

# **Bill Barrett Corp.**

Garfield County, Colorado [NAD83]

MDP Pad #10

GGU Federal 33B-20-691

Wellbore #1

Design: Wellbore #1

## **Standard Survey Report**

12 September, 2011

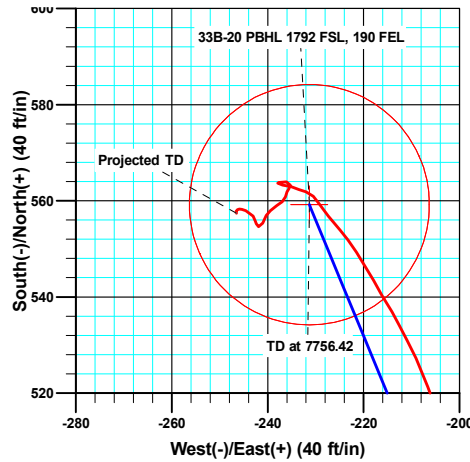
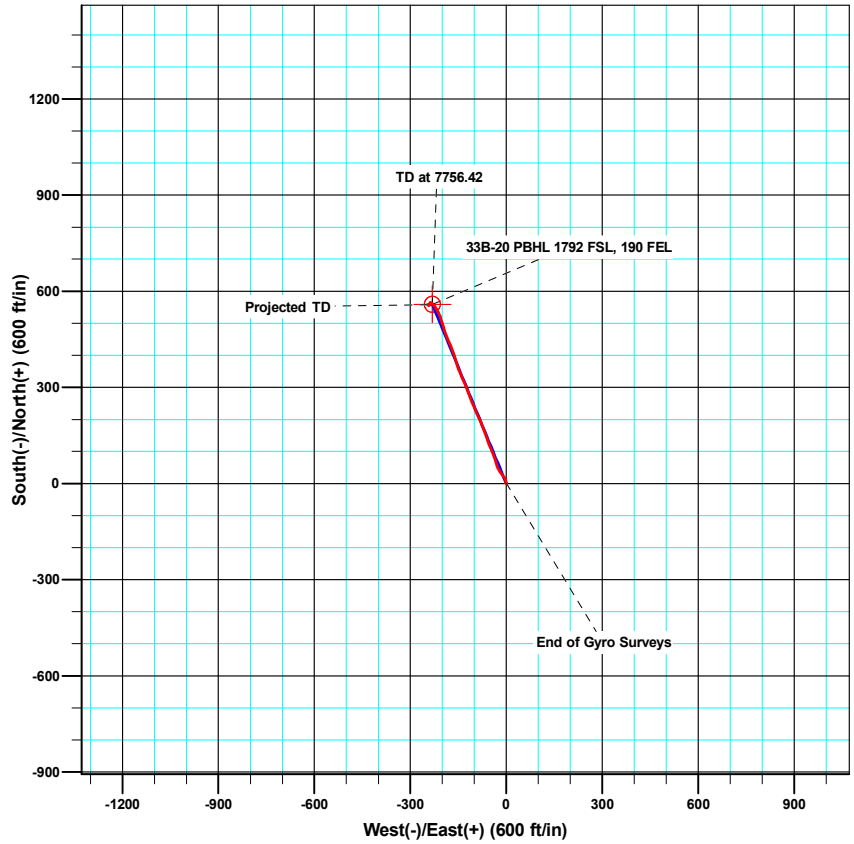
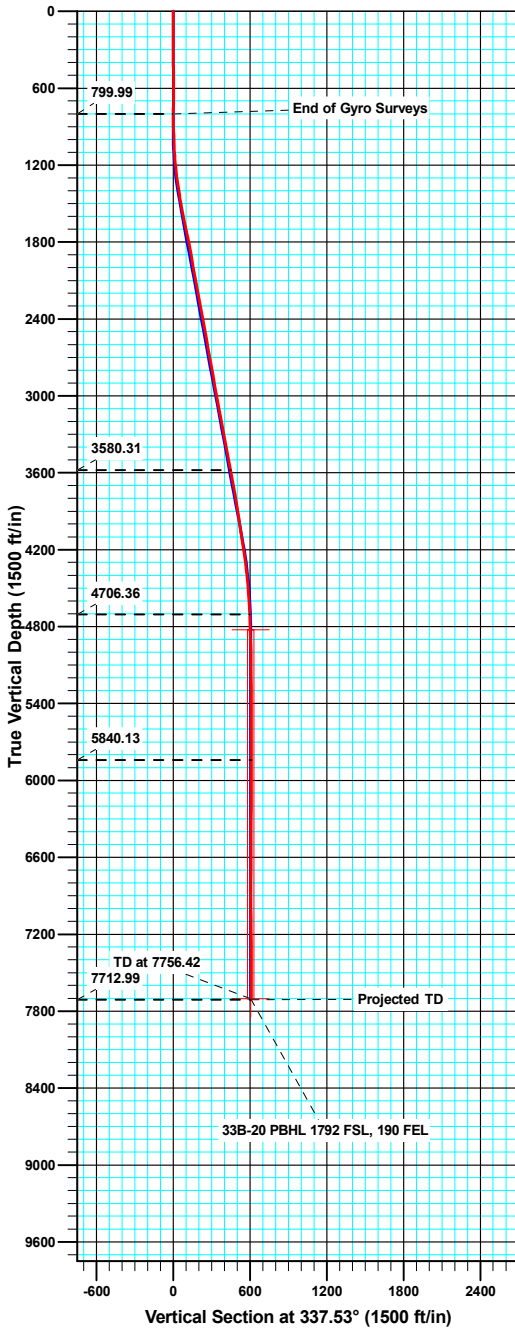


# Well Details: GGU Federal 33B-20-691

Ground Level: 6473



North American Datum 1983 , US State Plane 1983 , Colorado Central Zone  
 +N/-S +E/-W Northing Easting Latitude Longitude  
 0.00 0.00 1617144.72 2414616.03 39° 30' 34.15 N 107° 34' 29.76 W  
 MDP Pad #10



Azimuths to True North  
 Magnetic North: 10.14°

Magnetic Field  
 Strength: 52287.1nT  
 Dip Angle: 65.82°  
 Date: 08/30/2011  
 Model: IGRF2010

## ANNOTATIONS

TVD	MD	Inc	Azi	+N/-S	+E/-W	Vsect	Departure	Annotation
799.99	800.00	0.510	164.70	1.18	-0.08	1.12	3.29	End of Gyro Surveys
3580.31	3620.00	10.500	338.70	414.86	-168.22	447.66	452.13	As of Sept 7
4706.36	4757.00	2.800	318.30	553.91	-224.90	597.81	603.03	As of Sept 8
5840.13	5891.00	0.400	180.40	563.68	-235.76	610.99	623.09	As of Sept 9
7712.99	7764.00	0.200	137.40	557.45	-246.45	609.33	643.94	Projected TD



<b>Company:</b>	Bill Barrett Corp.	<b>Local Co-ordinate Reference:</b>	Well GGU Federal 33B-20-691
<b>Project:</b>	Garfield County, Colorado [NAD83]	<b>TVD Reference:</b>	KB @ 6495.81ft (KB=22')
<b>Site:</b>	MDP Pad #10	<b>MD Reference:</b>	KB @ 6495.81ft (KB=22')
<b>Well:</b>	GGU Federal 33B-20-691	<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>	Compass VM

<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		

Site	MDP Pad #10				
Site Position:		Northing:	1,617,054.04 usft	Latitude:	39° 30' 33.26 N
From:	Lat/Long	Easting:	2,414,646.98 usft	Longitude:	107° 34' 29.34 W
Position Uncertainty:	0.00 ft	Slot Radius:	1.10 ft	Grid Convergence:	-1.31 °

Well	GGU Federal 33B-20-691					
Well Position	+N/-S	0.00 ft	Northing:	1,617,144.72 usft	Latitude:	39° 30' 34.15 N
	+E/-W	0.00 ft	Easting:	2,414,616.04 usft	Longitude:	107° 34' 29.76 W
Position Uncertainty		0.00 ft	Wellhead Elevation:	ft	Ground Level:	6,473.81 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	08/30/11	10.14	65.82	52,287

<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	337.53	

<b>Survey Program</b>	<b>Date</b>	09/12/11			
<b>From (ft)</b>	<b>To (ft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>	
22.00	800.00	Survey #1 Gyro (Wellbore #1)	NS-GYRO-MS	North sensing gyrocompassing m/s	
870.00	7,764.00	MWD Surveys (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	
22.00	0.000	0.00	22.00	0.00	0.00	0.00	0.00	0.00	0.00	
72.00	0.220	320.59	72.00	0.07	-0.06	0.09	0.44	0.44	0.00	
122.00	0.090	325.72	122.00	0.18	-0.14	0.22	0.26	-0.26	10.26	
172.00	0.160	334.92	172.00	0.28	-0.20	0.33	0.15	0.14	18.40	
222.00	0.350	338.57	222.00	0.48	-0.28	0.55	0.38	0.38	7.30	
272.00	0.400	317.86	272.00	0.75	-0.45	0.87	0.29	0.10	-41.42	
322.00	0.330	278.12	322.00	0.90	-0.71	1.11	0.51	-0.14	-79.48	
372.00	0.300	25.28	372.00	1.04	-0.80	1.27	1.01	-0.06	214.32	
422.00	0.180	25.24	422.00	1.23	-0.71	1.41	0.24	-0.24	-0.08	

<b>Company:</b>	Bill Barrett Corp.	<b>Local Co-ordinate Reference:</b>	Well GGU Federal 33B-20-691
<b>Project:</b>	Garfield County, Colorado [NAD83]	<b>TVD Reference:</b>	KB @ 6495.81ft (KB=22')
<b>Site:</b>	MDP Pad #10	<b>MD Reference:</b>	KB @ 6495.81ft (KB=22')
<b>Well:</b>	GGU Federal 33B-20-691	<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>	Compass VM

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)
472.00	0.110	344.43	472.00	1.35	-0.69	1.51	0.24	-0.14	-81.62
522.00	0.150	231.64	522.00	1.35	-0.75	1.54	0.44	0.08	-225.58
572.00	0.310	73.20	572.00	1.35	-0.68	1.51	0.91	0.32	-316.88
622.00	0.320	41.04	622.00	1.50	-0.46	1.56	0.35	0.02	-64.32
672.00	0.190	100.83	672.00	1.59	-0.28	1.57	0.56	-0.26	119.58
722.00	0.100	355.32	722.00	1.61	-0.20	1.57	0.47	-0.18	-211.02
767.00	0.510	164.70	767.00	1.46	-0.15	1.41	1.35	0.91	376.40
800.00	0.510	164.70	799.99	1.18	-0.08	1.12	0.00	0.00	0.00
870.00	0.300	309.80	869.99	0.99	-0.14	0.97	1.11	-0.30	207.29
965.00	2.300	344.40	964.96	2.99	-0.84	3.08	2.17	2.11	36.42
1,060.00	2.800	351.60	1,059.87	7.12	-1.69	7.23	0.62	0.53	7.58
1,154.00	4.900	338.50	1,153.65	13.13	-3.50	13.47	2.41	2.23	-13.94
1,248.00	6.300	321.90	1,247.21	20.92	-8.15	22.45	2.26	1.49	-17.66
1,344.00	8.100	323.30	1,342.45	30.49	-15.44	34.08	1.88	1.88	1.46
1,438.00	9.700	330.10	1,435.32	42.67	-23.35	48.35	2.03	1.70	7.23
1,533.00	10.900	341.90	1,528.79	58.15	-30.13	65.25	2.55	1.26	12.42
1,627.00	11.600	341.80	1,620.99	75.57	-35.84	83.53	0.74	0.74	-0.11
1,722.00	11.900	340.20	1,714.00	93.86	-42.15	102.84	0.47	0.32	-1.68
1,817.00	11.100	335.70	1,807.09	111.41	-49.23	121.77	1.26	-0.84	-4.74
1,912.00	10.200	338.80	1,900.45	127.59	-56.03	139.32	1.12	-0.95	3.26
2,007.00	9.800	341.80	1,994.01	143.11	-61.60	155.79	0.69	-0.42	3.16
2,102.00	10.200	340.20	2,087.57	158.71	-66.97	172.25	0.51	0.42	-1.68
2,198.00	10.700	338.90	2,181.97	175.02	-73.06	189.65	0.58	0.52	-1.35
2,293.00	10.500	336.30	2,275.35	191.17	-79.72	207.13	0.55	-0.21	-2.74
2,388.00	10.700	334.70	2,368.73	207.07	-86.96	224.59	0.37	0.21	-1.68
2,482.00	10.200	337.00	2,461.17	222.62	-93.95	241.63	0.69	-0.53	2.45
2,577.00	10.400	336.60	2,554.64	238.23	-100.64	258.61	0.22	0.21	-0.42
2,672.00	10.300	336.80	2,648.10	253.91	-107.39	275.68	0.11	-0.11	0.21
2,766.00	10.400	339.10	2,740.57	269.56	-113.73	292.56	0.45	0.11	2.45
2,861.00	10.200	340.00	2,834.04	285.48	-119.66	309.54	0.27	-0.21	0.95
2,956.00	10.300	338.10	2,927.52	301.26	-125.71	326.43	0.37	0.11	-2.00
3,051.00	10.300	338.10	3,020.99	317.02	-132.04	343.42	0.00	0.00	0.00
3,146.00	10.100	335.20	3,114.49	332.46	-138.70	360.23	0.58	-0.21	-3.05
3,240.00	10.500	335.60	3,206.97	347.75	-145.70	377.03	0.43	0.43	0.43
3,336.00	11.000	344.70	3,301.30	364.55	-151.73	394.86	1.84	0.52	9.48
3,430.00	11.000	341.90	3,393.57	381.72	-156.88	412.70	0.57	0.00	-2.98
3,526.00	10.500	341.90	3,487.89	398.74	-162.45	430.56	0.52	-0.52	0.00
3,620.00	10.500	338.70	3,580.31	414.86	-168.22	447.66	0.62	0.00	-3.40
3,715.00	10.400	339.00	3,673.74	430.93	-174.44	464.89	0.12	-0.11	0.32
3,810.00	9.800	337.70	3,767.26	446.42	-180.58	481.54	0.68	-0.63	-1.37
3,904.00	9.000	334.40	3,860.00	460.45	-186.79	496.88	1.03	-0.85	-3.51
3,999.00	8.800	340.30	3,953.86	473.99	-192.45	511.56	0.98	-0.21	6.21
4,094.00	8.300	345.20	4,047.80	487.47	-196.65	525.62	0.93	-0.53	5.16

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<b>Well:</b>	GGU Federal 33B-20-691	<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>	Compass VM

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)
4,189.00	9.000	342.80	4,141.72	501.19	-200.60	539.81	0.83	0.74	-2.53
4,284.00	8.300	345.00	4,235.64	514.91	-204.57	554.01	0.81	-0.74	2.32
4,379.00	7.700	334.50	4,329.72	527.28	-209.09	567.16	1.66	-0.63	-11.05
4,474.00	5.400	329.50	4,424.10	536.88	-214.10	577.95	2.49	-2.42	-5.26
4,567.00	4.100	330.90	4,516.78	543.56	-217.93	585.58	1.40	-1.40	1.51
4,662.00	4.100	326.30	4,611.53	549.35	-221.47	592.29	0.35	0.00	-4.84
4,757.00	2.800	318.30	4,706.36	553.91	-224.90	597.81	1.46	-1.37	-8.42
4,849.00	2.000	323.70	4,798.28	556.88	-227.34	601.49	0.90	-0.87	5.87
4,943.00	1.500	323.80	4,892.23	559.19	-229.04	604.28	0.53	-0.53	0.11
5,038.00	1.300	316.90	4,987.21	560.98	-230.51	606.50	0.27	-0.21	-7.26
5,133.00	0.900	278.20	5,082.19	561.88	-231.99	607.88	0.86	-0.42	-40.74
5,228.00	1.000	297.50	5,177.18	562.37	-233.46	608.90	0.35	0.11	20.32
5,323.00	1.100	281.70	5,272.16	562.93	-235.09	610.05	0.32	0.11	-16.63
5,418.00	1.100	280.30	5,367.14	563.28	-236.88	611.05	0.03	0.00	-1.47
5,513.00	0.300	328.80	5,462.14	563.66	-237.91	611.79	0.98	-0.84	51.05
5,607.00	0.400	100.90	5,556.14	563.81	-237.71	611.85	0.68	0.11	140.53
5,702.00	0.600	75.70	5,651.13	563.87	-236.90	611.60	0.31	0.21	-26.53
5,797.00	0.400	88.30	5,746.13	564.00	-236.09	611.41	0.24	-0.21	13.26
5,891.00	0.400	180.40	5,840.13	563.68	-235.76	610.99	0.61	0.00	97.98
5,986.00	0.300	57.40	5,935.13	563.48	-235.56	610.73	0.65	-0.11	-129.47
6,081.00	0.400	169.90	6,030.12	563.29	-235.29	610.45	0.62	0.11	118.42
6,176.00	0.600	220.50	6,125.12	562.59	-235.55	609.90	0.49	0.21	53.26
6,271.00	0.400	195.60	6,220.12	561.89	-235.97	609.42	0.31	-0.21	-26.21
6,365.00	0.900	195.10	6,314.11	560.86	-236.25	608.57	0.53	0.53	-0.53
6,460.00	0.700	241.60	6,409.10	559.86	-236.95	607.92	0.69	-0.21	48.95
6,554.00	1.000	229.60	6,503.09	559.06	-238.08	607.61	0.37	0.32	-12.77
6,649.00	1.100	232.40	6,598.08	557.96	-239.43	607.12	0.12	0.11	2.95
6,744.00	0.600	196.70	6,693.07	556.93	-240.30	606.49	0.74	-0.53	-37.58
6,839.00	1.500	207.00	6,788.05	555.35	-241.01	605.30	0.96	0.95	10.84
6,935.00	0.600	327.60	6,884.04	554.65	-241.85	604.98	1.96	-0.94	125.63
7,030.00	0.400	306.70	6,979.04	555.27	-242.38	605.75	0.28	-0.21	-22.00
7,124.00	0.400	14.90	7,073.03	555.78	-242.56	606.29	0.48	0.00	72.55
7,219.00	1.100	324.50	7,168.03	556.85	-243.00	607.45	0.95	0.74	-53.05
7,314.00	1.300	292.10	7,263.01	557.99	-244.53	609.09	0.73	0.21	-34.11
7,409.00	0.400	251.40	7,358.00	558.29	-245.84	609.87	1.08	-0.95	-42.84
7,504.00	0.200	252.50	7,452.99	558.14	-246.32	609.91	0.21	-0.21	1.16
7,599.00	0.300	205.40	7,547.99	557.86	-246.58	609.75	0.23	0.11	-49.58
7,694.00	0.100	108.00	7,642.99	557.61	-246.61	609.53	0.35	-0.21	-102.53
7,714.00	0.200	137.40	7,662.99	557.58	-246.57	609.49	0.62	0.50	147.00
7,764.00	0.200	137.40	7,712.99	557.45	-246.45	609.33	0.00	0.00	0.00

<b>Company:</b>	Bill Barrett Corp.	<b>Local Co-ordinate Reference:</b>	Well GGU Federal 33B-20-691
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<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Wellbore #1	<b>Database:</b>	Compass VM

#### Design Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
800.00	799.99	1.18	-0.08	End of Gyro Surveys
3,620.00	3,580.31	414.86	-168.22	As of Sept 7
4,757.00	4,706.36	553.91	-224.90	As of Sept 8
5,891.00	5,840.13	563.68	-235.76	As of Sept 9
7,764.00	7,712.99	557.45	-246.45	Projected TD

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