

# **Bill Barrett Corp.**

**Garfield Co., CO (NAD83)**

**Scott 41C-36-692 Pad (Sec.30-T6S-R91W)**

**GGU 11C-31-691**

**Wellbore #1**

**Design: Wellbore #1**

## **Standard Survey Report**

**29 May, 2012**



Project: Garfield Co., CO (NAD83)  
Site: Scott 41C-36-692 Pad (Sec.30-T6S-R91W)  
Well: GGU 11C-31-691  
Wellbore: Wellbore #1  
Design: Wellbore #1  
Latitude: 39° 29' 32.68 N  
Longitude: 107° 36' 19.49 W  
Ground Level: 5922.01  
WELL @ 5945.01ft



PROJECT DETAILS: Garfield Co., CO (NAD83)

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

REFERENCE INFORMATION

Co-ordinate (N/E) Reference: Well GGU 11C-31-691, True North  
Vertical (TVD) Reference: WELL @ 5945.01ft  
Section (VS) Reference: Slot - (0.00N, 0.00E)  
Measured Depth Reference: WELL @ 5945.01ft  
Calculation Method: Minimum Curvature

WELL DETAILS: GGU 11C-31-691

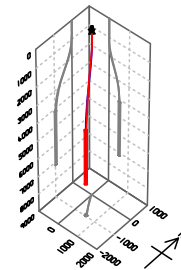
+N/-S	+E/-W	Northing	Easting	Ground Level:	Latitude	Longitude	Slot
0.00	0.00	1611124.11	2405874.34	5922.01	39° 29' 32.68 N	107° 36' 19.49 W	

WELLBORE TARGET DETAILS (MAP CO-ORDINATES AND LAT/LONG)

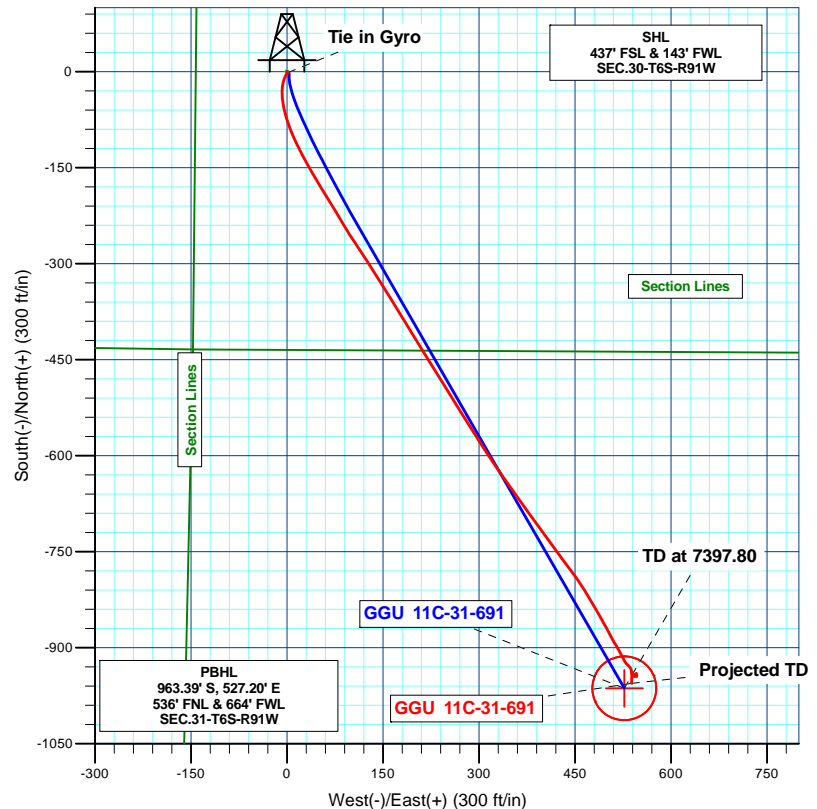
Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
GGU 11C-31-691 Tgt	4145.01	-963.40	527.20	1610148.76	2406379.07	39° 29' 23.15 N	107° 36' 12.76 W	Circle (Radius: 50.00)

ANNOTATIONS

TVD	MD	Inc	Azi	+N/-S	+E/-W	Vsect	Departure	Annotation
646.00	646.00	0.310	112.21	-0.92	2.10	1.81	2.44	Tie in Gyro
7156.09	7382.00	1.800	181.70	-955.53	538.68	1096.82	1148.81	Projected TD



Azimuths to True North  
Magnetic North: 10.08°  
Magnetic Field  
Strength: 52222.3snT  
Dip Angle: 65.79°  
Date: 3/19/2012  
Model: IGRF2010



# Sharewell

## Survey Report

<b>Company:</b>	Bill Barrett Corp.	<b>Local Co-ordinate Reference:</b>	Well GGU 11C-31-691
<b>Project:</b>	Garfield Co., CO (NAD83)	<b>TVD Reference:</b>	WELL @ 5945.01ft
<b>Site:</b>	Scott 41C-36-692 Pad (Sec.30-T6S-R91W)	<b>MD Reference:</b>	WELL @ 5945.01ft
<b>Well:</b>	GGU 11C-31-691	<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 Co., CO (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		

Site		Scott 41C-36-692 Pad (Sec.30-T6S-R91W)			
Site Position:		Northing:	1,611,121.74 usft	Latitude:	39° 29' 32.67 N
From:	Lat/Long	Easting:	2,405,929.90 usft	Longitude:	107° 36' 18.78 W
Position Uncertainty:	0.00 ft	Slot Radius:	1.10 ft	Grid Convergence:	-1.33 °

Well		GGU 11C-31-691				
Well Position	+N/-S	0.00 ft	Northing:	1,611,124.11 usft	Latitude:	39° 29' 32.68 N
	+E/-W	0.00 ft	Easting:	2,405,874.35 usft	Longitude:	107° 36' 19.49 W
Position Uncertainty		0.00 ft	Wellhead Elevation:	ft	Ground Level:	5,922.01 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	3/19/2012	10.08	65.79	52,222

<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>	
	4,145.01	0.00	0.00	151.31	

<b>Survey Program</b>	<b>Date</b>	5/29/2012			
<b>From (ft)</b>	<b>To (ft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>	
123.00	646.00	Survey #1 (Wellbore #1)	MWD	MWD - Standard	
787.00	7,382.00	MWD (Wellbore #1)	MWD	MWD - Standard	

<b>Survey</b>										
<b>Measured Depth (ft)</b>	<b>Inclination (°)</b>	<b>Azimuth (°)</b>	<b>Vertical Depth (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Vertical Section (ft)</b>	<b>Dogleg Rate (°/100ft)</b>	<b>Build Rate (°/100ft)</b>	<b>Turn Rate (°/100ft)</b>	
0.00	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
123.00	0.290	128.81	123.00	-0.20	0.24	0.29	0.24	0.24	0.00	
223.00	0.180	117.60	223.00	-0.43	0.58	0.65	0.12	-0.11	-11.21	
323.00	0.280	130.08	323.00	-0.66	0.91	1.01	0.11	0.10	12.48	
423.00	0.320	112.38	423.00	-0.92	1.35	1.46	0.10	0.04	-17.70	
523.00	0.160	70.87	523.00	-0.98	1.74	1.70	0.23	-0.16	-41.51	
623.00	0.160	75.60	623.00	-0.90	2.01	1.75	0.01	0.00	4.73	
646.00	0.310	112.21	646.00	-0.92	2.10	1.81	0.89	0.65	159.17	
787.00	1.100	243.10	786.99	-1.67	1.24	2.06	0.94	0.56	92.83	
879.00	2.400	215.70	878.94	-3.64	-0.67	2.87	1.64	1.41	-29.78	

# Sharewell

## Survey Report

<b>Company:</b>	Bill Barrett Corp.	<b>Local Co-ordinate Reference:</b>	Well GGU 11C-31-691
<b>Project:</b>	Garfield Co., CO (NAD83)	<b>TVD Reference:</b>	WELL @ 5945.01ft
<b>Site:</b>	Scott 41C-36-692 Pad (Sec.30-T6S-R91W)	<b>MD Reference:</b>	WELL @ 5945.01ft
<b>Well:</b>	GGU 11C-31-691	<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)
970.00	2.800	199.90	969.85	-7.27	-2.54	5.16	0.90	0.44	-17.36
1,066.00	3.600	206.10	1,065.70	-12.19	-4.66	8.45	0.91	0.83	6.46
1,161.00	5.300	186.80	1,160.42	-19.22	-6.49	13.74	2.36	1.79	-20.32
1,256.00	7.000	184.00	1,254.87	-29.35	-7.42	22.19	1.82	1.79	-2.95
1,351.00	8.800	173.00	1,348.97	-42.34	-6.94	33.82	2.47	1.89	-11.58
1,446.00	11.700	168.00	1,442.44	-58.98	-4.05	49.80	3.19	3.05	-5.26
1,541.00	15.600	161.90	1,534.75	-80.55	1.93	71.59	4.37	4.11	-6.42
1,636.00	18.500	154.80	1,625.57	-106.34	12.32	99.20	3.75	3.05	-7.47
1,731.00	21.600	152.00	1,714.80	-135.43	26.95	131.74	3.42	3.26	-2.95
1,826.00	24.500	149.00	1,802.21	-167.76	45.31	168.91	3.29	3.05	-3.16
1,921.00	27.000	148.80	1,887.77	-203.09	66.63	210.15	2.63	2.63	-0.21
2,017.00	28.700	148.50	1,972.65	-241.39	89.96	254.94	1.78	1.77	-0.31
2,112.00	31.100	146.50	2,055.00	-281.31	115.42	302.18	2.74	2.53	-2.11
2,207.00	31.500	147.60	2,136.18	-322.72	142.27	351.40	0.73	0.42	1.16
2,302.00	31.400	148.50	2,217.22	-364.78	168.49	400.88	0.51	-0.11	0.95
2,397.00	31.200	148.80	2,298.39	-406.93	194.17	450.18	0.27	-0.21	0.32
2,492.00	31.600	147.70	2,379.48	-449.01	220.22	499.61	0.74	0.42	-1.16
2,587.00	31.200	148.20	2,460.57	-490.96	246.49	549.02	0.50	-0.42	0.53
2,682.00	30.200	148.10	2,542.25	-532.16	272.08	597.44	1.05	-1.05	-0.11
2,777.00	28.800	147.60	2,624.94	-571.77	296.97	644.14	1.50	-1.47	-0.53
2,872.00	27.800	146.20	2,708.58	-609.50	321.55	689.04	1.26	-1.05	-1.47
2,968.00	25.700	144.50	2,794.30	-645.05	346.10	732.01	2.33	-2.19	-1.77
3,063.00	24.100	144.20	2,880.47	-677.56	369.41	771.71	1.69	-1.68	-0.32
3,158.00	22.500	144.60	2,967.72	-708.11	391.28	809.02	1.69	-1.68	0.42
3,253.00	21.000	143.30	3,055.95	-736.57	411.99	843.93	1.66	-1.58	-1.37
3,348.00	18.500	144.20	3,145.36	-762.45	430.98	875.75	2.65	-2.63	0.95
3,443.00	17.800	143.00	3,235.63	-786.27	448.54	905.07	0.84	-0.74	-1.26
3,538.00	15.700	148.20	3,326.60	-808.80	464.05	932.28	2.71	-2.21	5.47
3,633.00	14.900	150.00	3,418.23	-830.30	476.93	957.32	0.98	-0.84	1.89
3,728.00	13.800	149.60	3,510.27	-850.65	488.77	980.86	1.16	-1.16	-0.42
3,823.00	11.700	151.70	3,602.92	-868.91	499.07	1,001.82	2.26	-2.21	2.21
3,919.00	10.400	151.90	3,697.14	-885.12	507.77	1,020.22	1.35	-1.35	0.21
4,014.00	8.900	148.60	3,790.79	-898.96	515.64	1,036.13	1.68	-1.58	-3.47
4,109.00	7.100	152.70	3,884.87	-910.45	522.16	1,049.35	1.99	-1.89	4.32
4,204.00	5.700	152.70	3,979.27	-919.86	527.02	1,059.93	1.47	-1.47	0.00
4,299.00	3.400	130.00	4,073.97	-925.86	531.34	1,067.27	3.03	-2.42	-23.89
4,394.00	2.400	145.90	4,168.85	-929.32	534.61	1,071.88	1.34	-1.05	16.74
4,489.00	2.100	141.60	4,263.78	-932.33	536.81	1,075.57	0.36	-0.32	-4.53
4,584.00	1.800	177.00	4,358.73	-935.19	537.97	1,078.63	1.28	-0.32	37.26
4,679.00	2.800	168.60	4,453.65	-938.95	538.51	1,082.19	1.11	1.05	-8.84
4,774.00	2.400	149.10	4,548.55	-942.93	539.99	1,086.40	1.02	-0.42	-20.53
4,870.00	1.200	81.30	4,644.51	-944.50	542.01	1,088.75	2.33	-1.25	-70.63
4,965.00	1.400	21.70	4,739.49	-943.28	543.42	1,088.35	1.37	0.21	-62.74

# Sharewell

## Survey Report

<b>Company:</b>	Bill Barrett Corp.	<b>Local Co-ordinate Reference:</b>	Well GGU 11C-31-691
<b>Project:</b>	Garfield Co., CO (NAD83)	<b>TVD Reference:</b>	WELL @ 5945.01ft
<b>Site:</b>	Scott 41C-36-692 Pad (Sec.30-T6S-R91W)	<b>MD Reference:</b>	WELL @ 5945.01ft
<b>Well:</b>	GGU 11C-31-691	<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)	
5,060.00	1.200	37.50	4,834.47	-941.41	544.46	1,087.21	0.43	-0.21	16.63	
5,155.00	0.500	20.00	4,929.46	-940.23	545.21	1,086.53	0.78	-0.74	-18.42	
5,250.00	0.500	106.00	5,024.45	-939.95	545.75	1,086.55	0.72	0.00	90.53	
5,345.00	0.000	88.20	5,119.45	-940.07	546.14	1,086.84	0.53	-0.53	0.00	
5,440.00	0.600	162.30	5,214.45	-940.54	546.30	1,087.33	0.63	0.63	0.00	
5,535.00	0.900	172.50	5,309.44	-941.76	546.54	1,088.52	0.34	0.32	10.74	
5,630.00	1.100	180.80	5,404.43	-943.41	546.63	1,090.01	0.26	0.21	8.74	
5,725.00	1.100	220.40	5,499.41	-945.01	546.03	1,091.12	0.78	0.00	41.68	
5,821.00	1.300	322.80	5,595.40	-944.85	544.77	1,090.38	1.95	0.21	106.67	
5,916.00	0.900	297.90	5,690.38	-943.64	543.46	1,088.69	0.65	-0.42	-26.21	
6,011.00	1.100	313.10	5,785.37	-942.67	542.13	1,087.20	0.35	0.21	16.00	
6,106.00	0.600	293.60	5,880.36	-941.85	541.01	1,085.94	0.60	-0.53	-20.53	
6,201.00	0.700	356.70	5,975.35	-941.07	540.52	1,085.02	0.72	0.11	66.42	
6,296.00	0.700	1.50	6,070.35	-939.91	540.50	1,084.00	0.06	0.00	5.05	
6,391.00	0.400	314.20	6,165.34	-939.10	540.28	1,083.18	0.55	-0.32	-49.79	
6,486.00	0.300	9.70	6,260.34	-938.62	540.09	1,082.66	0.36	-0.11	58.42	
6,581.00	0.400	234.20	6,355.34	-938.57	539.86	1,082.51	0.68	0.11	-142.63	
6,676.00	0.000	231.70	6,450.34	-938.76	539.59	1,082.55	0.42	-0.42	0.00	
6,772.00	0.600	192.10	6,546.34	-939.25	539.48	1,082.93	0.63	0.63	0.00	
6,867.00	1.000	187.10	6,641.33	-940.56	539.28	1,083.98	0.43	0.42	-5.26	
6,962.00	0.900	181.60	6,736.31	-942.13	539.15	1,085.30	0.14	-0.11	-5.79	
7,057.00	1.800	186.40	6,831.29	-944.36	538.97	1,087.16	0.95	0.95	5.05	
7,152.00	2.100	180.80	6,926.23	-947.58	538.78	1,089.90	0.37	0.32	-5.89	
7,247.00	2.100	179.70	7,021.17	-951.06	538.76	1,092.95	0.04	0.00	-1.16	
7,333.00	1.800	181.70	7,107.12	-953.99	538.73	1,095.50	0.36	-0.35	2.33	
7,382.00	1.800	181.70	7,156.09	-955.53	538.68	1,096.82	0.00	0.00	0.00	

Design Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates			
		+N/-S (ft)	+E/-W (ft)	Comment	
646.00	646.00	-0.92	2.10	Tie in Gyro	
7,382.00	7,156.09	-955.53	538.68	Projected TD	

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