



**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 5-63-27-3340BH, 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 5-63-27-3340BH

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.0	0.0	1379418.38	3298958.47	40° 22' 11.784 N	104° 25' 37.308 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	2463.4	21.95	252.19	2427.9	-84.7	-263.7	1.50	252.19	-254.9	
4	3988.2	21.95	252.19	3842.1	-259.0	-806.3	0.00	0.00	-779.4	
5	5451.6	0.00	0.00	5270.0	-343.7	-1070.0	1.50	180.00	-1034.2	
6	5951.6	0.00	0.00	5770.0	-343.7	-1070.0	0.00	0.00	-1034.2	
7	6853.6	90.20	89.75	6343.0	-341.2	-495.0	10.00	89.75	-461.9	3340BH LP
8	10882.1	90.20	89.75	6328.9	-323.3	3533.3	0.00	0.00	3548.1	3340BH 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

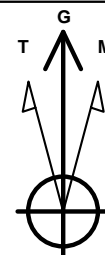
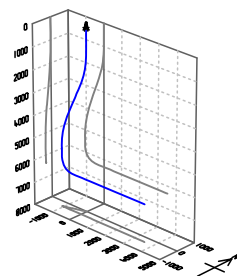
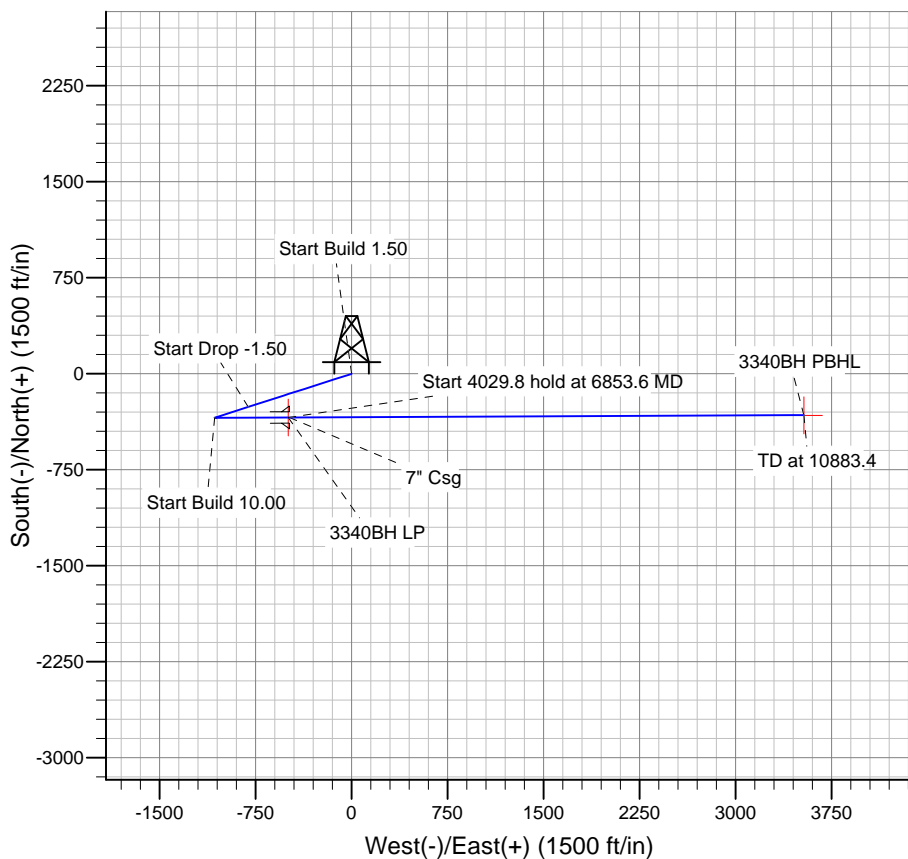
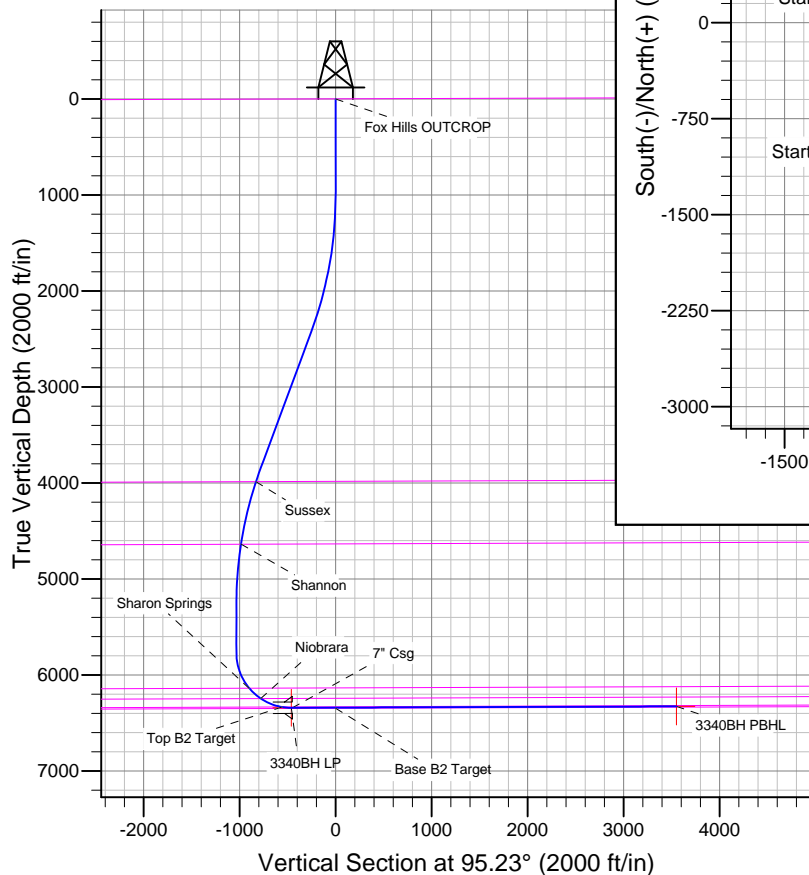
TVDPath	MDPath	Formation
		Base B2 Target
		Fox Hills OUTCROP
3988.0	4144.3	Sussex
4639.6	4818.3	Shannon
6140.3	6354.2	Sharon Springs
6246.8	6514.9	Niobrara
6335.1	6756.4	Top B2 Target

## WELLBORE TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Shape
3340BH PBHL	6328.0	-324.9	3534.5	Point
3340BH LP	6343.0	-341.1	-494.7	Point

## CASING DETAILS

TVD	MD	Name	Size
6342.9	6865.0	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 5-63-27-3340BH**

**Wellbore #1**

**Plan: Design #1**

## **Standard Planning Report**

**30 May, 2013**

# Bill Barrett Corp

## Planning Report

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

<b>Project</b>	WELD COUNTY, COLORADO		
<b>Map System:</b>	US State Plane 1983	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	North American Datum 1983		
<b>Map Zone:</b>	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 5-63-27-3340BH					
Well Position	+N-S	-17.9 ft	Northing:	1,379,418.38 ft	Latitude:	40° 22' 11.784 N
	+E-W	25.3 ft	Easting:	3,298,958.47 ft	Longitude:	104° 25' 37.308 W
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,542.0ft

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

<b>Design</b>	Design #1				
<b>Audit Notes:</b>					
<b>Version:</b>	<b>Phase:</b>	PLAN	<b>Tie On Depth:</b>	0.0	
<b>Vertical Section:</b>	<b>Depth From (TVD) (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Direction (°)</b>	
	0.0	0.0	0.0	95.23	

<b>Plan Sections</b>										
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	
2,463.4	21.95	252.19	2,427.9	-84.7	-263.7	1.50	1.50	0.00	252.19	
3,988.2	21.95	252.19	3,842.1	-259.0	-806.3	0.00	0.00	0.00	0.00	
5,451.6	0.00	0.00	5,270.0	-343.7	-1,070.0	1.50	-1.50	0.00	180.00	
5,951.6	0.00	0.00	5,770.0	-343.7	-1,070.0	0.00	0.00	0.00	0.00	
6,853.6	90.20	89.75	6,343.0	-341.2	-495.0	10.00	10.00	0.00	89.75	3340BH LP
10,882.1	90.20	89.75	6,328.9	-323.3	3,533.3	0.00	0.00	0.00	0.00	3340BH PBHL

# Bill Barrett Corp

## Planning Report

<b>Database:</b>	Compass	<b>Local Co-ordinate Reference:</b>	Well Helton 5-63-27-3340BH
<b>Company:</b>	BILL BARRETT CORP	<b>TVD Reference:</b>	KB @ 4565.0ft (Original Well Elev)
<b>Project:</b>	WELD COUNTY, COLORADO	<b>MD Reference:</b>	KB @ 4565.0ft (Original Well Elev)
<b>Site:</b>	Helton 5-63-27 Pad	<b>North Reference:</b>	Grid
<b>Well:</b>	Helton 5-63-27-3340BH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	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	252.19	1,100.0	-0.4	-1.2	-1.2	1.50	1.50	0.00
1,200.0	3.00	252.19	1,199.9	-1.6	-5.0	-4.8	1.50	1.50	0.00
1,300.0	4.50	252.19	1,299.7	-3.6	-11.2	-10.8	1.50	1.50	0.00
1,400.0	6.00	252.19	1,399.3	-6.4	-19.9	-19.3	1.50	1.50	0.00
1,500.0	7.50	252.19	1,498.6	-10.0	-31.1	-30.1	1.50	1.50	0.00
1,600.0	9.00	252.19	1,597.5	-14.4	-44.8	-43.3	1.50	1.50	0.00
1,700.0	10.50	252.19	1,696.1	-19.6	-60.9	-58.9	1.50	1.50	0.00
1,800.0	12.00	252.19	1,794.2	-25.5	-79.5	-76.8	1.50	1.50	0.00
1,900.0	13.50	252.19	1,891.7	-32.3	-100.5	-97.1	1.50	1.50	0.00
2,000.0	15.00	252.19	1,988.6	-39.8	-123.9	-119.8	1.50	1.50	0.00
2,100.0	16.50	252.19	2,084.9	-48.1	-149.8	-144.8	1.50	1.50	0.00
2,200.0	18.00	252.19	2,180.4	-57.2	-178.0	-172.0	1.50	1.50	0.00
2,300.0	19.50	252.19	2,275.0	-67.0	-208.6	-201.6	1.50	1.50	0.00
2,400.0	21.00	252.19	2,368.9	-77.6	-241.5	-233.5	1.50	1.50	0.00
2,463.4	21.95	252.19	2,427.9	-84.7	-263.7	-254.9	1.50	1.50	0.00
2,500.0	21.95	252.19	2,461.8	-88.9	-276.7	-267.4	0.00	0.00	0.00
2,600.0	21.95	252.19	2,554.6	-100.3	-312.3	-301.8	0.00	0.00	0.00
2,700.0	21.95	252.19	2,647.3	-111.7	-347.9	-336.2	0.00	0.00	0.00
2,800.0	21.95	252.19	2,740.1	-123.2	-383.4	-370.6	0.00	0.00	0.00
2,900.0	21.95	252.19	2,832.8	-134.6	-419.0	-405.0	0.00	0.00	0.00
3,000.0	21.95	252.19	2,925.6	-146.0	-454.6	-439.4	0.00	0.00	0.00
3,100.0	21.95	252.19	3,018.3	-157.5	-490.2	-473.8	0.00	0.00	0.00
3,200.0	21.95	252.19	3,111.1	-168.9	-525.8	-508.2	0.00	0.00	0.00
3,300.0	21.95	252.19	3,203.8	-180.3	-561.4	-542.6	0.00	0.00	0.00
3,400.0	21.95	252.19	3,296.6	-191.8	-597.0	-577.0	0.00	0.00	0.00
3,500.0	21.95	252.19	3,389.3	-203.2	-632.6	-611.4	0.00	0.00	0.00
3,600.0	21.95	252.19	3,482.1	-214.6	-668.2	-645.8	0.00	0.00	0.00
3,700.0	21.95	252.19	3,574.8	-226.1	-703.8	-680.2	0.00	0.00	0.00
3,800.0	21.95	252.19	3,667.6	-237.5	-739.4	-714.6	0.00	0.00	0.00
3,900.0	21.95	252.19	3,760.3	-248.9	-775.0	-749.0	0.00	0.00	0.00
3,988.2	21.95	252.19	3,842.1	-259.0	-806.3	-779.4	0.00	0.00	0.00
4,000.0	21.77	252.19	3,853.1	-260.4	-810.5	-783.4	1.50	-1.50	0.00
4,100.0	20.27	252.19	3,946.4	-271.3	-844.7	-816.4	1.50	-1.50	0.00
4,144.3	19.61	252.19	3,988.0	-275.9	-859.1	-830.3	1.50	-1.50	0.00
Sussex									
4,200.0	18.77	252.19	4,040.7	-281.5	-876.5	-847.2	1.50	-1.50	0.00
4,300.0	17.27	252.19	4,135.7	-291.0	-906.0	-875.7	1.50	-1.50	0.00
4,400.0	15.77	252.19	4,231.6	-299.7	-933.0	-901.9	1.50	-1.50	0.00
4,500.0	14.27	252.19	4,328.2	-307.6	-957.7	-925.7	1.50	-1.50	0.00
4,600.0	12.77	252.19	4,425.4	-314.8	-980.0	-947.2	1.50	-1.50	0.00
4,700.0	11.27	252.19	4,523.2	-321.2	-999.8	-966.4	1.50	-1.50	0.00
4,800.0	9.77	252.19	4,621.5	-326.7	-1,017.2	-983.2	1.50	-1.50	0.00
4,818.3	9.50	252.19	4,639.6	-327.7	-1,020.1	-986.0	1.50	-1.50	0.00

# Bill Barrett Corp

## Planning Report

<b>Database:</b>	Compass	<b>Local Co-ordinate Reference:</b>	Well Helton 5-63-27-3340BH
<b>Company:</b>	BILL BARRETT CORP	<b>TVD Reference:</b>	KB @ 4565.0ft (Original Well Elev)
<b>Project:</b>	WELD COUNTY, COLORADO	<b>MD Reference:</b>	KB @ 4565.0ft (Original Well Elev)
<b>Site:</b>	Helton 5-63-27 Pad	<b>North Reference:</b>	Grid
<b>Well:</b>	Helton 5-63-27-3340BH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	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)
<b>Shannon</b>									
4,900.0	8.27	252.19	4,720.3	-331.5	-1,032.1	-997.6	1.50	-1.50	0.00
5,000.0	6.77	252.19	4,819.4	-335.5	-1,044.6	-1,009.7	1.50	-1.50	0.00
5,100.0	5.27	252.19	4,918.9	-338.8	-1,054.6	-1,019.3	1.50	-1.50	0.00
5,200.0	3.77	252.19	5,018.6	-341.2	-1,062.1	-1,026.6	1.50	-1.50	0.00
5,300.0	2.27	252.19	5,118.4	-342.8	-1,067.1	-1,031.5	1.50	-1.50	0.00
5,400.0	0.77	252.19	5,218.4	-343.6	-1,069.7	-1,033.9	1.50	-1.50	0.00
5,451.6	0.00	0.00	5,270.0	-343.7	-1,070.0	-1,034.2	1.50	-1.50	0.00
5,500.0	0.00	0.00	5,318.4	-343.7	-1,070.0	-1,034.2	0.00	0.00	0.00
5,600.0	0.00	0.00	5,418.4	-343.7	-1,070.0	-1,034.2	0.00	0.00	0.00
5,700.0	0.00	0.00	5,518.4	-343.7	-1,070.0	-1,034.2	0.00	0.00	0.00
5,800.0	0.00	0.00	5,618.4	-343.7	-1,070.0	-1,034.2	0.00	0.00	0.00
5,900.0	0.00	0.00	5,718.4	-343.7	-1,070.0	-1,034.2	0.00	0.00	0.00
5,951.6	0.00	0.00	5,770.0	-343.7	-1,070.0	-1,034.2	0.00	0.00	0.00
6,000.0	4.84	89.75	5,818.3	-343.7	-1,068.0	-1,032.2	10.00	10.00	0.00
6,100.0	14.84	89.75	5,916.7	-343.6	-1,050.9	-1,015.2	10.00	10.00	0.00
6,200.0	24.84	89.75	6,010.7	-343.5	-1,017.0	-981.5	10.00	10.00	0.00
6,300.0	34.84	89.75	6,097.3	-343.2	-967.3	-932.0	10.00	10.00	0.00
6,354.2	40.26	89.75	6,140.3	-343.1	-934.3	-899.1	10.00	10.00	0.00
<b>Sharon Springs</b>									
6,400.0	44.84	89.75	6,174.0	-343.0	-903.3	-868.3	10.00	10.00	0.00
6,500.0	54.84	89.75	6,238.4	-342.6	-827.0	-792.4	10.00	10.00	0.00
6,514.9	56.33	89.75	6,246.8	-342.6	-814.7	-780.1	10.00	10.00	0.00
<b>Niobrara</b>									
6,600.0	64.84	89.75	6,288.6	-342.2	-740.7	-706.4	10.00	10.00	0.00
6,700.0	74.84	89.75	6,323.0	-341.8	-646.9	-613.1	10.00	10.00	0.00
6,756.4	80.48	89.75	6,335.1	-341.6	-591.8	-558.2	10.00	10.00	0.00
<b>Top B2 Target</b>									
6,800.0	84.84	89.75	6,340.6	-341.4	-548.6	-515.2	10.00	10.00	0.00
6,853.6	90.20	89.75	6,343.0	-341.2	-495.0	-461.9	10.00	10.00	0.00
6,854.0	90.20	89.75	6,343.0	-341.1	-494.7	-461.5	0.00	0.00	0.00
<b>3340BH LP</b>									
6,865.0	90.20	89.75	6,342.9	-341.1	-483.7	-450.6	0.00	0.00	0.00
<b>7" Csg</b>									
6,900.0	90.20	89.75	6,342.8	-340.9	-448.7	-415.7	0.00	0.00	0.00
7,000.0	90.20	89.75	6,342.4	-340.5	-348.7	-316.2	0.00	0.00	0.00
7,100.0	90.20	89.75	6,342.1	-340.1	-248.7	-216.7	0.00	0.00	0.00
7,200.0	90.20	89.75	6,341.7	-339.6	-148.7	-117.1	0.00	0.00	0.00
7,300.0	90.20	89.75	6,341.4	-339.2	-48.7	-17.6	0.00	0.00	0.00
7,400.0	90.20	89.75	6,341.0	-338.7	51.3	82.0	0.00	0.00	0.00
7,500.0	90.20	89.75	6,340.7	-338.3	151.3	181.5	0.00	0.00	0.00
7,600.0	90.20	89.75	6,340.4	-337.8	251.3	281.1	0.00	0.00	0.00
7,700.0	90.20	89.75	6,340.0	-337.4	351.3	380.6	0.00	0.00	0.00
7,800.0	90.20	89.75	6,339.7	-337.0	451.3	480.1	0.00	0.00	0.00
7,900.0	90.20	89.75	6,339.3	-336.5	551.3	579.7	0.00	0.00	0.00
8,000.0	90.20	89.75	6,339.0	-336.1	651.3	679.2	0.00	0.00	0.00
8,100.0	90.20	89.75	6,338.6	-335.6	751.3	778.8	0.00	0.00	0.00
8,200.0	90.20	89.75	6,338.3	-335.2	851.3	878.3	0.00	0.00	0.00
8,300.0	90.20	89.75	6,337.9	-334.7	951.3	977.8	0.00	0.00	0.00
8,400.0	90.20	89.75	6,337.6	-334.3	1,051.3	1,077.4	0.00	0.00	0.00
8,500.0	90.20	89.75	6,337.2	-333.8	1,151.3	1,176.9	0.00	0.00	0.00
8,600.0	90.20	89.75	6,336.9	-333.4	1,251.3	1,276.5	0.00	0.00	0.00
8,700.0	90.20	89.75	6,336.5	-333.0	1,351.3	1,376.0	0.00	0.00	0.00

# Bill Barrett Corp

## Planning Report

<b>Database:</b>	Compass	<b>Local Co-ordinate Reference:</b>	Well Helton 5-63-27-3340BH
<b>Company:</b>	BILL BARRETT CORP	<b>TVD Reference:</b>	KB @ 4565.0ft (Original Well Elev)
<b>Project:</b>	WELD COUNTY, COLORADO	<b>MD Reference:</b>	KB @ 4565.0ft (Original Well Elev)
<b>Site:</b>	Helton 5-63-27 Pad	<b>North Reference:</b>	Grid
<b>Well:</b>	Helton 5-63-27-3340BH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	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	90.20	89.75	6,336.2	-332.5	1,451.3	1,475.6	0.00	0.00	0.00
8,900.0	90.20	89.75	6,335.8	-332.1	1,551.3	1,575.1	0.00	0.00	0.00
9,000.0	90.20	89.75	6,335.5	-331.6	1,651.3	1,674.6	0.00	0.00	0.00
9,100.0	90.20	89.75	6,335.1	-331.2	1,751.3	1,774.2	0.00	0.00	0.00
9,200.0	90.20	89.75	6,334.8	-330.7	1,851.3	1,873.7	0.00	0.00	0.00
9,300.0	90.20	89.75	6,334.4	-330.3	1,951.3	1,973.3	0.00	0.00	0.00
9,400.0	90.20	89.75	6,334.1	-329.9	2,051.3	2,072.8	0.00	0.00	0.00
9,500.0	90.20	89.75	6,333.7	-329.4	2,151.3	2,172.4	0.00	0.00	0.00
9,600.0	90.20	89.75	6,333.4	-329.0	2,251.3	2,271.9	0.00	0.00	0.00
9,700.0	90.20	89.75	6,333.0	-328.5	2,351.3	2,371.4	0.00	0.00	0.00
9,800.0	90.20	89.75	6,332.7	-328.1	2,451.3	2,471.0	0.00	0.00	0.00
9,900.0	90.20	89.75	6,332.3	-327.6	2,551.3	2,570.5	0.00	0.00	0.00
10,000.0	90.20	89.75	6,332.0	-327.2	2,651.3	2,670.1	0.00	0.00	0.00
10,100.0	90.20	89.75	6,331.6	-326.8	2,751.3	2,769.6	0.00	0.00	0.00
10,200.0	90.20	89.75	6,331.3	-326.3	2,851.3	2,869.1	0.00	0.00	0.00
10,300.0	90.20	89.75	6,330.9	-325.9	2,951.3	2,968.7	0.00	0.00	0.00
10,400.0	90.20	89.75	6,330.6	-325.4	3,051.3	3,068.2	0.00	0.00	0.00
10,500.0	90.20	89.75	6,330.2	-325.0	3,151.3	3,167.8	0.00	0.00	0.00
10,600.0	90.20	89.75	6,329.9	-324.5	3,251.3	3,267.3	0.00	0.00	0.00
10,700.0	90.20	89.75	6,329.5	-324.1	3,351.3	3,366.9	0.00	0.00	0.00
10,800.0	90.20	89.75	6,329.2	-323.7	3,451.3	3,466.4	0.00	0.00	0.00
10,882.1	90.20	89.75	6,328.9	-323.3	3,533.3	3,548.1	0.00	0.00	0.00
3340BH PBHL									

### Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
6,865.0	6,342.9	7" Csg	7	8-3/4

### Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
	0.0	Fox Hills OUTCROP		-0.20	89.75
4,144.3	3,985.0	Sussex		-0.20	89.75
4,818.3	4,636.0	Shannon		-0.20	89.75
6,354.2	6,137.0	Sharon Springs		-0.20	89.75
6,514.9	6,244.0	Niobrara		-0.20	89.75
6,756.4	6,333.0	Top B2 Target		-0.20	89.75
	6,348.0	Base B2 Target		-0.20	89.75