



Actual Wellpath Report

Penn Unit 1H AWP Proj: 15172'

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REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Well	Penn Unit 1H
Field	Tyler	API	47-095-02614-0000
Facility	State Ridge Pad	Wellbore	Penn Unit 1H AWB
Slot	Slot #05		

REPORT SETUP INFORMATION			
Projection System	NAD27 / UTM Zone 17 North, US feet	Software System	WellArchitect® 6.0
North Reference	Grid	User	Delaset
Scale	0.999601	Report Generated	2/7/2020 at 12:56:37 PM
Convergence at slot	0.08° East	Database	WA_MPL_EasternUS_Defn

WELLPATH LOCATION						
	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	3.19	14.66	1675833.61	14347066.28	39°30'30.2180"N	80°52'27.9590"W
Facility Reference Pt			1675818.95	14347063.09	39°30'30.1867"N	80°52'28.1461"W
Field Reference Pt			0.00	0.00	0°00'0.0000"	85°29'19.3013"W

WELLPATH DATUM			
Calculation method	Minimum curvature	H&P 317 (RKB) to Facility Vertical Datum	25.50ft
Horizontal Reference Pt	Slot	H&P 317 (RKB) to Mean Sea Level	1089.50ft
Vertical Reference Pt	H&P 317 (RKB)	H&P 317 (RKB) to Ground Level at Slot (Slot #05)	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	161.18°

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WELLPATH DATA (182 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†	0.000	54.520	0.00	0.00	0.00	0.00	1675833.61	14347066.28	39°30'30.2180"N	80°52'27.9590"W	0.00	0.000	0.00	0.00	0.00	
25.50	0.000	54.520	25.50	0.00	0.00	0.00	1675833.61	14347066.28	39°30'30.2180"N	80°52'27.9590"W	0.00	0.000	0.00	0.00	0.00	
60.50	0.680	54.520	60.50	-0.06	0.12	0.17	1675833.78	14347066.40	39°30'30.2192"N	80°52'27.9568"W	0.21	54.520	1.94	1.94	0.00	Gyrodata MS Gyro <17-1/2">(50'-350')
85.50	0.680	53.500	85.50	-0.15	0.29	0.41	1675834.02	14347066.58	39°30'30.2209"N	80°52'27.9538"W	0.50	54.220	0.05	0.00	-4.08	
110.50	0.720	53.950	110.50	-0.24	0.48	0.66	1675834.26	14347066.76	39°30'30.2227"N	80°52'27.9506"W	0.81	54.036	0.16	0.16	1.80	
135.50	0.530	60.010	135.49	-0.31	0.63	0.88	1675834.49	14347066.91	39°30'30.2242"N	80°52'27.9477"W	1.08	54.661	0.80	-0.76	24.24	
160.50	0.520	71.340	160.49	-0.33	0.72	1.09	1675834.70	14347067.00	39°30'30.2251"N	80°52'27.9451"W	1.31	56.562	0.42	-0.04	45.32	
185.50	0.460	68.360	185.49	-0.33	0.79	1.29	1675834.90	14347067.07	39°30'30.2258"N	80°52'27.9425"W	1.52	58.432	0.26	-0.24	-11.92	
210.50	0.380	55.740	210.49	-0.36	0.88	1.45	1675835.06	14347067.16	39°30'30.2266"N	80°52'27.9404"W	1.70	58.885	0.49	-0.32	-50.48	
235.50	0.300	45.060	235.49	-0.41	0.97	1.57	1675835.17	14347067.25	39°30'30.2276"N	80°52'27.9390"W	1.84	58.257	0.41	-0.32	-42.72	
260.50	0.170	71.360	260.49	-0.44	1.03	1.65	1675835.26	14347067.31	39°30'30.2281"N	80°52'27.9379"W	1.94	58.065	0.66	-0.52	105.20	
285.50	0.190	90.700	285.49	-0.43	1.04	1.73	1675835.33	14347067.32	39°30'30.2282"N	80°52'27.9370"W	2.01	58.943	0.25	0.08	77.36	
310.50	0.110	48.240	310.49	-0.42	1.05	1.79	1675835.39	14347067.34	39°30'30.2284"N	80°52'27.9362"W	2.07	59.423	0.53	-0.32	-169.84	
335.50	0.130	90.580	335.49	-0.42	1.07	1.83	1675835.44	14347067.35	39°30'30.2286"N	80°52'27.9356"W	2.12	59.694	0.35	0.08	169.36	
360.50	0.320	134.720	360.49	-0.35	1.02	1.91	1675835.52	14347067.30	39°30'30.2281"N	80°52'27.9346"W	2.17	61.864	0.98	0.76	176.56	
455.50	0.260	118.700	455.49	0.05	0.73	2.29	1675835.89	14347067.01	39°30'30.2252"N	80°52'27.9298"W	2.40	72.278	0.11	-0.06	-16.86	Gyrodata MS Gyro <12-1/4">(350')(445'-630')
547.50	1.300	8.620	547.48	-0.73	1.66	2.63	1675836.23	14347067.94	39°30'30.2344"N	80°52'27.9255"W	3.11	57.667	1.53	1.13	-119.65	
640.50	3.310	353.540	640.40	-4.29	5.37	2.48	1675836.09	14347071.65	39°30'30.2711"N	80°52'27.9272"W	5.92	24.795	2.24	2.16	-16.22	
760.50	6.620	339.020	759.94	-14.58	15.28	-0.38	1675833.22	14347081.55	39°30'30.3690"N	80°52'27.9636"W	15.28	358.557	2.93	2.76	-12.10	WFT EM <12-1/4">(630')(750'-2546')
851.50	9.160	331.060	850.07	-26.96	26.52	-5.77	1675827.84	14347092.79	39°30'30.4801"N	80°52'28.0321"W	27.14	347.726	3.03	2.79	-8.75	
947.50	12.490	331.620	944.35	-44.72	42.34	-14.40	1675819.21	14347108.60	39°30'30.6367"N	80°52'28.1420"W	44.72	341.213	3.47	3.47	0.58	
1041.50	15.380	337.550	1035.58	-67.19	62.81	-24.00	1675809.62	14347129.07	39°30'30.8391"N	80°52'28.2640"W	67.24	339.090	3.43	3.07	6.31	
1136.50	15.840	340.500	1127.08	-92.73	86.68	-33.14	1675800.48	14347152.92	39°30'31.0751"N	80°52'28.3802"W	92.79	339.078	0.97	0.48	3.11	
1230.50	15.730	338.370	1217.53	-118.29	110.61	-42.12	1675791.51	14347176.85	39°30'31.3118"N	80°52'28.4944"W	118.36	339.156	0.63	-0.12	-2.27	
1324.50	17.070	340.510	1307.71	-144.81	135.46	-51.42	1675782.21	14347201.69	39°30'31.5576"N	80°52'28.6126"W	144.89	339.216	1.56	1.43	2.28	
1419.50	18.510	341.370	1398.16	-173.83	162.90	-60.89	1675772.75	14347229.12	39°30'31.8288"N	80°52'28.7329"W	173.91	339.506	1.54	1.52	0.91	
1514.50	19.150	339.080	1488.08	-204.48	191.75	-71.27	1675762.37	14347257.95	39°30'32.1141"N	80°52'28.8648"W	204.56	339.611	1.03	0.67	-2.41	
1608.50	19.360	337.000	1576.82	-235.43	220.49	-82.86	1675750.78	14347286.68	39°30'32.3983"N	80°52'29.0122"W	235.54	339.404	0.76	0.22	-2.21	
1703.50	19.330	335.570	1666.46	-266.78	249.30	-95.52	1675738.13	14347315.48	39°30'32.6832"N	80°52'29.1732"W	266.97	339.036	0.50	-0.03	-1.51	
1798.50	18.850	332.980	1756.24	-297.62	277.29	-108.99	1675724.66	14347343.46	39°30'32.9600"N	80°52'29.3446"W	297.94	338.542	1.02	-0.51	-2.73	

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Slot	Slot #05		

WELLPATH DATA (182 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
1893.50	17.710	332.720	1846.44	-327.11	303.80	-122.59	1675711.07	14347369.96	39°30'33.2223"N	80°52'29.5176"W	327.60	338.026	1.20	-1.20	-0.27	
1988.50	17.640	330.830	1936.96	-355.56	329.21	-136.22	1675697.44	14347395.36	39°30'33.4736"N	80°52'29.6912"W	356.28	337.521	0.61	-0.07	-1.99	
2082.50	17.840	333.690	2026.49	-383.85	354.56	-149.55	1675684.12	14347420.70	39°30'33.7243"N	80°52'29.8607"W	384.81	337.130	0.95	0.21	3.04	
2177.50	18.400	338.440	2116.78	-413.25	381.55	-161.51	1675672.16	14347447.68	39°30'33.9912"N	80°52'30.0128"W	414.32	337.057	1.66	0.59	5.00	
2272.50	17.980	339.470	2207.03	-442.88	409.22	-172.16	1675661.52	14347475.34	39°30'34.2649"N	80°52'30.1482"W	443.96	337.183	0.56	-0.44	1.08	
2366.50	16.090	335.500	2296.91	-470.35	434.67	-182.65	1675651.03	14347500.77	39°30'34.5165"N	80°52'30.2816"W	471.48	337.207	2.36	-2.01	-4.22	
2461.50	16.340	333.320	2388.13	-496.69	458.59	-194.11	1675639.57	14347524.68	39°30'34.7530"N	80°52'30.4274"W	497.98	337.058	0.69	0.26	-2.29	
2556.50	17.250	332.800	2479.08	-523.86	483.06	-206.55	1675627.14	14347549.14	39°30'34.9950"N	80°52'30.5857"W	525.36	336.849	0.97	0.96	-0.55	
2690.50	15.230	330.000	2607.73	-560.79	515.97	-224.44	1675609.26	14347582.05	39°30'35.3206"N	80°52'30.8133"W	562.67	336.492	1.62	-1.51	-2.09	WFT EM <8-3/4">(2546)(2680-6315)
2785.50	15.380	334.070	2699.36	-585.53	538.11	-236.18	1675597.52	14347604.18	39°30'35.5396"N	80°52'30.9628"W	587.66	336.303	1.14	0.16	4.28	
2879.50	16.880	336.050	2789.66	-611.50	561.79	-247.17	1675586.53	14347627.85	39°30'35.7738"N	80°52'31.1026"W	613.77	336.252	1.70	1.60	2.11	
2974.50	18.610	338.120	2880.13	-640.37	588.47	-258.42	1675575.29	14347654.51	39°30'36.0376"N	80°52'31.2456"W	642.71	336.292	1.94	1.82	2.18	
3069.50	18.270	338.200	2970.26	-670.38	616.36	-269.60	1675564.11	14347682.40	39°30'36.3134"N	80°52'31.3878"W	672.75	336.375	0.36	-0.36	0.08	
3168.50	17.570	336.560	3064.45	-700.77	644.48	-281.31	1675552.41	14347710.50	39°30'36.5915"N	80°52'31.5367"W	703.20	336.419	0.87	-0.71	-1.66	
3262.50	18.740	336.210	3153.77	-729.96	671.31	-293.04	1675540.68	14347737.33	39°30'36.8568"N	80°52'31.6859"W	732.49	336.418	1.25	1.24	-0.37	
3357.50	18.150	334.730	3243.89	-759.87	698.66	-305.52	1675528.21	14347764.66	39°30'37.1273"N	80°52'31.8446"W	762.54	336.381	0.79	-0.62	-1.56	
3451.50	17.500	333.500	3333.38	-788.42	724.55	-318.07	1675515.66	14347790.54	39°30'37.3833"N	80°52'32.0043"W	791.29	336.299	0.80	-0.69	-1.31	
3546.50	18.080	334.470	3423.84	-817.22	750.63	-330.80	1675502.94	14347816.61	39°30'37.6413"N	80°52'32.1662"W	820.29	336.217	0.69	0.61	1.02	
3640.50	17.490	333.180	3513.35	-845.69	776.40	-343.46	1675490.28	14347842.37	39°30'37.8961"N	80°52'32.3273"W	848.98	336.137	0.75	-0.63	-1.37	
3735.50	17.620	336.490	3603.92	-874.16	802.33	-355.64	1675478.11	14347868.29	39°30'38.1525"N	80°52'32.4822"W	877.61	336.094	1.06	0.14	3.48	
3830.50	16.720	334.650	3694.69	-902.07	827.86	-367.22	1675466.53	14347893.81	39°30'38.4051"N	80°52'32.6296"W	905.65	336.079	1.11	-0.95	-1.94	
3924.50	18.030	333.420	3784.40	-929.92	853.09	-379.52	1675454.24	14347919.03	39°30'38.6546"N	80°52'32.7860"W	933.70	336.017	1.45	1.39	-1.31	
4018.50	17.680	332.050	3873.87	-958.42	878.71	-392.72	1675441.04	14347944.64	39°30'38.9080"N	80°52'32.9540"W	962.48	335.919	0.58	-0.37	-1.46	
4113.50	17.240	333.730	3964.49	-986.63	904.08	-405.71	1675428.06	14347970.00	39°30'39.1589"N	80°52'33.1193"W	990.94	335.831	0.70	-0.46	1.77	
4208.50	16.610	338.360	4055.38	-1014.15	929.32	-416.95	1675416.82	14347995.23	39°30'39.4085"N	80°52'33.2623"W	1018.57	335.836	1.57	-0.66	4.87	
4302.50	15.920	337.240	4145.62	-1040.43	953.70	-426.90	1675406.88	14348019.60	39°30'39.6496"N	80°52'33.3887"W	1044.89	335.886	0.81	-0.73	-1.19	
4397.50	16.830	336.300	4236.77	-1067.13	978.31	-437.46	1675396.32	14348044.20	39°30'39.8929"N	80°52'33.5231"W	1071.66	335.908	1.00	0.96	-0.99	
4494.50	17.580	335.110	4329.43	-1095.69	1004.46	-449.27	1675384.51	14348070.33	39°30'40.1515"N	80°52'33.6733"W	1100.35	335.902	0.85	0.77	-1.23	
4589.50	17.340	334.390	4420.05	-1124.01	1030.24	-461.43	1675372.36	14348096.10	39°30'40.4065"N	80°52'33.8280"W	1128.85	335.873	0.34	-0.25	-0.76	
4683.50	17.260	333.010	4509.80	-1151.73	1055.29	-473.82	1675359.98	14348121.15	39°30'40.6543"N	80°52'33.9855"W	1156.78	335.820	0.44	-0.09	-1.47	

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4778.50	16.880	331.840	4600.61	-1179.29	1080.01	-486.72	1675347.08	14348145.86	39°30'40.8988"N	80°52'34.1498"W	1184.62	335.741	0.54	-0.40	-1.23	
4872.50	16.820	334.060	4690.58	-1206.25	1104.28	-499.11	1675334.70	14348170.11	39°30'41.1388"N	80°52'34.3074"W	1211.83	335.678	0.69	-0.06	2.36	
4967.50	16.490	333.590	4781.59	-1233.25	1128.71	-511.12	1675322.69	14348194.54	39°30'41.3804"N	80°52'34.4602"W	1239.05	335.637	0.38	-0.35	-0.49	
5061.50	17.390	335.420	4871.51	-1260.45	1153.43	-522.90	1675310.92	14348219.25	39°30'41.6249"N	80°52'34.6101"W	1266.43	335.613	1.11	0.96	1.95	
5156.50	17.110	334.140	4962.24	-1288.45	1178.92	-534.90	1675298.92	14348244.73	39°30'41.8770"N	80°52'34.7627"W	1294.59	335.595	0.50	-0.29	-1.35	
5250.50	18.800	334.880	5051.66	-1317.23	1205.08	-547.36	1675286.47	14348270.88	39°30'42.1357"N	80°52'34.9213"W	1323.56	335.572	1.81	1.80	0.79	
5345.50	18.860	333.680	5141.57	-1347.67	1232.70	-560.67	1675273.17	14348298.49	39°30'42.4089"N	80°52'35.0906"W	1354.22	335.543	0.41	0.06	-1.26	
5440.50	18.240	336.280	5231.64	-1377.70	1260.08	-573.46	1675260.38	14348325.85	39°30'42.6796"N	80°52'35.2533"W	1384.43	335.530	1.09	-0.65	2.74	
5537.50	17.200	335.980	5324.04	-1407.11	1287.08	-585.40	1675248.44	14348352.84	39°30'42.9466"N	80°52'35.4052"W	1413.95	335.543	1.08	-1.07	-0.31	
5631.50	15.350	335.440	5414.27	-1433.34	1311.09	-596.23	1675237.62	14348376.84	39°30'43.1841"N	80°52'35.5429"W	1440.29	335.546	1.97	-1.97	-0.57	
5726.50	15.350	333.620	5505.88	-1458.31	1333.79	-607.04	1675226.81	14348399.54	39°30'43.4086"N	80°52'35.6805"W	1465.43	335.528	0.51	0.00	-1.92	
5789.50	12.670	328.960	5567.00	-1473.33	1347.18	-614.31	1675219.54	14348412.92	39°30'43.5410"N	80°52'35.7730"W	1480.64	335.487	4.61	-4.25	-7.40	
5852.50	10.030	322.200	5628.77	-1485.28	1357.44	-621.24	1675212.62	14348423.18	39°30'43.6425"N	80°52'35.8612"W	1492.84	335.409	4.69	-4.19	-10.73	
5915.50	7.240	318.520	5691.05	-1494.13	1364.75	-627.23	1675206.63	14348430.48	39°30'43.7148"N	80°52'35.9376"W	1501.99	335.317	4.51	-4.43	-5.84	
5978.50	1.710	265.280	5753.84	-1498.03	1367.65	-630.80	1675203.06	14348433.38	39°30'43.7436"N	80°52'35.9831"W	1506.11	335.239	10.10	-8.78	-84.51	
6041.50	7.610	162.960	5816.66	-1494.08	1363.58	-630.52	1675203.34	14348429.31	39°30'43.7033"N	80°52'35.9795"W	1502.30	335.184	12.93	9.37	-162.41	
6104.50	13.620	155.480	5878.56	-1482.52	1352.83	-626.21	1675207.65	14348418.57	39°30'43.5970"N	80°52'35.9247"W	1490.73	335.161	9.77	9.54	-11.87	
6167.50	16.520	148.250	5939.39	-1466.40	1338.46	-618.42	1675215.44	14348404.20	39°30'43.4549"N	80°52'35.8255"W	1474.42	335.201	5.48	4.60	-11.48	
6230.50	18.810	151.500	5999.41	-1447.66	1321.91	-608.86	1675225.00	14348387.67	39°30'43.2912"N	80°52'35.7038"W	1455.39	335.270	3.96	3.63	5.16	
6294.50	22.330	159.750	6059.34	-1425.32	1301.43	-599.72	1675234.13	14348367.19	39°30'43.0887"N	80°52'35.5876"W	1432.96	335.259	7.11	5.50	12.89	
6325.50	25.190	162.200	6087.71	-1412.83	1289.62	-595.66	1675238.18	14348355.39	39°30'42.9719"N	80°52'35.5361"W	1420.54	335.208	9.76	9.23	7.90	
6375.00	28.240	162.630	6131.92	-1390.59	1268.41	-588.95	1675244.90	14348334.18	39°30'42.7622"N	80°52'35.4507"W	1398.47	335.094	6.17	6.16	0.87	BH AT Curve <8-1/2">(6325.5')(6375'-15148')
6390.00	29.370	162.880	6145.06	-1383.36	1261.51	-586.80	1675247.04	14348327.28	39°30'42.6939"N	80°52'35.4235"W	1391.31	335.054	7.58	7.53	1.67	
6485.00	36.150	156.180	6224.93	-1332.09	1213.54	-568.60	1675265.23	14348279.33	39°30'42.2196"N	80°52'35.1921"W	1340.14	334.895	8.08	7.14	-7.05	
6580.00	44.160	150.640	6297.50	-1271.52	1158.96	-541.01	1675292.82	14348224.77	39°30'41.6798"N	80°52'34.8410"W	1279.01	334.977	9.23	8.43	-5.83	
6587.00†	44.714	150.755	6302.50	-1266.70	1154.68	-538.61	1675295.21	14348220.50	39°30'41.6375"N	80°52'34.8105"W	1274.12	334.993	8.00	7.92	1.64	Middlesex: 6587' MD
6674.00	51.610	152.020	6360.50	-1202.86	1097.80	-507.62	1675326.19	14348163.64	39°30'41.0749"N	80°52'34.4161"W	1209.48	335.184	8.00	7.93	1.45	
6722.00	55.620	153.590	6388.97	-1164.64	1063.43	-489.98	1675343.83	14348129.29	39°30'40.7349"N	80°52'34.1916"W	1170.88	335.262	8.76	8.35	3.27	
6738.00†	57.148	154.290	6397.83	-1151.42	1051.46	-484.13	1675349.68	14348117.32	39°30'40.6166"N	80°52'34.1172"W	1157.56	335.277	10.22	9.55	4.37	Burkett: 6738' MD
6769.00	60.120	155.580	6413.96	-1125.11	1027.49	-472.92	1675360.88	14348093.35	39°30'40.3795"N	80°52'33.9746"W	1131.10	335.285	10.22	9.59	4.16	

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Actual Wellpath Report

Penn Unit 1H AWP Proj: 15172'
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REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Well	Penn Unit 1H
Field	Tyler	API	47-095-02614-0000
Facility	State Ridge Pad	Wellbore	Penn Unit 1H AWB
Slot	Slot #05		

WELLPATH DATA (182 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
6777.00†	60.915	155.708	6417.90	-1118.18	1021.14	-470.05	1675363.75	14348087.01	39°30'40.3167"N	80°52'33.9380"W	1124.13	335.283	10.04	9.94	1.60	Tully: 6777' MD
6864.00	69.570	156.990	6454.30	-1039.53	948.83	-438.41	1675395.37	14348014.73	39°30'39.6016"N	80°52'33.5357"W	1045.22	335.200	10.04	9.95	1.47	
6896.00†	72.396	157.853	6464.73	-1009.35	920.90	-426.80	1675406.98	14347986.81	39°30'39.3254"N	80°52'33.3880"W	1014.99	335.134	9.19	8.83	2.70	Marcellus POE: 6896' MD
6959.00	77.970	159.480	6480.83	-948.53	864.19	-404.66	1675429.11	14347930.12	39°30'38.7646"N	80°52'33.1066"W	954.24	334.908	9.19	8.85	2.58	
7054.00	86.150	161.650	6493.94	-854.53	775.53	-373.40	1675460.36	14347841.50	39°30'37.8880"N	80°52'32.7093"W	860.74	334.290	8.90	8.61	2.28	
7149.00	89.720	161.850	6497.37	-759.61	685.39	-343.67	1675490.07	14347751.39	39°30'36.9966"N	80°52'32.3316"W	766.72	333.369	3.76	3.76	0.21	
7244.00	89.850	161.070	6497.72	-664.61	595.32	-313.47	1675520.27	14347661.36	39°30'36.1060"N	80°52'31.9478"W	672.80	332.231	0.83	0.14	-0.82	
7339.00	89.750	160.410	6498.06	-569.62	505.64	-282.13	1675551.59	14347571.71	39°30'35.2192"N	80°52'31.5496"W	579.02	330.840	0.70	-0.11	-0.69	
7433.00	89.850	158.120	6498.38	-475.68	417.73	-248.85	1675584.85	14347483.84	39°30'34.3500"N	80°52'31.1266"W	486.24	329.217	2.44	0.11	-2.44	
7528.00	89.290	157.410	6499.10	-380.85	329.80	-212.91	1675620.79	14347395.95	39°30'33.4804"N	80°52'30.6695"W	392.55	327.155	0.95	-0.59	-0.75	
7623.00	89.350	156.600	6500.22	-286.11	242.35	-175.80	1675657.88	14347308.54	39°30'32.6157"N	80°52'30.1976"W	299.40	324.044	0.85	0.06	-0.85	
7718.00	89.050	157.520	6501.55	-191.36	154.88	-138.77	1675694.89	14347221.10	39°30'31.7506"N	80°52'29.7268"W	207.95	318.139	1.02	-0.32	0.97	
7813.00	88.980	160.130	6503.18	-96.47	66.31	-104.47	1675729.18	14347132.57	39°30'30.8748"N	80°52'29.2906"W	123.74	302.406	2.75	-0.07	2.75	
7908.00	89.450	162.140	6504.49	-1.48	-23.57	-73.75	1675759.88	14347042.72	39°30'29.9861"N	80°52'28.9004"W	77.43	252.276	2.17	0.49	2.12	
8003.00	89.600	161.340	6505.27	93.51	-113.78	-43.99	1675789.64	14346952.54	39°30'29.0940"N	80°52'28.5222"W	121.99	201.136	0.86	0.16	-0.84	
8097.00	89.480	161.220	6506.03	187.51	-202.81	-13.82	1675819.79	14346863.55	39°30'28.2138"N	80°52'28.1389"W	203.28	183.899	0.18	-0.13	-0.13	
8192.00	89.510	165.550	6506.87	282.41	-293.82	13.34	1675846.94	14346772.58	39°30'27.3139"N	80°52'27.7941"W	294.12	177.401	4.56	0.03	4.56	
8287.00	89.540	165.270	6507.65	377.15	-385.75	37.27	1675870.86	14346680.69	39°30'26.4050"N	80°52'27.4904"W	387.55	174.482	0.30	0.03	-0.29	
8382.00	89.570	166.440	6508.39	471.83	-477.86	60.48	1675894.06	14346588.61	39°30'25.4943"N	80°52'27.1959"W	481.68	172.787	1.23	0.03	1.23	
8476.00	89.660	167.580	6509.02	565.34	-569.46	81.61	1675915.18	14346497.05	39°30'24.5887"N	80°52'26.9280"W	575.27	171.844	1.22	0.10	1.21	
8571.00	89.350	162.760	6509.84	660.08	-661.26	105.92	1675939.48	14346405.29	39°30'23.6811"N	80°52'26.6195"W	669.69	170.900	5.08	-0.33	-5.07	
8666.00	89.290	163.660	6510.97	755.01	-752.20	133.36	1675966.91	14346314.38	39°30'22.7819"N	80°52'26.2710"W	763.93	169.947	0.95	-0.06	0.95	
8761.00	89.230	164.650	6512.20	849.87	-843.59	159.29	1675992.84	14346223.03	39°30'21.8784"N	80°52'25.9418"W	858.49	169.307	1.04	-0.06	1.04	
8855.00	89.660	168.110	6513.11	943.47	-934.92	181.42	1676014.96	14346131.73	39°30'20.9753"N	80°52'25.6611"W	952.36	169.018	3.71	0.46	3.68	
8950.00	89.290	165.680	6513.98	1037.98	-1027.44	202.96	1676036.49	14346039.25	39°30'20.0607"N	80°52'25.3880"W	1047.29	168.826	2.59	-0.39	-2.56	
9045.00	89.260	158.000	6515.18	1132.90	-1117.63	232.54	1676066.06	14345949.10	39°30'19.1689"N	80°52'25.0121"W	1141.57	168.246	8.08	-0.03	-8.08	
9140.00	89.510	157.500	6516.20	1227.72	-1205.55	268.51	1676102.01	14345861.21	39°30'18.2994"N	80°52'24.5548"W	1235.09	167.443	0.59	0.26	-0.53	
9235.00	89.820	155.140	6516.76	1322.37	-1292.55	306.66	1676140.15	14345774.25	39°30'17.4391"N	80°52'24.0697"W	1328.43	166.653	2.51	0.33	-2.48	
9330.00	89.720	152.060	6517.14	1416.53	-1377.63	348.90	1676182.37	14345689.21	39°30'16.5976"N	80°52'23.5324"W	1421.12	165.788	3.24	-0.11	-3.24	
9425.00	89.200	152.000	6518.04	1510.32	-1461.53	393.45	1676226.90	14345605.34	39°30'15.7678"N	80°52'22.9655"W	1513.56	164.933	0.55	-0.55	-0.06	

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Penn Unit 1H AWP Proj: 15172'
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REFERENCE WELLPATH IDENTIFICATION

Operator	ANTERO RESOURCES CORPORATION	Well	Penn Unit 1H
Field	Tyler	API	47-095-02614-0000
Facility	State Ridge Pad	Wellbore	Penn Unit 1H AWB
Slot	Slot #05		

WELLPATH DATA (182 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
9520.00	89.170	155.170	6519.39	1604.46	-1546.59	435.71	1676269.14	14345520.31	39°30'14.9265"N	80°52'22.4280"W	1606.79	164.266	3.34	-0.03	3.34	
9614.00	89.480	158.330	6520.49	1698.16	-1632.94	472.80	1676306.22	14345434.00	39°30'14.0726"N	80°52'21.9563"W	1700.01	163.852	3.38	0.33	3.36	
9709.00	89.850	160.190	6521.05	1793.10	-1721.78	506.44	1676339.85	14345345.19	39°30'13.1941"N	80°52'21.5287"W	1794.71	163.609	2.00	0.39	1.96	
9804.00	89.720	161.830	6521.41	1888.10	-1811.60	537.36	1676370.75	14345255.40	39°30'12.3059"N	80°52'21.1360"W	1889.62	163.479	1.73	-0.14	1.73	
9899.00	89.780	162.660	6521.82	1983.08	-1902.08	566.33	1676399.71	14345164.97	39°30'11.4113"N	80°52'20.7680"W	1984.60	163.420	0.88	0.06	0.87	
9994.00	89.630	163.930	6522.31	2078.01	-1993.06	593.63	1676427.00	14345074.02	39°30'10.5116"N	80°52'20.4213"W	2079.59	163.414	1.35	-0.16	1.34	
10089.00	89.880	165.140	6522.72	2172.85	-2084.62	618.96	1676452.32	14344982.49	39°30'9.6064"N	80°52'20.0998"W	2174.57	163.463	1.30	0.26	1.27	
10183.00	89.750	162.590	6523.02	2266.73	-2174.91	645.08	1676478.43	14344892.24	39°30'8.7136"N	80°52'19.7682"W	2268.56	163.480	2.72	-0.14	-2.71	
10278.00	89.850	159.740	6523.35	2361.72	-2264.81	675.75	1676509.09	14344802.37	39°30'7.8247"N	80°52'19.3786"W	2363.48	163.387	3.00	0.11	-3.00	
10373.00	89.780	158.000	6523.66	2456.64	-2353.42	710.00	1676543.32	14344713.80	39°30'6.9484"N	80°52'18.9434"W	2458.19	163.212	1.83	-0.07	-1.83	
10468.00	89.380	157.430	6524.35	2551.47	-2441.32	746.02	1676579.33	14344625.93	39°30'6.0792"N	80°52'18.4854"W	2552.76	163.008	0.73	-0.42	-0.60	
10563.00	89.260	159.100	6525.48	2646.33	-2529.56	781.20	1676614.49	14344537.73	39°30'5.2066"N	80°52'18.0383"W	2647.44	162.838	1.76	-0.13	1.76	
10658.00	89.380	160.740	6526.61	2741.30	-2618.78	813.81	1676647.09	14344448.55	39°30'4.3244"N	80°52'17.6239"W	2742.31	162.737	1.73	0.13	1.73	
10753.00	89.540	163.760	6527.51	2836.27	-2709.24	842.77	1676676.04	14344358.13	39°30'3.4299"N	80°52'17.2561"W	2837.29	162.721	3.18	0.17	3.18	
10848.00	90.030	166.140	6527.86	2931.05	-2800.97	867.43	1676700.69	14344266.43	39°30'2.5229"N	80°52'16.9431"W	2932.22	162.793	2.56	0.52	2.51	
10942.00	89.850	167.920	6527.96	3024.56	-2892.57	888.53	1676721.78	14344174.87	39°30'1.6173"N	80°52'16.6756"W	3025.96	162.924	1.90	-0.19	1.89	
11037.00	89.660	168.120	6528.37	3118.88	-2985.50	908.25	1676741.49	14344081.97	39°30'0.6986"N	80°52'16.4258"W	3120.60	163.079	0.29	-0.20	0.21	
11132.00	89.880	165.160	6528.75	3213.44	-3077.92	930.20	1676763.43	14343989.59	39°29'59.7849"N	80°52'16.1475"W	3215.41	163.184	3.12	0.23	-3.12	
11227.00	89.910	163.380	6528.92	3308.30	-3169.36	955.95	1676789.18	14343898.19	39°29'58.8808"N	80°52'15.8206"W	3310.39	163.215	1.87	0.03	-1.87	
11322.00	89.820	159.870	6529.15	3403.28	-3259.50	985.89	1676819.11	14343808.09	39°29'57.9895"N	80°52'15.4403"W	3405.34	163.171	3.70	-0.09	-3.69	
11417.00	89.850	157.420	6529.42	3498.18	-3347.97	1020.48	1676853.68	14343719.65	39°29'57.1146"N	80°52'15.0006"W	3500.04	163.048	2.58	0.03	-2.58	
11512.00	89.320	157.860	6530.11	3593.00	-3435.83	1056.62	1676889.81	14343631.83	39°29'56.2458"N	80°52'14.5412"W	3594.63	162.906	0.73	-0.56	0.46	
11606.00	89.690	162.460	6530.92	3686.95	-3524.22	1088.52	1676921.69	14343543.47	39°29'55.3717"N	80°52'14.1360"W	3688.49	162.836	4.91	0.39	4.89	
11701.00	89.820	163.390	6531.33	3781.91	-3615.03	1116.41	1676949.57	14343452.70	39°29'54.4738"N	80°52'13.7819"W	3783.49	162.838	0.99	0.14	0.98	
11796.00	90.430	162.220	6531.12	3876.87	-3705.78	1144.49	1676977.64	14343361.98	39°29'53.5765"N	80°52'13.4253"W	3878.49	162.837	1.39	0.64	-1.23	
11891.00	89.450	160.640	6531.22	3971.86	-3795.83	1174.75	1677007.88	14343271.97	39°29'52.6860"N	80°52'13.0410"W	3973.46	162.804	1.96	-1.03	-1.66	
11986.00	89.350	158.530	6532.21	4066.81	-3884.85	1207.88	1677041.00	14343182.98	39°29'51.8057"N	80°52'12.6200"W	4068.30	162.728	2.22	-0.11	-2.22	
12081.00	89.570	157.580	6533.11	4161.67	-3972.97	1243.38	1677076.49	14343094.91	39°29'50.9344"N	80°52'12.1687"W	4162.99	162.622	1.03	0.23	-1.00	
12176.00	89.690	156.610	6533.72	4256.42	-4060.47	1280.35	1677113.45	14343007.44	39°29'50.0690"N	80°52'11.6987"W	4257.55	162.499	1.03	0.13	-1.02	
12271.00	89.690	156.890	6534.24	4351.14	-4147.76	1317.85	1677150.93	14342920.19	39°29'49.2058"N	80°52'11.2220"W	4352.08	162.374	0.29	0.00	0.29	

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Field	Tyler	API	47-095-02614-0000
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Slot	Slot #05		

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12365.00	89.600	159.080	6534.82	4444.98	-4234.89	1353.09	1677186.15	14342833.08	39°29'48.3441"N	80°52'10.7741"W	4445.80	162.281	2.33	-0.10	2.33	
12460.00	89.880	159.480	6535.25	4539.93	-4323.75	1386.70	1677219.75	14342744.26	39°29'47.4654"N	80°52'10.3470"W	4540.68	162.218	0.51	0.29	0.42	
12555.00	89.600	157.610	6535.68	4634.82	-4412.16	1421.44	1677254.48	14342655.89	39°29'46.5911"N	80°52'9.9054"W	4635.48	162.143	1.99	-0.29	-1.97	
12650.00	89.420	155.030	6536.49	4729.47	-4499.15	1459.59	1677292.62	14342568.93	39°29'45.7308"N	80°52'9.4204"W	4729.99	162.026	2.72	-0.19	-2.72	
12745.00	89.450	155.310	6537.43	4823.95	-4585.37	1499.49	1677332.49	14342482.75	39°29'44.8781"N	80°52'8.9131"W	4824.32	161.891	0.30	0.03	0.29	
12840.00	89.350	156.850	6538.43	4918.56	-4672.20	1538.00	1677370.99	14342395.95	39°29'44.0194"N	80°52'8.4235"W	4918.83	161.779	1.62	-0.11	1.62	
12935.00	89.480	159.230	6539.40	5013.41	-4760.30	1573.52	1677406.50	14342307.89	39°29'43.1482"N	80°52'7.9720"W	5013.62	161.709	2.51	0.14	2.51	
13030.00	89.290	163.110	6540.42	5108.38	-4850.19	1604.18	1677437.14	14342218.04	39°29'42.2593"N	80°52'7.5826"W	5108.59	161.699	4.09	-0.20	4.08	
13125.00	89.480	168.500	6541.44	5203.03	-4942.25	1627.46	1677460.42	14342126.01	39°29'41.3491"N	80°52'7.2873"W	5203.31	161.773	5.68	0.20	5.67	
13220.00	89.450	171.250	6542.32	5296.93	-5035.76	1644.16	1677477.11	14342032.54	39°29'40.4247"N	80°52'7.0760"W	5297.37	161.918	2.89	-0.03	2.89	
13315.00	89.910	168.560	6542.85	5390.82	-5129.27	1660.81	1677493.75	14341939.06	39°29'39.5002"N	80°52'6.8654"W	5391.45	162.059	2.87	0.48	-2.83	
13410.00	90.400	162.510	6542.60	5485.50	-5221.22	1684.53	1677517.46	14341847.15	39°29'38.5911"N	80°52'6.5646"W	5486.24	162.119	6.39	0.52	-6.37	
13505.00	89.290	158.730	6542.85	5580.48	-5310.82	1716.05	1677548.97	14341757.59	39°29'37.7051"N	80°52'6.1642"W	5581.18	162.093	4.15	-1.17	-3.98	
13599.00	89.320	162.310	6543.99	5674.45	-5399.42	1747.39	1677580.30	14341669.03	39°29'36.8290"N	80°52'5.7661"W	5675.13	162.067	3.81	0.03	3.81	
13694.00	89.660	168.530	6544.84	5769.14	-5491.31	1771.29	1677604.19	14341577.17	39°29'35.9205"N	80°52'5.4629"W	5769.92	162.122	6.56	0.36	6.55	
13789.00	89.510	171.250	6545.53	5863.03	-5584.82	1787.96	1677620.85	14341483.69	39°29'34.9960"N	80°52'5.2520"W	5864.05	162.248	2.87	-0.16	2.86	
13884.00	89.660	173.070	6546.22	5956.28	-5678.93	1800.92	1677633.81	14341389.63	39°29'34.0657"N	80°52'5.0885"W	5957.65	162.405	1.92	0.16	1.92	
13979.00	89.630	167.190	6546.81	6050.08	-5772.48	1817.20	1677650.08	14341296.11	39°29'33.1409"N	80°52'4.8826"W	6051.75	162.526	6.19	-0.03	-6.19	
14074.00	89.570	162.540	6547.47	6144.86	-5864.16	1841.99	1677674.86	14341204.47	39°29'32.2345"N	80°52'4.5680"W	6146.65	162.562	4.90	-0.06	-4.89	
14169.00	89.780	162.620	6548.01	6239.83	-5954.80	1870.43	1677703.29	14341113.87	39°29'31.3382"N	80°52'4.2070"W	6241.65	162.562	0.24	0.22	0.08	
14263.00	89.480	160.600	6548.62	6333.82	-6043.99	1900.09	1677732.93	14341024.71	39°29'30.4562"N	80°52'3.8304"W	6335.63	162.548	2.17	-0.32	-2.15	
14358.00	90.090	154.940	6548.97	6428.61	-6131.89	1936.01	1677768.85	14340936.84	39°29'29.5870"N	80°52'3.3738"W	6430.26	162.478	5.99	0.64	-5.96	
14453.00	89.570	150.400	6549.25	6522.54	-6216.27	1979.62	1677812.43	14340852.50	39°29'28.7524"N	80°52'2.8192"W	6523.87	162.336	4.81	-0.55	-4.78	
14548.00	89.480	149.640	6550.04	6615.74	-6298.55	2027.09	1677859.88	14340770.25	39°29'27.9385"N	80°52'2.2153"W	6616.71	162.160	0.81	-0.09	-0.80	
14643.00	89.540	151.320	6550.85	6709.08	-6381.21	2073.89	1677906.67	14340687.62	39°29'27.1208"N	80°52'1.6198"W	6709.76	161.996	1.77	0.06	1.77	
14738.00	89.750	155.690	6551.44	6803.21	-6466.21	2116.26	1677949.02	14340602.66	39°29'26.2801"N	80°52'1.0810"W	6803.71	161.878	4.61	0.22	4.60	
14832.00	89.660	157.990	6551.93	6896.93	-6552.63	2153.23	1677985.98	14340516.27	39°29'25.4255"N	80°52'0.6111"W	6897.35	161.809	2.45	-0.10	2.45	
14927.00	89.480	156.710	6552.64	6991.71	-6640.30	2189.81	1678022.54	14340428.64	39°29'24.5585"N	80°52'0.1461"W	6992.06	161.749	1.36	-0.19	-1.35	
15022.00	89.420	156.010	6553.55	7086.37	-6727.32	2227.91	1678060.62	14340341.65	39°29'23.6978"N	80°51'59.6619"W	7086.64	161.677	0.74	-0.06	-0.74	
15117.00	89.510	156.720	6554.44	7181.03	-6814.35	2265.99	1678098.69	14340254.66	39°29'22.8372"N	80°51'59.1778"W	7181.23	161.606	0.75	0.09	0.75	

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Actual Wellpath Report

Penn Unit 1H AWP Proj: 15172'
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REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Well	Penn Unit 1H
Field	Tyler	API	47-095-02614-0000
Facility	State Ridge Pad	Wellbore	Penn Unit 1H AWB
Slot	Slot #05		

WELLPATH DATA (182 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
15148.00	89.510	157.560	6554.70	7211.95	-6842.91	2278.03	1678110.73	14340226.11	39°29'22.5547"N	80°51'59.0247"W	7212.14	161.587	2.71	0.00	2.71	
15172.00‡	89.510	157.560	6554.91	7235.90	-6865.10	2287.19	1678119.88	14340203.93	39°29'22.3353"N	80°51'58.9083"W	7236.08	161.574	0.00	0.00	0.00	Projected MD at TD: 15172'

HOLE & CASING SECTIONS - Ref Wellbore: Penn Unit 1H AWB Ref Wellpath: Penn Unit 1H AWP Proj: 15172'									
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	120.50	95.00	25.50	120.49	0.00	0.00	0.54	0.75
17.5in Open Hole	120.50	403.10	282.60	120.49	403.09	0.54	0.75	0.87	2.08
13.375in Casing Surface	25.50	403.10	377.60	25.50	403.09	0.00	0.00	0.87	2.08
12.25in Open Hole	403.10	2655.70	2252.60	403.09	2574.19	0.87	2.08	507.89	-219.84
9.625in Casing Intermediate	25.50	2655.70	2630.20	25.50	2574.19	0.00	0.00	507.89	-219.84
8.75in Open Hole	2655.70	6400.50	3744.80	2574.19	6154.18	507.89	-219.84	1256.54	-585.23
8.5in Open Hole	6400.50	15172.00	8771.50	6154.18	6554.91	1256.54	-585.23	-6865.10	2287.19
5.5in Casing Production	25.50	15172.00	15146.50	25.50	6554.91	0.00	0.00	-6865.10	2287.19

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Penn Unit 1H AWP Proj: 15172'
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REFERENCE WELLPATH IDENTIFICATION

Operator	ANTERO RESOURCES CORPORATION	Well	Penn Unit 1H
Field	Tyler	API	47-095-02614-0000
Facility	State Ridge Pad	Wellbore	Penn Unit 1H AWB
Slot	Slot #05		

TARGETS

Name	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
Penn Unit 1H - BHL - Rev-2	6497.00	-6874.96	2242.94	1678075.65	14340194.08	39°29'22.2385"N	80°51'59.4730"W	point
Penn Unit 1H - LP - Rev-2	6497.00	725.55	-348.05	1675485.69	14347791.54	39°30'37.3936"N	80°52'32.3868"W	point
Penn Unit 1H - 50' L/R Hardline	6550.00	-3074.70	947.44	1676780.67	14343992.81	39°29'59.8164"N	80°52'15.9274"W	rectangle
2D Rectangle 8030 x 100.								

WELLPATH COMPOSITION - Ref Wellbore: Penn Unit 1H AWB Ref Wellpath: Penn Unit 1H AWP Proj: 15172'

Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore	Survey Date
25.50	360.50	Gyrodata 2015 - GC+WIR+DPIPE	01 Gyrodata MS Gyro <17-1/2">(50'-350')	Penn Unit 1H AWB	1/2/2020
360.50	640.50	Gyrodata 2015 - GC+WIR+DPIPE	02 Gyrodata MS Gyro <12-1/4">(350')(445'-630')	Penn Unit 1H AWB	1/2/2020
640.50	2556.50	OWSG MWD rev2 + HRGM	03 WFT EM <12-1/4">(630')(750'-2546')	Penn Unit 1H AWB	1/2/2020
2556.50	6325.50	OWSG MWD rev2 + HRGM	04 WFT EM <8-3/4">(2546')(2680'-6315')	Penn Unit 1H AWB	1/2/2020
6325.50	15172.00	BH AutoTrak Curve (2019) (Short spacing)	05 BH AT Curve <8-1/2">(6325.5')(6375'-15148')	Penn Unit 1H AWB	1/25/2020

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Penn Unit 1H AWP Proj: 15172'
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Operator	ANTERO RESOURCES CORPORATION	Well	Penn Unit 1H
Field	Tyler	API	47-095-02614-0000
Facility	State Ridge Pad	Wellbore	Penn Unit 1H AWB
Slot	Slot #05		

COMMENTS
<p>Wellpath general comments API: 47-095-02614-0000 BHI Job #: 110250212A Rig: H&P 317 Duration: 01/27/2020-01/28/2020 Gyrodata MS Gyro <17-1/2">(50'-350') Gyrodata MS Gyro <12-1/4">(350')(445'-630') WFT EM <12-1/4">(630')(750'-2546') WFT EM <8-3/4">(2546')(2680'-6315') BH AT Curve <8-1/2">(6325.5')(6375'-15148') Middlesex: 6587' MD Burkett: 6738' MD Tully: 6777' MD Marcellus POE: 6896' MD Projected MD at TD: 15172'</p>

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