

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	1600.0	0.00	0.00	1600.0	0.0	0.0	0.00	0.00	0.0	
3	2267.8	13.36	48.29	2261.7	51.5	57.8	2.00	48.29	77.5	
4	4915.9	13.36	48.29	4838.3	458.5	514.5	0.00	0.00	689.2	
5	5583.7	0.00	0.00	5500.0	510.0	572.3	2.00	180.00	766.6	TARGET BHL 1634'FSL, 2456'FWL
6	7817.7	0.00	0.00	7734.0	510.0	572.3	0.00	0.00	766.6	



Directional

**NOBLE ENERGY INC WELD
COUNTY CO**

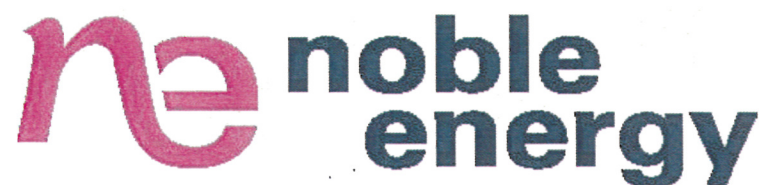
SEC.12-T3N-R65W
Ray Pad Sec.12-T3N-R65W
Ray H 12-24D

Ray H 12-24D

Plan: Ray H 12-24D Plan #1

Standard Planning Report

02 March, 2009



Database: EDM den0-adp01 Server Data
Company: NOBLE ENERGY INC WELD COUNTY CO
Project: SEC.12-T3N-R65W
Site: Ray Pad Sec.12-T3N-R65W
Well: Ray H 12-24D
Wellbore: Ray H 12-24D
Design: Ray H 12-24D Plan #1

Local Co-ordinate Reference: Well Ray H 12-24D
TVD Reference: WELL @ 4870.0ft (Original Well Elev)
MD Reference: WELL @ 4870.0ft (Original Well Elev)
North Reference: True
Survey Calculation Method: Minimum Curvature

Project	SEC.12-T3N-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	Ray Pad Sec.12-T3N-R65W				
Site Position:		Northing:	1,329,876.91 ft	Latitude:	40° 14' 7.872 N
From:	Lat/Long	Easting:	3,247,287.74 ft	Longitude:	104° 36' 51.264 W
Position Uncertainty:	0.0 ft	Slot Radius:	"	Grid Convergence:	0.57 °

Well	Ray H 12-24D					
Well Position	+N/-S	0.0 ft	Northing:	1,329,876.90 ft	Latitude:	40° 14' 7.872 N
	+E/-W	0.0 ft	Easting:	3,247,287.74 ft	Longitude:	104° 36' 51.264 W
Position Uncertainty	0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,858.0 ft	

Wellbore	Ray H 12-24D				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	2/25/2009	9.04	67.03	53,321

Design	Ray H 12-24D Plan #1			
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	48.29

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	
1,600.0	0.00	0.00	1,600.0	0.0	0.0	0.00	0.00	0.00	0.00	
2,267.8	13.36	48.29	2,261.7	51.5	57.8	2.00	2.00	0.00	48.29	
4,915.9	13.36	48.29	4,838.3	458.5	514.5	0.00	0.00	0.00	0.00	
5,583.7	0.00	0.00	5,500.0	510.0	572.3	2.00	-2.00	0.00	180.00	TARGET BHL 1634
7,817.7	0.00	0.00	7,734.0	510.0	572.3	0.00	0.00	0.00	0.00	

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MD Reference: WELL @ 4870.0ft (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
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	0.00	0.00	1,040.0	0.0	0.0	0.0	0.00	0.00	0.00
1,080.0	0.00	0.00	1,080.0	0.0	0.0	0.0	0.00	0.00	0.00
1,120.0	0.00	0.00	1,120.0	0.0	0.0	0.0	0.00	0.00	0.00
1,160.0	0.00	0.00	1,160.0	0.0	0.0	0.0	0.00	0.00	0.00
1,200.0	0.00	0.00	1,200.0	0.0	0.0	0.0	0.00	0.00	0.00
1,240.0	0.00	0.00	1,240.0	0.0	0.0	0.0	0.00	0.00	0.00
1,280.0	0.00	0.00	1,280.0	0.0	0.0	0.0	0.00	0.00	0.00
1,320.0	0.00	0.00	1,320.0	0.0	0.0	0.0	0.00	0.00	0.00
1,360.0	0.00	0.00	1,360.0	0.0	0.0	0.0	0.00	0.00	0.00
1,400.0	0.00	0.00	1,400.0	0.0	0.0	0.0	0.00	0.00	0.00
1,440.0	0.00	0.00	1,440.0	0.0	0.0	0.0	0.00	0.00	0.00
1,480.0	0.00	0.00	1,480.0	0.0	0.0	0.0	0.00	0.00	0.00
1,520.0	0.00	0.00	1,520.0	0.0	0.0	0.0	0.00	0.00	0.00
1,560.0	0.00	0.00	1,560.0	0.0	0.0	0.0	0.00	0.00	0.00
1,600.0	0.00	0.00	1,600.0	0.0	0.0	0.0	0.00	0.00	0.00
1,640.0	0.80	48.29	1,640.0	0.2	0.2	0.3	2.00	2.00	0.00
1,680.0	1.60	48.29	1,680.0	0.7	0.8	1.1	2.00	2.00	0.00
1,720.0	2.40	48.29	1,720.0	1.7	1.9	2.5	2.00	2.00	0.00
1,760.0	3.20	48.29	1,759.9	3.0	3.3	4.5	2.00	2.00	0.00
1,800.0	4.00	48.29	1,799.8	4.6	5.2	7.0	2.00	2.00	0.00
1,840.0	4.80	48.29	1,839.7	6.7	7.5	10.0	2.00	2.00	0.00
1,880.0	5.60	48.29	1,879.6	9.1	10.2	13.7	2.00	2.00	0.00
1,920.0	6.40	48.29	1,919.3	11.9	13.3	17.9	2.00	2.00	0.00
1,960.0	7.20	48.29	1,959.1	15.0	16.9	22.6	2.00	2.00	0.00
2,000.0	8.00	48.29	1,998.7	18.5	20.8	27.9	2.00	2.00	0.00
2,040.0	8.80	48.29	2,038.3	22.4	25.2	33.7	2.00	2.00	0.00
2,080.0	9.60	48.29	2,077.8	26.7	30.0	40.1	2.00	2.00	0.00
2,120.0	10.40	48.29	2,117.1	31.3	35.1	47.1	2.00	2.00	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)
2,160.0	11.20	48.29	2,156.4	36.3	40.7	54.6	2.00	2.00	0.00
2,200.0	12.00	48.29	2,195.6	41.6	46.7	62.6	2.00	2.00	0.00
2,240.0	12.80	48.29	2,234.7	47.4	53.2	71.2	2.00	2.00	0.00
2,267.8	13.36	48.29	2,261.7	51.5	57.8	77.5	2.00	2.00	0.00
2,280.0	13.36	48.29	2,273.6	53.4	60.0	80.3	0.00	0.00	0.00
2,320.0	13.36	48.29	2,312.6	59.6	66.8	89.5	0.00	0.00	0.00
2,360.0	13.36	48.29	2,351.5	65.7	73.7	98.8	0.00	0.00	0.00
2,400.0	13.36	48.29	2,390.4	71.9	80.6	108.0	0.00	0.00	0.00
2,440.0	13.36	48.29	2,429.3	78.0	87.5	117.3	0.00	0.00	0.00
2,480.0	13.36	48.29	2,468.2	84.2	94.4	126.5	0.00	0.00	0.00
2,520.0	13.36	48.29	2,507.1	90.3	101.3	135.7	0.00	0.00	0.00
2,560.0	13.36	48.29	2,546.1	96.5	108.2	145.0	0.00	0.00	0.00
2,600.0	13.36	48.29	2,585.0	102.6	115.1	154.2	0.00	0.00	0.00
2,640.0	13.36	48.29	2,623.9	108.7	122.0	163.5	0.00	0.00	0.00
2,680.0	13.36	48.29	2,662.8	114.9	128.9	172.7	0.00	0.00	0.00
2,720.0	13.36	48.29	2,701.7	121.0	135.8	181.9	0.00	0.00	0.00
2,740.8	13.36	48.29	2,722.0	124.2	139.4	186.7	0.00	0.00	0.00
PIERRE SILT									
2,760.0	13.36	48.29	2,740.7	127.2	142.7	191.2	0.00	0.00	0.00
2,800.0	13.36	48.29	2,779.6	133.3	149.6	200.4	0.00	0.00	0.00
2,840.0	13.36	48.29	2,818.5	139.5	156.5	209.7	0.00	0.00	0.00
2,880.0	13.36	48.29	2,857.4	145.6	163.4	218.9	0.00	0.00	0.00
2,920.0	13.36	48.29	2,896.3	151.8	170.3	228.1	0.00	0.00	0.00
2,960.0	13.36	48.29	2,935.2	157.9	177.2	237.4	0.00	0.00	0.00
3,000.0	13.36	48.29	2,974.2	164.1	184.1	246.6	0.00	0.00	0.00
3,040.0	13.36	48.29	3,013.1	170.2	191.0	255.8	0.00	0.00	0.00
3,080.0	13.36	48.29	3,052.0	176.4	197.9	265.1	0.00	0.00	0.00
3,120.0	13.36	48.29	3,090.9	182.5	204.8	274.3	0.00	0.00	0.00
3,160.0	13.36	48.29	3,129.8	188.7	211.7	283.6	0.00	0.00	0.00
3,200.0	13.36	48.29	3,168.8	194.8	218.6	292.8	0.00	0.00	0.00
3,240.0	13.36	48.29	3,207.7	201.0	225.5	302.0	0.00	0.00	0.00
3,280.0	13.36	48.29	3,246.6	207.1	232.4	311.3	0.00	0.00	0.00
3,320.0	13.36	48.29	3,285.5	213.2	239.3	320.5	0.00	0.00	0.00
3,360.0	13.36	48.29	3,324.4	219.4	246.2	329.8	0.00	0.00	0.00
3,400.0	13.36	48.29	3,363.4	225.5	253.1	339.0	0.00	0.00	0.00
3,440.0	13.36	48.29	3,402.3	231.7	260.0	348.2	0.00	0.00	0.00
3,480.0	13.36	48.29	3,441.2	237.8	266.9	357.5	0.00	0.00	0.00
3,520.0	13.36	48.29	3,480.1	244.0	273.8	366.7	0.00	0.00	0.00
3,560.0	13.36	48.29	3,519.0	250.1	280.7	376.0	0.00	0.00	0.00
3,600.0	13.36	48.29	3,557.9	256.3	287.6	385.2	0.00	0.00	0.00
3,640.0	13.36	48.29	3,596.9	262.4	294.5	394.4	0.00	0.00	0.00
3,680.0	13.36	48.29	3,635.8	268.6	301.4	403.7	0.00	0.00	0.00
3,720.0	13.36	48.29	3,674.7	274.7	308.3	412.9	0.00	0.00	0.00
3,760.0	13.36	48.29	3,713.6	280.9	315.2	422.2	0.00	0.00	0.00
3,800.0	13.36	48.29	3,752.5	287.0	322.1	431.4	0.00	0.00	0.00
3,840.0	13.36	48.29	3,791.5	293.2	329.0	440.6	0.00	0.00	0.00
3,880.0	13.36	48.29	3,830.4	299.3	335.9	449.9	0.00	0.00	0.00
3,920.0	13.36	48.29	3,869.3	305.4	342.8	459.1	0.00	0.00	0.00
3,960.0	13.36	48.29	3,908.2	311.6	349.7	468.4	0.00	0.00	0.00
3,967.0	13.36	48.29	3,915.0	312.7	350.9	470.0	0.00	0.00	0.00
PARKMAN									
4,000.0	13.36	48.29	3,947.1	317.7	356.6	477.6	0.00	0.00	0.00
4,040.0	13.36	48.29	3,986.0	323.9	363.5	486.8	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)
4,080.0	13.36	48.29	4,025.0	330.0	370.4	496.1	0.00	0.00	0.00
4,120.0	13.36	48.29	4,063.9	336.2	377.3	505.3	0.00	0.00	0.00
4,160.0	13.36	48.29	4,102.8	342.3	384.2	514.6	0.00	0.00	0.00
4,200.0	13.36	48.29	4,141.7	348.5	391.0	523.8	0.00	0.00	0.00
4,240.0	13.36	48.29	4,180.6	354.6	397.9	533.0	0.00	0.00	0.00
4,280.0	13.36	48.29	4,219.6	360.8	404.8	542.3	0.00	0.00	0.00
4,320.0	13.36	48.29	4,258.5	366.9	411.7	551.5	0.00	0.00	0.00
4,360.0	13.36	48.29	4,297.4	373.1	418.6	560.7	0.00	0.00	0.00
4,400.0	13.36	48.29	4,336.3	379.2	425.5	570.0	0.00	0.00	0.00
4,440.0	13.36	48.29	4,375.2	385.4	432.4	579.2	0.00	0.00	0.00
4,480.0	13.36	48.29	4,414.1	391.5	439.3	588.5	0.00	0.00	0.00
4,520.0	13.36	48.29	4,453.1	397.7	446.2	597.7	0.00	0.00	0.00
4,530.2	13.36	48.29	4,463.0	399.2	448.0	600.1	0.00	0.00	0.00
SUSSEX									
4,560.0	13.36	48.29	4,492.0	403.8	453.1	606.9	0.00	0.00	0.00
4,600.0	13.36	48.29	4,530.9	409.9	460.0	616.2	0.00	0.00	0.00
4,640.0	13.36	48.29	4,569.8	416.1	466.9	625.4	0.00	0.00	0.00
4,680.0	13.36	48.29	4,608.7	422.2	473.8	634.7	0.00	0.00	0.00
4,720.0	13.36	48.29	4,647.7	428.4	480.7	643.9	0.00	0.00	0.00
4,760.0	13.36	48.29	4,686.6	434.5	487.6	653.1	0.00	0.00	0.00
4,800.0	13.36	48.29	4,725.5	440.7	494.5	662.4	0.00	0.00	0.00
4,840.0	13.36	48.29	4,764.4	446.8	501.4	671.6	0.00	0.00	0.00
4,880.0	13.36	48.29	4,803.3	453.0	508.3	680.9	0.00	0.00	0.00
4,915.9	13.36	48.29	4,838.3	458.5	514.5	689.2	0.00	0.00	0.00
4,920.0	13.27	48.29	4,842.2	459.1	515.2	690.1	2.00	-2.00	0.00
4,960.0	12.47	48.29	4,881.2	465.0	521.9	699.0	2.00	-2.00	0.00
5,000.0	11.67	48.29	4,920.4	470.6	528.1	707.4	2.00	-2.00	0.00
5,040.0	10.87	48.29	4,959.6	475.8	533.9	715.2	2.00	-2.00	0.00
5,080.0	10.07	48.29	4,998.9	480.7	539.4	722.5	2.00	-2.00	0.00
5,097.3	9.73	48.29	5,016.0	482.6	541.6	725.4	2.00	-2.00	0.00
SHANNON									
5,120.0	9.27	48.29	5,038.3	485.1	544.4	729.2	2.00	-2.00	0.00
5,160.0	8.47	48.29	5,077.9	489.2	549.0	735.4	2.00	-2.00	0.00
5,200.0	7.67	48.29	5,117.5	493.0	553.2	741.0	2.00	-2.00	0.00
5,240.0	6.87	48.29	5,157.2	496.3	557.0	746.0	2.00	-2.00	0.00
5,280.0	6.07	48.29	5,196.9	499.3	560.3	750.5	2.00	-2.00	0.00
5,320.0	5.27	48.29	5,236.7	502.0	563.3	754.5	2.00	-2.00	0.00
5,360.0	4.47	48.29	5,276.6	504.2	565.8	757.9	2.00	-2.00	0.00
5,400.0	3.67	48.29	5,316.5	506.1	568.0	760.7	2.00	-2.00	0.00
5,440.0	2.87	48.29	5,356.4	507.6	569.7	763.0	2.00	-2.00	0.00
5,480.0	2.07	48.29	5,396.3	508.8	570.9	764.8	2.00	-2.00	0.00
5,520.0	1.27	48.29	5,436.3	509.6	571.8	765.9	2.00	-2.00	0.00
5,560.0	0.47	48.29	5,476.3	510.0	572.3	766.5	2.00	-2.00	0.00
5,583.7	0.00	0.00	5,500.0	510.0	572.3	766.6	2.00	-2.00	0.00
TARGET BHL 1634'FSL, 2456'FWL									
5,600.0	0.00	0.00	5,516.3	510.0	572.3	766.6	0.00	0.00	0.00
5,640.0	0.00	0.00	5,556.3	510.0	572.3	766.6	0.00	0.00	0.00
5,680.0	0.00	0.00	5,596.3	510.0	572.3	766.6	0.00	0.00	0.00
5,720.0	0.00	0.00	5,636.3	510.0	572.3	766.6	0.00	0.00	0.00
5,760.0	0.00	0.00	5,676.3	510.0	572.3	766.6	0.00	0.00	0.00
5,800.0	0.00	0.00	5,716.3	510.0	572.3	766.6	0.00	0.00	0.00
5,840.0	0.00	0.00	5,756.3	510.0	572.3	766.6	0.00	0.00	0.00
5,880.0	0.00	0.00	5,796.3	510.0	572.3	766.6	0.00	0.00	0.00

Database: EDM den0-adp01 Server Data
Company: NOBLE ENERGY INC WELD COUNTY CO
Project: SEC.12-T3N-R65W
Site: Ray Pad Sec.12-T3N-R65W
Well: Ray H 12-24D
Wellbore: Ray H 12-24D
Design: Ray H 12-24D Plan #1

Local Co-ordinate Reference: Well Ray H 12-24D
TVD Reference: WELL @ 4870.0ft (Original Well Elev)
MD Reference: WELL @ 4870.0ft (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)
5,920.0	0.00	0.00	5,836.3	510.0	572.3	766.6	0.00	0.00	0.00
5,960.0	0.00	0.00	5,876.3	510.0	572.3	766.6	0.00	0.00	0.00
6,000.0	0.00	0.00	5,916.3	510.0	572.3	766.6	0.00	0.00	0.00
6,040.0	0.00	0.00	5,956.3	510.0	572.3	766.6	0.00	0.00	0.00
6,069.7	0.00	0.00	5,986.0	510.0	572.3	766.6	0.00	0.00	0.00
TEEPEE BUTTES									
6,080.0	0.00	0.00	5,996.3	510.0	572.3	766.6	0.00	0.00	0.00
6,120.0	0.00	0.00	6,036.3	510.0	572.3	766.6	0.00	0.00	0.00
6,160.0	0.00	0.00	6,076.3	510.0	572.3	766.6	0.00	0.00	0.00
6,200.0	0.00	0.00	6,116.3	510.0	572.3	766.6	0.00	0.00	0.00
6,240.0	0.00	0.00	6,156.3	510.0	572.3	766.6	0.00	0.00	0.00
6,280.0	0.00	0.00	6,196.3	510.0	572.3	766.6	0.00	0.00	0.00
6,320.0	0.00	0.00	6,236.3	510.0	572.3	766.6	0.00	0.00	0.00
6,360.0	0.00	0.00	6,276.3	510.0	572.3	766.6	0.00	0.00	0.00
6,400.0	0.00	0.00	6,316.3	510.0	572.3	766.6	0.00	0.00	0.00
6,440.0	0.00	0.00	6,356.3	510.0	572.3	766.6	0.00	0.00	0.00
6,480.0	0.00	0.00	6,396.3	510.0	572.3	766.6	0.00	0.00	0.00
6,520.0	0.00	0.00	6,436.3	510.0	572.3	766.6	0.00	0.00	0.00
6,560.0	0.00	0.00	6,476.3	510.0	572.3	766.6	0.00	0.00	0.00
6,600.0	0.00	0.00	6,516.3	510.0	572.3	766.6	0.00	0.00	0.00
6,640.0	0.00	0.00	6,556.3	510.0	572.3	766.6	0.00	0.00	0.00
6,680.0	0.00	0.00	6,596.3	510.0	572.3	766.6	0.00	0.00	0.00
6,720.0	0.00	0.00	6,636.3	510.0	572.3	766.6	0.00	0.00	0.00
6,760.0	0.00	0.00	6,676.3	510.0	572.3	766.6	0.00	0.00	0.00
6,800.0	0.00	0.00	6,716.3	510.0	572.3	766.6	0.00	0.00	0.00
6,840.0	0.00	0.00	6,756.3	510.0	572.3	766.6	0.00	0.00	0.00
6,880.0	0.00	0.00	6,796.3	510.0	572.3	766.6	0.00	0.00	0.00
6,894.7	0.00	0.00	6,811.0	510.0	572.3	766.6	0.00	0.00	0.00
NIOBRARA									
6,920.0	0.00	0.00	6,836.3	510.0	572.3	766.6	0.00	0.00	0.00
6,960.0	0.00	0.00	6,876.3	510.0	572.3	766.6	0.00	0.00	0.00
7,000.0	0.00	0.00	6,916.3	510.0	572.3	766.6	0.00	0.00	0.00
7,040.0	0.00	0.00	6,956.3	510.0	572.3	766.6	0.00	0.00	0.00
7,080.0	0.00	0.00	6,996.3	510.0	572.3	766.6	0.00	0.00	0.00
7,120.0	0.00	0.00	7,036.3	510.0	572.3	766.6	0.00	0.00	0.00
7,160.0	0.00	0.00	7,076.3	510.0	572.3	766.6	0.00	0.00	0.00
7,185.7	0.00	0.00	7,102.0	510.0	572.3	766.6	0.00	0.00	0.00
FT HAYS									
7,200.0	0.00	0.00	7,116.3	510.0	572.3	766.6	0.00	0.00	0.00
7,209.7	0.00	0.00	7,126.0	510.0	572.3	766.6	0.00	0.00	0.00
CODELL									
7,240.0	0.00	0.00	7,156.3	510.0	572.3	766.6	0.00	0.00	0.00
7,280.0	0.00	0.00	7,196.3	510.0	572.3	766.6	0.00	0.00	0.00
7,320.0	0.00	0.00	7,236.3	510.0	572.3	766.6	0.00	0.00	0.00
7,360.0	0.00	0.00	7,276.3	510.0	572.3	766.6	0.00	0.00	0.00
7,400.0	0.00	0.00	7,316.3	510.0	572.3	766.6	0.00	0.00	0.00
7,440.0	0.00	0.00	7,356.3	510.0	572.3	766.6	0.00	0.00	0.00
7,480.0	0.00	0.00	7,396.3	510.0	572.3	766.6	0.00	0.00	0.00
7,520.0	0.00	0.00	7,436.3	510.0	572.3	766.6	0.00	0.00	0.00
7,560.0	0.00	0.00	7,476.3	510.0	572.3	766.6	0.00	0.00	0.00
7,600.0	0.00	0.00	7,516.3	510.0	572.3	766.6	0.00	0.00	0.00
7,640.0	0.00	0.00	7,556.3	510.0	572.3	766.6	0.00	0.00	0.00
7,667.7	0.00	0.00	7,584.0	510.0	572.3	766.6	0.00	0.00	0.00
J SAND									

Database: EDM den0-adp01 Server Data
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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)
7,680.0	0.00	0.00	7,596.3	510.0	572.3	766.6	0.00	0.00	0.00
7,720.0	0.00	0.00	7,636.3	510.0	572.3	766.6	0.00	0.00	0.00
7,760.0	0.00	0.00	7,676.3	510.0	572.3	766.6	0.00	0.00	0.00
7,800.0	0.00	0.00	7,716.3	510.0	572.3	766.6	0.00	0.00	0.00
7,817.7	0.00	0.00	7,734.0	510.0	572.3	766.6	0.00	0.00	0.00

HARDLINE 85°E OF RAY H 12-24D BHL

Targets

Target Name

- hit/miss target	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
- Shape									
HARDLINE 85°E OF F	0.00	0.00	7,734.0	410.0	657.3	1,330,293.42	3,247,940.88	40° 14' 11.923 N	104° 36' 42.789 W
- plan misses target center by 131.2ft at 7817.7ft MD (7734.0 TVD, 510.0 N, 572.3 E)									
- Polygon									
Point 1			7,734.0	0.0	0.0	1,330,293.42	3,247,940.88		
Point 2			7,734.0	200.0	0.0	1,330,493.41	3,247,938.88		
TARGET BHL 1634°F	0.00	0.00	5,500.0	510.0	572.3	1,330,392.60	3,247,854.94	40° 14' 12.912 N	104° 36' 43.884 W
- plan hits target center									
- Point									

Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
2,740.8	2,722.0	PIERRE SILT		0.00	
3,967.0	3,915.0	PARKMAN		0.00	
4,530.2	4,463.0	SUSSEX		0.00	
5,097.3	5,016.0	SHANNON		0.00	
6,069.7	5,986.0	TEEPEE BUTTES		0.00	
6,894.7	6,811.0	NIOBRARA		0.00	
7,185.7	7,102.0	FT HAYS		0.00	
7,209.7	7,126.0	CODELL		0.00	
7,667.7	7,584.0	J SAND		0.00	