



ALTITUDE  
ENERGY PARTNERS

30 025 43135

State of New Mexico

I, Ryan Nelson, an authorized employee of Altitude Energy Partners, Inc.,  
have verified the Measurement While Drilling surveys performed on 11-25-2017  
through 12-16-2017, from 1,708 ft. to a depth 16,500 ft.

I certify that the data is true, correct, complete and within the limitations of the tool as  
set forth by Altitude Energy Partners, Inc. This survey was conducted at the request of

Centennial Resource Development, Inc. for the Crazy Wolf 1/2 B2MM Federal Com 1H well in  
Lea County, State of New Mexico.

Sincerely,

Ryan Nelson  
Operations Coordinator



# Survey Report

11/28/2017 15:00:00 AM

**Service Company:** Altitude Energy Partners

**Location:** Lea County

**Well:** Crazy Wolf 1/2 B2MM Federal Com 1H

**Rig:** H & P 650

**API or UWI:**

**Job Number:** AEP-1775

**State:** New Mexico

**Operating Company:** Centennial Resource Development LLC

**County:** Lea County

**Magnetic Declination:** 7.85

**Country:** United States

**Proposed Azimuth:** 270.16

**Comment:**

**North Reference:** TRUE

**Latitude:** 32° 40' 58.877N

**Longitude:** 103° 43' 27.017W

## Tie-In Data

| MD      | Inclination | Azimuth | TVD     | NS     | EW    |
|---------|-------------|---------|---------|--------|-------|
| 1451.00 | 1.50        | 166.00  | 1450.67 | -20.38 | -0.79 |

## Survey Data

| MD     | Inclination | Azimuth | TVD    | NS    | EW    | CA     | CD   | VS   | DLS  | TEMP |
|--------|-------------|---------|--------|-------|-------|--------|------|------|------|------|
| 0.00   | 0.00        | 0.00    | 0.00   | 0.00  | 0.00  | 0.00   | 0.00 | 0.00 | 0.00 |      |
| 154.75 | 0.20        | 210.70  | 134.75 | -0.20 | -0.12 | 210.70 | 0.24 | 0.12 | 0.15 |      |
| 273.39 | 0.40        | 258.10  | 253.39 | -0.47 | -0.63 | 233.57 | 0.78 | 0.63 | 0.26 |      |
| 350.48 | 0.50        | 271.60  | 330.48 | -0.51 | -1.23 | 247.42 | 1.33 | 1.23 | 0.19 |      |
| 440.17 | 0.30        | 237.80  | 420.16 | -0.63 | -1.82 | 251.02 | 1.93 | 1.82 | 0.34 |      |
| 529.83 | 0.40        | 226.70  | 509.82 | -0.97 | -2.25 | 246.74 | 2.45 | 2.24 | 0.13 |      |
| 619.54 | 0.40        | 241.70  | 599.53 | -1.33 | -2.75 | 244.21 | 3.05 | 2.75 | 0.12 |      |
| 709.20 | 0.10        | 160.30  | 689.19 | -1.55 | -3.00 | 242.66 | 3.38 | 3.00 | 0.44 |      |
| 798.85 | 0.40        | 190.40  | 778.84 | -1.93 | -3.03 | 237.47 | 3.59 | 3.02 | 0.35 |      |
| 888.48 | 0.50        | 198.90  | 868.47 | -2.61 | -3.21 | 230.91 | 4.14 | 3.21 | 0.13 |      |

|         |      |        |         |        |        |        |        |         |      |         |
|---------|------|--------|---------|--------|--------|--------|--------|---------|------|---------|
| 979.45  | 1.10 | 191.50 | 979.43  | -3.87  | -3.53  | 222.39 | 5.24   | 3.52    | 0.67 |         |
| 1069.00 | 1.90 | 188.30 | 1048.94 | -6.15  | -3.90  | 212.38 | 7.29   | 3.88    | 0.90 |         |
| 1113.76 | 2.20 | 176.20 | 1093.68 | -7.74  | -3.95  | 207.03 | 8.69   | 3.93    | 1.17 |         |
| 1158.46 | 2.40 | 167.50 | 1138.34 | -9.51  | -3.69  | 201.21 | 10.21  | 3.67    | 0.90 |         |
| 1203.23 | 2.70 | 164.30 | 1183.07 | -11.44 | -3.20  | 195.64 | 11.88  | 3.17    | 0.74 |         |
| 1248.46 | 2.70 | 171.30 | 1228.25 | -13.52 | -2.75  | 191.51 | 13.80  | 2.72    | 0.73 |         |
| 1293.26 | 2.20 | 164.70 | 1273.00 | -15.40 | -2.37  | 188.74 | 15.58  | 2.32    | 1.28 |         |
| 1338.02 | 1.80 | 167.80 | 78.84   | -16.91 | -1.99  | 186.72 | 17.03  | 1.95    | 0.93 |         |
| 1382.83 | 1.60 | 157.80 | 1362.53 | -18.18 | -1.61  | 185.05 | 18.25  | 1.56    | 0.80 |         |
| 1427.65 | 1.50 | 157.60 | 1407.33 | -19.30 | -1.15  | 183.40 | 19.33  | 1.09    | 0.22 |         |
| 1471.00 | 1.50 | 166.00 | 1450.67 | -20.38 | -0.79  | 182.23 | 20.39  | 0.74    | 0.51 |         |
| 1614.00 | 1.20 | 180.88 | 1613.62 | -24.15 | -0.30  | 180.72 | 24.15  | 0.24    | 0.28 | 86.6°F  |
| 1708.00 | 1.44 | 121.54 | 1707.60 | -25.75 | 0.69   | 178.47 | 25.76  | -0.76   | 1.41 | 93.6°F  |
| 1802.00 | 2.27 | 101.27 | 1801.55 | -26.74 | 3.52   | 172.50 | 26.97  | -3.59   | 1.11 | 93.8°F  |
| 1897.00 | 2.66 | 91.80  | 1896.46 | -27.17 | 7.57   | 164.44 | 28.21  | -7.64   | 0.59 | 93.8°F  |
| 1991.00 | 3.87 | 77.93  | 1990.31 | -26.58 | 12.85  | 154.20 | 29.52  | -12.92  | 1.53 | 97.4°F  |
| 2086.00 | 5.00 | 75.30  | 2085.02 | -24.86 | 19.99  | 141.19 | 31.90  | -20.06  | 1.21 | 97.4°F  |
| 2180.00 | 6.10 | 80.17  | 2178.58 | -22.96 | 28.87  | 128.50 | 36.89  | -28.94  | 1.27 | 97.4°F  |
| 2274.00 | 7.24 | 82.69  | 2271.95 | -21.36 | 39.67  | 118.30 | 45.05  | -39.73  | 1.25 | 101°F   |
| 2368.00 | 7.75 | 83.27  | 2365.14 | -19.86 | 51.84  | 110.96 | 55.51  | -51.90  | 0.55 | 97.4°F  |
| 2462.00 | 7.74 | 83.09  | 2458.28 | -18.36 | 64.42  | 105.91 | 66.98  | -64.47  | 0.03 | 97.4°F  |
| 2557.00 | 7.60 | 83.93  | 2552.43 | -16.92 | 77.02  | 102.39 | 78.85  | -77.06  | 0.19 | 101°F   |
| 2651.00 | 7.54 | 82.06  | 2645.62 | -15.41 | 89.31  | 99.79  | 90.63  | -89.35  | 0.27 | 97.4°F  |
| 2745.00 | 7.41 | 80.91  | 2738.82 | -13.60 | 101.40 | 97.64  | 102.31 | -101.44 | 0.21 | 101°F   |
| 2839.00 | 7.43 | 80.90  | 2832.03 | -11.69 | 113.39 | 95.88  | 113.99 | -113.42 | 0.02 | 101°F   |
| 2934.00 | 7.36 | 80.28  | 2926.24 | -9.69  | 125.45 | 94.42  | 125.82 | -125.47 | 0.11 | 104.6°F |
| 3028.00 | 7.07 | 79.73  | 3019.50 | -7.21  | 137.00 | 93.01  | 137.19 | -137.02 | 0.32 | 104.6°F |
| 3122.00 | 6.63 | 79.58  | 3112.83 | -5.19  | 148.03 | 92.01  | 148.12 | -148.04 | 0.47 | 108.3°F |
| 3216.00 | 6.04 | 78.84  | 3206.25 | -3.25  | 158.22 | 91.18  | 158.25 | -158.22 | 0.63 | 108.3°F |
| 3311.00 | 6.23 | 81.58  | 3300.71 | -1.53  | 168.22 | 90.52  | 168.23 | -168.22 | 0.37 | 111.9°F |
| 3405.00 | 6.86 | 89.23  | 3394.10 | -0.71  | 178.88 | 90.23  | 178.88 | -178.88 | 1.14 | 108.3°F |
| 3499.00 | 7.17 | 93.56  | 3487.40 | -1.00  | 190.35 | 90.30  | 190.35 | -190.35 | 0.65 | 108.3°F |
| 3593.00 | 6.72 | 92.90  | 3580.71 | -1.64  | 201.69 | 90.47  | 201.70 | -201.70 | 0.49 | 108.3°F |
| 3688.00 | 6.38 | 92.73  | 3675.09 | -2.17  | 212.52 | 90.59  | 212.53 | -212.52 | 0.36 | 104.6°F |

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|         |      |       |         |        |        |       |        |         |      |         |
|---------|------|-------|---------|--------|--------|-------|--------|---------|------|---------|
| 3782.00 | 6.56 | 91.97 | 3768.49 | -2.61  | 223.10 | 90.67 | 223.12 | -223.11 | 0.21 | 108.3°F |
| 3876.00 | 7.23 | 89.68 | 3861.81 | -2.76  | 234.38 | 90.67 | 234.40 | -234.39 | 0.77 | 108.3°F |
| 3970.00 | 7.46 | 91.12 | 3955.04 | -2.84  | 246.40 | 90.66 | 246.41 | -246.40 | 0.31 | 108.3°F |
| 4064.00 | 7.17 | 91.39 | 4048.27 | -3.11  | 258.36 | 90.69 | 258.38 | -258.37 | 0.31 | 108.3°F |
| 4159.00 | 6.68 | 90.90 | 4142.58 | -3.34  | 269.81 | 90.71 | 269.84 | -269.82 | 0.52 | 108.3°F |
| 4253.00 | 6.26 | 93.67 | 4235.98 | -3.75  | 280.40 | 90.77 | 280.42 | -280.41 | 0.56 | 108.3°F |
| 4347.00 | 6.62 | 91.53 | 4329.39 | -4.22  | 290.93 | 90.83 | 290.96 | -290.94 | 0.46 | 108.3°F |
| 4441.00 | 6.73 | 92.33 | 4422.75 | -4.59  | 301.85 | 90.87 | 301.88 | -301.86 | 0.15 | 108.3°F |
| 4536.00 | 7.43 | 91.71 | 4517.02 | -5.00  | 313.55 | 90.91 | 313.59 | -313.56 | 0.74 | 108.3°F |
| 4630.00 | 7.74 | 88.94 | 4610.20 | -5.07  | 325.95 | 90.89 | 325.99 | -325.96 | 0.51 | 111.9°F |
| 4724.00 | 7.27 | 90.86 | 4703.40 | -5.04  | 338.23 | 90.85 | 338.27 | -338.24 | 0.57 | 108.3°F |
| 4818.00 | 7.11 | 92.72 | 4796.66 | -5.40  | 349.99 | 90.88 | 350.03 | -350.00 | 0.30 | 108.3°F |
| 4913.00 | 6.67 | 92.55 | 4890.97 | -5.93  | 361.37 | 90.94 | 361.42 | -361.39 | 0.46 | 108.3°F |
| 5008.00 | 6.24 | 95.01 | 4985.37 | -6.62  | 372.03 | 91.02 | 372.08 | -372.04 | 0.54 | 108.3°F |
| 5102.00 | 6.17 | 92.96 | 5078.82 | -7.33  | 382.16 | 91.10 | 382.23 | -382.18 | 0.25 | 111.9°F |
| 5193.00 | 5.75 | 95.14 | 5169.33 | -7.99  | 391.58 | 91.17 | 391.66 | -391.60 | 0.52 | 111.9°F |
| 5288.00 | 6.84 | 92.61 | 5263.75 | -8.68  | 401.97 | 91.24 | 402.07 | -402.00 | 1.18 | 111.9°F |
| 5382.00 | 7.49 | 92.33 | 5357.02 | -9.18  | 413.69 | 91.27 | 413.79 | -413.71 | 0.69 | 111.9°F |
| 5476.00 | 7.52 | 93.13 | 5450.21 | -9.77  | 425.95 | 91.31 | 426.06 | -425.98 | 0.12 | 111.9°F |
| 5571.00 | 7.69 | 92.12 | 5544.38 | -10.34 | 438.51 | 91.35 | 438.63 | -438.54 | 0.23 | 115.5°F |
| 5665.00 | 7.33 | 90.53 | 5637.57 | -10.63 | 450.79 | 91.35 | 450.92 | -450.82 | 0.44 | 119.1°F |
| 5759.00 | 7.12 | 89.39 | 5730.82 | -10.62 | 462.61 | 91.32 | 462.73 | -462.64 | 0.27 | 122.7°F |
| 5854.00 | 6.96 | 88.89 | 5825.11 | -10.45 | 474.25 | 91.26 | 474.37 | -474.28 | 0.18 | 122.7°F |
| 5948.00 | 6.73 | 89.26 | 5918.44 | -10.27 | 485.46 | 91.21 | 485.56 | -485.48 | 0.25 | 122.7°F |
| 6042.00 | 6.56 | 87.20 | 6011.81 | -9.93  | 496.33 | 91.15 | 496.43 | -496.35 | 0.31 | 119.1°F |
| 6136.00 | 6.47 | 87.30 | 6105.20 | -9.42  | 506.98 | 91.06 | 507.07 | -507.00 | 0.10 | 119.1°F |
| 6230.00 | 6.37 | 87.74 | 6198.61 | -8.97  | 517.48 | 90.99 | 517.56 | -517.50 | 0.12 | 122.7°F |
| 6324.00 | 6.34 | 87.77 | 6292.03 | -8.56  | 527.88 | 90.93 | 527.95 | -527.90 | 0.03 | 126.3°F |
| 6419.00 | 6.46 | 90.12 | 6386.44 | -8.36  | 538.46 | 90.89 | 538.53 | -538.48 | 0.30 | 126.3°F |
| 6513.00 | 7.63 | 94.52 | 6479.73 | -8.87  | 549.97 | 90.92 | 550.04 | -550.00 | 1.37 | 129.9°F |
| 6607.00 | 7.91 | 94.66 | 6572.87 | -9.88  | 562.64 | 91.01 | 562.73 | -562.67 | 0.30 | 129.9°F |
| 6701.00 | 8.06 | 94.53 | 6665.95 | -10.93 | 575.66 | 91.09 | 575.76 | -575.68 | 0.16 | 129.9°F |
| 6796.00 | 8.12 | 92.32 | 6760.01 | -11.73 | 589.00 | 91.14 | 589.12 | -589.03 | 0.33 | 126.3°F |
| 6890.00 | 8.23 | 91.50 | 6853.05 | -12.17 | 602.36 | 91.16 | 602.48 | -602.39 | 0.17 | 129.9°F |

|         |       |        |         |        |        |       |        |         |       |          |
|---------|-------|--------|---------|--------|--------|-------|--------|---------|-------|----------|
| 6984.00 | 7.88  | 89.08  | 6946.13 | -12.25 | 615.53 | 91.14 | 615.65 | -615.56 | 0.52  | 129.9°F  |
| 7077.00 | 8.12  | 87.92  | 7038.22 | -11.91 | 628.46 | 91.09 | 628.58 | -628.50 | 0.31  | 129.9°F  |
| 7172.00 | 7.21  | 86.46  | 7132.37 | -11.29 | 641.12 | 91.01 | 641.22 | -641.15 | 0.98  | 129.9°F  |
| 7266.00 | 7.07  | 86.24  | 7225.64 | -10.55 | 652.77 | 90.93 | 652.86 | -652.80 | 0.16  | 133.6°F  |
| 7360.00 | 6.90  | 85.88  | 7318.95 | -9.77  | 664.17 | 90.84 | 664.24 | -664.19 | 0.18  | 133.6°F  |
| 7454.00 | 6.74  | 84.46  | 7412.27 | -8.93  | 675.41 | 90.76 | 675.46 | -675.43 | 1.37  | 133.6°F  |
| 7548.00 | 6.41  | 83.90  | 7505.66 | -7.74  | 686.01 | 90.65 | 686.06 | -686.03 | 0.36  | 129.9°F  |
| 7643.00 | 6.80  | 86.94  | 7600.03 | -6.87  | 696.90 | 90.57 | 696.94 | -696.92 | 0.55  | 133.6°F  |
| 7737.00 | 6.82  | 88.90  | 7693.37 | -6.47  | 708.04 | 90.52 | 708.07 | -708.06 | 0.25  | 137.2°F  |
| 7831.00 | 6.76  | 87.01  | 7786.71 | -6.07  | 719.15 | 90.48 | 719.17 | -719.16 | 0.25  | 137.2°F  |
| 7925.00 | 7.06  | 88.19  | 7880.03 | -5.60  | 730.44 | 90.44 | 730.47 | -730.46 | 0.35  | 137.2°F  |
| 8019.00 | 6.97  | 88.35  | 7973.32 | -5.26  | 741.92 | 90.41 | 741.94 | -741.93 | 0.10  | 137.2°F  |
| 8113.00 | 6.73  | 88.78  | 8066.65 | -4.97  | 753.13 | 90.38 | 753.14 | -753.14 | 0.26  | 137.2°F  |
| 8207.00 | 6.42  | 89.46  | 8160.03 | -4.81  | 763.89 | 90.36 | 763.90 | -763.90 | 0.34  | 140.08°F |
| 8302.00 | 6.09  | 91.80  | 8254.47 | -4.92  | 774.24 | 90.36 | 774.25 | -774.25 | 0.44  | 140.08°F |
| 8396.00 | 5.95  | 93.36  | 8347.95 | -5.36  | 784.08 | 90.39 | 784.10 | -784.10 | 0.23  | 140.8°F  |
| 8490.00 | 5.09  | 94.72  | 8441.51 | -5.99  | 793.10 | 90.43 | 793.13 | -793.12 | 0.93  | 140.8°F  |
| 8585.00 | 4.55  | 94.18  | 8536.18 | -6.61  | 801.06 | 90.47 | 801.09 | -801.08 | 0.57  | 140.8°F  |
| 8679.00 | 3.78  | 89.47  | 8629.93 | -6.85  | 807.88 | 90.49 | 807.91 | -807.89 | 0.90  | 144.4°F  |
| 8774.00 | 3.47  | 88.61  | 8724.74 | -6.75  | 813.88 | 90.48 | 813.91 | -813.90 | 0.33  | 144.4°F  |
| 8868.00 | 2.35  | 85.67  | 8818.61 | -6.54  | 818.65 | 90.46 | 818.68 | -818.67 | 1.20  | 144.4°F  |
| 8962.00 | 1.31  | 103.69 | 8912.57 | -6.65  | 821.62 | 90.46 | 821.64 | -821.63 | 1.25  | 144.4°F  |
| 9033.00 | 0.63  | 98.01  | 8983.55 | -6.89  | 822.79 | 90.48 | 822.82 | -822.81 | 0.97  | 140.8°F  |
| 9087.00 | 0.23  | 113.63 | 9037.55 | -6.98  | 823.18 | 90.49 | 823.21 | -823.20 | 0.77  | 129.9°F  |
| 9150.00 | 6.11  | 265.22 | 9100.44 | -7.31  | 819.96 | 90.51 | 819.99 | -819.97 | 10.02 | 129.9°F  |
| 9182.00 | 9.59  | 266.95 | 9132.13 | -7.59  | 815.60 | 90.53 | 815.63 | -815.61 | 10.90 | 129.9°F  |
| 9229.00 | 14.62 | 271.97 | 9178.07 | -7.60  | 805.75 | 90.54 | 805.79 | -805.77 | 10.92 | 129.9°F  |
| 9276.00 | 18.41 | 274.00 | 9223.13 | -6.87  | 792.41 | 90.50 | 792.44 | -792.43 | 8.16  | 129.9°F  |
| 9323.00 | 21.25 | 279.83 | 9267.34 | -4.90  | 776.61 | 90.36 | 776.63 | -776.62 | 7.36  | 129.9°F  |
| 9370.00 | 26.45 | 277.97 | 9310.31 | -1.99  | 757.84 | 90.15 | 757.85 | -757.85 | 11.18 | 133.6°F  |
| 9417.00 | 32.58 | 277.22 | 9351.19 | 1.05   | 734.90 | 89.92 | 734.90 | -734.89 | 13.07 | 133.6°F  |
| 9464.00 | 37.12 | 277.17 | 9389.75 | 4.41   | 708.26 | 89.64 | 708.28 | -708.25 | 9.66  | 133.6°F  |
| 9511.00 | 39.67 | 274.86 | 9426.59 | 7.45   | 679.24 | 89.37 | 679.28 | -679.21 | 6.22  | 133.6°F  |
| 9558.00 | 42.38 | 272.02 | 9462.05 | 9.28   | 648.45 | 89.18 | 648.52 | -648.42 | 7.00  | 133.6°F  |



|          |       |        |         |        |          |        |         |         |       |         |
|----------|-------|--------|---------|--------|----------|--------|---------|---------|-------|---------|
| 9605.00  | 48.30 | 269.21 | 9495.07 | 9.60   | 615.04   | 89.11  | 615.12  | -615.01 | 13.29 | 133.6°F |
| 9653.00  | 54.75 | 267.99 | 9524.92 | 8.67   | 577.50   | 89.14  | 577.56  | -577.47 | 13.58 | 133.6°F |
| 9700.00  | 58.69 | 267.83 | 9550.71 | 7.23   | 538.24   | 89.23  | 538.29  | -538.22 | 8.39  | 133.6°F |
| 9747.00  | 61.92 | 267.52 | 9573.99 | 5.57   | 497.45   | 89.36  | 497.48  | -497.43 | 6.90  | 129.9°F |
| 9794.00  | 66.77 | 267.37 | 9594.33 | 3.68   | 455.14   | 89.54  | 455.15  | -455.13 | 10.32 | 133.6°F |
| 9841.00  | 71.40 | 267.67 | 9611.10 | 1.79   | 411.29   | 89.75  | 411.29  | -411.28 | 9.87  | 133.6°F |
| 9888.00  | 74.04 | 267.50 | 9625.06 | -0.10  | 366.45   | 90.02  | 366.45  | -366.45 | 5.63  | 133.6°F |
| 9935.00  | 79.74 | 266.85 | 9635.72 | -2.36  | 320.75   | 90.42  | 320.76  | -320.76 | 12.20 | 133.6°F |
| 9966.00  | 82.47 | 267.03 | 9640.51 | -4.00  | 290.17   | 90.79  | 290.20  | -290.18 | 8.83  | 129.9°F |
| 10047.00 | 87.93 | 267.38 | 9647.29 | -7.94  | 209.58   | 92.17  | 209.73  | -209.61 | 6.75  | 126.3°F |
| 10141.00 | 90.62 | 267.21 | 9648.48 | -12.37 | 115.71   | 96.10  | 116.36  | -115.74 | 2.87  | 133.6°F |
| 10235.00 | 92.52 | 267.05 | 9645.90 | -17.08 | 21.86    | 127.99 | 27.74   | -21.91  | 2.03  | 133.6°F |
| 10330.00 | 91.85 | 267.38 | 9642.28 | -21.69 | -72.96   | 253.44 | 76.11   | 72.89   | 0.79  | 137.2°F |
| 10424.00 | 90.06 | 267.70 | 9640.71 | -25.72 | -166.85  | 261.24 | 168.82  | 166.78  | 1.93  | 137.2°F |
| 10518.00 | 89.05 | 268.60 | 9641.44 | -28.76 | -260.80  | 263.71 | 262.38  | 260.72  | 1.44  | 137.2°F |
| 10612.00 | 87.76 | 269.92 | 9644.06 | -29.97 | -354.75  | 265.17 | 356.01  | 354.66  | 1.96  | 140.8°F |
| 10706.00 | 87.14 | 270.96 | 9648.24 | -29.25 | -448.65  | 266.27 | 449.60  | 448.57  | 1.29  | 140.8°F |
| 10800.00 | 89.33 | 271.17 | 9651.14 | -27.50 | -542.59  | 267.10 | 543.28  | 542.51  | 2.34  | 144.4°F |
| 10894.00 | 87.42 | 272.17 | 9653.77 | -22.78 | -636.44  | 267.95 | 636.85  | 636.38  | 2.07  | 148°F   |
| 10989.00 | 87.53 | 271.63 | 9657.99 | -21.61 | -731.36  | 268.31 | 731.68  | 731.29  | 0.58  | 133.6°F |
| 11083.00 | 89.61 | 271.72 | 9660.33 | -18.87 | -825.28  | 268.69 | 825.50  | 825.23  | 2.21  | 140.8°F |
| 11177.00 | 91.07 | 271.36 | 9659.78 | -16.34 | -919.24  | 268.98 | 919.39  | 919.20  | 1.60  | 144.4°F |
| 11271.00 | 89.89 | 270.43 | 9658.99 | -14.87 | -1013.23 | 269.16 | 1013.34 | 1013.18 | 1.60  | 144.4°F |
| 11365.00 | 90.73 | 270.04 | 9658.48 | -14.49 | -1107.22 | 269.25 | 1107.32 | 1107.18 | 0.99  | 144.4°F |
| 11459.00 | 90.95 | 270.32 | 9657.10 | -14.19 | -1201.21 | 269.32 | 1201.30 | 1201.17 | 0.38  | 144.4°F |
| 11553.00 | 91.40 | 270.05 | 9655.17 | -13.89 | -1295.19 | 269.39 | 1295.27 | 1295.15 | 0.56  | 144.4°F |
| 11647.00 | 92.24 | 269.78 | 9652.19 | -14.03 | -1389.14 | 269.42 | 1389.22 | 1389.10 | 0.94  | 151.6°F |
| 11742.00 | 92.47 | 270.06 | 9648.28 | -14.16 | -1484.06 | 269.45 | 1484.13 | 1484.02 | 0.38  | 151.6°F |
| 11836.00 | 92.30 | 270.24 | 9644.37 | -13.91 | -1577.98 | 269.49 | 1578.04 | 1577.94 | 0.26  | 151.6°F |
| 11930.00 | 91.91 | 270.72 | 9640.92 | -13.13 | -1671.91 | 269.55 | 1671.97 | 1671.87 | 0.66  | 155.2°F |
| 12023.00 | 91.80 | 270.78 | 9637.91 | -11.91 | -1764.86 | 269.61 | 1764.90 | 1764.82 | 0.13  | 155.2°F |
| 12118.00 | 91.57 | 271.18 | 9635.12 | -10.29 | -1859.80 | 269.68 | 1859.83 | 1859.77 | 0.49  | 155.2°F |
| 12212.00 | 91.46 | 271.08 | 9632.63 | -8.43  | -1953.75 | 269.75 | 1953.77 | 1953.72 | 0.16  | 158.9°F |
| 12306.00 | 91.12 | 270.72 | 9630.51 | -6.96  | -2047.72 | 269.81 | 2047.73 | 2047.69 | 0.53  | 158.9°F |

|          |       |        |         |        |          |        |         |         |      |         |
|----------|-------|--------|---------|--------|----------|--------|---------|---------|------|---------|
| 12400.00 | 90.50 | 270.33 | 9629.19 | -6.10  | -2141.70 | 269.84 | 2141.71 | 2141.68 | 0.78 | 158.9°F |
| 12494.00 | 90.90 | 270.32 | 9628.04 | -5.56  | -2235.69 | 269.86 | 2235.70 | 2235.67 | 0.43 | 158.9°F |
| 12589.00 | 90.17 | 270.42 | 9627.15 | -4.95  | -2330.69 | 269.88 | 2330.69 | 2330.66 | 0.78 | 158.9°F |
| 12683.00 | 89.78 | 270.68 | 9627.19 | -4.05  | -2424.68 | 269.90 | 2424.69 | 2424.66 | 0.50 | 158.9°F |
| 12777.00 | 91.40 | 270.86 | 9626.22 | -2.78  | -2518.66 | 269.94 | 2518.67 | 2518.65 | 1.73 | 162.5°F |
| 12871.00 | 91.35 | 270.62 | 9623.97 | -1.57  | -2612.63 | 269.97 | 2612.63 | 2612.62 | 0.26 | 158.9°F |
| 12965.00 | 91.40 | 270.36 | 9621.71 | -0.77  | -2706.60 | 269.98 | 2706.60 | 2706.59 | 0.28 | 158.9°F |
| 13059.00 | 92.47 | 270.21 | 9618.54 | -0.30  | -2800.54 | 269.99 | 2800.54 | 2800.53 | 1.15 | 162.5°F |
| 13153.00 | 92.53 | 270.20 | 9614.44 | 0.04   | -2894.45 | 270.00 | 2894.45 | 2894.44 | 0.06 | 162.5°F |
| 13247.00 | 92.24 | 269.70 | 9610.53 | -0.05  | -2988.37 | 270.00 | 2988.37 | 2988.36 | 0.61 | 162.5°F |
| 13342.00 | 92.97 | 269.58 | 9606.21 | -0.64  | -3083.27 | 269.99 | 3083.27 | 3083.26 | 0.78 | 162.5°F |
| 13436.00 | 91.96 | 269.33 | 9602.17 | -1.54  | -3177.18 | 269.97 | 3177.18 | 3177.16 | 1.11 | 162.5°F |
| 13530.00 | 92.41 | 269.40 | 9598.58 | -2.58  | -3271.10 | 269.95 | 3271.10 | 3271.08 | 0.48 | 158.9°F |
| 13625.00 | 93.26 | 268.88 | 9593.88 | -4.00  | -3365.98 | 269.93 | 3365.98 | 3365.95 | 1.05 | 158.9°F |
| 13719.00 | 93.20 | 268.89 | 9588.59 | -5.83  | -3459.81 | 269.90 | 3459.81 | 3459.78 | 0.06 | 158.9°F |
| 13813.00 | 92.92 | 268.93 | 9583.57 | -7.61  | -3553.66 | 269.88 | 3553.67 | 3553.62 | 0.30 | 140.8°F |
| 13907.00 | 92.92 | 268.71 | 9578.78 | -9.55  | -3647.52 | 269.85 | 3647.53 | 3647.47 | 0.23 | 144.4°F |
| 14001.00 | 92.13 | 269.07 | 9574.64 | -11.36 | -3741.41 | 269.83 | 3741.42 | 3741.36 | 0.92 | 148.0°F |
| 14095.00 | 90.62 | 269.47 | 9572.38 | -12.56 | -3835.37 | 269.81 | 3835.39 | 3835.32 | 1.66 | 155.2°F |
| 14189.00 | 90.34 | 269.45 | 9571.60 | -13.45 | -3929.36 | 269.80 | 3929.38 | 3929.31 | 0.30 | 158.9°F |
| 14284.00 | 89.94 | 269.56 | 9571.36 | -14.27 | -4024.36 | 269.80 | 4024.38 | 4024.30 | 0.44 | 162.5°F |
| 14365.00 | 91.40 | 269.52 | 9570.42 | -14.92 | -4105.35 | 269.79 | 4105.37 | 4105.29 | 1.80 | 144.4°F |
| 14459.00 | 93.42 | 270.47 | 9566.46 | -14.93 | -4199.26 | 269.80 | 4199.28 | 4199.20 | 2.37 | 148.0°F |
| 14553.00 | 93.08 | 269.75 | 9561.14 | -14.75 | -4293.10 | 269.80 | 4293.13 | 4293.05 | 0.85 | 151.6°F |
| 14647.00 | 94.54 | 269.96 | 9554.89 | -14.98 | -4386.89 | 269.80 | 4386.92 | 4386.83 | 1.57 | 151.6°F |
| 14741.00 | 92.30 | 271.21 | 9549.28 | -14.03 | -4480.71 | 269.82 | 4480.74 | 4480.66 | 2.73 | 151.6°F |
| 14836.00 | 91.68 | 271.31 | 9545.98 | -11.94 | -4575.63 | 269.85 | 4575.65 | 4575.58 | 0.66 | 155.2°F |
| 14930.00 | 92.86 | 270.94 | 9542.26 | -10.09 | -4669.54 | 269.88 | 4669.55 | 4669.49 | 1.32 | 155.2°F |
| 15024.00 | 91.90 | 270.99 | 9538.36 | -8.51  | -4763.44 | 269.90 | 4763.45 | 4763.40 | 1.02 | 158.9°F |
| 15118.00 | 91.29 | 270.99 | 9535.74 | -6.89  | -4857.39 | 269.92 | 4857.40 | 4857.35 | 0.65 | 158.9°F |
| 15212.00 | 93.03 | 271.23 | 9532.20 | -5.07  | -4951.30 | 269.94 | 4951.31 | 4951.27 | 1.87 | 162.5°F |
| 15306.00 | 92.58 | 271.14 | 9527.60 | -3.13  | -5045.17 | 269.96 | 5045.17 | 5045.14 | 0.49 | 162.5°F |
| 15400.00 | 94.04 | 270.88 | 9522.17 | -1.47  | -5139.00 | 269.98 | 5139.00 | 5138.97 | 1.58 | 166.0°F |
| 15495.00 | 93.48 | 271.08 | 9515.94 | 0.15   | -5233.78 | 270.00 | 5233.78 | 5233.76 | 0.63 | 166.1°F |

|          |       |        |         |       |          |        |         |         |      |         |
|----------|-------|--------|---------|-------|----------|--------|---------|---------|------|---------|
| 15588.00 | 92.41 | 271.11 | 9511.16 | 1.92  | -5326.64 | 270.02 | 5326.64 | 5326.62 | 1.15 | 158.9°F |
| 15683.00 | 93.59 | 271.22 | 9506.19 | 3.85  | -5421.49 | 270.04 | 5421.49 | 5421.48 | 1.25 | 166.1°F |
| 15778.00 | 93.76 | 271.28 | 9500.10 | 5.92  | -5516.27 | 270.06 | 5516.27 | 5516.26 | 0.19 | 162.5°F |
| 15873.00 | 94.71 | 270.76 | 9493.09 | 7.61  | -5610.99 | 270.08 | 5611.00 | 5610.99 | 1.14 | 148.0°F |
| 15967.00 | 91.18 | 271.49 | 9488.26 | 9.45  | -5704.83 | 270.09 | 5704.84 | 5704.84 | 3.83 | 151.6°F |
| 16062.00 | 90.62 | 270.72 | 9486.76 | 11.28 | -5799.80 | 270.11 | 5799.82 | 5799.81 | 1.00 | 155.2°F |
| 16156.00 | 92.07 | 271.05 | 9484.56 | 12.73 | -5893.76 | 270.12 | 5893.78 | 5893.78 | 1.58 | 158.9°F |
| 16251.00 | 91.46 | 271.18 | 9481.63 | 14.58 | -5988.70 | 270.14 | 5988.72 | 5988.72 | 0.66 | 158.9°F |
| 16345.00 | 92.02 | 270.97 | 9478.78 | 16.34 | -6082.64 | 270.15 | 6082.66 | 6082.66 | 0.64 | 158.9°F |
| 16424.00 | 93.42 | 270.68 | 9475.03 | 17.48 | -6161.54 | 270.16 | 6161.57 | 6161.57 | 1.81 | 162.5°F |
| 16500.00 | 93.42 | 270.68 | 9470.50 | 18.38 | -6237.40 | 270.17 | 6237.43 | 6237.43 | 0.00 | 162.5°F |

BIT PROJECTION





March 7, 2018

State of New Mexico Oil Conservation Division  
Attn: Ms. Karen Sharp  
1625 N. French Drive  
Hobbs, NM 88240

**HOBBS OCD**  
**MAR 12 2018**  
**RECEIVED**

Re: Crazy Wolf 1/2 B2MM Fed Com 1H

Dear Ms. Sharp,

25-43130

Enclosed in this mailing is the following documents for the above referenced well:

- C104NW
- Certified Directional Survey
- Signed As Drilled C102
- Submitted BLM Completion Report

The well log will be mailed to you as soon as it's received.

Should you need anything else for these wells, please don't hesitate to let me know.

Sincerely,

A handwritten signature in blue ink, appearing to read "Melissa Luke".

Melissa Luke

[Melissa.Luke@cdevinc.com](mailto:Melissa.Luke@cdevinc.com)