

# **Bill Barrett Corp.**

**Garfield County, Colorado [NAD83]**

**GGU 14-19 Pad**

**GGU Daley 34D-19-691**

**Wellbore #1**

**Survey: MWD Surveys**

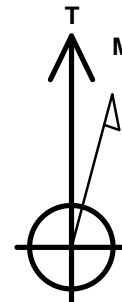
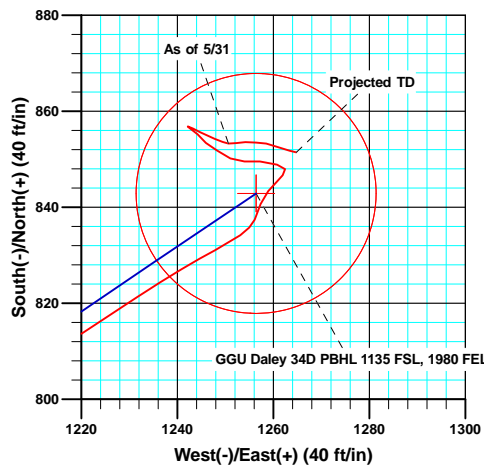
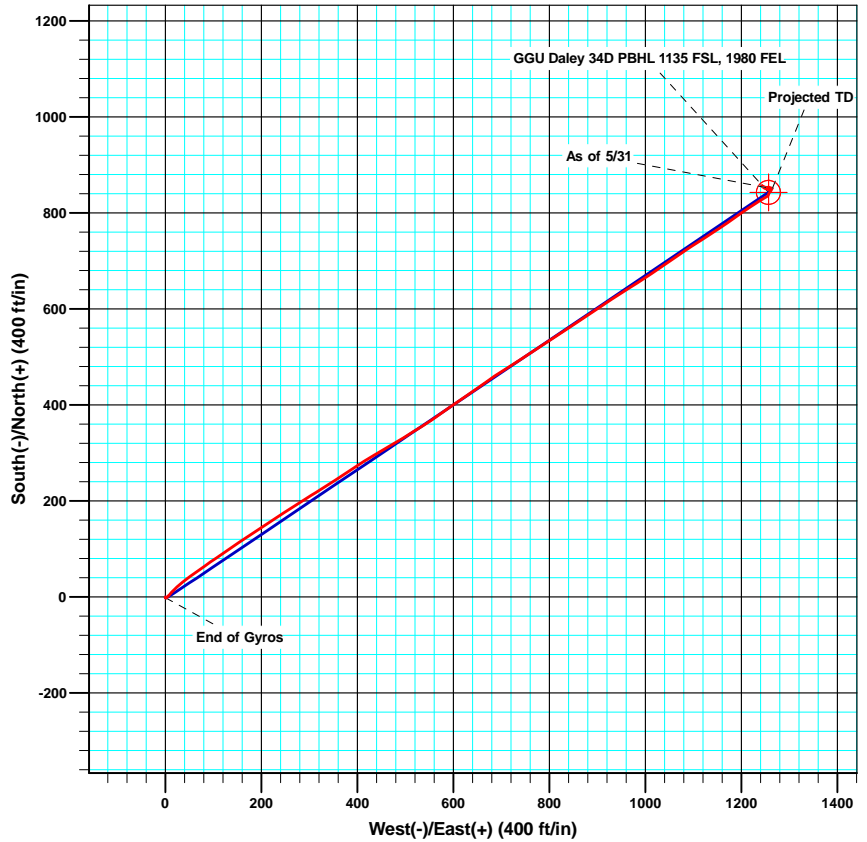
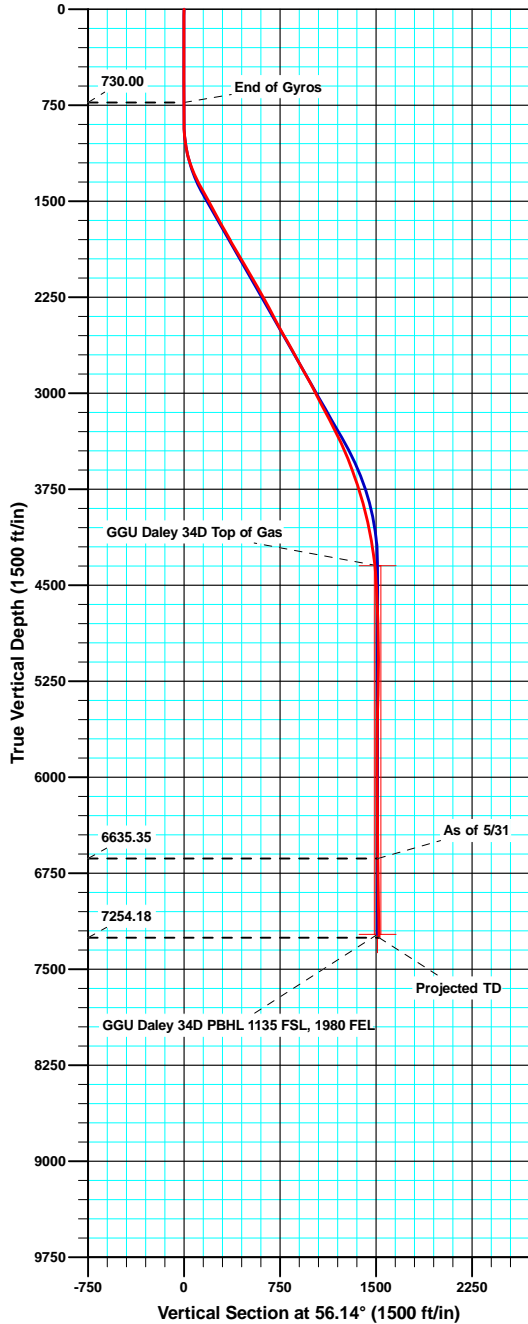
## **Standard Survey Report**

**02 June, 2011**

# GGU Daley 34D-19-691



North American Datum 1983 , US State Plane 1983 , Colorado Central Zone  
 +N/-S +E/-W Northing Easting Latitude Longitude  
 0.00 0.00 1616255.61 2407803.54 39.506617 -107.598999  
 Ground Level: 5823.00



Asimuths to True North  
 Magnetic North: 10.20°

Magnetic Field  
 Strength: 52332.2snT  
 Dip Angle: 65.83°  
 Date: 3/23/2011  
 Model: IGRF2010

### ANNOTATIONS

TVD	MD	Inc	Azi	+N/-S	+E/-W	VSect	Departure	Annotation
730.00	730.00	0.29	118.09	-1.75	0.72	-0.37	2.55	End of Gyros
6635.35	6981.00	1.00	96.80	853.32	1250.65	1513.98	1562.31	As of 5/31
7254.18	7600.00	1.70	103.60	851.47	1264.76	1524.67	1576.76	Projected TD



## Survey Report

<b>Company:</b> Bill Barrett Corp.	<b>Local Co-ordinate Reference:</b> Well GGU Daley 34D-19-691
<b>Project:</b> Garfield County, Colorado [NAD83]	<b>TVD Reference:</b> KB @ 5846.00ft
<b>Site:</b> GGU 14-19 Pad	<b>MD Reference:</b> KB @ 5846.00ft
<b>Well:</b> GGU Daley 34D-19-691	<b>North Reference:</b> True
<b>Wellbore:</b> Wellbore #1	<b>Survey Calculation Method:</b> Minimum Curvature
<b>Design:</b> Wellbore #1	<b>Database:</b> CompassVM

<b>Project</b> Garfield County, Colorado [NAD83]	
<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 Central Zone	

<b>Site</b> GGU 14-19 Pad		
<b>Site Position:</b>	<b>Northing:</b> 1,616,207.75 usft	<b>Latitude:</b> 39.506485
<b>From:</b> Lat/Long	<b>Easting:</b> 2,407,793.69 usft	<b>Longitude:</b> -107.599030
<b>Position Uncertainty:</b> 0.00 ft	<b>Slot Radius:</b> 1.10 ft	<b>Grid Convergence:</b> -1.32 °

<b>Well</b> GGU Daley 34D-19-691		
<b>Well Position</b> +N/-S 0.00 ft	<b>Northing:</b> 1,616,255.61 usft	<b>Latitude:</b> 39.506617
+E/-W 0.00 ft	<b>Easting:</b> 2,407,803.54 usft	<b>Longitude:</b> -107.598999
<b>Position Uncertainty</b> 0.00 ft	<b>Wellhead Elevation:</b> ft	<b>Ground Level:</b> 5,823.00 ft

<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	3/23/2011	10.20	65.83	52,332

<b>Design</b> Wellbore #1					
<b>Audit Notes:</b>					
<b>Version:</b> 1.0	<b>Phase:</b> ACTUAL	<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	56.14	

<b>Survey Program</b>		<b>Date</b> 6/2/2011		
<b>From (ft)</b>	<b>To (ft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>
50.00	730.00	Gyro Surveys (Wellbore #1)	MWD	MWD - Standard
882.00	7,600.00	MWD Surveys (Wellbore #1)	MWD	MWD - Standard

<b>Survey</b>										
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)	
730.00	0.29	118.09	730.00	-1.75	0.72	-0.37	0.00	0.00	0.00	
882.00	0.40	117.50	881.99	-2.18	1.53	0.06	0.07	0.07	-0.39	
975.00	4.40	44.50	974.90	0.22	4.32	3.71	4.62	4.30	-78.49	
1,070.00	9.80	41.40	1,069.13	8.89	12.23	15.11	5.70	5.68	-3.26	
1,165.00	15.60	48.50	1,161.78	23.43	27.16	35.61	6.31	6.11	7.47	
1,261.00	21.60	53.90	1,252.73	42.42	51.12	66.09	6.50	6.25	5.63	
1,356.00	26.40	54.50	1,339.49	65.00	82.47	104.69	5.06	5.05	0.63	
1,452.00	29.10	56.30	1,424.44	90.35	119.27	149.38	2.94	2.81	1.88	
1,547.00	29.00	56.10	1,507.49	116.01	157.60	195.51	0.15	-0.11	-0.21	
1,643.00	28.70	55.30	1,591.58	142.11	195.87	241.83	0.51	-0.31	-0.83	

## Survey Report

<b>Company:</b>	Bill Barrett Corp.	<b>Local Co-ordinate Reference:</b>	Well GGU Daley 34D-19-691
<b>Project:</b>	Garfield County, Colorado [NAD83]	<b>TVD Reference:</b>	KB @ 5846.00ft
<b>Site:</b>	GGU 14-19 Pad	<b>MD Reference:</b>	KB @ 5846.00ft
<b>Well:</b>	GGU Daley 34D-19-691	<b>North Reference:</b>	True
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Wellbore #1	<b>Database:</b>	CompassVM

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)
1,738.00	29.40	58.00	1,674.63	167.45	234.40	287.94	1.56	0.74	2.84
1,883.00	29.00	56.90	1,801.20	205.51	294.03	358.66	0.46	-0.28	-0.76
1,929.00	30.10	58.30	1,841.22	217.66	313.18	381.34	2.82	2.39	3.04
2,024.00	30.40	57.10	1,923.28	243.23	353.63	429.18	0.71	0.32	-1.26
2,119.00	30.60	56.20	2,005.14	269.74	393.91	477.39	0.52	0.21	-0.95
2,215.00	30.00	59.40	2,088.03	295.55	434.87	525.79	1.79	-0.63	3.33
2,310.00	30.20	59.60	2,170.22	319.73	475.92	573.35	0.24	0.21	0.21
2,405.00	29.10	58.50	2,252.78	343.90	516.23	620.29	1.29	-1.16	-1.16
2,501.00	28.20	55.60	2,337.03	368.91	554.85	666.29	1.73	-0.94	-3.02
2,596.00	27.70	54.70	2,420.95	394.35	591.39	710.81	0.69	-0.53	-0.95
2,691.00	29.10	55.70	2,504.51	420.13	628.50	755.99	1.56	1.47	1.05
2,787.00	29.20	54.40	2,588.35	446.92	666.83	802.74	0.67	0.10	-1.35
2,882.00	29.20	57.50	2,671.29	472.86	705.21	849.07	1.59	0.00	3.26
2,977.00	29.00	57.20	2,754.30	497.78	744.12	895.26	0.26	-0.21	-0.32
3,073.00	29.00	57.30	2,838.26	522.96	783.26	941.80	0.05	0.00	0.10
3,168.00	28.30	56.40	2,921.63	547.86	821.40	987.34	0.87	-0.74	-0.95
3,263.00	27.20	56.10	3,005.70	572.44	858.17	1,031.57	1.17	-1.16	-0.32
3,358.00	26.20	56.10	3,090.57	596.24	893.60	1,074.26	1.05	-1.05	0.00
3,453.00	28.70	57.00	3,174.87	620.37	930.15	1,118.04	2.67	2.63	0.95
3,549.00	27.80	57.50	3,259.43	644.95	968.36	1,163.47	0.97	-0.94	0.52
3,644.00	25.50	56.90	3,344.33	668.03	1,004.18	1,206.07	2.44	-2.42	-0.63
3,739.00	23.30	55.40	3,430.84	689.86	1,036.78	1,245.31	2.41	-2.32	-1.58
3,835.00	22.70	55.10	3,519.21	711.24	1,067.60	1,282.82	0.64	-0.63	-0.31
3,930.00	20.00	56.80	3,607.69	730.63	1,096.23	1,317.40	2.92	-2.84	1.79
4,025.00	18.40	56.80	3,697.40	747.74	1,122.38	1,348.64	1.68	-1.68	0.00
4,121.00	17.00	57.20	3,788.85	763.64	1,146.85	1,377.82	1.46	-1.46	0.42
4,216.00	14.80	55.40	3,880.21	778.05	1,168.52	1,403.84	2.37	-2.32	-1.89
4,312.00	12.80	55.70	3,973.44	791.01	1,187.40	1,426.74	2.08	-2.08	0.31
4,407.00	12.10	54.30	4,066.20	802.75	1,204.17	1,447.21	0.80	-0.74	-1.47
4,502.00	10.20	56.50	4,159.41	813.20	1,219.28	1,465.58	2.05	-2.00	2.32
4,598.00	7.50	57.00	4,254.25	821.31	1,231.62	1,480.35	2.81	-2.81	0.52
4,693.00	5.70	59.00	4,348.62	827.12	1,240.87	1,491.26	1.91	-1.89	2.11
4,788.00	4.00	62.70	4,443.28	831.07	1,247.85	1,499.26	1.82	-1.79	3.89
4,884.00	3.30	55.00	4,539.08	834.19	1,253.09	1,505.35	0.89	-0.73	-8.02
4,979.00	2.20	25.00	4,633.98	837.41	1,256.10	1,509.65	1.87	-1.16	-31.58
5,075.00	2.00	16.20	4,729.91	840.69	1,257.35	1,512.51	0.39	-0.21	-9.17
5,170.00	1.90	45.30	4,824.86	843.39	1,258.93	1,515.32	1.04	-0.11	30.63
5,265.00	1.30	39.90	4,919.82	845.32	1,260.74	1,517.91	0.65	-0.63	-5.68
5,361.00	0.90	41.60	5,015.80	846.72	1,261.94	1,519.68	0.42	-0.42	1.77
5,456.00	0.80	2.40	5,110.79	847.94	1,262.46	1,520.80	0.61	-0.11	-41.26
5,551.00	2.10	280.10	5,205.77	848.91	1,260.78	1,519.93	2.26	1.37	-86.63
5,647.00	2.20	279.70	5,301.70	849.53	1,257.23	1,517.33	0.11	0.10	-0.42
5,742.00	1.80	258.10	5,396.64	849.53	1,253.97	1,514.63	0.89	-0.42	-22.74

## Survey Report

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<b>Wellbore:</b> Wellbore #1	<b>Survey Calculation Method:</b> Minimum Curvature
<b>Design:</b> Wellbore #1	<b>Database:</b> CompassVM

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)	
5,837.00	2.10	304.30	5,491.59	850.20	1,251.08	1,512.60	1.64	0.32	48.63	
5,933.00	1.80	297.00	5,587.54	851.88	1,248.28	1,511.21	0.41	-0.31	-7.60	
6,028.00	1.60	311.00	5,682.50	853.42	1,245.95	1,510.13	0.48	-0.21	14.74	
6,123.00	1.40	321.60	5,777.47	855.20	1,244.23	1,509.70	0.36	-0.21	11.16	
6,219.00	1.40	295.30	5,873.44	856.62	1,242.44	1,509.00	0.66	0.00	-27.40	
6,314.00	1.00	108.10	5,968.43	856.86	1,242.18	1,508.92	2.52	-0.42	181.89	
6,409.00	0.40	121.90	6,063.42	856.43	1,243.25	1,509.56	0.65	-0.63	14.53	
6,504.00	0.70	115.50	6,158.42	856.00	1,244.05	1,510.00	0.32	0.32	-6.74	
6,600.00	1.20	115.90	6,254.40	855.31	1,245.49	1,510.80	0.52	0.52	0.42	
6,695.00	1.60	114.50	6,349.38	854.33	1,247.59	1,512.00	0.42	0.42	-1.47	
6,791.00	0.20	74.30	6,445.36	853.82	1,248.97	1,512.86	1.51	-1.46	-41.88	
6,886.00	0.50	122.60	6,540.36	853.64	1,249.48	1,513.18	0.42	0.32	50.84	
6,981.00	1.00	96.80	6,635.35	853.32	1,250.65	1,513.98	0.62	0.53	-27.16	
7,077.00	1.00	77.90	6,731.34	853.39	1,252.30	1,515.39	0.34	0.00	-19.69	
7,172.00	1.30	89.70	6,826.32	853.57	1,254.19	1,517.06	0.40	0.32	12.42	
7,267.00	1.40	93.00	6,921.29	853.52	1,256.42	1,518.89	0.13	0.11	3.47	
7,363.00	1.10	100.50	7,017.27	853.29	1,258.50	1,520.48	0.36	-0.31	7.81	
7,458.00	1.70	110.60	7,112.24	852.63	1,260.72	1,521.96	0.68	0.63	10.63	
7,554.00	1.70	103.60	7,208.20	851.79	1,263.43	1,523.75	0.22	0.00	-7.29	
7,600.00	1.70	103.60	7,254.18	851.47	1,264.76	1,524.67	0.00	0.00	0.00	

Survey Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
6,981.00	6,635.35	853.32	1,250.65	As of 5/31
7,600.00	7,254.18	851.47	1,264.76	Projected TD

Checked By: \_\_\_\_\_ Approved By: \_\_\_\_\_ Date: \_\_\_\_\_