

EE3

Well Name: **Evans 2-21H**

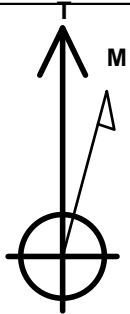
Surface Location: Evans 2-21H Pad Sec.21-T7N-R80W
North American Datum 1983 , US State Plane 1983 , Colorado Northern Zone

Ground Elevation: 8236.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1451571.04	2756674.21	40.569663	-106.375875	
Original Well Elev WELL @ 8249.0ft (Original Well Elev)						

WELLBORE TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Shape
600' Setback BHL	1.0	-4473.3	-1700.0	Polygon
600' Setback SHL	1.0	-392.2	200.0	Polygon
SHL 204'FNL & 1919'FEL	1.0	0.0	0.0	Point
BHL 600'FSL & 1960'FWL	7756.0	-4473.3	-1478.5	Point



Azimuths to True North
Magnetic North: 9.34°

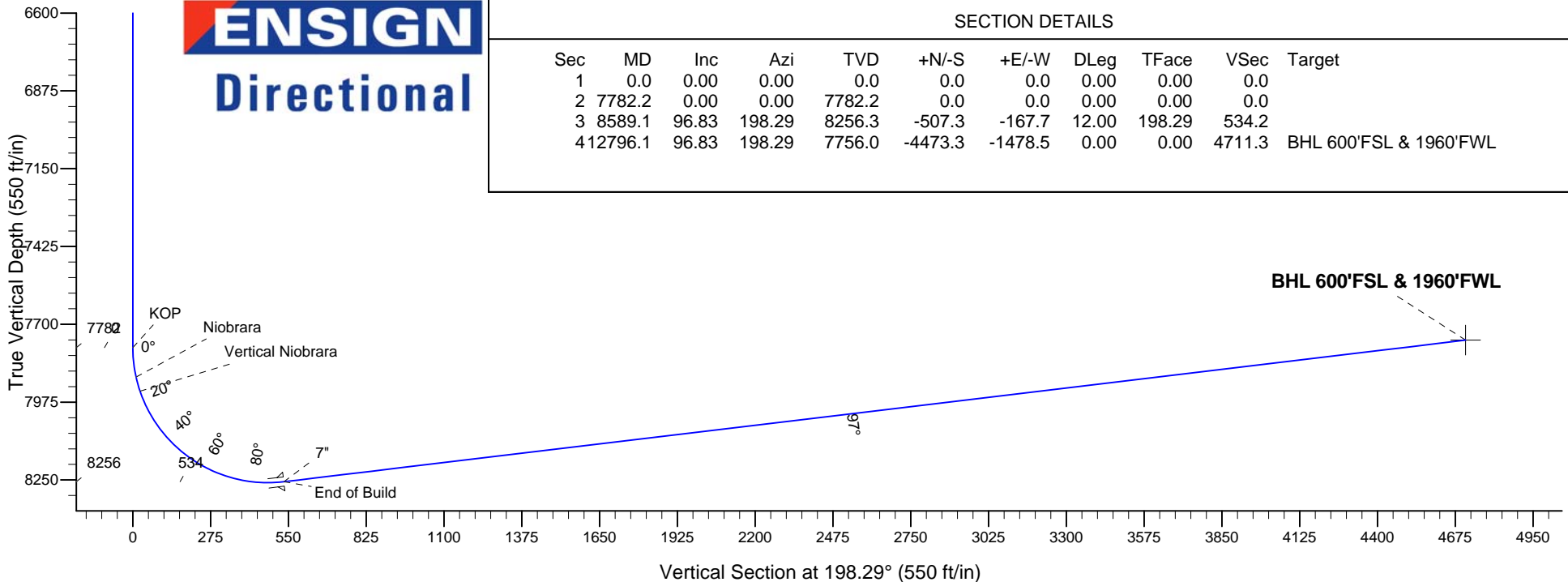
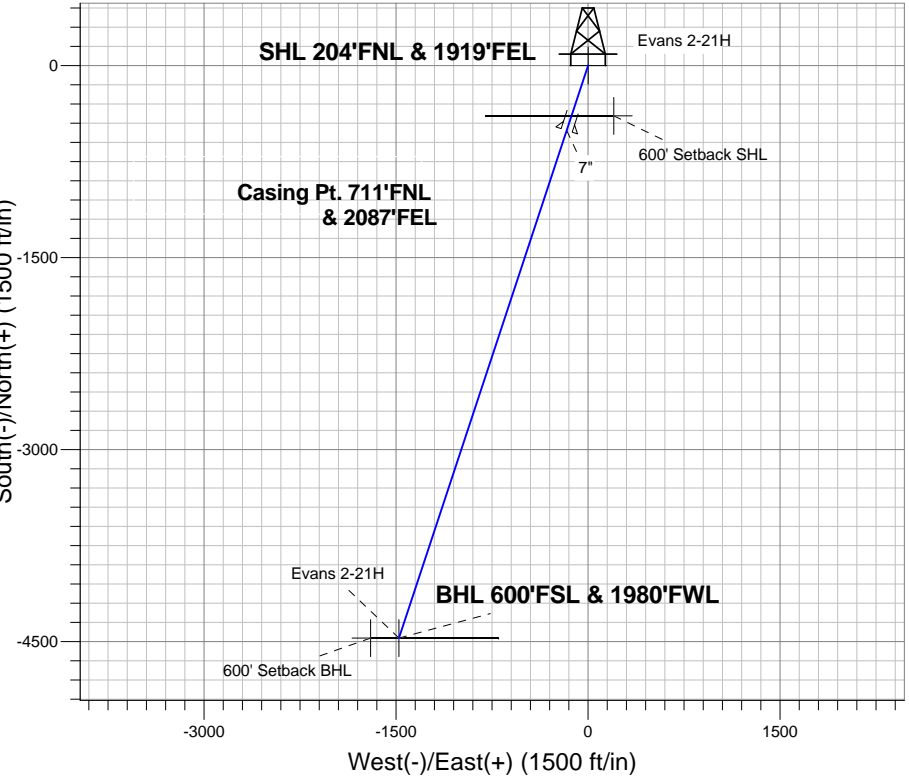
Magnetic Field
Strength: 52719.0srT
Dip Angle: 66.82°
Date: 4/7/2014
Model: IGRF2010

Evans 2-21H Pad Sec.21-T7N-R80W
Evans 2-21H
Plan #1 (4-7-14)
8:52, April 08 2014

ANNOTATIONS

TVD	MD	Annotation
7782.2	7782.2	KOP
8256.3	8589.1	End of Build

South(-)/North(+) (1500 ft/in)



ENSIGN
Directional

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	7782.2	0.00	0.00	7782.2	0.0	0.0	0.00	0.00	0.0	
3	8589.1	96.83	198.29	8256.3	-507.3	-167.7	12.00	198.29	534.2	
4	12796.1	96.83	198.29	7756.0	-4473.3	-1478.5	0.00	0.00	4711.3	BHL 600'FSL & 1960'FWL



EE3

SEC.21-T7N-R80W

Evans 2-21H Pad Sec.21-T7N-R80W

Evans 2-21H

Wellbore #1

Plan: Plan #1 (4-7-14)

Standard Planning Report

08 April, 2014



Database:	Landmark	Local Co-ordinate Reference:	Well Evans 2-21H
Company:	EE3	TVD Reference:	WELL @ 8249.0ft (Original Well Elev)
Project:	SEC.21-T7N-R80W	MD Reference:	WELL @ 8249.0ft (Original Well Elev)
Site:	Evans 2-21H Pad Sec.21-T7N-R80W	North Reference:	True
Well:	Evans 2-21H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (4-7-14)		

Project	SEC.21-T7N-R80W, Jackson 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						Evans 2-21H Pad Sec.21-T7N-R80W											
Site Position:						Northing:			1,451,571.05 ft			Latitude:			40.569663		
From:			Lat/Long			Easting:			2,756,674.21 ft			Longitude:			-106.375875		
Position Uncertainty:			0.0 ft			Slot Radius:			"			Grid Convergence:			-0.57 °		

Well	Evans 2-21H					
Well Position	+N/-S	0.0 ft	Northing:	1,451,571.04 ft	Latitude:	40.569663
	+E/-W	0.0 ft	Easting:	2,756,674.21 ft	Longitude:	-106.375875
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	8,236.0 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	4/7/2014	9.34	66.82	52,719

Design	Plan #1 (4-7-14)			
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	198.29

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	
7,782.2	0.00	0.00	7,782.2	0.0	0.0	0.00	0.00	0.00	0.00	
8,589.1	96.83	198.29	8,256.3	-507.3	-167.7	12.00	12.00	0.00	198.29	
12,796.1	96.83	198.29	7,756.0	-4,473.3	-1,478.5	0.00	0.00	0.00	0.00	BHL 600'FSL & 196

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Site:	Evans 2-21H Pad Sec.21-T7N-R80W	North Reference:	True
Well:	Evans 2-21H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (4-7-14)		

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
1.0	0.00	0.00	1.0	0.0	0.0	0.0	0.00	0.00	0.00
600' Setback BHL - SHL 204'FNL & 1919'FEL - 600' Setback SHL									
100.0	0.00	0.00	100.0	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
300.0	0.00	0.00	300.0	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
500.0	0.00	0.00	500.0	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
700.0	0.00	0.00	700.0	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
900.0	0.00	0.00	900.0	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
1,100.0	0.00	0.00	1,100.0	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
1,300.0	0.00	0.00	1,300.0	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
1,500.0	0.00	0.00	1,500.0	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
1,700.0	0.00	0.00	1,700.0	0.0	0.0	0.0	0.00	0.00	0.00
1,800.0	0.00	0.00	1,800.0	0.0	0.0	0.0	0.00	0.00	0.00
1,900.0	0.00	0.00	1,900.0	0.0	0.0	0.0	0.00	0.00	0.00
2,000.0	0.00	0.00	2,000.0	0.0	0.0	0.0	0.00	0.00	0.00
2,100.0	0.00	0.00	2,100.0	0.0	0.0	0.0	0.00	0.00	0.00
2,200.0	0.00	0.00	2,200.0	0.0	0.0	0.0	0.00	0.00	0.00
2,300.0	0.00	0.00	2,300.0	0.0	0.0	0.0	0.00	0.00	0.00
2,400.0	0.00	0.00	2,400.0	0.0	0.0	0.0	0.00	0.00	0.00
2,500.0	0.00	0.00	2,500.0	0.0	0.0	0.0	0.00	0.00	0.00
2,600.0	0.00	0.00	2,600.0	0.0	0.0	0.0	0.00	0.00	0.00
2,700.0	0.00	0.00	2,700.0	0.0	0.0	0.0	0.00	0.00	0.00
2,800.0	0.00	0.00	2,800.0	0.0	0.0	0.0	0.00	0.00	0.00
2,900.0	0.00	0.00	2,900.0	0.0	0.0	0.0	0.00	0.00	0.00
2,986.0	0.00	0.00	2,986.0	0.0	0.0	0.0	0.00	0.00	0.00
Midcoal									
3,000.0	0.00	0.00	3,000.0	0.0	0.0	0.0	0.00	0.00	0.00
3,100.0	0.00	0.00	3,100.0	0.0	0.0	0.0	0.00	0.00	0.00
3,200.0	0.00	0.00	3,200.0	0.0	0.0	0.0	0.00	0.00	0.00
3,300.0	0.00	0.00	3,300.0	0.0	0.0	0.0	0.00	0.00	0.00
3,400.0	0.00	0.00	3,400.0	0.0	0.0	0.0	0.00	0.00	0.00
3,500.0	0.00	0.00	3,500.0	0.0	0.0	0.0	0.00	0.00	0.00
3,600.0	0.00	0.00	3,600.0	0.0	0.0	0.0	0.00	0.00	0.00
3,700.0	0.00	0.00	3,700.0	0.0	0.0	0.0	0.00	0.00	0.00
3,766.0	0.00	0.00	3,766.0	0.0	0.0	0.0	0.00	0.00	0.00
Suddeth Coal									
3,800.0	0.00	0.00	3,800.0	0.0	0.0	0.0	0.00	0.00	0.00
3,900.0	0.00	0.00	3,900.0	0.0	0.0	0.0	0.00	0.00	0.00
4,000.0	0.00	0.00	4,000.0	0.0	0.0	0.0	0.00	0.00	0.00
4,100.0	0.00	0.00	4,100.0	0.0	0.0	0.0	0.00	0.00	0.00
4,200.0	0.00	0.00	4,200.0	0.0	0.0	0.0	0.00	0.00	0.00
4,300.0	0.00	0.00	4,300.0	0.0	0.0	0.0	0.00	0.00	0.00
4,400.0	0.00	0.00	4,400.0	0.0	0.0	0.0	0.00	0.00	0.00
4,500.0	0.00	0.00	4,500.0	0.0	0.0	0.0	0.00	0.00	0.00
4,600.0	0.00	0.00	4,600.0	0.0	0.0	0.0	0.00	0.00	0.00

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Well:	Evans 2-21H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (4-7-14)		

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)
4,700.0	0.00	0.00	4,700.0	0.0	0.0	0.0	0.00	0.00	0.00
4,800.0	0.00	0.00	4,800.0	0.0	0.0	0.0	0.00	0.00	0.00
4,900.0	0.00	0.00	4,900.0	0.0	0.0	0.0	0.00	0.00	0.00
5,000.0	0.00	0.00	5,000.0	0.0	0.0	0.0	0.00	0.00	0.00
5,100.0	0.00	0.00	5,100.0	0.0	0.0	0.0	0.00	0.00	0.00
5,200.0	0.00	0.00	5,200.0	0.0	0.0	0.0	0.00	0.00	0.00
5,300.0	0.00	0.00	5,300.0	0.0	0.0	0.0	0.00	0.00	0.00
5,400.0	0.00	0.00	5,400.0	0.0	0.0	0.0	0.00	0.00	0.00
5,500.0	0.00	0.00	5,500.0	0.0	0.0	0.0	0.00	0.00	0.00
5,600.0	0.00	0.00	5,600.0	0.0	0.0	0.0	0.00	0.00	0.00
5,700.0	0.00	0.00	5,700.0	0.0	0.0	0.0	0.00	0.00	0.00
5,800.0	0.00	0.00	5,800.0	0.0	0.0	0.0	0.00	0.00	0.00
5,900.0	0.00	0.00	5,900.0	0.0	0.0	0.0	0.00	0.00	0.00
6,000.0	0.00	0.00	6,000.0	0.0	0.0	0.0	0.00	0.00	0.00
6,100.0	0.00	0.00	6,100.0	0.0	0.0	0.0	0.00	0.00	0.00
6,200.0	0.00	0.00	6,200.0	0.0	0.0	0.0	0.00	0.00	0.00
6,266.0	0.00	0.00	6,266.0	0.0	0.0	0.0	0.00	0.00	0.00
Sussex									
6,300.0	0.00	0.00	6,300.0	0.0	0.0	0.0	0.00	0.00	0.00
6,400.0	0.00	0.00	6,400.0	0.0	0.0	0.0	0.00	0.00	0.00
6,500.0	0.00	0.00	6,500.0	0.0	0.0	0.0	0.00	0.00	0.00
6,566.0	0.00	0.00	6,566.0	0.0	0.0	0.0	0.00	0.00	0.00
Shannon									
6,600.0	0.00	0.00	6,600.0	0.0	0.0	0.0	0.00	0.00	0.00
6,700.0	0.00	0.00	6,700.0	0.0	0.0	0.0	0.00	0.00	0.00
6,800.0	0.00	0.00	6,800.0	0.0	0.0	0.0	0.00	0.00	0.00
6,900.0	0.00	0.00	6,900.0	0.0	0.0	0.0	0.00	0.00	0.00
7,000.0	0.00	0.00	7,000.0	0.0	0.0	0.0	0.00	0.00	0.00
7,100.0	0.00	0.00	7,100.0	0.0	0.0	0.0	0.00	0.00	0.00
7,200.0	0.00	0.00	7,200.0	0.0	0.0	0.0	0.00	0.00	0.00
7,300.0	0.00	0.00	7,300.0	0.0	0.0	0.0	0.00	0.00	0.00
7,400.0	0.00	0.00	7,400.0	0.0	0.0	0.0	0.00	0.00	0.00
7,500.0	0.00	0.00	7,500.0	0.0	0.0	0.0	0.00	0.00	0.00
7,600.0	0.00	0.00	7,600.0	0.0	0.0	0.0	0.00	0.00	0.00
7,700.0	0.00	0.00	7,700.0	0.0	0.0	0.0	0.00	0.00	0.00
7,782.2	0.00	0.00	7,782.2	0.0	0.0	0.0	0.00	0.00	0.00
KOP									
7,800.0	2.13	198.29	7,800.0	-0.3	-0.1	0.3	11.98	11.98	0.00
7,886.8	12.55	198.29	7,886.0	-10.8	-3.6	11.4	12.00	12.00	0.00
Niobrara									
7,900.0	14.13	198.29	7,898.8	-13.7	-4.5	14.5	12.00	12.00	0.00
7,938.8	18.79	198.29	7,936.0	-24.2	-8.0	25.4	12.00	12.00	0.00
Vertical Niobrara									
8,000.0	26.13	198.29	7,992.5	-46.3	-15.3	48.8	12.00	12.00	0.00
8,100.0	38.13	198.29	8,077.1	-96.8	-32.0	101.9	12.00	12.00	0.00
8,200.0	50.13	198.29	8,148.7	-162.7	-53.8	171.4	12.00	12.00	0.00
8,300.0	62.13	198.29	8,204.3	-241.4	-79.8	254.3	12.00	12.00	0.00
8,400.0	74.13	198.29	8,241.5	-329.4	-108.9	346.9	12.00	12.00	0.00
8,500.0	86.13	198.29	8,258.6	-422.8	-139.7	445.3	12.00	12.00	0.00
8,589.1	96.82	198.29	8,256.3	-507.2	-167.6	534.2	12.00	12.00	0.00
End of Build - 7"									
8,600.0	96.83	198.29	8,255.0	-517.5	-171.0	545.0	0.05	0.05	0.00
8,700.0	96.83	198.29	8,243.1	-611.8	-202.2	644.3	0.00	0.00	0.00

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Well:	Evans 2-21H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (4-7-14)		

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)
8,800.0	96.83	198.29	8,231.2	-706.0	-233.4	743.6	0.00	0.00	0.00
8,900.0	96.83	198.29	8,219.3	-800.3	-264.5	842.9	0.00	0.00	0.00
9,000.0	96.83	198.29	8,207.4	-894.6	-295.7	942.2	0.00	0.00	0.00
9,100.0	96.83	198.29	8,195.6	-988.9	-326.8	1,041.5	0.00	0.00	0.00
9,200.0	96.83	198.29	8,183.7	-1,083.1	-358.0	1,140.8	0.00	0.00	0.00
9,300.0	96.83	198.29	8,171.8	-1,177.4	-389.2	1,240.1	0.00	0.00	0.00
9,400.0	96.83	198.29	8,159.9	-1,271.7	-420.3	1,339.3	0.00	0.00	0.00
9,500.0	96.83	198.29	8,148.0	-1,366.0	-451.5	1,438.6	0.00	0.00	0.00
9,600.0	96.83	198.29	8,136.1	-1,460.2	-482.6	1,537.9	0.00	0.00	0.00
9,700.0	96.83	198.29	8,124.2	-1,554.5	-513.8	1,637.2	0.00	0.00	0.00
9,800.0	96.83	198.29	8,112.3	-1,648.8	-544.9	1,736.5	0.00	0.00	0.00
9,900.0	96.83	198.29	8,100.4	-1,743.1	-576.1	1,835.8	0.00	0.00	0.00
10,000.0	96.83	198.29	8,088.5	-1,837.3	-607.3	1,935.1	0.00	0.00	0.00
10,100.0	96.83	198.29	8,076.6	-1,931.6	-638.4	2,034.4	0.00	0.00	0.00
10,200.0	96.83	198.29	8,064.7	-2,025.9	-669.6	2,133.7	0.00	0.00	0.00
10,300.0	96.83	198.29	8,052.8	-2,120.2	-700.7	2,233.0	0.00	0.00	0.00
10,400.0	96.83	198.29	8,041.0	-2,214.4	-731.9	2,332.2	0.00	0.00	0.00
10,500.0	96.83	198.29	8,029.1	-2,308.7	-763.1	2,431.5	0.00	0.00	0.00
10,600.0	96.83	198.29	8,017.2	-2,403.0	-794.2	2,530.8	0.00	0.00	0.00
10,700.0	96.83	198.29	8,005.3	-2,497.3	-825.4	2,630.1	0.00	0.00	0.00
10,800.0	96.83	198.29	7,993.4	-2,591.5	-856.5	2,729.4	0.00	0.00	0.00
10,900.0	96.83	198.29	7,981.5	-2,685.8	-887.7	2,828.7	0.00	0.00	0.00
11,000.0	96.83	198.29	7,969.6	-2,780.1	-918.9	2,928.0	0.00	0.00	0.00
11,100.0	96.83	198.29	7,957.7	-2,874.4	-950.0	3,027.3	0.00	0.00	0.00
11,200.0	96.83	198.29	7,945.8	-2,968.6	-981.2	3,126.6	0.00	0.00	0.00
11,300.0	96.83	198.29	7,933.9	-3,062.9	-1,012.3	3,225.9	0.00	0.00	0.00
11,400.0	96.83	198.29	7,922.0	-3,157.2	-1,043.5	3,325.2	0.00	0.00	0.00
11,500.0	96.83	198.29	7,910.1	-3,251.5	-1,074.7	3,424.4	0.00	0.00	0.00
11,600.0	96.83	198.29	7,898.2	-3,345.7	-1,105.8	3,523.7	0.00	0.00	0.00
11,700.0	96.83	198.29	7,886.4	-3,440.0	-1,137.0	3,623.0	0.00	0.00	0.00
11,800.0	96.83	198.29	7,874.5	-3,534.3	-1,168.1	3,722.3	0.00	0.00	0.00
11,900.0	96.83	198.29	7,862.6	-3,628.6	-1,199.3	3,821.6	0.00	0.00	0.00
12,000.0	96.83	198.29	7,850.7	-3,722.8	-1,230.4	3,920.9	0.00	0.00	0.00
12,100.0	96.83	198.29	7,838.8	-3,817.1	-1,261.6	4,020.2	0.00	0.00	0.00
12,200.0	96.83	198.29	7,826.9	-3,911.4	-1,292.8	4,119.5	0.00	0.00	0.00
12,300.0	96.83	198.29	7,815.0	-4,005.6	-1,323.9	4,218.8	0.00	0.00	0.00
12,400.0	96.83	198.29	7,803.1	-4,099.9	-1,355.1	4,318.1	0.00	0.00	0.00
12,500.0	96.83	198.29	7,791.2	-4,194.2	-1,386.2	4,417.3	0.00	0.00	0.00
12,600.0	96.83	198.29	7,779.3	-4,288.5	-1,417.4	4,516.6	0.00	0.00	0.00
12,700.0	96.83	198.29	7,767.4	-4,382.7	-1,448.6	4,615.9	0.00	0.00	0.00
12,796.1	96.83	198.29	7,756.0	-4,473.3	-1,478.5	4,711.3	0.00	0.00	0.00
BHL 600'FSL & 1980'FWL									

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)		Name	Casing Diameter (")	Hole Diameter (")
8,589.1	8,256.3	7"		7	7-1/2

Database:	Landmark	Local Co-ordinate Reference:	Well Evans 2-21H
Company:	EE3	TVD Reference:	WELL @ 8249.0ft (Original Well Elev)
Project:	SEC.21-T7N-R80W	MD Reference:	WELL @ 8249.0ft (Original Well Elev)
Site:	Evans 2-21H Pad Sec.21-T7N-R80W	North Reference:	True
Well:	Evans 2-21H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (4-7-14)		

Formations					
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
2,986.0	2,986.0	Midcoal		0.00	
3,766.0	3,766.0	Suddeth Coal		0.00	
6,266.0	6,266.0	Sussex		0.00	
6,566.0	6,566.0	Shannon		0.00	
7,886.8	7,886.0	Niobrara		0.00	
7,938.8	7,936.0	Vertical Niobrara		0.00	

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates			
		+N/-S (ft)	+E/-W (ft)	Comment	
7,782.2	7,782.2	0.0	0.0	KOP	
8,589.1	8,256.3	-507.2	-167.6	End of Build	