

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	800.0	0.00	0.00	800.0	0.0	0.0	0.00	0.00	0.0	
3	1464.4	13.29	47.06	1458.5	52.3	56.2	2.00	47.06	76.7	
4	4426.8	13.29	47.06	4341.5	516.1	554.6	0.00	0.00	757.6	
5	5091.2	0.00	0.00	5000.0	568.3	610.8	2.00	180.00	834.3	TARGET BHL 1320'FSL & 75'FEL
6	7228.2	0.00	0.00	7137.0	568.3	610.8	0.00	0.00	834.3	



NOBLE ENERGY INC WELD COUNTY CO

SEC.17-T4N-R65W

Walker G16-33D Pad Sec.17-T4N-R65W

Walker G16-33D

Wellbore #1

Plan: Noble Walker G16-33D Plan #1 (9-7-11)

Standard Planning Report

09 September, 2011



Database: Landmark
Company: NOBLE ENERGY INC WELD COUNTY CO
Project: SEC.17-T4N-R65W
Site: Walker G16-33D Pad Sec.17-T4N-R65W
Well: Walker G16-33D
Wellbore: Wellbore #1
Design: Noble Walker G16-33D Plan #1 (9-7-11)

Local Co-ordinate Reference: Well Walker G16-33D
TVD Reference: WELL @ 4797.0ft (Original Well Elev)
MD Reference: WELL @ 4797.0ft (Original Well Elev)
North Reference: True
Survey Calculation Method: Minimum Curvature

Project	SEC.17-T4N-R65W, Weld County, CO		
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	Walker G16-33D Pad Sec.17-T4N-R65W				
Site Position:		Northing:	1,355,826.02 ft	Latitude:	40.307240
From:	Lat/Long	Easting:	3,228,698.87 ft	Longitude:	-104.679960
Position Uncertainty:	0.0 ft	Slot Radius:	"	Grid Convergence:	0.53 °

Well	Walker G16-33D					
Well Position	+N/-S	0.0 ft	Northing:	1,355,826.01 ft	Latitude:	40.307240
	+E/-W	0.0 ft	Easting:	3,228,698.87 ft	Longitude:	-104.679960
Position Uncertainty	0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,784.0 ft	

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	9/7/2011	8.78	66.98	53,068

Design	Noble Walker G16-33D Plan #1 (9-7-11)			
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	47.06

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	
800.0	0.00	0.00	800.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,464.4	13.29	47.06	1,458.5	52.3	56.2	2.00	2.00	0.00	47.06	
4,426.8	13.29	47.06	4,341.5	516.1	554.6	0.00	0.00	0.00	0.00	
5,091.2	0.00	0.00	5,000.0	568.3	610.8	2.00	-2.00	0.00	180.00	TARGET BHL 132C
7,228.2	0.00	0.00	7,137.0	568.3	610.8	0.00	0.00	0.00	0.00	

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Wellbore: Wellbore #1
Design: Noble Walker G16-33D Plan #1 (9-7-11)

Local Co-ordinate Reference: Well Walker G16-33D
TVD Reference: WELL @ 4797.0ft (Original Well Elev)
MD Reference: WELL @ 4797.0ft (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
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	0.80	47.06	840.0	0.2	0.2	0.3	2.00	2.00	0.00
880.0	1.60	47.06	880.0	0.8	0.8	1.1	2.00	2.00	0.00
920.0	2.40	47.06	920.0	1.7	1.8	2.5	2.00	2.00	0.00
960.0	3.20	47.06	959.9	3.0	3.3	4.5	2.00	2.00	0.00
1,000.0	4.00	47.06	999.8	4.8	5.1	7.0	2.00	2.00	0.00
1,040.0	4.80	47.06	1,039.7	6.8	7.4	10.0	2.00	2.00	0.00
1,080.0	5.60	47.06	1,079.6	9.3	10.0	13.7	2.00	2.00	0.00
1,120.0	6.40	47.06	1,119.3	12.2	13.1	17.9	2.00	2.00	0.00
1,160.0	7.20	47.06	1,159.1	15.4	16.5	22.6	2.00	2.00	0.00
1,200.0	8.00	47.06	1,198.7	19.0	20.4	27.9	2.00	2.00	0.00
1,240.0	8.80	47.06	1,238.3	23.0	24.7	33.7	2.00	2.00	0.00
1,280.0	9.60	47.06	1,277.8	27.3	29.4	40.1	2.00	2.00	0.00
1,320.0	10.40	47.06	1,317.1	32.1	34.5	47.1	2.00	2.00	0.00
1,360.0	11.20	47.06	1,356.4	37.2	39.9	54.6	2.00	2.00	0.00
1,400.0	12.00	47.06	1,395.6	42.6	45.8	62.6	2.00	2.00	0.00
1,440.0	12.80	47.06	1,434.7	48.5	52.1	71.2	2.00	2.00	0.00
1,464.4	13.29	47.06	1,458.5	52.3	56.2	76.7	2.00	2.00	0.00
1,480.0	13.29	47.06	1,473.6	54.7	58.8	80.3	0.00	0.00	0.00
1,520.0	13.29	47.06	1,512.6	61.0	65.5	89.5	0.00	0.00	0.00
1,560.0	13.29	47.06	1,551.5	67.2	72.2	98.7	0.00	0.00	0.00
1,600.0	13.29	47.06	1,590.4	73.5	79.0	107.9	0.00	0.00	0.00
1,640.0	13.29	47.06	1,629.4	79.7	85.7	117.1	0.00	0.00	0.00
1,680.0	13.29	47.06	1,668.3	86.0	92.4	126.3	0.00	0.00	0.00
1,720.0	13.29	47.06	1,707.2	92.3	99.2	135.4	0.00	0.00	0.00
1,760.0	13.29	47.06	1,746.1	98.5	105.9	144.6	0.00	0.00	0.00
1,800.0	13.29	47.06	1,785.1	104.8	112.6	153.8	0.00	0.00	0.00
1,840.0	13.29	47.06	1,824.0	111.1	119.4	163.0	0.00	0.00	0.00
1,880.0	13.29	47.06	1,862.9	117.3	126.1	172.2	0.00	0.00	0.00
1,920.0	13.29	47.06	1,901.9	123.6	132.8	181.4	0.00	0.00	0.00
1,960.0	13.29	47.06	1,940.8	129.8	139.5	190.6	0.00	0.00	0.00
2,000.0	13.29	47.06	1,979.7	136.1	146.3	199.8	0.00	0.00	0.00
2,040.0	13.29	47.06	2,018.6	142.4	153.0	209.0	0.00	0.00	0.00

Database: Landmark
Company: NOBLE ENERGY INC WELD COUNTY CO
Project: SEC.17-T4N-R65W
Site: Walker G16-33D Pad Sec.17-T4N-R65W
Well: Walker G16-33D
Wellbore: Wellbore #1
Design: Noble Walker G16-33D Plan #1 (9-7-11)

Local Co-ordinate Reference: Well Walker G16-33D
TVD Reference: WELL @ 4797.0ft (Original Well Elev)
MD Reference: WELL @ 4797.0ft (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)
2,080.0	13.29	47.06	2,057.6	148.6	159.7	218.2	0.00	0.00	0.00
2,120.0	13.29	47.06	2,096.5	154.9	166.5	227.4	0.00	0.00	0.00
2,160.0	13.29	47.06	2,135.4	161.2	173.2	236.6	0.00	0.00	0.00
2,200.0	13.29	47.06	2,174.4	167.4	179.9	245.8	0.00	0.00	0.00
2,240.0	13.29	47.06	2,213.3	173.7	186.7	255.0	0.00	0.00	0.00
2,280.0	13.29	47.06	2,252.2	180.0	193.4	264.2	0.00	0.00	0.00
2,320.0	13.29	47.06	2,291.2	186.2	200.1	273.4	0.00	0.00	0.00
2,360.0	13.29	47.06	2,330.1	192.5	206.9	282.6	0.00	0.00	0.00
2,400.0	13.29	47.06	2,369.0	198.7	213.6	291.7	0.00	0.00	0.00
2,440.0	13.29	47.06	2,407.9	205.0	220.3	300.9	0.00	0.00	0.00
2,480.0	13.29	47.06	2,446.9	211.3	227.0	310.1	0.00	0.00	0.00
2,520.0	13.29	47.06	2,485.8	217.5	233.8	319.3	0.00	0.00	0.00
2,560.0	13.29	47.06	2,524.7	223.8	240.5	328.5	0.00	0.00	0.00
2,600.0	13.29	47.06	2,563.7	230.1	247.2	337.7	0.00	0.00	0.00
2,640.0	13.29	47.06	2,602.6	236.3	254.0	346.9	0.00	0.00	0.00
2,680.0	13.29	47.06	2,641.5	242.6	260.7	356.1	0.00	0.00	0.00
2,720.0	13.29	47.06	2,680.4	248.8	267.4	365.3	0.00	0.00	0.00
2,760.0	13.29	47.06	2,719.4	255.1	274.2	374.5	0.00	0.00	0.00
2,800.0	13.29	47.06	2,758.3	261.4	280.9	383.7	0.00	0.00	0.00
2,840.0	13.29	47.06	2,797.2	267.6	287.6	392.9	0.00	0.00	0.00
2,880.0	13.29	47.06	2,836.2	273.9	294.4	402.1	0.00	0.00	0.00
2,920.0	13.29	47.06	2,875.1	280.2	301.1	411.3	0.00	0.00	0.00
2,960.0	13.29	47.06	2,914.0	286.4	307.8	420.5	0.00	0.00	0.00
3,000.0	13.29	47.06	2,952.9	292.7	314.5	429.7	0.00	0.00	0.00
3,040.0	13.29	47.06	2,991.9	299.0	321.3	438.9	0.00	0.00	0.00
3,080.0	13.29	47.06	3,030.8	305.2	328.0	448.0	0.00	0.00	0.00
3,120.0	13.29	47.06	3,069.7	311.5	334.7	457.2	0.00	0.00	0.00
3,160.0	13.29	47.06	3,108.7	317.7	341.5	466.4	0.00	0.00	0.00
3,200.0	13.29	47.06	3,147.6	324.0	348.2	475.6	0.00	0.00	0.00
3,240.0	13.29	47.06	3,186.5	330.3	354.9	484.8	0.00	0.00	0.00
3,280.0	13.29	47.06	3,225.4	336.5	361.7	494.0	0.00	0.00	0.00
3,320.0	13.29	47.06	3,264.4	342.8	368.4	503.2	0.00	0.00	0.00
3,360.0	13.29	47.06	3,303.3	349.1	375.1	512.4	0.00	0.00	0.00
3,400.0	13.29	47.06	3,342.2	355.3	381.9	521.6	0.00	0.00	0.00
3,440.0	13.29	47.06	3,381.2	361.6	388.6	530.8	0.00	0.00	0.00
3,480.0	13.29	47.06	3,420.1	367.8	395.3	540.0	0.00	0.00	0.00
3,520.0	13.29	47.06	3,459.0	374.1	402.0	549.2	0.00	0.00	0.00
3,560.0	13.29	47.06	3,498.0	380.4	408.8	558.4	0.00	0.00	0.00
3,600.0	13.29	47.06	3,536.9	386.6	415.5	567.6	0.00	0.00	0.00
3,640.0	13.29	47.06	3,575.8	392.9	422.2	576.8	0.00	0.00	0.00
3,680.0	13.29	47.06	3,614.7	399.2	429.0	586.0	0.00	0.00	0.00
3,720.0	13.29	47.06	3,653.7	405.4	435.7	595.1	0.00	0.00	0.00
3,760.0	13.29	47.06	3,692.6	411.7	442.4	604.3	0.00	0.00	0.00
3,800.0	13.29	47.06	3,731.5	417.9	449.2	613.5	0.00	0.00	0.00
3,840.0	13.29	47.06	3,770.5	424.2	455.9	622.7	0.00	0.00	0.00
3,880.0	13.29	47.06	3,809.4	430.5	462.6	631.9	0.00	0.00	0.00
3,920.0	13.29	47.06	3,848.3	436.7	469.4	641.1	0.00	0.00	0.00
3,960.0	13.29	47.06	3,887.2	443.0	476.1	650.3	0.00	0.00	0.00
4,000.0	13.29	47.06	3,926.2	449.3	482.8	659.5	0.00	0.00	0.00
4,040.0	13.29	47.06	3,965.1	455.5	489.5	668.7	0.00	0.00	0.00
4,080.0	13.29	47.06	4,004.0	461.8	496.3	677.9	0.00	0.00	0.00
4,120.0	13.29	47.06	4,043.0	468.1	503.0	687.1	0.00	0.00	0.00
4,160.0	13.29	47.06	4,081.9	474.3	509.7	696.3	0.00	0.00	0.00
4,200.0	13.29	47.06	4,120.8	480.6	516.5	705.5	0.00	0.00	0.00

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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)
4,240.0	13.29	47.06	4,159.7	486.8	523.2	714.7	0.00	0.00	0.00
4,280.0	13.29	47.06	4,198.7	493.1	529.9	723.9	0.00	0.00	0.00
4,320.0	13.29	47.06	4,237.6	499.4	536.7	733.1	0.00	0.00	0.00
4,360.0	13.29	47.06	4,276.5	505.6	543.4	742.3	0.00	0.00	0.00
4,400.0	13.29	47.06	4,315.5	511.9	550.1	751.4	0.00	0.00	0.00
4,426.8	13.29	47.06	4,341.5	516.1	554.6	757.6	0.00	0.00	0.00
4,440.0	13.02	47.06	4,354.4	518.1	556.8	760.6	2.00	-2.00	0.00
4,480.0	12.22	47.06	4,393.4	524.1	563.2	769.4	2.00	-2.00	0.00
4,520.0	11.42	47.06	4,432.6	529.7	569.2	777.6	2.00	-2.00	0.00
4,560.0	10.62	47.06	4,471.8	534.9	574.8	785.2	2.00	-2.00	0.00
4,600.0	9.82	47.06	4,511.2	539.7	580.0	792.3	2.00	-2.00	0.00
4,640.0	9.02	47.06	4,550.7	544.2	584.8	798.8	2.00	-2.00	0.00
4,680.0	8.22	47.06	4,590.2	548.3	589.2	804.8	2.00	-2.00	0.00
4,720.0	7.42	47.06	4,629.8	552.0	593.2	810.3	2.00	-2.00	0.00
4,760.0	6.62	47.06	4,669.5	555.3	596.8	815.2	2.00	-2.00	0.00
4,800.0	5.82	47.06	4,709.3	558.3	600.0	819.5	2.00	-2.00	0.00
4,840.0	5.02	47.06	4,749.1	560.8	602.7	823.3	2.00	-2.00	0.00
4,880.0	4.22	47.06	4,789.0	563.0	605.1	826.5	2.00	-2.00	0.00
4,920.0	3.42	47.06	4,828.9	564.9	607.0	829.2	2.00	-2.00	0.00
4,960.0	2.62	47.06	4,868.9	566.3	608.6	831.3	2.00	-2.00	0.00
5,000.0	1.82	47.06	4,908.8	567.3	609.7	832.9	2.00	-2.00	0.00
5,040.0	1.02	47.06	4,948.8	568.0	610.5	833.8	2.00	-2.00	0.00
5,080.0	0.22	47.06	4,988.8	568.3	610.8	834.3	2.00	-2.00	0.00
5,091.2	0.00	0.00	5,000.0	568.3	610.8	834.3	2.00	-2.00	0.00
TARGET BHL 1320'FSL & 75'FEL									
5,120.0	0.00	0.00	5,028.8	568.3	610.8	834.3	0.00	0.00	0.00
5,160.0	0.00	0.00	5,068.8	568.3	610.8	834.3	0.00	0.00	0.00
5,200.0	0.00	0.00	5,108.8	568.3	610.8	834.3	0.00	0.00	0.00
5,240.0	0.00	0.00	5,148.8	568.3	610.8	834.3	0.00	0.00	0.00
5,280.0	0.00	0.00	5,188.8	568.3	610.8	834.3	0.00	0.00	0.00
5,320.0	0.00	0.00	5,228.8	568.3	610.8	834.3	0.00	0.00	0.00
5,360.0	0.00	0.00	5,268.8	568.3	610.8	834.3	0.00	0.00	0.00
5,400.0	0.00	0.00	5,308.8	568.3	610.8	834.3	0.00	0.00	0.00
5,440.0	0.00	0.00	5,348.8	568.3	610.8	834.3	0.00	0.00	0.00
5,480.0	0.00	0.00	5,388.8	568.3	610.8	834.3	0.00	0.00	0.00
5,520.0	0.00	0.00	5,428.8	568.3	610.8	834.3	0.00	0.00	0.00
5,560.0	0.00	0.00	5,468.8	568.3	610.8	834.3	0.00	0.00	0.00
5,600.0	0.00	0.00	5,508.8	568.3	610.8	834.3	0.00	0.00	0.00
5,640.0	0.00	0.00	5,548.8	568.3	610.8	834.3	0.00	0.00	0.00
5,680.0	0.00	0.00	5,588.8	568.3	610.8	834.3	0.00	0.00	0.00
5,720.0	0.00	0.00	5,628.8	568.3	610.8	834.3	0.00	0.00	0.00
5,760.0	0.00	0.00	5,668.8	568.3	610.8	834.3	0.00	0.00	0.00
5,800.0	0.00	0.00	5,708.8	568.3	610.8	834.3	0.00	0.00	0.00
5,840.0	0.00	0.00	5,748.8	568.3	610.8	834.3	0.00	0.00	0.00
5,880.0	0.00	0.00	5,788.8	568.3	610.8	834.3	0.00	0.00	0.00
5,920.0	0.00	0.00	5,828.8	568.3	610.8	834.3	0.00	0.00	0.00
5,960.0	0.00	0.00	5,868.8	568.3	610.8	834.3	0.00	0.00	0.00
6,000.0	0.00	0.00	5,908.8	568.3	610.8	834.3	0.00	0.00	0.00
6,040.0	0.00	0.00	5,948.8	568.3	610.8	834.3	0.00	0.00	0.00
6,080.0	0.00	0.00	5,988.8	568.3	610.8	834.3	0.00	0.00	0.00
6,120.0	0.00	0.00	6,028.8	568.3	610.8	834.3	0.00	0.00	0.00
6,160.0	0.00	0.00	6,068.8	568.3	610.8	834.3	0.00	0.00	0.00
6,200.0	0.00	0.00	6,108.8	568.3	610.8	834.3	0.00	0.00	0.00
6,240.0	0.00	0.00	6,148.8	568.3	610.8	834.3	0.00	0.00	0.00

Database: Landmark
Company: NOBLE ENERGY INC WELD COUNTY CO
Project: SEC.17-T4N-R65W
Site: Walker G16-33D Pad Sec.17-T4N-R65W
Well: Walker G16-33D
Wellbore: Wellbore #1
Design: Noble Walker G16-33D Plan #1 (9-7-11)

Local Co-ordinate Reference: Well Walker G16-33D
TVD Reference: WELL @ 4797.0ft (Original Well Elev)
MD Reference: WELL @ 4797.0ft (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)
6,280.0	0.00	0.00	6,188.8	568.3	610.8	834.3	0.00	0.00	0.00
6,320.0	0.00	0.00	6,228.8	568.3	610.8	834.3	0.00	0.00	0.00
6,360.0	0.00	0.00	6,268.8	568.3	610.8	834.3	0.00	0.00	0.00
6,400.0	0.00	0.00	6,308.8	568.3	610.8	834.3	0.00	0.00	0.00
6,440.0	0.00	0.00	6,348.8	568.3	610.8	834.3	0.00	0.00	0.00
6,480.0	0.00	0.00	6,388.8	568.3	610.8	834.3	0.00	0.00	0.00
6,520.0	0.00	0.00	6,428.8	568.3	610.8	834.3	0.00	0.00	0.00
6,560.0	0.00	0.00	6,468.8	568.3	610.8	834.3	0.00	0.00	0.00
6,600.0	0.00	0.00	6,508.8	568.3	610.8	834.3	0.00	0.00	0.00
6,640.0	0.00	0.00	6,548.8	568.3	610.8	834.3	0.00	0.00	0.00
6,680.0	0.00	0.00	6,588.8	568.3	610.8	834.3	0.00	0.00	0.00
6,720.0	0.00	0.00	6,628.8	568.3	610.8	834.3	0.00	0.00	0.00
6,760.0	0.00	0.00	6,668.8	568.3	610.8	834.3	0.00	0.00	0.00
6,763.2	0.00	0.00	6,672.0	568.3	610.8	834.3	0.00	0.00	0.00
NIOBRARA - TARGET CIRCLE 1320'FSL & 75'FEL									
6,800.0	0.00	0.00	6,708.8	568.3	610.8	834.3	0.00	0.00	0.00
6,840.0	0.00	0.00	6,748.8	568.3	610.8	834.3	0.00	0.00	0.00
6,880.0	0.00	0.00	6,788.8	568.3	610.8	834.3	0.00	0.00	0.00
6,920.0	0.00	0.00	6,828.8	568.3	610.8	834.3	0.00	0.00	0.00
6,960.0	0.00	0.00	6,868.8	568.3	610.8	834.3	0.00	0.00	0.00
7,000.0	0.00	0.00	6,908.8	568.3	610.8	834.3	0.00	0.00	0.00
7,040.0	0.00	0.00	6,948.8	568.3	610.8	834.3	0.00	0.00	0.00
7,078.2	0.00	0.00	6,987.0	568.3	610.8	834.3	0.00	0.00	0.00
CODELL									
7,080.0	0.00	0.00	6,988.8	568.3	610.8	834.3	0.00	0.00	0.00
7,120.0	0.00	0.00	7,028.8	568.3	610.8	834.3	0.00	0.00	0.00
7,160.0	0.00	0.00	7,068.8	568.3	610.8	834.3	0.00	0.00	0.00
7,200.0	0.00	0.00	7,108.8	568.3	610.8	834.3	0.00	0.00	0.00
7,228.2	0.00	0.00	7,137.0	568.3	610.8	834.3	0.00	0.00	0.00
HARDLINE 75'E OF BHL									

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									
HARDLINE 75'E OF E	0.00	0.00	7,137.0	668.3	685.8	1,356,500.63	3,229,378.46	40.309074	-104.677501
- plan misses target center by 125.0ft at 7228.2ft MD (7137.0 TVD, 568.3 N, 610.8 E)									
- Polygon									
Point 1			7,137.0	0.0	0.0	1,356,500.63	3,229,378.46		
Point 2			7,137.0	-200.0	0.0	1,356,300.65	3,229,380.31		
TARGET CIRCLE 1320'FSL	0.00	0.00	6,672.0	568.3	610.8	1,356,399.94	3,229,304.35	40.308800	-104.677770
- plan hits target center									
- Circle (radius 75.0)									
TARGET BHL 1320'F	0.00	0.00	5,000.0	568.3	610.8	1,356,399.94	3,229,304.35	40.308800	-104.677770
- plan hits target center									
- Point									

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MD Reference: WELL @ 4797.0ft (Original Well Elev)
North Reference: True
Survey Calculation Method: Minimum Curvature

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 (°)
6,763.2	6,672.0	NIOBRARA		0.00	
7,078.2	6,987.0	CODELL		0.00	