

# **Bill Barrett Corp. (II)**

**Garfield County, Colorado [NAD83]**

**Werner Pad**

**Werner 34D-23-692**

**Wellbore #1**

**Design: Wellbore #1**

## **Standard Survey Report**

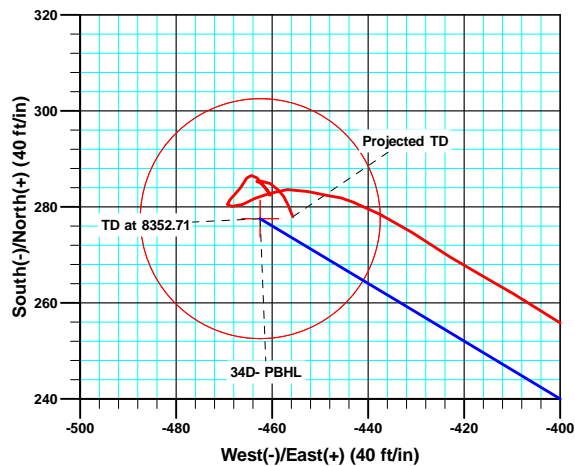
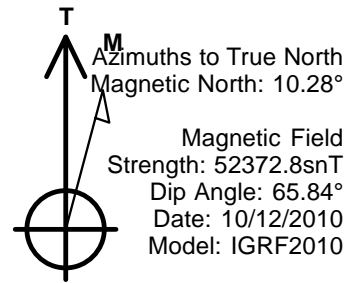
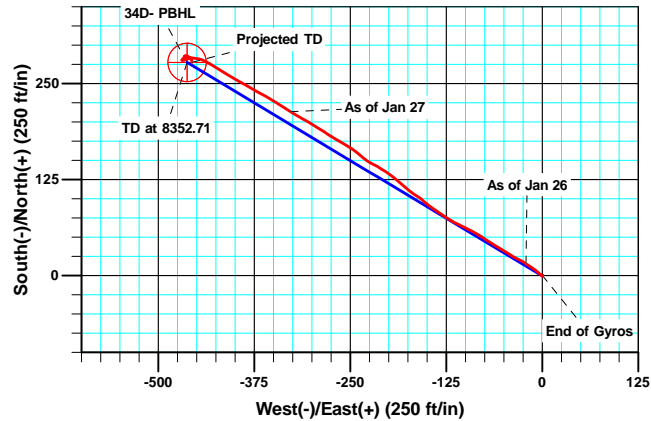
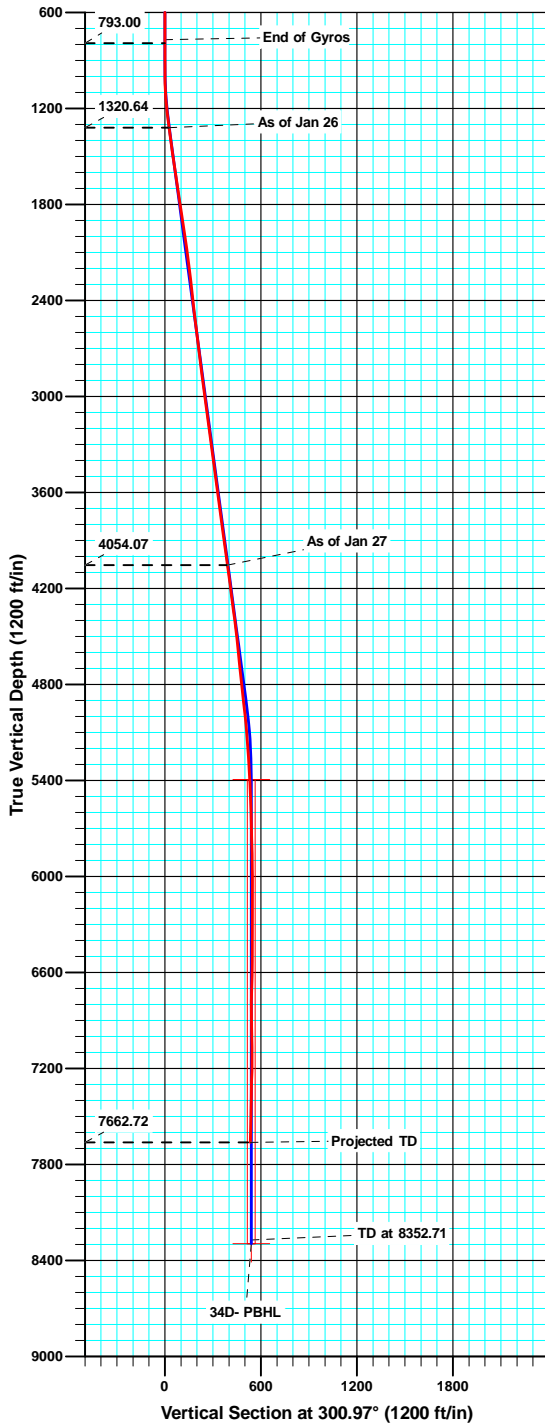
**27 January, 2012**



## WELL DETAILS: Werner 34D-23-692

US State Plane 1983 North American Datum 1983 Colorado Central Zone  
 +N/-S +E/-W Northing Easting Latitude Longitude  
 0.00 0.00 1616864.69 2398996.27 39° 30' 27.81 N 107° 37' 48.92 W

Ground Level: 5943.00 KB: 23'



### ANNOTATIONS

TVD	MD	Inc	Azi	+N/-S	+E/-W	Vsect	Departure	Annotation
793.00	793.00	0.140	164.07	0.27	0.11	0.04	1.74	End of Gyros
1320.64	1322.00	7.500	304.10	15.66	-21.06	26.11	30.00	As of Jan 26
4054.07	4080.00	8.100	303.40	213.50	-327.96	391.07	396.56	As of Jan 27
7662.72	7697.00	1.600	157.90	278.00	-455.65	533.75	588.21	Projected TD

<b>Company:</b>	Bill Barrett Corp. (V)	<b>Local Co-ordinate Reference:</b>	Well Werner 34D-23-692
<b>Project:</b>	Garfield County, Colorado [NAD83]	<b>TVD Reference:</b>	GL @ 5943.00ft (Original Well Elev)
<b>Site:</b>	Werner Pad	<b>MD Reference:</b>	GL @ 5943.00ft (Original Well Elev)
<b>Well:</b>	Werner 34D-23-692	<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		

Site		Werner Pad			
Site Position:		Northing:	1,616,752.90 usft	Latitude:	39.507419
From:	Lat/Long	Easting:	2,398,994.50 usft	Longitude:	-107.630252
Position Uncertainty:	0.00 ft	Slot Radius:	1.10 ft	Grid Convergence:	-1.34 °

Well	Werner 34D-23-692					
Well Position	+N/-S	0.00 ft	Northing:	1,616,864.68 usft	Latitude:	39.507726
	+E/-W	0.00 ft	Easting:	2,398,996.27 usft	Longitude:	-107.630255
Position Uncertainty		0.00 ft	Wellhead Elevation:	ft	Ground Level:	5,943.00 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	10/12/2010	10.28	65.84	52,373

<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	300.97	

<b>Survey Program</b>	<b>Date</b>	1/30/2012			
<b>From (ft)</b>	<b>To (ft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>	
50.00	793.00	Gyro Surveys (Wellbore #1)	MWD	MWD - Standard	
947.00	7,697.00	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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
50.00	0.20	320.42	50.00	0.07	-0.06	0.08	0.40	0.40	0.00	
100.00	0.07	24.11	100.00	0.16	-0.10	0.17	0.36	-0.26	127.38	
150.00	0.17	216.83	150.00	0.13	-0.13	0.18	0.48	0.20	-334.56	
200.00	0.11	302.10	200.00	0.10	-0.22	0.24	0.39	-0.12	170.54	
250.00	0.24	134.24	250.00	0.05	-0.18	0.18	0.70	0.26	-335.72	
300.00	0.05	269.53	300.00	-0.02	-0.13	0.10	0.56	-0.38	270.58	
350.00	0.10	102.62	350.00	-0.03	-0.11	0.07	0.30	0.10	-333.82	
400.00	0.05	201.41	400.00	-0.06	-0.07	0.03	0.24	-0.10	197.58	
450.00	0.21	26.09	450.00	0.00	-0.04	0.03	0.52	0.32	-350.64	

<b>Company:</b>	Bill Barrett Corp. (V)	<b>Local Co-ordinate Reference:</b>	Well Werner 34D-23-692
<b>Project:</b>	Garfield County, Colorado [NAD83]	<b>TVD Reference:</b>	GL @ 5943.00ft (Original Well Elev)
<b>Site:</b>	Werner Pad	<b>MD Reference:</b>	GL @ 5943.00ft (Original Well Elev)
<b>Well:</b>	Werner 34D-23-692	<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)
500.00	0.02	172.33	500.00	0.07	0.00	0.04	0.45	-0.38	292.48
550.00	0.17	8.32	550.00	0.14	0.01	0.06	0.38	0.30	-328.02
600.00	0.05	152.82	600.00	0.19	0.03	0.07	0.43	-0.24	289.00
650.00	0.14	296.13	650.00	0.20	-0.01	0.11	0.37	0.18	286.62
700.00	0.21	21.47	700.00	0.31	-0.03	0.19	0.49	0.14	170.68
750.00	0.15	131.21	750.00	0.35	0.05	0.14	0.59	-0.12	219.48
793.00	0.14	164.07	793.00	0.27	0.11	0.04	0.19	-0.02	76.42
End of Gyros									
947.00	0.50	182.90	947.00	-0.59	0.12	-0.41	0.24	0.23	12.23
1,039.00	1.40	318.10	1,038.99	-0.15	-0.65	0.48	1.95	0.98	146.96
1,131.00	4.20	312.60	1,130.87	2.97	-3.88	4.85	3.05	3.04	-5.98
1,226.00	7.00	305.90	1,225.41	8.72	-11.13	14.03	3.02	2.95	-7.05
1,322.00	7.50	304.10	1,320.64	15.66	-21.06	26.11	0.57	0.52	-1.88
As of Jan 26									
1,417.00	7.80	294.40	1,414.80	21.80	-32.06	38.71	1.39	0.32	-10.21
1,512.00	8.10	304.60	1,508.89	28.26	-43.44	51.79	1.52	0.32	10.74
1,607.00	8.40	298.60	1,602.91	35.38	-55.04	65.40	0.96	0.32	-6.32
1,703.00	8.30	305.90	1,697.89	42.80	-66.81	79.31	1.11	-0.10	7.60
1,798.00	9.00	301.20	1,791.81	50.67	-78.72	93.58	1.05	0.74	-4.95
1,893.00	8.70	298.30	1,885.68	57.93	-91.41	108.18	0.57	-0.32	-3.05
1,988.00	8.20	293.80	1,979.65	64.07	-103.93	122.08	0.87	-0.53	-4.74
2,083.00	7.70	299.50	2,073.74	69.94	-115.67	135.17	0.98	-0.53	6.00
2,178.00	7.20	304.60	2,167.94	76.45	-126.11	147.47	0.87	-0.53	5.37
2,274.00	6.90	303.70	2,263.21	83.07	-135.86	159.24	0.33	-0.31	-0.94
2,369.00	6.50	305.20	2,357.56	89.34	-145.00	170.30	0.46	-0.42	1.58
2,464.00	7.00	314.30	2,451.91	96.48	-153.54	181.29	1.24	0.53	9.58
2,559.00	6.60	299.30	2,546.25	103.19	-162.44	192.39	1.91	-0.42	-15.79
2,654.00	7.00	307.70	2,640.58	109.41	-171.78	203.59	1.13	0.42	8.84
2,749.00	6.90	314.10	2,734.88	116.92	-180.46	214.90	0.82	-0.11	6.74
2,844.00	6.70	309.10	2,829.22	124.38	-188.86	225.94	0.66	-0.21	-5.26
2,939.00	7.60	302.70	2,923.48	131.27	-198.45	237.71	1.26	0.95	-6.74
3,034.00	7.90	305.80	3,017.61	138.49	-209.03	250.49	0.54	0.32	3.26
3,129.00	8.80	295.60	3,111.61	145.44	-220.88	264.23	1.82	0.95	-10.74
3,224.00	7.40	310.50	3,205.67	152.56	-232.09	277.51	2.64	-1.47	15.68
3,319.00	7.30	308.40	3,299.89	160.28	-241.47	289.52	0.30	-0.11	-2.21
3,414.00	7.50	302.10	3,394.10	167.32	-251.45	301.71	0.88	0.21	-6.63
3,509.00	7.20	299.70	3,488.32	173.57	-261.87	313.86	0.45	-0.32	-2.53
3,604.00	8.20	302.60	3,582.46	180.17	-272.75	326.58	1.13	1.05	3.05
3,700.00	7.80	302.00	3,677.53	187.31	-284.05	339.94	0.43	-0.42	-0.63
3,795.00	7.30	301.70	3,771.70	193.90	-294.65	352.42	0.53	-0.53	-0.32
3,890.00	8.00	301.40	3,865.86	200.51	-305.43	365.07	0.74	0.74	-0.32
3,985.00	7.70	297.40	3,959.97	206.89	-316.72	378.03	0.66	-0.32	-4.21
4,080.00	8.10	303.40	4,054.07	213.50	-327.96	391.07	0.96	0.42	6.32

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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)
<b>As of Jan 27</b>									
4,176.00	7.70	302.00	4,149.16	220.63	-339.06	404.25	0.46	-0.42	-1.46
4,271.00	7.40	302.70	4,243.33	227.31	-349.60	416.73	0.33	-0.32	0.74
4,366.00	7.10	297.00	4,337.57	233.28	-359.98	428.71	0.82	-0.32	-6.00
4,461.00	6.90	300.20	4,431.87	238.81	-370.14	440.27	0.46	-0.21	3.37
4,557.00	6.80	300.00	4,527.18	244.56	-380.05	451.72	0.11	-0.10	-0.21
4,652.00	5.40	299.60	4,621.64	249.58	-388.81	461.81	1.47	-1.47	-0.42
4,747.00	5.40	298.70	4,716.22	253.93	-396.62	470.75	0.09	0.00	-0.95
4,843.00	6.70	303.20	4,811.68	259.17	-405.27	480.86	1.44	1.35	4.69
4,938.00	5.70	298.10	4,906.13	264.42	-414.06	491.11	1.20	-1.05	-5.37
5,034.00	6.50	302.40	5,001.58	269.58	-422.86	501.30	0.96	0.83	4.48
5,128.00	5.00	302.90	5,095.11	274.66	-430.79	510.71	1.60	-1.60	0.53
5,224.00	4.20	295.60	5,190.80	278.45	-437.47	518.39	1.03	-0.83	-7.60
5,319.00	3.30	293.10	5,285.59	281.03	-443.13	524.57	0.96	-0.95	-2.63
5,415.00	2.90	275.80	5,381.45	282.36	-448.08	529.50	1.05	-0.42	-18.02
5,429.17	2.86	277.31	5,395.61	282.44	-448.79	530.15	0.59	-0.25	10.66
<b>34D- Vert</b>									
5,510.00	2.70	286.60	5,476.34	283.24	-452.62	533.84	0.59	-0.20	11.49
5,605.00	2.50	262.60	5,571.25	283.61	-456.82	537.64	1.16	-0.21	-25.26
5,701.00	2.00	252.60	5,667.17	282.84	-460.49	540.39	0.66	-0.52	-10.42
5,796.00	1.80	250.10	5,762.12	281.84	-463.48	542.43	0.23	-0.21	-2.63
5,891.00	1.80	238.80	5,857.07	280.55	-466.16	544.07	0.37	0.00	-11.89
5,987.00	1.20	292.50	5,953.04	280.16	-468.37	545.77	1.52	-0.63	55.94
6,082.00	0.00	293.10	6,048.04	280.54	-469.29	546.75	1.26	-1.26	0.00
6,177.00	1.40	29.50	6,143.03	281.55	-468.72	546.78	1.47	1.47	0.00
6,273.00	0.60	68.70	6,239.01	282.75	-467.68	546.50	1.05	-0.83	40.83
6,368.00	1.70	32.20	6,333.99	284.13	-466.46	546.17	1.34	1.16	-38.42
6,463.00	1.00	33.40	6,428.97	286.01	-465.25	546.10	0.74	-0.74	1.26
6,559.00	0.60	102.80	6,524.96	286.60	-464.30	545.59	1.01	-0.42	72.29
6,654.00	1.00	122.70	6,619.95	286.04	-463.12	544.29	0.51	0.42	20.95
6,749.00	2.10	146.20	6,714.91	284.15	-461.45	541.89	1.31	1.16	24.74
6,844.00	0.30	154.30	6,809.89	282.48	-460.38	540.10	1.90	-1.89	8.53
6,939.00	1.60	331.50	6,904.88	283.42	-460.90	541.04	2.00	1.37	186.53
7,034.00	1.10	294.50	6,999.85	284.96	-462.37	543.09	1.03	-0.53	-38.95
7,129.00	0.00	170.30	7,094.85	285.34	-463.20	543.99	1.16	-1.16	0.00
7,225.00	1.20	88.70	7,190.84	285.36	-462.19	543.14	1.25	1.25	0.00
7,320.00	1.10	120.60	7,285.82	284.92	-460.41	541.39	0.67	-0.11	33.58
7,415.00	1.30	135.10	7,380.80	283.69	-458.87	539.43	0.38	0.21	15.26
7,511.00	1.00	143.60	7,476.78	282.25	-457.60	537.60	0.36	-0.31	8.85
7,606.00	1.60	157.90	7,571.76	280.35	-456.61	535.78	0.71	0.63	15.05
7,697.00	1.60	157.90	7,662.72	278.00	-455.65	533.75	0.00	0.00	0.00
<b>Projected TD - 34D- PBHL</b>									

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<b>Project:</b>	Garfield County, Colorado [NAD83]	<b>TVD Reference:</b>	GL @ 5943.00ft (Original Well Elev)
<b>Site:</b>	Werner Pad	<b>MD Reference:</b>	GL @ 5943.00ft (Original Well Elev)
<b>Well:</b>	Werner 34D-23-692	<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

#### Design Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
793.00	793.00	0.27	0.11	End of Gyros
1,322.00	1,320.64	15.66	-21.06	As of Jan 26
4,080.00	4,054.07	213.50	-327.96	As of Jan 27
7,697.00	7,662.72	278.00	-455.65	Projected TD

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