



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	700.0	0.00	0.00	700.0	0.0	0.0	0.00	0.00	0.0	
3	1644.8	18.90	345.34	1627.8	149.4	-39.1	2.00	345.34	154.4	
4	5179.8	18.90	345.34	4972.2	1256.9	-328.8	0.00	0.00	1299.2	
5	6124.6	0.00	0.00	5900.0	1406.3	-367.8	2.00	180.00	1453.6	TARGET BHL 100'FSL, 1320'FEL
6	7756.6	0.00	0.00	7532.0	1406.3	-367.8	0.00	0.00	1453.6	



NOBLE ENERGY INC WELD COUNTY CO

SEC.36-T5N-R67W

Bernhardt State PC N36-27D Pad Sec.36-T5N-R67W

Bernhardt State PC N36-27D

Wellbore #1

Plan: Noble Bernhardt State PC N36-27D Plan#1 (11-02-10)

Standard Planning Report

05 November, 2010



Database: Landmark
Company: NOBLE ENERGY INC WELD COUNTY CO
Project: SEC.36-T5N-R67W
Site: Bernhardt State PC N36-27D Pad
 Sec.36-T5N-R67W
Well: Bernhardt State PC N36-27D
Wellbore: Wellbore #1
Design: Noble Bernhardt State PC N36-27D Plan#1 (11

Local Co-ordinate Reference: Well Bernhardt State PC N36-27D
TVD Reference: WELL @ 4897.0ft (Original Well Elev)
MD Reference: WELL @ 4897.0ft (Original Well Elev)
North Reference: True
Survey Calculation Method: Minimum Curvature

Project	SEC.36-T5N-R67W, 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	Bernhardt State PC N36-27D Pad Sec.36-T5N-R67W				
Site Position:		Northing:	1,374,576.85 ft	Latitude:	40° 21' 34.956 N
From:	Lat/Long	Easting:	3,185,189.53 ft	Longitude:	104° 50' 7.656 W
Position Uncertainty:	0.0 ft	Slot Radius:	"	Grid Convergence:	0.43 °

Well	Bernhardt State PC N36-27D					
Well Position	+N/-S	0.0 ft	Northing:	1,374,576.84 ft	Latitude:	40° 21' 34.956 N
	+E/-W	0.0 ft	Easting:	3,185,189.53 ft	Longitude:	104° 50' 7.656 W
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,884.0 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination	Dip Angle	Field Strength
			(°)	(°)	(nT)
	IGRF2010	11/2/2010	8.98	67.03	53,167

Design	Noble Bernhardt State PC N36-27D Plan#1 (11-02-10)				
Audit Notes:					
Version:	Phase:	PROTOTYPE	Tie On Depth:	0.0	
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W	Direction	
	(ft)	(ft)	(ft)	(°)	
	0.0	0.0	0.0	345.34	

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	
700.0	0.00	0.00	700.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,644.8	18.90	345.34	1,627.8	149.4	-39.1	2.00	2.00	0.00	345.34	
5,179.8	18.90	345.34	4,972.2	1,256.9	-328.8	0.00	0.00	0.00	0.00	
6,124.6	0.00	0.00	5,900.0	1,406.3	-367.8	2.00	-2.00	0.00	180.00	TARGET BHL 100'
7,756.6	0.00	0.00	7,532.0	1,406.3	-367.8	0.00	0.00	0.00	0.00	

Database: Landmark
 Company: NOBLE ENERGY INC WELD COUNTY CO
 Project: SEC.36-T5N-R67W
 Site: Bernhardt State PC N36-27D Pad
 Sec.36-T5N-R67W
 Well: Bernhardt State PC N36-27D
 Wellbore: Wellbore #1
 Design: Noble Bernhardt State PC N36-27D Plan#1 (11

Local Co-ordinate Reference: Well Bernhardt State PC N36-27D
 TVD Reference: WELL @ 4897.0ft (Original Well Elev)
 MD Reference: WELL @ 4897.0ft (Original Well Elev)
 North Reference: True
 Survey Calculation Method: Minimum Curvature

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
8 5/8"									
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
700.0	0.00	0.00	700.0	0.0	0.0	0.0	0.00	0.00	0.00
720.0	0.40	345.34	720.0	0.1	0.0	0.1	2.00	2.00	0.00
760.0	1.20	345.34	760.0	0.6	-0.2	0.6	2.00	2.00	0.00
800.0	2.00	345.34	800.0	1.7	-0.4	1.7	2.00	2.00	0.00
840.0	2.80	345.34	839.9	3.3	-0.9	3.4	2.00	2.00	0.00
880.0	3.60	345.34	879.9	5.5	-1.4	5.7	2.00	2.00	0.00
920.0	4.40	345.34	919.8	8.2	-2.1	8.4	2.00	2.00	0.00
960.0	5.20	345.34	959.6	11.4	-3.0	11.8	2.00	2.00	0.00
1,000.0	6.00	345.34	999.5	15.2	-4.0	15.7	2.00	2.00	0.00
1,040.0	6.80	345.34	1,039.2	19.5	-5.1	20.2	2.00	2.00	0.00
1,080.0	7.60	345.34	1,078.9	24.3	-6.4	25.2	2.00	2.00	0.00
1,120.0	8.40	345.34	1,118.5	29.7	-7.8	30.7	2.00	2.00	0.00
1,160.0	9.20	345.34	1,158.0	35.7	-9.3	36.9	2.00	2.00	0.00
1,200.0	10.00	345.34	1,197.5	42.1	-11.0	43.5	2.00	2.00	0.00
1,240.0	10.80	345.34	1,236.8	49.1	-12.8	50.7	2.00	2.00	0.00
1,280.0	11.60	345.34	1,276.0	56.6	-14.8	58.5	2.00	2.00	0.00
1,320.0	12.40	345.34	1,315.2	64.7	-16.9	66.8	2.00	2.00	0.00
1,360.0	13.20	345.34	1,354.2	73.2	-19.2	75.7	2.00	2.00	0.00
1,400.0	14.00	345.34	1,393.1	82.3	-21.5	85.1	2.00	2.00	0.00
1,440.0	14.80	345.34	1,431.8	92.0	-24.1	95.0	2.00	2.00	0.00
1,480.0	15.60	345.34	1,470.4	102.1	-26.7	105.5	2.00	2.00	0.00
1,520.0	16.40	345.34	1,508.8	112.8	-29.5	116.6	2.00	2.00	0.00
1,560.0	17.20	345.34	1,547.1	123.9	-32.4	128.1	2.00	2.00	0.00
1,600.0	18.00	345.34	1,585.3	135.6	-35.5	140.2	2.00	2.00	0.00
1,640.0	18.80	345.34	1,623.2	147.9	-38.7	152.8	2.00	2.00	0.00
1,644.8	18.90	345.34	1,627.8	149.4	-39.1	154.4	2.00	2.00	0.00
1,680.0	18.90	345.34	1,661.1	160.4	-42.0	165.8	0.00	0.00	0.00
1,720.0	18.90	345.34	1,698.9	172.9	-45.2	178.7	0.00	0.00	0.00
1,760.0	18.90	345.34	1,736.8	185.5	-48.5	191.7	0.00	0.00	0.00
1,800.0	18.90	345.34	1,774.6	198.0	-51.8	204.6	0.00	0.00	0.00
1,840.0	18.90	345.34	1,812.4	210.5	-55.1	217.6	0.00	0.00	0.00
1,880.0	18.90	345.34	1,850.3	223.1	-58.3	230.6	0.00	0.00	0.00
1,920.0	18.90	345.34	1,888.1	235.6	-61.6	243.5	0.00	0.00	0.00
1,960.0	18.90	345.34	1,926.0	248.1	-64.9	256.5	0.00	0.00	0.00

Database: Landmark
 Company: NOBLE ENERGY INC WELD COUNTY CO
 Project: SEC.36-T5N-R67W
 Site: Bernhardt State PC N36-27D Pad
 Sec.36-T5N-R67W
 Well: Bernhardt State PC N36-27D
 Wellbore: Wellbore #1
 Design: Noble Bernhardt State PC N36-27D Plan#1 (11)

Local Co-ordinate Reference: Well Bernhardt State PC N36-27D
 TVD Reference: WELL @ 4897.0ft (Original Well Elev)
 MD Reference: WELL @ 4897.0ft (Original Well Elev)
 North Reference: True

Survey Calculation Method: Minimum Curvature

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	18.90	345.34	1,963.8	260.6	-68.2	269.4	0.00	0.00	0.00
2,040.0	18.90	345.34	2,001.7	273.2	-71.5	282.4	0.00	0.00	0.00
2,080.0	18.90	345.34	2,039.5	285.7	-74.7	295.3	0.00	0.00	0.00
2,120.0	18.90	345.34	2,077.4	298.2	-78.0	308.3	0.00	0.00	0.00
2,160.0	18.90	345.34	2,115.2	310.8	-81.3	321.2	0.00	0.00	0.00
2,200.0	18.90	345.34	2,153.0	323.3	-84.6	334.2	0.00	0.00	0.00
2,240.0	18.90	345.34	2,190.9	335.8	-87.8	347.1	0.00	0.00	0.00
2,280.0	18.90	345.34	2,228.7	348.4	-91.1	360.1	0.00	0.00	0.00
2,320.0	18.90	345.34	2,266.6	360.9	-94.4	373.1	0.00	0.00	0.00
2,360.0	18.90	345.34	2,304.4	373.4	-97.7	386.0	0.00	0.00	0.00
2,400.0	18.90	345.34	2,342.3	386.0	-101.0	399.0	0.00	0.00	0.00
2,440.0	18.90	345.34	2,380.1	398.5	-104.2	411.9	0.00	0.00	0.00
2,480.0	18.90	345.34	2,418.0	411.0	-107.5	424.9	0.00	0.00	0.00
2,520.0	18.90	345.34	2,455.8	423.6	-110.8	437.8	0.00	0.00	0.00
2,560.0	18.90	345.34	2,493.6	436.1	-114.1	450.8	0.00	0.00	0.00
2,600.0	18.90	345.34	2,531.5	448.6	-117.4	463.7	0.00	0.00	0.00
2,640.0	18.90	345.34	2,569.3	461.2	-120.6	476.7	0.00	0.00	0.00
2,680.0	18.90	345.34	2,607.2	473.7	-123.9	489.6	0.00	0.00	0.00
2,720.0	18.90	345.34	2,645.0	486.2	-127.2	502.6	0.00	0.00	0.00
2,760.0	18.90	345.34	2,682.9	498.8	-130.5	515.5	0.00	0.00	0.00
2,800.0	18.90	345.34	2,720.7	511.3	-133.7	528.5	0.00	0.00	0.00
2,840.0	18.90	345.34	2,758.6	523.8	-137.0	541.5	0.00	0.00	0.00
2,880.0	18.90	345.34	2,796.4	536.4	-140.3	554.4	0.00	0.00	0.00
2,920.0	18.90	345.34	2,834.2	548.9	-143.6	567.4	0.00	0.00	0.00
2,960.0	18.90	345.34	2,872.1	561.4	-146.9	580.3	0.00	0.00	0.00
3,000.0	18.90	345.34	2,909.9	574.0	-150.1	593.3	0.00	0.00	0.00
3,040.0	18.90	345.34	2,947.8	586.5	-153.4	606.2	0.00	0.00	0.00
3,080.0	18.90	345.34	2,985.6	599.0	-156.7	619.2	0.00	0.00	0.00
3,120.0	18.90	345.34	3,023.5	611.6	-160.0	632.1	0.00	0.00	0.00
3,160.0	18.90	345.34	3,061.3	624.1	-163.2	645.1	0.00	0.00	0.00
3,200.0	18.90	345.34	3,099.2	636.6	-166.5	658.0	0.00	0.00	0.00
3,240.0	18.90	345.34	3,137.0	649.1	-169.8	671.0	0.00	0.00	0.00
3,280.0	18.90	345.34	3,174.8	661.7	-173.1	683.9	0.00	0.00	0.00
3,320.0	18.90	345.34	3,212.7	674.2	-176.4	696.9	0.00	0.00	0.00
3,360.0	18.90	345.34	3,250.5	686.7	-179.6	709.9	0.00	0.00	0.00
3,400.0	18.90	345.34	3,288.4	699.3	-182.9	722.8	0.00	0.00	0.00
3,440.0	18.90	345.34	3,326.2	711.8	-186.2	735.8	0.00	0.00	0.00
3,480.0	18.90	345.34	3,364.1	724.3	-189.5	748.7	0.00	0.00	0.00
3,520.0	18.90	345.34	3,401.9	736.9	-192.8	761.7	0.00	0.00	0.00
3,560.0	18.90	345.34	3,439.8	749.4	-196.0	774.6	0.00	0.00	0.00
3,600.0	18.90	345.34	3,477.6	761.9	-199.3	787.6	0.00	0.00	0.00
3,640.0	18.90	345.34	3,515.4	774.5	-202.6	800.5	0.00	0.00	0.00
3,680.0	18.90	345.34	3,553.3	787.0	-205.9	813.5	0.00	0.00	0.00
3,720.0	18.90	345.34	3,591.1	799.5	-209.1	826.4	0.00	0.00	0.00
3,760.0	18.90	345.34	3,629.0	812.1	-212.4	839.4	0.00	0.00	0.00
3,800.0	18.90	345.34	3,666.8	824.6	-215.7	852.3	0.00	0.00	0.00
3,840.0	18.90	345.34	3,704.7	837.1	-219.0	865.3	0.00	0.00	0.00
3,880.0	18.90	345.34	3,742.5	849.7	-222.3	878.3	0.00	0.00	0.00
3,920.0	18.90	345.34	3,780.4	862.2	-225.5	891.2	0.00	0.00	0.00
3,960.0	18.90	345.34	3,818.2	874.7	-228.8	904.2	0.00	0.00	0.00
4,000.0	18.90	345.34	3,856.0	887.3	-232.1	917.1	0.00	0.00	0.00
4,040.0	18.90	345.34	3,893.9	899.8	-235.4	930.1	0.00	0.00	0.00
4,080.0	18.90	345.34	3,931.7	912.3	-238.6	943.0	0.00	0.00	0.00

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 North Reference: True

Survey Calculation Method: Minimum Curvature

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	18.90	345.34	3,969.6	924.9	-241.9	956.0	0.00	0.00	0.00
4,160.0	18.90	345.34	4,007.4	937.4	-245.2	968.9	0.00	0.00	0.00
4,200.0	18.90	345.34	4,045.3	949.9	-248.5	981.9	0.00	0.00	0.00
4,240.0	18.90	345.34	4,083.1	962.5	-251.8	994.8	0.00	0.00	0.00
4,280.0	18.90	345.34	4,121.0	975.0	-255.0	1,007.8	0.00	0.00	0.00
4,320.0	18.90	345.34	4,158.8	987.5	-258.3	1,020.7	0.00	0.00	0.00
4,360.0	18.90	345.34	4,196.6	1,000.0	-261.6	1,033.7	0.00	0.00	0.00
4,400.0	18.90	345.34	4,234.5	1,012.6	-264.9	1,046.7	0.00	0.00	0.00
4,440.0	18.90	345.34	4,272.3	1,025.1	-268.1	1,059.6	0.00	0.00	0.00
4,480.0	18.90	345.34	4,310.2	1,037.6	-271.4	1,072.6	0.00	0.00	0.00
4,520.0	18.90	345.34	4,348.0	1,050.2	-274.7	1,085.5	0.00	0.00	0.00
4,560.0	18.90	345.34	4,385.9	1,062.7	-278.0	1,098.5	0.00	0.00	0.00
4,600.0	18.90	345.34	4,423.7	1,075.2	-281.3	1,111.4	0.00	0.00	0.00
4,640.0	18.90	345.34	4,461.6	1,087.8	-284.5	1,124.4	0.00	0.00	0.00
4,680.0	18.90	345.34	4,499.4	1,100.3	-287.8	1,137.3	0.00	0.00	0.00
4,720.0	18.90	345.34	4,537.2	1,112.8	-291.1	1,150.3	0.00	0.00	0.00
4,760.0	18.90	345.34	4,575.1	1,125.4	-294.4	1,163.2	0.00	0.00	0.00
4,800.0	18.90	345.34	4,612.9	1,137.9	-297.7	1,176.2	0.00	0.00	0.00
4,840.0	18.90	345.34	4,650.8	1,150.4	-300.9	1,189.1	0.00	0.00	0.00
4,880.0	18.90	345.34	4,688.6	1,163.0	-304.2	1,202.1	0.00	0.00	0.00
4,920.0	18.90	345.34	4,726.5	1,175.5	-307.5	1,215.1	0.00	0.00	0.00
4,960.0	18.90	345.34	4,764.3	1,188.0	-310.8	1,228.0	0.00	0.00	0.00
5,000.0	18.90	345.34	4,802.2	1,200.6	-314.0	1,241.0	0.00	0.00	0.00
5,040.0	18.90	345.34	4,840.0	1,213.1	-317.3	1,253.9	0.00	0.00	0.00
5,080.0	18.90	345.34	4,877.8	1,225.6	-320.6	1,266.9	0.00	0.00	0.00
5,120.0	18.90	345.34	4,915.7	1,238.2	-323.9	1,279.8	0.00	0.00	0.00
5,160.0	18.90	345.34	4,953.5	1,250.7	-327.2	1,292.8	0.00	0.00	0.00
5,179.8	18.90	345.34	4,972.2	1,256.9	-328.8	1,299.2	0.00	0.00	0.00
5,200.0	18.49	345.34	4,991.4	1,263.2	-330.4	1,305.7	2.00	-2.00	0.00
5,240.0	17.69	345.34	5,029.4	1,275.2	-333.6	1,318.1	2.00	-2.00	0.00
5,280.0	16.89	345.34	5,067.6	1,286.7	-336.6	1,330.0	2.00	-2.00	0.00
5,320.0	16.09	345.34	5,106.0	1,297.7	-339.4	1,341.3	2.00	-2.00	0.00
5,360.0	15.29	345.34	5,144.5	1,308.1	-342.2	1,352.1	2.00	-2.00	0.00
5,400.0	14.49	345.34	5,183.1	1,318.1	-344.8	1,362.4	2.00	-2.00	0.00
5,440.0	13.69	345.34	5,221.9	1,327.5	-347.2	1,372.2	2.00	-2.00	0.00
5,480.0	12.89	345.34	5,260.9	1,336.4	-349.6	1,381.4	2.00	-2.00	0.00
5,520.0	12.09	345.34	5,299.9	1,344.8	-351.8	1,390.0	2.00	-2.00	0.00
5,560.0	11.29	345.34	5,339.1	1,352.6	-353.8	1,398.1	2.00	-2.00	0.00
5,600.0	10.49	345.34	5,378.4	1,359.9	-355.7	1,405.7	2.00	-2.00	0.00
5,640.0	9.69	345.34	5,417.7	1,366.7	-357.5	1,412.7	2.00	-2.00	0.00
5,680.0	8.89	345.34	5,457.2	1,372.9	-359.1	1,419.1	2.00	-2.00	0.00
5,720.0	8.09	345.34	5,496.8	1,378.7	-360.6	1,425.0	2.00	-2.00	0.00
5,760.0	7.29	345.34	5,536.4	1,383.8	-362.0	1,430.4	2.00	-2.00	0.00
5,800.0	6.49	345.34	5,576.1	1,388.5	-363.2	1,435.2	2.00	-2.00	0.00
5,840.0	5.69	345.34	5,615.9	1,392.6	-364.3	1,439.4	2.00	-2.00	0.00
5,880.0	4.89	345.34	5,655.7	1,396.2	-365.2	1,443.1	2.00	-2.00	0.00
5,920.0	4.09	345.34	5,695.6	1,399.2	-366.0	1,446.3	2.00	-2.00	0.00
5,960.0	3.29	345.34	5,735.5	1,401.7	-366.7	1,448.8	2.00	-2.00	0.00
6,000.0	2.49	345.34	5,775.5	1,403.6	-367.2	1,450.9	2.00	-2.00	0.00
6,040.0	1.69	345.34	5,815.4	1,405.0	-367.5	1,452.3	2.00	-2.00	0.00
6,080.0	0.89	345.34	5,855.4	1,405.9	-367.8	1,453.2	2.00	-2.00	0.00
6,120.0	0.09	345.34	5,895.4	1,406.2	-367.8	1,453.6	2.00	-2.00	0.00
6,124.6	0.00	0.00	5,900.0	1,406.3	-367.8	1,453.6	2.00	-2.00	0.00

Database: Landmark
 Company: NOBLE ENERGY INC WELD COUNTY CO
 Project: SEC.36-T5N-R67W
 Site: Bernhardt State PC N36-27D Pad
 Sec.36-T5N-R67W
 Well: Bernhardt State PC N36-27D
 Wellbore: Wellbore #1
 Design: Noble Bernhardt State PC N36-27D Plan#1 (11)

Local Co-ordinate Reference: Well Bernhardt State PC N36-27D
 TVD Reference: WELL @ 4897.0ft (Original Well Elev)
 MD Reference: WELL @ 4897.0ft (Original Well Elev)
 North Reference: True

Survey Calculation Method: Minimum Curvature

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)
TARGET BHL 100'FSL, 1320'FEL									
6,160.0	0.00	0.00	5,935.4	1,406.3	-367.8	1,453.6	0.00	0.00	0.00
6,200.0	0.00	0.00	5,975.4	1,406.3	-367.8	1,453.6	0.00	0.00	0.00
6,240.0	0.00	0.00	6,015.4	1,406.3	-367.8	1,453.6	0.00	0.00	0.00
6,280.0	0.00	0.00	6,055.4	1,406.3	-367.8	1,453.6	0.00	0.00	0.00
6,320.0	0.00	0.00	6,095.4	1,406.3	-367.8	1,453.6	0.00	0.00	0.00
6,360.0	0.00	0.00	6,135.4	1,406.3	-367.8	1,453.6	0.00	0.00	0.00
6,400.0	0.00	0.00	6,175.4	1,406.3	-367.8	1,453.6	0.00	0.00	0.00
6,440.0	0.00	0.00	6,215.4	1,406.3	-367.8	1,453.6	0.00	0.00	0.00
6,480.0	0.00	0.00	6,255.4	1,406.3	-367.8	1,453.6	0.00	0.00	0.00
6,520.0	0.00	0.00	6,295.4	1,406.3	-367.8	1,453.6	0.00	0.00	0.00
6,560.0	0.00	0.00	6,335.4	1,406.3	-367.8	1,453.6	0.00	0.00	0.00
6,600.0	0.00	0.00	6,375.4	1,406.3	-367.8	1,453.6	0.00	0.00	0.00
6,640.0	0.00	0.00	6,415.4	1,406.3	-367.8	1,453.6	0.00	0.00	0.00
6,680.0	0.00	0.00	6,455.4	1,406.3	-367.8	1,453.6	0.00	0.00	0.00
6,720.0	0.00	0.00	6,495.4	1,406.3	-367.8	1,453.6	0.00	0.00	0.00
6,760.0	0.00	0.00	6,535.4	1,406.3	-367.8	1,453.6	0.00	0.00	0.00
6,800.0	0.00	0.00	6,575.4	1,406.3	-367.8	1,453.6	0.00	0.00	0.00
6,840.0	0.00	0.00	6,615.4	1,406.3	-367.8	1,453.6	0.00	0.00	0.00
6,880.0	0.00	0.00	6,655.4	1,406.3	-367.8	1,453.6	0.00	0.00	0.00
6,920.0	0.00	0.00	6,695.4	1,406.3	-367.8	1,453.6	0.00	0.00	0.00
6,960.0	0.00	0.00	6,735.4	1,406.3	-367.8	1,453.6	0.00	0.00	0.00
7,000.0	0.00	0.00	6,775.4	1,406.3	-367.8	1,453.6	0.00	0.00	0.00
7,040.0	0.00	0.00	6,815.4	1,406.3	-367.8	1,453.6	0.00	0.00	0.00
7,080.0	0.00	0.00	6,855.4	1,406.3	-367.8	1,453.6	0.00	0.00	0.00
7,120.0	0.00	0.00	6,895.4	1,406.3	-367.8	1,453.6	0.00	0.00	0.00
7,160.0	0.00	0.00	6,935.4	1,406.3	-367.8	1,453.6	0.00	0.00	0.00
7,200.0	0.00	0.00	6,975.4	1,406.3	-367.8	1,453.6	0.00	0.00	0.00
7,240.0	0.00	0.00	7,015.4	1,406.3	-367.8	1,453.6	0.00	0.00	0.00
7,266.6	0.00	0.00	7,042.0	1,406.3	-367.8	1,453.6	0.00	0.00	0.00
NIOBRARA - TARGET CIRCLE 100'FSL, 1320'FEL									
7,280.0	0.00	0.00	7,055.4	1,406.3	-367.8	1,453.6	0.00	0.00	0.00
7,320.0	0.00	0.00	7,095.4	1,406.3	-367.8	1,453.6	0.00	0.00	0.00
7,360.0	0.00	0.00	7,135.4	1,406.3	-367.8	1,453.6	0.00	0.00	0.00
7,400.0	0.00	0.00	7,175.4	1,406.3	-367.8	1,453.6	0.00	0.00	0.00
7,440.0	0.00	0.00	7,215.4	1,406.3	-367.8	1,453.6	0.00	0.00	0.00
7,480.0	0.00	0.00	7,255.4	1,406.3	-367.8	1,453.6	0.00	0.00	0.00
7,520.0	0.00	0.00	7,295.4	1,406.3	-367.8	1,453.6	0.00	0.00	0.00
7,560.0	0.00	0.00	7,335.4	1,406.3	-367.8	1,453.6	0.00	0.00	0.00
7,600.0	0.00	0.00	7,375.4	1,406.3	-367.8	1,453.6	0.00	0.00	0.00
7,606.6	0.00	0.00	7,382.0	1,406.3	-367.8	1,453.6	0.00	0.00	0.00
CODELL									
7,640.0	0.00	0.00	7,415.4	1,406.3	-367.8	1,453.6	0.00	0.00	0.00
7,680.0	0.00	0.00	7,455.4	1,406.3	-367.8	1,453.6	0.00	0.00	0.00
7,720.0	0.00	0.00	7,495.4	1,406.3	-367.8	1,453.6	0.00	0.00	0.00
7,756.6	0.00	0.00	7,532.0	1,406.3	-367.8	1,453.6	0.00	0.00	0.00
HARD LINES 100'S of BHL									

Database: Landmark
Company: NOBLE ENERGY INC WELD COUNTY CO
Project: SEC.36-T5N-R67W
Site: Bernhardt State PC N36-27D Pad
 Sec.36-T5N-R67W
Well: Bernhardt State PC N36-27D
Wellbore: Wellbore #1
Design: Noble Bernhardt State PC N36-27D Plan#1 (11

Local Co-ordinate Reference: Well Bernhardt State PC N36-27D
TVD Reference: WELL @ 4897.0ft (Original Well Elev)
MD Reference: WELL @ 4897.0ft (Original Well Elev)
North Reference: True

Survey Calculation Method: Minimum Curvature

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
HARD LINES 100'S o - plan misses by 141.4ft at 7756.6ft MD (7532.0 TVD, 1406.3 N, -367.8 E) - Polygon Point 1 Point 2	0.00	0.00	7,532.0 7,532.0	1,306.2 0.0	-467.8 0.0	1,375,879.45 1,375,880.94	3,184,711.98 3,184,911.96	40° 21' 47.863 N	104° 50' 13.699 W
TARGET CIRCLE 100' - plan hits target - Circle (radius 75.0)	0.00	0.00	7,042.0	1,406.3	-367.8	1,375,980.23	3,184,811.17	40° 21' 48.852 N	104° 50' 12.408 W
TARGET BHL 100'FS - plan hits target - Point	0.00	0.00	5,900.0	1,406.3	-367.8	1,375,980.23	3,184,811.17	40° 21' 48.852 N	104° 50' 12.408 W

Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
600.0	600.0	8 5/8"	8-5/8	12-1/4

Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
7,266.6	7,042.0	NIOBRARA		0.00	
7,606.6	7,382.0	CODELL		0.00	