



Actual Wellpath Report
 Cortina Unit 3H AWP Proj: 19058'
 Page 1 of 12



| REFERENCE WELLPATH IDENTIFICATION | | | |
|-----------------------------------|------------------------------|----------|---------------------|
| Operator | ANTERO RESOURCES CORPORATION | Slot | Slot #09 |
| Area | Doddridge Co., WV | Well | Cortina Unit 3H |
| Field | Doddridge | Wellbore | Cortina Unit 3H AWB |
| Facility | George Scott Pad | | |

| REPORT SETUP INFORMATION | | | |
|--------------------------|------------------------------------|----------------------|---|
| Projection System | NAD27 / UTM Zone 17 North, US feet | Software System | WellArchitect® 5.1 |
| North Reference | Grid | User | Delaset |
| Scale | 0.999607 | Report Generated | 11/12/2019 at 9:31:14 AM |
| Convergence at slot | 0.17° East | Database/Source file | WA_MPL_EasternUS_Defn/Cortina_Unit_3H_AWP_Proj_19058_.xml |

| WELLPATH LOCATION | | | | | | |
|-----------------------|-------------------|----------|------------------|-----------------|------------------------|----------------|
| | Local coordinates | | Grid coordinates | | Geographic coordinates | |
| | North[ft] | East[ft] | Easting[US ft] | Northing[US ft] | Latitude | Longitude |
| Slot Location | -13.41 | 48.15 | 1715852.82 | 14274019.82 | 39°18'27.116"N | 80°43'59.936"W |
| Facility Reference Pt | | | 1715804.69 | 14274033.23 | 39°18'27.250"N | 80°44'00.548"W |
| Field Reference Pt | | | 0.00 | 0.00 | 0°00'00.000" | 85°29'19.301"W |

| WELLPATH DATUM | | | |
|--------------------------|-------------------|--|-------------------|
| Calculation method | Minimum curvature | H&P 317 (RKB) to Facility Vertical Datum | 1308.50ft |
| Horizontal Reference Pt | Slot | H&P 317 (RKB) to Mean Sea Level | 1308.50ft |
| Vertical Reference Pt | H&P 317 (RKB) | H&P 317 (RKB) to Ground Level at Slot (Slot #09) | 25.50ft |
| MD Reference Pt | H&P 317 (RKB) | Section Origin | N 0.00, E 0.00 ft |
| Field Vertical Reference | Mean Sea Level | Section Azimuth | 342.50° |

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| Area | Doddridge Co., WV | Well | Cortina Unit 3H |
| Field | Doddridge | Wellbore | Cortina Unit 3H AWB |
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| WELLPATH DATA (228 stations) † = interpolated/extrapolated station | | | | | | | | | | | | | | | | |
|--|-----------------|-------------|----------|----------------|------------|-----------|-------------------|--------------------|----------------|----------------|-------------------|-----------------|---------------|----------------------|---------------------|---------------------------------------|
| MD (ft) | Inclination (°) | Azimuth (°) | TVD (ft) | Vert Sect (ft) | North (ft) | East (ft) | Grid East (US ft) | Grid North (US ft) | Latitude | Longitude | Closure Dist (ft) | Closure Dir (°) | DLS (°/100ft) | Build Rate (°/100ft) | Turn Rate (°/100ft) | Comments |
| 0.00 | 0.00 | 190.770 | 0.00 | 0.00 | 0.00 | 0.00 | 1715852.82 | 14274019.82 | 39°18'27.116"N | 80°43'59.936"W | 0.00 | 0.000 | 0.00 | 0.00 | 0.00 | |
| 25.50 | 0.00 | 190.770 | 25.50 | 0.00 | 0.00 | 0.00 | 1715852.82 | 14274019.82 | 39°18'27.116"N | 80°43'59.936"W | 0.00 | 0.000 | 0.00 | 0.00 | 0.00 | |
| 50.00 | 0.28 | 190.770 | 50.00 | -0.05 | -0.06 | -0.01 | 1715852.81 | 14274019.76 | 39°18'27.115"N | 80°43'59.936"W | 0.06 | 190.770 | 1.14 | -1.14 | -690.73 | Gyrodatta MS Gyro <17-1/2">(50'-550') |
| 75.00 | 0.33 | 197.790 | 75.00 | -0.17 | -0.19 | -0.04 | 1715852.78 | 14274019.63 | 39°18'27.114"N | 80°43'59.937"W | 0.19 | 193.388 | 0.25 | 0.20 | 28.09 | |
| 100.00 | 0.34 | 182.520 | 100.00 | -0.29 | -0.33 | -0.07 | 1715852.75 | 14274019.49 | 39°18'27.113"N | 80°43'59.937"W | 0.34 | 191.951 | 0.36 | 0.04 | -61.08 | |
| 125.00 | 0.30 | 186.570 | 125.00 | -0.42 | -0.47 | -0.08 | 1715852.74 | 14274019.35 | 39°18'27.111"N | 80°43'59.937"W | 0.48 | 189.749 | 0.18 | -0.16 | 16.20 | |
| 150.00 | 0.21 | 181.350 | 150.00 | -0.53 | -0.58 | -0.09 | 1715852.73 | 14274019.24 | 39°18'27.110"N | 80°43'59.937"W | 0.59 | 188.741 | 0.37 | -0.36 | -20.88 | |
| 175.00 | 0.37 | 199.290 | 175.00 | -0.63 | -0.70 | -0.12 | 1715852.70 | 14274019.12 | 39°18'27.109"N | 80°43'59.938"W | 0.71 | 189.456 | 0.73 | 0.64 | 71.76 | |
| 200.00 | 0.36 | 190.200 | 200.00 | -0.77 | -0.86 | -0.16 | 1715852.66 | 14274018.96 | 39°18'27.108"N | 80°43'59.938"W | 0.87 | 190.432 | 0.23 | -0.04 | -36.36 | |
| 225.00 | 0.39 | 198.270 | 225.00 | -0.91 | -1.01 | -0.20 | 1715852.62 | 14274018.81 | 39°18'27.106"N | 80°43'59.939"W | 1.03 | 191.051 | 0.24 | 0.12 | -32.28 | |
| 250.00 | 0.34 | 189.030 | 250.00 | -1.04 | -1.17 | -0.24 | 1715852.58 | 14274018.65 | 39°18'27.105"N | 80°43'59.939"W | 1.19 | 191.445 | 0.31 | -0.20 | -36.96 | |
| 275.00 | 0.38 | 189.360 | 275.00 | -1.18 | -1.32 | -0.26 | 1715852.56 | 14274018.50 | 39°18'27.103"N | 80°43'59.939"W | 1.35 | 191.184 | 0.16 | 0.16 | 1.32 | |
| 300.00 | 0.34 | 195.280 | 300.00 | -1.32 | -1.48 | -0.29 | 1715852.53 | 14274018.34 | 39°18'27.101"N | 80°43'59.940"W | 1.51 | 191.286 | 0.22 | -0.16 | 23.68 | |
| 325.00 | 0.37 | 199.110 | 325.00 | -1.45 | -1.62 | -0.34 | 1715852.48 | 14274018.20 | 39°18'27.100"N | 80°43'59.940"W | 1.66 | 191.843 | 0.15 | 0.12 | 15.32 | |
| 350.00 | 0.43 | 196.320 | 349.99 | -1.59 | -1.79 | -0.38 | 1715852.44 | 14274018.03 | 39°18'27.098"N | 80°43'59.941"W | 1.83 | 192.065 | 0.34 | 0.24 | -35.16 | |
| 375.00 | 0.41 | 177.170 | 374.99 | -1.76 | -1.97 | -0.40 | 1715852.42 | 14274017.85 | 39°18'27.097"N | 80°43'59.941"W | 2.01 | 191.347 | 0.39 | -0.08 | -62.60 | |
| 400.00 | 0.43 | 196.560 | 399.99 | -1.93 | -2.15 | -0.42 | 1715852.40 | 14274017.67 | 39°18'27.095"N | 80°43'59.941"W | 2.19 | 190.998 | 0.57 | 0.08 | 77.58 | |
| 425.00 | 0.58 | 192.330 | 424.99 | -2.12 | -2.37 | -0.47 | 1715852.35 | 14274017.45 | 39°18'27.093"N | 80°43'59.942"W | 2.41 | 191.283 | 0.62 | 0.60 | -16.92 | |
| 450.00 | 0.50 | 185.630 | 449.99 | -2.33 | -2.60 | -0.51 | 1715852.31 | 14274017.22 | 39°18'27.090"N | 80°43'59.943"W | 2.65 | 191.101 | 0.41 | -0.32 | -26.80 | |
| 475.00 | 0.46 | 190.340 | 474.99 | -2.51 | -2.81 | -0.54 | 1715852.26 | 14274017.02 | 39°18'27.088"N | 80°43'59.943"W | 2.86 | 190.887 | 0.24 | -0.16 | 21.24 | |
| 500.00 | 0.50 | 196.450 | 499.99 | -2.69 | -3.01 | -0.59 | 1715852.23 | 14274016.81 | 39°18'27.086"N | 80°43'59.944"W | 3.07 | 191.086 | 0.24 | 0.16 | 22.04 | |
| 525.00 | 0.42 | 183.310 | 524.99 | -2.87 | -3.21 | -0.63 | 1715852.19 | 14274016.62 | 39°18'27.084"N | 80°43'59.944"W | 3.27 | 191.047 | 0.53 | -0.32 | -62.56 | |
| 550.00 | 0.41 | 191.840 | 549.99 | -3.03 | -3.38 | -0.65 | 1715852.17 | 14274016.44 | 39°18'27.083"N | 80°43'59.944"W | 3.45 | 190.863 | 0.25 | -0.04 | 34.12 | |
| 596.00 | 0.64 | 112.080 | 695.98 | -4.01 | -4.20 | 0.00 | 1715852.82 | 14274015.62 | 39°18'27.075"N | 80°43'59.936"W | 4.20 | 180.014 | 0.48 | 0.16 | -54.63 | APS EM <12-1/4">(550')(696'-2655') |
| 786.00 | 5.30 | 96.650 | 785.84 | -6.03 | -4.87 | 4.60 | 1715857.41 | 14274014.95 | 39°18'27.068"N | 80°43'59.878"W | 6.70 | 136.674 | 5.21 | 5.18 | -17.14 | |
| 876.00 | 7.65 | 89.430 | 875.26 | -9.47 | -5.29 | 14.72 | 1715867.53 | 14274014.53 | 39°18'27.063"N | 80°43'59.749"W | 15.64 | 109.787 | 2.76 | 2.81 | -8.02 | |
| 966.00 | 8.74 | 85.610 | 964.34 | -12.77 | -4.71 | 27.52 | 1715880.33 | 14274015.11 | 39°18'27.069"N | 80°43'59.586"W | 27.93 | 99.714 | 1.35 | 1.21 | -4.24 | |
| 1061.00 | 10.37 | 86.990 | 1058.02 | -16.55 | -3.71 | 43.26 | 1715896.06 | 14274016.11 | 39°18'27.078"N | 80°43'59.386"W | 43.42 | 94.902 | 1.73 | 1.72 | 1.45 | |
| 1156.00 | 10.19 | 87.880 | 1151.49 | -20.92 | -2.95 | 60.20 | 1715912.99 | 14274016.87 | 39°18'27.085"N | 80°43'59.170"W | 60.27 | 92.806 | 0.25 | -0.19 | 0.94 | |
| 1251.00 | 9.50 | 89.240 | 1245.09 | -25.40 | -2.54 | 76.43 | 1715929.22 | 14274017.29 | 39°18'27.089"N | 80°43'58.964"W | 76.48 | 91.900 | 0.77 | -0.73 | 1.43 | |

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| WELLPATH DATA (228 stations) | | | | | | | | | | | | | | | | |
|------------------------------|-----------------|-------------|----------|----------------|------------|-----------|-------------------|--------------------|----------------|----------------|-------------------|-----------------|---------------|----------------------|---------------------|------------------------------------|
| MD (ft) | Inclination (°) | Azimuth (°) | TVD (ft) | Vert Sect (ft) | North (ft) | East (ft) | Grid East (US ft) | Grid North (US ft) | Latitude | Longitude | Closure Dist (ft) | Closure Dir (°) | DLS (°/100ft) | Build Rate (°/100ft) | Turn Rate (°/100ft) | Comments |
| 1346.00 | 10.650 | 87.230 | 1336.83 | -29.89 | -2.01 | 93.04 | 1715945.82 | 14274017.81 | 39°18'27.093"N | 80°43'58.752"W | 93.08 | 91.238 | 1.27 | 1.21 | -2.12 | |
| 1441.00 | 11.610 | 84.290 | 1431.84 | -34.08 | -0.63 | 111.32 | 1715964.10 | 14274019.19 | 39°18'27.107"N | 80°43'58.520"W | 111.32 | 90.325 | 1.17 | 1.01 | -3.05 | |
| 1536.00 | 13.420 | 79.340 | 1524.58 | -37.34 | 2.36 | 131.67 | 1715984.44 | 14274022.18 | 39°18'27.136"N | 80°43'58.261"W | 131.69 | 88.974 | 2.21 | 1.91 | -5.21 | |
| 1630.00 | 15.730 | 75.560 | 1615.55 | -39.32 | 7.55 | 154.73 | 1716007.49 | 14274027.37 | 39°18'27.186"N | 80°43'57.967"W | 154.92 | 87.205 | 2.66 | 2.46 | -4.02 | |
| 1725.00 | 18.600 | 77.280 | 1706.31 | -41.27 | 14.10 | 181.99 | 1716034.74 | 14274033.92 | 39°18'27.250"N | 80°43'57.620"W | 182.53 | 85.569 | 3.07 | 3.02 | 1.81 | |
| 1820.00 | 20.900 | 78.130 | 1795.72 | -44.20 | 20.93 | 213.35 | 1716066.09 | 14274040.74 | 39°18'27.317"N | 80°43'57.221"W | 214.38 | 84.398 | 2.44 | 2.42 | 0.85 | |
| 1915.00 | 22.990 | 80.380 | 1883.83 | -48.41 | 27.51 | 248.23 | 1716100.95 | 14274047.32 | 39°18'27.381"N | 80°43'56.777"W | 249.75 | 83.676 | 2.37 | 2.20 | 2.37 | |
| 2010.00 | 22.860 | 80.310 | 1971.33 | -53.46 | 33.72 | 284.71 | 1716137.42 | 14274053.53 | 39°18'27.441"N | 80°43'56.313"W | 286.70 | 83.246 | 0.14 | -0.14 | -0.07 | |
| 2104.00 | 22.060 | 82.270 | 2058.20 | -58.93 | 39.17 | 320.20 | 1716172.90 | 14274058.97 | 39°18'27.494"N | 80°43'55.861"W | 322.59 | 83.026 | 1.17 | -0.85 | 2.09 | |
| 2199.00 | 23.030 | 86.950 | 2145.35 | -66.60 | 42.55 | 356.44 | 1716209.12 | 14274062.36 | 39°18'27.526"N | 80°43'55.400"W | 358.97 | 83.192 | 2.15 | 1.02 | 4.93 | |
| 2294.00 | 22.660 | 88.720 | 2233.49 | -76.35 | 43.95 | 393.29 | 1716245.96 | 14274063.76 | 39°18'27.539"N | 80°43'54.931"W | 395.74 | 83.623 | 0.82 | -0.39 | 1.86 | |
| 2389.00 | 20.410 | 86.650 | 2321.86 | -85.51 | 45.33 | 428.13 | 1716280.78 | 14274065.13 | 39°18'27.552"N | 80°43'54.488"W | 430.52 | 83.956 | 2.50 | -2.37 | -2.18 | |
| 2484.00 | 19.680 | 83.520 | 2411.11 | -92.62 | 48.10 | 460.56 | 1716313.20 | 14274067.90 | 39°18'27.578"N | 80°43'54.075"W | 463.07 | 84.037 | 1.37 | -0.77 | -3.25 | |
| 2579.00 | 21.670 | 80.180 | 2499.99 | -98.02 | 52.90 | 493.75 | 1716346.37 | 14274072.70 | 39°18'27.624"N | 80°43'53.653"W | 496.57 | 83.885 | 2.43 | 2.04 | -3.52 | |
| 2655.00 | 23.400 | 78.290 | 2570.18 | -101.42 | 58.36 | 522.35 | 1716374.97 | 14274078.15 | 39°18'27.678"N | 80°43'53.289"W | 525.60 | 83.625 | 2.47 | 2.28 | -2.49 | |
| 2739.00 | 24.160 | 73.190 | 2647.06 | -103.31 | 66.71 | 555.14 | 1716407.74 | 14274086.51 | 39°18'27.759"N | 80°43'52.871"W | 559.14 | 83.147 | 2.61 | 0.90 | -6.07 | APS EM <8-3/4"> (2655)(2739-5211') |
| 2834.00 | 23.230 | 77.560 | 2734.05 | -105.19 | 76.37 | 592.05 | 1716444.64 | 14274096.16 | 39°18'27.854"N | 80°43'52.401"W | 596.96 | 82.850 | 2.09 | -0.95 | 4.60 | |
| 2929.00 | 23.630 | 85.250 | 2821.24 | -111.05 | 81.99 | 629.33 | 1716481.90 | 14274101.78 | 39°18'27.908"N | 80°43'51.927"W | 634.65 | 82.577 | 3.24 | 0.42 | 8.04 | |
| 3026.00 | 23.850 | 89.730 | 2910.04 | -121.15 | 83.69 | 668.32 | 1716520.87 | 14274103.48 | 39°18'27.924"N | 80°43'51.431"W | 673.54 | 82.862 | 1.87 | 0.23 | 4.62 | |
| 3121.00 | 23.120 | 85.420 | 2997.18 | -131.01 | 85.27 | 706.12 | 1716558.66 | 14274105.06 | 39°18'27.938"N | 80°43'50.950"W | 711.25 | 83.114 | 1.96 | -0.77 | -4.54 | |
| 3216.00 | 21.280 | 89.500 | 3085.14 | -140.22 | 86.91 | 741.96 | 1716594.48 | 14274106.70 | 39°18'27.953"N | 80°43'50.494"W | 747.03 | 83.319 | 2.53 | -1.94 | 4.25 | |
| 3311.00 | 20.000 | 86.460 | 3174.04 | -149.18 | 88.06 | 775.41 | 1716627.92 | 14274107.85 | 39°18'27.964"N | 80°43'50.068"W | 780.40 | 83.521 | 1.76 | -1.35 | -3.20 | |
| 3406.00 | 20.630 | 87.810 | 3263.13 | -157.52 | 89.71 | 808.35 | 1716660.85 | 14274109.49 | 39°18'27.979"N | 80°43'49.649"W | 813.31 | 83.668 | 0.83 | 0.66 | 1.42 | |
| 3501.00 | 19.850 | 90.820 | 3352.27 | -167.01 | 90.12 | 841.20 | 1716693.69 | 14274109.90 | 39°18'27.982"N | 80°43'49.231"W | 846.02 | 83.885 | 1.37 | -0.82 | 3.17 | |
| 3516.00 | 21.880 | 80.330 | 3441.03 | -177.50 | 89.78 | 875.03 | 1716727.51 | 14274109.57 | 39°18'27.978"N | 80°43'48.801"W | 879.63 | 84.142 | 2.14 | 2.14 | -0.52 | |
| 3690.00 | 23.460 | 90.080 | 3527.77 | -188.52 | 89.66 | 911.26 | 1716763.72 | 14274109.44 | 39°18'27.975"N | 80°43'48.340"W | 915.66 | 84.381 | 1.68 | 1.68 | -0.27 | |
| 3785.00 | 22.590 | 85.490 | 3615.20 | -198.33 | 91.06 | 948.37 | 1716800.81 | 14274110.85 | 39°18'27.988"N | 80°43'47.868"W | 952.73 | 84.515 | 2.10 | -0.92 | -4.83 | |
| 3880.00 | 20.980 | 89.500 | 3703.42 | -207.41 | 92.85 | 983.57 | 1716836.00 | 14274112.43 | 39°18'28.003"N | 80°43'47.420"W | 987.92 | 84.619 | 2.31 | -1.65 | 4.22 | |
| 3975.00 | 20.250 | 86.060 | 3792.34 | -216.23 | 93.93 | 1016.98 | 1716869.39 | 14274113.71 | 39°18'28.015"N | 80°43'46.995"W | 1021.31 | 84.723 | 1.49 | -0.77 | -3.62 | |
| 4070.00 | 20.890 | 84.220 | 3881.29 | -223.53 | 96.76 | 1050.23 | 1716902.64 | 14274116.54 | 39°18'28.042"N | 80°43'46.572"W | 1054.68 | 84.736 | 0.96 | 0.67 | -1.94 | |

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| Field | Doddridge | Wellbore | Cortina Unit 3H AWB |
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WELLPATH DATA (228 stations)

| MD (ft) | Inclination (°) | Azimuth (°) | TVD (ft) | Vert Sact (ft) | North (ft) | East (ft) | Grid East (US ft) | Grid North (US ft) | Latitude | Longitude | Closure Dist (ft) | Closure Dir (°) | DLS (°/100ft) | Build Rate (°/100ft) | Turn Rate (°/100ft) | Comments |
|---------|-----------------|-------------|----------|----------------|------------|-----------|-------------------|--------------------|----------------|----------------|-------------------|-----------------|---------------|----------------------|---------------------|--|
| 4165.00 | 22.250 | 83.500 | 3969.63 | -230.40 | 100.50 | 1084.95 | 1716937.34 | 14274120.28 | 39°18'28.078"N | 80°43'46.130"W | 1089.60 | 84.708 | 1.46 | 1.43 | -0.70 | |
| 4259.00 | 21.980 | 85.060 | 4056.72 | -237.62 | 104.03 | 1120.16 | 1716972.54 | 14274123.81 | 39°18'28.111"N | 80°43'45.682"W | 1124.98 | 84.694 | 0.89 | -0.29 | -1.66 | |
| 4354.00 | 21.110 | 83.740 | 4145.08 | -244.82 | 107.43 | 1154.88 | 1717007.24 | 14274127.21 | 39°18'28.144"N | 80°43'45.240"W | 1159.87 | 84.686 | 1.05 | -0.92 | -1.39 | |
| 4449.00 | 20.450 | 83.870 | 4233.90 | -251.43 | 111.07 | 1188.39 | 1717040.74 | 14274130.84 | 39°18'28.179"N | 80°43'44.813"W | 1193.57 | 84.661 | 0.70 | -0.69 | 0.14 | |
| 4544.00 | 21.570 | 86.140 | 4322.58 | -258.82 | 114.01 | 1222.31 | 1717074.65 | 14274133.79 | 39°18'28.207"N | 80°43'44.382"W | 1227.62 | 84.671 | 1.46 | 1.18 | 2.39 | |
| 4639.00 | 21.820 | 90.590 | 4410.86 | -268.42 | 116.01 | 1257.39 | 1717109.72 | 14274134.78 | 39°18'28.216"N | 80°43'43.935"W | 1262.64 | 84.774 | 1.75 | 0.28 | 4.68 | |
| 4734.00 | 19.570 | 84.120 | 4499.73 | -277.11 | 116.48 | 1290.88 | 1717143.19 | 14274136.23 | 39°18'28.229"N | 80°43'43.509"W | 1296.13 | 84.845 | 3.37 | -2.37 | -6.81 | |
| 4829.00 | 20.690 | 84.090 | 4588.93 | -283.69 | 119.81 | 1323.40 | 1717175.70 | 14274139.59 | 39°18'28.261"N | 80°43'43.096"W | 1328.82 | 84.827 | 1.18 | 1.18 | -0.03 | |
| 4924.00 | 22.340 | 90.360 | 4677.32 | -292.60 | 121.43 | 1358.16 | 1717210.44 | 14274141.20 | 39°18'28.276"N | 80°43'42.653"W | 1363.58 | 84.891 | 2.98 | 1.74 | 6.60 | |
| 5021.00 | 23.360 | 90.950 | 4766.71 | -304.34 | 120.99 | 1395.82 | 1717248.09 | 14274140.77 | 39°18'28.271"N | 80°43'42.174"W | 1401.06 | 85.046 | 1.08 | 1.05 | 0.61 | |
| 5116.00 | 22.790 | 88.250 | 4854.11 | -315.29 | 121.24 | 1433.05 | 1717285.30 | 14274141.02 | 39°18'28.272"N | 80°43'41.701"W | 1438.17 | 85.164 | 1.27 | -0.60 | -2.84 | |
| 5211.00 | 22.310 | 85.390 | 4941.85 | -324.31 | 123.26 | 1469.41 | 1717321.65 | 14274143.03 | 39°18'28.291"N | 80°43'41.238"W | 1474.57 | 85.205 | 1.26 | -0.51 | -3.02 | |
| 5255.00 | 21.560 | 80.430 | 4982.66 | -327.28 | 125.28 | 1485.71 | 1717337.94 | 14274145.05 | 39°18'28.310"N | 80°43'41.030"W | 1490.98 | 85.180 | 4.53 | -1.70 | -11.25 | PH AT Curve <8-1/2">(5211)(5255-19034) |
| 5351.00 | 22.740 | 82.520 | 5071.58 | -332.95 | 130.62 | 1521.50 | 1717373.72 | 14274150.39 | 39°18'28.362"N | 80°43'40.575"W | 1527.10 | 85.093 | 1.48 | 1.23 | 2.18 | |
| 5446.00 | 23.530 | 82.300 | 5158.94 | -339.37 | 135.56 | 1558.50 | 1717410.70 | 14274155.32 | 39°18'28.410"N | 80°43'40.104"W | 1564.38 | 85.029 | 0.84 | 0.83 | -0.23 | |
| 5541.00 | 21.630 | 85.430 | 5246.66 | -346.52 | 139.49 | 1594.75 | 1717446.94 | 14274159.26 | 39°18'28.448"N | 80°43'39.643"W | 1600.84 | 85.001 | 2.37 | -2.00 | 3.29 | |
| 5635.00 | 23.020 | 88.040 | 5333.61 | -355.32 | 141.50 | 1630.39 | 1717482.57 | 14274161.26 | 39°18'28.467"N | 80°43'39.189"W | 1636.52 | 85.040 | 1.82 | 1.48 | 2.78 | |
| 5730.00 | 23.000 | 91.710 | 5421.06 | -366.40 | 141.58 | 1667.51 | 1717519.67 | 14274161.35 | 39°18'28.466"N | 80°43'38.717"W | 1673.51 | 85.147 | 1.51 | -0.02 | 3.86 | |
| 5825.00 | 21.840 | 91.760 | 5508.87 | -378.34 | 140.49 | 1703.72 | 1717555.87 | 14274160.25 | 39°18'28.454"N | 80°43'38.256"W | 1709.51 | 85.286 | 1.22 | -1.22 | 0.05 | |
| 5920.00 | 21.880 | 92.420 | 5597.05 | -390.19 | 139.20 | 1739.06 | 1717591.19 | 14274158.96 | 39°18'28.441"N | 80°43'37.807"W | 1744.62 | 85.424 | 0.26 | 0.02 | 0.65 | |
| 6014.00 | 21.680 | 90.750 | 5684.35 | -401.59 | 138.23 | 1773.90 | 1717626.02 | 14274158.00 | 39°18'28.430"N | 80°43'37.364"W | 1779.28 | 85.544 | 0.69 | -0.15 | -1.75 | |
| 6109.00 | 22.060 | 88.940 | 5772.51 | -412.13 | 138.33 | 1809.29 | 1717661.39 | 14274158.10 | 39°18'28.430"N | 80°43'36.914"W | 1814.57 | 85.628 | 0.81 | 0.40 | -1.91 | |
| 6204.00 | 21.910 | 86.350 | 5860.60 | -421.43 | 139.79 | 1844.81 | 1717696.90 | 14274159.55 | 39°18'28.443"N | 80°43'36.462"W | 1850.10 | 85.667 | 1.03 | -0.16 | -2.73 | |
| 6299.00 | 21.590 | 85.710 | 5948.84 | -429.66 | 142.22 | 1879.93 | 1717732.01 | 14274161.99 | 39°18'28.466"N | 80°43'36.015"W | 1885.30 | 85.674 | 0.42 | -0.34 | -0.67 | |
| 6394.00 | 21.770 | 86.360 | 6037.12 | -437.88 | 144.65 | 1914.94 | 1717767.00 | 14274164.41 | 39°18'28.489"N | 80°43'35.569"W | 1920.40 | 85.680 | 0.32 | 0.19 | 0.68 | |
| 6489.00 | 21.640 | 86.680 | 6125.39 | -446.39 | 146.78 | 1950.01 | 1717802.06 | 14274166.55 | 39°18'28.509"N | 80°43'35.123"W | 1955.53 | 85.695 | 0.19 | -0.14 | 0.34 | |
| 6584.00 | 21.770 | 87.300 | 6213.65 | -455.18 | 148.63 | 1985.09 | 1717837.13 | 14274168.39 | 39°18'28.526"N | 80°43'34.677"W | 1990.65 | 85.718 | 0.28 | 0.14 | 0.65 | |
| 6678.00 | 20.460 | 72.450 | 6301.40 | -459.62 | 154.41 | 2018.20 | 1717870.22 | 14274174.17 | 39°18'28.583"N | 80°43'34.255"W | 2024.09 | 85.625 | 5.84 | -1.39 | -15.80 | |
| 6773.00 | 20.140 | 54.800 | 6390.58 | -454.63 | 168.86 | 2047.42 | 1717899.43 | 14274188.61 | 39°18'28.724"N | 80°43'33.883"W | 2054.37 | 85.285 | 6.43 | -0.34 | -18.54 | |
| 6868.00 | 21.790 | 40.880 | 6479.35 | -440.40 | 191.63 | 2072.34 | 1717924.34 | 14274211.37 | 39°18'28.949"N | 80°43'33.565"W | 2081.18 | 84.717 | 5.51 | 1.74 | -14.85 | |

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Actual Wellpath Report
Cortina Unit 3H AWP Proj: 19058'
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| REFERENCE WELLPATH IDENTIFICATION | | | |
|-----------------------------------|------------------------------|----------|---------------------|
| Operator | ANTERO RESOURCES CORPORATION | Slot | Slot #09 |
| Area | Doddridge Co., WV | Well | Cortina Unit 3H |
| Field | Doddridge | Wellbore | Cortina Unit 3H AWB |
| Facility | George Scott Pad | | |

| WELLPATH DATA (228 stations) † = Interpolated/extrapolated station | | | | | | | | | | | | | | | | |
|--|-----------------|-------------|----------|----------------|------------|-----------|-------------------|--------------------|----------------|----------------|-------------------|-----------------|---------------|----------------------|---------------------|-------------------------|
| MD (ft) | Inclination (°) | Azimuth (°) | TVD (ft) | Vert Sect (ft) | North (ft) | East (ft) | Grid East (US ft) | Grid North (US ft) | Latitude | Longitude | Closure Dist (ft) | Closure Dir (°) | DLS (°/100ft) | Build Rate (°/100ft) | Turn Rate (°/100ft) | Comments |
| 8963.00 | 25.240 | 24.550 | 6568.54 | -416.09 | 223.43 | 2092.32 | 1717944.32 | 14274243.16 | 39°18'29.263"N | 80°43'33.310"W | 2104.22 | 83.905 | 7.73 | 8.83 | -17.19 | |
| 7057.00 | 30.420 | 12.200 | 6649.71 | -380.48 | 264.98 | 2105.70 | 1717957.69 | 14274284.70 | 39°18'28.673"N | 80°43'33.138"W | 2122.31 | 82.828 | 8.22 | 5.51 | -13.14 | |
| 7152.00 | 36.710 | 2.880 | 6728.88 | -332.89 | 316.93 | 2112.22 | 1717964.20 | 14274336.63 | 39°18'30.186"N | 80°43'33.053"W | 2135.87 | 81.467 | 8.54 | 6.62 | -9.81 | |
| 7162.00† | 37.463 | 1.990 | 6736.86 | -327.22 | 322.96 | 2112.48 | 1717964.46 | 14274342.65 | 39°18'30.246"N | 80°43'33.049"W | 2137.02 | 81.308 | 9.25 | 7.53 | -8.90 | Middlesex: 7162' MD |
| 7247.00 | 44.090 | 355.500 | 6801.22 | -273.96 | 378.36 | 2111.05 | 1717963.04 | 14274398.03 | 39°18'30.793"N | 80°43'33.065"W | 2144.69 | 79.839 | 9.25 | 7.80 | -7.64 | |
| 7342.00 | 52.050 | 351.820 | 6864.66 | -204.67 | 448.51 | 2103.11 | 1717955.10 | 14274468.15 | 39°18'31.487"N | 80°43'33.164"W | 2150.41 | 77.961 | 8.86 | 8.38 | -3.87 | |
| 7372.00† | 54.563 | 350.887 | 6882.58 | -180.90 | 472.29 | 2099.50 | 1717951.49 | 14274491.92 | 39°18'31.722"N | 80°43'33.209"W | 2151.96 | 77.322 | 8.74 | 8.38 | -3.11 | Burkett: 7372' MD |
| 7425.00† | 59.019 | 349.373 | 6911.61 | -136.96 | 515.96 | 2091.88 | 1717943.87 | 14274535.58 | 39°18'32.154"N | 80°43'33.304"W | 2154.57 | 76.145 | 8.74 | 8.41 | -2.80 | Tully: 7425' MD |
| 7437.00 | 60.030 | 349.050 | 6917.69 | -126.69 | 526.12 | 2089.95 | 1717941.94 | 14274545.73 | 39°18'32.254"N | 80°43'33.328"W | 2155.15 | 75.870 | 8.74 | 8.43 | -2.69 | |
| 7531.00 | 67.930 | 346.870 | 6958.90 | -42.67 | 608.65 | 2072.29 | 1717924.29 | 14274628.23 | 39°18'33.070"N | 80°43'33.650"W | 2159.82 | 73.632 | 8.66 | 8.40 | -2.32 | |
| 7578.00 | 72.050 | 347.200 | 6974.98 | 1.35 | 651.68 | 2062.38 | 1717914.39 | 14274671.24 | 39°18'33.496"N | 80°43'33.674"W | 2162.89 | 72.464 | 8.79 | 8.77 | 0.70 | |
| 7602.00† | 73.364 | 346.648 | 6982.11 | 24.19 | 674.00 | 2057.20 | 1717909.21 | 14274693.55 | 39°18'33.717"N | 80°43'33.739"W | 2164.80 | 71.860 | 5.90 | 5.48 | -2.31 | Marcellus POE: 7602' MD |
| 7626.00 | 74.880 | 346.100 | 6988.72 | 47.21 | 696.42 | 2051.76 | 1717903.77 | 14274715.97 | 39°18'33.939"N | 80°43'33.807"W | 2168.73 | 71.251 | 5.90 | 5.48 | -2.28 | |
| 7673.00 | 77.150 | 344.830 | 7000.16 | 92.73 | 740.54 | 2040.32 | 1717892.33 | 14274760.07 | 39°18'34.375"N | 80°43'33.951"W | 2170.56 | 70.051 | 5.87 | 5.26 | -2.70 | |
| 7721.00 | 80.230 | 342.150 | 7009.57 | 139.78 | 785.66 | 2026.94 | 1717878.96 | 14274805.17 | 39°18'34.821"N | 80°43'34.120"W | 2173.88 | 68.813 | 8.43 | 6.42 | -5.58 | |
| 7768.00 | 83.370 | 341.960 | 7016.27 | 186.30 | 829.91 | 2012.61 | 1717864.63 | 14274849.40 | 39°18'35.259"N | 80°43'34.300"W | 2177.00 | 67.591 | 6.69 | 6.68 | -0.40 | |
| 7816.00 | 85.860 | 342.790 | 7020.86 | 234.07 | 875.44 | 1998.14 | 1717850.17 | 14274894.92 | 39°18'35.710"N | 80°43'34.483"W | 2181.51 | 66.340 | 5.07 | 4.77 | 1.73 | |
| 7863.00 | 88.000 | 343.790 | 7023.46 | 280.99 | 920.39 | 1984.65 | 1717836.69 | 14274939.84 | 39°18'36.154"N | 80°43'34.652"W | 2187.68 | 65.120 | 5.41 | 4.98 | 2.13 | |
| 7911.00 | 89.380 | 342.080 | 7024.56 | 328.98 | 966.26 | 1970.57 | 1717822.61 | 14274985.70 | 39°18'36.608"N | 80°43'34.830"W | 2194.72 | 63.879 | 4.58 | 2.88 | -3.56 | |
| 8006.00 | 88.920 | 341.750 | 7025.97 | 423.96 | 1056.56 | 1941.08 | 1717793.14 | 14275075.96 | 39°18'37.501"N | 80°43'35.202"W | 2210.00 | 61.440 | 0.80 | -0.48 | -0.38 | |
| 8100.00 | 88.860 | 342.060 | 7027.79 | 517.94 | 1145.89 | 1911.89 | 1717763.96 | 14275165.26 | 39°18'38.385"N | 80°43'35.569"W | 2228.99 | 59.064 | 0.34 | -0.06 | 0.33 | |
| 8195.00 | 88.920 | 340.350 | 7029.63 | 612.89 | 1235.80 | 1881.29 | 1717733.37 | 14275255.13 | 39°18'39.275"N | 80°43'35.955"W | 2250.88 | 56.699 | 1.80 | 0.06 | -1.80 | |
| 8290.00 | 89.050 | 339.910 | 7031.31 | 707.79 | 1325.13 | 1849.01 | 1717701.10 | 14275344.43 | 39°18'40.159"N | 80°43'36.363"W | 2274.82 | 54.372 | 0.48 | 0.14 | -0.46 | |
| 8384.00 | 88.800 | 340.200 | 7033.08 | 801.69 | 1413.48 | 1816.95 | 1717669.05 | 14275432.74 | 39°18'41.033"N | 80°43'36.767"W | 2302.01 | 52.119 | 0.41 | -0.27 | 0.31 | |
| 8479.00 | 88.890 | 340.340 | 7034.99 | 896.60 | 1502.88 | 1784.89 | 1717637.00 | 14275522.11 | 39°18'41.917"N | 80°43'37.172"W | 2333.34 | 49.902 | 0.18 | 0.03 | 0.19 | |
| 8574.00 | 88.680 | 340.280 | 7037.00 | 991.51 | 1592.31 | 1752.88 | 1717605.01 | 14275611.50 | 39°18'42.802"N | 80°43'37.575"W | 2368.13 | 47.748 | 0.23 | -0.22 | -0.06 | |
| 8669.00 | 88.150 | 338.160 | 7039.63 | 1086.31 | 1681.09 | 1719.20 | 1717571.34 | 14275700.25 | 39°18'43.681"N | 80°43'38.000"W | 2404.52 | 45.642 | 2.30 | -0.56 | -2.23 | |
| 8763.00 | 88.890 | 338.550 | 7042.06 | 1180.03 | 1768.43 | 1684.53 | 1717536.69 | 14275787.55 | 39°18'44.545"N | 80°43'38.438"W | 2442.34 | 43.608 | 0.89 | 0.73 | 0.41 | |
| 8858.00 | 89.200 | 339.680 | 7043.64 | 1274.85 | 1857.18 | 1650.67 | 1717502.84 | 14275876.26 | 39°18'45.423"N | 80°43'38.865"W | 2484.72 | 41.631 | 1.23 | 0.33 | 1.19 | |
| 8943.00 | 89.480 | 340.130 | 7044.74 | 1369.75 | 1946.39 | 1618.04 | 1717470.22 | 14275965.44 | 39°18'46.306"N | 80°43'39.277"W | 2531.10 | 39.737 | 0.56 | 0.29 | 0.47 | |

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Environmental Protection



Actual Wellpath Report

Cortina Unit 3H AWP Proj: 19058'
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| REFERENCE WELLPATH IDENTIFICATION | | | |
|-----------------------------------|------------------------------|----------|---------------------|
| Operator | ANTERO RESOURCES CORPORATION | Slot | Slot #09 |
| Area | Doddridge Co., WV | Well | Cortina Unit 3H |
| Field | Doddridge | Wellbore | Cortina Unit 3H AWB |
| Facility | George Scott Pad | | |

| WELLPATH DATA (228 stations) | | | | | | | | | | | | | | | | |
|------------------------------|-----------------|-------------|----------|----------------|------------|-----------|-------------------|--------------------|----------------|----------------|-------------------|-----------------|---------------|----------------------|---------------------|----------|
| MD (ft) | Inclination (°) | Azimuth (°) | TVD (ft) | Vert Sect (ft) | North (ft) | East (ft) | Grid East (US ft) | Grid North (US ft) | Latitude | Longitude | Closure Dist (ft) | Closure Dir (°) | DLS (°/100ft) | Build Rate (°/100ft) | Turn Rate (°/100ft) | Comments |
| 9048.00 | 90.000 | 341.030 | 7045.17 | 1464.69 | 2035.98 | 1586.45 | 1717438.64 | 14276055.00 | 39°18'47.192"N | 80°43'39.676"W | 2581.09 | 37.926 | 1.09 | 0.55 | 0.95 | |
| 9143.00 | 89.750 | 341.380 | 7045.38 | 1559.67 | 2125.91 | 1555.84 | 1717408.05 | 14276144.89 | 39°18'48.082"N | 80°43'40.062"W | 2634.42 | 36.198 | 0.45 | -0.26 | 0.37 | |
| 9238.00 | 90.090 | 340.480 | 7045.51 | 1654.63 | 2215.70 | 1524.80 | 1717377.02 | 14276234.64 | 39°18'48.970"N | 80°43'40.453"W | 2689.69 | 34.535 | 1.01 | 0.36 | -0.96 | |
| 9332.00 | 89.940 | 340.580 | 7045.48 | 1748.58 | 2304.32 | 1493.47 | 1717345.70 | 14276323.23 | 39°18'49.847"N | 80°43'40.848"W | 2745.97 | 32.948 | 0.19 | -0.16 | 0.11 | |
| 9427.00 | 89.820 | 342.630 | 7045.68 | 1843.56 | 2394.47 | 1463.50 | 1717315.74 | 14276413.34 | 39°18'50.739"N | 80°43'41.226"W | 2806.29 | 31.433 | 2.16 | -0.13 | 2.16 | |
| 9522.00 | 89.690 | 342.040 | 7046.09 | 1938.56 | 2484.98 | 1434.67 | 1717286.92 | 14276503.82 | 39°18'51.635"N | 80°43'41.590"W | 2869.39 | 29.999 | 0.64 | -0.14 | -0.62 | |
| 9617.00 | 90.000 | 340.150 | 7046.35 | 2033.53 | 2574.86 | 1403.89 | 1717256.15 | 14276593.66 | 39°18'52.524"N | 80°43'41.978"W | 2932.71 | 28.601 | 2.02 | 0.33 | -1.99 | |
| 9712.00 | 89.880 | 343.060 | 7046.45 | 2128.50 | 2664.99 | 1373.91 | 1717226.19 | 14276683.76 | 39°18'53.415"N | 80°43'42.356"W | 2998.30 | 27.273 | 3.07 | -0.13 | 3.06 | |
| 9806.00 | 89.860 | 344.080 | 7046.64 | 2222.49 | 2755.15 | 1347.33 | 1717199.61 | 14276773.88 | 39°18'54.307"N | 80°43'42.691"W | 3066.94 | 26.060 | 1.09 | 0.00 | 1.09 | |
| 9901.00 | 89.970 | 341.670 | 7046.77 | 2317.48 | 2845.93 | 1319.36 | 1717171.65 | 14276864.63 | 39°18'55.205"N | 80°43'43.043"W | 3136.88 | 24.872 | 2.54 | 0.08 | -2.54 | |
| 9996.00 | 89.570 | 342.170 | 7047.15 | 2412.47 | 2936.24 | 1289.87 | 1717142.18 | 14276954.90 | 39°18'56.099"N | 80°43'43.415"W | 3207.07 | 23.716 | 0.67 | -0.42 | 0.53 | |
| 10091.00 | 89.850 | 344.340 | 7047.63 | 2507.46 | 3027.21 | 1262.51 | 1717114.83 | 14277045.83 | 39°18'56.999"N | 80°43'43.759"W | 3279.92 | 22.639 | 2.30 | 0.29 | 2.28 | |
| 10186.00 | 89.320 | 344.100 | 7048.32 | 2602.41 | 3118.62 | 1236.67 | 1717089.00 | 14277137.21 | 39°18'57.903"N | 80°43'44.085"W | 3354.87 | 21.631 | 0.61 | -0.56 | -0.25 | |
| 10281.00 | 89.720 | 344.310 | 7049.11 | 2697.36 | 3210.03 | 1210.81 | 1717063.15 | 14277228.58 | 39°18'58.807"N | 80°43'44.410"W | 3430.80 | 20.666 | 0.48 | 0.42 | 0.22 | |
| 10375.00 | 89.820 | 345.800 | 7049.49 | 2791.27 | 3300.85 | 1186.57 | 1717038.92 | 14277319.36 | 39°18'59.706"N | 80°43'44.715"W | 3507.64 | 19.772 | 1.59 | 0.11 | 1.59 | |
| 10470.00 | 89.630 | 343.590 | 7049.95 | 2886.19 | 3392.47 | 1161.50 | 1717013.86 | 14277410.95 | 39°19'00.612"N | 80°43'45.031"W | 3585.80 | 18.900 | 2.33 | -0.20 | -2.33 | |
| 10565.00 | 89.890 | 343.440 | 7050.35 | 2981.17 | 3483.57 | 1134.54 | 1716986.91 | 14277502.01 | 39°19'01.513"N | 80°43'45.370"W | 3663.66 | 18.040 | 0.31 | 0.26 | -0.16 | |
| 10660.00 | 89.820 | 342.570 | 7050.60 | 3076.17 | 3574.42 | 1106.77 | 1716959.16 | 14277592.82 | 39°19'02.412"N | 80°43'45.720"W | 3741.85 | 17.204 | 0.92 | -0.06 | -0.92 | |
| 10755.00 | 89.540 | 343.250 | 7051.13 | 3171.16 | 3665.22 | 1078.86 | 1716931.25 | 14277683.59 | 39°19'03.310"N | 80°43'46.072"W | 3820.70 | 16.402 | 0.77 | -0.29 | 0.72 | |
| 10850.00 | 89.690 | 345.280 | 7051.77 | 3266.11 | 3756.65 | 1053.10 | 1716905.50 | 14277774.99 | 39°19'04.215"N | 80°43'46.396"W | 3901.47 | 15.660 | 2.14 | 0.16 | 2.14 | |
| 10945.00 | 89.910 | 345.290 | 7052.10 | 3361.00 | 3848.54 | 1028.96 | 1716881.38 | 14277866.84 | 39°19'05.123"N | 80°43'46.699"W | 3983.72 | 14.969 | 0.23 | 0.23 | 0.01 | |
| 11040.00 | 90.030 | 344.500 | 7052.15 | 3455.92 | 3940.25 | 1004.21 | 1716856.63 | 14277958.52 | 39°19'06.031"N | 80°43'47.011"W | 4066.21 | 14.298 | 0.84 | 0.13 | -0.83 | |
| 11134.00 | 89.110 | 344.540 | 7052.86 | 3549.85 | 4030.84 | 979.12 | 1716831.55 | 14278049.07 | 39°19'06.927"N | 80°43'47.327"W | 4148.05 | 13.653 | 0.98 | -0.98 | 0.04 | |
| 11229.00 | 90.120 | 346.970 | 7053.50 | 3644.69 | 4122.91 | 955.75 | 1716808.19 | 14278141.10 | 39°19'07.837"N | 80°43'47.621"W | 4232.24 | 13.051 | 2.77 | 1.06 | 2.56 | |
| 11324.00 | 89.720 | 346.590 | 7053.63 | 3739.42 | 4215.39 | 934.02 | 1716786.47 | 14278233.54 | 39°19'08.752"N | 80°43'47.894"W | 4317.63 | 12.493 | 0.58 | -0.42 | -0.40 | |
| 11419.00 | 89.750 | 347.710 | 7054.07 | 3834.11 | 4308.01 | 912.89 | 1716765.35 | 14278326.13 | 39°19'09.668"N | 80°43'48.159"W | 4403.67 | 11.964 | 1.18 | 0.03 | 1.18 | |
| 11514.00 | 90.250 | 348.870 | 7054.07 | 3928.62 | 4401.03 | 893.61 | 1716746.08 | 14278419.11 | 39°19'10.588"N | 80°43'48.401"W | 4490.84 | 11.478 | 1.33 | 0.53 | 1.22 | |
| 11608.00 | 90.370 | 346.400 | 7053.56 | 4022.24 | 4492.84 | 873.49 | 1716725.96 | 14278510.89 | 39°19'11.496"N | 80°43'48.653"W | 4576.97 | 11.002 | 2.63 | 0.13 | -2.63 | |
| 11703.00 | 89.140 | 340.610 | 7053.97 | 4117.18 | 4583.89 | 846.53 | 1716699.01 | 14278601.90 | 39°19'12.397"N | 80°43'48.993"W | 4661.40 | 10.463 | 6.23 | -1.29 | -6.09 | |
| 11798.00 | 89.200 | 339.300 | 7055.34 | 4212.07 | 4673.12 | 813.97 | 1716666.47 | 14278691.10 | 39°19'13.280"N | 80°43'49.404"W | 4743.48 | 9.881 | 1.38 | 0.06 | -1.38 | |

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Actual Wellpath Report

Cortina Unit 3H AWP Proj: 19058'
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| REFERENCE WELLPATH IDENTIFICATION | | | |
|-----------------------------------|------------------------------|----------|---------------------|
| Operator | ANTERO RESOURCES CORPORATION | Slot | Slot #09 |
| Area | Doddridge Co., WV | Well | Cortina Unit 3H |
| Field | Doddridge | Wellbore | Cortina Unit 3H AWB |
| Facility | George Scott Pad | | |

| WELLPATH DATA (228 stations) | | | | | | | | | | | | | | | | |
|------------------------------|-----------------|-------------|----------|----------------|------------|-----------|-------------------|--------------------|----------------|----------------|-------------------|-----------------|----------------|-----------------------|----------------------|----------|
| MD (ft) | Inclination (°) | Azimuth (°) | TVD (ft) | Vert Sect (ft) | North (ft) | East (ft) | Grid East (US ft) | Grid North (US ft) | Latitude | Longitude | Closure Dist (ft) | Closure Dir (°) | DLS (ft/100ft) | Build Rate (ft/100ft) | Turn Rate (ft/100ft) | Comments |
| 11893.00 | 89.350 | 341.090 | 7056.54 | 4306.99 | 4762.49 | 781.78 | 1716634.29 | 14278780.43 | 39°19'14.164"N | 80°43'45.810"W | 4826.24 | 9.322 | 1.89 | 0.16 | 1.88 | |
| 11988.00 | 89.260 | 342.760 | 7057.70 | 4401.97 | 4852.79 | 752.30 | 1716604.83 | 14278670.70 | 39°19'15.057"N | 80°43'50.182"W | 4910.76 | 8.812 | 1.75 | -0.09 | 1.75 | |
| 12063.00 | 88.980 | 340.720 | 7059.18 | 4496.95 | 4942.99 | 722.54 | 1716575.07 | 14278960.86 | 39°19'15.950"N | 80°43'50.557"W | 4995.52 | 8.316 | 2.16 | -0.29 | -2.14 | |
| 12178.00 | 88.860 | 340.710 | 7060.95 | 4591.88 | 5032.65 | 691.17 | 1716543.71 | 14279050.48 | 39°19'16.837"N | 80°43'50.953"W | 5079.89 | 7.820 | 0.13 | -0.13 | -0.01 | |
| 12272.00 | 89.910 | 341.430 | 7061.96 | 4685.85 | 5121.56 | 660.67 | 1716513.23 | 14279139.35 | 39°19'17.718"N | 80°43'51.337"W | 5163.99 | 7.350 | 1.35 | 1.12 | 0.77 | |
| 12367.00 | 89.420 | 337.410 | 7062.51 | 4780.69 | 5210.47 | 627.29 | 1716479.86 | 14279228.23 | 39°19'18.596"N | 80°43'51.759"W | 5248.10 | 6.865 | 4.26 | -0.52 | -4.23 | |
| 12462.00 | 89.420 | 336.320 | 7063.47 | 4875.22 | 5297.83 | 589.96 | 1716442.55 | 14279315.55 | 39°19'19.461"N | 80°43'52.230"W | 5330.57 | 6.354 | 1.15 | 0.00 | -1.15 | |
| 12557.00 | 89.720 | 339.630 | 7064.19 | 4969.91 | 5385.88 | 554.34 | 1716406.94 | 14279403.57 | 39°19'20.332"N | 80°43'52.680"W | 5414.33 | 5.877 | 3.50 | 0.32 | 3.48 | |
| 12652.00 | 89.480 | 341.990 | 7064.85 | 5064.86 | 5475.59 | 523.12 | 1716375.73 | 14279493.25 | 39°19'21.219"N | 80°43'53.074"W | 5500.52 | 5.457 | 2.50 | -0.25 | 2.48 | |
| 12746.00 | 89.780 | 343.010 | 7065.46 | 5158.86 | 5565.24 | 494.85 | 1716347.48 | 14279582.86 | 39°19'22.106"N | 80°43'53.430"W | 5587.20 | 5.081 | 1.13 | 0.32 | 1.08 | |
| 12841.00 | 89.570 | 336.740 | 7066.00 | 5253.71 | 5654.39 | 462.19 | 1716314.82 | 14279671.98 | 39°19'22.988"N | 80°43'53.843"W | 5673.25 | 4.673 | 6.60 | -0.22 | -6.60 | |
| 12936.00 | 90.000 | 334.110 | 7066.35 | 5347.97 | 5740.78 | 422.68 | 1716275.33 | 14279758.33 | 39°19'23.843"N | 80°43'54.342"W | 5756.32 | 4.211 | 2.81 | 0.45 | -2.77 | |
| 13031.00 | 90.370 | 340.780 | 7066.05 | 5442.55 | 5828.46 | 386.26 | 1716238.93 | 14279845.98 | 39°19'24.711"N | 80°43'54.802"W | 5841.25 | 3.792 | 7.03 | 0.39 | 7.02 | |
| 13126.00 | 90.060 | 342.260 | 7065.69 | 5537.53 | 5918.56 | 356.15 | 1716208.83 | 14279936.04 | 39°19'25.603"N | 80°43'55.182"W | 5929.27 | 3.444 | 1.59 | -0.33 | 1.56 | |
| 13221.00 | 90.120 | 340.740 | 7065.54 | 5632.52 | 6008.65 | 326.01 | 1716178.70 | 14280026.09 | 39°19'26.494"N | 80°43'55.562"W | 6017.48 | 3.106 | 1.60 | 0.06 | -1.60 | |
| 13316.00 | 89.970 | 340.240 | 7065.47 | 5727.46 | 6098.19 | 294.28 | 1716146.98 | 14280115.60 | 39°19'27.380"N | 80°43'55.963"W | 6105.29 | 2.763 | 0.55 | -0.16 | -0.53 | |
| 13411.00 | 90.060 | 342.010 | 7065.44 | 5822.43 | 6188.08 | 263.55 | 1716116.26 | 14280205.45 | 39°19'28.269"N | 80°43'56.350"W | 6193.69 | 2.439 | 1.87 | 0.09 | 1.86 | |
| 13505.00 | 90.000 | 344.260 | 7065.39 | 5916.41 | 6278.03 | 236.28 | 1716089.01 | 14280295.37 | 39°19'29.159"N | 80°43'56.694"W | 6282.48 | 2.155 | 2.39 | -0.06 | 2.39 | |
| 13600.00 | 89.680 | 345.610 | 7065.67 | 6011.33 | 6369.76 | 211.59 | 1716064.32 | 14280387.06 | 39°19'30.066"N | 80°43'57.005"W | 6373.28 | 1.903 | 1.47 | -0.36 | 1.42 | |
| 13695.00 | 90.370 | 349.270 | 7065.65 | 6105.96 | 6462.47 | 190.93 | 1716043.68 | 14280479.74 | 39°19'30.983"N | 80°43'57.264"W | 6465.29 | 1.692 | 3.92 | 0.75 | 3.89 | |
| 13790.00 | 90.220 | 349.620 | 7065.16 | 6200.26 | 6555.87 | 173.53 | 1716026.28 | 14280573.09 | 39°19'31.907"N | 80°43'57.482"W | 6558.16 | 1.516 | 0.40 | -0.16 | 0.37 | |
| 13885.00 | 90.550 | 346.690 | 7064.52 | 6294.78 | 6648.63 | 154.03 | 1716006.79 | 14280666.02 | 39°19'32.826"N | 80°43'57.726"W | 6650.61 | 1.327 | 3.10 | 0.35 | -3.08 | |
| 13980.00 | 89.780 | 344.310 | 7064.25 | 6389.65 | 6740.80 | 130.25 | 1715983.02 | 14280757.95 | 39°19'33.736"N | 80°43'58.026"W | 6742.05 | 1.107 | 2.63 | -0.81 | -2.51 | |
| 14075.00 | 89.910 | 342.420 | 7064.50 | 6484.63 | 6831.82 | 103.05 | 1715955.83 | 14280848.93 | 39°19'34.636"N | 80°43'58.368"W | 6832.59 | 0.864 | 1.99 | 0.14 | -1.99 | |
| 14169.00 | 90.220 | 343.260 | 7064.40 | 6578.63 | 6921.63 | 75.32 | 1715928.11 | 14280938.71 | 39°19'35.525"N | 80°43'58.718"W | 6922.04 | 0.623 | 0.95 | 0.33 | 0.89 | |
| 14264.00 | 90.180 | 343.850 | 7064.07 | 6673.61 | 7012.74 | 48.43 | 1715901.23 | 14281029.79 | 39°19'36.426"N | 80°43'59.057"W | 7012.91 | 0.396 | 0.62 | -0.04 | 0.62 | |
| 14359.00 | 90.120 | 340.940 | 7063.82 | 6768.60 | 7103.28 | 19.70 | 1715872.51 | 14281120.29 | 39°19'37.322"N | 80°43'59.419"W | 7103.31 | 0.159 | 3.06 | -0.06 | -3.06 | |
| 14454.00 | 90.890 | 343.160 | 7062.98 | 6863.59 | 7193.65 | -9.58 | 1715843.25 | 14281210.63 | 39°19'38.216"N | 80°43'59.788"W | 7193.66 | 359.924 | 2.47 | 0.81 | 2.34 | |
| 14549.00 | 89.480 | 338.130 | 7062.67 | 6958.50 | 7283.25 | -41.05 | 1715811.78 | 14281300.19 | 39°19'39.102"N | 80°44'00.185"W | 7283.37 | 359.677 | 5.50 | -1.48 | -5.29 | |
| 14644.00 | 90.000 | 339.290 | 7063.10 | 7053.29 | 7371.76 | -75.54 | 1715777.31 | 14281388.67 | 39°19'39.978"N | 80°44'00.621"W | 7372.15 | 359.413 | 1.34 | 0.55 | 1.22 | |

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Actual Wellpath Report

Cortina Unit 3H AWP Proj: 19058'
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REFERENCE WELLPATH IDENTIFICATION

| | | | |
|----------|------------------------------|----------|---------------------|
| Operator | ANTERO RESOURCES CORPORATION | Slot | Slot #09 |
| Area | Doddridge Co., WV | Well | Cortina Unit 3H |
| Field | Doddridge | Wellbore | Cortina Unit 3H AWB |
| Facility | George Scott Pad | | |

WELLPATH DATA (228 stations)

| MD (ft) | Inclination (°) | Azimuth (°) | TVD (ft) | Vert Sect (ft) | North (ft) | East (ft) | Grid East (US ft) | Grid North (US ft) | Latitude | Longitude | Closure Dist (ft) | Closure Dir (°) | DLS (ft/100ft) | Build Rate (ft/100ft) | Turn Rate (ft/100ft) | Comments |
|----------|-----------------|-------------|----------|----------------|------------|-----------|-------------------|--------------------|----------------|----------------|-------------------|-----------------|----------------|-----------------------|----------------------|----------|
| 14739.00 | 89.660 | 338.470 | 7063.39 | 7148.10 | 7460.38 | -109.77 | 1715743.09 | 14281477.25 | 39°19'40.855"N | 80°44'01.063"W | 7461.19 | 359.157 | 0.93 | -0.36 | -0.86 | |
| 14833.00 | 90.180 | 341.140 | 7063.52 | 7241.99 | 7548.59 | -142.22 | 1715710.66 | 14281565.43 | 39°19'41.728"N | 80°44'01.463"W | 7549.93 | 358.921 | 2.89 | 0.55 | 2.84 | |
| 14926.00 | 89.850 | 338.070 | 7063.49 | 7336.86 | 7637.63 | -175.32 | 1715677.57 | 14281654.43 | 39°19'42.609"N | 80°44'01.880"W | 7639.64 | 358.685 | 3.25 | -0.39 | -3.23 | |
| 15023.00 | 90.310 | 335.100 | 7063.36 | 7431.34 | 7724.79 | -213.07 | 1715639.83 | 14281741.56 | 39°19'43.471"N | 80°44'02.358"W | 7727.73 | 358.420 | 3.16 | 0.48 | -3.13 | |
| 15118.00 | 90.120 | 338.670 | 7063.00 | 7525.87 | 7812.15 | -250.38 | 1715602.56 | 14281828.68 | 39°19'44.336"N | 80°44'02.829"W | 7816.16 | 358.164 | 3.76 | -0.20 | -3.76 | |
| 15213.00 | 89.600 | 340.670 | 7063.23 | 7620.75 | 7901.23 | -283.36 | 1715569.57 | 14281917.92 | 39°19'45.217"N | 80°44'03.245"W | 7906.31 | 357.946 | 2.18 | -0.55 | 2.11 | |
| 15307.00 | 89.380 | 344.290 | 7064.07 | 7714.73 | 7990.85 | -311.66 | 1715541.29 | 14282007.51 | 39°19'46.104"N | 80°44'03.602"W | 7996.93 | 357.767 | 3.86 | -0.23 | 3.85 | |
| 15402.00 | 89.510 | 348.550 | 7064.99 | 7809.48 | 8083.17 | -333.96 | 1715519.00 | 14282099.79 | 39°19'47.017"N | 80°44'03.882"W | 8090.06 | 357.634 | 4.49 | 0.14 | 4.48 | |
| 15497.00 | 89.600 | 346.340 | 7065.73 | 7904.12 | 8175.89 | -354.60 | 1715498.36 | 14282192.48 | 39°19'47.934"N | 80°44'04.142"W | 8183.58 | 357.517 | 2.33 | 0.09 | -2.33 | |
| 15592.00 | 89.420 | 343.200 | 7066.54 | 7999.03 | 8267.54 | -379.56 | 1715473.41 | 14282284.09 | 39°19'48.840"N | 80°44'04.456"W | 8276.25 | 357.371 | 3.31 | -0.19 | -3.31 | |
| 15687.00 | 89.350 | 345.090 | 7067.56 | 8093.98 | 8358.91 | -405.51 | 1715447.47 | 14282375.43 | 39°19'49.744"N | 80°44'04.783"W | 8368.74 | 357.223 | 1.99 | -0.07 | 1.99 | |
| 15782.00 | 89.690 | 348.220 | 7068.36 | 8188.71 | 8451.33 | -427.43 | 1715425.56 | 14282467.81 | 39°19'50.658"N | 80°44'05.058"W | 8462.14 | 357.105 | 3.31 | 0.36 | 3.29 | |
| 15876.00 | 89.510 | 351.450 | 7069.02 | 8281.93 | 8543.84 | -444.02 | 1715408.98 | 14282560.28 | 39°19'51.573"N | 80°44'05.266"W | 8555.37 | 357.025 | 3.44 | -0.19 | 3.44 | |
| 15971.00 | 89.570 | 346.400 | 7069.78 | 8376.30 | 8637.04 | -462.26 | 1715390.74 | 14282653.45 | 39°19'52.495"N | 80°44'05.495"W | 8649.40 | 356.936 | 5.32 | 0.06 | -5.32 | |
| 16066.00 | 89.380 | 344.220 | 7070.65 | 8471.17 | 8728.93 | -486.35 | 1715366.66 | 14282745.29 | 39°19'53.404"N | 80°44'05.796"W | 8742.47 | 356.811 | 2.30 | -0.20 | -2.29 | |
| 16161.00 | 89.540 | 342.430 | 7071.54 | 8566.16 | 8819.92 | -513.61 | 1715339.42 | 14282836.26 | 39°19'54.304"N | 80°44'06.141"W | 8834.87 | 356.667 | 1.89 | 0.17 | -1.88 | |
| 16256.00 | 89.570 | 343.920 | 7072.28 | 8661.14 | 8910.85 | -541.10 | 1715311.93 | 14282927.15 | 39°19'55.203"N | 80°44'06.488"W | 8927.27 | 356.525 | 1.57 | 0.03 | 1.57 | |
| 16351.00 | 89.600 | 347.540 | 7072.97 | 8755.97 | 9002.90 | -564.51 | 1715288.53 | 14283019.16 | 39°19'56.114"N | 80°44'06.782"W | 9020.58 | 356.412 | 3.81 | 0.03 | 3.81 | |
| 16445.00 | 90.150 | 347.550 | 7073.18 | 8849.61 | 9094.69 | -584.79 | 1715268.26 | 14283110.91 | 39°19'57.022"N | 80°44'07.037"W | 9113.47 | 356.321 | 0.99 | 0.59 | 0.01 | |
| 16540.00 | 90.520 | 341.640 | 7073.82 | 8944.50 | 9186.23 | -610.01 | 1715243.05 | 14283202.42 | 39°19'57.927"N | 80°44'07.354"W | 9206.47 | 356.201 | 6.23 | 0.39 | -6.22 | |
| 16635.00 | 89.350 | 339.420 | 7072.73 | 9039.44 | 9275.80 | -641.67 | 1715211.40 | 14283291.95 | 39°19'58.813"N | 80°44'07.754"W | 9297.96 | 356.043 | 2.64 | -1.23 | -2.34 | |
| 16730.00 | 89.420 | 338.780 | 7073.75 | 9134.27 | 9364.54 | -675.56 | 1715177.53 | 14283380.66 | 39°19'59.691"N | 80°44'08.182"W | 9388.88 | 355.874 | 0.68 | 0.07 | -0.67 | |
| 16825.00 | 89.600 | 337.630 | 7074.56 | 9228.99 | 9452.74 | -710.83 | 1715142.27 | 14283468.83 | 39°20'00.564"N | 80°44'08.628"W | 9479.43 | 355.700 | 1.23 | 0.19 | -1.21 | |
| 16919.00 | 89.540 | 340.180 | 7075.27 | 9322.80 | 9540.43 | -744.66 | 1715108.45 | 14283556.48 | 39°20'01.432"N | 80°44'09.055"W | 9569.45 | 355.537 | 2.71 | -0.06 | 2.71 | |
| 17014.00 | 89.380 | 339.070 | 7076.16 | 9417.67 | 9629.49 | -777.73 | 1715075.39 | 14283645.50 | 39°20'02.313"N | 80°44'09.472"W | 9660.84 | 355.382 | 1.18 | -0.17 | -1.17 | |
| 17109.00 | 89.450 | 340.450 | 7077.13 | 9512.56 | 9718.61 | -810.60 | 1715042.54 | 14283734.59 | 39°20'03.195"N | 80°44'09.887"W | 9752.36 | 355.232 | 1.45 | 0.07 | 1.45 | |
| 17204.00 | 89.450 | 341.570 | 7078.04 | 9607.52 | 9808.44 | -841.51 | 1715011.64 | 14283824.38 | 39°20'04.083"N | 80°44'10.277"W | 9844.47 | 355.096 | 1.18 | 0.00 | 1.18 | |
| 17299.00 | 89.450 | 342.910 | 7078.95 | 9702.51 | 9898.90 | -870.48 | 1714982.66 | 14283914.81 | 39°20'04.978"N | 80°44'10.643"W | 9937.10 | 354.974 | 1.41 | 0.00 | 1.41 | |
| 17394.00 | 89.480 | 344.260 | 7079.84 | 9797.49 | 9990.02 | -897.33 | 1714955.85 | 14284005.89 | 39°20'05.880"N | 80°44'11.081"W | 10030.24 | 354.867 | 1.42 | 0.03 | 1.42 | |
| 17488.00 | 89.510 | 344.850 | 7080.67 | 9891.42 | 10080.63 | -922.36 | 1714930.82 | 14284096.46 | 39°20'06.776"N | 80°44'11.296"W | 10122.74 | 354.772 | 0.63 | 0.03 | 0.63 | |

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Actual Wellpath Report

Cortina Unit 3H AWP Proj: 19058*
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| REFERENCE WELLPATH IDENTIFICATION | | | |
|-----------------------------------|------------------------------|----------|---------------------|
| Operator | ANTERO RESOURCES CORPORATION | Slot | Slot #09 |
| Area | Doddridge Co., WV | Well | Cortina Unit 3H |
| Field | Doddridge | Wellbore | Cortina Unit 3H AWB |
| Facility | George Scott Pad | | |

| WELLPATH DATA (228 stations) | | | | | | | | | | | | | | | | |
|------------------------------|-----------------|-------------|----------|----------------|------------|-----------|-------------------|--------------------|----------------|----------------|-------------------|-----------------|---------------|----------------------|---------------------|----------------------------|
| MD (ft) | Inclination (°) | Azimuth (°) | TVD (ft) | Vert Sect (ft) | North (ft) | East (ft) | Grid East (US ft) | Grid North (US ft) | Latitude | Longitude | Closure Dist (ft) | Closure Dir (°) | DLS (°/100ft) | Build Rate (°/100ft) | Turn Rate (°/100ft) | Comments |
| 17583.00 | 89.510 | 343.080 | 7081.48 | 9986.38 | 10171.92 | -948.60 | 1714904.59 | 14284187.72 | 39°20'07.679"N | 80°44'11.627"W | 10216.06 | 354.672 | 1.86 | 0.00 | -1.86 | |
| 17678.00 | 89.480 | 340.800 | 7082.32 | 10081.37 | 10262.23 | -978.05 | 1714875.16 | 14284277.99 | 39°20'08.572"N | 80°44'11.998"W | 10308.73 | 354.556 | 2.40 | -0.03 | -2.40 | |
| 17773.00 | 89.420 | 337.620 | 7083.23 | 10176.20 | 10351.03 | -1011.76 | 1714841.46 | 14284366.76 | 39°20'09.451"N | 80°44'12.424"W | 10400.36 | 354.417 | 3.35 | -0.06 | -3.35 | |
| 17868.00 | 89.480 | 336.710 | 7084.14 | 10270.78 | 10438.58 | -1048.63 | 1714804.61 | 14284454.27 | 39°20'10.317"N | 80°44'12.890"W | 10491.12 | 354.263 | 0.96 | 0.06 | -0.96 | |
| 17963.00 | 89.510 | 341.050 | 7084.98 | 10365.56 | 10527.18 | -1082.85 | 1714770.40 | 14284542.83 | 39°20'11.194"N | 80°44'13.322"W | 10582.72 | 354.127 | 4.57 | 0.03 | 4.57 | |
| 18057.00 | 89.420 | 343.120 | 7085.86 | 10459.55 | 10618.61 | -1111.76 | 1714741.50 | 14284632.23 | 39°20'12.079"N | 80°44'13.687"W | 10674.66 | 354.022 | 2.20 | -0.10 | 2.20 | |
| 18152.00 | 89.510 | 343.630 | 7086.75 | 10554.54 | 10707.63 | -1138.94 | 1714714.33 | 14284723.22 | 39°20'12.979"N | 80°44'14.029"W | 10768.04 | 353.928 | 0.55 | 0.09 | 0.54 | |
| 18247.00 | 89.350 | 343.520 | 7087.69 | 10649.52 | 10798.75 | -1165.80 | 1714687.48 | 14284814.30 | 39°20'13.881"N | 80°44'14.368"W | 10861.50 | 353.838 | 0.20 | -0.17 | -0.12 | |
| 18342.00 | 89.510 | 341.500 | 7088.64 | 10744.51 | 10889.35 | -1194.35 | 1714658.94 | 14284904.86 | 39°20'14.777"N | 80°44'14.728"W | 10954.65 | 353.741 | 2.13 | 0.17 | -2.13 | |
| 18437.00 | 89.510 | 340.800 | 7089.45 | 10839.48 | 10979.25 | -1225.04 | 1714628.26 | 14284994.73 | 39°20'15.666"N | 80°44'15.115"W | 11047.38 | 353.633 | 0.74 | 0.00 | -0.74 | |
| 18531.00 | 89.570 | 344.270 | 7090.20 | 10933.46 | 11068.90 | -1253.25 | 1714600.07 | 14285084.34 | 39°20'16.553"N | 80°44'15.471"W | 11139.62 | 353.540 | 3.69 | 0.06 | 3.69 | |
| 18626.00 | 89.260 | 343.930 | 7091.17 | 11028.42 | 11160.26 | -1279.27 | 1714574.05 | 14285175.67 | 39°20'17.457"N | 80°44'15.799"W | 11233.34 | 353.461 | 0.48 | -0.33 | -0.36 | |
| 18721.00 | 89.510 | 340.940 | 7092.19 | 11123.40 | 11250.82 | -1307.94 | 1714545.40 | 14285266.19 | 39°20'18.353"N | 80°44'16.160"W | 11326.59 | 353.369 | 3.16 | 0.26 | -3.15 | |
| 18816.00 | 89.510 | 341.820 | 7093.01 | 11218.38 | 11340.84 | -1338.27 | 1714515.08 | 14285356.18 | 39°20'19.243"N | 80°44'16.543"W | 11419.53 | 353.270 | 0.93 | 0.00 | 0.93 | |
| 18911.00 | 89.630 | 347.080 | 7093.72 | 11313.29 | 11432.33 | -1363.73 | 1714489.63 | 14285447.63 | 39°20'20.148"N | 80°44'16.863"W | 11513.38 | 353.198 | 5.54 | 0.13 | 5.54 | |
| 19006.00 | 89.630 | 346.790 | 7094.33 | 11408.00 | 11524.87 | -1385.20 | 1714468.17 | 14285540.13 | 39°20'21.064"N | 80°44'17.133"W | 11607.81 | 353.146 | 0.31 | 0.00 | -0.31 | |
| 19034.00 | 89.600 | 347.500 | 7094.52 | 11435.91 | 11552.18 | -1391.43 | 1714461.94 | 14285567.42 | 39°20'21.333"N | 80°44'17.212"W | 11635.66 | 353.132 | 2.54 | -0.11 | 2.54 | |
| 19058.00 | 89.600 | 347.500 | 7094.69 | 11459.81 | 11575.60 | -1396.63 | 1714456.75 | 14285590.84 | 39°20'21.565"N | 80°44'17.277"W | 11659.54 | 353.120 | 0.00 | 0.00 | 0.00 | Projected MD at TD: 19058* |

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WV Department of
Environmental Protection



Actual Wellpath Report
Cortina Unit 3H AWP Proj: 19058'
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REFERENCE WELLPATH IDENTIFICATION

| | | | |
|----------|------------------------------|----------|---------------------|
| Operator | ANTERO RESOURCES CORPORATION | Slot | Slot #09 |
| Area | Doddridge Co., WV | Well | Cortina Unit 3H |
| Field | Doddridge | Wellbore | Cortina Unit 3H AWB |
| Facility | George Scott Pad | | |

HOLE & CASING SECTIONS - Ref Wellbore: Cortina Unit 3H AWB Ref Wellpath: Cortina Unit 3H AWP Proj: 19058'

| String/Diameter | Start MD (ft) | End MD (ft) | Interval (ft) | Start TVD (ft) | End TVD (ft) | Start N/S (ft) | Start E/W (ft) | End N/S (ft) | End E/W (ft) |
|-----------------------------|---------------|-------------|---------------|----------------|--------------|----------------|----------------|--------------|--------------|
| 20in Conductor | 25.50 | 105.50 | 80.00 | 25.50 | 105.50 | 0.00 | 0.00 | -0.36 | -0.07 |
| 17.5in Open Hole | 105.50 | 554.00 | 448.50 | 105.50 | 553.99 | -0.36 | -0.07 | -3.41 | -0.65 |
| 13.375in Casing Surface | 25.50 | 554.00 | 528.50 | 25.50 | 553.99 | 0.00 | 0.00 | -3.41 | -0.65 |
| 12.25in Open Hole | 554.00 | 2723.00 | 2169.00 | 553.99 | 2632.45 | -3.41 | -0.65 | 64.88 | 548.88 |
| 9.625in Casing Intermediate | 25.50 | 2664.90 | 2639.40 | 25.50 | 2579.26 | 0.00 | 0.00 | 59.18 | 526.20 |
| 8.75in Open Hole | 2723.00 | 5295.00 | 2572.00 | 2632.45 | 5019.80 | 64.88 | 548.88 | 127.63 | 1500.38 |
| 8.5in Open Hole | 5295.00 | 19058.00 | 13763.00 | 5019.80 | 7094.69 | 127.63 | 1500.38 | 11575.60 | -1396.63 |
| 5.5in Casing Production | 25.50 | 19058.00 | 19032.50 | 25.50 | 7094.69 | 0.00 | 0.00 | 11575.60 | -1396.63 |

TARGETS

| Name | TVD (ft) | North (ft) | East (ft) | Grid East (US ft) | Grid North (US ft) | Latitude | Longitude | Shape |
|-------------------------------|----------|------------|-----------|-------------------|--------------------|----------------|----------------|-------|
| Cortina Unit 3H - POE - Rev-2 | 6981.00 | 664.45 | 2050.99 | 1717903.00 | 14274684.00 | 39°18'33.623"N | 80°43'33.818"W | point |
| Cortina Unit 3H - BHL - Rev-3 | 7025.00 | 11605.47 | -1399.56 | 1714453.81 | 14285620.70 | 39°20'21.861"N | 80°44'17.313"W | point |
| Cortina Unit 3H - LP - Rev-2 | 7025.00 | 900.16 | 1976.65 | 1717828.69 | 14274919.63 | 39°18'35.955"N | 80°43'34.755"W | point |

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 Cortina Unit 3H AWP Proj: 19058'
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| REFERENCE WELLPATH IDENTIFICATION | | | |
|-----------------------------------|------------------------------|----------|---------------------|
| Operator | ANTERO RESOURCES CORPORATION | Slot | Slot #09 |
| Area | Doddridge Co., WV | Well | Cortina Unit 3H |
| Field | Doddridge | Wellbore | Cortina Unit 3H AWB |
| Facility | George Scott Pad | | |

| WELLPATH COMPOSITION - Ref Wellbore: Cortina Unit 3H AWB Ref Wellpath: Cortina Unit 3H AWP Proj: 19058' | | | | |
|---|-------------|---|---|---------------------|
| Start MD (ft) | End MD (ft) | Positional Uncertainty Model | Log Name/Comment | Wellbore |
| 25.50 | 550.00 | Gyrodata standard - Drop gyro or Multi-shot | 01 Gyrodata MS Gyro <17-1/2">(50'-550') | Cortina Unit 3H AWB |
| 550.00 | 2655.00 | BHI NaviTrak (Axial) | 02 APS EM <12-1/4">(550'-2655') | Cortina Unit 3H AWB |
| 2655.00 | 5211.00 | BHI NaviTrak (Axial) | 03 APS EM <8-3/4">(2655'-5211') | Cortina Unit 3H AWB |
| 5211.00 | 19034.00 | BHI AutoTrak Curve (Short) | 04 BH AT Curve <8-1/2">(5211'-19034') | Cortina Unit 3H AWB |
| 19034.00 | 19058.00 | Blind Drilling (std) | Projection to bit | Cortina Unit 3H AWB |

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REFERENCE WELLPATH IDENTIFICATION

| | | | |
|----------|------------------------------|----------|---------------------|
| Operator | ANTERO RESOURCES CORPORATION | Slot | Slot #09 |
| Area | Doddridge Co., WV | Well | Cortina Unit 3H |
| Field | Doddridge | Wellbore | Cortina Unit 3H AWB |
| Facility | George Scott Pad | | |

COMMENTS

Wellpath general comments
API: 47-017-06891-0000
BHI Job #: 110073048B
Rig: H&P 317
Duration: 10/10/2019-11/08/2019
Gyrodata MS Gyro <17-1/2">(50'-550')
APS EM <12-1/4">(550')(696'-2655')
APS EM <8-3/4"> (2655')(2739'-5211')
BH AT Curve <8-1/2">(5211')(5255'-19034')
Middlesex: 7162' MD
Burkett: 7372' MD
Tully: 7425' MD
Marcellus POE: 7602' MD
Projected MD at TD: 19058'

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