

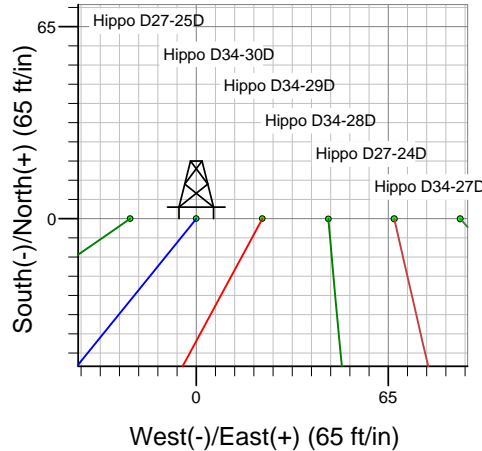
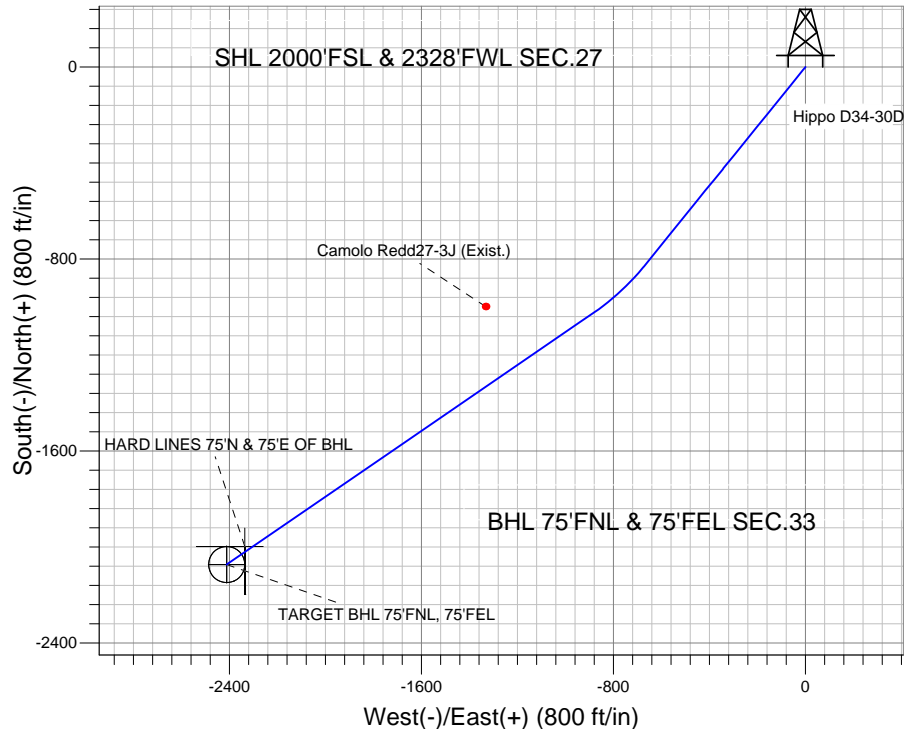
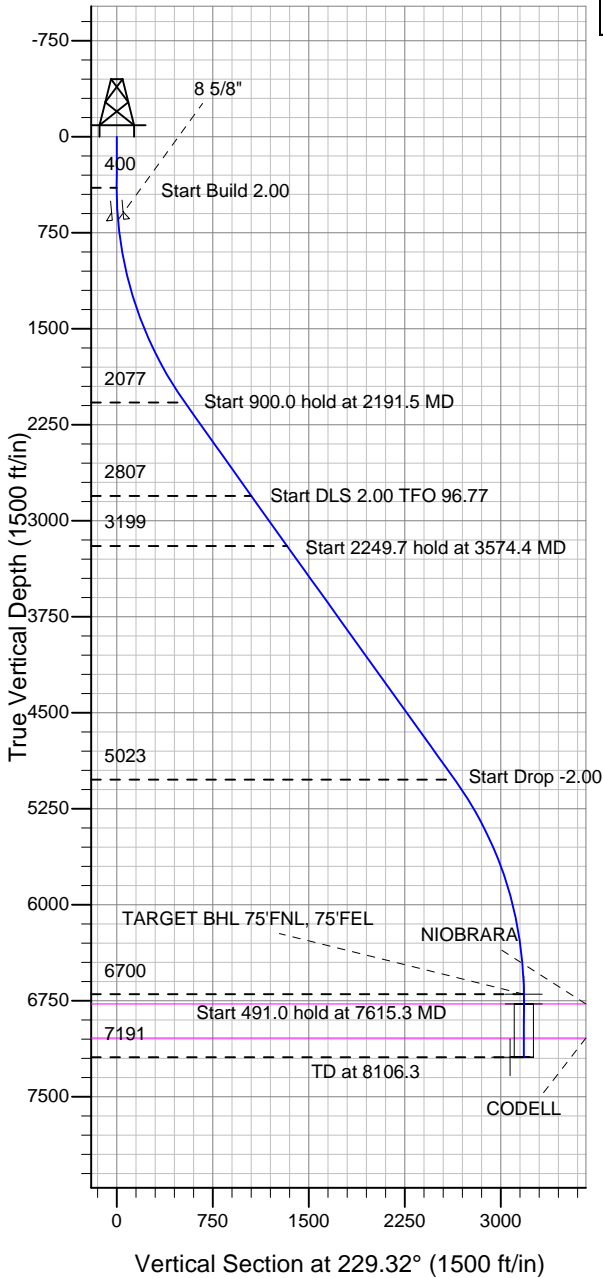
ENSIGN

Directional

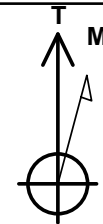
Well Name: Hippo D34-30D

Surface Location: Hippo D27-25D Pad Sec.27-T3N-R64W
 North American Datum 1983 US State Plane 1983 Colorado Northern Zone
 Ground Elevation: 4874.0
 +N/-S +E/-W Northing Easting Latitude Longitude Slot
 0.0 0.0 1315194.67 3268549.04 40.194610 -104.538660
 Original Well Elev WELL @ 4887.0ft (Original Well Elev)

NOBLE ENERGY INC WELD COUNTY CO



Hippo D27-25D Pad Sec.27-T3N-R64W
 Hippo D34-30D
 Noble Hippo D34-30D Plan #2 (5-02-11)
 14:54, May 02 2011



Azimuths to True North
 Magnetic North: 8.74°

Magnetic Field
 Strength: 53060.2snT
 Dip Angle: 66.93°
 Date: 5/2/2011
 Model: IGRF2010

WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
TARGET BHL 75'FNL, 75'FEL	6700.0	-2072.7	-2411.1	40.188920	-104.547290	Point
TARGET CIRCLE 75'FNL & 75'FEL	6776.0	-2072.7	-2411.1	40.188920	-104.547290	Circle (Radius: 75.0)
HARD LINES 75'N & 75'E OF BHL	7191.0	-1997.7	-2336.1	40.189126	-104.547021	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	2191.5	35.83	219.00	2077.0	-421.3	-341.2	2.00	219.00	533.4	
4	3091.5	35.83	219.00	2806.7	-830.8	-672.7	0.00	0.00	1051.7	
5	3574.4	35.82	235.54	3199.2	-1021.0	-878.7	2.00	96.77	1331.9	
6	5824.1	35.82	235.54	5023.3	-1766.1	-1964.3	0.00	0.00	2640.9	
7	7615.3	0.00	0.00	6700.0	-2072.7	-2411.1	2.00	180.00	3179.6	TARGET BHL 75'FNL, 75'FEL
8	8106.3	0.00	0.00	7191.0	-2072.7	-2411.1	0.00	0.00	3179.6	



Directional

NOBLE ENERGY INC WELD COUNTY CO

SEC.27-T3N-R64W

Hippo D27-25D Pad Sec.27-T3N-R64W

Hippo D34-30D

Wellbore #1

Plan: Noble Hippo D34-30D Plan #2 (5-02-11)

Standard Planning Report

02 May, 2011



Database:	Landmark	Local Co-ordinate Reference:	Well Hippo D34-30D
Company:	NOBLE ENERGY INC WELD COUNTY CO	TVD Reference:	WELL @ 4887.0ft (Original Well Elev)
Project:	SEC.27-T3N-R64W	MD Reference:	WELL @ 4887.0ft (Original Well Elev)
Site:	Hippo D27-25D Pad Sec.27-T3N-R64W	North Reference:	True
Well:	Hippo D34-30D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Noble Hippo D34-30D Plan #2 (5-02-11)		

Project	SEC.27-T3N-R64W, 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						Hippo D27-25D Pad Sec.27-T3N-R64W											
Site Position:						Northing:			1,315,194.44 ft			Latitude:			40.194610		
From:			Lat/Long			Easting:			3,268,526.69 ft			Longitude:			-104.538740		
Position Uncertainty:			0.0 ft			Slot Radius:			"			Grid Convergence:			0.62 °		

Well	Hippo D34-30D					
Well Position	+N-S	0.0 ft	Northing:	1,315,194.67 ft	Latitude:	40.194610
	+E-W	22.3 ft	Easting:	3,268,549.04 ft	Longitude:	-104.538660
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,874.0 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	5/2/2011	8.74	66.93	53,060

Design	Noble Hippo D34-30D Plan #2 (5-02-11)			
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	229.32

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	
2,191.5	35.83	219.00	2,077.0	-421.3	-341.2	2.00	2.00	0.00	219.00	
3,091.5	35.83	219.00	2,806.7	-830.8	-672.7	0.00	0.00	0.00	0.00	
3,574.4	35.82	235.54	3,199.2	-1,021.0	-878.7	2.00	0.00	3.42	96.77	
5,824.1	35.82	235.54	5,023.3	-1,766.1	-1,964.3	0.00	0.00	0.00	0.00	
7,615.3	0.00	0.00	6,700.0	-2,072.7	-2,411.1	2.00	-2.00	0.00	180.00	TARGET BHL 75'FI
8,106.3	0.00	0.00	7,191.0	-2,072.7	-2,411.1	0.00	0.00	0.00	0.00	

Database:	Landmark	Local Co-ordinate Reference:	Well Hippo D34-30D
Company:	NOBLE ENERGY INC WELD COUNTY CO	TVD Reference:	WELL @ 4887.0ft (Original Well Elev)
Project:	SEC.27-T3N-R64W	MD Reference:	WELL @ 4887.0ft (Original Well Elev)
Site:	Hippo D27-25D Pad Sec.27-T3N-R64W	North Reference:	True
Well:	Hippo D34-30D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Noble Hippo D34-30D Plan #2 (5-02-11)		

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	0.80	219.00	440.0	-0.2	-0.2	0.3	2.00	2.00	0.00
480.0	1.60	219.00	480.0	-0.9	-0.7	1.1	2.00	2.00	0.00
520.0	2.40	219.00	520.0	-2.0	-1.6	2.5	2.00	2.00	0.00
560.0	3.20	219.00	559.9	-3.5	-2.8	4.4	2.00	2.00	0.00
600.0	4.00	219.00	599.8	-5.4	-4.4	6.9	2.00	2.00	0.00
640.0	4.80	219.00	639.7	-7.8	-6.3	9.9	2.00	2.00	0.00
650.3	5.01	219.00	650.0	-8.5	-6.9	10.8	2.00	2.00	0.00
8 5/8"									
680.0	5.60	219.00	679.6	-10.6	-8.6	13.5	2.00	2.00	0.00
720.0	6.40	219.00	719.3	-13.9	-11.2	17.6	2.00	2.00	0.00
760.0	7.20	219.00	759.1	-17.6	-14.2	22.2	2.00	2.00	0.00
800.0	8.00	219.00	798.7	-21.7	-17.5	27.4	2.00	2.00	0.00
840.0	8.80	219.00	838.3	-26.2	-21.2	33.2	2.00	2.00	0.00
880.0	9.60	219.00	877.8	-31.2	-25.2	39.5	2.00	2.00	0.00
920.0	10.40	219.00	917.1	-36.6	-29.6	46.3	2.00	2.00	0.00
960.0	11.20	219.00	956.4	-42.4	-34.3	53.7	2.00	2.00	0.00
1,000.0	12.00	219.00	995.6	-48.7	-39.4	61.6	2.00	2.00	0.00
1,040.0	12.80	219.00	1,034.7	-55.3	-44.8	70.0	2.00	2.00	0.00
1,080.0	13.60	219.00	1,073.6	-62.4	-50.6	79.0	2.00	2.00	0.00
1,120.0	14.40	219.00	1,112.4	-69.9	-56.6	88.5	2.00	2.00	0.00
1,160.0	15.20	219.00	1,151.1	-77.9	-63.1	98.6	2.00	2.00	0.00
1,200.0	16.00	219.00	1,189.6	-86.2	-69.8	109.2	2.00	2.00	0.00
1,240.0	16.80	219.00	1,228.0	-95.0	-76.9	120.3	2.00	2.00	0.00
1,280.0	17.60	219.00	1,266.2	-104.2	-84.4	131.9	2.00	2.00	0.00
1,320.0	18.40	219.00	1,304.3	-113.8	-92.2	144.1	2.00	2.00	0.00
1,360.0	19.20	219.00	1,342.1	-123.8	-100.3	156.8	2.00	2.00	0.00
1,400.0	20.00	219.00	1,379.8	-134.3	-108.7	170.0	2.00	2.00	0.00
1,440.0	20.80	219.00	1,417.3	-145.1	-117.5	183.7	2.00	2.00	0.00
1,480.0	21.60	219.00	1,454.6	-156.3	-126.6	197.9	2.00	2.00	0.00
1,520.0	22.40	219.00	1,491.7	-168.0	-136.0	212.7	2.00	2.00	0.00
1,560.0	23.20	219.00	1,528.6	-180.0	-145.8	227.9	2.00	2.00	0.00
1,600.0	24.00	219.00	1,565.2	-192.5	-155.9	243.7	2.00	2.00	0.00
1,640.0	24.80	219.00	1,601.6	-205.3	-166.3	259.9	2.00	2.00	0.00
1,680.0	25.60	219.00	1,637.8	-218.6	-177.0	276.7	2.00	2.00	0.00
1,720.0	26.40	219.00	1,673.8	-232.2	-188.0	293.9	2.00	2.00	0.00
1,760.0	27.20	219.00	1,709.5	-246.2	-199.4	311.7	2.00	2.00	0.00
1,800.0	28.00	219.00	1,744.9	-260.6	-211.0	329.9	2.00	2.00	0.00
1,840.0	28.80	219.00	1,780.1	-275.4	-223.0	348.6	2.00	2.00	0.00
1,880.0	29.60	219.00	1,815.0	-290.6	-235.3	367.8	2.00	2.00	0.00
1,920.0	30.40	219.00	1,849.7	-306.1	-247.9	387.5	2.00	2.00	0.00
1,960.0	31.20	219.00	1,884.0	-322.0	-260.8	407.7	2.00	2.00	0.00
2,000.0	32.00	219.00	1,918.1	-338.3	-273.9	428.3	2.00	2.00	0.00
2,040.0	32.80	219.00	1,951.9	-355.0	-287.4	449.4	2.00	2.00	0.00

Database:	Landmark	Local Co-ordinate Reference:	Well Hippo D34-30D
Company:	NOBLE ENERGY INC WELD COUNTY CO	TVD Reference:	WELL @ 4887.0ft (Original Well Elev)
Project:	SEC.27-T3N-R64W	MD Reference:	WELL @ 4887.0ft (Original Well Elev)
Site:	Hippo D27-25D Pad Sec.27-T3N-R64W	North Reference:	True
Well:	Hippo D34-30D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Noble Hippo D34-30D Plan #2 (5-02-11)		

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)
2,080.0	33.60	219.00	1,985.4	-372.0	-301.2	470.9	2.00	2.00	0.00
2,120.0	34.40	219.00	2,018.5	-389.4	-315.3	492.9	2.00	2.00	0.00
2,160.0	35.20	219.00	2,051.4	-407.1	-329.7	515.4	2.00	2.00	0.00
2,191.5	35.83	219.00	2,077.0	-421.3	-341.2	533.4	2.00	2.00	0.00
2,200.0	35.83	219.00	2,083.9	-425.2	-344.3	538.3	0.00	0.00	0.00
2,240.0	35.83	219.00	2,116.3	-443.4	-359.0	561.3	0.00	0.00	0.00
2,280.0	35.83	219.00	2,148.7	-461.6	-373.8	584.3	0.00	0.00	0.00
2,320.0	35.83	219.00	2,181.2	-479.8	-388.5	607.4	0.00	0.00	0.00
2,360.0	35.83	219.00	2,213.6	-498.0	-403.3	630.4	0.00	0.00	0.00
2,400.0	35.83	219.00	2,246.0	-516.2	-418.0	653.5	0.00	0.00	0.00
2,440.0	35.83	219.00	2,278.5	-534.4	-432.7	676.5	0.00	0.00	0.00
2,480.0	35.83	219.00	2,310.9	-552.6	-447.5	699.5	0.00	0.00	0.00
2,520.0	35.83	219.00	2,343.3	-570.8	-462.2	722.6	0.00	0.00	0.00
2,560.0	35.83	219.00	2,375.8	-589.0	-476.9	745.6	0.00	0.00	0.00
2,600.0	35.83	219.00	2,408.2	-607.2	-491.7	768.6	0.00	0.00	0.00
2,640.0	35.83	219.00	2,440.6	-625.4	-506.4	791.7	0.00	0.00	0.00
2,680.0	35.83	219.00	2,473.1	-643.6	-521.1	814.7	0.00	0.00	0.00
2,720.0	35.83	219.00	2,505.5	-661.8	-535.9	837.7	0.00	0.00	0.00
2,760.0	35.83	219.00	2,537.9	-679.9	-550.6	860.8	0.00	0.00	0.00
2,800.0	35.83	219.00	2,570.3	-698.1	-565.3	883.8	0.00	0.00	0.00
2,840.0	35.83	219.00	2,602.8	-716.3	-580.1	906.9	0.00	0.00	0.00
2,880.0	35.83	219.00	2,635.2	-734.5	-594.8	929.9	0.00	0.00	0.00
2,920.0	35.83	219.00	2,667.6	-752.7	-609.6	952.9	0.00	0.00	0.00
2,960.0	35.83	219.00	2,700.1	-770.9	-624.3	976.0	0.00	0.00	0.00
3,000.0	35.83	219.00	2,732.5	-789.1	-639.0	999.0	0.00	0.00	0.00
3,040.0	35.83	219.00	2,764.9	-807.3	-653.8	1,022.0	0.00	0.00	0.00
3,080.0	35.83	219.00	2,797.4	-825.5	-668.5	1,045.1	0.00	0.00	0.00
3,091.5	35.83	219.00	2,806.7	-830.8	-672.7	1,051.7	0.00	0.00	0.00
3,120.0	35.77	219.97	2,829.8	-843.6	-683.3	1,068.1	2.00	-0.22	3.40
3,160.0	35.69	221.33	2,862.3	-861.3	-698.5	1,091.2	2.00	-0.19	3.41
3,200.0	35.63	222.70	2,894.8	-878.7	-714.2	1,114.3	2.00	-0.15	3.42
3,240.0	35.59	224.07	2,927.3	-895.6	-730.2	1,137.5	2.00	-0.11	3.43
3,280.0	35.56	225.45	2,959.8	-912.1	-746.5	1,160.7	2.00	-0.07	3.44
3,320.0	35.54	226.82	2,992.4	-928.2	-763.3	1,183.9	2.00	-0.03	3.44
3,360.0	35.55	228.20	3,024.9	-943.9	-780.4	1,207.2	2.00	0.01	3.44
3,400.0	35.56	229.57	3,057.5	-959.2	-798.0	1,230.4	2.00	0.04	3.44
3,440.0	35.60	230.95	3,090.0	-974.1	-815.9	1,253.7	2.00	0.08	3.43
3,480.0	35.65	232.32	3,122.5	-988.6	-834.1	1,277.0	2.00	0.12	3.43
3,520.0	35.71	233.69	3,155.0	-1,002.6	-852.8	1,300.2	2.00	0.16	3.42
3,560.0	35.79	235.05	3,187.5	-1,016.2	-871.8	1,323.5	2.00	0.20	3.41
3,574.4	35.82	235.54	3,199.2	-1,021.0	-878.7	1,331.9	2.00	0.23	3.40
3,600.0	35.82	235.54	3,219.9	-1,029.5	-891.0	1,346.8	0.00	0.00	0.00
3,640.0	35.82	235.54	3,252.3	-1,042.7	-910.3	1,370.1	0.00	0.00	0.00
3,680.0	35.82	235.54	3,284.8	-1,056.0	-929.6	1,393.3	0.00	0.00	0.00
3,720.0	35.82	235.54	3,317.2	-1,069.2	-948.9	1,416.6	0.00	0.00	0.00
3,760.0	35.82	235.54	3,349.6	-1,082.5	-968.2	1,439.9	0.00	0.00	0.00
3,800.0	35.82	235.54	3,382.1	-1,095.7	-987.5	1,463.2	0.00	0.00	0.00
3,840.0	35.82	235.54	3,414.5	-1,109.0	-1,006.9	1,486.4	0.00	0.00	0.00
3,880.0	35.82	235.54	3,446.9	-1,122.2	-1,026.2	1,509.7	0.00	0.00	0.00
3,920.0	35.82	235.54	3,479.4	-1,135.5	-1,045.5	1,533.0	0.00	0.00	0.00
3,960.0	35.82	235.54	3,511.8	-1,148.7	-1,064.8	1,556.3	0.00	0.00	0.00
4,000.0	35.82	235.54	3,544.2	-1,162.0	-1,084.1	1,579.5	0.00	0.00	0.00
4,040.0	35.82	235.54	3,576.7	-1,175.2	-1,103.4	1,602.8	0.00	0.00	0.00
4,080.0	35.82	235.54	3,609.1	-1,188.5	-1,122.7	1,626.1	0.00	0.00	0.00

Database:	Landmark	Local Co-ordinate Reference:	Well Hippo D34-30D
Company:	NOBLE ENERGY INC WELD COUNTY CO	TVD Reference:	WELL @ 4887.0ft (Original Well Elev)
Project:	SEC.27-T3N-R64W	MD Reference:	WELL @ 4887.0ft (Original Well Elev)
Site:	Hippo D27-25D Pad Sec.27-T3N-R64W	North Reference:	True
Well:	Hippo D34-30D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Noble Hippo D34-30D Plan #2 (5-02-11)		

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)	
4,120.0	35.82	235.54	3,641.5	-1,201.7	-1,142.0	1,649.3	0.00	0.00	0.00	
4,160.0	35.82	235.54	3,674.0	-1,215.0	-1,161.3	1,672.6	0.00	0.00	0.00	
4,200.0	35.82	235.54	3,706.4	-1,228.2	-1,180.6	1,695.9	0.00	0.00	0.00	
4,240.0	35.82	235.54	3,738.8	-1,241.4	-1,199.9	1,719.2	0.00	0.00	0.00	
4,280.0	35.82	235.54	3,771.3	-1,254.7	-1,219.2	1,742.4	0.00	0.00	0.00	
4,320.0	35.82	235.54	3,803.7	-1,267.9	-1,238.5	1,765.7	0.00	0.00	0.00	
4,360.0	35.82	235.54	3,836.1	-1,281.2	-1,257.8	1,789.0	0.00	0.00	0.00	
4,400.0	35.82	235.54	3,868.6	-1,294.4	-1,277.1	1,812.3	0.00	0.00	0.00	
4,440.0	35.82	235.54	3,901.0	-1,307.7	-1,296.4	1,835.5	0.00	0.00	0.00	
4,480.0	35.82	235.54	3,933.4	-1,320.9	-1,315.7	1,858.8	0.00	0.00	0.00	
4,520.0	35.82	235.54	3,965.9	-1,334.2	-1,335.0	1,882.1	0.00	0.00	0.00	
4,560.0	35.82	235.54	3,998.3	-1,347.4	-1,354.3	1,905.4	0.00	0.00	0.00	
4,600.0	35.82	235.54	4,030.7	-1,360.7	-1,373.6	1,928.6	0.00	0.00	0.00	
4,640.0	35.82	235.54	4,063.2	-1,373.9	-1,392.9	1,951.9	0.00	0.00	0.00	
4,680.0	35.82	235.54	4,095.6	-1,387.2	-1,412.2	1,975.2	0.00	0.00	0.00	
4,720.0	35.82	235.54	4,128.0	-1,400.4	-1,431.5	1,998.4	0.00	0.00	0.00	
4,760.0	35.82	235.54	4,160.5	-1,413.7	-1,450.8	2,021.7	0.00	0.00	0.00	
4,800.0	35.82	235.54	4,192.9	-1,426.9	-1,470.1	2,045.0	0.00	0.00	0.00	
4,840.0	35.82	235.54	4,225.3	-1,440.2	-1,489.4	2,068.3	0.00	0.00	0.00	
4,880.0	35.82	235.54	4,257.8	-1,453.4	-1,508.7	2,091.5	0.00	0.00	0.00	
4,920.0	35.82	235.54	4,290.2	-1,466.6	-1,528.0	2,114.8	0.00	0.00	0.00	
4,960.0	35.82	235.54	4,322.6	-1,479.9	-1,547.3	2,138.1	0.00	0.00	0.00	
5,000.0	35.82	235.54	4,355.1	-1,493.1	-1,566.6	2,161.4	0.00	0.00	0.00	
5,040.0	35.82	235.54	4,387.5	-1,506.4	-1,585.9	2,184.6	0.00	0.00	0.00	
5,080.0	35.82	235.54	4,419.9	-1,519.6	-1,605.2	2,207.9	0.00	0.00	0.00	
5,120.0	35.82	235.54	4,452.4	-1,532.9	-1,624.5	2,231.2	0.00	0.00	0.00	
5,160.0	35.82	235.54	4,484.8	-1,546.1	-1,643.8	2,254.4	0.00	0.00	0.00	
5,200.0	35.82	235.54	4,517.2	-1,559.4	-1,663.1	2,277.7	0.00	0.00	0.00	
5,240.0	35.82	235.54	4,549.7	-1,572.6	-1,682.4	2,301.0	0.00	0.00	0.00	
5,280.0	35.82	235.54	4,582.1	-1,585.9	-1,701.7	2,324.3	0.00	0.00	0.00	
5,320.0	35.82	235.54	4,614.5	-1,599.1	-1,721.0	2,347.5	0.00	0.00	0.00	
5,360.0	35.82	235.54	4,647.0	-1,612.4	-1,740.3	2,370.8	0.00	0.00	0.00	
5,400.0	35.82	235.54	4,679.4	-1,625.6	-1,759.6	2,394.1	0.00	0.00	0.00	
5,440.0	35.82	235.54	4,711.8	-1,638.9	-1,779.0	2,417.4	0.00	0.00	0.00	
5,480.0	35.82	235.54	4,744.3	-1,652.1	-1,798.3	2,440.6	0.00	0.00	0.00	
5,520.0	35.82	235.54	4,776.7	-1,665.4	-1,817.6	2,463.9	0.00	0.00	0.00	
5,560.0	35.82	235.54	4,809.1	-1,678.6	-1,836.9	2,487.2	0.00	0.00	0.00	
5,600.0	35.82	235.54	4,841.6	-1,691.9	-1,856.2	2,510.5	0.00	0.00	0.00	
5,640.0	35.82	235.54	4,874.0	-1,705.1	-1,875.5	2,533.7	0.00	0.00	0.00	
5,680.0	35.82	235.54	4,906.4	-1,718.3	-1,894.8	2,557.0	0.00	0.00	0.00	
5,720.0	35.82	235.54	4,938.9	-1,731.6	-1,914.1	2,580.3	0.00	0.00	0.00	
5,760.0	35.82	235.54	4,971.3	-1,744.8	-1,933.4	2,603.5	0.00	0.00	0.00	
5,800.0	35.82	235.54	5,003.7	-1,758.1	-1,952.7	2,626.8	0.00	0.00	0.00	
5,824.1	35.82	235.54	5,023.3	-1,766.1	-1,964.3	2,640.9	0.00	0.00	0.00	
5,840.0	35.51	235.54	5,036.2	-1,771.3	-1,971.9	2,650.1	2.00	-2.00	0.00	
5,880.0	34.71	235.54	5,068.9	-1,784.3	-1,990.9	2,672.9	2.00	-2.00	0.00	
5,920.0	33.91	235.54	5,102.0	-1,797.1	-2,009.5	2,695.3	2.00	-2.00	0.00	
5,960.0	33.11	235.54	5,135.3	-1,809.6	-2,027.7	2,717.3	2.00	-2.00	0.00	
6,000.0	32.31	235.54	5,169.0	-1,821.8	-2,045.5	2,738.8	2.00	-2.00	0.00	
6,040.0	31.51	235.54	5,202.9	-1,833.8	-2,063.0	2,759.8	2.00	-2.00	0.00	
6,080.0	30.71	235.54	5,237.2	-1,845.5	-2,080.0	2,780.3	2.00	-2.00	0.00	
6,120.0	29.91	235.54	5,271.7	-1,856.9	-2,096.6	2,800.4	2.00	-2.00	0.00	
6,160.0	29.11	235.54	5,306.5	-1,868.0	-2,112.9	2,820.0	2.00	-2.00	0.00	
6,200.0	28.31	235.54	5,341.6	-1,878.9	-2,128.7	2,839.1	2.00	-2.00	0.00	

Database:	Landmark	Local Co-ordinate Reference:	Well Hippo D34-30D
Company:	NOBLE ENERGY INC WELD COUNTY CO	TVD Reference:	WELL @ 4887.0ft (Original Well Elev)
Project:	SEC.27-T3N-R64W	MD Reference:	WELL @ 4887.0ft (Original Well Elev)
Site:	Hippo D27-25D Pad Sec.27-T3N-R64W	North Reference:	True
Well:	Hippo D34-30D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Noble Hippo D34-30D Plan #2 (5-02-11)		

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)
6,240.0	27.51	235.54	5,377.0	-1,889.5	-2,144.2	2,857.7	2.00	-2.00	0.00
6,280.0	26.71	235.54	5,412.6	-1,899.8	-2,159.2	2,875.8	2.00	-2.00	0.00
6,320.0	25.91	235.54	5,448.4	-1,909.8	-2,173.8	2,893.4	2.00	-2.00	0.00
6,360.0	25.11	235.54	5,484.5	-1,919.6	-2,188.0	2,910.5	2.00	-2.00	0.00
6,400.0	24.31	235.54	5,520.9	-1,929.0	-2,201.8	2,927.2	2.00	-2.00	0.00
6,440.0	23.51	235.54	5,557.4	-1,938.2	-2,215.1	2,943.3	2.00	-2.00	0.00
6,480.0	22.71	235.54	5,594.2	-1,947.1	-2,228.1	2,958.9	2.00	-2.00	0.00
6,520.0	21.91	235.54	5,631.2	-1,955.7	-2,240.6	2,974.0	2.00	-2.00	0.00
6,560.0	21.11	235.54	5,668.4	-1,964.0	-2,252.7	2,988.6	2.00	-2.00	0.00
6,600.0	20.31	235.54	5,705.9	-1,972.0	-2,264.4	3,002.6	2.00	-2.00	0.00
6,640.0	19.51	235.54	5,743.5	-1,979.7	-2,275.6	3,016.1	2.00	-2.00	0.00
6,680.0	18.71	235.54	5,781.3	-1,987.1	-2,286.4	3,029.2	2.00	-2.00	0.00
6,720.0	17.91	235.54	5,819.2	-1,994.2	-2,296.7	3,041.7	2.00	-2.00	0.00
6,760.0	17.11	235.54	5,857.4	-2,001.0	-2,306.7	3,053.6	2.00	-2.00	0.00
6,800.0	16.31	235.54	5,895.7	-2,007.5	-2,316.1	3,065.0	2.00	-2.00	0.00
6,840.0	15.51	235.54	5,934.2	-2,013.7	-2,325.2	3,075.9	2.00	-2.00	0.00
6,880.0	14.71	235.54	5,972.8	-2,019.6	-2,333.8	3,086.3	2.00	-2.00	0.00
6,920.0	13.91	235.54	6,011.5	-2,025.2	-2,341.9	3,096.1	2.00	-2.00	0.00
6,960.0	13.11	235.54	6,050.4	-2,030.5	-2,349.6	3,105.4	2.00	-2.00	0.00
7,000.0	12.31	235.54	6,089.5	-2,035.5	-2,356.9	3,114.2	2.00	-2.00	0.00
7,040.0	11.51	235.54	6,128.6	-2,040.2	-2,363.7	3,122.4	2.00	-2.00	0.00
7,080.0	10.71	235.54	6,167.8	-2,044.5	-2,370.0	3,130.0	2.00	-2.00	0.00
7,120.0	9.91	235.54	6,207.2	-2,048.6	-2,375.9	3,137.1	2.00	-2.00	0.00
7,160.0	9.11	235.54	6,246.7	-2,052.3	-2,381.4	3,143.7	2.00	-2.00	0.00
7,200.0	8.31	235.54	6,286.2	-2,055.7	-2,386.4	3,149.7	2.00	-2.00	0.00
7,240.0	7.51	235.54	6,325.8	-2,058.8	-2,390.9	3,155.2	2.00	-2.00	0.00
7,280.0	6.71	235.54	6,365.5	-2,061.6	-2,395.0	3,160.1	2.00	-2.00	0.00
7,320.0	5.91	235.54	6,405.3	-2,064.1	-2,398.6	3,164.5	2.00	-2.00	0.00
7,360.0	5.11	235.54	6,445.1	-2,066.3	-2,401.8	3,168.3	2.00	-2.00	0.00
7,400.0	4.31	235.54	6,484.9	-2,068.2	-2,404.5	3,171.6	2.00	-2.00	0.00
7,440.0	3.51	235.54	6,524.8	-2,069.7	-2,406.7	3,174.3	2.00	-2.00	0.00
7,480.0	2.71	235.54	6,564.8	-2,070.9	-2,408.5	3,176.4	2.00	-2.00	0.00
7,520.0	1.91	235.54	6,604.8	-2,071.8	-2,409.8	3,178.0	2.00	-2.00	0.00
7,560.0	1.11	235.54	6,644.7	-2,072.4	-2,410.7	3,179.1	2.00	-2.00	0.00
7,600.0	0.31	235.54	6,684.7	-2,072.7	-2,411.1	3,179.5	2.00	-2.00	0.00
7,615.3	0.00	0.00	6,700.0	-2,072.7	-2,411.1	3,179.6	2.00	-2.00	0.00
TARGET BHL 75'FNL, 75'FEL									
7,640.0	0.00	0.00	6,724.7	-2,072.7	-2,411.1	3,179.6	0.00	0.00	0.00
7,680.0	0.00	0.00	6,764.7	-2,072.7	-2,411.1	3,179.6	0.00	0.00	0.00
7,691.3	0.00	0.00	6,776.0	-2,072.7	-2,411.1	3,179.6	0.00	0.00	0.00
NIOBRARA - TARGET CIRCLE 75'FNL & 75'FEL									
7,720.0	0.00	0.00	6,804.7	-2,072.7	-2,411.1	3,179.6	0.00	0.00	0.00
7,760.0	0.00	0.00	6,844.7	-2,072.7	-2,411.1	3,179.6	0.00	0.00	0.00
7,800.0	0.00	0.00	6,884.7	-2,072.7	-2,411.1	3,179.6	0.00	0.00	0.00
7,840.0	0.00	0.00	6,924.7	-2,072.7	-2,411.1	3,179.6	0.00	0.00	0.00
7,880.0	0.00	0.00	6,964.7	-2,072.7	-2,411.1	3,179.6	0.00	0.00	0.00
7,920.0	0.00	0.00	7,004.7	-2,072.7	-2,411.1	3,179.6	0.00	0.00	0.00
7,956.3	0.00	0.00	7,041.0	-2,072.7	-2,411.1	3,179.6	0.00	0.00	0.00
CODELL									
7,960.0	0.00	0.00	7,044.7	-2,072.7	-2,411.1	3,179.6	0.00	0.00	0.00
8,000.0	0.00	0.00	7,084.7	-2,072.7	-2,411.1	3,179.6	0.00	0.00	0.00
8,040.0	0.00	0.00	7,124.7	-2,072.7	-2,411.1	3,179.6	0.00	0.00	0.00
8,080.0	0.00	0.00	7,164.7	-2,072.7	-2,411.1	3,179.6	0.00	0.00	0.00

Database:	Landmark	Local Co-ordinate Reference:	Well Hippo D34-30D
Company:	NOBLE ENERGY INC WELD COUNTY CO	TVD Reference:	WELL @ 4887.0ft (Original Well Elev)
Project:	SEC.27-T3N-R64W	MD Reference:	WELL @ 4887.0ft (Original Well Elev)
Site:	Hippo D27-25D Pad Sec.27-T3N-R64W	North Reference:	True
Well:	Hippo D34-30D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Noble Hippo D34-30D Plan #2 (5-02-11)		

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)
8,106.3	0.00	0.00	7,191.0	-2,072.7	-2,411.1	3,179.6	0.00	0.00	0.00
HARD LINES 75°N & 75°E OF BHL									

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 CIRCLE 75' - plan hits target center - Circle (radius 75.0)	0.00	0.00	6,776.0	-2,072.7	-2,411.1	1,313,096.02	3,266,160.62	40.188920	-104.547290
TARGET BHL 75°FNL - plan hits target center - Point	0.00	0.00	6,700.0	-2,072.7	-2,411.1	1,313,096.02	3,266,160.62	40.188920	-104.547290
HARD LINES 75°N & 75°E - plan misses target center by 106.1ft at 8106.3ft MD (7191.0 TVD, -2072.7 N, -2411.1 E) - Polygon	0.00	0.00	7,191.0	-1,997.7	-2,336.1	1,313,171.85	3,266,234.84	40.189126	-104.547021
Point 1			7,191.0	0.0	0.0	1,313,171.85	3,266,234.84		
Point 2			7,191.0	-200.0	0.0	1,312,971.87	3,266,237.00		
Point 3			7,191.0	0.0	0.0	1,313,171.85	3,266,234.84		
Point 4			7,191.0	0.0	-200.0	1,313,169.69	3,266,034.86		

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 (°)
7,691.3	6,776.0	NIOBRARA		0.00	
7,956.3	7,041.0	CODELL		0.00	