



Bill Barrett Corporation

COMPANY DETAILS: BILL BARRETT CORP

Calculation Method: Minimum Curvature
Error System: ISCWSA
Scan Method: Closest Approach 3D
Error Surface: Elliptical Conic
Warning Method: Error Ratio

REFERENCE INFORMATION

Co-ordinate (N/E) Reference: Well Helton 5-63-27-3340CDH, Grid North
Vertical (TVD) Reference: KB @ 4565.0ft (Original Well Elev)
Section (VS) Reference: Slot - (0.0N, 0.0E)
Measured Depth Reference: KB @ 4565.0ft (Original Well Elev)
Calculation Method: Minimum Curvature

WELL DETAILS: Helton 5-63-27-3340CDH

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.0	0.0	1379429.14	3298944.40	40° 22' 11.892 N	104° 25' 37.488 W

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	1000.0	0.00	0.00	1000.0	0.0	0.0	0.00	0.00	0.0	
3	2189.6	17.84	267.21	2170.4	-8.9	-183.5	1.50	267.21	-183.4	
4	4421.0	17.84	267.21	4294.6	-42.3	-866.5	0.00	0.00	-866.0	
5	5610.6	0.00	0.00	5465.0	-51.2	-1050.0	1.50	180.00	-1049.4	
6	6110.6	0.00	0.00	5965.0	-51.2	-1050.0	0.00	0.00	-1049.4	
7	7012.7	90.21	89.82	6538.0	-49.4	-474.9	10.00	89.82	-474.4	3340CDH LP
8	11035.4	90.21	89.82	6523.2	-37.1	3547.7	0.00	0.00	3547.9	3340CDH PBHL

PROJECT DETAILS: WELD COUNTY, COLORADO

Geodetic System: US State Plane 1983
Datum: North American Datum 1983
Ellipsoid: GRS 1980
Zone: Colorado Northern Zone

FORMATION TOP DETAILS

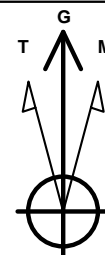
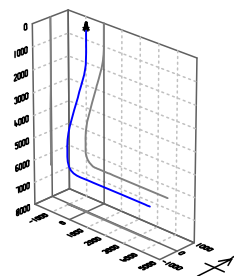
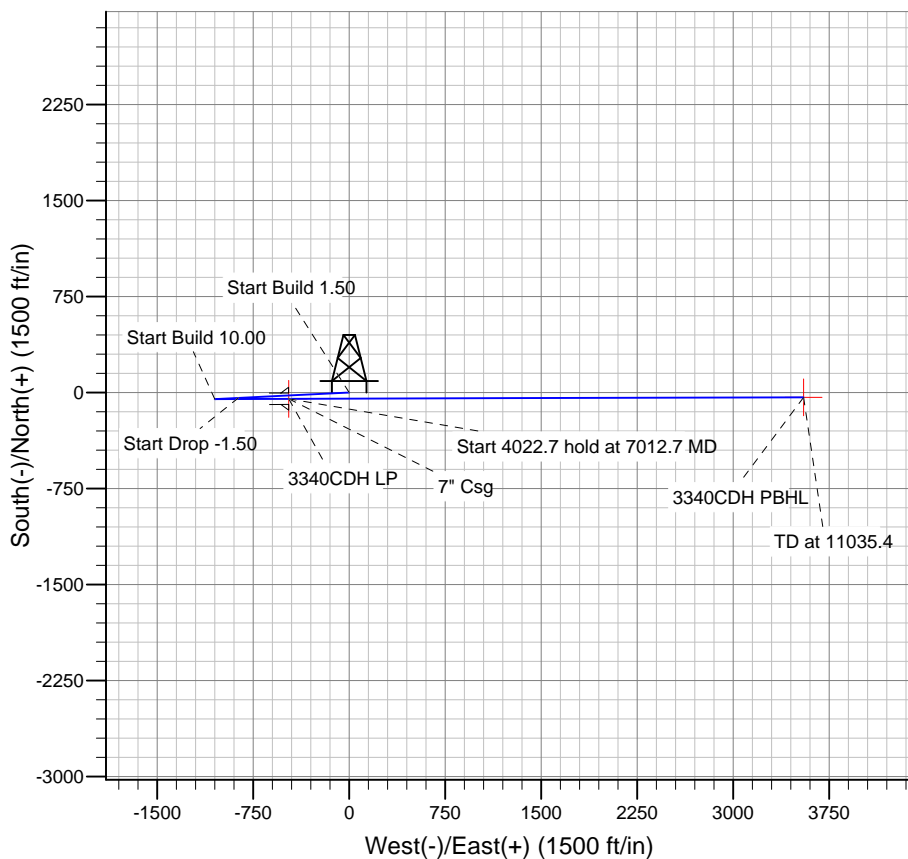
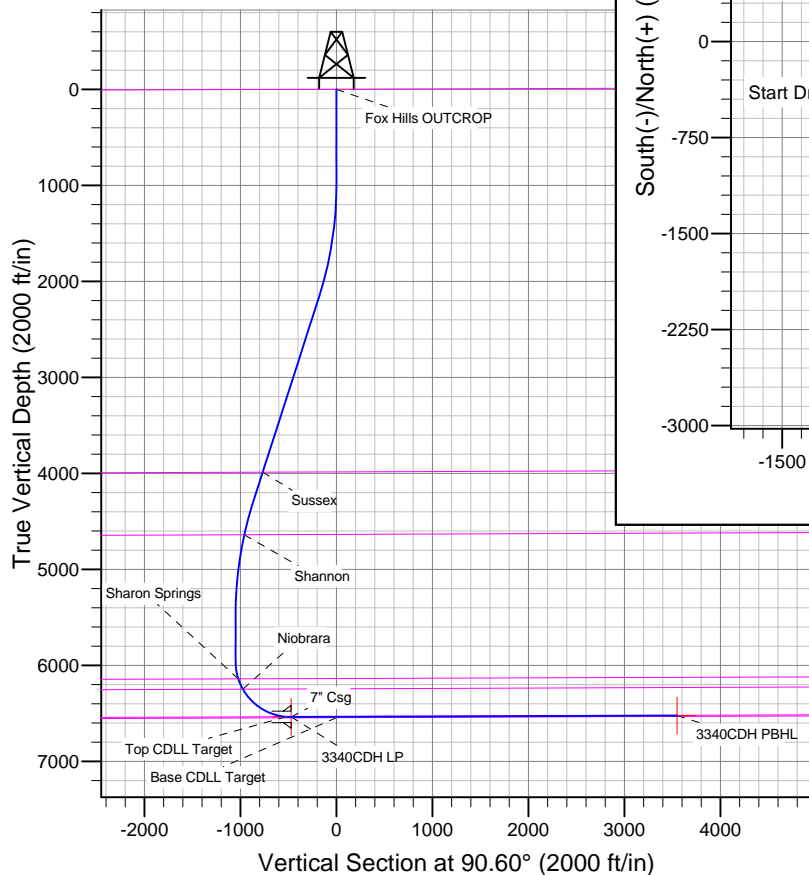
TVDPath	MDPath	Formation
		Base CDLL Target
		Fox Hills OUTCROP
3988.8	4099.8	Sussex
4640.5	4779.6	Shannon
6141.7	6290.3	Sharon Springs
6248.6	6407.3	Niobrara
6535.9	6962.3	Top CDLL Target

WELLBORE TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Shape
3340CDH PBH16523.0		-37.0	3547.7	Point
3340CDH LP 6538.0		-49.4	-473.1	Point

CASING DETAILS

TVD	MD	Name	Size
6537.9	7015.0	7" Csg	7



Azimuths to Grid North
True North: -0.69°
Magnetic North: 7.72°

Magnetic Field
Strength: 52947.1snT
Dip Angle: 67.01°
Date: 5/30/2013
Model: IGRF2010

BILL BARRETT CORP

WELD COUNTY, COLORADO

Helton 5-63-27 Pad

Helton 5-63-27-3340CDH

Wellbore #1

Plan: Design #1

Standard Planning Report

30 May, 2013

Bill Barrett Corp

Planning Report

Database:	Compass	Local Co-ordinate Reference:	Well Helton 5-63-27-3340CDH
Company:	BILL BARRETT CORP	TVD Reference:	KB @ 4565.0ft (Original Well Elev)
Project:	WELD COUNTY, COLORADO	MD Reference:	KB @ 4565.0ft (Original Well Elev)
Site:	Helton 5-63-27 Pad	North Reference:	Grid
Well:	Helton 5-63-27-3340CDH	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

Project	WELD COUNTY, COLORADO		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Northern Zone		

Site		Helton 5-63-27 Pad				
Site Position:		Northing:	1,379,436.30ft	Latitude:	40° 22' 11.964 N	
From:	Lat/Long	Easting:	3,298,933.17ft	Longitude:	104° 25' 37.632 W	
Position Uncertainty:		0.0 ft	Slot Radius:	"	Grid Convergence:	0.69 °

Well	Helton 5-63-27-3340CDH					
Well Position	+N-S	-7.2 ft	Northing:	1,379,429.14 ft	Latitude:	40° 22' 11.892 N
	+E-W	11.2 ft	Easting:	3,298,944.40 ft	Longitude:	104° 25' 37.488 W
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,542.0ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	5/30/2013	8.42	67.01	52,947

Design	Design #1			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.0	0.0	0.0	90.60

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	
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.00	0.00	0.00	0.00	
2,189.6	17.84	267.21	2,170.4	-8.9	-183.5	1.50	1.50	0.00	267.21	
4,421.0	17.84	267.21	4,294.6	-42.3	-866.5	0.00	0.00	0.00	0.00	
5,610.6	0.00	0.00	5,465.0	-51.2	-1,050.0	1.50	-1.50	0.00	180.00	
6,110.6	0.00	0.00	5,965.0	-51.2	-1,050.0	0.00	0.00	0.00	0.00	
7,012.7	90.21	89.82	6,538.0	-49.4	-474.9	10.00	10.00	0.00	89.82	3340CDH LP
11,035.4	90.21	89.82	6,523.2	-37.1	3,547.7	0.00	0.00	0.00	0.00	3340CDH PBHL

Bill Barrett Corp

Planning Report

Database:	Compass	Local Co-ordinate Reference:	Well Helton 5-63-27-3340CDH
Company:	BILL BARRETT CORP	TVD Reference:	KB @ 4565.0ft (Original Well Elev)
Project:	WELD COUNTY, COLORADO	MD Reference:	KB @ 4565.0ft (Original Well Elev)
Site:	Helton 5-63-27 Pad	North Reference:	Grid
Well:	Helton 5-63-27-3340CDH	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

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
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	1.50	267.21	1,100.0	-0.1	-1.3	-1.3	1.50	1.50	0.00
1,200.0	3.00	267.21	1,199.9	-0.3	-5.2	-5.2	1.50	1.50	0.00
1,300.0	4.50	267.21	1,299.7	-0.6	-11.8	-11.8	1.50	1.50	0.00
1,400.0	6.00	267.21	1,399.3	-1.0	-20.9	-20.9	1.50	1.50	0.00
1,500.0	7.50	267.21	1,498.6	-1.6	-32.6	-32.6	1.50	1.50	0.00
1,600.0	9.00	267.21	1,597.5	-2.3	-47.0	-46.9	1.50	1.50	0.00
1,700.0	10.50	267.21	1,696.1	-3.1	-63.9	-63.8	1.50	1.50	0.00
1,800.0	12.00	267.21	1,794.2	-4.1	-83.4	-83.3	1.50	1.50	0.00
1,900.0	13.50	267.21	1,891.7	-5.1	-105.4	-105.4	1.50	1.50	0.00
2,000.0	15.00	267.21	1,988.6	-6.3	-130.0	-129.9	1.50	1.50	0.00
2,100.0	16.50	267.21	2,084.9	-7.7	-157.1	-157.0	1.50	1.50	0.00
2,189.6	17.84	267.21	2,170.4	-8.9	-183.5	-183.4	1.50	1.50	0.00
2,200.0	17.84	267.21	2,180.4	-9.1	-186.7	-186.6	0.00	0.00	0.00
2,300.0	17.84	267.21	2,275.6	-10.6	-217.3	-217.2	0.00	0.00	0.00
2,400.0	17.84	267.21	2,370.7	-12.1	-247.9	-247.8	0.00	0.00	0.00
2,500.0	17.84	267.21	2,465.9	-13.6	-278.5	-278.4	0.00	0.00	0.00
2,600.0	17.84	267.21	2,561.1	-15.1	-309.1	-309.0	0.00	0.00	0.00
2,700.0	17.84	267.21	2,656.3	-16.6	-339.7	-339.6	0.00	0.00	0.00
2,800.0	17.84	267.21	2,751.5	-18.1	-370.3	-370.1	0.00	0.00	0.00
2,900.0	17.84	267.21	2,846.7	-19.6	-401.0	-400.7	0.00	0.00	0.00
3,000.0	17.84	267.21	2,941.9	-21.0	-431.6	-431.3	0.00	0.00	0.00
3,100.0	17.84	267.21	3,037.1	-22.5	-462.2	-461.9	0.00	0.00	0.00
3,200.0	17.84	267.21	3,132.3	-24.0	-492.8	-492.5	0.00	0.00	0.00
3,300.0	17.84	267.21	3,227.4	-25.5	-523.4	-523.1	0.00	0.00	0.00
3,400.0	17.84	267.21	3,322.6	-27.0	-554.0	-553.7	0.00	0.00	0.00
3,500.0	17.84	267.21	3,417.8	-28.5	-584.6	-584.3	0.00	0.00	0.00
3,600.0	17.84	267.21	3,513.0	-30.0	-615.2	-614.8	0.00	0.00	0.00
3,700.0	17.84	267.21	3,608.2	-31.5	-645.8	-645.4	0.00	0.00	0.00
3,800.0	17.84	267.21	3,703.4	-33.0	-676.4	-676.0	0.00	0.00	0.00
3,900.0	17.84	267.21	3,798.6	-34.5	-707.0	-706.6	0.00	0.00	0.00
4,000.0	17.84	267.21	3,893.8	-36.0	-737.6	-737.2	0.00	0.00	0.00
4,099.8	17.84	267.21	3,988.8	-37.5	-768.2	-767.7	0.00	0.00	0.00
Sussex									
4,100.0	17.84	267.21	3,989.0	-37.5	-768.2	-767.8	0.00	0.00	0.00
4,200.0	17.84	267.21	4,084.2	-39.0	-798.8	-798.4	0.00	0.00	0.00
4,300.0	17.84	267.21	4,179.3	-40.4	-829.4	-829.0	0.00	0.00	0.00
4,400.0	17.84	267.21	4,274.5	-41.9	-860.0	-859.6	0.00	0.00	0.00
4,421.0	17.84	267.21	4,294.6	-42.3	-866.5	-866.0	0.00	0.00	0.00
4,500.0	16.66	267.21	4,370.0	-43.4	-889.9	-889.4	1.50	-1.50	0.00
4,600.0	15.16	267.21	4,466.1	-44.7	-917.2	-916.7	1.50	-1.50	0.00
4,700.0	13.66	267.21	4,563.0	-45.9	-942.1	-941.6	1.50	-1.50	0.00
4,779.6	12.47	267.21	4,640.5	-46.8	-960.1	-959.5	1.50	-1.50	0.00
Shannon									

Bill Barrett Corp

Planning Report

Database:	Compass	Local Co-ordinate Reference:	Well Helton 5-63-27-3340CDH
Company:	BILL BARRETT CORP	TVD Reference:	KB @ 4565.0ft (Original Well Elev)
Project:	WELD COUNTY, COLORADO	MD Reference:	KB @ 4565.0ft (Original Well Elev)
Site:	Helton 5-63-27 Pad	North Reference:	Grid
Well:	Helton 5-63-27-3340CDH	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

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)
4,800.0	12.16	267.21	4,660.5	-47.0	-964.4	-963.9	1.50	-1.50	0.00
4,900.0	10.66	267.21	4,758.5	-48.0	-984.2	-983.6	1.50	-1.50	0.00
5,000.0	9.16	267.21	4,857.0	-48.8	-1,001.4	-1,000.8	1.50	-1.50	0.00
5,100.0	7.66	267.21	4,955.9	-49.5	-1,016.0	-1,015.4	1.50	-1.50	0.00
5,200.0	6.16	267.21	5,055.2	-50.1	-1,028.0	-1,027.4	1.50	-1.50	0.00
5,300.0	4.66	267.21	5,154.7	-50.6	-1,037.4	-1,036.8	1.50	-1.50	0.00
5,400.0	3.16	267.21	5,254.5	-50.9	-1,044.2	-1,043.6	1.50	-1.50	0.00
5,500.0	1.66	267.21	5,354.4	-51.1	-1,048.4	-1,047.8	1.50	-1.50	0.00
5,600.0	0.16	267.21	5,454.4	-51.2	-1,050.0	-1,049.4	1.50	-1.50	0.00
5,610.6	0.00	0.00	5,465.0	-51.2	-1,050.0	-1,049.4	1.50	-1.50	0.00
5,700.0	0.00	0.00	5,554.4	-51.2	-1,050.0	-1,049.4	0.00	0.00	0.00
5,800.0	0.00	0.00	5,654.4	-51.2	-1,050.0	-1,049.4	0.00	0.00	0.00
5,900.0	0.00	0.00	5,754.4	-51.2	-1,050.0	-1,049.4	0.00	0.00	0.00
6,000.0	0.00	0.00	5,854.4	-51.2	-1,050.0	-1,049.4	0.00	0.00	0.00
6,100.0	0.00	0.00	5,954.4	-51.2	-1,050.0	-1,049.4	0.00	0.00	0.00
6,110.6	0.00	0.00	5,965.0	-51.2	-1,050.0	-1,049.4	0.00	0.00	0.00
6,200.0	8.94	89.82	6,054.0	-51.2	-1,043.0	-1,042.4	10.00	10.00	0.00
6,290.3	17.97	89.82	6,141.7	-51.1	-1,022.1	-1,021.5	10.00	10.00	0.00
Sharon Springs									
6,300.0	18.94	89.82	6,151.0	-51.1	-1,019.0	-1,018.4	10.00	10.00	0.00
6,400.0	28.94	89.82	6,242.2	-51.0	-978.5	-977.9	10.00	10.00	0.00
6,407.3	29.67	89.82	6,248.6	-51.0	-974.9	-974.3	10.00	10.00	0.00
Niobrara									
6,500.0	38.94	89.82	6,325.1	-50.8	-922.7	-922.1	10.00	10.00	0.00
6,600.0	48.94	89.82	6,397.0	-50.6	-853.4	-852.8	10.00	10.00	0.00
6,700.0	58.94	89.82	6,455.8	-50.3	-772.7	-772.1	10.00	10.00	0.00
6,800.0	68.94	89.82	6,499.7	-50.1	-682.9	-682.4	10.00	10.00	0.00
6,900.0	78.94	89.82	6,527.3	-49.8	-587.0	-586.4	10.00	10.00	0.00
6,962.3	85.17	89.82	6,535.9	-49.6	-525.3	-524.7	10.00	10.00	0.00
Top CDLL Target									
7,000.0	88.94	89.82	6,537.9	-49.5	-487.7	-487.1	10.00	10.00	0.00
7,012.7	90.21	89.82	6,538.0	-49.4	-474.9	-474.4	10.00	10.00	0.00
7,014.5	90.21	89.82	6,537.9	-49.4	-473.1	-472.6	0.00	0.00	0.00
3340CDH LP									
7,015.0	90.21	89.82	6,537.9	-49.4	-472.7	-472.1	0.00	0.00	0.00
7" Csg									
7,100.0	90.21	89.82	6,537.6	-49.2	-387.7	-387.1	0.00	0.00	0.00
7,200.0	90.21	89.82	6,537.3	-48.9	-287.7	-287.1	0.00	0.00	0.00
7,300.0	90.21	89.82	6,536.9	-48.5	-187.7	-187.1	0.00	0.00	0.00
7,400.0	90.21	89.82	6,536.5	-48.2	-87.7	-87.2	0.00	0.00	0.00
7,500.0	90.21	89.82	6,536.2	-47.9	12.3	12.8	0.00	0.00	0.00
7,600.0	90.21	89.82	6,535.8	-47.6	112.3	112.8	0.00	0.00	0.00
7,700.0	90.21	89.82	6,535.4	-47.3	212.3	212.8	0.00	0.00	0.00
7,800.0	90.21	89.82	6,535.1	-47.0	312.3	312.8	0.00	0.00	0.00
7,900.0	90.21	89.82	6,534.7	-46.7	412.3	412.8	0.00	0.00	0.00
8,000.0	90.21	89.82	6,534.3	-46.4	512.3	512.8	0.00	0.00	0.00
8,100.0	90.21	89.82	6,534.0	-46.1	612.3	612.8	0.00	0.00	0.00
8,200.0	90.21	89.82	6,533.6	-45.8	712.3	712.8	0.00	0.00	0.00
8,300.0	90.21	89.82	6,533.2	-45.5	812.3	812.8	0.00	0.00	0.00
8,400.0	90.21	89.82	6,532.9	-45.2	912.3	912.7	0.00	0.00	0.00
8,500.0	90.21	89.82	6,532.5	-44.9	1,012.3	1,012.7	0.00	0.00	0.00
8,600.0	90.21	89.82	6,532.1	-44.6	1,112.3	1,112.7	0.00	0.00	0.00
8,700.0	90.21	89.82	6,531.8	-44.2	1,212.3	1,212.7	0.00	0.00	0.00

Bill Barrett Corp

Planning Report

Database:	Compass	Local Co-ordinate Reference:	Well Helton 5-63-27-3340CDH
Company:	BILL BARRETT CORP	TVD Reference:	KB @ 4565.0ft (Original Well Elev)
Project:	WELD COUNTY, COLORADO	MD Reference:	KB @ 4565.0ft (Original Well Elev)
Site:	Helton 5-63-27 Pad	North Reference:	Grid
Well:	Helton 5-63-27-3340CDH	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

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	90.21	89.82	6,531.4	-43.9	1,312.3	1,312.7	0.00	0.00	0.00
8,900.0	90.21	89.82	6,531.0	-43.6	1,412.3	1,412.7	0.00	0.00	0.00
9,000.0	90.21	89.82	6,530.7	-43.3	1,512.3	1,512.7	0.00	0.00	0.00
9,100.0	90.21	89.82	6,530.3	-43.0	1,612.3	1,612.7	0.00	0.00	0.00
9,200.0	90.21	89.82	6,529.9	-42.7	1,712.3	1,712.7	0.00	0.00	0.00
9,300.0	90.21	89.82	6,529.6	-42.4	1,812.3	1,812.7	0.00	0.00	0.00
9,400.0	90.21	89.82	6,529.2	-42.1	1,912.3	1,912.6	0.00	0.00	0.00
9,500.0	90.21	89.82	6,528.8	-41.8	2,012.3	2,012.6	0.00	0.00	0.00
9,600.0	90.21	89.82	6,528.5	-41.5	2,112.3	2,112.6	0.00	0.00	0.00
9,700.0	90.21	89.82	6,528.1	-41.2	2,212.3	2,212.6	0.00	0.00	0.00
9,800.0	90.21	89.82	6,527.7	-40.9	2,312.3	2,312.6	0.00	0.00	0.00
9,900.0	90.21	89.82	6,527.4	-40.6	2,412.3	2,412.6	0.00	0.00	0.00
10,000.0	90.21	89.82	6,527.0	-40.2	2,512.3	2,512.6	0.00	0.00	0.00
10,100.0	90.21	89.82	6,526.6	-39.9	2,612.3	2,612.6	0.00	0.00	0.00
10,200.0	90.21	89.82	6,526.3	-39.6	2,712.3	2,712.6	0.00	0.00	0.00
10,300.0	90.21	89.82	6,525.9	-39.3	2,812.3	2,812.6	0.00	0.00	0.00
10,400.0	90.21	89.82	6,525.5	-39.0	2,912.3	2,912.6	0.00	0.00	0.00
10,500.0	90.21	89.82	6,525.2	-38.7	3,012.3	3,012.5	0.00	0.00	0.00
10,600.0	90.21	89.82	6,524.8	-38.4	3,112.3	3,112.5	0.00	0.00	0.00
10,700.0	90.21	89.82	6,524.4	-38.1	3,212.3	3,212.5	0.00	0.00	0.00
10,800.0	90.21	89.82	6,524.1	-37.8	3,312.3	3,312.5	0.00	0.00	0.00
10,900.0	90.21	89.82	6,523.7	-37.5	3,412.3	3,412.5	0.00	0.00	0.00
11,000.0	90.21	89.82	6,523.3	-37.2	3,512.3	3,512.5	0.00	0.00	0.00
11,035.4	90.21	89.82	6,523.2	-37.1	3,547.7	3,547.9	0.00	0.00	0.00

3340CDH PBHL

Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
7,015.0	6,537.9	7" Csg	7	8-3/4

Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
	0.0	Fox Hills OUTCROP		-0.21	89.82
4,099.8	3,986.0	Sussex		-0.21	89.82
4,779.6	4,637.0	Shannon		-0.21	89.82
6,290.3	6,138.0	Sharon Springs		-0.21	89.82
6,407.3	6,245.0	Niobrara		-0.21	89.82
6,962.3	6,534.0	Top CDLL Target		-0.21	89.82
	6,546.0	Base CDLL Target		-0.21	89.82