0	0.00	0.00	800.0	0.0	0.0	0.0	0.00	0.00	0.00
840.0	0.00	0.00	840.0	0.0	0.0	0.0	0.00	0.00	0.00
880.0	0.00	0.00	880.0	0.0	0.0	0.0	0.00	0.00	0.00
920.0	0.00	0.00	920.0	0.0	0.0	0.0	0.00	0.00	0.00
960.0	0.00	0.00	960.0	0.0	0.0	0.0	0.00	0.00	0.00
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.0	0.00	0.00	0.00
1,040.0	0.80	195.29	1,040.0	-0.3	-0.1	0.3	2.00	2.00	0.00
1,080.0	1.60	195.29	1,080.0	-1.1	-0.3	1.1	2.00	2.00	0.00
1,120.0	2.40	195.29	1,120.0	-2.4	-0.7	2.5	2.00	2.00	0.00
1,160.0	3.20	195.29	1,159.9	-4.3	-1.2	4.5	2.00	2.00	0.00
1,200.0	4.00	195.29	1,199.8	-6.7	-1.8	7.0	2.00	2.00	0.00
1,240.0	4.80	195.29	1,239.7	-9.7	-2.6	10.0	2.00	2.00	0.00
1,280.0	5.60	195.29	1,279.6	-13.2	-3.6	13.7	2.00	2.00	0.00
1,320.0	6.40	195.29	1,319.3	-17.2	-4.7	17.9	2.00	2.00	0.00
1,360.0	7.20	195.29	1,359.1	-21.8	-6.0	22.6	2.00	2.00	0.00
1,400.0	8.00	195.29	1,398.7	-26.9	-7.4	27.9	2.00	2.00	0.00
1,440.0	8.80	195.29	1,438.3	-32.5	-8.9	33.7	2.00	2.00	0.00
1,480.0	9.60	195.29	1,477.8	-38.7	-10.6	40.1	2.00	2.00	0.00
1,520.0	10.40	195.29	1,517.1	-45.4	-12.4	47.1	2.00	2.00	0.00
1,560.0	11.20	195.29	1,556.4	-52.6	-14.4	54.6	2.00	2.00	0.00
1,600.0	12.00	195.29	1,595.6	-60.4	-16.5	62.6	2.00	2.00	0.00
1,640.0	12.80	195.29	1,634.7	-68.7	-18.8	71.2	2.00	2.00	0.00
1,680.0	13.60	195.29	1,673.6	-77.5	-21.2	80.3	2.00	2.00	0.00
1,720.0	14.40	195.29	1,712.4	-86.8	-23.7	90.0	2.00	2.00	0.00
1,750.2	15.00	195.29	1,741.7	-94.2	-25.8	97.7	2.00	2.00	0.00
1,760.0	15.00	195.29	1,751.1	-96.7	-26.4	100.2	0.00	0.00	0.00
1,800.0	15.00	195.29	1,789.8	-106.6	-29.2	110.6	0.00	0.00	0.00
1,840.0	15.00	195.29	1,828.4	-116.6	-31.9	120.9	0.00	0.00	0.00
1,880.0	15.00	195.29	1,867.0	-126.6	-34.6	131.3	0.00	0.00	0.00
1,920.0	15.00	195.29	1,905.7	-136.6	-37.3	141.6	0.00	0.00	0.00
1,960.0	15.00	195.29	1,944.3	-146.6	-40.1	152.0	0.00	0.00	0.00
2,000.0	15.00	195.29	1,982.9	-156.6	-42.8	162.3	0.00	0.00	0.00
2,040.0	15.00	195.29	2,021.6	-166.6	-45.5	172.7	0.00	0.00	0.00

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<b>Project:</b>	SEC.10-T4N-R65W	<b>MD Reference:</b>	WELL @ 4693.0ft (Original Well Elev)
<b>Site:</b>	Erickson PC G15-27D Pad Sec.10-T4N-R65W	<b>North Reference:</b>	True
<b>Well:</b>	Erickson PC G15-27D	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Noble Erickson PC G15-27D Pad Sec.10-T4N-		

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)
2,080.0	15.00	195.29	2,060.2	-176.6	-48.3	183.0	0.00	0.00	0.00
2,120.0	15.00	195.29	2,098.8	-186.6	-51.0	193.4	0.00	0.00	0.00
2,160.0	15.00	195.29	2,137.5	-196.5	-53.7	203.8	0.00	0.00	0.00
2,200.0	15.00	195.29	2,176.1	-206.5	-56.5	214.1	0.00	0.00	0.00
2,240.0	15.00	195.29	2,214.8	-216.5	-59.2	224.5	0.00	0.00	0.00
2,280.0	15.00	195.29	2,253.4	-226.5	-61.9	234.8	0.00	0.00	0.00
2,320.0	15.00	195.29	2,292.0	-236.5	-64.7	245.2	0.00	0.00	0.00
2,360.0	15.00	195.29	2,330.7	-246.5	-67.4	255.5	0.00	0.00	0.00
2,400.0	15.00	195.29	2,369.3	-256.5	-70.1	265.9	0.00	0.00	0.00
2,440.0	15.00	195.29	2,407.9	-266.5	-72.8	276.2	0.00	0.00	0.00
2,480.0	15.00	195.29	2,446.6	-276.5	-75.6	286.6	0.00	0.00	0.00
2,520.0	15.00	195.29	2,485.2	-286.4	-78.3	297.0	0.00	0.00	0.00
2,560.0	15.00	195.29	2,523.8	-296.4	-81.0	307.3	0.00	0.00	0.00
2,600.0	15.00	195.29	2,562.5	-306.4	-83.8	317.7	0.00	0.00	0.00
2,640.0	15.00	195.29	2,601.1	-316.4	-86.5	328.0	0.00	0.00	0.00
2,680.0	15.00	195.29	2,639.8	-326.4	-89.2	338.4	0.00	0.00	0.00
2,720.0	15.00	195.29	2,678.4	-336.4	-92.0	348.7	0.00	0.00	0.00
2,760.0	15.00	195.29	2,717.0	-346.4	-94.7	359.1	0.00	0.00	0.00
2,800.0	15.00	195.29	2,755.7	-356.4	-97.4	369.4	0.00	0.00	0.00
2,840.0	15.00	195.29	2,794.3	-366.4	-100.2	379.8	0.00	0.00	0.00
2,880.0	15.00	195.29	2,832.9	-376.3	-102.9	390.2	0.00	0.00	0.00
2,920.0	15.00	195.29	2,871.6	-386.3	-105.6	400.5	0.00	0.00	0.00
2,960.0	15.00	195.29	2,910.2	-396.3	-108.3	410.9	0.00	0.00	0.00
3,000.0	15.00	195.29	2,948.8	-406.3	-111.1	421.2	0.00	0.00	0.00
3,040.0	15.00	195.29	2,987.5	-416.3	-113.8	431.6	0.00	0.00	0.00
3,080.0	15.00	195.29	3,026.1	-426.3	-116.5	441.9	0.00	0.00	0.00
3,120.0	15.00	195.29	3,064.8	-436.3	-119.3	452.3	0.00	0.00	0.00
3,160.0	15.00	195.29	3,103.4	-446.3	-122.0	462.6	0.00	0.00	0.00
3,200.0	15.00	195.29	3,142.0	-456.3	-124.7	473.0	0.00	0.00	0.00
3,240.0	15.00	195.29	3,180.7	-466.2	-127.5	483.4	0.00	0.00	0.00
3,280.0	15.00	195.29	3,219.3	-476.2	-130.2	493.7	0.00	0.00	0.00
3,320.0	15.00	195.29	3,257.9	-486.2	-132.9	504.1	0.00	0.00	0.00
3,360.0	15.00	195.29	3,296.6	-496.2	-135.6	514.4	0.00	0.00	0.00
3,400.0	15.00	195.29	3,335.2	-506.2	-138.4	524.8	0.00	0.00	0.00
3,440.0	15.00	195.29	3,373.8	-516.2	-141.1	535.1	0.00	0.00	0.00
3,480.0	15.00	195.29	3,412.5	-526.2	-143.8	545.5	0.00	0.00	0.00
3,520.0	15.00	195.29	3,451.1	-536.2	-146.6	555.8	0.00	0.00	0.00
3,560.0	15.00	195.29	3,489.8	-546.2	-149.3	566.2	0.00	0.00	0.00
3,600.0	15.00	195.29	3,528.4	-556.1	-152.0	576.6	0.00	0.00	0.00
3,640.0	15.00	195.29	3,567.0	-566.1	-154.8	586.9	0.00	0.00	0.00
3,680.0	15.00	195.29	3,605.7	-576.1	-157.5	597.3	0.00	0.00	0.00
3,720.0	15.00	195.29	3,644.3	-586.1	-160.2	607.6	0.00	0.00	0.00
3,760.0	15.00	195.29	3,682.9	-596.1	-163.0	618.0	0.00	0.00	0.00
3,800.0	15.00	195.29	3,721.6	-606.1	-165.7	628.3	0.00	0.00	0.00
3,840.0	15.00	195.29	3,760.2	-616.1	-168.4	638.7	0.00	0.00	0.00
3,880.0	15.00	195.29	3,798.8	-626.1	-171.1	649.0	0.00	0.00	0.00
3,920.0	15.00	195.29	3,837.5	-636.1	-173.9	659.4	0.00	0.00	0.00
3,960.0	15.00	195.29	3,876.1	-646.0	-176.6	669.8	0.00	0.00	0.00
4,000.0	15.00	195.29	3,914.8	-656.0	-179.3	680.1	0.00	0.00	0.00
4,040.0	15.00	195.29	3,953.4	-666.0	-182.1	690.5	0.00	0.00	0.00
4,080.0	15.00	195.29	3,992.0	-676.0	-184.8	700.8	0.00	0.00	0.00
4,120.0	15.00	195.29	4,030.7	-686.0	-187.5	711.2	0.00	0.00	0.00
4,160.0	15.00	195.29	4,069.3	-696.0	-190.3	721.5	0.00	0.00	0.00

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<b>Project:</b>	SEC.10-T4N-R65W	<b>MD Reference:</b>	WELL @ 4693.0ft (Original Well Elev)
<b>Site:</b>	Erickson PC G15-27D Pad Sec.10-T4N-R65W	<b>North Reference:</b>	True
<b>Well:</b>	Erickson PC G15-27D	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Noble Erickson PC G15-27D Pad Sec.10-T4N-		

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)
4,200.0	15.00	195.29	4,107.9	-706.0	-193.0	731.9	0.00	0.00	0.00
4,240.0	15.00	195.29	4,146.6	-716.0	-195.7	742.2	0.00	0.00	0.00
4,280.0	15.00	195.29	4,185.2	-726.0	-198.5	752.6	0.00	0.00	0.00
4,320.0	15.00	195.29	4,223.8	-735.9	-201.2	762.9	0.00	0.00	0.00
4,360.0	15.00	195.29	4,262.5	-745.9	-203.9	773.3	0.00	0.00	0.00
4,400.0	15.00	195.29	4,301.1	-755.9	-206.6	783.7	0.00	0.00	0.00
4,440.0	15.00	195.29	4,339.8	-765.9	-209.4	794.0	0.00	0.00	0.00
4,480.0	15.00	195.29	4,378.4	-775.9	-212.1	804.4	0.00	0.00	0.00
4,520.0	15.00	195.29	4,417.0	-785.9	-214.8	814.7	0.00	0.00	0.00
4,560.0	15.00	195.29	4,455.7	-795.9	-217.6	825.1	0.00	0.00	0.00
4,600.0	15.00	195.29	4,494.3	-805.9	-220.3	835.4	0.00	0.00	0.00
4,640.0	15.00	195.29	4,532.9	-815.9	-223.0	845.8	0.00	0.00	0.00
4,680.0	15.00	195.29	4,571.6	-825.8	-225.8	856.1	0.00	0.00	0.00
4,720.0	15.00	195.29	4,610.2	-835.8	-228.5	866.5	0.00	0.00	0.00
4,760.0	15.00	195.29	4,648.8	-845.8	-231.2	876.9	0.00	0.00	0.00
4,800.0	15.00	195.29	4,687.5	-855.8	-234.0	887.2	0.00	0.00	0.00
4,840.0	15.00	195.29	4,726.1	-865.8	-236.7	897.6	0.00	0.00	0.00
4,880.0	15.00	195.29	4,764.8	-875.8	-239.4	907.9	0.00	0.00	0.00
4,920.0	15.00	195.29	4,803.4	-885.8	-242.1	918.3	0.00	0.00	0.00
4,960.0	15.00	195.29	4,842.0	-895.8	-244.9	928.6	0.00	0.00	0.00
5,000.0	15.00	195.29	4,880.7	-905.8	-247.6	939.0	0.00	0.00	0.00
5,040.0	15.00	195.29	4,919.3	-915.7	-250.3	949.3	0.00	0.00	0.00
5,080.0	15.00	195.29	4,957.9	-925.7	-253.1	959.7	0.00	0.00	0.00
5,080.4	15.00	195.29	4,958.3	-925.8	-253.1	959.8	0.00	0.00	0.00
5,120.0	14.21	195.29	4,996.6	-935.5	-255.7	969.8	2.00	-2.00	0.00
5,160.0	13.41	195.29	5,035.5	-944.7	-258.2	979.3	2.00	-2.00	0.00
5,200.0	12.61	195.29	5,074.5	-953.4	-260.6	988.3	2.00	-2.00	0.00
5,240.0	11.81	195.29	5,113.6	-961.5	-262.9	996.8	2.00	-2.00	0.00
5,280.0	11.01	195.29	5,152.8	-969.2	-264.9	1,004.7	2.00	-2.00	0.00
5,320.0	10.21	195.29	5,192.1	-976.3	-266.9	1,012.1	2.00	-2.00	0.00
5,360.0	9.41	195.29	5,231.5	-982.8	-268.7	1,018.9	2.00	-2.00	0.00
5,400.0	8.61	195.29	5,271.0	-988.9	-270.3	1,025.2	2.00	-2.00	0.00
5,440.0	7.81	195.29	5,310.6	-994.4	-271.8	1,030.9	2.00	-2.00	0.00
5,480.0	7.01	195.29	5,350.3	-999.4	-273.2	1,036.0	2.00	-2.00	0.00
5,520.0	6.21	195.29	5,390.0	-1,003.8	-274.4	1,040.7	2.00	-2.00	0.00
5,560.0	5.41	195.29	5,429.8	-1,007.7	-275.5	1,044.7	2.00	-2.00	0.00
5,600.0	4.61	195.29	5,469.6	-1,011.1	-276.4	1,048.2	2.00	-2.00	0.00
5,640.0	3.81	195.29	5,509.5	-1,013.9	-277.2	1,051.1	2.00	-2.00	0.00
5,680.0	3.01	195.29	5,549.4	-1,016.2	-277.8	1,053.5	2.00	-2.00	0.00
5,720.0	2.21	195.29	5,589.4	-1,018.0	-278.3	1,055.3	2.00	-2.00	0.00
5,760.0	1.41	195.29	5,629.4	-1,019.2	-278.6	1,056.6	2.00	-2.00	0.00
5,800.0	0.61	195.29	5,669.4	-1,019.9	-278.8	1,057.3	2.00	-2.00	0.00
5,830.6	0.00	0.00	5,700.0	-1,020.1	-278.9	1,057.5	2.00	-2.00	0.00
5,840.0	0.00	0.00	5,709.4	-1,020.1	-278.9	1,057.5	0.00	0.00	0.00
5,880.0	0.00	0.00	5,749.4	-1,020.1	-278.9	1,057.5	0.00	0.00	0.00
5,920.0	0.00	0.00	5,789.4	-1,020.1	-278.9	1,057.5	0.00	0.00	0.00
5,960.0	0.00	0.00	5,829.4	-1,020.1	-278.9	1,057.5	0.00	0.00	0.00
6,000.0	0.00	0.00	5,869.4	-1,020.1	-278.9	1,057.5	0.00	0.00	0.00
6,040.0	0.00	0.00	5,909.4	-1,020.1	-278.9	1,057.5	0.00	0.00	0.00
6,080.0	0.00	0.00	5,949.4	-1,020.1	-278.9	1,057.5	0.00	0.00	0.00
6,120.0	0.00	0.00	5,989.4	-1,020.1	-278.9	1,057.5	0.00	0.00	0.00
6,160.0	0.00	0.00	6,029.4	-1,020.1	-278.9	1,057.5	0.00	0.00	0.00
6,200.0	0.00	0.00	6,069.4	-1,020.1	-278.9	1,057.5	0.00	0.00	0.00

<b>Database:</b>	Landmark	<b>Local Co-ordinate Reference:</b>	Well Erickson PC G15-27D
<b>Company:</b>	NOBLE ENERGY INC WELD COUNTY CO	<b>TVD Reference:</b>	WELL @ 4693.0ft (Original Well Elev)
<b>Project:</b>	SEC.10-T4N-R65W	<b>MD Reference:</b>	WELL @ 4693.0ft (Original Well Elev)
<b>Site:</b>	Erickson PC G15-27D Pad Sec.10-T4N-R65W	<b>North Reference:</b>	True
<b>Well:</b>	Erickson PC G15-27D	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Noble Erickson PC G15-27D Pad Sec.10-T4N-		

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)
6,240.0	0.00	0.00	6,109.4	-1,020.1	-278.9	1,057.5	0.00	0.00	0.00
6,280.0	0.00	0.00	6,149.4	-1,020.1	-278.9	1,057.5	0.00	0.00	0.00
6,320.0	0.00	0.00	6,189.4	-1,020.1	-278.9	1,057.5	0.00	0.00	0.00
6,360.0	0.00	0.00	6,229.4	-1,020.1	-278.9	1,057.5	0.00	0.00	0.00
6,400.0	0.00	0.00	6,269.4	-1,020.1	-278.9	1,057.5	0.00	0.00	0.00
6,440.0	0.00	0.00	6,309.4	-1,020.1	-278.9	1,057.5	0.00	0.00	0.00
6,480.0	0.00	0.00	6,349.4	-1,020.1	-278.9	1,057.5	0.00	0.00	0.00
6,520.0	0.00	0.00	6,389.4	-1,020.1	-278.9	1,057.5	0.00	0.00	0.00
6,560.0	0.00	0.00	6,429.4	-1,020.1	-278.9	1,057.5	0.00	0.00	0.00
6,600.0	0.00	0.00	6,469.4	-1,020.1	-278.9	1,057.5	0.00	0.00	0.00
6,640.0	0.00	0.00	6,509.4	-1,020.1	-278.9	1,057.5	0.00	0.00	0.00
6,680.0	0.00	0.00	6,549.4	-1,020.1	-278.9	1,057.5	0.00	0.00	0.00
6,720.0	0.00	0.00	6,589.4	-1,020.1	-278.9	1,057.5	0.00	0.00	0.00
6,760.0	0.00	0.00	6,629.4	-1,020.1	-278.9	1,057.5	0.00	0.00	0.00
6,800.0	0.00	0.00	6,669.4	-1,020.1	-278.9	1,057.5	0.00	0.00	0.00
6,840.0	0.00	0.00	6,709.4	-1,020.1	-278.9	1,057.5	0.00	0.00	0.00
6,880.0	0.00	0.00	6,749.4	-1,020.1	-278.9	1,057.5	0.00	0.00	0.00
6,920.0	0.00	0.00	6,789.4	-1,020.1	-278.9	1,057.5	0.00	0.00	0.00
6,960.0	0.00	0.00	6,829.4	-1,020.1	-278.9	1,057.5	0.00	0.00	0.00
7,000.0	0.00	0.00	6,869.4	-1,020.1	-278.9	1,057.5	0.00	0.00	0.00
7,040.0	0.00	0.00	6,909.4	-1,020.1	-278.9	1,057.5	0.00	0.00	0.00
7,080.0	0.00	0.00	6,949.4	-1,020.1	-278.9	1,057.5	0.00	0.00	0.00
7,120.0	0.00	0.00	6,989.4	-1,020.1	-278.9	1,057.5	0.00	0.00	0.00
7,160.0	0.00	0.00	7,029.4	-1,020.1	-278.9	1,057.5	0.00	0.00	0.00
7,200.0	0.00	0.00	7,069.4	-1,020.1	-278.9	1,057.5	0.00	0.00	0.00
7,240.0	0.00	0.00	7,109.4	-1,020.1	-278.9	1,057.5	0.00	0.00	0.00
7,280.0	0.00	0.00	7,149.4	-1,020.1	-278.9	1,057.5	0.00	0.00	0.00
7,320.0	0.00	0.00	7,189.4	-1,020.1	-278.9	1,057.5	0.00	0.00	0.00
7,360.0	0.00	0.00	7,229.4	-1,020.1	-278.9	1,057.5	0.00	0.00	0.00
7,400.0	0.00	0.00	7,269.4	-1,020.1	-278.9	1,057.5	0.00	0.00	0.00
7,440.0	0.00	0.00	7,309.4	-1,020.1	-278.9	1,057.5	0.00	0.00	0.00
7,480.0	0.00	0.00	7,349.4	-1,020.1	-278.9	1,057.5	0.00	0.00	0.00
7,520.0	0.00	0.00	7,389.4	-1,020.1	-278.9	1,057.5	0.00	0.00	0.00
7,560.0	0.00	0.00	7,429.4	-1,020.1	-278.9	1,057.5	0.00	0.00	0.00
7,600.0	0.00	0.00	7,469.4	-1,020.1	-278.9	1,057.5	0.00	0.00	0.00
7,640.0	0.00	0.00	7,509.4	-1,020.1	-278.9	1,057.5	0.00	0.00	0.00
7,680.0	0.00	0.00	7,549.4	-1,020.1	-278.9	1,057.5	0.00	0.00	0.00
7,720.0	0.00	0.00	7,589.4	-1,020.1	-278.9	1,057.5	0.00	0.00	0.00
7,760.0	0.00	0.00	7,629.4	-1,020.1	-278.9	1,057.5	0.00	0.00	0.00
7,800.0	0.00	0.00	7,669.4	-1,020.1	-278.9	1,057.5	0.00	0.00	0.00
7,840.0	0.00	0.00	7,709.4	-1,020.1	-278.9	1,057.5	0.00	0.00	0.00
7,853.6	0.00	0.00	7,723.0	-1,020.1	-278.9	1,057.5	0.00	0.00	0.00



<b>Database:</b>	Landmark	<b>Local Co-ordinate Reference:</b>	Well Erickson PC G15-27D
<b>Company:</b>	NOBLE ENERGY INC WELD COUNTY CO	<b>TVD Reference:</b>	WELL @ 4693.0ft (Original Well Elev)
<b>Project:</b>	SEC.10-T4N-R65W	<b>MD Reference:</b>	WELL @ 4693.0ft (Original Well Elev)
<b>Site:</b>	Erickson PC G15-27D Pad Sec.10-T4N-R65W	<b>North Reference:</b>	True
<b>Well:</b>	Erickson PC G15-27D	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Noble Erickson PC G15-27D Pad Sec.10-T4N-		

Targets									
Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
TARGET BHL 75'FSL - plan hits target - Point	0.00	0.00	5,700.0	-1,020.1	-278.9	1,360,549.85	3,238,593.44	40° 19' 11.820 N	104° 38' 39.552 W
HARD LINES 75'S of - plan misses by 125.0ft at 7853.6ft MD (7723.0 TVD, -1020.1 N, -278.9 E) - Polygon	0.00	0.00	7,723.0	-1,095.0	-378.9	1,360,473.94	3,238,494.12	40° 19' 11.079 N	104° 38' 40.844 W
Point 1			7,723.0	0.0	0.0	1,360,473.94	3,238,494.12		
Point 2			7,723.0	0.0	200.0	1,360,475.87	3,238,694.11		
TARGET CIRCLE 75' - plan hits target - Circle (radius 75.0)	0.00	0.00	6,723.0	-1,020.1	-278.9	1,360,549.85	3,238,593.44	40° 19' 11.820 N	104° 38' 39.552 W

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 (°)	
6,853.6	6,723.0	NIOBRARA		0.00		
7,183.6	7,053.0	CODELL		0.00		
7,578.6	7,448.0	D-SAND		0.00		
7,653.6	7,523.0	J-SAND		0.00		