

# ANTERO RESOURCES CORPORATION

Location: Tyler County, WV  
 Field: Tyler  
 Facility: Neal Pad

Slot: Slot #03

Well: Crown Unit 1H

Wellbore: Crown Unit 1H PWB



API: 47-095-02453-0000

BHI Job #: 109423129

Rig: Frontier 22

Duration: 09/24/2018-09/28/2018

Property	Value
Grid System	MD27 / UTM Zone 17 North, US feet
North Reference	Grid north
Scale	True distance
Measured depths are referenced to	Frontier 22 (RKB)
Frontier 22 (RKB) to Mean Sea Level	1029.5 feet
Mean Sea Level to Ground level (At Slot: Slot #03)	-1025 feet
Coordinates are in feet referenced to Slot	
Created by	delmar on 2015-10-25
Database	WA_MPL_EasternUS_Dept

Gyrodata MS Gyro <17-1/2>-(100-327) : 0.28° Inc, 109.50ft MD, 109.50ft TVD, -0.08ft VS

Gyrodata MS Gyro <12-1/4>-(327-519) : 0.50° Inc, 346.50ft MD, 346.49ft TVD, 0.19ft VS

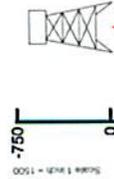
Directional ONE MWD <12-1/4>-(519-569-2536) : 2.64° Inc, 578.50ft MD, 578.45ft TVD, -1.59ft VS

Facility Name	Grid East (US ft)	Latitude	Longitude
Neal Pad	1658012.200	39°25'17.450"N	80°56'15.700"W
Slot	Local E (ft)	Grid North (US ft)	Longitude
Slot #03	25.31	1658028.656	39°25'17.700"N
Comment			80°56'15.400"W
Frontier 22 (RKB) to Ground level (At Slot: Slot #03)			24.5ft
Mean Sea Level to Ground level (At Slot: Slot #03)			-1003ft
Frontier 22 (RKB) to Mean Sea Level			1029.5ft

Panther MWD <8-3/4>-(2545-50-2633-5767) : 7.80° Inc, 2633.00ft MD, 2614.93ft TVD, -204.32ft VS

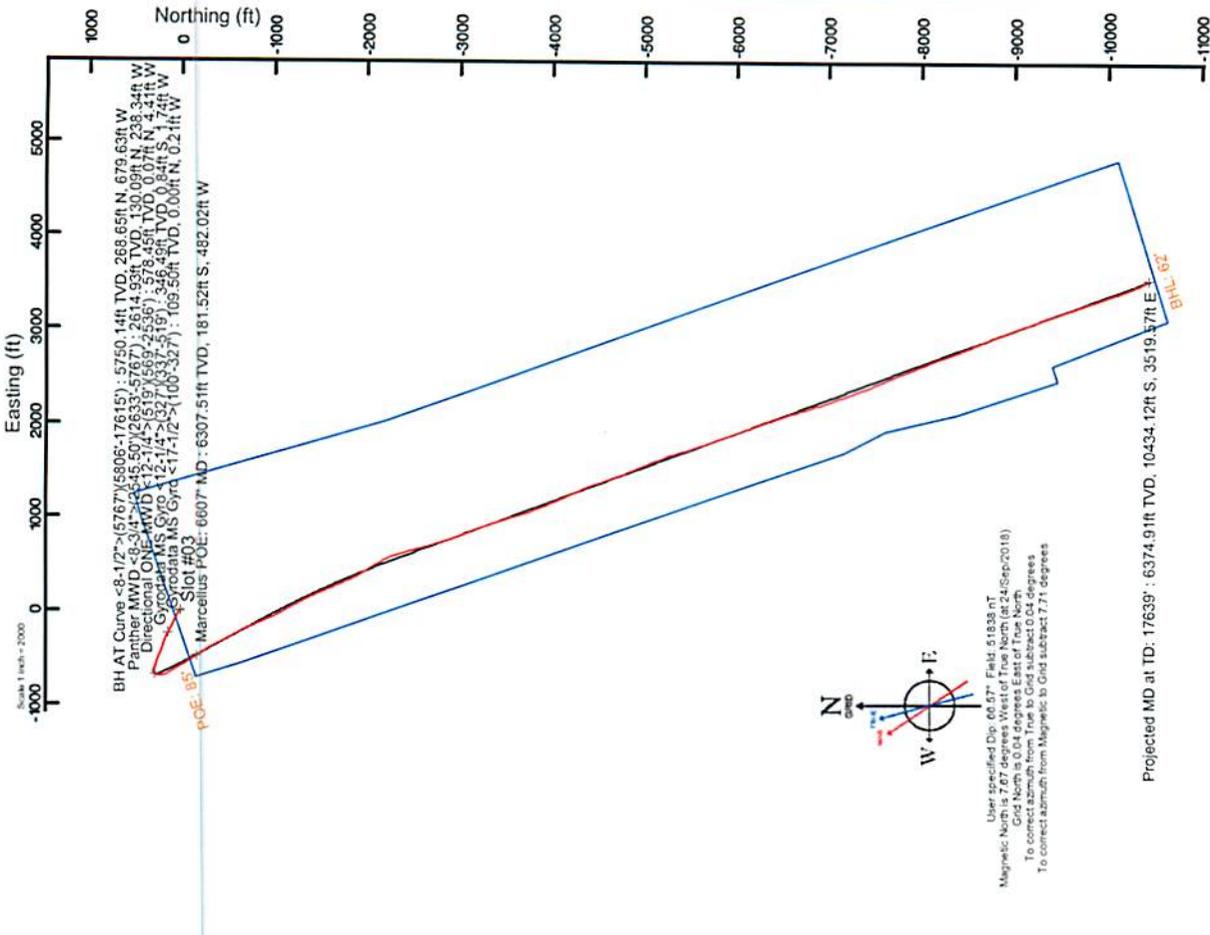
Design Comment	MD (ft)	Inc (°)	Az (°)	TVD (ft)	Local N (ft)	Local E (ft)	DLS (°/100ft)	VS (ft)
The On	5767.00	14.180	222.870	5712.46	276.71	-673.66	7.51	-402.11
Proj. To Bottom	5925.00	14.460	197.320	5768.71	264.58	-690.67	10.86	-483.15
End of 3D Arc	5945.83	20.000	160.000	5884.42	230.64	-678.08	10.00	-450.40
POE	6568.89	72.800	152.000	6298.00	-159.33	-488.78	8.44	-197.07
Landing Pt	6769.27	90.000	152.000	6328.00	-334.47	-395.65	8.54	177.45
IP #1	7427.75	90.000	152.000	6328.00	-916.76	-86.05	0.00	830.80
IP #2	8552.23	90.000	159.820	6328.00	-2216.44	495.06	0.55	2251.16
BHL	17617.48	90.000	159.820	6328.00	-10443.33	3518.71	0.00	11016.11

Slot	Well	Wellbore	Wellpath
Slot #03	Crown Unit 1H	Crown Unit 1H AWB	Crown Unit 1H AWP Proj: 17639
Slot #03	Crown Unit 1H	Crown Unit 1H PWB	Crown Unit 1H PWP Rev-A.0

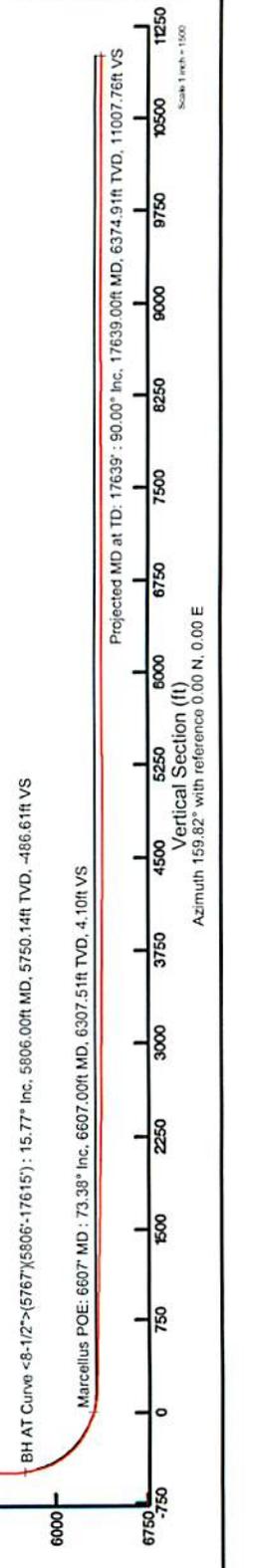


Scale 1 inch = 1500

Scale 1 inch = 2000



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Scale 1 inch = 1500

## REFERENCE WELLPATH IDENTIFICATION

Operator	ANTERO RESOURCES CORPORATION	Slot #03
Area	Tyler County, WV	Crown Unit 1H
Field	Tyler	Crown Unit 1H AWB
Facility	Neat Pad	

## REPORT SETUP INFORMATION

Projection System	NAD27 / UTM Zone 17 North, US feet	Software System	WellArchitect® 5.1
North Reference	Grid	User	Delaset
Scale	0.999600	Report Generated	05/Oct/2018 at 11:06
Convergence at slot	0.04° East	Database/Source file	WA_MPL_EasternUS_Defn/Crown_Unit_1H_AWP_Proj_17639_.xml

## WELLPATH LOCATION

	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	25.31	16.46	1658028.66	14315439.96	39°25'17.700"N	80°56'15.490"W
Facility Reference Pt			1658012.20	14315414.67	39°25'17.450"N	80°56'15.700"W
Field Reference Pt			0.00	0.00	0°00'00.000"	85°29'19.301"W

## WELLPATH DATUM

Calculation method	Minimum curvature	Frontier 22 (RKB) to Facility Vertical Datum	1029.50ft
Horizontal Reference Pt	Slot	Frontier 22 (RKB) to Mean Sea Level	1029.50ft
Vertical Reference Pt	Frontier 22 (RKB)	Frontier 22 (RKB) to Ground Level at Slot (Slot #03)	24.50ft
MD Reference Pt	Frontier 22 (RKB)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	159.82°

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# Actual Wellpath Report

Crown Unit 1H AWP Proj: 17639'

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REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #03
Area	Tyler County, WV	Well	Crown Unit 1H
Field	Tyler	Wellbore	Crown Unit 1H AWB
Facility	Neat Pad		

WELLPATH DATA (215 stations) * = interpolated/extrapolated station																	
MD (ft)	Inclination (°)	Azimuth (°)	TVD (ft)	Vert Sect (ft)	North (ft)	East (ft)	Grid East (ft)	Grid North (ft)	Latitude	Longitude	Closure (ft)	Dist (ft)	Dir (°)	DLS (F/100ft)	Build Rate (F/100ft)	Turn Rate (F/100ft)	Comments
0.00	271.230	0.00	0.00	0.00	0.00	0.00	1658028.66	14315439.96	39°25'17.700"N	80°56'15.490"W	0.00	0.000	0.00	0.00	0.00	0.00	
24.50	0.000	271.230	24.50	0.00	0.00	0.00	1658028.66	14315439.96	39°25'17.700"N	80°56'15.490"W	0.00	0.000	0.00	0.00	0.00	0.00	
109.50	0.280	271.230	109.50	-0.08	0.00	-0.21	1658028.45	14315439.97	39°25'17.700"N	80°56'15.493"W	0.21	271.230	0.33	0.33	-104.44	Syrodata MS Gyro <17-1/2">(100'-327')	
134.50	0.330	279.800	134.50	-0.13	0.02	-0.34	1658028.32	14315439.98	39°25'17.700"N	80°56'15.494"W	0.34	273.037	0.27	0.20	34.28		
159.50	0.380	272.820	159.50	-0.20	0.03	-0.48	1658028.16	14315440.00	39°25'17.700"N	80°56'15.496"W	0.48	273.983	0.26	0.20	-27.92		
184.50	0.280	254.560	184.50	-0.24	0.02	-0.64	1658028.02	14315439.98	39°25'17.700"N	80°56'15.498"W	0.64	271.999	0.58	-0.40	-73.04		
209.50	0.270	220.520	209.50	-0.22	-0.04	-0.73	1658027.92	14315439.92	39°25'17.700"N	80°56'15.499"W	0.73	266.961	0.65	-0.04	-136.16		
234.50	0.460	229.450	234.50	-0.15	-0.15	-0.85	1658027.81	14315439.69	39°25'17.699"N	80°56'15.501"W	0.86	260.028	0.79	0.78	35.72		
259.50	0.480	236.350	259.50	-0.09	-0.27	-1.01	1658027.65	14315439.69	39°25'17.697"N	80°56'15.503"W	1.05	254.922	0.74	0.08	27.60		
284.50	0.570	230.290	284.50	-0.03	-0.41	-1.19	1658027.46	14315439.55	39°25'17.696"N	80°56'15.505"W	1.26	251.050	0.42	0.36	-24.24		
309.50	0.580	233.100	309.49	0.05	-0.57	-1.39	1658027.27	14315439.40	39°25'17.694"N	80°56'15.508"W	1.50	247.876	0.12	0.04	11.24		
334.50	0.830	232.310	334.49	0.14	-0.75	-1.63	1658027.02	14315439.21	39°25'17.693"N	80°56'15.511"W	1.80	245.300	1.00	1.00	-3.16		
336.50	0.820	234.110	336.49	0.15	-0.77	-1.66	1658027.00	14315439.19	39°25'17.692"N	80°56'15.511"W	1.83	245.110	1.39	-0.50	90.00		
346.50	0.500	218.800	346.49	0.19	-0.84	-1.74	1658026.91	14315439.12	39°25'17.692"N	80°56'15.512"W	1.94	244.134	3.63	-3.20	-153.10	Syrodata MS Gyro <12-1/4">(327')(337'-519')	
437.50	0.340	199.350	437.49	0.60	-1.41	-2.08	1658026.58	14315439.55	39°25'17.686"N	80°56'15.517"W	2.51	235.896	0.23	-0.18	-21.37		
528.50	1.370	306.010	528.48	-0.09	-1.02	-3.05	1658025.61	14315439.94	39°25'17.690"N	80°56'15.529"W	3.22	251.439	1.65	1.13	117.21		
578.50	2.640	310.440	578.45	-1.59	0.07	-4.41	1658024.25	14315440.04	39°25'17.701"N	80°56'15.546"W	4.41	270.963	2.56	2.54	8.86	Directional ONE MWD <12-1/4">(519')(569'-2536')	
670.50	4.270	308.800	670.28	-6.37	3.59	-8.69	1658019.97	14315443.55	39°25'17.736"N	80°56'15.601"W	9.41	292.468	1.77	1.77	-1.78		
761.50	5.910	305.760	760.92	-13.16	8.46	-15.13	1658013.53	14315448.42	39°25'17.784"N	80°56'15.683"W	17.34	299.197	1.83	1.80	-3.32		
852.50	7.400	303.540	851.30	-21.77	14.43	-23.82	1658004.85	14315454.39	39°25'17.843"N	80°56'15.793"W	27.85	301.215	1.66	1.64	-2.46		
948.50	8.580	303.510	946.37	-32.52	21.80	-34.94	1657993.73	14315461.76	39°25'17.916"N	80°56'15.935"W	41.19	301.963	1.23	1.23	-0.03		
1042.50	8.580	304.040	1039.32	-43.86	29.60	-46.60	1657982.07	14315469.55	39°25'17.993"N	80°56'16.084"W	55.21	302.423	0.08	0.00	0.56		
1136.50	8.650	301.440	1132.26	-55.89	37.21	-58.44	1657970.24	14315477.16	39°25'18.068"N	80°56'16.234"W	69.28	302.487	0.42	0.07	-2.77		
1230.50	8.170	300.490	1225.24	-65.80	44.29	-70.23	1657958.46	14315484.23	39°25'18.138"N	80°56'16.384"W	83.03	302.237	0.53	-0.51	-1.01		
1324.50	8.210	299.560	1318.29	-76.08	50.99	-81.82	1657946.87	14315490.93	39°25'18.205"N	80°56'16.532"W	96.41	301.930	0.15	0.04	-0.99		
1418.50	7.610	297.740	1411.39	-85.83	57.20	-93.17	1657935.52	14315497.14	39°25'18.266"N	80°56'16.677"W	109.33	301.546	0.69	-0.64	-1.94		
1512.50	7.710	293.640	1504.55	-94.81	62.62	-104.45	1657924.24	14315502.56	39°25'18.320"N	80°56'16.820"W	121.79	300.943	0.59	0.11	-4.36		
1606.50	7.380	289.770	1597.74	-103.05	67.19	-115.91	1657912.79	14315507.13	39°25'18.365"N	80°56'16.966"W	133.98	300.100	0.64	-0.35	-4.12		
1700.50	7.020	292.790	1691.00	-110.85	71.46	-126.89	1657901.82	14315511.39	39°25'18.407"N	80°56'17.106"W	145.63	299.387	0.56	-0.38	3.21		
1794.50	6.800	295.470	1784.32	-118.74	76.08	-137.21	1657891.50	14315516.01	39°25'18.453"N	80°56'17.238"W	156.89	299.007	0.42	-0.23	2.85		

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# Actual Wellpath Report

Crown Unit 1H AWP Proj: 17639'  
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REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #03
Area	Tyler County, WV	Well	Crown Unit 1H
Field	Tyler	Wellbore	Crown Unit 1H AWB
Facility	Neat Pad		

WELLPATH DATA (215 stations)																
MD (ft)	Inclination (°)	Azimuth (°)	TVD (ft)	Vert Sect (ft)	North (ft)	East (ft)	Grid East (IUS ft)	Grid North (IUS ft)	Latitude	Longitude	Closure Dist (ft)	Closure Dir (°)	DLS (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	Comments
1889.50	7.690	297.380	1878.56	-127.45	81.42	-147.93	1657880.78	14315521.35	39°25'18.506"N	80°56'17.374"W	168.86	298.828	0.97	0.94	2.01	
1982.50	7.940	299.320	1970.69	-136.93	87.43	-159.06	1657869.66	14315527.35	39°25'18.565"N	80°56'17.516"W	181.50	298.796	0.39	0.27	2.09	
2076.50	7.950	298.670	2063.79	-146.76	93.73	-170.42	1657858.30	14315533.65	39°25'18.627"N	80°56'17.661"W	194.49	298.809	0.10	0.01	-0.69	
2170.50	7.550	297.040	2156.93	-156.19	99.65	-181.63	1657847.10	14315539.57	39°25'18.686"N	80°56'17.803"W	207.17	298.752	0.49	-0.43	-1.73	
2265.50	7.710	298.660	2251.09	-165.57	105.54	-192.78	1657835.96	14315545.46	39°25'18.744"N	80°56'17.946"W	219.78	298.701	0.28	0.17	1.71	
2359.50	8.350	299.590	2344.17	-175.53	111.94	-204.24	1657824.49	14315551.86	39°25'18.808"N	80°56'18.092"W	232.91	298.726	0.69	0.68	0.99	
2453.50	8.030	297.930	2437.21	-185.62	118.38	-215.98	1657812.76	14315558.30	39°25'18.872"N	80°56'18.241"W	246.30	298.728	0.42	-0.34	-1.77	
2545.50	8.250	298.090	2528.28	-195.33	124.50	-227.48	1657801.27	14315564.41	39°25'18.932"N	80°56'18.388"W	259.32	298.692	0.24	0.24	0.17	
2633.00	7.800	298.260	2614.93	-204.32	130.09	-238.34	1657790.41	14315570.00	39°25'18.987"N	80°56'18.526"W	271.53	298.626	0.59	-0.51	-2.07	Panther MWD <-8-3/4">(2545.50)(2633-5767)
2727.00	6.570	288.890	2708.19	-212.34	134.65	-249.15	1657779.61	14315574.56	39°25'19.033"N	80°56'18.664"W	283.21	298.389	1.63	-1.31	-7.86	
2822.00	7.450	301.500	2802.48	-220.60	139.63	-259.55	1657769.22	14315579.54	39°25'19.082"N	80°56'18.796"W	294.72	298.280	1.86	0.93	13.27	
2917.00	8.690	305.550	2896.54	-231.36	147.02	-270.64	1657758.13	14315586.92	39°25'19.155"N	80°56'18.937"W	307.99	298.513	1.44	1.31	4.26	
3011.00	7.640	296.750	2989.59	-241.79	153.96	-281.99	1657746.78	14315593.86	39°25'19.224"N	80°56'19.082"W	321.29	298.634	1.73	-1.12	-9.36	
3111.00	9.120	293.230	3088.52	-252.10	160.08	-295.21	1657733.56	14315599.98	39°25'19.284"N	80°56'19.250"W	335.82	298.469	1.57	1.48	-3.52	
3206.00	8.210	283.790	3182.44	-261.06	164.67	-308.72	1657720.06	14315604.56	39°25'19.330"N	80°56'19.422"W	349.89	298.075	1.77	-0.96	-9.94	
3301.00	7.310	290.550	3276.57	-268.79	168.41	-320.97	1657707.82	14315608.30	39°25'19.367"N	80°56'19.578"W	362.47	297.685	1.35	-0.95	7.12	
3396.00	8.510	294.120	3370.67	-277.65	173.40	-333.04	1657695.75	14315613.29	39°25'19.416"N	80°56'19.732"W	375.48	297.504	1.36	1.26	3.76	
3491.00	9.340	293.770	3464.52	-287.91	179.38	-346.51	1657682.28	14315619.27	39°25'19.475"N	80°56'19.904"W	390.19	297.369	0.88	0.87	-0.37	
3585.00	8.800	294.400	3557.34	-297.28	184.24	-360.46	1657668.34	14315624.13	39°25'19.523"N	80°56'20.082"W	404.82	297.073	1.67	-0.57	-9.97	
3681.00	7.960	279.950	3652.32	-304.79	187.22	-374.12	1657654.69	14315627.11	39°25'19.553"N	80°56'20.256"W	418.35	296.585	1.10	-0.88	-4.64	
3775.00	7.090	281.260	3745.51	-311.08	189.48	-386.22	1657642.59	14315629.36	39°25'19.575"N	80°56'20.410"W	430.19	296.132	0.94	-0.93	1.39	
3870.00	6.400	291.160	3839.85	-317.64	192.53	-396.91	1657631.91	14315632.42	39°25'19.606"N	80°56'20.546"W	441.14	295.877	1.42	-0.73	10.42	
3966.00	7.810	288.970	3935.12	-325.29	196.58	-408.07	1657620.75	14315636.47	39°25'19.646"N	80°56'20.688"W	452.95	295.722	1.50	1.47	-2.28	
4061.00	8.360	291.440	4029.17	-333.95	201.21	-420.60	1657608.23	14315641.09	39°25'19.691"N	80°56'20.848"W	466.25	295.566	0.68	0.58	2.60	
4156.00	8.750	301.550	4123.12	-344.21	207.51	-433.19	1657595.64	14315647.39	39°25'19.754"N	80°56'21.008"W	480.33	295.596	1.63	0.41	10.64	
4250.00	9.470	295.690	4215.94	-355.38	214.61	-446.25	1657582.59	14315654.48	39°25'19.824"N	80°56'21.174"W	495.17	295.683	1.25	0.77	-6.23	
4345.00	8.910	291.780	4309.72	-365.90	220.72	-460.12	1657568.72	14315660.60	39°25'19.885"N	80°56'21.351"W	510.33	295.627	0.88	-0.59	-4.12	
4440.00	8.380	293.920	4403.64	-375.64	226.26	-473.28	1657555.56	14315666.13	39°25'19.939"N	80°56'21.519"W	524.59	295.551	0.65	-0.56	2.25	
4535.00	9.470	294.970	4497.49	-386.00	232.37	-486.70	1657542.16	14315672.23	39°25'20.000"N	80°56'21.690"W	539.32	295.522	1.16	1.15	1.11	
4630.00	11.000	294.950	4590.97	-397.96	239.49	-502.00	1657526.86	14315679.35	39°25'20.070"N	80°56'21.885"W	556.20	295.504	1.61	1.61	-0.02	

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Crown Unit 1H AWP Proj: 17639'  
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Area	Tyler County, WV	Well	Crown Unit 1H
Field	Tyler	Wellbore	Crown Unit 1H AWB
Facility	Neat Pad		

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MD (ft)	Inclination (°)	Azimuth (°)	TVD (ft)	Vert Sect (ft)	North (ft)	East (ft)	Grid East (ft)	Grid North (ft)	Latitude	Longitude	Closure Dist (ft)	Closure Dir (°)	DLS (ft/100ft)	Build Rate (ft/100ft)	Turn Rate (°/100ft)	Comments
4725.00	9.940	290.150	4684.39	-409.69	246.14	-517.92	1657510.95	14315686.00	39°25'20.136"N	80°56'22.087"W	573.43	295.419	1.44	-1.12	-5.05	
4819.00	9.670	287.180	4777.02	-419.74	251.26	-533.07	1657495.80	14315691.12	39°25'20.187"N	80°56'22.281"W	589.32	295.237	0.61	-0.29	-3.16	
4913.00	9.340	284.940	4869.73	-428.91	255.56	-547.99	1657480.89	14315695.42	39°25'20.230"N	80°56'22.471"W	604.65	295.003	0.53	-0.35	-2.38	
5009.00	8.390	277.070	4964.58	-436.60	258.43	-562.46	1657466.42	14315698.29	39°25'20.258"N	80°56'22.655"W	618.99	294.677	1.60	-0.99	-8.20	
5104.00	7.540	283.170	5058.67	-443.20	260.71	-575.41	1657453.47	14315700.56	39°25'20.281"N	80°56'22.820"W	631.72	294.374	1.26	-0.89	6.42	
5198.00	7.120	283.260	5151.90	-450.60	264.41	-586.77	1657442.12	14315704.27	39°25'20.317"N	80°56'22.965"W	643.59	294.257	1.44	-0.45	10.73	
5293.00	8.520	297.320	5246.02	-459.84	269.67	-598.43	1657430.46	14315709.82	39°25'20.372"N	80°56'23.113"W	656.51	294.281	1.58	1.47	4.27	
5389.00	8.160	296.990	5341.00	-470.08	276.32	-610.82	1657418.08	14315716.17	39°25'20.435"N	80°56'23.271"W	670.42	294.341	0.38	-0.37	-0.34	
5484.00	9.250	296.820	5434.91	-480.61	282.83	-623.64	1657405.26	14315722.68	39°25'20.500"N	80°56'23.434"W	684.78	294.395	1.15	1.15	-0.18	
5579.00	10.800	284.560	5528.46	-491.26	288.51	-639.07	1657389.84	14315728.36	39°25'20.556"N	80°56'23.631"W	701.18	294.297	2.77	1.63	-12.91	
5673.00	11.670	252.930	5620.75	-496.80	287.93	-656.70	1657372.22	14315727.78	39°25'20.550"N	80°56'23.856"W	717.05	293.675	6.54	0.93	-33.65	
5763.00	14.180	222.970	5712.46	-492.11	276.71	-673.66	1657355.27	14315716.56	39°25'20.439"N	80°56'24.072"W	728.28	292.330	7.51	2.67	-31.87	
5806.00	15.770	210.750	5750.14	-486.61	268.65	-679.63	1657349.30	14315708.51	39°25'20.360"N	80°56'24.148"W	730.80	291.569	9.04	4.08	-31.33	BH AT Curve <-8-1/2"> (5767) (5806-17615)
5817.00	16.070	209.360	5760.72	-484.68	266.04	-681.14	1657342.79	14315705.90	39°25'20.334"N	80°56'24.167"W	731.25	291.335	4.41	2.73	-12.64	
5864.00	16.070	200.480	5805.99	-475.53	254.28	-688.61	1657342.33	14315684.14	39°25'20.218"N	80°56'24.237"W	732.18	290.321	5.23	0.00	-18.89	
5912.00	16.600	192.150	5851.96	-464.69	241.35	-690.37	1657338.56	14315668.21	39°25'20.090"N	80°56'24.285"W	731.34	289.269	5.00	1.10	-17.35	
5959.00	18.570	187.930	5896.76	-452.42	227.37	-692.82	1657336.11	14315667.24	39°25'19.952"N	80°56'24.316"W	729.18	288.169	4.99	4.19	-8.98	
6007.00	22.590	182.060	5941.70	-437.13	210.58	-694.21	1657334.73	14315650.45	39°25'19.786"N	80°56'24.334"W	725.44	286.874	9.40	8.38	-12.23	
6054.00	28.460	170.390	5984.12	-417.74	190.48	-692.66	1657336.28	14315630.37	39°25'19.587"N	80°56'24.315"W	718.37	285.377	16.39	12.49	-24.83	
6103.00	32.240	160.990	6026.42	-393.17	166.59	-686.45	1657342.49	14315606.49	39°25'19.351"N	80°56'24.236"W	706.37	283.641	12.37	7.71	-19.18	
6150.00	37.360	152.600	6065.02	-368.46	142.05	-675.79	1657353.14	14315581.95	39°25'19.108"N	80°56'24.100"W	690.56	281.871	14.89	10.89	-17.85	
6198.00	41.400	149.150	6102.12	-336.40	115.48	-660.94	1657367.98	14315555.40	39°25'18.846"N	80°56'23.911"W	670.95	279.911	9.57	8.42	-7.19	
6245.00	45.360	148.170	6136.27	-304.73	87.92	-644.14	1657384.77	14315527.84	39°25'18.573"N	80°56'23.697"W	650.11	277.772	8.59	8.47	-2.09	
6292.00	49.990	148.860	6167.90	-270.66	58.28	-626.00	1657402.91	14315498.22	39°25'18.280"N	80°56'23.466"W	628.71	275.319	9.87	9.81	1.47	
6309.00	51.594	149.326	6178.65	-257.71	46.98	-619.24	1657409.67	14315486.92	39°25'18.168"N	80°56'23.380"W	621.02	274.339	9.67	9.44	2.74	Middlesex: 6309' MD
6339.00	54.430	150.100	6196.70	-234.13	26.29	-607.15	1657421.75	14315466.24	39°25'17.964"N	80°56'23.226"W	607.72	272.479	9.67	9.45	2.58	
6386.00	59.280	151.050	6222.39	-195.29	-7.98	-587.83	1657441.06	14315431.98	39°25'17.625"N	80°56'22.981"W	587.89	269.222	10.46	10.32	2.02	
6433.00	63.250	150.180	6244.98	-154.62	-43.88	-567.61	1657461.27	14315396.10	39°25'17.270"N	80°56'22.723"W	569.31	265.579	8.60	8.45	-1.85	
6481.00	66.660	149.220	6265.29	-111.82	-81.42	-545.67	1657483.21	14315358.57	39°25'16.899"N	80°56'22.444"W	551.71	261.513	7.37	7.15	-2.00	
6492.00	67.417	148.958	6269.58	-101.87	-90.11	-540.47	1657488.41	14315349.89	39°25'16.813"N	80°56'22.378"W	547.93	260.584	7.05	6.70	-2.38	Burkett: 6492' MD

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# Actual Wellpath Report

Crown Unit 1H AWP Proj: 17639'

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## REFERENCE WELLPATH IDENTIFICATION

Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #03
Area	Tyler County, WV	Well	Crown Unit 1H
Field	Tyler	Wellbore	Crown Unit 1H AWB
Facility	Neat Pad		

## WELLPATH DATA (215 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 (ft/100ft)	Build Rate (ft/100ft)	Turn Rate (ft/100ft)	Comments
6528.00	89.830	148.120	6282.70	-68.99	-118.70	-522.97	1657505.90	14315321.31	39°25'16.530"N	80°56'22.155"W	536.27	257.212	7.05	6.70	-2.33	
6558.00†	71.291	147.077	6292.68	-41.35	-142.59	-507.81	1657521.05	14315297.43	39°25'16.294"N	80°56'21.962"W	527.45	254.316	5.87	4.87	-3.48	Tully, 6558' MD
6576.00	72.170	146.460	6298.32	-24.69	-156.88	-498.44	1657530.41	14315283.14	39°25'16.153"N	80°56'21.843"W	522.55	252.529	5.87	4.88	-3.43	
6607.00†	73.377	146.169	6307.51	4.10	-181.52	-482.02	1657546.83	14315258.51	39°25'15.909"N	80°56'21.634"W	515.07	249.364	4.00	3.89	-0.94	Marcellus POE: 6607' MD
6623.00	74.000	146.020	6312.00	19.01	-194.27	-473.45	1657555.39	14315245.77	39°25'15.783"N	80°56'21.525"W	511.76	247.691	4.00	3.89	-0.93	
6671.00	76.710	145.990	6324.13	64.11	-232.77	-447.49	1657581.34	14315207.29	39°25'15.402"N	80°56'21.194"W	504.41	242.519	5.65	5.65	-0.06	
6718.00	81.690	148.360	6332.94	109.14	-271.55	-422.48	1657606.34	14315168.52	39°25'15.019"N	80°56'20.876"W	502.23	237.269	11.70	10.60	5.04	
6766.00	85.290	151.790	6338.38	156.13	-312.87	-398.70	1657630.11	14315127.21	39°25'14.610"N	80°56'20.573"W	506.81	231.878	10.33	7.50	7.15	
6813.00	89.080	153.440	6340.69	202.69	-354.55	-377.12	1657653.69	14315085.56	39°25'14.198"N	80°56'20.298"W	517.61	226.767	8.79	8.06	3.51	
6862.00	89.170	154.070	6341.44	251.41	-388.49	-355.45	1657673.35	14315041.63	39°25'13.764"N	80°56'20.023"W	533.98	221.733	1.30	0.18	1.29	
6956.00	88.920	152.930	6343.00	344.82	-482.60	-313.51	1657715.27	14314957.55	39°25'12.932"N	80°56'19.489"W	575.49	213.009	1.24	-0.27	-1.21	
7051.00	89.110	150.940	6344.64	438.91	-566.41	-268.83	1657759.94	14314873.78	39°25'12.104"N	80°56'18.920"W	626.97	205.390	2.10	0.20	-2.09	
7145.00	89.080	152.930	6346.12	532.00	-649.35	-224.61	1657804.14	14314790.88	39°25'11.284"N	80°56'18.358"W	687.10	199.081	2.12	-0.03	2.12	
7240.00	89.080	155.410	6347.65	626.52	-734.84	-183.23	1657845.50	14314705.42	39°25'10.438"N	80°56'17.831"W	757.34	194.001	2.61	0.00	2.61	
7335.00	89.110	156.740	6349.15	721.30	-821.66	-144.71	1657884.01	14314618.63	39°25'09.580"N	80°56'17.341"W	834.31	189.988	1.40	0.03	1.40	
7430.00	89.350	157.650	6350.43	816.19	-909.23	-107.89	1657920.81	14314531.10	39°25'08.714"N	80°56'16.873"W	915.60	186.767	0.99	0.25	0.96	
7524.00	89.380	156.520	6351.47	910.08	-995.80	-71.29	1657957.39	14314444.56	39°25'07.858"N	80°56'16.407"W	998.35	184.095	1.20	0.03	-1.20	
7619.00	89.320	151.760	6352.55	1004.58	-1081.26	-29.87	1657998.80	14314359.14	39°25'07.014"N	80°56'15.880"W	1081.67	181.582	5.01	-0.06	-5.01	
7714.00	89.080	150.710	6353.87	1098.50	-1184.53	15.84	1658044.49	14314275.90	39°25'06.190"N	80°56'15.298"W	1164.63	179.221	1.13	-0.25	-1.11	
7808.00	88.980	152.730	6355.46	1191.55	-1247.29	60.37	1658089.00	14314193.17	39°25'05.372"N	80°56'14.732"W	1248.75	177.229	2.15	-0.11	2.15	
7903.00	89.110	153.110	6357.05	1285.85	-1331.86	103.61	1658132.22	14314108.63	39°25'04.536"N	80°56'14.182"W	1335.89	175.552	0.42	0.14	0.40	
7997.00	89.050	155.550	6358.56	1379.40	-1416.57	144.32	1658172.92	14314023.96	39°25'03.698"N	80°56'13.664"W	1423.90	174.183	2.60	-0.06	2.60	
8092.00	89.010	156.920	6360.17	1474.19	-1503.50	182.60	1658211.18	14313937.07	39°25'02.839"N	80°56'13.177"W	1514.55	173.075	1.44	-0.04	1.44	
8187.00	89.050	156.480	6361.77	1569.04	-1590.74	220.17	1658248.74	14313849.86	39°25'01.976"N	80°56'12.699"W	1605.90	172.120	0.47	0.04	-0.46	
8282.00	89.020	157.420	6363.37	1663.91	-1678.14	257.36	1658285.91	14313762.50	39°25'01.112"N	80°56'12.226"W	1697.76	171.281	0.99	-0.03	0.99	
8375.00	88.950	156.920	6365.02	1756.79	-1763.84	293.44	1658321.97	14313676.83	39°25'00.265"N	80°56'11.767"W	1788.08	170.555	0.54	-0.08	-0.54	
8469.00	89.420	155.310	6366.36	1850.58	-1849.78	331.49	1658360.02	14313590.93	39°24'59.415"N	80°56'11.283"W	1879.25	169.840	1.78	0.50	-1.71	
8564.00	89.350	150.380	6367.38	1944.85	-1934.28	374.83	1658403.34	14313508.46	39°24'58.580"N	80°56'10.731"W	1970.26	169.033	5.19	-0.07	-5.19	
8659.00	89.320	147.980	6368.48	2038.20	-2015.85	423.50	1658451.99	14313424.92	39°24'57.773"N	80°56'10.112"W	2059.85	168.136	2.53	-0.03	-2.53	
8754.00	89.350	149.460	6369.58	2131.41	-2097.03	472.82	1658501.29	14313343.77	39°24'56.971"N	80°56'09.484"W	2149.68	167.294	1.56	0.03	1.56	

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# Actual Wellpath Report

Crown Unit 1H AWP Proj: 17639'

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## REFERENCE WELLPATH IDENTIFICATION

Operator	Slot	Slot #03
ANTERO RESOURCES CORPORATION	Well	Crown Unit 1H
Tyler County, WV	Wellbore	Crown Unit 1H AWB
Tyler		
Neat Pad		

## WELLPATH DATA (215 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
8849.00	89.350	151.780	6370.66	2225.18	-2179.80	519.42	1658547.87	14313261.03	39°24'56.152"N	80°56'08.891"W	2240.83	166.597	2.44	0.00	0.00	2.44
8944.00	89.380	159.110	6371.72	2319.83	-2266.15	556.87	1658587.30	14313174.72	39°24'55.299"N	80°56'08.389"W	2334.04	166.146	7.72	0.03	7.72	7.72
9039.00	89.480	163.620	6372.66	2414.77	-2356.14	589.22	1658617.64	14313084.77	39°24'54.409"N	80°56'08.003"W	2428.70	165.960	4.75	0.11	4.75	4.75
9133.00	89.450	164.410	6373.54	2508.51	-2448.50	615.10	1658643.51	14312994.44	39°24'53.516"N	80°56'07.674"W	2522.84	165.887	0.84	-0.03	0.84	0.84
9229.00	89.510	165.620	6374.41	2604.11	-2539.23	639.92	1658668.32	14312901.75	39°24'52.599"N	80°56'07.359"W	2618.62	165.855	1.26	0.06	1.26	1.26
9324.00	89.880	165.230	6374.92	2698.65	-2631.17	663.83	1658692.22	14312809.85	39°24'51.690"N	80°56'07.055"W	2713.62	165.840	0.57	0.39	-0.41	0.57
9418.00	89.600	163.230	6375.34	2792.37	-2721.63	689.38	1658717.75	14312719.43	39°24'50.796"N	80°56'06.731"W	2807.58	165.786	2.15	-0.30	-2.13	2.15
9513.00	89.480	162.060	6376.11	2887.25	-2812.30	717.71	1658746.08	14312628.79	39°24'49.900"N	80°56'06.370"W	2902.44	165.663	1.24	-0.13	-1.23	1.24
9607.00	89.290	161.520	6376.19	2981.19	-2901.58	747.09	1658775.44	14312539.54	39°24'49.017"N	80°56'05.997"W	2996.22	165.561	0.61	-0.20	-0.57	0.61
9703.00	89.720	160.860	6377.94	3077.16	-2992.45	778.04	1658806.38	14312448.71	39°24'48.119"N	80°56'05.603"W	3091.84	165.426	0.82	0.45	-0.69	0.82
9797.00	89.540	158.780	6378.55	3171.15	-3080.68	810.46	1658838.79	14312360.52	39°24'47.246"N	80°56'05.191"W	3185.50	165.261	2.22	-0.19	-2.21	2.22
9891.00	89.350	158.020	6379.46	3265.12	-3168.07	845.06	1658873.38	14312273.16	39°24'46.382"N	80°56'04.751"W	3278.84	165.064	0.83	-0.20	-0.81	0.83
9986.00	89.880	160.420	6380.10	3360.10	-3256.88	878.76	1658907.07	14312184.39	39°24'45.504"N	80°56'04.323"W	3373.35	164.900	2.59	0.56	2.53	2.53
10081.00	89.260	161.310	6380.81	3455.08	-3346.63	909.90	1658938.19	14312094.68	39°24'44.617"N	80°56'03.927"W	3468.12	164.790	1.14	-0.65	0.94	1.14
10175.00	89.510	162.630	6381.82	3549.01	-3436.01	939.00	1658967.27	14312005.34	39°24'43.734"N	80°56'03.557"W	3562.00	164.715	1.43	0.27	1.40	1.43
10270.00	89.480	163.930	6382.66	3643.83	-3526.98	966.32	1658994.59	14311914.39	39°24'42.834"N	80°56'03.209"W	3656.97	164.678	1.37	-0.03	1.37	1.37
10365.00	89.380	163.770	6383.60	3738.59	-3618.23	992.75	1659021.01	14311823.18	39°24'41.932"N	80°56'02.874"W	3751.95	164.657	0.20	-0.11	-0.17	0.20
10460.00	89.570	161.510	6384.47	3833.46	-3708.89	1021.09	1659049.34	14311732.56	39°24'41.036"N	80°56'02.513"W	3846.88	164.607	2.39	0.20	-2.38	2.39
10555.00	89.540	159.440	6385.21	3928.45	-3798.42	1052.84	1659081.07	14311643.06	39°24'40.151"N	80°56'02.110"W	3941.84	164.508	2.18	-0.03	-2.18	2.18
10651.00	89.450	157.050	6386.06	4024.40	-3887.58	1088.42	1659116.64	14311553.95	39°24'39.269"N	80°56'01.657"W	4037.07	164.359	2.49	-0.09	-2.49	2.49
10745.00	89.600	159.110	6386.84	4118.35	-3974.77	1123.50	1659151.71	14311466.79	39°24'38.407"N	80°56'01.211"W	4130.51	164.217	2.20	0.16	2.19	2.19
10840.00	89.420	156.580	6387.65	4213.28	-4062.75	1159.33	1659187.52	14311378.85	39°24'37.538"N	80°56'00.755"W	4224.92	164.074	2.67	-0.19	-2.66	2.67
10935.00	89.350	154.460	6388.67	4308.01	-4149.20	1198.69	1659226.86	14311292.43	39°24'36.683"N	80°56'00.255"W	4318.88	163.886	2.23	-0.07	-2.23	2.23
11030.00	89.720	155.910	6389.44	4402.69	-4235.42	1238.56	1659266.71	14311206.24	39°24'35.830"N	80°55'59.748"W	4412.80	163.700	1.58	0.39	1.53	1.53
11126.00	89.630	157.330	6389.99	4498.53	-4323.54	1276.65	1659304.79	14311118.16	39°24'34.959"N	80°55'59.263"W	4508.08	163.549	1.48	-0.09	1.48	1.48
11221.00	89.880	159.700	6390.39	4593.50	-4411.93	1311.44	1659339.57	14311029.81	39°24'34.085"N	80°55'58.821"W	4602.71	163.445	2.51	0.26	2.49	2.49
11316.00	89.750	162.600	6390.70	4688.47	-4501.82	1342.13	1659370.25	14310939.95	39°24'33.197"N	80°55'58.431"W	4697.63	163.399	3.06	-0.14	3.05	3.05
11410.00	89.750	160.800	6391.11	4782.41	-4591.06	1371.64	1659399.75	14310850.74	39°24'32.314"N	80°55'58.055"W	4791.58	163.366	1.91	0.00	-1.91	1.91
11505.00	90.340	159.060	6391.03	4877.41	-4680.29	1404.24	1659432.34	14310761.55	39°24'31.432"N	80°55'57.641"W	4886.41	163.299	1.93	0.62	-1.83	1.93
11600.00	90.060	157.990	6390.70	4972.38	-4768.69	1439.02	1659467.10	14310673.18	39°24'30.558"N	80°55'57.199"W	4981.09	163.208	1.16	-0.29	-1.13	1.13

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# Actual Wellpath Report

Crown Unit 1H AWP Proj: 17639'

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## REFERENCE WELLPATH IDENTIFICATION

Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #03
Area	Tyler County, WV	Well	Crown Unit 1H
Field	Tyler	Wellbore	Crown Unit 1H AWB
Facility	Neat Pad		

## WELLPATH DATA (215 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 (F/100ft)	Build Rate (F/100ft)	Turn Rate (F/100ft)	Comments
11695.00	90.550	157.470	6390.20	5067.32	-4856.61	1475.02	1659503.09	14310585.31	39°24'29.689"N	80°55'56.741"W	5075.66	163.106	0.75	0.52	-0.55	
11790.00	90.310	157.500	6389.48	5162.23	-4944.36	1511.40	1659539.45	14310497.59	39°24'28.822"N	80°55'56.278"W	5170.21	163.003	0.25	-0.25	0.03	
11885.00	91.080	157.510	6388.33	5257.15	-5032.13	1547.75	1659575.78	14310409.86	39°24'27.954"N	80°55'55.816"W	5264.77	162.904	0.81	0.81	0.01	
11979.00	90.460	158.610	6387.07	5351.09	-5119.31	1582.86	1659610.88	14310322.71	39°24'27.092"N	80°55'55.370"W	5358.43	162.819	1.34	-0.66	1.17	
12074.00	90.310	158.290	6386.43	5446.06	-5207.67	1617.76	1659645.76	14310234.39	39°24'26.218"N	80°55'54.926"W	5453.16	162.743	0.37	-0.16	-0.34	
12169.00	90.400	161.980	6385.84	5541.04	-5297.00	1650.03	1659678.03	14310145.09	39°24'25.335"N	80°55'54.516"W	5548.04	162.698	3.89	0.09	3.88	
12264.00	90.400	163.870	6385.18	5635.90	-5387.80	1677.92	1659705.91	14310054.32	39°24'24.438"N	80°55'54.161"W	5643.03	162.702	1.99	0.00	1.99	
12358.00	90.490	163.570	6384.45	5729.68	-5478.03	1704.27	1659732.25	14309964.13	39°24'23.546"N	80°55'53.826"W	5737.02	162.719	0.33	0.10	-0.32	
12453.00	90.220	162.050	6383.86	5824.54	-5568.78	1732.35	1659760.31	14309873.42	39°24'22.648"N	80°55'53.469"W	5832.01	162.720	1.63	-0.28	-1.60	
12549.00	90.000	160.070	6383.68	5920.52	-5659.58	1763.61	1659791.46	14309782.65	39°24'21.751"N	80°55'53.073"W	5927.97	162.693	2.08	-0.23	-2.06	
12643.00	90.030	160.160	6383.65	6014.51	-5747.98	1795.48	1659823.42	14309694.29	39°24'20.877"N	80°55'52.667"W	6021.87	162.653	0.10	0.03	0.10	
12738.00	90.090	160.730	6383.55	6109.51	-5837.50	1827.28	1659855.20	14309604.81	39°24'19.992"N	80°55'52.263"W	6116.80	162.619	0.60	0.06	0.60	
12833.00	90.090	160.320	6383.40	6204.50	-5927.06	1858.95	1659886.86	14309515.28	39°24'19.106"N	80°55'51.860"W	6211.74	162.587	0.43	0.00	-0.43	
12927.00	89.970	159.470	6383.35	6298.50	-6015.33	1891.26	1659919.16	14309427.05	39°24'18.234"N	80°55'51.449"W	6305.64	162.546	0.91	-0.13	-0.90	
13021.00	90.310	160.720	6383.12	6392.50	-6103.71	1923.26	1659951.15	14309338.70	39°24'17.360"N	80°55'51.043"W	6399.55	162.510	1.38	0.36	1.33	
13116.00	90.060	160.170	6382.82	6487.49	-6193.23	1955.06	1659982.93	14309249.22	39°24'16.475"N	80°55'50.638"W	6494.49	162.480	0.64	-0.26	-0.58	
13211.00	90.120	160.090	6382.67	6582.49	-6282.58	1987.35	1660015.21	14309159.91	39°24'15.592"N	80°55'50.228"W	6589.41	162.446	0.11	0.06	-0.08	
13306.00	90.180	160.180	6382.42	6677.49	-6371.92	2019.63	1660047.48	14309070.61	39°24'14.708"N	80°55'49.817"W	6684.33	162.414	0.11	0.06	0.09	
13400.00	90.460	161.040	6381.89	6771.48	-6460.59	2050.84	1660078.67	14308981.97	39°24'13.832"N	80°55'49.421"W	6778.29	162.389	0.96	0.30	0.91	
13495.00	90.150	161.960	6381.39	6866.43	-6550.68	2080.98	1660108.80	14308891.91	39°24'12.941"N	80°55'49.038"W	6873.27	162.376	1.02	-0.33	0.97	
13588.00	90.400	163.920	6380.94	6959.29	-6639.58	2108.26	1660136.07	14308803.05	39°24'12.062"N	80°55'48.691"W	6966.26	162.384	2.12	0.27	2.11	
13682.00	90.370	164.630	6380.31	7053.00	-6730.06	2133.74	1660161.54	14308712.60	39°24'11.168"N	80°55'48.367"W	7060.21	162.409	0.76	-0.03	0.76	
13778.00	90.120	162.680	6379.90	7148.78	-6822.18	2160.75	1660188.53	14308620.52	39°24'10.257"N	80°55'48.024"W	7156.18	162.426	2.04	-0.26	-2.02	
13873.00	90.220	161.480	6379.62	7243.70	-6912.57	2189.97	1660217.74	14308530.17	39°24'09.364"N	80°55'47.653"W	7251.18	162.421	1.28	0.11	-1.27	
13968.00	90.120	161.600	6379.34	7338.66	-7002.68	2220.05	1660247.81	14308440.09	39°24'08.473"N	80°55'47.271"W	7346.17	162.410	0.16	-0.11	0.13	
14062.00	90.250	161.850	6379.03	7432.61	-7091.94	2249.52	1660277.28	14308350.87	39°24'07.590"N	80°55'46.896"W	7440.16	162.401	0.30	0.14	0.27	
14157.00	90.250	161.500	6378.62	7527.56	-7182.12	2279.39	1660307.13	14308260.73	39°24'06.699"N	80°55'46.516"W	7535.15	162.392	0.37	0.00	-0.37	
14252.00	90.310	160.250	6378.15	7622.54	-7271.87	2310.52	1660338.25	14308171.01	39°24'05.812"N	80°55'46.121"W	7630.11	162.373	1.32	0.06	-1.32	
14346.00	90.250	158.810	6377.69	7716.53	-7359.93	2343.39	1660371.10	14308082.98	39°24'04.941"N	80°55'45.703"W	7724.00	162.339	1.53	-0.06	-1.53	
14441.00	90.220	158.160	6377.30	7811.51	-7448.31	2378.23	1660405.93	14307994.64	39°24'04.067"N	80°55'45.260"W	7818.78	162.292	0.68	-0.03	-0.68	

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# Actual Wellpath Report

Crown Unit 1H AWP Proj: 17639'  
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REFERENCE WELLPATH IDENTIFICATION	
Operator	ANTERO RESOURCES CORPORATION
Area	Tyler County, WV
Field	Tyler
Facility	Neat Pad
Slot	Slot #03
Well	Crown Unit 1H
Wellbore	Crown Unit 1H AWB

WELLPATH DATA (215 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 F/100ft	Build Rate F/100ft	Turn Rate F/100ft	Comments
14536.00	90.340	157.610	6376.84	7906.45	-7536.32	2413.99	1660441.68	14307906.67	39°24'03.197"N	80°55'44.805"W	7913.50	162.239	0.59	0.13	-0.58	
14630.00	90.060	157.060	6376.51	8000.36	-7623.06	2450.22	1660477.89	14307819.96	39°24'02.339"N	80°55'44.345"W	8007.16	162.181	0.66	-0.30	-0.59	
14724.00	89.750	158.530	6376.67	8094.30	-7710.09	2485.74	1660513.40	14307732.97	39°24'01.479"N	80°55'43.893"W	8100.89	162.131	1.60	-0.33	1.56	
14820.00	89.880	158.580	6376.98	8190.28	-7799.44	2520.84	1660548.48	14307643.65	39°24'00.596"N	80°55'43.447"W	8196.70	162.089	0.15	0.14	0.05	
14914.00	89.820	158.780	6377.22	8284.26	-7887.01	2555.01	1660582.64	14307556.12	39°23'59.730"N	80°55'43.012"W	8290.54	162.050	0.22	-0.06	0.21	
15008.00	90.030	158.440	6377.35	8378.24	-7974.53	2589.30	1660616.91	14307468.63	39°23'58.865"N	80°55'42.577"W	8384.37	162.012	0.43	0.22	-0.36	
15103.00	89.910	158.890	6377.40	8473.17	-8062.40	2625.40	1660653.00	14307380.80	39°23'57.996"N	80°55'42.118"W	8479.10	161.963	1.64	-0.13	-1.63	
15198.00	90.860	158.010	6376.76	8568.08	-8150.14	2661.83	1660689.41	14307293.10	39°23'57.128"N	80°55'41.654"W	8573.80	161.913	1.55	1.00	1.18	
15293.00	89.970	160.010	6376.07	8663.06	-8238.83	2695.85	1660723.43	14307204.45	39°23'56.252"N	80°55'41.222"W	8668.67	161.881	2.30	-0.94	2.11	
15387.00	91.140	161.070	6375.16	8757.05	-8327.45	2727.17	1660754.73	14307115.88	39°23'55.375"N	80°55'40.824"W	8762.64	161.867	1.68	1.24	1.13	
15482.00	89.880	159.390	6374.31	8852.04	-8416.84	2759.30	1660786.84	14307026.50	39°23'54.492"N	80°55'40.416"W	8857.59	161.849	2.21	-1.33	-1.77	
15576.00	90.000	157.180	6374.41	8946.00	-8504.16	2794.07	1660821.61	14306939.21	39°23'53.628"N	80°55'39.973"W	8951.41	161.812	2.35	0.13	-2.35	
15670.00	89.780	158.400	6374.59	9039.86	-8590.56	2831.12	1660858.64	14306852.86	39°23'52.774"N	80°55'39.502"W	9045.05	161.760	0.86	-0.23	-0.83	
15766.00	90.000	158.170	6374.78	9135.77	-8679.11	2868.19	1660895.69	14306764.34	39°23'51.899"N	80°55'39.031"W	9140.75	161.713	1.86	0.23	1.84	
15860.00	89.820	159.430	6374.92	9229.75	-8766.74	2902.18	1660929.67	14306676.74	39°23'51.032"N	80°55'38.599"W	9234.63	161.683	1.35	-0.19	1.34	
15955.00	89.880	159.160	6375.17	9324.74	-8855.61	2935.77	1660963.24	14306587.91	39°23'50.154"N	80°55'38.172"W	9329.55	161.659	0.29	0.06	-0.28	
16048.00	89.880	159.920	6375.37	9417.74	-8942.74	2968.28	1660995.74	14306500.81	39°23'49.292"N	80°55'37.759"W	9422.49	161.638	0.82	0.00	0.82	
16143.00	89.940	159.880	6375.52	9512.74	-9031.95	3000.92	1661028.37	14306411.64	39°23'48.410"N	80°55'37.344"W	9517.44	161.621	0.08	0.06	-0.04	
16239.00	89.820	159.980	6375.72	9608.74	-9122.12	3033.87	1661061.30	14306321.50	39°23'47.519"N	80°55'36.925"W	9613.40	161.604	0.16	-0.12	0.10	
16334.00	89.850	159.200	6375.99	9703.74	-9211.16	3067.00	1661094.42	14306232.50	39°23'46.639"N	80°55'36.504"W	9708.34	161.584	0.82	0.03	-0.82	
16429.00	90.000	160.150	6376.12	9798.74	-9300.24	3099.99	1661127.41	14306143.46	39°23'45.758"N	80°55'36.085"W	9803.29	161.566	1.01	0.16	1.00	
16524.00	90.060	160.770	6376.07	9893.73	-9389.77	3131.77	1661159.17	14306053.96	39°23'44.873"N	80°55'35.681"W	9898.27	161.555	0.66	0.06	0.65	
16617.00	90.000	160.980	6376.02	9986.72	-9477.57	3162.42	1661189.81	14305966.20	39°23'44.005"N	80°55'35.291"W	9991.26	161.547	0.07	-0.06	-0.03	
16712.00	90.000	160.980	6376.02	10081.70	-9567.32	3193.57	1661220.94	14305876.48	39°23'43.117"N	80°55'34.896"W	10086.25	161.541	0.25	0.00	0.25	
16807.00	90.080	161.160	6375.94	10176.68	-9657.18	3224.39	1661251.75	14305786.66	39°23'42.229"N	80°55'34.504"W	10181.25	161.537	0.21	0.09	0.19	
16902.00	90.060	162.550	6375.82	10271.62	-9747.46	3253.97	1661281.42	14305696.42	39°23'41.337"N	80°55'34.128"W	10276.25	161.540	1.46	-0.03	1.46	
16997.00	90.120	160.470	6375.67	10366.57	-9837.55	3284.10	1661311.44	14305606.37	39°23'40.446"N	80°55'33.745"W	10371.24	161.539	2.19	0.06	-2.19	
17091.00	89.940	158.730	6375.62	10460.57	-9925.65	3316.86	1661344.19	14305518.30	39°23'39.575"N	80°55'33.329"W	10465.18	161.522	1.86	-0.19	-1.85	
17186.00	90.220	161.490	6375.49	10555.56	-10014.97	3349.18	1661376.49	14305429.01	39°23'38.692"N	80°55'32.918"W	10560.15	161.509	2.92	0.29	2.91	
17280.00	90.180	161.900	6375.16	10649.51	-10104.22	3378.70	1661406.00	14305339.80	39°23'37.810"N	80°55'32.543"W	10654.15	161.511	0.44	-0.04	0.44	

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REFERENCE WELLPATH IDENTIFICATION	
Operator	ANTERO RESOURCES CORPORATION
Area	Tyler County, WV
Field	Tyler
Facility	Neat Pad
Slot	Slot #03
Well	Crown Unit 1H
Wellbore	Crown Unit 1H AWB

WELLPATH DATA (215 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
17375.00	90.050	158.310	6374.96	10744.49	-10193.53	3411.03	1661438.31	14305250.52	39°23'36.927"N	80°55'32.132"W	10749.10	161.488	3.78	-0.13	-3.78	
17471.00	90.000	155.750	6374.91	10840.37	-10281.91	3448.49	1661475.76	14305162.18	39°23'36.053"N	80°55'31.656"W	10844.80	161.459	2.67	-0.06	-2.67	
17565.00	90.000	155.060	6374.91	10934.09	-10367.38	3487.61	1661514.87	14305076.74	39°23'35.208"N	80°55'31.159"W	10938.28	161.407	0.73	0.00	-0.73	
17615.00	90.000	154.080	6374.91	10983.88	-10412.54	3509.08	1661536.33	14305031.61	39°23'34.761"N	80°55'30.866"W	10987.93	161.376	1.96	0.00	-1.96	
17639.00	90.000	154.080	6374.91	11007.76	-10434.12	3519.57	1661546.81	14305010.03	39°23'34.548"N	80°55'30.752"W	11011.74	161.360	0.00	0.00	0.00	Projected MD at ID: 17639'

HOLE & CASING SECTIONS - Ref Wellbore: Crown Unit 1H AWB												Ref Wellpath: Crown Unit 1H AWP Proj: 17639'			
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]		
	Start MD [ft]	End MD [ft]	Start MD [ft]	End MD [ft]		Start TVD [ft]	End TVD [ft]	Start N/S [ft]	Start E/W [ft]						
20in Conductor	24.50	104.50	104.50	104.50	80.00	24.50	104.50	104.50	104.50	0.00	0.00	0.00	-0.18		
17.5in Open Hole	104.50	366.50	366.50	366.50	262.00	104.50	366.49	366.49	366.49	0.00	-0.18	-0.98	-1.84		
13.375in Casing Surface	24.50	366.50	366.50	366.50	342.00	24.50	366.49	366.49	366.49	0.00	0.00	-0.98	-1.84		
12.25in Open Hole	366.50	2615.50	2615.50	2615.50	2249.00	366.49	2597.59	2597.59	2597.59	-0.98	-1.84	129.02	-236.20		
9.625in Casing Intermediate	24.50	2615.50	2615.50	2615.50	2591.00	24.50	2597.59	2597.59	2597.59	0.00	0.00	129.02	-236.20		
8.75in Open Hole	2615.50	5825.00	5825.00	5825.00	3209.50	2597.59	5768.41	5768.41	5768.41	129.02	-236.20	264.10	-682.20		
8.5in Open Hole	5825.00	17639.00	17639.00	17639.00	11814.00	5768.41	6374.91	6374.91	6374.91	264.10	-682.20	-10434.12	3519.57		
5.5in Casing Production	24.50	17639.00	17639.00	17639.00	17614.50	24.50	6374.91	6374.91	6374.91	0.00	0.00	-10434.12	3519.57		

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# Actual Wellpath Report

Crown Unit 1H AWP Proj: 17639'  
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## REFERENCE WELLPATH IDENTIFICATION

Operator	Slot	Slot #03
ANTERO RESOURCES CORPORATION	Well	Crown Unit 1H
Tyler County, WV	Wellbore	Crown Unit 1H AWB
Tyler		
Facility		

## TARGETS

Name	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
Crown Unit 1H POE Rev-3	6298.00	-159.33	-488.78	1657540.07	14315280.70	39°25'16.129"N	80°56'21.720"W	point
Crown Unit 1H BHL Rev-3	6328.00	-10443.33	3518.71	1661545.96	14305000.82	39°23'34.457"N	80°55'30.763"W	point
Crown Unit 1H IP #1 Rev-3	6328.00	-916.76	-86.05	1657942.64	14314523.57	39°25'08.640"N	80°56'16.595"W	point
Crown Unit 1H IP #2 Rev-3	6328.00	-2216.44	495.06	1658523.51	14313224.41	39°24'55.790"N	80°56'09.202"W	point
Crown Unit 1H LP Rev-3	6328.00	-334.47	-395.65	1657633.16	14315105.62	39°25'14.397"N	80°56'20.534"W	point

## WELLPATH COMPOSITION - Ref Wellbore: Crown Unit 1H AWB Ref Wellpath: Crown Unit 1H AWP Proj: 17639'

Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
24.50	336.50	Gyrodata standard - Drop gyro or Multi-shot	01 Gyrodata MS Gyro <17-1/2">(100'-327')	Crown Unit 1H AWB
336.50	528.50	Gyrodata standard - Drop gyro or Multi-shot	02 Gyrodata MS Gyro <12-1/4">(327')(337'-519')	Crown Unit 1H AWB
528.50	2545.50	ISCWSA MWD, Rev. 4 (Standard)	03 Directional ONE MWD <12-1/4">(519')(569'-2536')	Crown Unit 1H AWB
2545.50	5767.00	ISCWSA MWD, Rev. 4 (Standard)	04 Panther MWD <8-3/4">(2545.50')(2633'-5767')	Crown Unit 1H AWB
5767.00	17615.00	BHI AutoTrak Curve (Short)	05 BHAT Curve <8-1/2">(5767')(5806'-17615')	Crown Unit 1H AWB
17615.00	17639.00	Blind Drilling (std)	Projection to bit	Crown Unit 1H AWB

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# Actual Wellpath Report

Crown Unit 1H AWP Proj: 17639'  
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REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #03
Area	Tyler County, WV	Well	Crown Unit 1H
Field	Tyler	Wellbore	Crown Unit 1H AWB
Facility	Neat Pad		

COMMENTS
<p>Wellpath general comments</p> <p>API: 47-095-02453-0000</p> <p>BHI Job #: 109423129</p> <p>Rig: Frontier 22</p> <p>Duration: 09/24/2018-09/28/2018</p> <p>Gyrodatta MS Gyro &lt;17-1/2"&gt;(100'-327')</p> <p>Gyrodatta MS Gyro &lt;12-1/4"&gt;(327')(337'-519')</p> <p>Directional ONE MWD &lt;12-1/4"&gt;(519')(569'-2536')</p> <p>Panther MWD &lt;8-3/4"&gt;(2545.50')(2633'-5767')</p> <p>BH AT Curve &lt;8-1/2"&gt;(5767')(5806'-17615')</p> <p>Middlesex: 6309' MD</p> <p>Burkett: 6492' MD</p> <p>Tully: 6558' MD</p> <p>Marcellus POE: 6607' MD</p> <p>Projected MD at TD: 17639'</p>

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