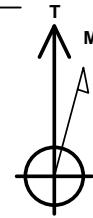


BILL BARRETT CORP
STATE OF COLORADO 1S-66-36 3340 BH
Adams County, CO

Geodetic System: US State Plane 1983
Zone: Colorado Northern Zone
WELL @ 5245.0usft (Original Well Elev)
Ground Level: 5225.0
Latitude: 39° 55' 0.903 N
Longitude: 104° 43' 56.852 W
Magnetic North is 8.49° East of True North (Magnetic Declination)



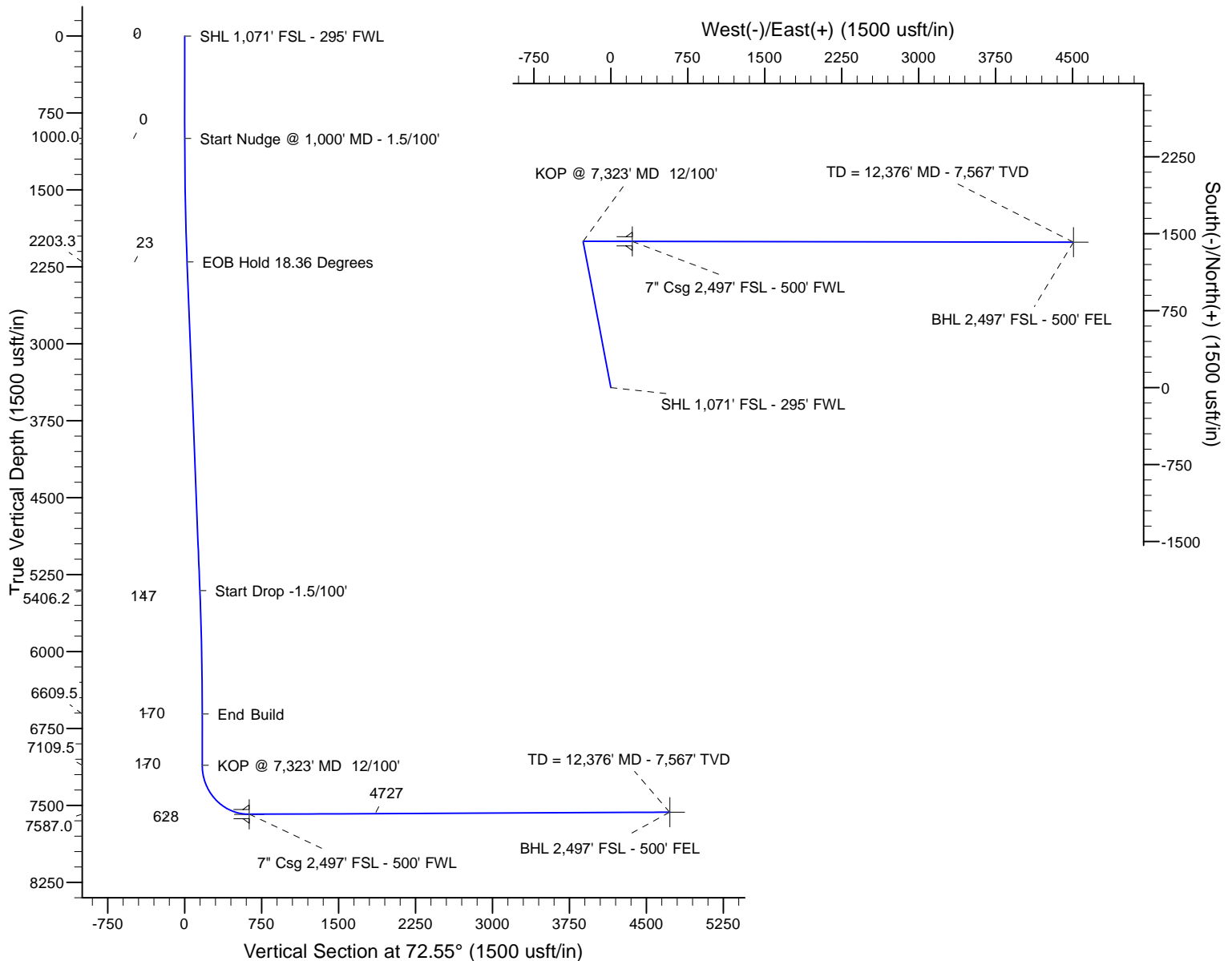
Azimuths to True North
Magnetic North: 8.49°

Magnetic Field
Strength: 52627.6snT
Dip Angle: 66.58°
Date: 10/28/2013
Model: IGRF2010

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	Vsect
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0
1000.0	0.00	0.00	1000.0	0.0	0.0	0.00	0.00	0.0
2224.1	18.36	349.28	2203.2	191.1	-36.2	1.50	349.28	22.8
5598.9	18.36	349.28	5406.3	1235.6	-233.8	0.00	0.00	147.4
6823.0	0.00	0.00	6609.5	1426.7	-270.0	1.50	180.00	170.2
7323.0	0.00	0.00	7109.5	1426.7	-270.0	0.00	0.00	170.2
8075.2	90.27	90.11	7587.0	1425.8	209.7	12.00	90.11	627.6
12375.5	90.27	90.11	7567.0	1417.5	4509.9	0.00	0.00	4727.5

FORMATION TOP DETAILS

TVDPath	MDPath	Formation
845.0	845.0	Base Fox Hills
4994.0	5164.5	Shannon
7292.1	7510.4	Sharon Springs
7379.9	7610.4	Niobrara
7559.8	7911.1	Top B2 Target
7586.2	8045.4	Landing Point



Plan: Design #1 (STATE OF COLORADO 1S-66-36 3340 BH/Wellbore #

Created By: Mike Kirby Date: 15:24, October 28 2013
Checked: Date:
Reviewed: Date:
Approved: x Date: x

Planning Report

Database:	Rocky Mountain R5000 Database	Local Co-ordinate Reference:	Well STATE OF COLORADO 1S-66-36 3340 BH
Company:	BILL BARRETT CORP	TVD Reference:	WELL @ 5245.0usft (Original Well Elev)
Project:	Adams County, CO	MD Reference:	WELL @ 5245.0usft (Original Well Elev)
Site:	State of Coloardo 36-1S-66W South Pad	North Reference:	True
Well:	STATE OF COLORADO 1S-66-36 3340 BH	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

Project	Adams County, CO		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Northern Zone		

Site		State of Coloardo 36-1S-66W South Pad			
Site Position:		Northing:	1,213,513.90 usft	Latitude:	39° 55' 0.903 N
From:	Map	Easting:	3,215,288.70 usft	Longitude:	104° 43' 56.852 W
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.50 °

Well	STATE OF COLORADO 1S-66-36 3340 BH					
Well Position	+N/-S	135.0 usft	Northing:	1,213,648.90 usft	Latitude:	39° 55' 2.237 N
	+E/-W	0.4 usft	Easting:	3,215,287.90 usft	Longitude:	104° 43' 56.847 W
Position Uncertainty		0.0 usft	Wellhead Elevation:	5,245.0 usft	Ground Level:	5,225.0 usft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	10/28/2013	8.49	66.58	52,628

Design	Design #1				
Audit Notes:					
Version:	Phase:	PROTOTYPE	Tie On Depth:	0.0	
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)	
	0.0	0.0	0.0	72.55	

Plan Sections										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	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	
2,224.1	18.36	349.28	2,203.2	191.1	-36.2	1.50	1.50	0.00	349.28	
5,598.9	18.36	349.28	5,406.3	1,235.6	-233.8	0.00	0.00	0.00	0.00	
6,823.0	0.00	0.00	6,609.5	1,426.7	-270.0	1.50	-1.50	0.00	180.00	
7,323.0	0.00	0.00	7,109.5	1,426.7	-270.0	0.00	0.00	0.00	0.00	
8,075.2	90.27	90.11	7,587.0	1,425.8	209.7	12.00	12.00	0.00	90.11	
12,375.5	90.27	90.11	7,567.0	1,417.5	4,509.9	0.00	0.00	0.00	0.00	SOC 1S-66-36 3340 BH

Planning Report

Database:	Rocky Mountain R5000 Database	Local Co-ordinate Reference:	Well STATE OF COLORADO 1S-66-36 3340 BH
Company:	BILL BARRETT CORP	TVD Reference:	WELL @ 5245.0usft (Original Well Elev)
Project:	Adams County, CO	MD Reference:	WELL @ 5245.0usft (Original Well Elev)
Site:	State of Coloardo 36-1S-66W South Pad	North Reference:	True
Well:	STATE OF COLORADO 1S-66-36 3340 BH	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
2.0	0.00	0.00	2.0	0.0	0.0	0.0	0.00	0.00	0.00
SHL 1,071' FSL - 295' FWL									
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
845.0	0.00	0.00	845.0	0.0	0.0	0.0	0.00	0.00	0.00
Base Fox Hills									
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
Start Nudge @ 1,000' MD - 1.5/100'									
1,100.0	1.50	349.28	1,100.0	1.3	-0.2	0.2	1.50	1.50	0.00
1,200.0	3.00	349.28	1,199.9	5.1	-1.0	0.6	1.50	1.50	0.00
1,300.0	4.50	349.28	1,299.7	11.6	-2.2	1.4	1.50	1.50	0.00
1,400.0	6.00	349.28	1,399.3	20.6	-3.9	2.5	1.50	1.50	0.00
1,500.0	7.50	349.28	1,498.6	32.1	-6.1	3.8	1.50	1.50	0.00
1,600.0	9.00	349.28	1,597.5	46.2	-8.7	5.5	1.50	1.50	0.00
1,700.0	10.50	349.28	1,696.1	62.8	-11.9	7.5	1.50	1.50	0.00
1,800.0	12.00	349.28	1,794.2	82.0	-15.5	9.8	1.50	1.50	0.00
1,900.0	13.50	349.28	1,891.7	103.7	-19.6	12.4	1.50	1.50	0.00
2,000.0	15.00	349.28	1,988.6	127.9	-24.2	15.3	1.50	1.50	0.00
2,100.0	16.50	349.28	2,084.9	154.6	-29.2	18.4	1.50	1.50	0.00
2,200.0	18.00	349.28	2,180.4	183.7	-34.8	21.9	1.50	1.50	0.00
2,224.1	18.36	349.28	2,203.3	191.1	-36.2	22.8	1.50	1.50	0.00
EOB Hold 18.36 Degrees									
2,300.0	18.36	349.28	2,275.3	214.6	-40.6	25.6	0.00	0.00	0.00
2,400.0	18.36	349.28	2,370.2	245.5	-46.5	29.3	0.00	0.00	0.00
2,500.0	18.36	349.28	2,465.1	276.5	-52.3	33.0	0.00	0.00	0.00
2,600.0	18.36	349.28	2,560.0	307.4	-58.2	36.7	0.00	0.00	0.00
2,700.0	18.36	349.28	2,654.9	338.4	-64.0	40.4	0.00	0.00	0.00
2,800.0	18.36	349.28	2,749.8	369.3	-69.9	44.1	0.00	0.00	0.00
2,900.0	18.36	349.28	2,844.7	400.3	-75.8	47.8	0.00	0.00	0.00
3,000.0	18.36	349.28	2,939.7	431.2	-81.6	51.4	0.00	0.00	0.00
3,100.0	18.36	349.28	3,034.6	462.2	-87.5	55.1	0.00	0.00	0.00
3,200.0	18.36	349.28	3,129.5	493.1	-93.3	58.8	0.00	0.00	0.00
3,300.0	18.36	349.28	3,224.4	524.1	-99.2	62.5	0.00	0.00	0.00
3,400.0	18.36	349.28	3,319.3	555.0	-105.0	66.2	0.00	0.00	0.00
3,500.0	18.36	349.28	3,414.2	586.0	-110.9	69.9	0.00	0.00	0.00
3,600.0	18.36	349.28	3,509.1	616.9	-116.8	73.6	0.00	0.00	0.00
3,700.0	18.36	349.28	3,604.0	647.9	-122.6	77.3	0.00	0.00	0.00
3,800.0	18.36	349.28	3,698.9	678.8	-128.5	81.0	0.00	0.00	0.00
3,900.0	18.36	349.28	3,793.8	709.8	-134.3	84.7	0.00	0.00	0.00
4,000.0	18.36	349.28	3,888.7	740.7	-140.2	88.4	0.00	0.00	0.00
4,100.0	18.36	349.28	3,983.7	771.7	-146.0	92.1	0.00	0.00	0.00
4,200.0	18.36	349.28	4,078.6	802.6	-151.9	95.8	0.00	0.00	0.00
4,300.0	18.36	349.28	4,173.5	833.6	-157.8	99.5	0.00	0.00	0.00
4,400.0	18.36	349.28	4,268.4	864.5	-163.6	103.1	0.00	0.00	0.00
4,500.0	18.36	349.28	4,363.3	895.5	-169.5	106.8	0.00	0.00	0.00

Planning Report

Database:	Rocky Mountain R5000 Database	Local Co-ordinate Reference:	Well STATE OF COLORADO 1S-66-36 3340 BH
Company:	BILL BARRETT CORP	TVD Reference:	WELL @ 5245.0usft (Original Well Elev)
Project:	Adams County, CO	MD Reference:	WELL @ 5245.0usft (Original Well Elev)
Site:	State of Coloardo 36-1S-66W South Pad	North Reference:	True
Well:	STATE OF COLORADO 1S-66-36 3340 BH	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
4,600.0	18.36	349.28	4,458.2	926.4	-175.3	110.5	0.00	0.00	0.00
4,700.0	18.36	349.28	4,553.1	957.4	-181.2	114.2	0.00	0.00	0.00
4,800.0	18.36	349.28	4,648.0	988.4	-187.0	117.9	0.00	0.00	0.00
4,900.0	18.36	349.28	4,742.9	1,019.3	-192.9	121.6	0.00	0.00	0.00
5,000.0	18.36	349.28	4,837.8	1,050.3	-198.8	125.3	0.00	0.00	0.00
5,100.0	18.36	349.28	4,932.7	1,081.2	-204.6	129.0	0.00	0.00	0.00
5,164.5	18.36	349.28	4,994.0	1,101.2	-208.4	131.4	0.00	0.00	0.00
Shannon									
5,200.0	18.36	349.28	5,027.7	1,112.2	-210.5	132.7	0.00	0.00	0.00
5,300.0	18.36	349.28	5,122.6	1,143.1	-216.3	136.4	0.00	0.00	0.00
5,400.0	18.36	349.28	5,217.5	1,174.1	-222.2	140.1	0.00	0.00	0.00
5,500.0	18.36	349.28	5,312.4	1,205.0	-228.0	143.8	0.00	0.00	0.00
5,598.9	18.36	349.28	5,406.2	1,235.6	-233.8	147.4	0.00	0.00	0.00
Start Drop -1.5/100'									
5,600.0	18.35	349.28	5,407.3	1,236.0	-233.9	147.5	1.47	-1.47	0.00
5,700.0	16.85	349.28	5,502.6	1,265.7	-239.5	151.0	1.50	-1.50	0.00
5,800.0	15.35	349.28	5,598.7	1,292.9	-244.7	154.3	1.50	-1.50	0.00
5,900.0	13.85	349.28	5,695.5	1,317.7	-249.4	157.2	1.50	-1.50	0.00
6,000.0	12.35	349.28	5,792.8	1,339.9	-253.6	159.9	1.50	-1.50	0.00
6,100.0	10.85	349.28	5,890.8	1,359.7	-257.3	162.2	1.50	-1.50	0.00
6,200.0	9.35	349.28	5,989.3	1,376.9	-260.6	164.3	1.50	-1.50	0.00
6,300.0	7.85	349.28	6,088.1	1,391.6	-263.4	166.0	1.50	-1.50	0.00
6,400.0	6.35	349.28	6,187.4	1,403.7	-265.6	167.5	1.50	-1.50	0.00
6,500.0	4.85	349.28	6,286.9	1,413.3	-267.5	168.6	1.50	-1.50	0.00
6,600.0	3.35	349.28	6,386.6	1,420.3	-268.8	169.5	1.50	-1.50	0.00
6,700.0	1.85	349.28	6,486.5	1,424.8	-269.6	170.0	1.50	-1.50	0.00
6,800.0	0.35	349.28	6,586.5	1,426.6	-270.0	170.2	1.50	-1.50	0.00
6,823.0	0.00	0.00	6,609.5	1,426.7	-270.0	170.2	1.50	-1.50	46.59
End Build									
6,900.0	0.00	0.00	6,686.5	1,426.7	-270.0	170.2	0.00	0.00	0.00
7,000.0	0.00	0.00	6,786.5	1,426.7	-270.0	170.2	0.00	0.00	0.00
7,100.0	0.00	0.00	6,886.5	1,426.7	-270.0	170.2	0.00	0.00	0.00
7,200.0	0.00	0.00	6,986.5	1,426.7	-270.0	170.2	0.00	0.00	0.00
7,300.0	0.00	0.00	7,086.5	1,426.7	-270.0	170.2	0.00	0.00	0.00
7,323.0	0.00	0.00	7,109.5	1,426.7	-270.0	170.2	0.00	0.00	0.00
KOP @ 7,323' MD 12/100'									
7,400.0	9.24	90.11	7,186.2	1,426.7	-263.8	176.1	12.00	12.00	0.00
7,500.0	21.24	90.11	7,282.5	1,426.6	-237.6	201.1	12.00	12.00	0.00
7,510.4	22.49	90.11	7,292.1	1,426.6	-233.7	204.8	12.00	12.00	0.00
Sharon Springs									
7,600.0	33.24	90.11	7,371.2	1,426.5	-191.9	244.7	12.00	12.00	0.00
7,610.4	34.49	90.11	7,379.9	1,426.5	-186.1	250.2	12.00	12.00	0.00
Niobrara									
7,700.0	45.24	90.11	7,448.5	1,426.4	-128.7	304.9	12.00	12.00	0.00
7,800.0	57.24	90.11	7,511.0	1,426.3	-50.9	379.1	12.00	12.00	0.00
7,900.0	69.24	90.11	7,556.0	1,426.1	38.2	464.1	12.00	12.00	0.00
7,911.1	70.57	90.11	7,559.8	1,426.1	48.7	474.0	12.00	12.00	0.00
Top B2 Target									
8,000.0	81.24	90.11	7,581.4	1,425.9	134.7	556.1	12.00	12.00	0.00
8,045.4	86.68	90.11	7,586.2	1,425.8	179.8	599.1	12.00	12.00	0.00
Landing Point									
8,075.2	90.26	90.11	7,587.0	1,425.8	209.7	627.5	12.00	12.00	0.00

Planning Report

Database:	Rocky Mountain R5000 Database	Local Co-ordinate Reference:	Well STATE OF COLORADO 1S-66-36 3340 BH
Company:	BILL BARRETT CORP	TVD Reference:	WELL @ 5245.0usft (Original Well Elev)
Project:	Adams County, CO	MD Reference:	WELL @ 5245.0usft (Original Well Elev)
Site:	State of Coloardo 36-1S-66W South Pad	North Reference:	True
Well:	STATE OF COLORADO 1S-66-36 3340 BH	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
7" Csg 2,497' FSL - 500' FWL - 7"										
8,100.0	90.27	90.11	7,586.8	1,425.7	234.5	651.2	0.01	0.01	0.00	
8,200.0	90.27	90.11	7,586.4	1,425.5	334.5	746.5	0.00	0.00	0.00	
8,300.0	90.27	90.11	7,585.9	1,425.3	434.5	841.9	0.00	0.00	0.00	
8,400.0	90.27	90.11	7,585.5	1,425.2	534.5	937.2	0.00	0.00	0.00	
8,500.0	90.27	90.11	7,585.0	1,425.0	634.5	1,032.5	0.00	0.00	0.00	
8,600.0	90.27	90.11	7,584.5	1,424.8	734.5	1,127.9	0.00	0.00	0.00	
8,700.0	90.27	90.11	7,584.1	1,424.6	834.5	1,223.2	0.00	0.00	0.00	
8,800.0	90.27	90.11	7,583.6	1,424.4	934.5	1,318.6	0.00	0.00	0.00	
8,900.0	90.27	90.11	7,583.1	1,424.2	1,034.5	1,413.9	0.00	0.00	0.00	
9,000.0	90.27	90.11	7,582.7	1,424.0	1,134.4	1,509.2	0.00	0.00	0.00	
9,100.0	90.27	90.11	7,582.2	1,423.8	1,234.4	1,604.6	0.00	0.00	0.00	
9,200.0	90.27	90.11	7,581.7	1,423.6	1,334.4	1,699.9	0.00	0.00	0.00	
9,300.0	90.27	90.11	7,581.3	1,423.4	1,434.4	1,795.3	0.00	0.00	0.00	
9,400.0	90.27	90.11	7,580.8	1,423.2	1,534.4	1,890.6	0.00	0.00	0.00	
9,500.0	90.27	90.11	7,580.3	1,423.0	1,634.4	1,985.9	0.00	0.00	0.00	
9,600.0	90.27	90.11	7,579.9	1,422.9	1,734.4	2,081.3	0.00	0.00	0.00	
9,700.0	90.27	90.11	7,579.4	1,422.7	1,834.4	2,176.6	0.00	0.00	0.00	
9,800.0	90.27	90.11	7,579.0	1,422.5	1,934.4	2,272.0	0.00	0.00	0.00	
9,900.0	90.27	90.11	7,578.5	1,422.3	2,034.4	2,367.3	0.00	0.00	0.00	
10,000.0	90.27	90.11	7,578.0	1,422.1	2,134.4	2,462.6	0.00	0.00	0.00	
10,100.0	90.27	90.11	7,577.6	1,421.9	2,234.4	2,558.0	0.00	0.00	0.00	
10,200.0	90.27	90.11	7,577.1	1,421.7	2,334.4	2,653.3	0.00	0.00	0.00	
10,300.0	90.27	90.11	7,576.6	1,421.5	2,434.4	2,748.7	0.00	0.00	0.00	
10,400.0	90.27	90.11	7,576.2	1,421.3	2,534.4	2,844.0	0.00	0.00	0.00	
10,500.0	90.27	90.11	7,575.7	1,421.1	2,634.4	2,939.3	0.00	0.00	0.00	
10,600.0	90.27	90.11	7,575.2	1,420.9	2,734.4	3,034.7	0.00	0.00	0.00	
10,700.0	90.27	90.11	7,574.8	1,420.7	2,834.4	3,130.0	0.00	0.00	0.00	
10,800.0	90.27	90.11	7,574.3	1,420.5	2,934.4	3,225.4	0.00	0.00	0.00	
10,900.0	90.27	90.11	7,573.8	1,420.4	3,034.4	3,320.7	0.00	0.00	0.00	
11,000.0	90.27	90.11	7,573.4	1,420.2	3,134.4	3,416.0	0.00	0.00	0.00	
11,100.0	90.27	90.11	7,572.9	1,420.0	3,234.4	3,511.4	0.00	0.00	0.00	
11,200.0	90.27	90.11	7,572.5	1,419.8	3,334.4	3,606.7	0.00	0.00	0.00	
11,300.0	90.27	90.11	7,572.0	1,419.6	3,434.4	3,702.1	0.00	0.00	0.00	
11,400.0	90.27	90.11	7,571.5	1,419.4	3,534.4	3,797.4	0.00	0.00	0.00	
11,500.0	90.27	90.11	7,571.1	1,419.2	3,634.4	3,892.7	0.00	0.00	0.00	
11,600.0	90.27	90.11	7,570.6	1,419.0	3,734.4	3,988.1	0.00	0.00	0.00	
11,700.0	90.27	90.11	7,570.1	1,418.8	3,834.4	4,083.4	0.00	0.00	0.00	
11,800.0	90.27	90.11	7,569.7	1,418.6	3,934.4	4,178.8	0.00	0.00	0.00	
11,900.0	90.27	90.11	7,569.2	1,418.4	4,034.4	4,274.1	0.00	0.00	0.00	
12,000.0	90.27	90.11	7,568.7	1,418.2	4,134.4	4,369.4	0.00	0.00	0.00	
12,100.0	90.27	90.11	7,568.3	1,418.1	4,234.4	4,464.8	0.00	0.00	0.00	
12,200.0	90.27	90.11	7,567.8	1,417.9	4,334.4	4,560.1	0.00	0.00	0.00	
12,300.0	90.27	90.11	7,567.3	1,417.7	4,434.4	4,655.5	0.00	0.00	0.00	
12,375.0	90.27	90.11	7,567.0	1,417.5	4,509.4	4,727.0	0.00	0.00	0.00	
TD = 12,376' MD - 7,567' TVD - BHL 2,497' FSL - 500' FEL										
12,375.5	90.27	90.11	7,567.0	1,417.5	4,509.9	4,727.5	0.00	0.00	0.00	

Planning Report

Database:	Rocky Mountain R5000 Database	Local Co-ordinate Reference:	Well STATE OF COLORADO 1S-66-36 3340 BH
Company:	BILL BARRETT CORP	TVD Reference:	WELL @ 5245.0usft (Original Well Elev)
Project:	Adams County, CO	MD Reference:	WELL @ 5245.0usft (Original Well Elev)
Site:	State of Coloardo 36-1S-66W South Pad	North Reference:	True
Well:	STATE OF COLORADO 1S-66-36 3340 BH	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

Design Targets									
Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
SOC 1S-66-36 3340 BH - plan hits target center - Point	0.00	0.00	7,567.0	1,417.5	4,509.9	1,215,105.40	3,219,785.40	39° 55' 16.242 N	104° 42' 58.961 W
SOC 1S-66-36 3340 BH - plan hits target center - Point	0.00	0.00	7,587.0	1,425.8	209.7	1,215,076.46	3,215,485.20	39° 55' 16.328 N	104° 43' 54.156 W

Casing Points				
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")
8,075.2	7,587.0	7"	7	8-3/4

Formations					
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
845.0	845.0	Base Fox Hills		-0.27	90.11
5,164.5	4,994.0	Shannon		-0.27	90.11
7,510.4	7,292.1	Sharon Springs		-0.27	90.11
7,610.4	7,379.9	Niobrara		-0.27	90.11
7,911.1	7,559.8	Top B2 Target		-0.27	90.11
8,045.4	7,586.2	Landing Point		-0.27	90.11

Plan Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
2.0	2.0	0.0	0.0	SHL 1,071' FSL - 295' FWL
1,000.0	1,000.0	0.0	0.0	Start Nudge @ 1,000' MD - 1.5/100'
2,224.1	2,203.3	191.1	-36.2	EOB Hold 18.36 Degrees
5,598.9	5,406.2	1,235.6	-233.8	Start Drop -1.5/100'
6,823.0	6,609.5	1,426.7	-270.0	End Build
7,323.0	7,109.5	1,426.7	-270.0	KOP @ 7,323' MD 12/100'
8,075.2	7,587.0	1,425.8	209.7	7" Csg 2,497' FSL - 500' FWL
12,375.0	7,567.0	1,417.5	4,509.4	TD = 12,376' MD - 7,567' TVD
12,375.0	7,567.0	1,417.5	4,509.4	BHL 2,497' FSL - 500' FEL