



Project: Weld County, CO NAD 83
Site: Anschutz-Williams 5-61-27 SWSW Pad
Well: Anschutz-Williams 5-61-27-4956B
Wellbore: OH
Design: OH

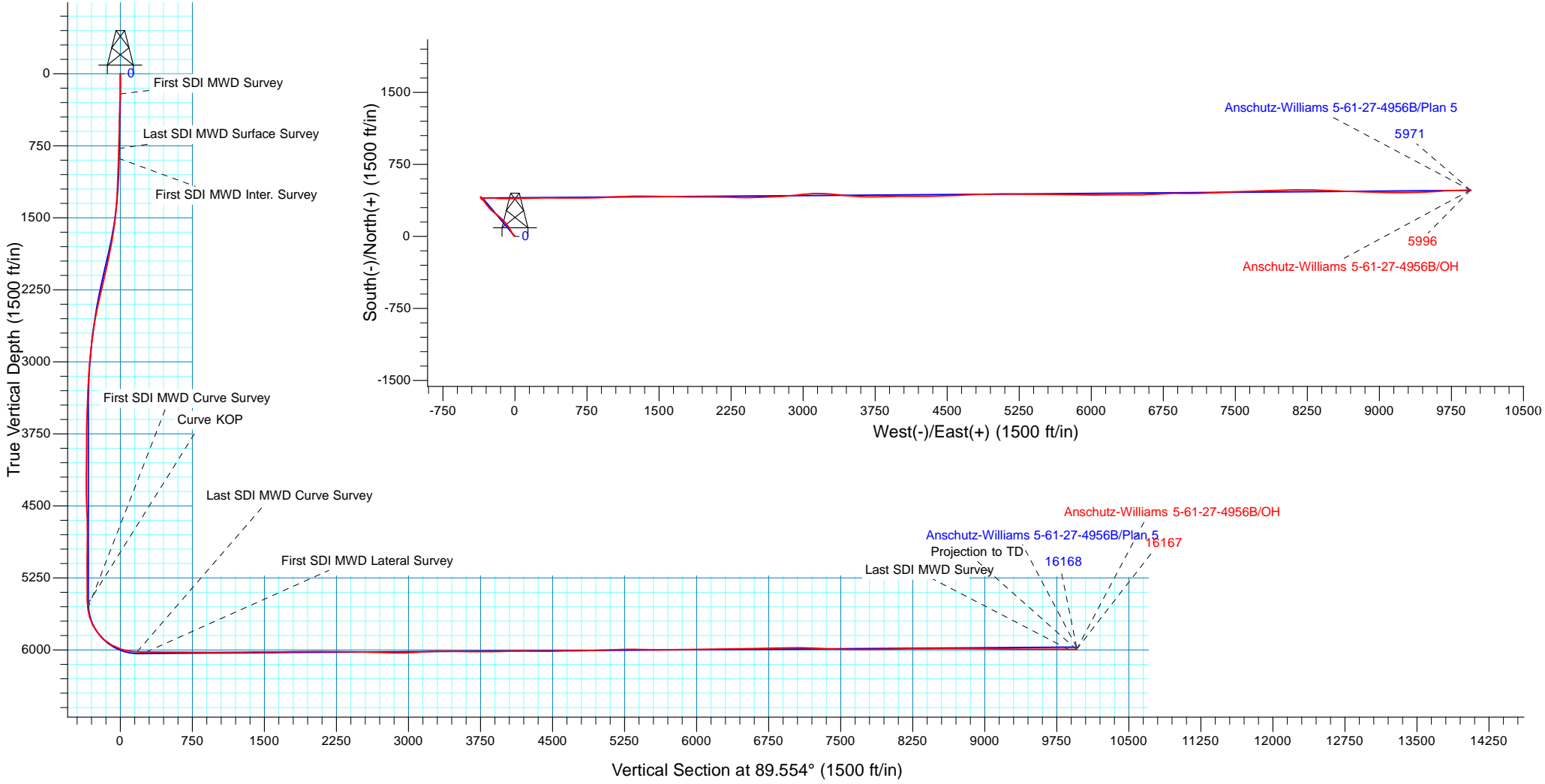


WELL DETAILS: Anschutz-Williams 5-61-27-4956B			
GL 4593.1' & KB 20' @ 4613.10ft (Savanna 802)	4593.10		
Northing	Easting	Latitude	Longitude
1379076.24	3361239.99	40° 22' 0.181 N	104° 12' 12.769 W

Design: OH (Anschutz-Williams 5-61-27-4956B/OH)	
Created By: Seth Burstad	Date: 12-21-2017

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

ANNOTATIONS								
TVD	MD	Inc	Azi	+N/-S	+E/-W	Vsect	Departure	Annotation
210.97	211.00	1.58	301.360	1.51	-2.48	-2.47	2.91	First SDI MWD Survey
778.63	779.00	2.05	318.050	15.03	-16.76	-16.64	22.69	Last SDI MWD Surface Survey
880.55	881.00	2.37	314.590	17.86	-19.48	-19.34	26.62	First SDI MWD Inter. Survey
5530.84	5591.00	4.39	75.241	389.34	-346.12	-343.08	589.69	Curve KOP
5569.62	5630.00	7.64	72.510	390.50	-342.20	-339.15	592.47	First SDI MWD Curve Survey
6020.03	6379.00	88.36	88.820	397.94	172.32	175.41	1108.67	Last SDI MWD Curve Survey
6021.06	6474.00	90.40	88.610	400.07	267.29	270.39	1203.66	First SDI MWD Lateral Survey
5993.89	16085.00	88.66	88.030	480.25	9869.86	9873.30	10812.67	Last SDI MWD Survey
5995.81	16167.00	88.66	88.030	483.07	9951.79	9955.25	10894.65	Projection to TD





Bill Barrett Corporation

Bill Barrett Corp.

Weld County, CO NAD 83

Anschutz-Williams 5-61-27 SWSW Pad

Anschutz-Williams 5-61-27-4956B

OH

Design: OH

Standard Survey Report

21 December, 2017



Scientific Drilling

www.scientificdrilling.com



Company:	Bill Barrett Corp.	Local Co-ordinate Reference:	Well Anschutz-Williams 5-61-27-4956B
Project:	Weld County, CO NAD 83	TVD Reference:	GL 4593.1' & KB 20 @ 4613.10ft (Savanna 802)
Site:	Anschutz-Williams 5-61-27 SWSW Pad	MD Reference:	GL 4593.1' & KB 20 @ 4613.10ft (Savanna 802)
Well:	Anschutz-Williams 5-61-27-4956B	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	Casper District

Project	Weld County, CO NAD 83		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Northern Zone		

Site	Anschutz-Williams 5-61-27 SWSW Pad, Site Center : Anschutz-Williams 5-61-27-4956B				
Site Position:		Northing:	1,379,076.31 usft	Latitude:	40° 22' 0.181 N
From:	Lat/Long	Easting:	3,361,239.98 usft	Longitude:	104° 12' 12.769 W
Position Uncertainty:	0.00 ft	Slot Radius:	13.200 in	Grid Convergence:	0.84 °

Well	Anschutz-Williams 5-61-27-4956B, 750' FSL 270' FWL Sec 27 T5N R61W					
Well Position	+N/-S	0.00 ft	Northing:	1,379,076.24 usft	Latitude:	40° 22' 0.181 N
	+E/-W	0.00 ft	Easting:	3,361,239.98 usft	Longitude:	104° 12' 12.769 W
Position Uncertainty		0.00 ft	Wellhead Elevation:	0.00 ft	Ground Level:	4,593.10 ft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	7/24/2017	8.25	67.07	52,362

Design	OH				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)	
	0.00	0.00	0.00	89.554	

Survey Program	Date	12/21/2017			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
211.00	779.00	Survey #1 - Surface (OH)	OWSG MWD	OWSG MWD - Standard	
881.00	6,379.00	Survey #2 - Intermediate (OH)	OWSG MWD	OWSG MWD - Standard	
6,474.00	16,167.00	Survey #3 - Lateral (OH)	OWSG MWD	OWSG MWD - Standard	

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	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
211.00	1.58	301.360	210.97	1.51	-2.48	-2.47	0.75	0.75	0.00	
First SDI MWD Survey										
302.00	1.63	305.910	301.94	2.93	-4.60	-4.58	0.15	0.05	5.00	
394.00	2.42	322.500	393.88	5.23	-6.85	-6.80	1.06	0.86	18.03	
485.00	1.95	314.070	484.81	7.84	-9.13	-9.07	0.62	-0.52	-9.26	
576.00	1.88	317.870	575.76	10.02	-11.24	-11.16	0.16	-0.08	4.18	
667.00	2.22	311.670	666.70	12.30	-13.56	-13.46	0.45	0.37	-6.81	
759.00	2.12	308.050	758.64	14.53	-16.23	-16.12	0.18	-0.11	-3.93	

Company:	Bill Barrett Corp.	Local Co-ordinate Reference:	Well Anschutz-Williams 5-61-27-4956B
Project:	Weld County, CO NAD 83	TVD Reference:	GL 4593.1' & KB 20 @ 4613.10ft (Savanna 802)
Site:	Anschutz-Williams 5-61-27 SWSW Pad	MD Reference:	GL 4593.1' & KB 20 @ 4613.10ft (Savanna 802)
Well:	Anschutz-Williams 5-61-27-4956B	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	Casper District

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)
779.00	2.05	318.050	778.63	15.03	-16.76	-16.64	1.85	-0.35	50.00
Last SDI MWD Surface Survey									
881.00	2.37	314.590	880.55	17.86	-19.48	-19.34	0.34	0.31	-3.39
First SDI MWD Inter. Survey									
973.00	1.94	306.990	972.48	20.14	-22.08	-21.92	0.56	-0.47	-8.26
1,065.00	4.74	330.280	1,064.32	24.37	-25.21	-25.02	3.32	3.04	25.32
1,155.00	6.11	336.680	1,153.92	32.00	-28.95	-28.70	1.66	1.52	7.11
1,247.00	6.35	334.240	1,245.38	41.08	-33.10	-32.78	0.39	0.26	-2.65
1,338.00	9.20	331.920	1,335.53	52.03	-38.71	-38.31	3.15	3.13	-2.55
1,429.00	11.08	331.930	1,425.10	66.17	-46.25	-45.73	2.07	2.07	0.01
1,520.00	13.49	327.490	1,514.02	82.84	-56.07	-55.43	2.84	2.65	-4.88
1,612.00	13.70	330.890	1,603.44	101.41	-67.14	-66.35	0.90	0.23	3.70
1,703.00	16.18	320.590	1,691.37	120.62	-80.44	-79.49	3.98	2.73	-11.32
1,795.00	16.01	319.300	1,779.77	140.15	-96.85	-95.75	0.43	-0.18	-1.40
1,886.00	14.72	315.340	1,867.51	157.88	-113.16	-111.92	1.83	-1.42	-4.35
1,977.00	16.80	313.310	1,955.09	175.13	-130.86	-129.49	2.36	2.29	-2.23
2,069.00	17.19	311.690	2,043.07	193.29	-150.68	-149.17	0.67	0.42	-1.76
2,160.00	17.31	310.310	2,129.98	210.99	-171.05	-169.40	0.47	0.13	-1.52
2,251.00	17.07	310.270	2,216.91	228.39	-191.56	-189.78	0.26	-0.26	-0.04
2,343.00	16.41	309.220	2,305.02	245.33	-211.93	-210.02	0.79	-0.72	-1.14
2,436.00	15.71	310.160	2,394.39	261.76	-231.73	-229.69	0.80	-0.75	1.01
2,530.00	15.40	311.990	2,484.94	278.32	-250.74	-248.56	0.62	-0.33	1.95
2,623.00	14.58	318.120	2,574.78	295.29	-267.73	-265.42	1.92	-0.88	6.59
2,717.00	13.67	322.770	2,665.94	312.95	-282.35	-279.90	1.55	-0.97	4.95
2,811.00	12.73	324.230	2,757.46	330.19	-295.12	-292.54	1.06	-1.00	1.55
2,905.00	11.03	325.850	2,849.44	346.04	-306.23	-303.52	1.84	-1.81	1.72
3,000.00	8.49	322.090	2,943.06	359.10	-315.64	-312.83	2.76	-2.67	-3.96
3,094.00	7.81	317.930	3,036.11	369.31	-324.18	-321.30	0.96	-0.72	-4.43
3,187.00	4.69	311.850	3,128.55	376.54	-331.25	-328.31	3.42	-3.35	-6.54
3,281.00	4.24	314.450	3,222.26	381.54	-336.59	-333.61	0.52	-0.48	2.77
3,375.00	2.88	307.710	3,316.08	385.42	-340.94	-337.93	1.51	-1.45	-7.17
3,469.00	2.36	306.330	3,409.98	388.01	-344.37	-341.34	0.56	-0.55	-1.47
3,563.00	2.88	294.290	3,503.88	390.13	-348.08	-345.03	0.80	0.55	-12.81
3,657.00	2.84	319.000	3,597.77	392.86	-351.76	-348.69	1.30	-0.04	26.29
3,751.00	3.71	351.690	3,691.62	397.62	-353.73	-350.62	2.15	0.93	34.78
3,845.00	2.11	345.480	3,785.50	402.31	-354.60	-351.46	1.73	-1.70	-6.61
3,940.00	0.42	345.050	3,880.47	404.34	-355.13	-351.97	1.78	-1.78	-0.45
4,034.00	1.31	310.590	3,974.46	405.37	-356.03	-352.87	1.06	0.95	-36.66
4,128.00	0.66	325.710	4,068.45	406.52	-357.15	-353.98	0.74	-0.69	16.09
4,223.00	0.98	346.930	4,163.44	407.76	-357.65	-354.46	0.46	0.34	22.34
4,317.00	1.02	332.800	4,257.42	409.29	-358.21	-355.01	0.27	0.04	-15.03
4,411.00	1.46	63.500	4,351.41	410.56	-357.52	-354.32	1.91	0.47	96.49
4,504.00	1.52	63.550	4,444.38	411.64	-355.36	-352.14	0.06	0.06	0.05
4,598.00	2.80	120.740	4,538.32	411.02	-352.27	-349.06	2.50	1.36	60.84

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Well:	Anschutz-Williams 5-61-27-4956B	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	Casper District

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)
4,692.00	2.59	118.700	4,632.21	408.83	-348.43	-345.24	0.25	-0.22	-2.17
4,786.00	2.30	177.860	4,726.14	405.93	-346.50	-343.33	2.58	-0.31	62.94
4,880.00	1.75	172.500	4,820.08	402.62	-346.24	-343.09	0.62	-0.59	-5.70
4,973.00	2.31	201.590	4,913.03	399.47	-346.74	-343.62	1.24	0.60	31.28
5,067.00	1.87	216.310	5,006.96	396.47	-348.35	-345.25	0.73	-0.47	15.66
5,161.00	1.12	185.260	5,100.93	394.32	-349.34	-346.26	1.15	-0.80	-33.03
5,255.00	0.81	175.470	5,194.92	392.74	-349.37	-346.31	0.37	-0.33	-10.41
5,348.00	0.87	155.010	5,287.91	391.45	-349.02	-345.97	0.33	0.06	-22.00
5,442.00	0.87	154.770	5,381.90	390.15	-348.42	-345.37	0.00	0.00	-0.26
5,536.00	0.54	183.920	5,475.89	389.07	-348.14	-345.10	0.51	-0.35	31.01
5,591.00	4.39	75.241	5,530.84	389.34	-346.12	-343.08	8.35	7.01	-197.60
Curve KOP									
5,630.00	7.64	72.510	5,569.62	390.50	-342.20	-339.15	8.35	8.32	-7.00
First SDI MWD Curve Survey									
5,724.00	17.28	78.020	5,661.30	395.29	-322.54	-319.45	10.32	10.26	5.86
5,818.00	27.89	82.870	5,747.97	400.94	-286.96	-283.83	11.45	11.29	5.16
5,911.00	39.26	96.010	5,825.43	400.55	-235.88	-232.76	14.45	12.23	14.13
6,005.00	47.73	93.370	5,893.57	395.38	-171.46	-168.38	9.21	9.01	-2.81
6,099.00	60.42	90.690	5,948.61	392.84	-95.55	-92.49	13.69	13.50	-2.85
6,194.00	71.19	87.470	5,987.50	394.33	-9.05	-5.98	11.75	11.34	-3.39
6,287.00	79.94	89.550	6,010.66	396.64	80.89	83.98	9.65	9.41	2.24
6,379.00	88.36	88.820	6,020.03	397.94	172.32	175.41	9.19	9.15	-0.79
Last SDI MWD Curve Survey									
6,474.00	90.40	88.610	6,021.06	400.07	267.29	270.39	2.16	2.15	-0.22
First SDI MWD Lateral Survey									
6,568.00	90.23	90.960	6,020.54	400.42	361.28	364.38	2.51	-0.18	2.50
6,662.00	88.29	90.600	6,021.76	399.14	455.26	458.35	2.10	-2.06	-0.38
6,756.00	88.66	89.700	6,024.26	398.90	549.22	552.31	1.03	0.39	-0.96
6,850.00	88.86	90.060	6,026.29	399.09	643.20	646.29	0.44	0.21	0.38
6,944.00	89.80	89.020	6,027.39	399.85	737.19	740.28	1.49	1.00	-1.11
7,038.00	90.23	88.380	6,027.37	401.98	831.16	834.27	0.82	0.46	-0.68
7,132.00	91.31	87.420	6,026.10	405.43	925.09	928.22	1.54	1.15	-1.02
7,226.00	89.87	87.670	6,025.14	409.45	1,018.99	1,022.15	1.55	-1.53	0.27
7,320.00	90.67	87.410	6,024.69	413.49	1,112.91	1,116.09	0.89	0.85	-0.28
7,413.00	90.81	87.790	6,023.49	417.38	1,205.82	1,209.03	0.44	0.15	0.41
7,508.00	90.87	89.930	6,022.10	419.27	1,300.78	1,304.01	2.25	0.06	2.25
7,601.00	90.57	91.580	6,020.93	418.05	1,393.76	1,396.97	1.80	-0.32	1.77
7,695.00	89.36	90.810	6,020.99	416.09	1,487.74	1,490.93	1.53	-1.29	-0.82
7,788.00	90.03	91.220	6,021.48	414.44	1,580.72	1,583.90	0.84	0.72	0.44
7,882.00	90.91	90.040	6,020.71	413.40	1,674.71	1,677.88	1.57	0.94	-1.26
7,976.00	89.97	91.640	6,019.99	412.03	1,768.69	1,771.85	1.97	-1.00	1.70
8,070.00	90.74	90.140	6,019.41	410.57	1,862.68	1,865.82	1.79	0.82	-1.60
8,163.00	90.54	89.810	6,018.37	410.61	1,955.67	1,958.81	0.41	-0.22	-0.35
8,258.00	90.47	90.250	6,017.53	410.56	2,050.67	2,053.80	0.47	-0.07	0.46

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Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	Casper District

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)
8,351.00	89.56	90.860	6,017.51	409.66	2,143.66	2,146.79	1.18	-0.98	0.66
8,445.00	90.20	91.330	6,017.70	407.86	2,237.64	2,240.75	0.84	0.68	0.50
8,539.00	89.16	91.560	6,018.23	405.49	2,331.61	2,334.70	1.13	-1.11	0.24
8,634.00	88.96	89.710	6,019.79	404.44	2,426.59	2,429.66	1.96	-0.21	-1.95
8,728.00	88.25	87.820	6,022.08	406.46	2,520.53	2,523.62	2.15	-0.76	-2.01
8,822.00	88.52	88.850	6,024.73	409.19	2,614.46	2,617.56	1.13	0.29	1.10
8,916.00	88.02	87.550	6,027.56	412.14	2,708.36	2,711.49	1.48	-0.53	-1.38
9,010.00	88.23	86.330	6,030.64	417.16	2,802.18	2,805.34	1.32	0.22	-1.30
9,104.00	90.07	82.720	6,032.03	426.12	2,895.72	2,898.95	4.31	1.96	-3.84
9,198.00	92.38	84.420	6,030.02	436.65	2,989.10	2,992.41	3.05	2.46	1.81
9,292.00	94.00	86.770	6,024.79	443.86	3,082.66	3,086.03	3.03	1.72	2.50
9,386.00	93.22	89.400	6,018.87	446.99	3,176.42	3,179.80	2.91	-0.83	2.80
9,480.00	91.88	95.810	6,014.69	442.72	3,270.17	3,273.52	6.96	-1.43	6.82
9,575.00	90.10	95.350	6,013.05	433.49	3,364.71	3,367.98	1.94	-1.87	-0.48
9,669.00	88.79	96.370	6,013.96	423.89	3,458.21	3,461.40	1.77	-1.39	1.09
9,762.00	88.93	92.160	6,015.81	416.98	3,550.91	3,554.05	4.53	0.15	-4.53
9,856.00	88.66	92.350	6,017.78	413.28	3,644.82	3,647.92	0.35	-0.29	0.20
9,950.00	90.50	89.280	6,018.47	411.94	3,738.79	3,741.88	3.81	1.96	-3.27
10,044.00	90.64	89.330	6,017.54	413.08	3,832.78	3,835.88	0.16	0.15	0.05
10,138.00	90.94	88.030	6,016.24	415.25	3,926.74	3,929.86	1.42	0.32	-1.38
10,233.00	91.48	89.690	6,014.24	417.14	4,021.70	4,024.82	1.84	0.57	1.75
10,327.00	91.51	90.020	6,011.78	417.38	4,115.67	4,118.79	0.35	0.03	0.35
10,418.00	89.06	90.560	6,011.33	416.92	4,206.66	4,209.77	2.76	-2.69	0.59
10,510.00	88.39	88.940	6,013.38	417.32	4,298.63	4,301.75	1.91	-0.73	-1.76
10,601.00	90.54	88.190	6,014.23	419.60	4,389.59	4,392.72	2.50	2.36	-0.82
10,693.00	90.81	87.560	6,013.14	423.01	4,481.52	4,484.68	0.74	0.29	-0.68
10,784.00	91.44	88.110	6,011.36	426.44	4,572.44	4,575.62	0.92	0.69	0.60
10,875.00	90.70	87.030	6,009.66	430.30	4,663.34	4,666.55	1.44	-0.81	-1.19
10,967.00	90.64	87.620	6,008.58	434.59	4,755.23	4,758.47	0.64	-0.07	0.64
11,058.00	91.17	87.170	6,007.14	438.73	4,846.13	4,849.39	0.76	0.58	-0.49
11,149.00	92.32	90.510	6,004.37	440.57	4,937.05	4,940.33	3.88	1.26	3.67
11,241.00	91.85	89.300	6,001.03	440.72	5,028.99	5,032.26	1.41	-0.51	-1.32
11,331.00	91.17	90.600	5,998.65	440.80	5,118.95	5,122.23	1.63	-0.76	1.44
11,423.00	92.12	90.570	5,996.01	439.86	5,210.91	5,214.18	1.03	1.03	-0.03
11,514.00	90.00	89.940	5,994.33	439.46	5,301.89	5,305.15	2.43	-2.33	-0.69
11,605.00	88.63	91.170	5,995.42	438.58	5,392.87	5,396.12	2.02	-1.51	1.35
11,696.00	88.26	89.970	5,997.89	437.67	5,483.83	5,487.07	1.38	-0.41	-1.32
11,788.00	90.17	90.280	5,999.15	437.47	5,575.82	5,579.06	2.10	2.08	0.34
11,880.00	90.23	91.080	5,998.83	436.38	5,667.81	5,671.04	0.87	0.07	0.87
11,972.00	90.27	90.370	5,998.42	435.22	5,759.80	5,763.02	0.77	0.04	-0.77
12,063.00	91.27	91.860	5,997.20	433.45	5,850.77	5,853.97	1.97	1.10	1.64
12,154.00	91.81	90.380	5,994.76	431.67	5,941.72	5,944.90	1.73	0.59	-1.63
12,245.00	90.97	90.170	5,992.55	431.23	6,032.69	6,035.87	0.95	-0.92	-0.23

Company:	Bill Barrett Corp.	Local Co-ordinate Reference:	Well Anschutz-Williams 5-61-27-4956B
Project:	Weld County, CO NAD 83	TVD Reference:	GL 4593.1' & KB 20 @ 4613.10ft (Savanna 802)
Site:	Anschutz-Williams 5-61-27 SWSW Pad	MD Reference:	GL 4593.1' & KB 20 @ 4613.10ft (Savanna 802)
Well:	Anschutz-Williams 5-61-27-4956B	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	Casper District

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)	
12,337.00	89.70	89.350	5,992.01	431.62	6,124.69	6,127.86	1.64	-1.38	-0.89	
12,428.00	89.63	88.390	5,992.54	433.41	6,215.67	6,218.85	1.06	-0.08	-1.05	
12,519.00	91.61	90.430	5,991.56	434.35	6,306.65	6,309.84	3.12	2.18	2.24	
12,610.00	91.61	91.130	5,989.00	433.11	6,397.60	6,400.78	0.77	0.00	0.77	
12,700.00	90.97	88.820	5,986.97	433.15	6,487.57	6,490.75	2.66	-0.71	-2.57	
12,792.00	90.54	87.390	5,985.76	436.19	6,579.51	6,582.71	1.62	-0.47	-1.55	
12,882.00	90.80	87.990	5,984.71	439.82	6,669.43	6,672.65	0.73	0.29	0.67	
12,973.00	91.01	86.370	5,983.27	444.30	6,760.31	6,763.56	1.79	0.23	-1.78	
13,064.00	91.24	89.610	5,981.49	447.49	6,851.22	6,854.50	3.57	0.25	3.56	
13,156.00	92.21	90.390	5,978.72	447.49	6,943.18	6,946.45	1.35	1.05	0.85	
13,248.00	89.77	89.180	5,977.13	447.83	7,035.16	7,038.43	2.96	-2.65	-1.32	
13,339.00	87.82	89.180	5,979.04	449.13	7,126.12	7,129.40	2.14	-2.14	0.00	
13,430.00	87.68	87.230	5,982.61	451.98	7,217.00	7,220.30	2.15	-0.15	-2.14	
13,521.00	87.32	88.000	5,986.58	455.77	7,307.84	7,311.16	0.93	-0.40	0.85	
13,613.00	88.19	86.450	5,990.19	460.22	7,399.65	7,403.01	1.93	0.95	-1.68	
13,704.00	88.76	87.420	5,992.61	465.08	7,490.49	7,493.88	1.24	0.63	1.07	
13,795.00	88.99	87.800	5,994.39	468.87	7,581.39	7,584.81	0.49	0.25	0.42	
13,886.00	89.23	89.990	5,995.81	470.63	7,672.36	7,675.79	2.42	0.26	2.41	
13,977.00	90.54	88.300	5,995.99	471.99	7,763.34	7,766.78	2.35	1.44	-1.86	
14,069.00	91.54	87.670	5,994.32	475.22	7,855.27	7,858.73	1.28	1.09	-0.68	
14,160.00	90.94	87.350	5,992.35	479.17	7,946.16	7,949.65	0.75	-0.66	-0.35	
14,251.00	90.77	86.890	5,990.99	483.74	8,037.04	8,040.56	0.54	-0.19	-0.51	
14,342.00	90.60	91.670	5,989.91	484.89	8,128.00	8,131.53	5.26	-0.19	5.25	
14,434.00	90.71	89.730	5,988.85	483.76	8,219.98	8,223.50	2.11	0.12	-2.11	
14,526.00	89.93	91.640	5,988.34	482.66	8,311.97	8,315.47	2.24	-0.85	2.08	
14,617.00	90.44	91.720	5,988.05	480.00	8,402.93	8,406.41	0.57	0.56	0.09	
14,708.00	90.87	92.300	5,987.01	476.80	8,493.86	8,497.32	0.79	0.47	0.64	
14,799.00	89.20	91.980	5,986.95	473.41	8,584.80	8,588.22	1.87	-1.84	-0.35	
14,890.00	89.66	91.780	5,987.86	470.42	8,675.74	8,679.14	0.55	0.51	-0.22	
14,981.00	90.13	92.320	5,988.02	467.17	8,766.68	8,770.06	0.79	0.52	0.59	
15,072.00	89.80	92.510	5,988.08	463.33	8,857.60	8,860.94	0.42	-0.36	0.21	
15,163.00	90.34	92.940	5,987.97	459.01	8,948.50	8,951.80	0.76	0.59	0.47	
15,255.00	89.13	90.420	5,988.39	456.31	9,040.45	9,043.73	3.04	-1.32	-2.74	
15,346.00	89.30	90.190	5,989.64	455.82	9,131.44	9,134.71	0.31	0.19	-0.25	
15,438.00	89.63	90.350	5,990.50	455.39	9,223.44	9,226.70	0.40	0.36	0.17	
15,529.00	89.16	87.940	5,991.46	456.75	9,314.41	9,317.69	2.70	-0.52	-2.65	
15,621.00	89.16	87.820	5,992.81	460.15	9,406.34	9,409.64	0.13	0.00	-0.13	
15,712.00	89.90	87.090	5,993.55	464.19	9,497.25	9,500.57	1.14	0.81	-0.80	
15,803.00	89.70	86.790	5,993.87	469.05	9,588.12	9,591.48	0.40	-0.22	-0.33	
15,897.00	90.94	87.320	5,993.35	473.88	9,681.99	9,685.38	1.43	1.32	0.56	
15,991.00	89.87	88.440	5,992.68	477.36	9,775.92	9,779.34	1.65	-1.14	1.19	
16,085.00	88.66	88.030	5,993.89	480.25	9,869.86	9,873.30	1.36	-1.29	-0.44	
Last SDI MWD Survey										

Company:	Bill Barrett Corp.	Local Co-ordinate Reference:	Well Anschutz-Williams 5-61-27-4956B
Project:	Weld County, CO NAD 83	TVD Reference:	GL 4593.1' & KB 20 @ 4613.10ft (Savanna 802)
Site:	Anschutz-Williams 5-61-27 SWSW Pad	MD Reference:	GL 4593.1' & KB 20 @ 4613.10ft (Savanna 802)
Well:	Anschutz-Williams 5-61-27-4956B	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	Casper District

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)
16,167.00	88.66	88.030	5,995.81	483.07	9,951.79	9,955.25	0.00	0.00	0.00
Projection to TD									

Design Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
211.00	210.97	1.51	-2.48	First SDI MWD Survey
779.00	778.63	15.03	-16.76	Last SDI MWD Surface Survey
881.00	880.55	17.86	-19.48	First SDI MWD Inter. Survey
5,591.00	5,530.84	389.34	-346.12	Curve KOP
5,630.00	5,569.62	390.50	-342.20	First SDI MWD Curve Survey
6,379.00	6,020.03	397.94	172.32	Last SDI MWD Curve Survey
6,474.00	6,021.06	400.07	267.29	First SDI MWD Lateral Survey
16,085.00	5,993.89	480.25	9,869.86	Last SDI MWD Survey
16,167.00	5,995.81	483.07	9,951.79	Projection to TD

Checked By: _____ Approved By: _____ Date: _____