



Survey Certification

7327 West Barton Road
Casper, WY 82604
(307)-472-6621 Fax (307) 472-5439

Operator	Bill Barrett Corp.
Well Name & No.	Anschutz-Williams 5-61-27-3225B
API #	05-123-45715
County & State	Weld County, CO
SDI Job #	OP.006659
Rig	Cade 24
Survey Date	22-Dec-2017

I, Seth M. Burstad, having personal knowledge of all the facts, hereby certify that the attached directional survey run from a measured depth of 775 feet to a measured depth of 16152 feet is true and correct as determined from all available records.

Seth M. Burstad

Signature

23-Dec-2017

Date

Seth M. Burstad

Rockies Region Well Planner
Scientific Drilling - Rocky Mountain District



Bill Barrett Corporation

Project: Weld County, CO NAD 83
Site: Anschutz-Williams 5-61-27 CW2 Pad
Well: Anschutz-Williams 5-61-27-3225B
Wellbore: OH
Design: OH

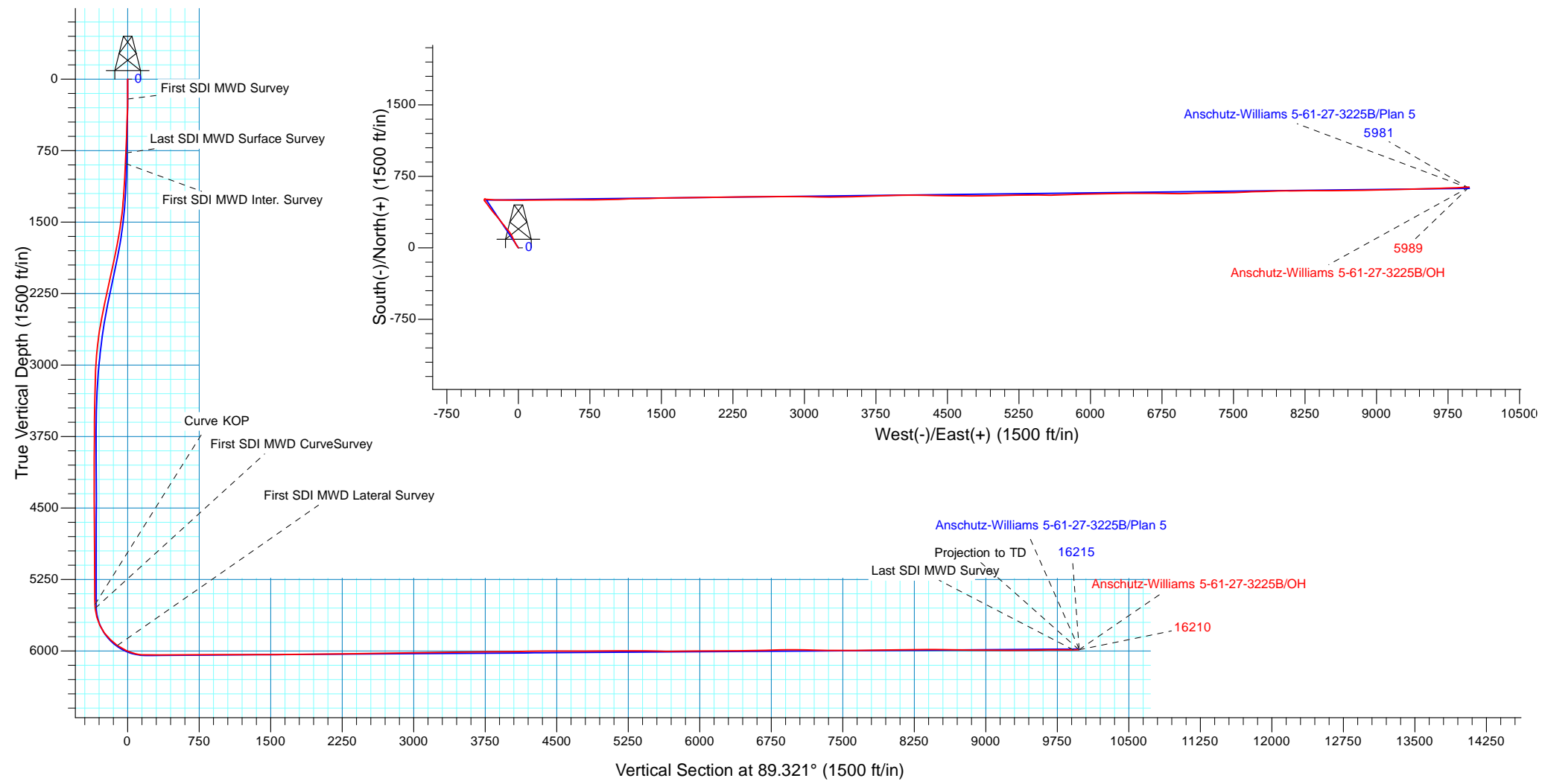


WELL DETAILS: Anschutz-Williams 5-61-27-3225B			
GL 4601.3' & KB 16.5' @ 4617.80ft (Cade 24)	4601.30		
Northing	Easting	Latitude	Longitude
1380703.99	3361209.22	40° 22' 16.269 N	104° 12' 12.859 W

Design: OH (Anschutz-Williams 5-61-27-3225B/OH)	
Created By: Seth Burstad	Date: 12-23-2017

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	
209.00	209.00	0.68	310.020	0.80	-0.95	-0.94	1.24	First SDI MWD Survey	
774.09	775.00	4.42	324.970	24.85	-18.62	-18.32	31.20	Last SDI MWD Surface Survey	
884.78	886.00	4.18	320.980	31.50	-23.62	-23.25	39.52	First SDI MWD Inter. Survey	
5514.66	5593.00	3.33	87.427	510.86	-350.05	-343.98	643.74	Curve KOP	
5552.54	5631.00	5.41	89.190	510.94	-347.16	-341.08	645.66	First SDI MWD CurveSurvey	
5942.63	6101.00	55.09	88.660	500.80	-113.74	-107.79	879.49	First SDI MWD Lateral Survey	
5989.77	16152.00	90.91	86.840	635.58	9912.52	9919.36	10908.18	Last SDI MWD Survey	
5988.85	16210.00	90.91	86.840	638.78	9970.42	9977.29	10966.17	Projection to TD	





Bill Barrett Corporation

Bill Barrett Corp.

Weld County, CO NAD 83

Anschutz-Williams 5-61-27 CW2 Pad

Anschutz-Williams 5-61-27-3225B

OH

Design: OH

Standard Survey Report

23 December, 2017



Scientific Drilling

www.scientificdrilling.com



Company:	Bill Barrett Corp.	Local Co-ordinate Reference:	Well Anschutz-Williams 5-61-27-3225B
Project:	Weld County, CO NAD 83	TVD Reference:	GL 4601.3' & KB 16.5' @ 4617.80ft (Cade 24)
Site:	Anschutz-Williams 5-61-27 CW2 Pad	MD Reference:	GL 4601.3' & KB 16.5' @ 4617.80ft (Cade 24)
Well:	Anschutz-Williams 5-61-27-3225B	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 CW2 Pad, Site Center : Anschutz-Williams 5-61-27-3225B		
Site Position:		Northing:	1,380,704.06 usft
From:	Lat/Long	Easting:	3,361,209.22 usft
Position Uncertainty:	0.00 ft	Slot Radius:	13.200 in
		Latitude:	40° 22' 16.270 N
		Longitude:	104° 12' 12.859 W
		Grid Convergence:	0.84 °

Well	Anschutz-Williams 5-61-27-3225B, 2378' FSL 270' FWL Sec 27 T5N R61W		
Well Position	+N/-S	0.00 ft	Northing: 1,380,703.99 usft
	+E/-W	0.00 ft	Easting: 3,361,209.22 usft
Position Uncertainty	0.00 ft	Wellhead Elevation:	0.00 ft
		Ground Level:	4,601.30 ft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	7/24/2017	8.27	67.03	52,359

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		89.321

Survey Program	Date	12/23/2017			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
209.00	775.00	Survey #1 - Surface (OH)	OWSG MWD	OWSG MWD - Standard	
886.00	6,007.00	Survey #2 - Intermediate (OH)	OWSG MWD	OWSG MWD - Standard	
6,101.00	16,210.00	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
209.00	0.68	310.020	209.00	0.80	-0.95	-0.94	0.33	0.33	0.00
First SDI MWD Survey									
301.00	1.59	311.890	300.98	2.00	-2.32	-2.29	0.99	0.99	2.03
393.00	2.52	319.400	392.92	4.39	-4.58	-4.53	1.05	1.01	8.16
484.00	3.21	328.650	483.80	8.08	-7.21	-7.12	0.91	0.76	10.16
576.00	3.93	324.640	575.62	12.85	-10.38	-10.22	0.83	0.78	-4.36
668.00	4.32	324.470	667.38	18.25	-14.21	-14.00	0.42	0.42	-0.18
759.00	4.18	328.110	758.13	23.85	-17.96	-17.67	0.33	-0.15	4.00

Company:	Bill Barrett Corp.	Local Co-ordinate Reference:	Well Anschutz-Williams 5-61-27-3225B
Project:	Weld County, CO NAD 83	TVD Reference:	GL 4601.3' & KB 16.5' @ 4617.80ft (Cade 24)
Site:	Anschutz-Williams 5-61-27 CW2 Pad	MD Reference:	GL 4601.3' & KB 16.5' @ 4617.80ft (Cade 24)
Well:	Anschutz-Williams 5-61-27-3225B	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)	
775.00	4.42	324.970	774.09	24.85	-18.62	-18.32	2.10	1.50	-19.63	
Last SDI MWD Surface Survey										
886.00	4.18	320.980	884.78	31.50	-23.62	-23.25	0.35	-0.22	-3.59	
First SDI MWD Inter. Survey										
977.00	6.27	329.140	975.40	38.34	-28.26	-27.80	2.43	2.30	8.97	
1,068.00	7.62	332.930	1,065.73	47.98	-33.56	-32.98	1.57	1.48	4.16	
1,159.00	9.50	338.300	1,155.71	60.33	-39.08	-38.36	2.24	2.07	5.90	
1,250.00	11.56	339.610	1,245.17	75.86	-45.03	-44.13	2.28	2.26	1.44	
1,341.00	12.86	334.480	1,334.11	93.54	-52.57	-51.46	1.86	1.43	-5.64	
1,432.00	14.35	329.380	1,422.56	112.39	-62.68	-61.34	2.10	1.64	-5.60	
1,522.00	15.14	330.610	1,509.60	132.23	-74.13	-72.56	0.94	0.88	1.37	
1,613.00	16.13	326.020	1,597.23	153.06	-87.03	-85.21	1.74	1.09	-5.04	
1,704.00	16.73	322.300	1,684.52	173.91	-102.10	-100.03	1.33	0.66	-4.09	
1,795.00	17.57	321.300	1,771.47	194.99	-118.70	-116.38	0.98	0.92	-1.10	
1,886.00	18.96	320.310	1,857.89	217.09	-136.73	-134.15	1.57	1.53	-1.09	
1,978.00	19.01	322.160	1,944.88	240.42	-155.47	-152.61	0.66	0.05	2.01	
2,070.00	19.32	322.390	2,031.78	264.31	-173.95	-170.80	0.35	0.34	0.25	
2,162.00	20.22	321.450	2,118.36	288.80	-193.14	-189.71	1.04	0.98	-1.02	
2,253.00	19.96	320.500	2,203.82	313.09	-212.82	-209.10	0.46	-0.29	-1.04	
2,345.00	19.05	319.680	2,290.54	336.65	-232.53	-228.52	1.03	-0.99	-0.89	
2,439.00	18.56	319.720	2,379.52	359.76	-252.12	-247.84	0.52	-0.52	0.04	
2,533.00	16.81	321.600	2,469.08	381.83	-270.24	-265.70	1.96	-1.86	2.00	
2,626.00	16.69	322.860	2,558.13	403.01	-286.66	-281.86	0.41	-0.13	1.35	
2,721.00	14.26	324.160	2,649.68	423.37	-301.75	-296.71	2.58	-2.56	1.37	
2,815.00	12.53	324.810	2,741.12	441.09	-314.40	-309.15	1.85	-1.84	0.69	
2,908.00	10.53	321.130	2,832.24	455.96	-325.55	-320.12	2.29	-2.15	-3.96	
3,001.00	7.37	324.570	2,924.10	467.44	-334.34	-328.78	3.44	-3.40	3.70	
3,095.00	4.79	329.280	3,017.56	475.72	-339.84	-334.18	2.79	-2.74	5.01	
3,189.00	3.13	318.620	3,111.34	481.02	-343.55	-337.82	1.92	-1.77	-11.34	
3,283.00	2.23	316.920	3,205.23	484.29	-346.49	-340.73	0.96	-0.96	-1.81	
3,376.00	2.73	319.750	3,298.15	487.30	-349.16	-343.36	0.55	0.54	3.04	
3,470.00	1.14	314.200	3,392.09	489.66	-351.27	-345.45	1.70	-1.69	-5.90	
3,564.00	0.95	297.370	3,486.07	490.67	-352.64	-346.80	0.38	-0.20	-17.90	
3,658.00	1.21	279.030	3,580.06	491.18	-354.31	-348.46	0.46	0.28	-19.51	
3,751.00	0.69	72.570	3,673.05	491.50	-354.74	-348.90	1.99	-0.56	165.10	
3,845.00	0.17	306.550	3,767.05	491.76	-354.32	-348.46	0.85	-0.55	-134.06	
3,939.00	0.39	314.820	3,861.05	492.07	-354.66	-348.80	0.24	0.23	8.80	
4,033.00	0.75	336.200	3,955.04	492.85	-355.13	-349.27	0.44	0.38	22.74	
4,127.00	1.34	340.590	4,049.03	494.45	-355.74	-349.86	0.63	0.63	4.67	
4,221.00	1.35	344.570	4,143.00	496.56	-356.40	-350.50	0.10	0.01	4.23	
4,315.00	1.77	323.290	4,236.97	498.79	-357.57	-351.63	0.75	0.45	-22.64	
4,409.00	2.19	2.370	4,330.92	501.75	-358.36	-352.39	1.47	0.45	41.57	
4,503.00	2.59	358.920	4,424.83	505.67	-358.33	-352.31	0.45	0.43	-3.67	
4,597.00	1.34	34.640	4,518.78	508.69	-357.74	-351.69	1.80	-1.33	38.00	

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Site:	Anschutz-Williams 5-61-27 CW2 Pad	MD Reference:	GL 4601.3' & KB 16.5' @ 4617.80ft (Cade 24)
Well:	Anschutz-Williams 5-61-27-3225B	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)
4,691.00	1.22	33.800	4,612.76	510.43	-356.56	-350.49	0.13	-0.13	-0.89
4,785.00	1.16	46.390	4,706.74	511.92	-355.31	-349.22	0.28	-0.06	13.39
4,879.00	1.25	36.700	4,800.71	513.40	-354.01	-347.90	0.24	0.10	-10.31
4,972.00	0.71	156.360	4,893.71	513.68	-353.18	-347.06	1.85	-0.58	128.67
5,066.00	0.68	143.280	4,987.70	512.70	-352.61	-346.51	0.17	-0.03	-13.91
5,161.00	0.41	175.730	5,082.70	511.91	-352.25	-346.15	0.42	-0.28	34.16
5,255.00	0.27	178.480	5,176.69	511.35	-352.22	-346.13	0.15	-0.15	2.93
5,350.00	0.24	212.790	5,271.69	510.96	-352.32	-346.24	0.16	-0.03	36.12
5,444.00	0.32	130.720	5,365.69	510.62	-352.22	-346.15	0.40	0.09	-87.31
5,537.00	0.37	46.000	5,458.69	510.66	-351.81	-345.74	0.50	0.05	-91.10
5,593.00	3.33	87.427	5,514.66	510.86	-350.05	-343.98	5.47	5.29	73.98
Curve KOP									
5,631.00	5.41	89.190	5,552.54	510.94	-347.16	-341.08	5.47	5.46	4.64
First SDI MWD CurveSurvey									
5,725.00	15.71	97.130	5,644.83	509.42	-330.05	-323.99	11.04	10.96	8.45
5,819.00	26.06	93.730	5,732.54	506.49	-296.73	-290.71	11.08	11.01	-3.62
5,913.00	35.54	93.340	5,813.19	503.54	-248.74	-242.76	10.09	10.09	-0.41
6,007.00	47.13	91.700	5,883.65	500.92	-186.83	-180.88	12.38	12.33	-1.74
6,101.00	55.09	88.660	5,942.63	500.80	-113.74	-107.79	8.83	8.47	-3.23
First SDI MWD Lateral Survey									
6,194.00	63.81	90.530	5,989.86	501.31	-33.73	-27.79	9.53	9.38	2.01
6,288.00	73.20	90.450	6,024.26	500.56	53.63	59.56	9.99	9.99	-0.09
6,382.00	87.01	88.040	6,040.38	501.82	145.99	151.93	14.91	14.69	-2.56
6,394.00	88.49	88.080	6,040.85	502.23	157.98	163.92	12.34	12.33	0.33
6,476.00	89.70	90.260	6,042.15	503.41	239.95	245.90	3.04	1.48	2.66
6,570.00	89.50	89.130	6,042.80	503.91	333.95	339.90	1.22	-0.21	-1.20
6,664.00	90.34	89.690	6,042.93	504.88	427.94	433.89	1.07	0.89	0.60
6,758.00	90.54	90.990	6,042.21	504.32	521.93	527.87	1.40	0.21	1.38
6,852.00	90.67	91.050	6,041.22	502.65	615.91	621.83	0.15	0.14	0.06
6,946.00	90.54	89.770	6,040.23	501.98	709.90	715.80	1.37	-0.14	-1.36
7,040.00	90.20	88.880	6,039.62	503.09	803.89	809.80	1.01	-0.36	-0.95
7,133.00	89.97	88.220	6,039.48	505.44	896.86	902.79	0.75	-0.25	-0.71
7,227.00	89.90	87.600	6,039.59	508.87	990.80	996.76	0.66	-0.07	-0.66
7,321.00	90.00	88.510	6,039.67	512.06	1,084.75	1,090.74	0.97	0.11	0.97
7,414.00	90.03	88.530	6,039.65	514.46	1,177.72	1,183.73	0.04	0.03	0.02
7,508.00	89.90	88.800	6,039.70	516.65	1,271.69	1,277.72	0.32	-0.14	0.29
7,602.00	90.13	88.570	6,039.68	518.81	1,365.66	1,371.72	0.35	0.24	-0.24
7,696.00	90.03	87.870	6,039.55	521.73	1,459.62	1,465.70	0.75	-0.11	-0.74
7,790.00	90.30	89.630	6,039.28	523.78	1,553.59	1,559.69	1.89	0.29	1.87
7,884.00	90.57	89.760	6,038.56	524.28	1,647.59	1,653.69	0.32	0.29	0.14
7,977.00	90.44	89.140	6,037.74	525.17	1,740.58	1,746.68	0.68	-0.14	-0.67
8,071.00	90.81	88.910	6,036.72	526.77	1,834.56	1,840.67	0.46	0.39	-0.24
8,165.00	90.84	88.740	6,035.36	528.70	1,928.53	1,934.66	0.18	0.03	-0.18

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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)
8,258.00	91.01	88.420	6,033.86	531.00	2,021.49	2,027.64	0.39	0.18	-0.34
8,352.00	90.94	89.410	6,032.26	532.78	2,115.46	2,121.62	1.06	-0.07	1.05
8,446.00	90.97	89.650	6,030.70	533.55	2,209.44	2,215.61	0.26	0.03	0.26
8,540.00	90.57	89.770	6,029.43	534.03	2,303.43	2,309.60	0.44	-0.43	0.13
8,634.00	90.50	89.290	6,028.56	534.80	2,397.42	2,403.59	0.52	-0.07	-0.51
8,727.00	90.74	89.190	6,027.55	536.03	2,490.41	2,496.59	0.28	0.26	-0.11
8,821.00	91.01	89.470	6,026.11	537.13	2,584.39	2,590.58	0.41	0.29	0.30
8,915.00	91.44	89.610	6,024.10	537.89	2,678.37	2,684.55	0.48	0.46	0.15
9,010.00	90.57	89.790	6,022.44	538.38	2,773.35	2,779.54	0.94	-0.92	0.19
9,104.00	90.40	90.370	6,021.64	538.25	2,867.35	2,873.52	0.64	-0.18	0.62
9,198.00	90.94	90.540	6,020.54	537.51	2,961.34	2,967.50	0.60	0.57	0.18
9,292.00	91.21	90.980	6,018.78	536.26	3,055.31	3,061.45	0.55	0.29	0.47
9,386.00	90.77	90.300	6,017.16	535.21	3,149.29	3,155.41	0.86	-0.47	-0.72
9,480.00	91.01	90.440	6,015.70	534.60	3,243.28	3,249.39	0.30	0.26	0.15
9,574.00	90.34	89.200	6,014.59	534.90	3,337.27	3,343.37	1.50	-0.71	-1.32
9,667.00	90.67	89.410	6,013.77	536.03	3,430.26	3,436.37	0.42	0.35	0.23
9,761.00	90.81	88.920	6,012.55	537.39	3,524.24	3,530.36	0.54	0.15	-0.52
9,855.00	91.41	88.770	6,010.73	539.29	3,618.20	3,624.34	0.66	0.64	-0.16
9,948.00	89.63	87.510	6,009.89	542.31	3,711.14	3,717.31	2.34	-1.91	-1.35
10,042.00	89.33	86.950	6,010.74	546.85	3,805.03	3,811.24	0.68	-0.32	-0.60
10,136.00	91.61	88.170	6,009.97	550.85	3,898.93	3,905.19	2.75	2.43	1.30
10,230.00	91.61	89.560	6,007.33	552.71	3,992.88	3,999.15	1.48	0.00	1.48
10,324.00	90.40	90.440	6,005.68	552.71	4,086.86	4,093.12	1.59	-1.29	0.94
10,417.00	91.24	90.300	6,004.35	552.11	4,179.85	4,186.10	0.92	0.90	-0.15
10,510.00	90.17	91.190	6,003.21	550.90	4,272.83	4,279.06	1.50	-1.15	0.96
10,601.00	90.74	90.810	6,002.48	549.31	4,363.81	4,370.02	0.75	0.63	-0.42
10,691.00	89.66	90.840	6,002.17	548.02	4,453.80	4,459.98	1.20	-1.20	0.03
10,781.00	90.27	90.690	6,002.22	546.82	4,543.79	4,549.95	0.70	0.68	-0.17
10,873.00	90.77	90.250	6,001.39	546.06	4,635.79	4,641.93	0.72	0.54	-0.48
10,964.00	89.29	89.870	6,001.34	545.97	4,726.78	4,732.92	1.68	-1.63	-0.42
11,055.00	90.00	89.440	6,001.91	546.52	4,817.78	4,823.92	0.91	0.78	-0.47
11,146.00	91.24	89.830	6,000.92	547.10	4,908.77	4,914.91	1.43	1.36	0.43
11,237.00	89.13	88.540	6,000.63	548.39	4,999.75	5,005.90	2.72	-2.32	-1.42
11,328.00	91.95	89.340	5,999.77	550.07	5,090.72	5,096.88	3.22	3.10	0.88
11,419.00	89.66	87.940	5,998.49	552.23	5,181.68	5,187.86	2.95	-2.52	-1.54
11,510.00	89.09	87.890	5,999.48	555.54	5,272.61	5,278.83	0.63	-0.63	-0.05
11,601.00	91.04	91.400	5,999.38	556.11	5,363.59	5,369.81	4.41	2.14	3.86
11,692.00	89.13	92.120	5,999.25	553.31	5,454.55	5,460.72	2.24	-2.10	0.79
11,783.00	87.95	89.710	6,001.56	551.86	5,545.50	5,551.65	2.95	-1.30	-2.65
11,873.00	88.72	86.450	6,004.18	554.87	5,635.40	5,641.57	3.72	0.86	-3.62
11,964.00	90.20	88.340	6,005.04	559.01	5,726.29	5,732.51	2.64	1.63	2.08
12,055.00	91.61	88.380	6,003.60	561.61	5,817.24	5,823.49	1.55	1.55	0.04
12,146.00	91.28	89.310	6,001.31	563.45	5,908.19	5,914.45	1.08	-0.36	1.02
12,238.00	90.13	88.730	6,000.17	565.02	6,000.17	6,006.44	1.40	-1.25	-0.63

Company:	Bill Barrett Corp.	Local Co-ordinate Reference:	Well Anschutz-Williams 5-61-27-3225B
Project:	Weld County, CO NAD 83	TVD Reference:	GL 4601.3' & KB 16.5' @ 4617.80ft (Cade 24)
Site:	Anschutz-Williams 5-61-27 CW2 Pad	MD Reference:	GL 4601.3' & KB 16.5' @ 4617.80ft (Cade 24)
Well:	Anschutz-Williams 5-61-27-3225B	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)
12,330.00	90.00	88.880	6,000.07	566.94	6,092.15	6,098.44	0.22	-0.14	0.16
12,421.00	90.34	88.700	5,999.80	568.86	6,183.13	6,189.43	0.42	0.37	-0.20
12,513.00	90.37	89.060	5,999.23	570.66	6,275.11	6,281.43	0.39	0.03	0.39
12,605.00	90.74	89.540	5,998.34	571.78	6,367.10	6,373.43	0.66	0.40	0.52
12,696.00	91.01	89.620	5,996.95	572.45	6,458.08	6,464.41	0.31	0.30	0.09
12,788.00	89.40	89.330	5,996.62	573.29	6,550.08	6,556.41	1.78	-1.75	-0.32
12,879.00	90.81	90.140	5,996.45	573.71	6,641.07	6,647.40	1.79	1.55	0.89
12,970.00	92.92	91.410	5,993.49	572.48	6,732.01	6,738.32	2.71	2.32	1.40
13,062.00	91.95	91.170	5,989.58	570.41	6,823.90	6,830.18	1.09	-1.05	-0.26
13,153.00	90.54	90.010	5,987.60	569.48	6,914.87	6,921.13	2.01	-1.55	-1.27
13,244.00	89.33	88.380	5,987.71	570.76	7,005.86	7,012.13	2.23	-1.33	-1.79
13,335.00	88.49	88.160	5,989.44	573.50	7,096.80	7,103.10	0.95	-0.92	-0.24
13,426.00	88.56	89.140	5,991.78	575.65	7,187.74	7,194.06	1.08	0.08	1.08
13,517.00	88.73	89.640	5,993.93	576.61	7,278.71	7,285.03	0.58	0.19	0.55
13,609.00	89.33	89.120	5,995.49	577.61	7,370.69	7,377.02	0.86	0.65	-0.57
13,700.00	90.03	88.460	5,996.00	579.53	7,461.67	7,468.01	1.06	0.77	-0.73
13,791.00	90.74	87.660	5,995.39	582.61	7,552.61	7,558.99	1.18	0.78	-0.88
13,882.00	91.11	87.140	5,993.92	586.74	7,643.51	7,649.92	0.70	0.41	-0.57
13,973.00	90.17	88.890	5,992.90	589.89	7,734.44	7,740.89	2.18	-1.03	1.92
14,064.00	90.37	88.010	5,992.47	592.35	7,825.41	7,831.88	0.99	0.22	-0.97
14,155.00	91.44	87.960	5,991.04	595.55	7,916.34	7,922.84	1.18	1.18	-0.05
14,246.00	90.34	89.990	5,989.62	597.18	8,007.31	8,013.82	2.54	-1.21	2.23
14,337.00	90.17	89.000	5,989.22	597.98	8,098.30	8,104.82	1.10	-0.19	-1.09
14,429.00	90.50	88.850	5,988.68	599.71	8,190.28	8,196.81	0.39	0.36	-0.16
14,520.00	91.01	89.660	5,987.48	600.89	8,281.27	8,287.81	1.05	0.56	0.89
14,612.00	91.14	89.920	5,985.75	601.23	8,373.25	8,379.79	0.32	0.14	0.28
14,703.00	89.56	90.020	5,985.20	601.27	8,464.24	8,470.78	1.74	-1.74	0.11
14,794.00	88.96	89.420	5,986.37	601.72	8,555.23	8,561.76	0.93	-0.66	-0.66
14,885.00	88.86	89.280	5,988.10	602.75	8,646.21	8,652.75	0.19	-0.11	-0.15
14,976.00	88.46	89.000	5,990.23	604.12	8,737.18	8,743.72	0.54	-0.44	-0.31
15,067.00	89.63	89.480	5,991.75	605.32	8,828.15	8,834.71	1.39	1.29	0.53
15,159.00	90.91	90.670	5,991.32	605.20	8,920.15	8,926.70	1.90	1.39	1.29
15,250.00	88.82	87.900	5,991.53	606.34	9,011.13	9,017.68	3.81	-2.30	-3.04
15,341.00	88.83	87.950	5,993.40	609.63	9,102.05	9,108.64	0.06	0.01	0.05
15,433.00	89.43	88.180	5,994.79	612.74	9,193.99	9,200.60	0.70	0.65	0.25
15,524.00	90.34	88.850	5,994.98	615.10	9,284.95	9,291.59	1.24	1.00	0.74
15,615.00	90.94	88.810	5,993.96	616.96	9,375.93	9,382.58	0.66	0.66	-0.04
15,707.00	91.54	88.360	5,991.97	619.23	9,467.88	9,474.55	0.82	0.65	-0.49
15,798.00	90.94	88.540	5,990.00	621.69	9,558.82	9,565.52	0.69	-0.66	0.20
15,889.00	90.07	88.350	5,989.20	624.16	9,649.79	9,656.50	0.98	-0.96	-0.21
15,980.00	89.60	87.920	5,989.46	627.12	9,740.74	9,747.48	0.70	-0.52	-0.47
16,074.00	89.60	86.930	5,990.12	631.34	9,834.64	9,841.43	1.05	0.00	-1.05
16,152.00	90.91	86.840	5,989.77	635.58	9,912.52	9,919.36	1.68	1.68	-0.12

Company:	Bill Barrett Corp.	Local Co-ordinate Reference:	Well Anschutz-Williams 5-61-27-3225B
Project:	Weld County, CO NAD 83	TVD Reference:	GL 4601.3' & KB 16.5' @ 4617.80ft (Cade 24)
Site:	Anschutz-Williams 5-61-27 CW2 Pad	MD Reference:	GL 4601.3' & KB 16.5' @ 4617.80ft (Cade 24)
Well:	Anschutz-Williams 5-61-27-3225B	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)
Last SDI MWD Survey									
16,210.00	90.91	86.840	5,988.85	638.78	9,970.43	9,977.29	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)	
209.00	209.00	0.80	-0.95	First SDI MWD Survey
775.00	774.09	24.85	-18.62	Last SDI MWD Surface Survey
886.00	884.78	31.50	-23.62	First SDI MWD Inter. Survey
5,593.00	5,514.66	510.86	-350.05	Curve KOP
5,631.00	5,552.54	510.94	-347.16	First SDI MWD CurveSurvey
6,101.00	5,942.63	500.80	-113.74	First SDI MWD Lateral Survey
16,152.00	5,989.77	635.58	9,912.52	Last SDI MWD Survey
16,210.00	5,988.85	638.78	9,970.43	Projection to TD

Checked By: _____ Approved By: _____ Date: _____