

ENSIGN

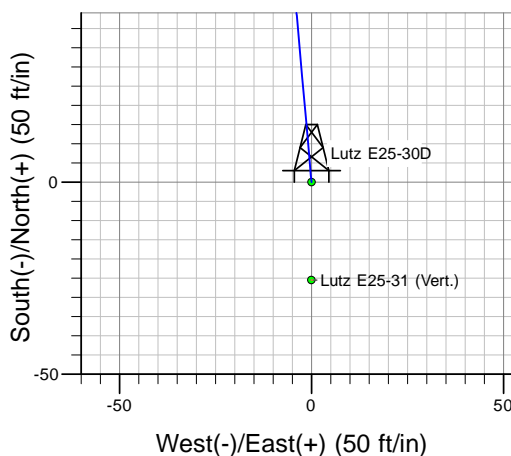
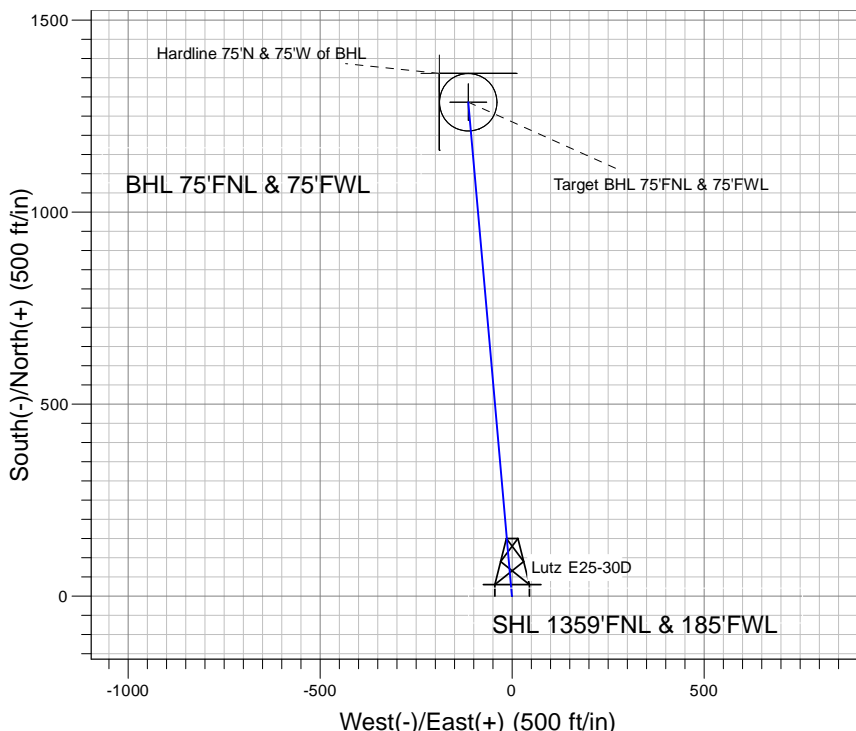
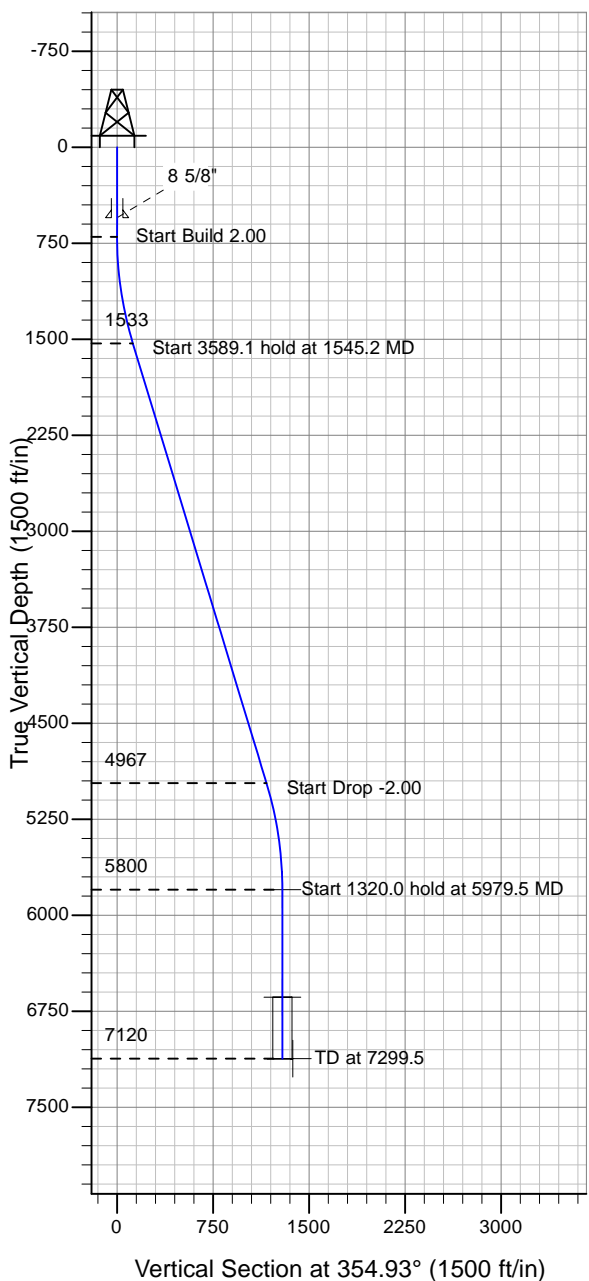
Directional

Well Name: Lutz E25-30D

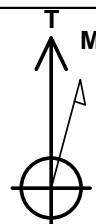
Surface Location: Lutz E25-30D Pad Sec.25-T6N-R65W
 North American Datum 1983 , US State Plane 1983 , Colorado Northern Zone
 Ground Elevation: 4687.0

+N/-S+E/-W Northing Easting Latitude Longitude Slot
 0.0 0.0 1411807.89 3244833.05 40° 27' 37.728 N 104° 37' 12.432 W
 Original Well Elev WELL @ 4700.0ft (Original Well Elev)

NOBLE ENERGY INC WELD COUNTY CO



Lutz E25-30D Pad Sec.25-T6N-R65W
 Lutz E25-30D
 Noble Lutz E25-30D Plan #1 (8-10-10)
 17:30, August 16 2010



Azimuths to True North
 Magnetic North: 8.91°

Magnetic Field
 Strength: 53269.4snT
 Dip Angle: 67.15°
 Date: 8/10/2010
 Model: IGRF2010

WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
Target BHL 75'FNL & 75'FWL	5800.0	1286.1	-114.1	40° 27' 50.436 N	104° 37' 13.908 W	Point
Target Circle 75'FNL & 75'FWL	6640.0	1286.1	-114.1	40° 27' 50.436 N	104° 37' 13.908 W	Circle (Radius: 75.0)
Hardline 75'N & 75'W of BHL	7120.0	1361.1	-189.1	40° 27' 51.178 N	104° 37' 14.879 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	700.0	0.00	0.00	700.0	0.0	0.0	0.00	0.00	0.0	
3	1545.2	16.90	354.93	1533.0	123.3	-10.9	2.00	354.93	123.8	
4	5134.3	16.90	354.93	4967.0	1162.8	-103.1	0.00	0.00	1167.3	
5	5979.5	0.00	0.00	5800.0	1286.1	-114.1	2.00	180.00	1291.1	Target BHL 75'FNL & 75'FWL
6	7299.5	0.00	0.00	7120.0	1286.1	-114.1	0.00	0.00	1291.1	



NOBLE ENERGY INC WELD COUNTY CO

SEC.25-T6N-R65W

Lutz E25-30D Pad Sec.25-T6N-R65W

Lutz E25-30D

Wellbore #1

Plan: Noble Lutz E25-30D Plan #1 (8-10-10)

Standard Planning Report

16 August, 2010



Database:	EDM den0-adp01 Server Data	Local Co-ordinate Reference:	Well Lutz E25-30D
Company:	NOBLE ENERGY INC WELD COUNTY CO	TVD Reference:	WELL @ 4700.0ft (Original Well Elev)
Project:	SEC.25-T6N-R65W	MD Reference:	WELL @ 4700.0ft (Original Well Elev)
Site:	Lutz E25-30D Pad Sec.25-T6N-R65W	North Reference:	True
Well:	Lutz E25-30D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Noble Lutz E25-30D Plan #1 (8-10-10)		

Project	SEC.25-T6N-R65W, 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						Lutz E25-30D Pad Sec.25-T6N-R65W							
Site Position: From:			Lat/Long			Northing:		1,411,807.91 ft		Latitude:		40° 27' 37.728 N	
						Easting:		3,244,833.05 ft		Longitude:		104° 37' 12.432 W	
Position Uncertainty:			0.0 ft			Slot Radius:		"		Grid Convergence:		0.57 °	

Well	Lutz E25-30D					
Well Position	+N-S	0.0 ft	Northing:	1,411,807.89 ft	Latitude:	40° 27' 37.728 N
	+E-W	0.0 ft	Easting:	3,244,833.05 ft	Longitude:	104° 37' 12.432 W
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,687.0 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	8/10/2010	8.91	67.15	53,269

Design	Noble Lutz E25-30D Plan #1 (8-10-10)			
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	354.93

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	
1,545.2	16.90	354.93	1,533.0	123.3	-10.9	2.00	2.00	0.00	354.93	
5,134.3	16.90	354.93	4,967.0	1,162.8	-103.1	0.00	0.00	0.00	0.00	
5,979.5	0.00	0.00	5,800.0	1,286.1	-114.1	2.00	-2.00	0.00	180.00	Target BHL 75'FNL
7,299.5	0.00	0.00	7,120.0	1,286.1	-114.1	0.00	0.00	0.00	0.00	

Database:	EDM den0-adp01 Server Data	Local Co-ordinate Reference:	Well Lutz E25-30D
Company:	NOBLE ENERGY INC WELD COUNTY CO	TVD Reference:	WELL @ 4700.0ft (Original Well Elev)
Project:	SEC.25-T6N-R65W	MD Reference:	WELL @ 4700.0ft (Original Well Elev)
Site:	Lutz E25-30D Pad Sec.25-T6N-R65W	North Reference:	True
Well:	Lutz E25-30D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Noble Lutz E25-30D Plan #1 (8-10-10)		

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
550.0	0.00	0.00	550.0	0.0	0.0	0.0	0.00	0.00	0.00
8 5/8"									
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
700.0	0.00	0.00	700.0	0.0	0.0	0.0	0.00	0.00	0.00
720.0	0.40	354.93	720.0	0.1	0.0	0.1	2.00	2.00	0.00
760.0	1.20	354.93	760.0	0.6	-0.1	0.6	2.00	2.00	0.00
800.0	2.00	354.93	800.0	1.7	-0.2	1.7	2.00	2.00	0.00
840.0	2.80	354.93	839.9	3.4	-0.3	3.4	2.00	2.00	0.00
880.0	3.60	354.93	879.9	5.6	-0.5	5.7	2.00	2.00	0.00
920.0	4.40	354.93	919.8	8.4	-0.7	8.4	2.00	2.00	0.00
960.0	5.20	354.93	959.6	11.7	-1.0	11.8	2.00	2.00	0.00
1,000.0	6.00	354.93	999.5	15.6	-1.4	15.7	2.00	2.00	0.00
1,040.0	6.80	354.93	1,039.2	20.1	-1.8	20.2	2.00	2.00	0.00
1,080.0	7.60	354.93	1,078.9	25.1	-2.2	25.2	2.00	2.00	0.00
1,120.0	8.40	354.93	1,118.5	30.6	-2.7	30.7	2.00	2.00	0.00
1,160.0	9.20	354.93	1,158.0	36.7	-3.3	36.9	2.00	2.00	0.00
1,200.0	10.00	354.93	1,197.5	43.4	-3.8	43.5	2.00	2.00	0.00
1,240.0	10.80	354.93	1,236.8	50.5	-4.5	50.7	2.00	2.00	0.00
1,280.0	11.60	354.93	1,276.0	58.3	-5.2	58.5	2.00	2.00	0.00
1,320.0	12.40	354.93	1,315.2	66.6	-5.9	66.8	2.00	2.00	0.00
1,360.0	13.20	354.93	1,354.2	75.4	-6.7	75.7	2.00	2.00	0.00
1,400.0	14.00	354.93	1,393.1	84.8	-7.5	85.1	2.00	2.00	0.00
1,440.0	14.80	354.93	1,431.8	94.7	-8.4	95.0	2.00	2.00	0.00
1,480.0	15.60	354.93	1,470.4	105.1	-9.3	105.5	2.00	2.00	0.00
1,520.0	16.40	354.93	1,508.8	116.1	-10.3	116.6	2.00	2.00	0.00
1,545.2	16.90	354.93	1,533.0	123.3	-10.9	123.8	2.00	2.00	0.00
1,560.0	16.90	354.93	1,547.2	127.6	-11.3	128.1	0.00	0.00	0.00
1,600.0	16.90	354.93	1,585.4	139.2	-12.3	139.7	0.00	0.00	0.00
1,640.0	16.90	354.93	1,623.7	150.7	-13.4	151.3	0.00	0.00	0.00
1,680.0	16.90	354.93	1,662.0	162.3	-14.4	163.0	0.00	0.00	0.00
1,720.0	16.90	354.93	1,700.2	173.9	-15.4	174.6	0.00	0.00	0.00
1,760.0	16.90	354.93	1,738.5	185.5	-16.5	186.2	0.00	0.00	0.00
1,800.0	16.90	354.93	1,776.8	197.1	-17.5	197.9	0.00	0.00	0.00
1,840.0	16.90	354.93	1,815.1	208.7	-18.5	209.5	0.00	0.00	0.00
1,880.0	16.90	354.93	1,853.3	220.3	-19.5	221.1	0.00	0.00	0.00
1,920.0	16.90	354.93	1,891.6	231.8	-20.6	232.8	0.00	0.00	0.00
1,960.0	16.90	354.93	1,929.9	243.4	-21.6	244.4	0.00	0.00	0.00

Database:	EDM den0-adp01 Server Data	Local Co-ordinate Reference:	Well Lutz E25-30D
Company:	NOBLE ENERGY INC WELD COUNTY CO	TVD Reference:	WELL @ 4700.0ft (Original Well Elev)
Project:	SEC.25-T6N-R65W	MD Reference:	WELL @ 4700.0ft (Original Well Elev)
Site:	Lutz E25-30D Pad Sec.25-T6N-R65W	North Reference:	True
Well:	Lutz E25-30D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Noble Lutz E25-30D Plan #1 (8-10-10)		

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	16.90	354.93	1,968.1	255.0	-22.6	256.0	0.00	0.00	0.00
2,040.0	16.90	354.93	2,006.4	266.6	-23.6	267.6	0.00	0.00	0.00
2,080.0	16.90	354.93	2,044.7	278.2	-24.7	279.3	0.00	0.00	0.00
2,120.0	16.90	354.93	2,083.0	289.8	-25.7	290.9	0.00	0.00	0.00
2,160.0	16.90	354.93	2,121.2	301.4	-26.7	302.5	0.00	0.00	0.00
2,200.0	16.90	354.93	2,159.5	312.9	-27.8	314.2	0.00	0.00	0.00
2,240.0	16.90	354.93	2,197.8	324.5	-28.8	325.8	0.00	0.00	0.00
2,280.0	16.90	354.93	2,236.0	336.1	-29.8	337.4	0.00	0.00	0.00
2,320.0	16.90	354.93	2,274.3	347.7	-30.8	349.1	0.00	0.00	0.00
2,360.0	16.90	354.93	2,312.6	359.3	-31.9	360.7	0.00	0.00	0.00
2,400.0	16.90	354.93	2,350.9	370.9	-32.9	372.3	0.00	0.00	0.00
2,440.0	16.90	354.93	2,389.1	382.4	-33.9	383.9	0.00	0.00	0.00
2,480.0	16.90	354.93	2,427.4	394.0	-35.0	395.6	0.00	0.00	0.00
2,520.0	16.90	354.93	2,465.7	405.6	-36.0	407.2	0.00	0.00	0.00
2,560.0	16.90	354.93	2,503.9	417.2	-37.0	418.8	0.00	0.00	0.00
2,600.0	16.90	354.93	2,542.2	428.8	-38.0	430.5	0.00	0.00	0.00
2,640.0	16.90	354.93	2,580.5	440.4	-39.1	442.1	0.00	0.00	0.00
2,680.0	16.90	354.93	2,618.8	452.0	-40.1	453.7	0.00	0.00	0.00
2,720.0	16.90	354.93	2,657.0	463.5	-41.1	465.4	0.00	0.00	0.00
2,760.0	16.90	354.93	2,695.3	475.1	-42.1	477.0	0.00	0.00	0.00
2,800.0	16.90	354.93	2,733.6	486.7	-43.2	488.6	0.00	0.00	0.00
2,840.0	16.90	354.93	2,771.9	498.3	-44.2	500.2	0.00	0.00	0.00
2,880.0	16.90	354.93	2,810.1	509.9	-45.2	511.9	0.00	0.00	0.00
2,920.0	16.90	354.93	2,848.4	521.5	-46.3	523.5	0.00	0.00	0.00
2,960.0	16.90	354.93	2,886.7	533.0	-47.3	535.1	0.00	0.00	0.00
3,000.0	16.90	354.93	2,924.9	544.6	-48.3	546.8	0.00	0.00	0.00
3,040.0	16.90	354.93	2,963.2	556.2	-49.3	558.4	0.00	0.00	0.00
3,080.0	16.90	354.93	3,001.5	567.8	-50.4	570.0	0.00	0.00	0.00
3,120.0	16.90	354.93	3,039.8	579.4	-51.4	581.7	0.00	0.00	0.00
3,160.0	16.90	354.93	3,078.0	591.0	-52.4	593.3	0.00	0.00	0.00
3,200.0	16.90	354.93	3,116.3	602.6	-53.5	604.9	0.00	0.00	0.00
3,240.0	16.90	354.93	3,154.6	614.1	-54.5	616.6	0.00	0.00	0.00
3,280.0	16.90	354.93	3,192.8	625.7	-55.5	628.2	0.00	0.00	0.00
3,320.0	16.90	354.93	3,231.1	637.3	-56.5	639.8	0.00	0.00	0.00
3,360.0	16.90	354.93	3,269.4	648.9	-57.6	651.4	0.00	0.00	0.00
3,400.0	16.90	354.93	3,307.7	660.5	-58.6	663.1	0.00	0.00	0.00
3,440.0	16.90	354.93	3,345.9	672.1	-59.6	674.7	0.00	0.00	0.00
3,480.0	16.90	354.93	3,384.2	683.6	-60.6	686.3	0.00	0.00	0.00
3,520.0	16.90	354.93	3,422.5	695.2	-61.7	698.0	0.00	0.00	0.00
3,560.0	16.90	354.93	3,460.7	706.8	-62.7	709.6	0.00	0.00	0.00
3,600.0	16.90	354.93	3,499.0	718.4	-63.7	721.2	0.00	0.00	0.00
3,640.0	16.90	354.93	3,537.3	730.0	-64.8	732.9	0.00	0.00	0.00
3,680.0	16.90	354.93	3,575.6	741.6	-65.8	744.5	0.00	0.00	0.00
3,720.0	16.90	354.93	3,613.8	753.2	-66.8	756.1	0.00	0.00	0.00
3,760.0	16.90	354.93	3,652.1	764.7	-67.8	767.7	0.00	0.00	0.00
3,800.0	16.90	354.93	3,690.4	776.3	-68.9	779.4	0.00	0.00	0.00
3,840.0	16.90	354.93	3,728.6	787.9	-69.9	791.0	0.00	0.00	0.00
3,880.0	16.90	354.93	3,766.9	799.5	-70.9	802.6	0.00	0.00	0.00
3,920.0	16.90	354.93	3,805.2	811.1	-72.0	814.3	0.00	0.00	0.00
3,960.0	16.90	354.93	3,843.5	822.7	-73.0	825.9	0.00	0.00	0.00
4,000.0	16.90	354.93	3,881.7	834.3	-74.0	837.5	0.00	0.00	0.00
4,040.0	16.90	354.93	3,920.0	845.8	-75.0	849.2	0.00	0.00	0.00
4,080.0	16.90	354.93	3,958.3	857.4	-76.1	860.8	0.00	0.00	0.00
4,120.0	16.90	354.93	3,996.6	869.0	-77.1	872.4	0.00	0.00	0.00

Database:	EDM den0-adp01 Server Data	Local Co-ordinate Reference:	Well Lutz E25-30D
Company:	NOBLE ENERGY INC WELD COUNTY CO	TVD Reference:	WELL @ 4700.0ft (Original Well Elev)
Project:	SEC.25-T6N-R65W	MD Reference:	WELL @ 4700.0ft (Original Well Elev)
Site:	Lutz E25-30D Pad Sec.25-T6N-R65W	North Reference:	True
Well:	Lutz E25-30D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Noble Lutz E25-30D Plan #1 (8-10-10)		

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)
4,160.0	16.90	354.93	4,034.8	880.6	-78.1	884.0	0.00	0.00	0.00
4,200.0	16.90	354.93	4,073.1	892.2	-79.1	895.7	0.00	0.00	0.00
4,240.0	16.90	354.93	4,111.4	903.8	-80.2	907.3	0.00	0.00	0.00
4,280.0	16.90	354.93	4,149.6	915.3	-81.2	918.9	0.00	0.00	0.00
4,320.0	16.90	354.93	4,187.9	926.9	-82.2	930.6	0.00	0.00	0.00
4,360.0	16.90	354.93	4,226.2	938.5	-83.3	942.2	0.00	0.00	0.00
4,400.0	16.90	354.93	4,264.5	950.1	-84.3	953.8	0.00	0.00	0.00
4,440.0	16.90	354.93	4,302.7	961.7	-85.3	965.5	0.00	0.00	0.00
4,480.0	16.90	354.93	4,341.0	973.3	-86.3	977.1	0.00	0.00	0.00
4,520.0	16.90	354.93	4,379.3	984.9	-87.4	988.7	0.00	0.00	0.00
4,560.0	16.90	354.93	4,417.5	996.4	-88.4	1,000.4	0.00	0.00	0.00
4,600.0	16.90	354.93	4,455.8	1,008.0	-89.4	1,012.0	0.00	0.00	0.00
4,640.0	16.90	354.93	4,494.1	1,019.6	-90.4	1,023.6	0.00	0.00	0.00
4,680.0	16.90	354.93	4,532.4	1,031.2	-91.5	1,035.2	0.00	0.00	0.00
4,720.0	16.90	354.93	4,570.6	1,042.8	-92.5	1,046.9	0.00	0.00	0.00
4,760.0	16.90	354.93	4,608.9	1,054.4	-93.5	1,058.5	0.00	0.00	0.00
4,800.0	16.90	354.93	4,647.2	1,065.9	-94.6	1,070.1	0.00	0.00	0.00
4,840.0	16.90	354.93	4,685.4	1,077.5	-95.6	1,081.8	0.00	0.00	0.00
4,880.0	16.90	354.93	4,723.7	1,089.1	-96.6	1,093.4	0.00	0.00	0.00
4,920.0	16.90	354.93	4,762.0	1,100.7	-97.6	1,105.0	0.00	0.00	0.00
4,960.0	16.90	354.93	4,800.3	1,112.3	-98.7	1,116.7	0.00	0.00	0.00
5,000.0	16.90	354.93	4,838.5	1,123.9	-99.7	1,128.3	0.00	0.00	0.00
5,040.0	16.90	354.93	4,876.8	1,135.5	-100.7	1,139.9	0.00	0.00	0.00
5,080.0	16.90	354.93	4,915.1	1,147.0	-101.8	1,151.5	0.00	0.00	0.00
5,120.0	16.90	354.93	4,953.4	1,158.6	-102.8	1,163.2	0.00	0.00	0.00
5,134.3	16.90	354.93	4,967.0	1,162.8	-103.1	1,167.3	0.00	0.00	0.00
5,160.0	16.39	354.93	4,991.7	1,170.1	-103.8	1,174.7	2.00	-2.00	0.00
5,200.0	15.59	354.93	5,030.1	1,181.1	-104.8	1,185.7	2.00	-2.00	0.00
5,240.0	14.79	354.93	5,068.7	1,191.5	-105.7	1,196.2	2.00	-2.00	0.00
5,280.0	13.99	354.93	5,107.5	1,201.4	-106.6	1,206.1	2.00	-2.00	0.00
5,320.0	13.19	354.93	5,146.3	1,210.8	-107.4	1,215.5	2.00	-2.00	0.00
5,360.0	12.39	354.93	5,185.3	1,219.6	-108.2	1,224.4	2.00	-2.00	0.00
5,400.0	11.59	354.93	5,224.5	1,227.9	-108.9	1,232.7	2.00	-2.00	0.00
5,440.0	10.79	354.93	5,263.7	1,235.6	-109.6	1,240.5	2.00	-2.00	0.00
5,480.0	9.99	354.93	5,303.1	1,242.8	-110.2	1,247.7	2.00	-2.00	0.00
5,520.0	9.19	354.93	5,342.5	1,249.4	-110.8	1,254.3	2.00	-2.00	0.00
5,560.0	8.39	354.93	5,382.0	1,255.5	-111.4	1,260.4	2.00	-2.00	0.00
5,600.0	7.59	354.93	5,421.6	1,261.1	-111.9	1,266.0	2.00	-2.00	0.00
5,640.0	6.79	354.93	5,461.3	1,266.0	-112.3	1,271.0	2.00	-2.00	0.00
5,680.0	5.99	354.93	5,501.1	1,270.5	-112.7	1,275.5	2.00	-2.00	0.00
5,720.0	5.19	354.93	5,540.9	1,274.4	-113.0	1,279.4	2.00	-2.00	0.00
5,760.0	4.39	354.93	5,580.7	1,277.7	-113.3	1,282.7	2.00	-2.00	0.00
5,800.0	3.59	354.93	5,620.6	1,280.5	-113.6	1,285.5	2.00	-2.00	0.00
5,840.0	2.79	354.93	5,660.6	1,282.7	-113.8	1,287.7	2.00	-2.00	0.00
5,880.0	1.99	354.93	5,700.5	1,284.3	-113.9	1,289.4	2.00	-2.00	0.00
5,920.0	1.19	354.93	5,740.5	1,285.4	-114.0	1,290.5	2.00	-2.00	0.00
5,960.0	0.39	354.93	5,780.5	1,286.0	-114.1	1,291.0	2.00	-2.00	0.00
5,979.5	0.00	0.00	5,800.0	1,286.1	-114.1	1,291.1	2.00	-2.00	26.03
Target BHL 75'FNL & 75'FWL									
6,000.0	0.00	0.00	5,820.5	1,286.1	-114.1	1,291.1	0.00	0.00	0.00
6,040.0	0.00	0.00	5,860.5	1,286.1	-114.1	1,291.1	0.00	0.00	0.00
6,080.0	0.00	0.00	5,900.5	1,286.1	-114.1	1,291.1	0.00	0.00	0.00
6,120.0	0.00	0.00	5,940.5	1,286.1	-114.1	1,291.1	0.00	0.00	0.00
6,160.0	0.00	0.00	5,980.5	1,286.1	-114.1	1,291.1	0.00	0.00	0.00

Database:	EDM den0-adp01 Server Data	Local Co-ordinate Reference:	Well Lutz E25-30D
Company:	NOBLE ENERGY INC WELD COUNTY CO	TVD Reference:	WELL @ 4700.0ft (Original Well Elev)
Project:	SEC.25-T6N-R65W	MD Reference:	WELL @ 4700.0ft (Original Well Elev)
Site:	Lutz E25-30D Pad Sec.25-T6N-R65W	North Reference:	True
Well:	Lutz E25-30D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Noble Lutz E25-30D Plan #1 (8-10-10)		

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)
6,200.0	0.00	0.00	6,020.5	1,286.1	-114.1	1,291.1	0.00	0.00	0.00
6,240.0	0.00	0.00	6,060.5	1,286.1	-114.1	1,291.1	0.00	0.00	0.00
6,280.0	0.00	0.00	6,100.5	1,286.1	-114.1	1,291.1	0.00	0.00	0.00
6,320.0	0.00	0.00	6,140.5	1,286.1	-114.1	1,291.1	0.00	0.00	0.00
6,360.0	0.00	0.00	6,180.5	1,286.1	-114.1	1,291.1	0.00	0.00	0.00
6,400.0	0.00	0.00	6,220.5	1,286.1	-114.1	1,291.1	0.00	0.00	0.00
6,440.0	0.00	0.00	6,260.5	1,286.1	-114.1	1,291.1	0.00	0.00	0.00
6,480.0	0.00	0.00	6,300.5	1,286.1	-114.1	1,291.1	0.00	0.00	0.00
6,520.0	0.00	0.00	6,340.5	1,286.1	-114.1	1,291.1	0.00	0.00	0.00
6,560.0	0.00	0.00	6,380.5	1,286.1	-114.1	1,291.1	0.00	0.00	0.00
6,600.0	0.00	0.00	6,420.5	1,286.1	-114.1	1,291.1	0.00	0.00	0.00
6,640.0	0.00	0.00	6,460.5	1,286.1	-114.1	1,291.1	0.00	0.00	0.00
6,680.0	0.00	0.00	6,500.5	1,286.1	-114.1	1,291.1	0.00	0.00	0.00
6,720.0	0.00	0.00	6,540.5	1,286.1	-114.1	1,291.1	0.00	0.00	0.00
6,760.0	0.00	0.00	6,580.5	1,286.1	-114.1	1,291.1	0.00	0.00	0.00
6,800.0	0.00	0.00	6,620.5	1,286.1	-114.1	1,291.1	0.00	0.00	0.00
6,819.5	0.00	0.00	6,640.0	1,286.1	-114.1	1,291.1	0.00	0.00	0.00
Niobrara - Target Circle 75'FNL & 75'FWL									
6,840.0	0.00	0.00	6,660.5	1,286.1	-114.1	1,291.1	0.00	0.00	0.00
6,880.0	0.00	0.00	6,700.5	1,286.1	-114.1	1,291.1	0.00	0.00	0.00
6,920.0	0.00	0.00	6,740.5	1,286.1	-114.1	1,291.1	0.00	0.00	0.00
6,960.0	0.00	0.00	6,780.5	1,286.1	-114.1	1,291.1	0.00	0.00	0.00
7,000.0	0.00	0.00	6,820.5	1,286.1	-114.1	1,291.1	0.00	0.00	0.00
7,040.0	0.00	0.00	6,860.5	1,286.1	-114.1	1,291.1	0.00	0.00	0.00
7,080.0	0.00	0.00	6,900.5	1,286.1	-114.1	1,291.1	0.00	0.00	0.00
7,120.0	0.00	0.00	6,940.5	1,286.1	-114.1	1,291.1	0.00	0.00	0.00
7,149.5	0.00	0.00	6,970.0	1,286.1	-114.1	1,291.1	0.00	0.00	0.00
Codell									
7,160.0	0.00	0.00	6,980.5	1,286.1	-114.1	1,291.1	0.00	0.00	0.00
7,200.0	0.00	0.00	7,020.5	1,286.1	-114.1	1,291.1	0.00	0.00	0.00
7,240.0	0.00	0.00	7,060.5	1,286.1	-114.1	1,291.1	0.00	0.00	0.00
7,280.0	0.00	0.00	7,100.5	1,286.1	-114.1	1,291.1	0.00	0.00	0.00
7,299.5	0.00	0.00	7,120.0	1,286.1	-114.1	1,291.1	0.00	0.00	0.00
Hardline 75'N & 75'W of BHL									

Database:	EDM den0-adp01 Server Data	Local Co-ordinate Reference:	Well Lutz E25-30D
Company:	NOBLE ENERGY INC WELD COUNTY CO	TVD Reference:	WELL @ 4700.0ft (Original Well Elev)
Project:	SEC.25-T6N-R65W	MD Reference:	WELL @ 4700.0ft (Original Well Elev)
Site:	Lutz E25-30D Pad Sec.25-T6N-R65W	North Reference:	True
Well:	Lutz E25-30D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Noble Lutz E25-30D Plan #1 (8-10-10)		

Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
- hit/miss target									
- Shape									
Target Circle 75'FNL & plan hits target center	0.00	0.00	6,640.0	1,286.1	-114.1	1,413,092.70	3,244,706.22	40° 27' 50.436 N	104° 37' 13.908 W
- Circle (radius 75.0)									
Target BHL 75'FNL & plan hits target center	0.00	0.00	5,800.0	1,286.1	-114.1	1,413,092.70	3,244,706.22	40° 27' 50.436 N	104° 37' 13.908 W
- Point									
Hardline 75'N & 75'W	0.00	0.00	7,120.0	1,361.1	-189.1	1,413,167.00	3,244,630.47	40° 27' 51.178 N	104° 37' 14.879 W
- plan misses target center by 106.1ft at 7299.5ft MD (7120.0 TVD, 1286.1 N, -114.1 E)									
- Polygon									
Point 1			7,120.0	0.0	0.0	1,413,167.00	3,244,630.47		
Point 2			7,120.0	0.0	200.0	1,413,168.98	3,244,830.45		
Point 3			7,120.0	0.0	0.0	1,413,167.00	3,244,630.47		
Point 4			7,120.0	-200.0	0.0	1,412,967.02	3,244,632.45		

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")	
550.0	550.0	8 5/8"	8-5/8	12-1/4	

Formations					
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
6,819.5	6,640.0	Niobrara		0.00	
7,149.5	6,970.0	Codell		0.00	