



Project: Weld County, CO NAD 83
Site: Kunsemiller 5-61-20_19NW21 Pad
Well: Kunsemiller 5-61-20-0801B2
Wellbore: OH
Design: OH

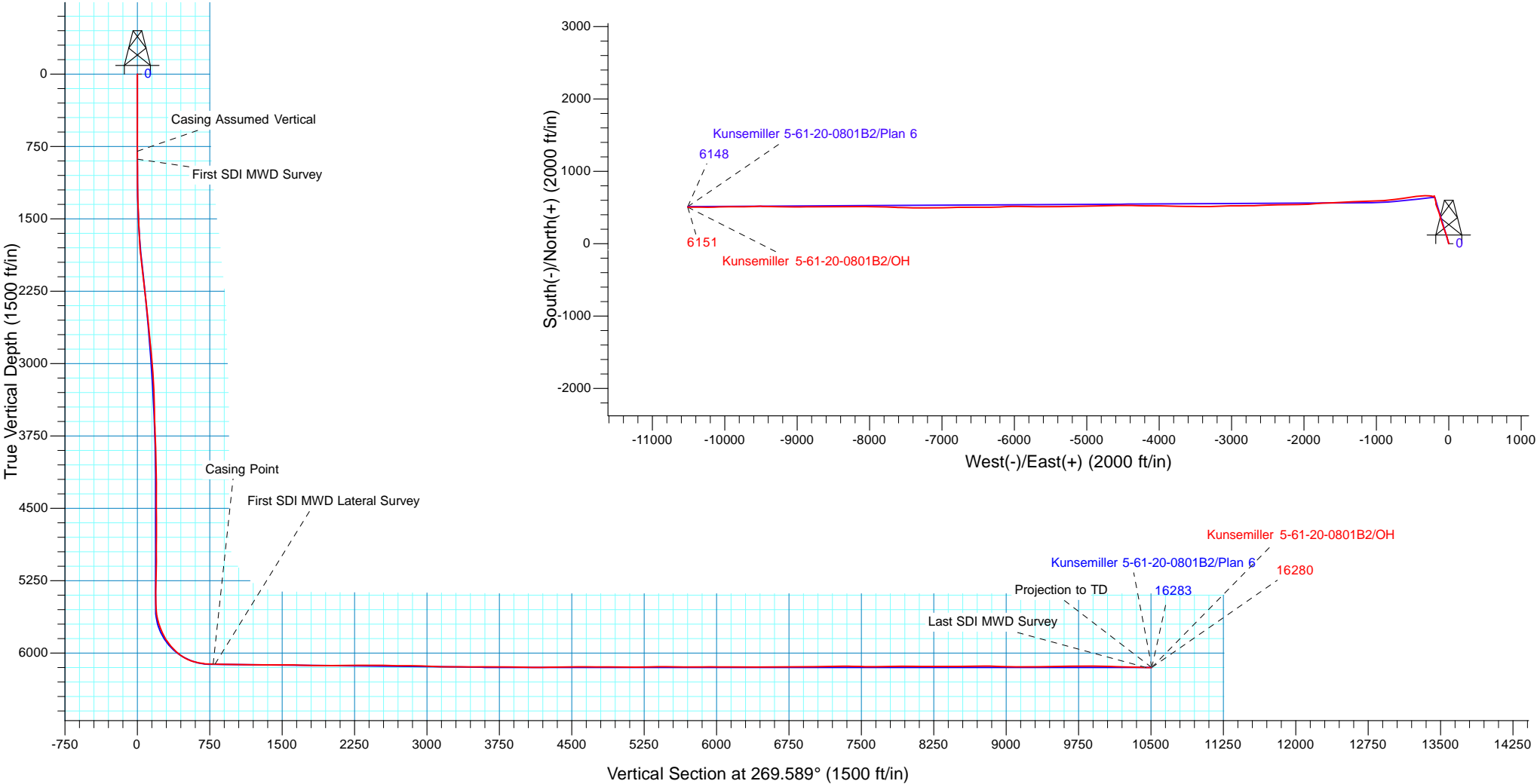


| WELL DETAILS: Kunsemiller 5-61-20-0801B2 | | | | |
|---|------------|------------------|-------------------|--|
| GL 4637.6' & KB 16.5' @ 4654.10ft (Cade 24) 4637.60 | | | | |
| Northing | Easting | Latitude | Longitude | |
| 1387801.87 | 3355807.73 | 40° 23' 27.178 N | 104° 13' 21.320 W | |

| | |
|--|-----------------|
| Design: OH (Kunsemiller 5-61-20-0801B2/OH) | |
| Created By: Seth Burstad | Date: 7-31-2017 |

| 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 |
| 800.00 | 800.00 | 0.00 | 0.000 | 0.00 | 0.00 | 0.00 | 0.00 | Casing Assumed Vertical |
| 882.00 | 882.00 | 0.97 | 316.120 | 0.50 | -0.48 | 0.48 | 0.69 | First SDI MWD Survey |
| 6115.88 | 6554.00 | 89.07 | 263.434 | 607.23 | -791.77 | 787.39 | 1312.14 | Casing Point |
| 6116.07 | 6572.00 | 89.77 | 263.420 | 605.17 | -809.65 | 805.29 | 1330.14 | First SDI MWD Lateral Survey |
| 6149.68 | 16222.00 | 88.76 | 270.320 | 506.16 | -10454.47 | 10450.57 | 10978.65 | Last SDI MWD Survey |
| 6150.94 | 16280.00 | 88.76 | 270.320 | 506.48 | -10512.45 | 10508.55 | 11036.63 | Projection to TD |



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|------------------|--------------------------------|-------------------------------------|---|
| Company: | Bill Barrett Corp. | Local Co-ordinate Reference: | Well Kunsemiller 5-61-20-0801B2 |
| Project: | Weld County, CO NAD 83 | TVD Reference: | GL 4637.6' & KB 16.5' @ 4654.10ft (Cade 24) |
| Site: | Kunsemiller 5-61-20_19NW21 Pad | MD Reference: | GL 4637.6' & KB 16.5' @ 4654.10ft (Cade 24) |
| Well: | Kunsemiller 5-61-20-0801B2 | 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 | Kunsemiller 5-61-20_19NW21 Pad, Site Center : 5-61-20-20801B2B | | |
| Site Position: | | Northing: | 1,387,878.07 usft |
| From: | Lat/Long | Easting: | 3,355,805.79 usft |
| Position Uncertainty: | 0.00 ft | Slot Radius: | 13.200 in |
| | | Latitude: | 40° 23' 27.931 N |
| | | Longitude: | 104° 13' 21.331 W |
| | | Grid Convergence: | 0.83 ° |

| | | | |
|-----------------------------|--|----------------------------|------------------------------------|
| Well | Kunsemiller 5-61-20-0801B2, 1081' FNL 300' FWL Sec 21 T5N R61W | | |
| Well Position | +N/-S | 0.00 ft | Northing: 1,387,801.87 usft |
| | +E/-W | 0.00 ft | Easting: 3,355,807.73 usft |
| Position Uncertainty | 0.00 ft | Wellhead Elevation: | 0.00 ft |
| | | Latitude: | 40° 23' 27.178 N |
| | | Longitude: | 104° 13' 21.320 W |
| | | Ground Level: | 4,637.60 ft |

| | | | | | |
|------------------|-------------------|--------------------|------------------------|----------------------|----------------------------|
| Wellbore | OH | | | | |
| Magnetics | Model Name | Sample Date | Declination (°) | Dip Angle (°) | Field Strength (nT) |
| | HDGM | 7/19/2017 | 8.23 | 67.07 | 52,341 |

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|--------------------------|------------------------------|-------------------|-------------------|----------------------|---------|
| 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 | | 269.589 |

| | | | | | |
|-----------------------|----------------|-------------------------------|------------------|---------------------|--|
| Survey Program | Date | 7/31/2017 | | | |
| From (ft) | To (ft) | Survey (Wellbore) | Tool Name | Description | |
| 800.00 | 6,509.00 | Survey #1 - Intermediate (OH) | OWSG MWD | OWSG MWD - Standard | |
| 6,572.00 | 16,280.00 | Survey #2 - Lateral (OH) | OWSG MWD | OWSG MWD - Standard | |

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|--------------------------------|------------------------|--------------------|----------------------------|-------------------|-------------------|------------------------------|------------------------------|-----------------------------|----------------------------|--|
| 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 | |
| 800.00 | 0.00 | 0.000 | 800.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| Casing Assumed Vertical | | | | | | | | | | |
| 882.00 | 0.97 | 316.120 | 882.00 | 0.50 | -0.48 | 0.48 | 1.18 | 1.18 | 0.00 | |
| First SDI MWD Survey | | | | | | | | | | |
| 973.00 | 0.97 | 313.570 | 972.98 | 1.59 | -1.57 | 1.56 | 0.05 | 0.00 | -2.80 | |
| 1,065.00 | 2.81 | 346.000 | 1,064.93 | 4.31 | -2.68 | 2.65 | 2.24 | 2.00 | 35.25 | |
| 1,156.00 | 3.25 | 344.330 | 1,155.80 | 8.96 | -3.92 | 3.85 | 0.49 | 0.48 | -1.84 | |
| 1,247.00 | 5.10 | 351.540 | 1,246.56 | 15.44 | -5.21 | 5.10 | 2.11 | 2.03 | 7.92 | |

| | | | |
|------------------|--------------------------------|-------------------------------------|---|
| Company: | Bill Barrett Corp. | Local Co-ordinate Reference: | Well Kunsemiller 5-61-20-0801B2 |
| Project: | Weld County, CO NAD 83 | TVD Reference: | GL 4637.6' & KB 16.5' @ 4654.10ft (Cade 24) |
| Site: | Kunsemiller 5-61-20_19NW21 Pad | MD Reference: | GL 4637.6' & KB 16.5' @ 4654.10ft (Cade 24) |
| Well: | Kunsemiller 5-61-20-0801B2 | 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) |
| 1,339.00 | 6.86 | 349.430 | 1,338.05 | 24.89 | -6.82 | 6.64 | 1.93 | 1.91 | -2.29 |
| 1,430.00 | 8.18 | 340.550 | 1,428.27 | 36.34 | -9.97 | 9.71 | 1.93 | 1.45 | -9.76 |
| 1,522.00 | 9.41 | 341.610 | 1,519.19 | 49.65 | -14.53 | 14.17 | 1.35 | 1.34 | 1.15 |
| 1,613.00 | 10.90 | 343.980 | 1,608.76 | 64.98 | -19.25 | 18.78 | 1.70 | 1.64 | 2.60 |
| 1,705.00 | 12.40 | 348.290 | 1,698.87 | 83.01 | -23.65 | 23.06 | 1.88 | 1.63 | 4.68 |
| 1,796.00 | 14.33 | 345.040 | 1,787.40 | 103.46 | -28.54 | 27.80 | 2.28 | 2.12 | -3.57 |
| 1,888.00 | 16.71 | 337.920 | 1,876.05 | 126.72 | -36.46 | 35.55 | 3.31 | 2.59 | -7.74 |
| 1,979.00 | 18.55 | 336.690 | 1,962.77 | 152.14 | -47.10 | 46.01 | 2.06 | 2.02 | -1.35 |
| 2,070.00 | 19.17 | 341.080 | 2,048.89 | 179.57 | -57.68 | 56.39 | 1.70 | 0.68 | 4.82 |
| 2,162.00 | 20.84 | 343.540 | 2,135.33 | 209.56 | -67.21 | 65.71 | 2.03 | 1.82 | 2.67 |
| 2,254.00 | 20.22 | 342.220 | 2,221.49 | 240.39 | -76.70 | 74.98 | 0.84 | -0.67 | -1.43 |
| 2,345.00 | 20.14 | 341.870 | 2,306.90 | 270.25 | -86.38 | 84.44 | 0.16 | -0.09 | -0.38 |
| 2,439.00 | 19.79 | 340.730 | 2,395.26 | 300.65 | -96.67 | 94.51 | 0.56 | -0.37 | -1.21 |
| 2,533.00 | 19.70 | 340.380 | 2,483.73 | 330.60 | -107.24 | 104.87 | 0.16 | -0.10 | -0.37 |
| 2,628.00 | 18.64 | 343.540 | 2,573.46 | 360.24 | -116.92 | 114.33 | 1.56 | -1.12 | 3.33 |
| 2,722.00 | 18.99 | 344.600 | 2,662.44 | 389.39 | -125.24 | 122.44 | 0.52 | 0.37 | 1.13 |
| 2,816.00 | 20.22 | 344.950 | 2,750.99 | 419.83 | -133.52 | 130.50 | 1.31 | 1.31 | 0.37 |
| 2,910.00 | 16.53 | 338.450 | 2,840.19 | 447.97 | -142.65 | 139.43 | 4.48 | -3.93 | -6.91 |
| 3,004.00 | 13.89 | 337.740 | 2,930.89 | 470.85 | -151.84 | 148.46 | 2.82 | -2.81 | -0.76 |
| 3,097.00 | 12.49 | 343.100 | 3,021.44 | 490.80 | -158.99 | 155.47 | 2.00 | -1.51 | 5.76 |
| 3,191.00 | 12.75 | 335.370 | 3,113.17 | 509.96 | -166.27 | 162.61 | 1.82 | 0.28 | -8.22 |
| 3,286.00 | 10.73 | 340.820 | 3,206.18 | 527.84 | -173.54 | 169.75 | 2.42 | -2.13 | 5.74 |
| 3,380.00 | 10.73 | 353.560 | 3,298.55 | 544.81 | -177.40 | 173.49 | 2.52 | 0.00 | 13.55 |
| 3,474.00 | 10.82 | 355.140 | 3,390.90 | 562.29 | -179.13 | 175.09 | 0.33 | 0.10 | 1.68 |
| 3,567.00 | 11.34 | 353.120 | 3,482.16 | 580.07 | -180.96 | 176.80 | 0.70 | 0.56 | -2.17 |
| 3,661.00 | 9.67 | 348.470 | 3,574.58 | 596.98 | -183.65 | 179.36 | 1.99 | -1.78 | -4.95 |
| 3,755.00 | 9.50 | 343.370 | 3,667.27 | 612.15 | -187.45 | 183.05 | 0.92 | -0.18 | -5.43 |
| 3,849.00 | 7.39 | 341.700 | 3,760.25 | 625.32 | -191.57 | 187.08 | 2.26 | -2.24 | -1.78 |
| 3,942.00 | 5.72 | 336.860 | 3,852.64 | 635.26 | -195.27 | 190.70 | 1.89 | -1.80 | -5.20 |
| 4,036.00 | 5.19 | 353.210 | 3,946.22 | 643.79 | -197.61 | 192.99 | 1.74 | -0.56 | 17.39 |
| 4,130.00 | 4.48 | 353.120 | 4,039.88 | 651.66 | -198.55 | 193.87 | 0.76 | -0.76 | -0.10 |
| 4,224.00 | 3.25 | 311.730 | 4,133.69 | 657.08 | -200.98 | 196.26 | 3.15 | -1.31 | -44.03 |
| 4,318.00 | 0.97 | 164.250 | 4,227.64 | 658.09 | -202.75 | 198.03 | 4.36 | -2.43 | -156.89 |
| 4,412.00 | 1.14 | 170.750 | 4,321.63 | 656.40 | -202.39 | 197.67 | 0.22 | 0.18 | 6.91 |
| 4,506.00 | 1.41 | 158.010 | 4,415.60 | 654.40 | -201.81 | 197.11 | 0.41 | 0.29 | -13.55 |
| 4,600.00 | 0.97 | 320.870 | 4,509.60 | 653.95 | -201.87 | 197.18 | 2.50 | -0.47 | 173.26 |
| 4,694.00 | 0.62 | 294.240 | 4,603.59 | 654.78 | -202.84 | 198.14 | 0.53 | -0.37 | -28.33 |
| 4,788.00 | 0.97 | 183.580 | 4,697.58 | 654.19 | -203.35 | 198.66 | 1.41 | 0.37 | -117.72 |
| 4,881.00 | 0.97 | 172.330 | 4,790.57 | 652.62 | -203.30 | 198.61 | 0.20 | 0.00 | -12.10 |
| 4,975.00 | 1.06 | 126.450 | 4,884.56 | 651.32 | -202.49 | 197.81 | 0.85 | 0.10 | -48.81 |
| 5,068.00 | 0.79 | 135.070 | 4,977.54 | 650.35 | -201.35 | 196.68 | 0.33 | -0.29 | 9.27 |
| 5,162.00 | 0.62 | 121.530 | 5,071.54 | 649.63 | -200.46 | 195.79 | 0.25 | -0.18 | -14.40 |
| 5,256.00 | 0.44 | 131.640 | 5,165.53 | 649.12 | -199.75 | 195.09 | 0.22 | -0.19 | 10.76 |

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|------------------|--------------------------------|-------------------------------------|---|
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| Project: | Weld County, CO NAD 83 | TVD Reference: | GL 4637.6' & KB 16.5' @ 4654.10ft (Cade 24) |
| Site: | Kunsemiller 5-61-20_19NW21 Pad | MD Reference: | GL 4637.6' & KB 16.5' @ 4654.10ft (Cade 24) |
| Well: | Kunsemiller 5-61-20-0801B2 | 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) | |
| 5,349.00 | 0.35 | 66.510 | 5,258.53 | 649.00 | -199.23 | 194.56 | 0.46 | -0.10 | -70.03 | |
| 5,443.00 | 0.62 | 91.210 | 5,352.53 | 649.10 | -198.45 | 193.79 | 0.36 | 0.29 | 26.28 | |
| 5,537.00 | 0.79 | 122.500 | 5,446.52 | 648.74 | -197.40 | 192.74 | 0.44 | 0.18 | 33.29 | |
| 5,631.00 | 2.90 | 271.560 | 5,540.49 | 648.46 | -199.23 | 194.57 | 3.83 | 2.24 | 158.57 | |
| 5,724.00 | 12.66 | 285.890 | 5,632.52 | 651.32 | -211.41 | 206.74 | 10.62 | 10.49 | 15.41 | |
| 5,819.00 | 20.22 | 280.000 | 5,723.58 | 657.03 | -237.63 | 232.91 | 8.14 | 7.96 | -6.20 | |
| 5,912.00 | 26.29 | 273.850 | 5,809.00 | 661.21 | -274.05 | 269.30 | 7.02 | 6.53 | -6.61 | |
| 6,007.00 | 35.88 | 271.820 | 5,890.26 | 663.51 | -322.98 | 318.21 | 10.15 | 10.09 | -2.14 | |
| 6,100.00 | 44.41 | 263.650 | 5,961.34 | 660.77 | -382.71 | 377.96 | 10.76 | 9.17 | -8.78 | |
| 6,194.00 | 53.90 | 261.800 | 6,022.75 | 651.70 | -453.15 | 448.47 | 10.20 | 10.10 | -1.97 | |
| 6,287.00 | 66.39 | 264.090 | 6,068.96 | 641.91 | -533.05 | 528.43 | 13.60 | 13.43 | 2.46 | |
| 6,381.00 | 78.00 | 260.660 | 6,097.66 | 629.97 | -621.57 | 617.04 | 12.83 | 12.35 | -3.65 | |
| 6,475.00 | 84.42 | 262.600 | 6,112.02 | 616.47 | -713.43 | 708.99 | 7.13 | 6.83 | 2.06 | |
| 6,509.00 | 87.32 | 263.470 | 6,114.47 | 612.36 | -747.09 | 742.68 | 8.90 | 8.53 | 2.56 | |
| 6,554.00 | 89.07 | 263.434 | 6,115.88 | 607.23 | -791.77 | 787.39 | 3.89 | 3.89 | -0.08 | |
| Casing Point | | | | | | | | | | |
| 6,572.00 | 89.77 | 263.420 | 6,116.07 | 605.17 | -809.65 | 805.29 | 3.89 | 3.89 | -0.08 | |
| First SDI MWD Lateral Survey | | | | | | | | | | |
| 6,666.00 | 88.79 | 265.860 | 6,117.25 | 596.39 | -903.22 | 898.92 | 2.80 | -1.04 | 2.60 | |
| 6,760.00 | 89.83 | 268.210 | 6,118.38 | 591.53 | -997.08 | 992.81 | 2.73 | 1.11 | 2.50 | |
| 6,854.00 | 89.16 | 268.010 | 6,119.21 | 588.43 | -1,091.03 | 1,086.78 | 0.74 | -0.71 | -0.21 | |
| 6,948.00 | 88.22 | 268.190 | 6,121.36 | 585.31 | -1,184.95 | 1,180.72 | 1.02 | -1.00 | 0.19 | |
| 7,042.00 | 89.90 | 267.590 | 6,122.90 | 581.85 | -1,278.87 | 1,274.66 | 1.90 | 1.79 | -0.64 | |
| 7,136.00 | 89.80 | 267.110 | 6,123.14 | 577.51 | -1,372.77 | 1,368.59 | 0.52 | -0.11 | -0.51 | |
| 7,230.00 | 89.93 | 266.930 | 6,123.37 | 572.62 | -1,466.64 | 1,462.50 | 0.24 | 0.14 | -0.19 | |
| 7,324.00 | 90.67 | 267.640 | 6,122.87 | 568.17 | -1,560.53 | 1,556.42 | 1.09 | 0.79 | 0.76 | |
| 7,418.00 | 88.22 | 267.700 | 6,123.78 | 564.35 | -1,654.44 | 1,650.35 | 2.61 | -2.61 | 0.06 | |
| 7,512.00 | 88.39 | 266.110 | 6,126.57 | 559.27 | -1,748.26 | 1,744.21 | 1.70 | 0.18 | -1.69 | |
| 7,606.00 | 88.29 | 266.080 | 6,129.29 | 552.87 | -1,842.01 | 1,837.99 | 0.11 | -0.11 | -0.03 | |
| 7,701.00 | 90.23 | 265.900 | 6,130.51 | 546.23 | -1,936.76 | 1,932.79 | 2.05 | 2.04 | -0.19 | |
| 7,794.00 | 90.07 | 268.900 | 6,130.27 | 542.01 | -2,029.65 | 2,025.71 | 3.23 | -0.17 | 3.23 | |
| 7,888.00 | 91.11 | 269.300 | 6,129.30 | 540.54 | -2,123.64 | 2,119.70 | 1.19 | 1.11 | 0.43 | |
| 7,982.00 | 91.64 | 269.350 | 6,127.05 | 539.43 | -2,217.60 | 2,213.68 | 0.57 | 0.56 | 0.05 | |
| 8,077.00 | 89.80 | 269.090 | 6,125.85 | 538.14 | -2,312.58 | 2,308.66 | 1.96 | -1.94 | -0.27 | |
| 8,171.00 | 90.17 | 269.180 | 6,125.88 | 536.72 | -2,406.57 | 2,402.66 | 0.41 | 0.39 | 0.10 | |
| 8,265.00 | 88.05 | 266.730 | 6,127.34 | 533.37 | -2,500.49 | 2,496.60 | 3.45 | -2.26 | -2.61 | |
| 8,358.00 | 88.79 | 268.160 | 6,129.90 | 529.22 | -2,593.36 | 2,589.49 | 1.73 | 0.80 | 1.54 | |
| 8,453.00 | 89.16 | 268.010 | 6,131.60 | 526.05 | -2,688.29 | 2,684.45 | 0.42 | 0.39 | -0.16 | |
| 8,547.00 | 90.44 | 270.560 | 6,131.93 | 524.87 | -2,782.27 | 2,778.43 | 3.04 | 1.36 | 2.71 | |
| 8,641.00 | 88.39 | 269.220 | 6,132.89 | 524.69 | -2,876.26 | 2,872.42 | 2.61 | -2.18 | -1.43 | |
| 8,735.00 | 88.29 | 269.210 | 6,135.61 | 523.41 | -2,970.21 | 2,966.38 | 0.11 | -0.11 | -0.01 | |
| 8,828.00 | 87.59 | 267.870 | 6,138.96 | 521.04 | -3,063.12 | 3,059.30 | 1.62 | -0.75 | -1.44 | |
| 8,922.00 | 89.53 | 268.320 | 6,141.32 | 517.92 | -3,157.03 | 3,153.23 | 2.12 | 2.06 | 0.48 | |
| 9,016.00 | 89.56 | 268.570 | 6,142.07 | 515.36 | -3,250.99 | 3,247.21 | 0.27 | 0.03 | 0.27 | |

| | | | |
|------------------|--------------------------------|-------------------------------------|---|
| Company: | Bill Barrett Corp. | Local Co-ordinate Reference: | Well Kunsemiller 5-61-20-0801B2 |
| Project: | Weld County, CO NAD 83 | TVD Reference: | GL 4637.6' & KB 16.5' @ 4654.10ft (Cade 24) |
| Site: | Kunsemiller 5-61-20_19NW21 Pad | MD Reference: | GL 4637.6' & KB 16.5' @ 4654.10ft (Cade 24) |
| Well: | Kunsemiller 5-61-20-0801B2 | 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) | |
| 9,110.00 | 89.20 | 270.290 | 6,143.08 | 514.43 | -3,344.98 | 3,341.20 | 1.87 | -0.38 | 1.83 | |
| 9,204.00 | 89.33 | 269.910 | 6,144.29 | 514.59 | -3,438.97 | 3,435.19 | 0.43 | 0.14 | -0.40 | |
| 9,298.00 | 90.54 | 270.320 | 6,144.40 | 514.78 | -3,532.97 | 3,529.18 | 1.36 | 1.29 | 0.44 | |
| 9,392.00 | 91.38 | 270.120 | 6,142.82 | 515.14 | -3,626.95 | 3,623.17 | 0.92 | 0.89 | -0.21 | |
| 9,486.00 | 89.13 | 271.610 | 6,142.40 | 516.56 | -3,720.93 | 3,717.13 | 2.87 | -2.39 | 1.59 | |
| 9,580.00 | 89.13 | 271.470 | 6,143.83 | 519.09 | -3,814.89 | 3,811.07 | 0.15 | 0.00 | -0.15 | |
| 9,675.00 | 88.89 | 271.110 | 6,145.47 | 521.23 | -3,909.85 | 3,906.01 | 0.46 | -0.25 | -0.38 | |
| 9,769.00 | 88.99 | 270.500 | 6,147.21 | 522.55 | -4,003.82 | 3,999.97 | 0.66 | 0.11 | -0.65 | |
| 9,862.00 | 88.93 | 269.970 | 6,148.90 | 522.93 | -4,096.81 | 4,092.95 | 0.57 | -0.06 | -0.57 | |
| 9,956.00 | 90.80 | 271.760 | 6,149.12 | 524.35 | -4,190.79 | 4,186.92 | 2.75 | 1.99 | 1.90 | |
| 10,050.00 | 91.11 | 270.950 | 6,147.55 | 526.57 | -4,284.75 | 4,280.86 | 0.92 | 0.33 | -0.86 | |
| 10,144.00 | 91.54 | 270.470 | 6,145.38 | 527.73 | -4,378.72 | 4,374.82 | 0.69 | 0.46 | -0.51 | |
| 10,238.00 | 90.13 | 270.210 | 6,144.01 | 528.29 | -4,472.70 | 4,468.80 | 1.53 | -1.50 | -0.28 | |
| 10,332.00 | 90.94 | 269.480 | 6,143.13 | 528.04 | -4,566.70 | 4,562.79 | 1.16 | 0.86 | -0.78 | |
| 10,426.00 | 89.23 | 269.440 | 6,142.99 | 527.15 | -4,660.69 | 4,656.79 | 1.82 | -1.82 | -0.04 | |
| 10,520.00 | 90.13 | 268.810 | 6,143.52 | 525.72 | -4,754.67 | 4,750.78 | 1.17 | 0.96 | -0.67 | |
| 10,612.00 | 89.60 | 268.470 | 6,143.73 | 523.53 | -4,846.65 | 4,842.77 | 0.68 | -0.58 | -0.37 | |
| 10,703.00 | 89.66 | 267.560 | 6,144.32 | 520.38 | -4,937.59 | 4,933.73 | 1.00 | 0.07 | -1.00 | |
| 10,795.00 | 89.16 | 268.920 | 6,145.27 | 517.56 | -5,029.54 | 5,025.70 | 1.57 | -0.54 | 1.48 | |
| 10,886.00 | 89.23 | 268.460 | 6,146.55 | 515.48 | -5,120.51 | 5,116.68 | 0.51 | 0.08 | -0.51 | |
| 10,977.00 | 90.94 | 268.780 | 6,146.41 | 513.28 | -5,211.48 | 5,207.66 | 1.91 | 1.88 | 0.35 | |
| 11,068.00 | 91.95 | 269.090 | 6,144.12 | 511.59 | -5,302.43 | 5,298.62 | 1.16 | 1.11 | 0.34 | |
| 11,160.00 | 91.58 | 270.360 | 6,141.28 | 511.15 | -5,394.38 | 5,390.58 | 1.44 | -0.40 | 1.38 | |
| 11,251.00 | 88.59 | 270.090 | 6,141.15 | 511.51 | -5,485.37 | 5,481.56 | 3.30 | -3.29 | -0.30 | |
| 11,343.00 | 88.62 | 269.360 | 6,143.39 | 511.07 | -5,577.34 | 5,573.53 | 0.79 | 0.03 | -0.79 | |
| 11,434.00 | 90.13 | 270.930 | 6,144.38 | 511.30 | -5,668.33 | 5,664.52 | 2.39 | 1.66 | 1.73 | |
| 11,526.00 | 89.97 | 270.650 | 6,144.30 | 512.57 | -5,760.32 | 5,756.50 | 0.35 | -0.17 | -0.30 | |
| 11,616.00 | 91.04 | 271.210 | 6,143.51 | 514.03 | -5,850.31 | 5,846.47 | 1.34 | 1.19 | 0.62 | |
| 11,708.00 | 89.66 | 271.050 | 6,142.95 | 515.84 | -5,942.28 | 5,938.43 | 1.51 | -1.50 | -0.17 | |
| 11,800.00 | 88.96 | 269.060 | 6,144.05 | 515.93 | -6,034.27 | 6,030.42 | 2.29 | -0.76 | -2.16 | |
| 11,891.00 | 90.57 | 266.660 | 6,144.43 | 512.53 | -6,125.20 | 6,121.36 | 3.18 | 1.77 | -2.64 | |
| 11,982.00 | 90.17 | 266.730 | 6,143.84 | 507.29 | -6,216.05 | 6,212.25 | 0.45 | -0.44 | 0.08 | |
| 12,074.00 | 89.20 | 268.560 | 6,144.34 | 503.51 | -6,307.96 | 6,304.19 | 2.25 | -1.05 | 1.99 | |
| 12,166.00 | 91.04 | 270.670 | 6,144.15 | 502.89 | -6,399.95 | 6,396.18 | 3.04 | 2.00 | 2.29 | |
| 12,257.00 | 89.63 | 271.260 | 6,143.62 | 504.42 | -6,490.93 | 6,487.15 | 1.68 | -1.55 | 0.65 | |
| 12,348.00 | 88.36 | 269.290 | 6,145.22 | 504.86 | -6,581.91 | 6,578.12 | 2.58 | -1.40 | -2.16 | |
| 12,440.00 | 90.20 | 269.880 | 6,146.37 | 504.19 | -6,673.90 | 6,670.11 | 2.10 | 2.00 | 0.64 | |
| 12,531.00 | 90.84 | 268.450 | 6,145.55 | 502.87 | -6,764.88 | 6,761.10 | 1.72 | 0.70 | -1.57 | |
| 12,623.00 | 91.34 | 268.840 | 6,143.80 | 500.69 | -6,856.84 | 6,853.07 | 0.69 | 0.54 | 0.42 | |
| 12,714.00 | 91.71 | 268.000 | 6,141.37 | 498.18 | -6,947.77 | 6,944.02 | 1.01 | 0.41 | -0.92 | |
| 12,806.00 | 90.20 | 269.250 | 6,139.84 | 495.97 | -7,039.73 | 7,035.99 | 2.13 | -1.64 | 1.36 | |
| 12,898.00 | 90.64 | 270.720 | 6,139.17 | 495.95 | -7,131.72 | 7,127.98 | 1.67 | 0.48 | 1.60 | |
| 12,989.00 | 90.67 | 269.790 | 6,138.13 | 496.36 | -7,222.71 | 7,218.97 | 1.02 | 0.03 | -1.02 | |

| | | | |
|------------------|--------------------------------|-------------------------------------|---|
| Company: | Bill Barrett Corp. | Local Co-ordinate Reference: | Well Kunsemiller 5-61-20-0801B2 |
| Project: | Weld County, CO NAD 83 | TVD Reference: | GL 4637.6' & KB 16.5' @ 4654.10ft (Cade 24) |
| Site: | Kunsemiller 5-61-20_19NW21 Pad | MD Reference: | GL 4637.6' & KB 16.5' @ 4654.10ft (Cade 24) |
| Well: | Kunsemiller 5-61-20-0801B2 | 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) | |
| 13,080.00 | 90.54 | 269.430 | 6,137.17 | 495.74 | -7,313.71 | 7,309.96 | 0.42 | -0.14 | -0.40 | |
| 13,171.00 | 88.99 | 271.090 | 6,137.54 | 496.15 | -7,404.70 | 7,400.95 | 2.50 | -1.70 | 1.82 | |
| 13,263.00 | 88.16 | 271.300 | 6,139.83 | 498.07 | -7,496.65 | 7,492.88 | 0.93 | -0.90 | 0.23 | |
| 13,354.00 | 89.33 | 270.920 | 6,141.82 | 499.83 | -7,587.61 | 7,583.83 | 1.35 | 1.29 | -0.42 | |
| 13,445.00 | 91.11 | 273.790 | 6,141.47 | 503.57 | -7,678.52 | 7,674.71 | 3.71 | 1.96 | 3.15 | |
| 13,537.00 | 90.84 | 271.580 | 6,139.90 | 507.88 | -7,770.40 | 7,766.55 | 2.42 | -0.29 | -2.40 | |
| 13,628.00 | 91.27 | 271.240 | 6,138.23 | 510.12 | -7,861.35 | 7,857.49 | 0.60 | 0.47 | -0.37 | |
| 13,719.00 | 89.50 | 270.250 | 6,137.62 | 511.30 | -7,952.34 | 7,948.47 | 2.23 | -1.95 | -1.09 | |
| 13,811.00 | 89.23 | 270.450 | 6,138.64 | 511.86 | -8,044.33 | 8,040.45 | 0.37 | -0.29 | 0.22 | |
| 13,902.00 | 89.46 | 270.090 | 6,139.68 | 512.29 | -8,135.33 | 8,131.44 | 0.47 | 0.25 | -0.40 | |
| 13,993.00 | 89.77 | 270.040 | 6,140.29 | 512.39 | -8,226.32 | 8,222.44 | 0.35 | 0.34 | -0.05 | |
| 14,085.00 | 90.00 | 269.920 | 6,140.47 | 512.36 | -8,318.32 | 8,314.43 | 0.28 | 0.25 | -0.13 | |
| 14,177.00 | 90.20 | 269.700 | 6,140.31 | 512.06 | -8,410.32 | 8,406.43 | 0.32 | 0.22 | -0.24 | |
| 14,268.00 | 90.50 | 269.800 | 6,139.76 | 511.66 | -8,501.32 | 8,497.43 | 0.35 | 0.33 | 0.11 | |
| 14,359.00 | 92.18 | 270.230 | 6,137.63 | 511.68 | -8,592.29 | 8,588.40 | 1.91 | 1.85 | 0.47 | |
| 14,450.00 | 90.17 | 269.310 | 6,135.76 | 511.32 | -8,683.27 | 8,679.37 | 2.43 | -2.21 | -1.01 | |
| 14,542.00 | 90.44 | 269.020 | 6,135.27 | 509.98 | -8,775.25 | 8,771.37 | 0.43 | 0.29 | -0.32 | |
| 14,634.00 | 88.09 | 269.850 | 6,136.45 | 509.07 | -8,867.24 | 8,863.36 | 2.71 | -2.55 | 0.90 | |
| 14,725.00 | 87.92 | 269.000 | 6,139.62 | 508.16 | -8,958.17 | 8,954.30 | 0.95 | -0.19 | -0.93 | |
| 14,816.00 | 89.50 | 270.720 | 6,141.67 | 507.93 | -9,049.14 | 9,045.27 | 2.57 | 1.74 | 1.89 | |
| 14,908.00 | 89.43 | 270.410 | 6,142.53 | 508.84 | -9,141.14 | 9,137.25 | 0.35 | -0.08 | -0.34 | |
| 14,999.00 | 89.77 | 270.950 | 6,143.16 | 509.92 | -9,232.13 | 9,228.23 | 0.70 | 0.37 | 0.59 | |
| 15,091.00 | 90.44 | 271.830 | 6,143.00 | 512.15 | -9,324.10 | 9,320.18 | 1.20 | 0.73 | 0.96 | |
| 15,183.00 | 91.24 | 272.110 | 6,141.65 | 515.32 | -9,416.03 | 9,412.09 | 0.92 | 0.87 | 0.30 | |
| 15,274.00 | 91.31 | 269.720 | 6,139.62 | 516.77 | -9,506.99 | 9,503.04 | 2.63 | 0.08 | -2.63 | |
| 15,365.00 | 90.07 | 267.290 | 6,138.53 | 514.39 | -9,597.95 | 9,594.01 | 3.00 | -1.36 | -2.67 | |
| 15,457.00 | 90.50 | 268.130 | 6,138.07 | 510.72 | -9,689.87 | 9,685.96 | 1.03 | 0.47 | 0.91 | |
| 15,548.00 | 92.78 | 271.520 | 6,135.46 | 510.44 | -9,780.81 | 9,776.90 | 4.49 | 2.51 | 3.73 | |
| 15,640.00 | 89.36 | 269.220 | 6,133.75 | 511.03 | -9,872.78 | 9,868.86 | 4.48 | -3.72 | -2.50 | |
| 15,731.00 | 88.73 | 269.140 | 6,135.26 | 509.73 | -9,963.75 | 9,959.84 | 0.70 | -0.69 | -0.09 | |
| 15,822.00 | 88.16 | 268.570 | 6,137.73 | 507.91 | -10,054.70 | 10,050.80 | 0.89 | -0.63 | -0.63 | |
| 15,914.00 | 87.59 | 268.570 | 6,141.14 | 505.62 | -10,146.61 | 10,142.72 | 0.62 | -0.62 | 0.00 | |
| 16,006.00 | 88.46 | 270.180 | 6,144.31 | 504.61 | -10,238.54 | 10,234.66 | 1.99 | 0.95 | 1.75 | |
| 16,099.00 | 88.42 | 270.150 | 6,146.85 | 504.88 | -10,331.51 | 10,327.62 | 0.05 | -0.04 | -0.03 | |
| 16,194.00 | 88.86 | 271.000 | 6,149.10 | 505.84 | -10,426.48 | 10,422.58 | 1.01 | 0.46 | 0.89 | |
| 16,222.00 | 88.76 | 270.320 | 6,149.68 | 506.16 | -10,454.47 | 10,450.57 | 2.45 | -0.36 | -2.43 | |
| Last SDI MWD Survey | | | | | | | | | | |
| 16,280.00 | 88.76 | 270.320 | 6,150.94 | 506.48 | -10,512.45 | 10,508.55 | 0.00 | 0.00 | 0.00 | |
| Projection to TD | | | | | | | | | | |

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|------------------|--------------------------------|-------------------------------------|---|
| Company: | Bill Barrett Corp. | Local Co-ordinate Reference: | Well Kunsemiller 5-61-20-0801B2 |
| Project: | Weld County, CO NAD 83 | TVD Reference: | GL 4637.6' & KB 16.5' @ 4654.10ft (Cade 24) |
| Site: | Kunsemiller 5-61-20_19NW21 Pad | MD Reference: | GL 4637.6' & KB 16.5' @ 4654.10ft (Cade 24) |
| Well: | Kunsemiller 5-61-20-0801B2 | North Reference: | True |
| Wellbore: | OH | Survey Calculation Method: | Minimum Curvature |
| Design: | OH | Database: | Casper District |

| Design Annotations | | | | |
|---------------------|---------------------|-------------------|------------|------------------------------|
| Measured Depth (ft) | Vertical Depth (ft) | Local Coordinates | | Comment |
| | | +N/-S (ft) | +E/-W (ft) | |
| 800.00 | 800.00 | 0.00 | 0.00 | Casing Assumed Vertical |
| 882.00 | 882.00 | 0.50 | -0.48 | First SDI MWD Survey |
| 6,554.00 | 6,115.88 | 607.23 | -791.77 | Casing Point |
| 6,572.00 | 6,116.07 | 605.17 | -809.65 | First SDI MWD Lateral Survey |
| 16,222.00 | 6,149.68 | 506.16 | -10,454.47 | Last SDI MWD Survey |
| 16,280.00 | 6,150.94 | 506.48 | -10,512.45 | Projection to TD |

Checked By: _____ Approved By: _____ Date: _____