



PROJECT DETAILS: Weld County, CO NAD 83

Geodetic System: US State Plane 1983  
Datum: North American Datum 1983  
Ellipsoid: GRS 1980  
Zone: Colorado Northern Zone  
System Datum: Mean Sea Level  
Local North: True

Project: Weld County, CO NAD 83  
Site: Heath  
Well: Heath 6-62-15-0659A2  
Wellbore: OH  
Design: Plan 1



Azinuths to True North  
Magnetic North: 8.25°



Magnetic Field  
Strength: 52680.7nT  
Dip Angle: 67.11°  
Date: 12/16/2015  
Model: BGGM2015

Plan: Plan 1 (Heath 6-62-15-0659A2/OH)

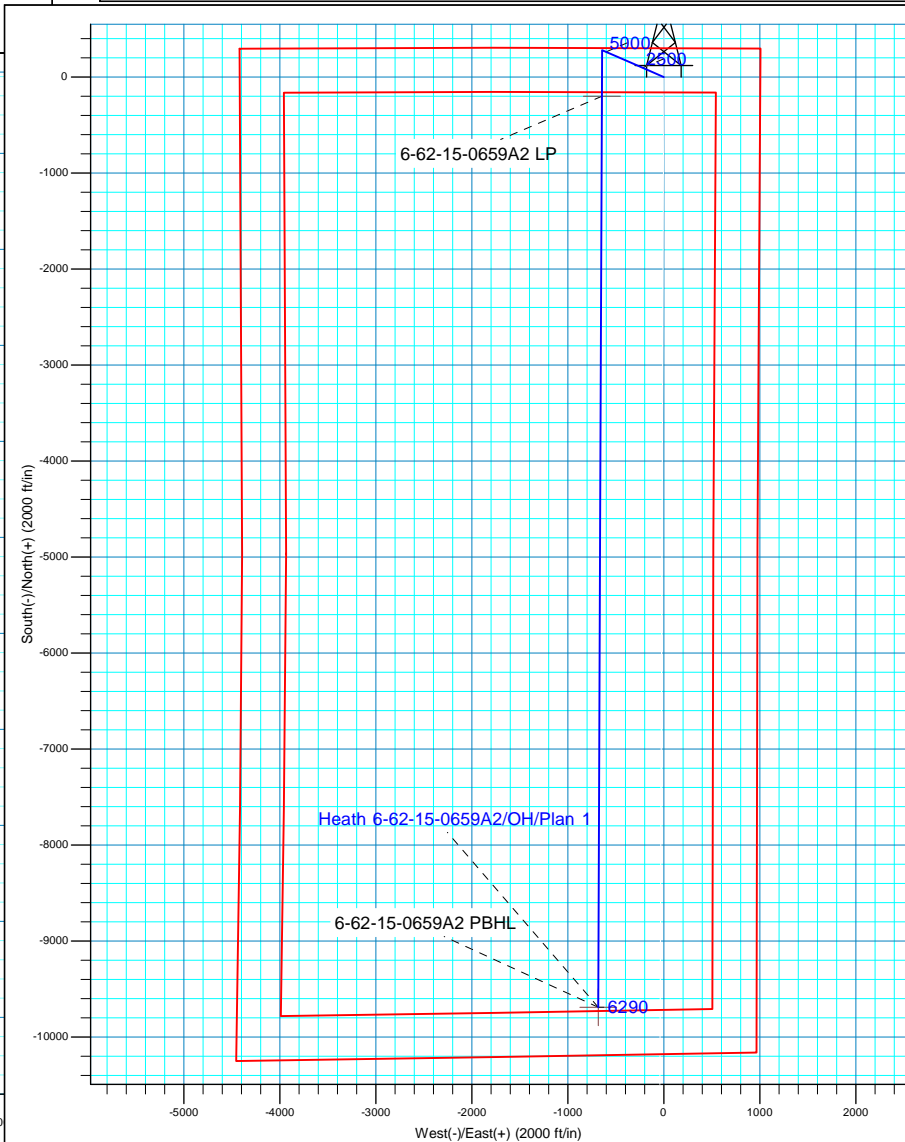
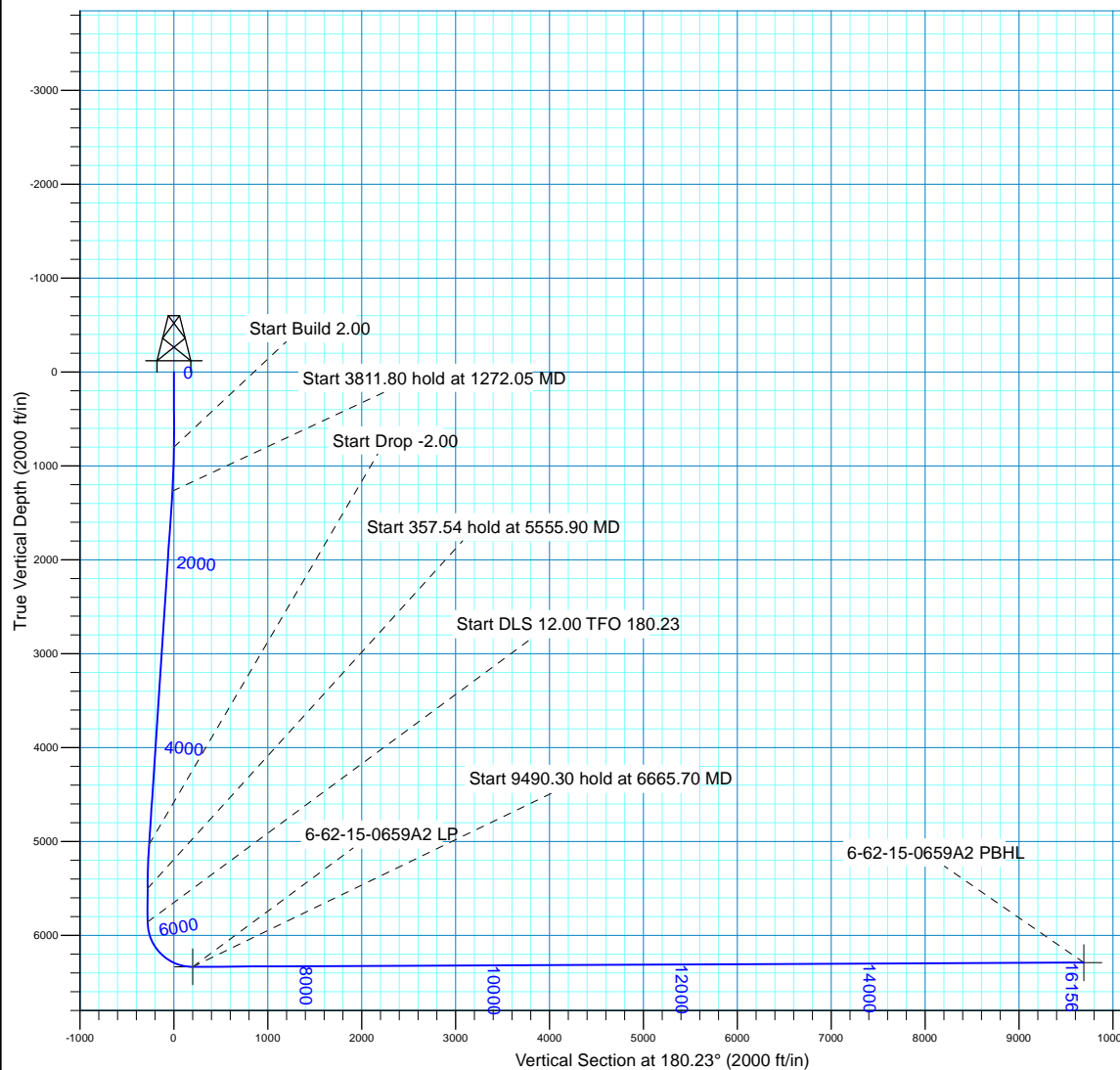
Created By: Seth Burstad Date: 12-16-2015

### SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00
1272.05	9.44	293.58	1269.91	15.52	-35.56	2.00	293.58	-15.38
5083.85	9.44	293.58	5030.09	265.67	-608.60	0.00	0.00	-263.22
5555.90	0.00	0.00	5500.00	281.19	-644.16	2.00	180.00	-278.60
5913.44	0.00	0.00	5857.54	281.19	-644.16	0.00	0.00	-278.60
6665.70	90.27	180.23	6335.00	-198.53	-646.09	12.00	180.23	201.13
16156.00	90.27	180.23	6290.00	-9688.65	-684.18	0.00	0.00	9691.32

### WELL DETAILS: Heath 6-62-15-0659A2

		GL 4732' & KB 16' @ 4748.00ft		4732.00	Longitude
+N/-S	+E/-W	Northing	Easting	Latitude	
0.00	0.00	1424920.57	3333158.30	40° 29' 37.071 N	104° 18' 7.538 W





## **Bill Barrett Corp.**

Weld County, CO NAD 83

Heath

Heath 6-62-15-0659A2

OH

Plan: Plan 1

## **Standard Planning Report**

16 December, 2015



<b>Database:</b>	Casper District	<b>Local Co-ordinate Reference:</b>	Well Heath 6-62-15-0659A2
<b>Company:</b>	Bill Barrett Corp.	<b>TVD Reference:</b>	GL 4732' & KB 16' @ 4748.00ft
<b>Project:</b>	Weld County, CO NAD 83	<b>MD Reference:</b>	GL 4732' & KB 16' @ 4748.00ft
<b>Site:</b>	Heath	<b>North Reference:</b>	True
<b>Well:</b>	Heath 6-62-15-0659A2	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	Plan 1		

<b>Project</b>	Weld County, CO NAD 83		
<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		Heath, Site Center : 6-62-15-0659A2			
Site Position: From:		Northing:	1,424,920.59 usft	Latitude:	40° 29' 37.072 N
	Lat/Long	Easting:	3,333,158.31 usft	Longitude:	104° 18' 7.538 W
	Position Uncertainty:	0.00 ft	Slot Radius:	13.200 in	Grid Convergence:

Well	Heath 6-62-15-0659A2, 300' FNL 1005' FEL Sec 15 T6N R62W					
Well Position	+N/-S	-0.02 ft	Northing:	1,424,920.57 usft	Latitude:	40° 29' 37.071 N
	+E/-W	0.00 ft	Easting:	3,333,158.31 usft	Longitude:	104° 18' 7.538 W
Position Uncertainty		0.00 ft	Wellhead Elevation:	0.00 ft	Ground Level:	4,732.00 ft

<b>Wellbore</b>	OH				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	BGGM2015	12/16/2015	8.25	67.11	52,681

<b>Design</b>	Plan 1			
<b>Audit Notes:</b>				
<b>Version:</b>	<b>Phase:</b>	PLAN	<b>Tie On Depth:</b>	0.00
<b>Vertical Section:</b>	<b>Depth From (TVD) (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Direction (°)</b>
	0.00	0.00	0.00	180.23

<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
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,272.05	9.44	293.58	1,269.91	15.52	-35.56	2.00	2.00	0.00	293.58	
5,083.85	9.44	293.58	5,030.09	265.67	-608.60	0.00	0.00	0.00	0.00	
5,555.90	0.00	0.00	5,500.00	281.19	-644.16	2.00	-2.00	0.00	180.00	
5,913.44	0.00	0.00	5,857.54	281.19	-644.16	0.00	0.00	0.00	0.00	
6,665.70	90.27	180.23	6,335.00	-198.53	-646.09	12.00	12.00	-23.90	180.23	
16,155.99	90.27	180.23	6,290.00	-9,688.65	-684.18	0.00	0.00	0.00	0.00	6-62-15-0659A2 PBH

<b>Database:</b>	Casper District	<b>Local Co-ordinate Reference:</b>	Well Heath 6-62-15-0659A2
<b>Company:</b>	Bill Barrett Corp.	<b>TVD Reference:</b>	GL 4732' & KB 16' @ 4748.00ft
<b>Project:</b>	Weld County, CO NAD 83	<b>MD Reference:</b>	GL 4732' & KB 16' @ 4748.00ft
<b>Site:</b>	Heath	<b>North Reference:</b>	True
<b>Well:</b>	Heath 6-62-15-0659A2	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	Plan 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)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
248.00	0.00	0.00	248.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>BASE OF FOX HILLS</b>									
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Start Build 2.00</b>									
900.00	2.00	293.58	899.98	0.70	-1.60	-0.69	2.00	2.00	0.00
1,000.00	4.00	293.58	999.84	2.79	-6.40	-2.77	2.00	2.00	0.00
1,100.00	6.00	293.58	1,099.45	6.28	-14.38	-6.22	2.00	2.00	0.00
1,200.00	8.00	293.58	1,198.70	11.15	-25.55	-11.05	2.00	2.00	0.00
1,272.05	9.44	293.58	1,269.91	15.52	-35.56	-15.38	2.00	2.00	0.00
<b>Start 3811.80 hold at 1272.05 MD</b>									
1,300.00	9.44	293.58	1,297.49	17.36	-39.76	-17.20	0.00	0.00	0.00
1,400.00	9.44	293.58	1,396.13	23.92	-54.80	-23.70	0.00	0.00	0.00
1,500.00	9.44	293.58	1,494.78	30.48	-69.83	-30.20	0.00	0.00	0.00
1,600.00	9.44	293.58	1,593.42	37.05	-84.86	-36.70	0.00	0.00	0.00
1,700.00	9.44	293.58	1,692.07	43.61	-99.90	-43.21	0.00	0.00	0.00
1,800.00	9.44	293.58	1,790.72	50.17	-114.93	-49.71	0.00	0.00	0.00
1,900.00	9.44	293.58	1,889.36	56.73	-129.96	-56.21	0.00	0.00	0.00
2,000.00	9.44	293.58	1,988.01	63.29	-145.00	-62.71	0.00	0.00	0.00
2,100.00	9.44	293.58	2,086.65	69.86	-160.03	-69.21	0.00	0.00	0.00
2,200.00	9.44	293.58	2,185.30	76.42	-175.06	-75.72	0.00	0.00	0.00
2,300.00	9.44	293.58	2,283.94	82.98	-190.10	-82.22	0.00	0.00	0.00
2,400.00	9.44	293.58	2,382.59	89.54	-205.13	-88.72	0.00	0.00	0.00
2,500.00	9.44	293.58	2,481.23	96.11	-220.16	-95.22	0.00	0.00	0.00
2,600.00	9.44	293.58	2,579.88	102.67	-235.20	-101.72	0.00	0.00	0.00
2,700.00	9.44	293.58	2,678.53	109.23	-250.23	-108.23	0.00	0.00	0.00
2,800.00	9.44	293.58	2,777.17	115.79	-265.26	-114.73	0.00	0.00	0.00
2,900.00	9.44	293.58	2,875.82	122.36	-280.30	-121.23	0.00	0.00	0.00
3,000.00	9.44	293.58	2,974.46	128.92	-295.33	-127.73	0.00	0.00	0.00
3,100.00	9.44	293.58	3,073.11	135.48	-310.36	-134.23	0.00	0.00	0.00
3,200.00	9.44	293.58	3,171.75	142.04	-325.40	-140.73	0.00	0.00	0.00
3,300.00	9.44	293.58	3,270.40	148.60	-340.43	-147.24	0.00	0.00	0.00
3,400.00	9.44	293.58	3,369.04	155.17	-355.46	-153.74	0.00	0.00	0.00
3,500.00	9.44	293.58	3,467.69	161.73	-370.49	-160.24	0.00	0.00	0.00
3,600.00	9.44	293.58	3,566.34	168.29	-385.53	-166.74	0.00	0.00	0.00
3,700.00	9.44	293.58	3,664.98	174.85	-400.56	-173.24	0.00	0.00	0.00
3,800.00	9.44	293.58	3,763.63	181.42	-415.59	-179.75	0.00	0.00	0.00
3,900.00	9.44	293.58	3,862.27	187.98	-430.63	-186.25	0.00	0.00	0.00
4,000.00	9.44	293.58	3,960.92	194.54	-445.66	-192.75	0.00	0.00	0.00
4,100.00	9.44	293.58	4,059.56	201.10	-460.69	-199.25	0.00	0.00	0.00
4,124.77	9.44	293.58	4,084.00	202.73	-464.42	-200.86	0.00	0.00	0.00
<b>SUSSEX</b>									
4,200.00	9.44	293.58	4,158.21	207.67	-475.73	-205.75	0.00	0.00	0.00
4,300.00	9.44	293.58	4,256.85	214.23	-490.76	-212.26	0.00	0.00	0.00
4,400.00	9.44	293.58	4,355.50	220.79	-505.79	-218.76	0.00	0.00	0.00
4,500.00	9.44	293.58	4,454.15	227.35	-520.83	-225.26	0.00	0.00	0.00
4,600.00	9.44	293.58	4,552.79	233.91	-535.86	-231.76	0.00	0.00	0.00

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<b>Company:</b>	Bill Barrett Corp.	<b>TVD Reference:</b>	GL 4732' & KB 16' @ 4748.00ft
<b>Project:</b>	Weld County, CO NAD 83	<b>MD Reference:</b>	GL 4732' & KB 16' @ 4748.00ft
<b>Site:</b>	Heath	<b>North Reference:</b>	True
<b>Well:</b>	Heath 6-62-15-0659A2	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	Plan 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)
4,700.00	9.44	293.58	4,651.44	240.48	-550.89	-238.26	0.00	0.00	0.00
4,800.00	9.44	293.58	4,750.08	247.04	-565.93	-244.77	0.00	0.00	0.00
4,870.88	9.44	293.58	4,820.00	251.69	-576.58	-249.37	0.00	0.00	0.00
<b>SHANNON</b>									
4,900.00	9.44	293.58	4,848.73	253.60	-580.96	-251.27	0.00	0.00	0.00
5,000.00	9.44	293.58	4,947.37	260.16	-595.99	-257.77	0.00	0.00	0.00
5,083.85	9.44	293.58	5,030.09	265.67	-608.60	-263.22	0.00	0.00	0.00
<b>Start Drop -2.00</b>									
5,100.00	9.12	293.58	5,046.03	266.71	-610.98	-264.25	2.00	-2.00	0.00
5,200.00	7.12	293.58	5,145.02	272.36	-623.93	-269.85	2.00	-2.00	0.00
5,300.00	5.12	293.58	5,244.44	276.62	-633.69	-274.07	2.00	-2.00	0.00
5,400.00	3.12	293.58	5,344.18	279.49	-640.27	-276.92	2.00	-2.00	0.00
5,500.00	1.12	293.58	5,444.11	280.97	-643.66	-278.39	2.00	-2.00	0.00
5,555.90	0.00	0.00	5,500.00	281.19	-644.16	-278.60	2.00	-2.00	0.00
<b>Start 357.54 hold at 5555.90 MD</b>									
5,600.00	0.00	0.00	5,544.10	281.19	-644.16	-278.60	0.00	0.00	0.00
5,700.00	0.00	0.00	5,644.10	281.19	-644.16	-278.60	0.00	0.00	0.00
5,800.00	0.00	0.00	5,744.10	281.19	-644.16	-278.60	0.00	0.00	0.00
5,900.00	0.00	0.00	5,844.10	281.19	-644.16	-278.60	0.00	0.00	0.00
5,913.44	0.00	0.00	5,857.54	281.19	-644.16	-278.60	0.00	0.00	0.00
<b>Start DLS 12.00 TFO 180.23</b>									
6,000.00	10.39	180.23	5,943.63	273.36	-644.19	-270.78	12.00	12.00	0.00
6,100.00	22.39	180.23	6,039.39	245.20	-644.30	-242.61	12.00	12.00	0.00
6,200.00	34.39	180.23	6,127.21	197.75	-644.49	-195.16	12.00	12.00	0.00
6,274.28	43.30	180.23	6,185.00	151.21	-644.68	-148.62	12.00	12.00	0.00
<b>SHARON SPRINGS</b>									
6,300.00	46.39	180.23	6,203.24	133.07	-644.75	-130.48	12.00	12.00	0.00
6,400.00	58.39	180.23	6,264.16	54.00	-645.07	-51.41	12.00	12.00	0.00
6,417.39	60.47	180.23	6,273.00	39.03	-645.13	-36.44	12.00	12.00	0.00
<b>NIOBRARA</b>									
6,454.47	64.92	180.23	6,290.00	6.09	-645.26	-3.50	12.00	12.00	0.00
<b>TD (HORIZONTAL)</b>									
6,500.00	70.39	180.23	6,307.30	-36.01	-645.43	38.60	12.00	12.00	0.00
6,511.39	71.75	180.23	6,311.00	-46.78	-645.48	49.37	12.00	12.00	0.00
<b>TOP "A" TARGET</b>									
6,600.00	82.39	180.23	6,330.80	-133.02	-645.82	135.61	12.00	12.00	0.00
6,665.59	90.27	180.23	6,335.00	-198.42	-646.09	201.01	12.02	12.02	0.00
<b>LANDING POINT</b>									
6,665.70	90.27	180.23	6,335.00	-198.53	-646.09	201.13	0.00	0.00	0.00
<b>Start 9490.30 hold at 6665.70 MD</b>									
6,700.00	90.27	180.23	6,334.84	-232.83	-646.22	235.43	0.00	0.00	0.00
6,800.00	90.27	180.23	6,334.36	-332.83	-646.62	335.43	0.00	0.00	0.00
6,900.00	90.27	180.23	6,333.89	-432.83	-647.03	435.42	0.00	0.00	0.00
7,000.00	90.27	180.23	6,333.41	-532.83	-647.43	535.42	0.00	0.00	0.00
7,100.00	90.27	180.23	6,332.94	-632.83	-647.83	635.42	0.00	0.00	0.00
7,200.00	90.27	180.23	6,332.47	-732.82	-648.23	735.42	0.00	0.00	0.00
7,300.00	90.27	180.23	6,331.99	-832.82	-648.63	835.42	0.00	0.00	0.00
7,400.00	90.27	180.23	6,331.52	-932.82	-649.03	935.42	0.00	0.00	0.00
7,500.00	90.27	180.23	6,331.04	-1,032.82	-649.43	1,035.42	0.00	0.00	0.00
7,600.00	90.27	180.23	6,330.57	-1,132.82	-649.84	1,135.42	0.00	0.00	0.00
7,700.00	90.27	180.23	6,330.10	-1,232.81	-650.24	1,235.41	0.00	0.00	0.00
7,800.00	90.27	180.23	6,329.62	-1,332.81	-650.64	1,335.41	0.00	0.00	0.00

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<b>Project:</b>	Weld County, CO NAD 83	<b>MD Reference:</b>	GL 4732' & KB 16' @ 4748.00ft
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<b>Well:</b>	Heath 6-62-15-0659A2	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	Plan 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)	
7,900.00	90.27	180.23	6,329.15	-1,432.81	-651.04	1,435.41	0.00	0.00	0.00	
8,000.00	90.27	180.23	6,328.67	-1,532.81	-651.44	1,535.41	0.00	0.00	0.00	
8,100.00	90.27	180.23	6,328.20	-1,632.81	-651.84	1,635.41	0.00	0.00	0.00	
8,200.00	90.27	180.23	6,327.72	-1,732.80	-652.24	1,735.41	0.00	0.00	0.00	
8,300.00	90.27	180.23	6,327.25	-1,832.80	-652.65	1,835.41	0.00	0.00	0.00	
8,400.00	90.27	180.23	6,326.78	-1,932.80	-653.05	1,935.41	0.00	0.00	0.00	
8,500.00	90.27	180.23	6,326.30	-2,032.80	-653.45	2,035.41	0.00	0.00	0.00	
8,600.00	90.27	180.23	6,325.83	-2,132.80	-653.85	2,135.40	0.00	0.00	0.00	
8,700.00	90.27	180.23	6,325.35	-2,232.80	-654.25	2,235.40	0.00	0.00	0.00	
8,800.00	90.27	180.23	6,324.88	-2,332.79	-654.65	2,335.40	0.00	0.00	0.00	
8,900.00	90.27	180.23	6,324.41	-2,432.79	-655.05	2,435.40	0.00	0.00	0.00	
9,000.00	90.27	180.23	6,323.93	-2,532.79	-655.46	2,535.40	0.00	0.00	0.00	
9,100.00	90.27	180.23	6,323.46	-2,632.79	-655.86	2,635.40	0.00	0.00	0.00	
9,200.00	90.27	180.23	6,322.98	-2,732.79	-656.26	2,735.40	0.00	0.00	0.00	
9,300.00	90.27	180.23	6,322.51	-2,832.78	-656.66	2,835.40	0.00	0.00	0.00	
9,400.00	90.27	180.23	6,322.03	-2,932.78	-657.06	2,935.40	0.00	0.00	0.00	
9,500.00	90.27	180.23	6,321.56	-3,032.78	-657.46	3,035.39	0.00	0.00	0.00	
9,600.00	90.27	180.23	6,321.09	-3,132.78	-657.86	3,135.39	0.00	0.00	0.00	
9,700.00	90.27	180.23	6,320.61	-3,232.78	-658.27	3,235.39	0.00	0.00	0.00	
9,800.00	90.27	180.23	6,320.14	-3,332.77	-658.67	3,335.39	0.00	0.00	0.00	
9,900.00	90.27	180.23	6,319.66	-3,432.77	-659.07	3,435.39	0.00	0.00	0.00	
10,000.00	90.27	180.23	6,319.19	-3,532.77	-659.47	3,535.39	0.00	0.00	0.00	
10,100.00	90.27	180.23	6,318.72	-3,632.77	-659.87	3,635.39	0.00	0.00	0.00	
10,200.00	90.27	180.23	6,318.24	-3,732.77	-660.27	3,735.39	0.00	0.00	0.00	
10,300.00	90.27	180.23	6,317.77	-3,832.76	-660.67	3,835.39	0.00	0.00	0.00	
10,400.00	90.27	180.23	6,317.29	-3,932.76	-661.08	3,935.38	0.00	0.00	0.00	
10,500.00	90.27	180.23	6,316.82	-4,032.76	-661.48	4,035.38	0.00	0.00	0.00	
10,600.00	90.27	180.23	6,316.34	-4,132.76	-661.88	4,135.38	0.00	0.00	0.00	
10,700.00	90.27	180.23	6,315.87	-4,232.76	-662.28	4,235.38	0.00	0.00	0.00	
10,800.00	90.27	180.23	6,315.40	-4,332.75	-662.68	4,335.38	0.00	0.00	0.00	
10,900.00	90.27	180.23	6,314.92	-4,432.75	-663.08	4,435.38	0.00	0.00	0.00	
11,000.00	90.27	180.23	6,314.45	-4,532.75	-663.48	4,535.38	0.00	0.00	0.00	
11,100.00	90.27	180.23	6,313.97	-4,632.75	-663.89	4,635.38	0.00	0.00	0.00	
11,200.00	90.27	180.23	6,313.50	-4,732.75	-664.29	4,735.38	0.00	0.00	0.00	
11,300.00	90.27	180.23	6,313.03	-4,832.75	-664.69	4,835.37	0.00	0.00	0.00	
11,400.00	90.27	180.23	6,312.55	-4,932.74	-665.09	4,935.37	0.00	0.00	0.00	
11,500.00	90.27	180.23	6,312.08	-5,032.74	-665.49	5,035.37	0.00	0.00	0.00	
11,600.00	90.27	180.23	6,311.60	-5,132.74	-665.89	5,135.37	0.00	0.00	0.00	
11,700.00	90.27	180.23	6,311.13	-5,232.74	-666.29	5,235.37	0.00	0.00	0.00	
11,800.00	90.27	180.23	6,310.65	-5,332.74	-666.70	5,335.37	0.00	0.00	0.00	
11,900.00	90.27	180.23	6,310.18	-5,432.73	-667.10	5,435.37	0.00	0.00	0.00	
12,000.00	90.27	180.23	6,309.71	-5,532.73	-667.50	5,535.37	0.00	0.00	0.00	
12,100.00	90.27	180.23	6,309.23	-5,632.73	-667.90	5,635.37	0.00	0.00	0.00	
12,200.00	90.27	180.23	6,308.76	-5,732.73	-668.30	5,735.36	0.00	0.00	0.00	
12,300.00	90.27	180.23	6,308.28	-5,832.73	-668.70	5,835.36	0.00	0.00	0.00	
12,400.00	90.27	180.23	6,307.81	-5,932.72	-669.10	5,935.36	0.00	0.00	0.00	
12,500.00	90.27	180.23	6,307.34	-6,032.72	-669.51	6,035.36	0.00	0.00	0.00	
12,600.00	90.27	180.23	6,306.86	-6,132.72	-669.91	6,135.36	0.00	0.00	0.00	
12,700.00	90.27	180.23	6,306.39	-6,232.72	-670.31	6,235.36	0.00	0.00	0.00	
12,800.00	90.27	180.23	6,305.91	-6,332.72	-670.71	6,335.36	0.00	0.00	0.00	
12,900.00	90.27	180.23	6,305.44	-6,432.71	-671.11	6,435.36	0.00	0.00	0.00	
13,000.00	90.27	180.23	6,304.96	-6,532.71	-671.51	6,535.36	0.00	0.00	0.00	
13,100.00	90.27	180.23	6,304.49	-6,632.71	-671.91	6,635.35	0.00	0.00	0.00	
13,200.00	90.27	180.23	6,304.02	-6,732.71	-672.32	6,735.35	0.00	0.00	0.00	

<b>Database:</b>	Casper District	<b>Local Co-ordinate Reference:</b>	Well Heath 6-62-15-0659A2
<b>Company:</b>	Bill Barrett Corp.	<b>TVD Reference:</b>	GL 4732' & KB 16' @ 4748.00ft
<b>Project:</b>	Weld County, CO NAD 83	<b>MD Reference:</b>	GL 4732' & KB 16' @ 4748.00ft
<b>Site:</b>	Heath	<b>North Reference:</b>	True
<b>Well:</b>	Heath 6-62-15-0659A2	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	Plan 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)	
13,300.00	90.27	180.23	6,303.54	-6,832.71	-672.72	6,835.35	0.00	0.00	0.00	
13,400.00	90.27	180.23	6,303.07	-6,932.70	-673.12	6,935.35	0.00	0.00	0.00	
13,500.00	90.27	180.23	6,302.59	-7,032.70	-673.52	7,035.35	0.00	0.00	0.00	
13,600.00	90.27	180.23	6,302.12	-7,132.70	-673.92	7,135.35	0.00	0.00	0.00	
13,700.00	90.27	180.23	6,301.65	-7,232.70	-674.32	7,235.35	0.00	0.00	0.00	
13,800.00	90.27	180.23	6,301.17	-7,332.70	-674.72	7,335.35	0.00	0.00	0.00	
13,900.00	90.27	180.23	6,300.70	-7,432.70	-675.13	7,435.35	0.00	0.00	0.00	
14,000.00	90.27	180.23	6,300.22	-7,532.69	-675.53	7,535.34	0.00	0.00	0.00	
14,100.00	90.27	180.23	6,299.75	-7,632.69	-675.93	7,635.34	0.00	0.00	0.00	
14,200.00	90.27	180.23	6,299.27	-7,732.69	-676.33	7,735.34	0.00	0.00	0.00	
14,300.00	90.27	180.23	6,298.80	-7,832.69	-676.73	7,835.34	0.00	0.00	0.00	
14,400.00	90.27	180.23	6,298.33	-7,932.69	-677.13	7,935.34	0.00	0.00	0.00	
14,500.00	90.27	180.23	6,297.85	-8,032.68	-677.53	8,035.34	0.00	0.00	0.00	
14,600.00	90.27	180.23	6,297.38	-8,132.68	-677.94	8,135.34	0.00	0.00	0.00	
14,700.00	90.27	180.23	6,296.90	-8,232.68	-678.34	8,235.34	0.00	0.00	0.00	
14,800.00	90.27	180.23	6,296.43	-8,332.68	-678.74	8,335.34	0.00	0.00	0.00	
14,900.00	90.27	180.23	6,295.96	-8,432.68	-679.14	8,435.33	0.00	0.00	0.00	
15,000.00	90.27	180.23	6,295.48	-8,532.67	-679.54	8,535.33	0.00	0.00	0.00	
15,100.00	90.27	180.23	6,295.01	-8,632.67	-679.94	8,635.33	0.00	0.00	0.00	
15,200.00	90.27	180.23	6,294.53	-8,732.67	-680.34	8,735.33	0.00	0.00	0.00	
15,300.00	90.27	180.23	6,294.06	-8,832.67	-680.75	8,835.33	0.00	0.00	0.00	
15,400.00	90.27	180.23	6,293.58	-8,932.67	-681.15	8,935.33	0.00	0.00	0.00	
15,500.00	90.27	180.23	6,293.11	-9,032.66	-681.55	9,035.33	0.00	0.00	0.00	
15,600.00	90.27	180.23	6,292.64	-9,132.66	-681.95	9,135.33	0.00	0.00	0.00	
15,700.00	90.27	180.23	6,292.16	-9,232.66	-682.35	9,235.33	0.00	0.00	0.00	
15,800.00	90.27	180.23	6,291.69	-9,332.66	-682.75	9,335.32	0.00	0.00	0.00	
15,900.00	90.27	180.23	6,291.21	-9,432.66	-683.15	9,435.32	0.00	0.00	0.00	
16,000.00	90.27	180.23	6,290.74	-9,532.65	-683.55	9,535.32	0.00	0.00	0.00	
16,100.00	90.27	180.23	6,290.27	-9,632.65	-683.96	9,635.32	0.00	0.00	0.00	
16,155.99	90.27	180.23	6,290.00	-9,688.65	-684.18	9,691.31	0.00	0.00	0.00	
TD at 16156.00										

Design Targets										
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude	
6-62-15-0659A2 PBHL	0.00	0.00	6,290.00	-9,688.65	-684.18	1,415,223.58	3,332,605.07	40° 28' 1.330 N	104° 18' 16.391 W	
- plan hits target center										
- Point										
6-62-15-0659A2 LP	0.00	0.00	6,335.00	-198.52	-646.09	1,424,713.34	3,332,514.96	40° 29' 35.110 N	104° 18' 15.901 W	
- plan misses target center by 0.01ft at 6665.68ft MD (6335.00 TVD, -198.52 N, -646.09 E)										
- Point										

<b>Database:</b>	Casper District	<b>Local Co-ordinate Reference:</b>	Well Heath 6-62-15-0659A2
<b>Company:</b>	Bill Barrett Corp.	<b>TVD Reference:</b>	GL 4732' & KB 16' @ 4748.00ft
<b>Project:</b>	Weld County, CO NAD 83	<b>MD Reference:</b>	GL 4732' & KB 16' @ 4748.00ft
<b>Site:</b>	Heath	<b>North Reference:</b>	True
<b>Well:</b>	Heath 6-62-15-0659A2	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	Plan 1		

Formations					
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
248.00	248.00	BASE OF FOX HILLS		0.00	
4,124.77	4,084.00	SUSSEX		0.00	
4,870.88	4,820.00	SHANNON		0.00	
6,274.28	6,185.00	SHARON SPRINGS		0.00	
6,417.39	6,273.00	NIOBRARA		0.00	
6,454.47	6,290.00	TD (HORIZONTAL)		0.00	
6,511.39	6,311.00	TOP "A" TARGET		0.00	
6,665.59	6,335.00	LANDING POINT		0.00	

Plan Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
800.00	800.00	0.00	0.00	Start Build 2.00
1,272.05	1,269.91	15.52	-35.56	Start 3811.80 hold at 1272.05 MD
5,083.85	5,030.09	265.67	-608.60	Start Drop -2.00
5,555.90	5,500.00	281.19	-644.16	Start 357.54 hold at 5555.90 MD
5,913.44	5,857.54	281.19	-644.16	Start DLS 12.00 TFO 180.23
6,665.70	6,335.00	-198.53	-646.09	Start 9490.30 hold at 6665.70 MD
16,155.99	6,290.00	-9,688.65	-684.18	TD at 16156.00