



ANTERO RESOURCES CORPORATION



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

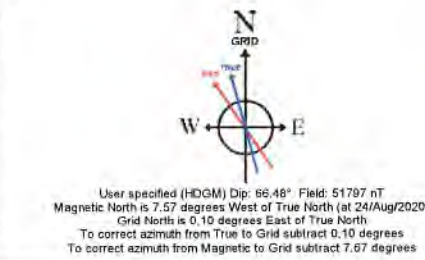
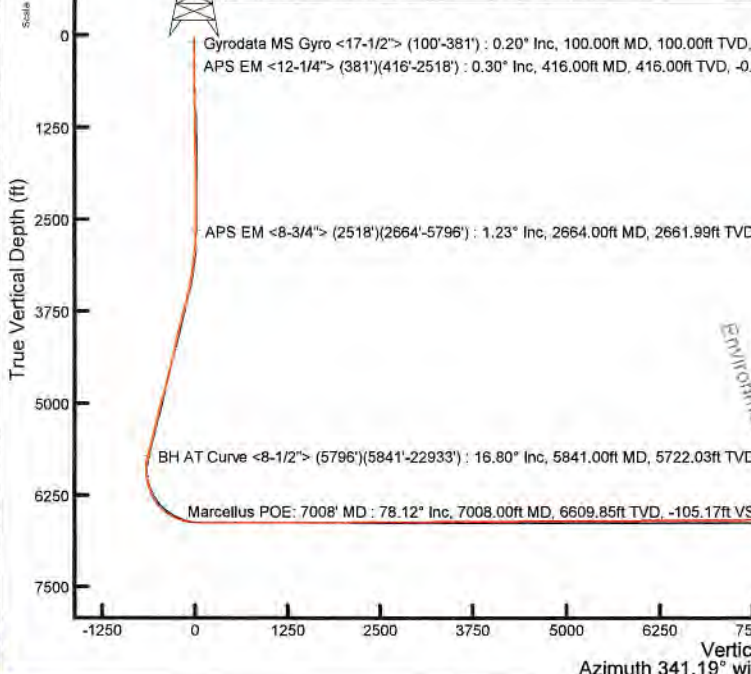
Slot: Slot #05
 Well: Friend Unit 1H
 Wellbore: Friend Unit 1H PWB

Plot reference wellpath is Friend Unit 1H PWP Rev-A.0	Grid System: NAD27 / UTM Zone 17 North, US foot
True vertical depths are referenced to H&P 317 (RKB)	North Reference: Grid north
Reference wellpath measured depths are referenced to H&P 317 (RKB)	Scale: True distance
H&P 317 (RKB) to Mean Sea Level: 1105.5 feet	Coordinates are in feet referenced to Slat
Mean Sea Level to Ground level (At Slot #05): -1081 feet	Depths are in feet
Offset wellpath MDs are referenced to each path's default MD datum	Created by: edonmayor on 2020-09-04; Database: WA_MPL_EASTERNUS_Datm

Location Information				
Facility Name	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude
Pyles Pad	1686309.101	14345436.083	39°30'13.9340"N	80°50'14.2940"W
Slot	Local N (ft)	Local E (ft)	Grid East (US ft)	Grid North (US ft)
Slot #05	-14.98	-0.68	1686308.423	14345421.113
Comment		Friend Unit 1H		
H&P 317 (RKB) to Ground level (At Slot #05)		25.5ft		
Mean Sea Level to Ground level (At Slot #05)		-1081ft		
H&P 317 (RKB) to Mean Sea Level		1105.5ft		

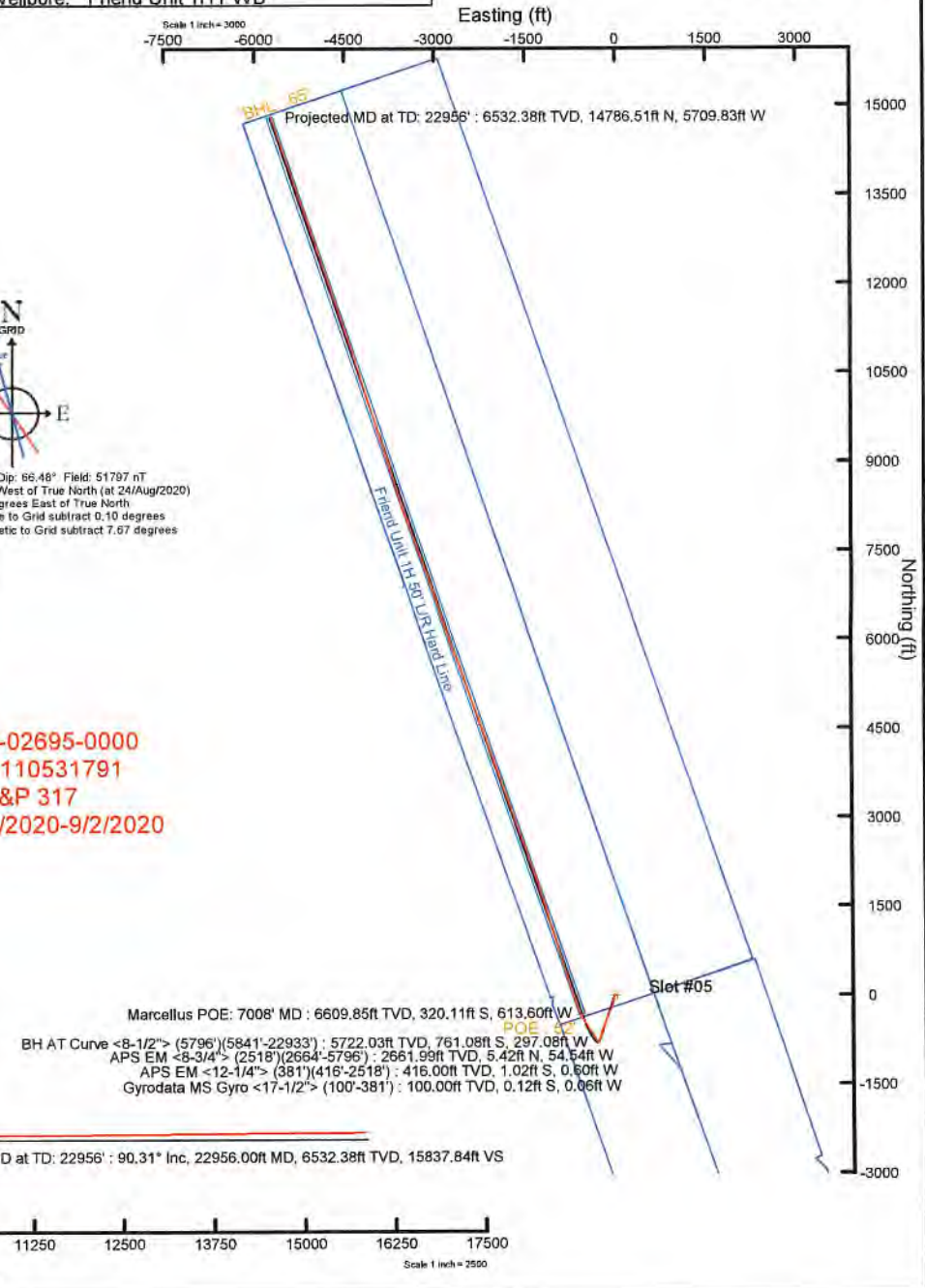
Well Profile Data								
Design Comment	MD (ft)	Inc (°)	Az (°)	TVD (ft)	Local N (ft)	Local E (ft)	DLS (°/100ft)	VS (ft)
Tie On	25.50	0.000	280.000	25.50	0.00	0.00	0.00	0.00
Start Nudge	470.00	0.000	280.000	470.00	0.00	0.00	0.00	0.00
End of Build	670.00	4.000	280.000	669.84	1.21	-6.87	2.00	3.36
Start Drop	1170.00	4.000	280.000	1168.62	7.27	-41.22	0.00	20.17
End of Drop	1370.00	0.000	198.359	1368.46	8.48	-48.09	2.00	23.53
KOP 1	2671.54	0.000	198.359	2670.00	8.48	-48.09	0.00	23.53
End of Build	3524.67	17.062	198.359	3510.57	-111.19	-87.81	2.00	-76.94
Curve KOP	5870.68	17.062	198.359	5753.33	-764.51	-304.63	0.00	-625.46
POE	6985.64	75.440	341.189	6505.00	-314.15	-590.30	8.00	-107.04
Landing PL	7167.63	90.000	341.189	6529.00	-143.72	-648.35	8.00	73.00
BHL	22955.70	90.000	341.189	6529.00	14801.08	-5739.13	0.00	15861.07

Well Data			
Slot	Well	Wellbore	Wellpath
Slot #05	Friend Unit 1H	Friend Unit 1H AWB	Friend Unit 1H AWP Proj: 22955'
Slot #05	Friend Unit 1H	Friend Unit 1H PWB	Friend Unit 1H PWP Rev-A.0



API: 47-095-02695-0000
 BH Job #: 110531791
 Rig: H&P 317
 Duration: 8/25/2020-9/2/2020

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Actual Wellpath Report

Friend Unit 1H AWP Proj: 22956'
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REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Well	Friend Unit 1H
Field	Tyler	API	47-095-02695-0000
Facility	Pyles Pad	Wellbore	Friend 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	Edsaryar
Scale	0.999602	Report Generated	04/Sep/2020 at 20:25
Convergence at slot	0.10° 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	-14.98	-0.68	1686308.42	14345421.11	39°30'13.7860"N	80°50'14.3030"W
Facility Reference Pt			1686309.10	14345436.08	39°30'13.9340"N	80°50'14.2940"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	1106.50ft
Horizontal Reference Pt	Slot	H&P 317 (RKB) to Mean Sea Level	1106.50ft
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	341.19°

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Field	Tyler	API	47-095-02695-0000
Facility	Pyles Pad	Wellbore	Friend Unit 1H AWB
Slot	Slot #05		

WELLPATH DATA (264 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	205.380	0.00	0.00	0.00	0.00	1686308.42	14345421.11	39°30'13.7860"N	80°50'14.3030"W	0.00	0.000	0.00	0.00	0.00	
25.50	0.000	205.380	25.50	0.00	0.00	0.00	1686308.42	14345421.11	39°30'13.7860"N	80°50'14.3030"W	0.00	0.000	0.00	0.00	0.00	
100.00	0.200	205.380	100.00	-0.09	-0.12	-0.06	1686308.37	14345421.00	39°30'13.7848"N	80°50'14.3037"W	0.13	205.380	0.27	0.27	0.00	Gyrodata MS Gyro <17-1/2"> (100'-381')
200.00	0.210	196.400	200.00	-0.37	-0.45	-0.18	1686308.24	14345420.66	39°30'13.7815"N	80°50'14.3053"W	0.49	202.009	0.03	0.01	-8.98	
300.00	0.180	229.510	300.00	-0.58	-0.73	-0.35	1686308.07	14345420.38	39°30'13.7788"N	80°50'14.3075"W	0.81	205.876	0.11	-0.03	33.11	
381.00	0.170	227.510	381.00	-0.67	-0.89	-0.54	1686307.88	14345420.22	39°30'13.7772"N	80°50'14.3099"W	1.04	211.121	0.01	-0.01	-2.47	
416.00	0.300	194.530	416.00	-0.77	-1.02	-0.60	1686307.82	14345420.10	39°30'13.7760"N	80°50'14.3107"W	1.18	210.562	0.52	0.37	-94.23	APS EM <12-1/4"> (381')(416'-2518')
506.00	2.650	274.650	505.96	-0.14	-1.08	-2.73	1686305.69	14345420.04	39°30'13.7754"N	80°50'14.3379"W	2.94	248.517	2.91	2.61	89.02	
597.00	4.660	273.510	596.78	2.10	-0.68	-8.52	1686299.91	14345420.43	39°30'13.7794"N	80°50'14.4117"W	8.55	265.445	2.21	2.21	-1.25	
689.00	6.760	277.600	688.31	5.93	0.27	-17.62	1686290.81	14345421.38	39°30'13.7889"N	80°50'14.5278"W	17.62	270.866	2.32	2.28	4.45	
779.00	5.530	274.930	777.80	10.03	1.34	-27.19	1686281.24	14345422.45	39°30'13.7997"N	80°50'14.6498"W	27.22	272.820	1.40	-1.37	-2.97	
871.00	2.680	261.280	869.55	12.20	1.39	-33.73	1686274.70	14345422.51	39°30'13.8004"N	80°50'14.7333"W	33.76	272.367	3.25	-3.10	-14.84	
962.00	2.330	245.110	960.47	12.37	0.29	-37.51	1686270.92	14345421.41	39°30'13.7896"N	80°50'14.7816"W	37.52	270.448	0.86	-0.38	-17.77	
1053.00	1.120	241.250	1051.42	12.02	-0.91	-39.97	1686268.47	14345420.20	39°30'13.7777"N	80°50'14.8130"W	39.98	268.691	1.34	-1.33	-4.24	
1148.00	1.610	101.910	1146.41	11.18	-1.64	-39.48	1686268.96	14345419.48	39°30'13.7705"N	80°50'14.8067"W	39.51	267.628	2.70	0.52	-146.67	
1243.00	1.170	67.700	1241.38	10.56	-1.54	-37.28	1686271.16	14345419.57	39°30'13.7714"N	80°50'14.7786"W	37.31	267.630	0.97	-0.46	-36.01	
1338.00	0.350	70.740	1336.38	10.62	-1.08	-36.11	1686272.33	14345420.03	39°30'13.7760"N	80°50'14.7636"W	36.12	268.289	0.86	-0.86	3.20	
1433.00	0.450	75.600	1431.37	10.59	-0.89	-35.47	1686272.97	14345420.22	39°30'13.7778"N	80°50'14.7555"W	35.48	268.562	0.11	0.11	5.12	
1528.00	1.330	307.410	1526.37	11.48	-0.13	-35.99	1686272.45	14345420.98	39°30'13.7854"N	80°50'14.7621"W	35.99	269.797	1.73	0.93	-134.94	
1623.00	3.660	298.810	1621.27	14.64	2.00	-39.52	1686268.92	14345423.12	39°30'13.8065"N	80°50'14.8071"W	39.57	272.902	2.48	2.45	-9.05	
1718.00	3.240	305.730	1716.10	19.07	5.03	-44.35	1686264.09	14345426.14	39°30'13.8365"N	80°50'14.8687"W	44.64	276.473	0.62	-0.44	7.28	
1812.00	0.760	294.480	1810.03	21.66	6.84	-47.08	1686261.36	14345427.95	39°30'13.8545"N	80°50'14.9034"W	47.57	278.269	2.66	-2.64	-11.97	
1907.00	0.220	315.930	1905.03	22.25	7.23	-47.78	1686260.66	14345428.34	39°30'13.8584"N	80°50'14.9124"W	48.32	278.610	0.59	-0.57	22.58	
2002.00	0.550	278.620	2000.03	22.63	7.43	-48.36	1686260.09	14345428.54	39°30'13.8603"N	80°50'14.9197"W	48.92	278.740	0.42	0.35	-39.27	
2097.00	0.540	253.870	2095.02	22.86	7.38	-49.24	1686259.20	14345428.49	39°30'13.8598"N	80°50'14.9310"W	49.79	278.522	0.25	-0.01	-26.05	
2192.00	0.500	248.480	2190.02	22.86	7.10	-50.05	1686258.39	14345428.21	39°30'13.8571"N	80°50'14.9414"W	50.55	278.075	0.07	-0.04	-5.67	
2287.00	0.550	237.900	2285.01	22.74	6.71	-50.83	1686257.62	14345427.82	39°30'13.8532"N	80°50'14.9512"W	51.27	277.518	0.11	0.05	-11.14	
2382.00	0.430	218.870	2380.01	22.44	6.19	-51.44	1686257.01	14345427.30	39°30'13.8481"N	80°50'14.9590"W	51.81	276.859	0.21	-0.13	-20.03	
2477.00	0.500	257.000	2475.01	22.29	5.82	-52.06	1686256.38	14345426.93	39°30'13.8444"N	80°50'14.9671"W	52.39	276.375	0.33	0.07	40.14	
2518.00	0.490	248.000	2516.01	22.30	5.71	-52.40	1686256.04	14345426.82	39°30'13.8434"N	80°50'14.9714"W	52.71	276.220	0.19	-0.02	-21.95	

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Operator	ANTERO RESOURCES CORPORATION		Well	Friend Unit 1H
Field	Tyler		API	47-095-02695-0000
Facility	Pyles Pad		Wellbore	Friend Unit 1H AWB
Slot	Slot #05			

WELLPATH DATA (264 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
2664.00	1.230	268.060	2661.99	22.72	5.42	-54.54	1686253.90	14345426.53	39°30'13.8406"N	80°50'14.9987"W	54.81	275.679	0.54	0.51	13.74	APS EM <8-3/4"> (2518')(2664'-5796')
2759.00	1.720	198.290	2756.96	21.88	4.04	-56.01	1686252.43	14345425.15	39°30'13.8269"N	80°50'15.0175"W	56.16	274.121	1.83	0.52	-73.44	
2853.00	4.980	162.910	2850.80	16.67	-1.21	-55.25	1686253.19	14345419.91	39°30'13.7751"N	80°50'15.0079"W	55.27	268.750	3.95	3.47	-37.64	
2948.00	7.260	169.350	2945.25	6.61	-11.05	-52.93	1686255.51	14345410.07	39°30'13.6778"N	80°50'14.9785"W	54.07	258.211	2.50	2.40	6.78	
3046.00	6.380	188.480	3042.57	-4.36	-22.52	-52.59	1686255.85	14345398.60	39°30'13.5644"N	80°50'14.9745"W	57.21	246.819	2.47	-0.90	19.52	
3141.00	7.880	189.420	3136.83	-14.79	-34.17	-54.44	1686254.01	14345386.96	39°30'13.4493"N	80°50'14.9983"W	64.27	237.886	1.58	1.58	0.99	
3236.00	10.990	194.360	3230.54	-28.11	-49.37	-57.75	1686250.70	14345371.77	39°30'13.2991"N	80°50'15.0409"W	75.97	229.474	3.38	3.27	5.20	
3330.00	12.110	191.220	3322.63	-44.15	-67.72	-61.89	1686246.56	14345353.42	39°30'13.1178"N	80°50'15.0941"W	91.74	222.425	1.37	1.19	-3.34	
3425.00	13.350	198.390	3415.30	-61.51	-87.90	-67.29	1686241.16	14345333.24	39°30'12.9184"N	80°50'15.1635"W	110.70	217.434	2.11	1.31	7.55	
3520.00	14.810	196.900	3507.45	-80.11	-109.93	-74.28	1686234.17	14345311.23	39°30'12.7009"N	80°50'15.2531"W	132.67	214.047	1.58	1.54	-1.57	
3615.00	16.250	195.450	3598.98	-100.95	-134.36	-81.35	1686227.10	14345286.81	39°30'12.4595"N	80°50'15.3439"W	157.07	211.193	1.57	1.52	-1.53	
3710.00	18.610	194.920	3689.61	-124.55	-161.82	-88.80	1686219.66	14345259.35	39°30'12.1882"N	80°50'15.4395"W	184.58	208.754	2.49	2.48	-0.56	
3804.00	19.660	196.950	3778.41	-149.86	-191.44	-97.27	1686211.19	14345229.75	39°30'11.8956"N	80°50'15.5483"W	214.74	206.934	1.32	1.12	2.16	
3899.00	19.880	205.000	3867.83	-174.49	-221.37	-108.75	1686199.71	14345199.83	39°30'11.6000"N	80°50'15.6955"W	246.65	206.164	2.87	0.23	8.47	
3994.00	17.600	203.420	3957.79	-196.78	-249.20	-121.29	1686187.18	14345172.02	39°30'11.3253"N	80°50'15.8561"W	277.15	205.954	2.46	-2.40	-1.66	
4088.00	17.610	202.980	4047.39	-217.90	-275.33	-132.49	1686175.98	14345145.89	39°30'11.0672"N	80°50'15.9996"W	305.55	205.697	0.14	0.01	-0.47	
4183.00	17.720	202.990	4137.91	-239.40	-301.87	-143.75	1686164.73	14345119.37	39°30'10.8051"N	80°50'16.1438"W	334.35	205.464	0.12	0.12	0.01	
4278.00	17.780	205.290	4228.39	-260.59	-328.29	-155.59	1686152.89	14345092.95	39°30'10.5442"N	80°50'16.2955"W	363.30	205.358	0.74	0.06	2.42	
4373.00	16.380	206.260	4319.19	-280.47	-353.42	-167.72	1686140.77	14345067.83	39°30'10.2960"N	80°50'16.4507"W	391.20	205.387	1.50	-1.47	1.02	
4468.00	14.140	195.870	4410.86	-299.48	-376.60	-176.82	1686131.68	14345044.66	39°30'10.0671"N	80°50'16.5674"W	416.04	205.150	3.71	-2.36	-10.94	
4563.00	14.280	201.290	4502.95	-317.98	-398.68	-184.25	1686124.25	14345022.59	39°30'9.8490"N	80°50'16.6626"W	439.20	204.803	1.41	0.15	5.71	
4658.00	15.730	197.420	4594.71	-337.33	-421.89	-192.36	1686116.14	14344999.40	39°30'9.6198"N	80°50'16.7666"W	463.67	204.510	1.85	1.53	-4.07	
4753.00	18.510	196.280	4685.50	-360.06	-448.65	-200.44	1686108.06	14344972.64	39°30'9.3554"N	80°50'16.8704"W	491.39	204.073	2.95	2.93	-1.20	
4847.00	20.480	197.520	4774.10	-385.52	-478.66	-209.57	1686098.93	14344942.64	39°30'9.0590"N	80°50'16.9876"W	522.53	203.645	2.14	2.10	1.32	
4942.00	20.750	199.810	4863.02	-412.06	-510.34	-220.28	1686088.23	14344910.97	39°30'8.7460"N	80°50'17.1249"W	555.85	203.347	0.89	0.28	2.41	
5037.00	20.550	204.170	4951.92	-437.41	-541.39	-232.81	1686075.70	14344879.94	39°30'8.4394"N	80°50'17.2855"W	589.32	203.269	1.63	-0.21	4.59	
5132.00	18.330	205.760	5041.50	-460.25	-570.06	-246.13	1686062.39	14344851.28	39°30'8.1563"N	80°50'17.4561"W	620.93	203.353	2.40	-2.34	1.67	
5226.00	17.240	202.740	5131.01	-481.21	-596.22	-257.94	1686050.58	14344825.13	39°30'7.8980"N	80°50'17.6073"W	649.62	203.395	1.52	-1.16	-3.21	
5321.00	15.560	192.830	5222.16	-502.60	-621.63	-266.21	1686042.31	14344799.73	39°30'7.6469"N	80°50'17.7135"W	676.24	203.183	3.43	-1.77	-10.43	
5416.00	16.110	190.010	5313.56	-524.99	-647.04	-271.34	1686037.20	14344774.33	39°30'7.3959"N	80°50'17.7794"W	701.63	202.751	1.00	0.58	-2.97	

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Facility	Pyles Pad	Wellbore	Friend Unit 1H AWB
Slot	Slot #05		

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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
5511.00	17.120	193.120	5404.59	-548.41	-673.64	-276.80	1686031.73	14344747.75	39°30'7.1332"N	80°50'17.8497"W	728.29	202.338	1.42	1.06	3.27	
5606.00	15.250	200.560	5495.83	-569.94	-698.96	-284.36	1686024.17	14344722.43	39°30'6.8830"N	80°50'17.9468"W	754.59	202.138	2.94	-1.97	7.83	
5701.00	15.870	193.870	5587.36	-590.53	-723.27	-291.87	1686016.67	14344698.13	39°30'6.6429"N	80°50'18.0430"W	779.94	201.976	2.00	0.65	-7.04	
5796.00	15.570	185.740	5678.81	-613.07	-748.57	-296.26	1686012.29	14344672.84	39°30'6.3929"N	80°50'18.0996"W	805.06	201.592	2.34	-0.32	-8.56	
5841.00	16.800	181.930	5722.03	-624.64	-761.08	-297.08	1686011.46	14344660.34	39°30'6.2693"N	80°50'18.1104"W	817.00	201.323	3.61	2.73	-8.47	BH AT Curve <8-1/2"> (5796')(5841'-22933
5902.00	14.490	192.360	5780.78	-639.42	-777.35	-299.01	1686009.53	14344644.08	39°30'6.1085"N	80°50'18.1354"W	832.87	201.039	5.95	-3.79	17.10	
5997.00	7.870	245.650	5874.14	-650.26	-791.69	-307.51	1686001.04	14344629.74	39°30'5.9670"N	80°50'18.2441"W	849.31	201.227	12.22	-6.97	56.09	
6092.00	7.320	301.010	5968.42	-646.25	-791.25	-318.63	1685989.92	14344630.18	39°30'5.9715"N	80°50'18.3861"W	853.00	201.935	7.43	-0.58	58.27	
6187.00	11.060	310.740	6062.19	-633.77	-782.18	-330.73	1685977.82	14344639.24	39°30'6.0613"N	80°50'18.5402"W	849.23	202.920	4.25	3.94	10.24	
6281.00	17.740	332.560	6153.25	-611.80	-763.55	-344.19	1685964.37	14344657.86	39°30'6.2457"N	80°50'18.7114"W	837.54	204.264	9.04	7.11	23.21	
6376.00	25.660	330.470	6241.45	-577.22	-732.76	-361.02	1685947.55	14344688.64	39°30'6.5503"N	80°50'18.9254"W	816.87	206.229	8.38	8.34	-2.20	
6467.00†	32.068	331.938	6321.11	-533.98	-694.26	-382.12	1685926.46	14344727.13	39°30'6.9312"N	80°50'19.1937"W	792.47	208.828	7.08	7.04	1.61	Sycamore: 6467' MD
6471.00	32.350	331.990	6324.49	-531.87	-692.38	-383.12	1685925.46	14344729.01	39°30'6.9498"N	80°50'19.2065"W	791.31	208.957	7.08	7.05	1.31	
6566.00	41.740	324.980	6400.26	-476.27	-643.91	-413.29	1685895.30	14344777.46	39°30'7.4293"N	80°50'19.5902"W	765.13	212.694	10.82	9.88	-7.38	
6617.00†	47.043	324.530	6436.70	-442.06	-614.79	-433.87	1685874.72	14344806.57	39°30'7.7175"N	80°50'19.8521"W	752.47	215.212	10.42	10.40	-0.88	Middlesex: 6617' MD
6661.00	51.620	324.200	6465.36	-410.13	-587.67	-453.31	1685855.29	14344833.67	39°30'7.9859"N	80°50'20.0995"W	742.20	217.645	10.42	10.40	-0.75	
6756.00	59.620	328.320	6518.98	-334.42	-522.48	-496.70	1685811.92	14344898.85	39°30'8.6310"N	80°50'20.6515"W	720.90	223.551	9.15	8.42	4.34	
6778.00†	61.174	328.639	6529.85	-315.76	-506.17	-506.70	1685801.93	14344915.14	39°30'8.7923"N	80°50'20.7787"W	716.21	225.030	7.17	7.06	1.45	Burkett: 6778' MD
6803.00	62.940	328.990	6541.56	-294.19	-487.28	-518.13	1685790.50	14344934.03	39°30'8.9793"N	80°50'20.9241"W	711.27	226.758	7.17	7.07	1.40	
6832.00†	64.439	329.201	6554.41	-268.77	-464.97	-531.48	1685777.15	14344956.33	39°30'9.2000"N	80°50'21.0940"W	706.17	228.819	5.21	5.17	0.73	Tully: 6832' MD
6850.00	65.370	329.330	6562.05	-252.82	-450.96	-539.81	1685768.82	14344970.33	39°30'9.3386"N	80°50'21.1999"W	703.40	230.125	5.21	5.17	0.71	
6900.00	70.130	329.730	6580.97	-207.51	-411.09	-563.27	1685745.38	14345010.19	39°30'9.7331"N	80°50'21.4983"W	697.33	233.877	9.55	9.52	0.80	
6945.00	74.170	330.570	6594.77	-165.48	-373.94	-584.58	1685724.07	14345047.32	39°30'10.1006"N	80°50'21.7693"W	693.95	237.394	9.15	8.98	1.87	
7008.00†	78.118	332.762	6609.85	-105.17	-320.11	-613.60	1685695.07	14345101.13	39°30'10.6331"N	80°50'22.1382"W	692.08	242.449	7.12	6.27	3.48	Marcellus POE: 7008' MD
7040.00	80.130	333.850	6615.89	-74.05	-292.04	-627.71	1685680.96	14345129.19	39°30'10.9108"N	80°50'22.3176"W	692.32	245.050	7.12	6.29	3.40	
7135.00	84.640	341.080	6628.49	19.83	-205.14	-663.74	1685644.95	14345216.06	39°30'11.7703"N	80°50'22.7752"W	694.71	252.826	8.91	4.75	7.61	
7230.00	90.860	341.640	6632.22	114.71	-115.23	-694.06	1685614.64	14345305.93	39°30'12.6594"N	80°50'23.1601"W	703.56	260.573	6.57	6.55	0.59	
7324.00	90.280	340.960	6631.28	208.70	-26.20	-724.20	1685584.51	14345394.92	39°30'13.5399"N	80°50'23.5425"W	724.67	267.928	0.95	-0.62	-0.72	
7419.00	90.220	341.200	6630.87	303.70	63.67	-755.00	1685553.72	14345484.75	39°30'14.4286"N	80°50'23.9334"W	757.68	274.820	0.26	-0.06	0.25	
7514.00	89.940	343.630	6630.74	398.67	154.22	-783.70	1685525.04	14345575.27	39°30'15.3241"N	80°50'24.2975"W	798.73	281.133	2.57	-0.29	2.56	



Actual Wellpath Report

Friend Unit 1H AWP Proj: 22956'

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REFERENCE WELLPATH IDENTIFICATION

Operator	ANTERO RESOURCES CORPORATION	Well	Friend Unit 1H
Field	Tyler	API	47-095-02695-0000
Facility	Pyles Pad	Wellbore	Friend Unit 1H AWB
Slot	Slot #05		

WELLPATH DATA (264 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
7609.00	89.970	343.620	6630.81	493.59	245.37	-810.48	1685498.26	14345666.38	39°30'16.2254"N	80°50'24.6371"W	846.81	286.843	0.03	0.03	-0.01	
7704.00	89.910	342.860	6630.91	588.53	336.33	-837.88	1685470.88	14345757.31	39°30'17.1249"N	80°50'24.9846"W	902.86	291.871	0.80	-0.06	-0.80	
7790.00	90.090	342.380	6630.91	674.50	418.40	-863.57	1685445.20	14345839.35	39°30'17.9365"N	80°50'25.3104"W	959.59	295.851	0.60	0.21	-0.56	
7879.00	90.180	342.990	6630.70	763.47	503.37	-890.05	1685418.72	14345924.28	39°30'18.7767"N	80°50'25.6464"W	1022.54	299.490	0.69	0.10	0.69	
8056.00	90.000	342.660	6630.42	940.40	672.48	-942.32	1685366.48	14346093.32	39°30'20.4490"N	80°50'26.3094"W	1157.67	305.513	0.21	-0.10	-0.19	
8144.00	90.370	343.670	6630.14	1028.34	756.70	-967.81	1685341.00	14346177.51	39°30'21.2819"N	80°50'26.6327"W	1228.52	308.021	1.22	0.42	1.15	
8233.00	90.060	342.780	6629.81	1117.28	841.92	-993.49	1685315.33	14346262.69	39°30'22.1245"N	80°50'26.9584"W	1302.25	310.279	1.06	-0.35	-1.00	
8321.00	89.940	343.040	6629.81	1205.24	926.03	-1019.35	1685289.48	14346346.77	39°30'22.9563"N	80°50'27.2865"W	1377.18	312.254	0.33	-0.14	0.30	
8410.00	90.580	343.910	6629.40	1294.17	1011.35	-1044.67	1685264.17	14346432.06	39°30'23.8000"N	80°50'27.6075"W	1454.02	314.072	1.21	0.72	0.98	
8498.00	90.150	342.740	6628.84	1382.11	1095.65	-1069.92	1685238.93	14346516.32	39°30'24.6335"N	80°50'27.9277"W	1531.39	315.681	1.42	-0.49	-1.33	
8587.00	90.180	342.900	6628.58	1471.07	1180.68	-1096.21	1685212.65	14346601.32	39°30'25.4744"N	80°50'28.2612"W	1611.11	317.125	0.18	0.03	0.18	
8675.00	90.310	342.920	6628.21	1559.03	1264.79	-1122.07	1685186.80	14346685.40	39°30'26.3061"N	80°50'28.5892"W	1690.78	318.422	0.15	0.15	0.02	
8764.00	90.400	343.800	6627.66	1647.96	1350.06	-1147.55	1685161.33	14346770.63	39°30'27.1493"N	80°50'28.9125"W	1771.87	319.635	0.99	0.10	0.99	
8852.00	89.970	342.720	6627.37	1735.90	1434.33	-1172.90	1685135.99	14346854.87	39°30'27.9826"N	80°50'29.2339"W	1852.83	320.726	1.32	-0.49	-1.23	
8941.00	90.550	343.930	6626.97	1824.84	1519.58	-1198.43	1685110.47	14346940.09	39°30'28.8257"N	80°50'29.5578"W	1935.30	321.739	1.51	0.65	1.36	
9029.00	90.150	343.030	6626.43	1912.77	1603.95	-1223.46	1685085.45	14347024.42	39°30'29.6599"N	80°50'29.8752"W	2017.30	322.664	1.12	-0.45	-1.02	
9118.00	90.650	343.590	6625.81	2001.70	1689.20	-1249.02	1685059.91	14347109.63	39°30'30.5029"N	80°50'30.1994"W	2100.81	323.520	0.84	0.56	0.63	
9295.00	90.520	344.250	6624.00	2178.49	1859.26	-1298.04	1685010.90	14347279.63	39°30'32.1845"N	80°50'30.8210"W	2267.54	325.079	0.38	-0.07	0.37	
9383.00	90.650	342.940	6623.10	2266.41	1943.67	-1322.89	1684986.06	14347364.01	39°30'33.0192"N	80°50'31.1362"W	2351.15	325.760	1.50	0.15	-1.49	
9472.00	90.280	339.650	6622.38	2355.39	2027.96	-1351.43	1684957.54	14347448.26	39°30'33.8527"N	80°50'31.4984"W	2437.00	326.321	3.72	-0.42	-3.70	
9560.00	90.460	340.790	6621.81	2443.38	2110.76	-1381.21	1684927.77	14347531.03	39°30'34.6717"N	80°50'31.8765"W	2522.51	326.801	1.31	0.20	1.30	
9649.00	90.340	339.870	6621.19	2532.36	2194.57	-1411.16	1684897.82	14347614.80	39°30'35.5004"N	80°50'32.2568"W	2609.12	327.258	1.04	-0.13	-1.03	
9737.00	90.090	339.970	6620.86	2620.34	2277.22	-1441.38	1684867.62	14347697.42	39°30'36.3178"N	80°50'32.6404"W	2695.05	327.668	0.31	-0.28	0.11	
9826.00	90.520	340.900	6620.39	2709.33	2361.07	-1471.18	1684837.83	14347781.24	39°30'37.1471"N	80°50'33.0188"W	2781.91	328.073	1.15	0.48	1.04	
9914.00	90.430	341.320	6619.66	2797.33	2444.33	-1499.67	1684809.35	14347864.47	39°30'37.9705"N	80°50'33.3804"W	2867.71	328.470	0.49	-0.10	0.48	
10002.00	90.400	340.340	6619.02	2885.32	2527.45	-1528.56	1684780.47	14347947.55	39°30'38.7925"N	80°50'33.7472"W	2953.73	328.835	1.11	-0.03	-1.11	
10091.00	90.310	340.910	6618.47	2974.32	2611.41	-1558.09	1684750.96	14348031.48	39°30'39.6227"N	80°50'34.1221"W	3040.90	329.178	0.65	-0.10	0.64	
10180.00	90.430	340.200	6617.90	3063.31	2695.33	-1587.72	1684721.34	14348115.36	39°30'40.4527"N	80°50'34.4982"W	3128.20	329.499	0.81	0.13	-0.80	
10268.00	90.430	339.770	6617.23	3151.29	2778.01	-1617.83	1684691.23	14348198.01	39°30'41.2704"N	80°50'34.8806"W	3214.77	329.785	0.49	0.00	-0.49	
10357.00	90.800	340.140	6616.28	3240.26	2861.61	-1648.34	1684660.74	14348281.58	39°30'42.0972"N	80°50'35.2680"W	3302.40	330.057	0.59	0.42	0.42	



Actual Wellpath Report

Friend Unit 1H AWP Proj: 22956'

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REFERENCE WELLPATH IDENTIFICATION

Operator	ANTERO RESOURCES CORPORATION	Well	Friend Unit 1H
Field	Tyler	API	47-095-02695-0000
Facility	Pyles Pad	Wellbore	Friend Unit 1H AWB
Slot	Slot #05		

WELLPATH DATA (264 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
10445.00	90.400	340.920	6615.36	3328.25	2944.58	-1677.67	1684631.43	14348364.51	39°30'42.9176"N	80°50'35.6403"W	3388.97	330.328	1.00	-0.45	0.89	
10534.00	90.490	340.150	6614.67	3417.24	3028.49	-1707.32	1684601.78	14348448.39	39°30'43.7475"N	80°50'36.0169"W	3476.59	330.588	0.87	0.10	-0.87	
10622.00	90.250	340.380	6614.10	3505.22	3111.32	-1737.04	1684572.08	14348531.19	39°30'44.5666"N	80°50'36.3941"W	3563.37	330.826	0.38	-0.27	0.26	
10711.00	90.370	340.670	6613.62	3594.22	3195.22	-1766.71	1684542.42	14348615.06	39°30'45.3964"N	80°50'36.7709"W	3651.12	331.061	0.35	0.13	0.33	
10799.00	90.460	340.740	6612.98	3682.21	3278.28	-1795.79	1684513.35	14348698.08	39°30'46.2177"N	80°50'37.1400"W	3737.91	331.287	0.13	0.10	0.08	
10888.00	90.150	340.310	6612.51	3771.20	3362.18	-1825.46	1684483.69	14348781.95	39°30'47.0475"N	80°50'37.5168"W	3825.78	331.501	0.60	-0.35	-0.48	
10976.00	90.150	340.290	6612.28	3859.19	3445.03	-1855.12	1684454.04	14348864.77	39°30'47.8669"N	80°50'37.8934"W	3912.77	331.698	0.02	0.00	-0.02	
11065.00	90.650	341.230	6611.65	3948.19	3529.06	-1884.45	1684424.73	14348948.76	39°30'48.6978"N	80°50'38.2657"W	4000.68	331.899	1.20	0.56	1.06	
11153.00	90.620	340.770	6610.68	4036.18	3612.26	-1913.10	1684396.09	14349031.93	39°30'49.5206"N	80°50'38.6294"W	4087.59	332.094	0.52	-0.03	-0.52	
11242.00	90.340	340.860	6609.93	4125.18	3696.31	-1942.34	1684366.85	14349115.95	39°30'50.3518"N	80°50'39.0007"W	4175.58	332.279	0.33	-0.31	0.10	
11330.00	90.280	340.340	6609.46	4213.17	3779.32	-1971.57	1684337.64	14349198.92	39°30'51.1727"N	80°50'39.3718"W	4262.67	332.450	0.59	-0.07	-0.59	
11419.00	90.400	341.230	6608.93	4302.17	3863.36	-2000.86	1684308.36	14349282.92	39°30'52.0038"N	80°50'39.7437"W	4350.74	332.620	1.01	0.13	1.00	
11507.00	90.550	341.170	6608.20	4390.16	3946.66	-2029.22	1684280.01	14349366.19	39°30'52.8276"N	80°50'40.1037"W	4437.78	332.789	0.18	0.17	-0.07	
11596.00	90.250	340.520	6607.58	4479.16	4030.73	-2058.42	1684250.82	14349450.23	39°30'53.6589"N	80°50'40.4745"W	4525.91	332.947	0.80	-0.34	-0.73	
11684.00	90.340	340.530	6607.12	4567.15	4113.69	-2087.76	1684221.49	14349533.16	39°30'54.4794"N	80°50'40.8470"W	4613.16	333.091	0.10	0.10	0.01	
11773.00	90.370	340.710	6606.57	4656.14	4197.65	-2117.30	1684191.97	14349617.08	39°30'55.3097"N	80°50'41.2220"W	4701.40	333.234	0.21	0.03	0.20	
11861.00	90.550	341.520	6605.87	4744.14	4280.91	-2145.78	1684163.50	14349700.31	39°30'56.1330"N	80°50'41.5835"W	4788.58	333.378	0.94	0.20	0.92	
11950.00	90.280	339.940	6605.22	4833.13	4364.92	-2175.15	1684134.14	14349784.28	39°30'56.9638"N	80°50'41.9564"W	4876.86	333.512	1.80	-0.30	-1.78	
12038.00	90.580	341.120	6604.56	4921.12	4447.88	-2204.48	1684104.83	14349867.21	39°30'57.7843"N	80°50'42.3289"W	4964.21	333.636	1.38	0.34	1.34	
12127.00	90.090	339.610	6604.04	5010.11	4531.70	-2234.38	1684074.93	14349951.00	39°30'58.6132"N	80°50'42.7086"W	5052.60	333.754	1.78	-0.55	-1.70	
12215.00	90.310	341.010	6603.73	5098.10	4614.55	-2264.03	1684045.30	14350033.82	39°30'59.4326"N	80°50'43.0851"W	5140.03	333.866	1.61	0.25	1.59	
12304.00	90.220	340.110	6603.32	5187.09	4698.48	-2293.65	1684015.69	14350117.71	39°31'0.2625"N	80°50'43.4612"W	5228.43	333.980	1.02	-0.10	-1.01	
12392.00	90.280	340.970	6602.94	5275.08	4781.45	-2322.97	1683986.38	14350200.65	39°31'1.0830"N	80°50'43.8335"W	5315.87	334.088	0.98	0.07	0.98	
12480.00	90.580	341.160	6602.28	5363.08	4864.68	-2351.52	1683957.84	14350283.85	39°31'1.9062"N	80°50'44.1960"W	5403.22	334.201	0.40	0.34	0.22	
12569.00	90.280	340.070	6601.61	5452.07	4948.63	-2381.06	1683928.31	14350367.77	39°31'2.7364"N	80°50'44.5711"W	5491.67	334.305	1.27	-0.34	-1.22	
12658.00	89.880	339.990	6601.49	5541.05	5032.28	-2411.46	1683897.93	14350451.38	39°31'3.5636"N	80°50'44.9571"W	5580.23	334.396	0.46	-0.45	-0.09	
12746.00	90.060	340.420	6601.53	5629.04	5115.08	-2441.26	1683868.14	14350534.15	39°31'4.3825"N	80°50'45.3356"W	5667.79	334.486	0.53	0.20	0.49	
12834.00	89.850	339.770	6601.60	5717.02	5197.82	-2471.22	1683838.19	14350616.86	39°31'5.2007"N	80°50'45.7161"W	5755.37	334.572	0.78	-0.24	-0.74	
12923.00	90.150	340.650	6601.60	5806.01	5281.57	-2501.35	1683808.07	14350700.57	39°31'6.0289"N	80°50'46.0987"W	5843.95	334.658	1.04	0.34	0.99	
13011.00	90.060	340.910	6601.44	5894.01	5364.66	-2530.32	1683779.11	14350783.63	39°31'6.8506"N	80°50'46.4666"W	5931.45	334.748	0.31	-0.10	0.30	



Actual Wellpath Report

Friend Unit 1H AWP Proj: 22956'

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REFERENCE WELLPATH IDENTIFICATION				
Operator	ANTERO RESOURCES CORPORATION		Well	Friend Unit 1H
Field	Tyler		API	47-095-02695-0000
Facility	Pyles Pad		Wellbore	Friend Unit 1H AWB
Slot	Slot #05			

WELLPATH DATA (264 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
13100.00	91.170	341.910	6600.48	5983.00	5449.01	-2558.69	1683750.75	14350867.95	39°31'7.6848"N	80°50'46.8267"W	6019.85	334.847	1.68	1.25	1.12	
13188.00	90.650	340.260	6599.09	6070.98	5532.25	-2587.21	1683722.24	14350951.15	39°31'8.5079"N	80°50'47.1889"W	6107.32	334.936	1.97	-0.59	-1.88	
13277.00	90.340	340.530	6598.32	6159.97	5616.08	-2617.08	1683692.39	14351034.95	39°31'9.3370"N	80°50'47.5681"W	6195.92	335.015	0.46	-0.35	0.30	
13365.00	90.030	340.030	6598.03	6247.96	5698.92	-2646.77	1683662.71	14351117.76	39°31'10.1562"N	80°50'47.9452"W	6283.56	335.088	0.67	-0.35	-0.57	
13454.00	90.400	340.150	6597.70	6336.94	5782.60	-2677.08	1683632.42	14351201.40	39°31'10.9837"N	80°50'48.3301"W	6372.22	335.158	0.44	0.42	0.13	
13542.00	90.060	340.510	6597.35	6424.93	5865.46	-2706.70	1683602.81	14351284.23	39°31'11.8032"N	80°50'48.7063"W	6459.87	335.228	0.56	-0.39	0.41	
13631.00	90.430	340.750	6596.97	6513.93	5949.43	-2736.22	1683573.30	14351368.16	39°31'12.6335"N	80°50'49.0811"W	6548.48	335.302	0.50	0.42	0.27	
13719.00	90.180	340.950	6596.50	6601.92	6032.55	-2765.08	1683544.44	14351451.26	39°31'13.4556"N	80°50'49.4477"W	6636.07	335.375	0.36	-0.28	0.23	
13808.00	90.280	340.390	6596.14	6690.92	6116.54	-2794.54	1683515.00	14351535.21	39°31'14.2861"N	80°50'49.8218"W	6724.69	335.445	0.64	0.11	-0.63	
13896.00	90.550	340.920	6595.50	6778.91	6199.57	-2823.69	1683485.86	14351618.20	39°31'15.1072"N	80°50'50.1919"W	6812.33	335.512	0.68	0.31	0.60	
13985.00	90.400	340.860	6594.77	6867.91	6283.66	-2852.83	1683456.73	14351702.26	39°31'15.9388"N	80°50'50.5619"W	6900.94	335.582	0.18	-0.17	-0.07	
14073.00	90.340	341.090	6594.20	6955.90	6366.85	-2881.51	1683428.06	14351785.42	39°31'16.7615"N	80°50'50.9261"W	6988.55	335.649	0.27	-0.07	0.26	
14162.00	90.310	340.930	6593.69	7044.90	6451.00	-2910.47	1683399.11	14351869.54	39°31'17.5937"N	80°50'51.2939"W	7077.17	335.717	0.18	-0.03	-0.18	
14250.00	90.280	340.720	6593.24	7132.90	6534.12	-2939.38	1683370.22	14351952.62	39°31'18.4157"N	80°50'51.6609"W	7164.82	335.779	0.24	-0.03	-0.24	
14339.00	90.340	340.940	6592.76	7221.90	6618.18	-2968.60	1683341.01	14352036.65	39°31'19.2470"N	80°50'52.0320"W	7253.48	335.841	0.26	0.07	0.25	
14427.00	90.370	340.780	6592.21	7309.89	6701.32	-2997.46	1683312.17	14352119.75	39°31'20.0691"N	80°50'52.3984"W	7341.14	335.901	0.18	0.03	-0.18	
14515.00	90.370	341.240	6591.64	7397.89	6784.53	-3026.09	1683283.54	14352202.93	39°31'20.8919"N	80°50'52.7620"W	7428.80	335.962	0.52	0.00	0.52	
14604.00	90.340	340.830	6591.09	7486.89	6868.69	-3055.01	1683254.63	14352287.06	39°31'21.7243"N	80°50'53.1293"W	7517.45	336.022	0.46	-0.03	-0.46	
14692.00	90.310	340.990	6590.59	7574.89	6951.85	-3083.79	1683225.86	14352370.19	39°31'22.5466"N	80°50'53.4948"W	7605.13	336.078	0.18	-0.03	0.18	
14781.00	90.220	340.570	6590.18	7663.88	7035.89	-3113.09	1683196.57	14352454.19	39°31'23.3777"N	80°50'53.8668"W	7693.84	336.133	0.48	-0.10	-0.47	
14869.00	90.180	340.270	6589.87	7751.87	7118.80	-3142.58	1683167.10	14352537.07	39°31'24.1976"N	80°50'54.2414"W	7781.59	336.181	0.34	-0.05	-0.34	
14957.00	90.770	341.220	6589.14	7839.87	7201.87	-3171.60	1683138.09	14352620.11	39°31'25.0191"N	80°50'54.6099"W	7869.31	336.232	1.27	0.67	1.08	
15046.00	90.400	340.680	6588.24	7928.86	7286.00	-3200.65	1683109.05	14352704.20	39°31'25.8510"N	80°50'54.9788"W	7958.01	336.285	0.74	-0.42	-0.61	
15134.00	90.150	340.120	6587.81	8016.85	7368.90	-3230.17	1683079.55	14352787.06	39°31'26.6708"N	80°50'55.3537"W	8045.78	336.330	0.70	-0.28	-0.64	
15223.00	90.340	340.260	6587.43	8105.84	7452.63	-3260.33	1683049.40	14352870.76	39°31'27.4989"N	80°50'55.7368"W	8134.58	336.372	0.27	0.21	0.16	
15311.00	90.090	339.650	6587.10	8193.81	7535.30	-3290.49	1683019.25	14352953.40	39°31'28.3164"N	80°50'56.1199"W	8222.41	336.410	0.75	-0.28	-0.69	
15400.00	90.650	340.060	6586.53	8282.79	7618.85	-3321.14	1682988.61	14353036.92	39°31'29.1427"N	80°50'56.5093"W	8311.25	336.447	0.78	0.63	0.46	
15488.00	90.430	340.380	6585.70	8370.77	7701.65	-3350.92	1682958.84	14353119.69	39°31'29.9616"N	80°50'56.8875"W	8399.06	336.487	0.44	-0.25	0.36	
15577.00	90.550	340.450	6584.94	8459.76	7785.50	-3380.75	1682929.02	14353203.50	39°31'30.7908"N	80°50'57.2664"W	8487.85	336.528	0.16	0.13	0.08	
15665.00	90.520	340.520	6584.12	8547.75	7868.44	-3410.15	1682899.64	14353286.41	39°31'31.6110"N	80°50'57.6398"W	8575.63	336.568	0.09	-0.03	0.08	

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Friend Unit 1H AWP Proj: 22956'

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REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Well	Friend Unit 1H
Field	Tyler	API	47-095-02695-0000
Facility	Pyles Pad	Wellbore	Friend Unit 1H AWB
Slot	Slot #05		

WELLPATH DATA (264 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
15754.00	91.170	340.060	6582.80	8636.73	7952.22	-3440.16	1682869.64	14353370.15	39°31'32.4395"N	80°50'58.0210"W	8664.44	336.606	0.89	0.73	-0.52	
15842.00	91.110	339.310	6581.05	8724.68	8034.73	-3470.71	1682839.10	14353452.63	39°31'33.2554"N	80°50'58.4091"W	8752.29	336.637	0.85	-0.07	-0.85	
15930.00	91.260	342.350	6579.23	8812.65	8117.82	-3499.59	1682810.23	14353535.69	39°31'34.0771"N	80°50'58.7759"W	8840.03	336.679	3.46	0.17	3.45	
16019.00	90.620	341.560	6577.77	8901.63	8202.43	-3527.16	1682782.67	14353620.27	39°31'34.9138"N	80°50'59.1259"W	8928.65	336.732	1.14	-0.72	-0.89	
16107.00	90.340	341.770	6577.04	8989.62	8285.96	-3554.84	1682755.00	14353703.76	39°31'35.7398"N	80°50'59.4774"W	9016.32	336.780	0.40	-0.32	0.24	
16196.00	90.400	341.800	6576.46	9078.62	8370.50	-3582.66	1682727.19	14353788.27	39°31'36.5758"N	80°50'59.8306"W	9104.98	336.829	0.08	0.07	0.03	
16284.00	90.620	342.320	6575.68	9166.60	8454.22	-3609.76	1682700.10	14353871.95	39°31'37.4037"N	80°51'0.1747"W	9192.61	336.879	0.64	0.25	0.59	
16373.00	91.200	342.670	6574.26	9255.57	8539.08	-3636.53	1682673.34	14353956.78	39°31'38.2429"N	80°51'0.5145"W	9281.18	336.932	0.76	0.65	0.39	
16461.00	90.650	342.520	6572.84	9343.53	8623.04	-3662.85	1682647.04	14354040.71	39°31'39.0731"N	80°51'0.8486"W	9368.74	336.985	0.65	-0.62	-0.17	
16550.00	90.550	342.220	6571.91	9432.50	8707.86	-3689.80	1682620.09	14354125.49	39°31'39.9118"N	80°51'1.1908"W	9457.35	337.036	0.36	-0.11	-0.34	
16638.00	90.520	342.570	6571.09	9520.48	8791.73	-3716.42	1682593.49	14354209.33	39°31'40.7412"N	80°51'1.5287"W	9544.96	337.085	0.40	-0.03	0.40	
16726.00	90.520	342.310	6570.29	9608.46	8875.63	-3742.97	1682566.95	14354293.19	39°31'41.5708"N	80°51'1.8657"W	9632.58	337.134	0.30	0.00	-0.30	
16815.00	90.580	343.150	6569.44	9697.42	8960.61	-3769.39	1682540.54	14354378.14	39°31'42.4111"N	80°51'2.2011"W	9721.15	337.185	0.95	0.07	0.94	
16903.00	90.220	342.140	6568.82	9785.39	9044.60	-3795.64	1682514.30	14354462.10	39°31'43.2417"N	80°51'2.5343"W	9808.76	337.234	1.22	-0.41	-1.15	
16992.00	90.490	342.170	6568.27	9874.37	9129.32	-3822.91	1682487.04	14354546.78	39°31'44.0794"N	80°51'2.8805"W	9897.43	337.278	0.31	0.30	0.03	
17080.00	90.370	342.650	6567.61	9962.35	9213.20	-3849.50	1682460.46	14354630.63	39°31'44.9089"N	80°51'3.2181"W	9985.08	337.324	0.56	-0.14	0.55	
17169.00	90.280	342.170	6567.11	10051.33	9298.04	-3876.40	1682433.57	14354715.44	39°31'45.7478"N	80°51'3.5596"W	10073.73	337.369	0.55	-0.10	-0.54	
17257.00	90.340	342.140	6566.63	10139.31	9381.80	-3903.37	1682406.62	14354799.17	39°31'46.5761"N	80°51'3.9020"W	10161.42	337.410	0.08	0.07	-0.03	
17346.00	90.340	342.580	6566.10	10228.29	9466.62	-3930.33	1682379.66	14354883.95	39°31'47.4148"N	80°51'4.2444"W	10250.09	337.453	0.49	0.00	0.49	
17434.00	89.970	342.010	6565.86	10316.28	9550.45	-3957.10	1682352.91	14354967.74	39°31'48.2437"N	80°51'4.5842"W	10337.78	337.494	0.77	-0.42	-0.65	
17523.00	90.280	342.470	6565.67	10405.26	9635.21	-3984.24	1682325.77	14355052.47	39°31'49.0819"N	80°51'4.9288"W	10426.48	337.534	0.62	0.35	0.52	
17611.00	90.280	342.780	6565.24	10493.23	9719.19	-4010.52	1682299.50	14355136.42	39°31'49.9123"N	80°51'5.2624"W	10514.13	337.577	0.35	0.00	0.35	
17700.00	89.910	341.780	6565.09	10582.22	9803.96	-4037.61	1682272.43	14355221.16	39°31'50.7506"N	80°51'5.6064"W	10602.83	337.616	1.20	-0.42	-1.12	
17788.00	90.310	342.770	6564.92	10670.20	9887.79	-4064.40	1682245.64	14355304.95	39°31'51.5795"N	80°51'5.9465"W	10690.54	337.655	1.21	0.45	1.12	
17877.00	90.250	342.810	6564.49	10759.16	9972.80	-4090.73	1682219.32	14355389.93	39°31'52.4202"N	80°51'6.2808"W	10779.19	337.697	0.08	-0.07	0.04	
17965.00	89.690	341.720	6564.53	10847.14	10056.62	-4117.54	1682192.53	14355473.71	39°31'53.2490"N	80°51'6.6211"W	10866.91	337.734	1.39	-0.64	-1.24	
18054.00	90.370	341.810	6564.49	10936.14	10141.15	-4145.39	1682164.69	14355558.21	39°31'54.0849"N	80°51'6.9748"W	10955.69	337.767	0.77	0.76	0.10	
18142.00	90.280	342.400	6563.99	11024.13	10224.89	-4172.43	1682137.66	14355641.91	39°31'54.9129"N	80°51'7.3181"W	11043.44	337.801	0.68	-0.10	0.67	
18230.00	90.250	342.320	6563.58	11112.11	10308.75	-4199.10	1682111.00	14355725.74	39°31'55.7422"N	80°51'7.6567"W	11131.16	337.837	0.10	-0.03	-0.09	
18319.00	90.250	342.260	6563.19	11201.09	10393.53	-4226.17	1682083.94	14355810.49	39°31'56.5806"N	80°51'8.0005"W	11219.89	337.873	0.07	0.00	-0.07	

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Actual Wellpath Report

Friend Unit 1H AWP Proj: 22956'

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REFERENCE WELLPATH IDENTIFICATION

Operator	ANTERO RESOURCES CORPORATION	Well	Friend Unit 1H
Field	Tyler	API	47-095-02695-0000
Facility	Pyles Pad	Wellbore	Friend Unit 1H AWB
Slot	Slot #05		

WELLPATH DATA (264 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
18407.00	90.090	342.150	6562.93	11289.08	10477.32	-4253.06	1682057.06	14355894.25	39°31'57.4091"N	80°51'8.3419"W	11307.64	337.906	0.22	-0.18	-0.13	
18496.00	90.400	342.090	6562.55	11378.06	10562.02	-4280.39	1682029.75	14355978.91	39°31'58.2467"N	80°51'8.6889"W	11396.40	337.939	0.35	0.35	-0.07	
18584.00	90.030	342.040	6562.22	11466.05	10645.74	-4307.49	1682002.66	14356062.60	39°31'59.0746"N	80°51'9.0330"W	11484.18	337.971	0.42	-0.42	-0.06	
18673.00	90.550	342.530	6561.77	11555.03	10730.52	-4334.57	1681975.59	14356147.35	39°31'59.9129"N	80°51'9.3769"W	11572.92	338.004	0.80	0.58	0.55	
18761.00	90.120	341.810	6561.26	11643.02	10814.29	-4361.51	1681948.65	14356231.08	39°32'0.7413"N	80°51'9.7190"W	11660.69	338.035	0.95	-0.49	-0.82	
18850.00	90.460	342.550	6560.80	11732.00	10899.02	-4388.75	1681921.43	14356315.78	39°32'1.5791"N	80°51'10.0648"W	11749.46	338.067	0.92	0.38	0.83	
18938.00	90.280	341.610	6560.24	11819.99	10982.75	-4415.82	1681894.36	14356399.47	39°32'2.4071"N	80°51'10.4087"W	11837.24	338.096	1.09	-0.20	-1.07	
19027.00	90.580	341.280	6559.57	11908.99	11067.12	-4444.14	1681866.06	14356483.81	39°32'3.2414"N	80°51'10.7683"W	11926.09	338.121	0.50	0.34	-0.37	
19116.00	90.310	341.450	6558.88	11997.98	11151.45	-4472.58	1681837.63	14356568.11	39°32'4.0753"N	80°51'11.1295"W	12014.94	338.145	0.36	-0.30	0.19	
19204.00	90.620	341.580	6558.16	12085.98	11234.91	-4500.48	1681809.74	14356651.53	39°32'4.9006"N	80°51'11.4839"W	12102.79	338.170	0.38	0.35	0.15	
19293.00	90.400	341.350	6557.37	12174.97	11319.29	-4528.77	1681781.46	14356735.88	39°32'5.7350"N	80°51'11.8432"W	12191.64	338.194	0.36	-0.25	-0.26	
19381.00	90.400	341.530	6556.76	12262.97	11402.71	-4556.78	1681753.46	14356819.27	39°32'6.5599"N	80°51'12.1990"W	12279.50	338.217	0.20	0.00	0.20	
19470.00	90.520	341.790	6556.04	12351.97	11487.19	-4584.78	1681725.47	14356903.71	39°32'7.3953"N	80°51'12.5546"W	12368.33	338.242	0.32	0.13	0.29	
19558.00	90.490	341.230	6555.27	12439.96	11570.64	-4612.69	1681697.57	14356987.13	39°32'8.2205"N	80°51'12.9091"W	12456.19	338.265	0.64	-0.03	-0.64	
19647.00	90.460	341.490	6554.53	12528.96	11654.97	-4641.14	1681669.14	14357071.42	39°32'9.0544"N	80°51'13.2704"W	12545.06	338.287	0.29	-0.03	0.29	
19735.00	90.430	341.380	6553.85	12616.95	11738.39	-4669.15	1681641.14	14357154.81	39°32'9.8793"N	80°51'13.6262"W	12632.92	338.309	0.13	-0.03	-0.13	
19824.00	90.460	341.370	6553.15	12705.95	11822.72	-4697.58	1681612.72	14357239.11	39°32'10.7133"N	80°51'13.9873"W	12721.79	338.330	0.04	0.03	-0.01	
19912.00	90.180	341.090	6552.66	12793.95	11906.04	-4725.89	1681584.42	14357322.40	39°32'11.5372"N	80°51'14.3469"W	12809.68	338.350	0.45	-0.32	-0.32	
20001.00	90.310	341.710	6552.28	12882.95	11990.39	-4754.28	1681556.04	14357406.71	39°32'12.3713"N	80°51'14.7075"W	12898.55	338.371	0.71	0.15	0.70	
20089.00	90.620	341.120	6551.57	12970.94	12073.80	-4782.32	1681528.01	14357490.09	39°32'13.1961"N	80°51'15.0637"W	12986.43	338.392	0.76	0.35	-0.67	
20178.00	90.430	341.100	6550.75	13059.94	12158.00	-4811.14	1681499.21	14357574.26	39°32'14.0288"N	80°51'15.4297"W	13075.32	338.410	0.21	-0.21	-0.02	
20267.00	90.580	341.620	6549.97	13148.93	12242.33	-4839.58	1681470.77	14357658.55	39°32'14.8627"N	80°51'15.7911"W	13164.20	338.430	0.61	0.17	0.58	
20355.00	90.520	341.380	6549.12	13236.93	12325.78	-4867.50	1681442.86	14357741.97	39°32'15.6879"N	80°51'16.1457"W	13252.07	338.451	0.28	-0.07	-0.27	
20444.00	90.920	341.700	6548.00	13325.92	12410.19	-4895.68	1681414.70	14357826.35	39°32'16.5226"N	80°51'16.5036"W	13340.94	338.471	0.58	0.45	0.36	
20532.00	90.150	341.230	6547.18	13413.91	12493.62	-4923.65	1681386.74	14357909.74	39°32'17.3476"N	80°51'16.8590"W	13428.81	338.491	1.03	-0.87	-0.53	
20621.00	90.430	341.370	6546.73	13502.91	12577.92	-4952.19	1681358.21	14357994.01	39°32'18.1812"N	80°51'17.2214"W	13517.70	338.509	0.35	0.31	0.16	
20709.00	90.490	341.730	6546.03	13590.91	12661.40	-4980.04	1681330.37	14358077.45	39°32'19.0067"N	80°51'17.5752"W	13605.58	338.529	0.41	0.07	0.41	
20797.00	90.310	341.580	6545.41	13678.90	12744.92	-5007.73	1681302.69	14358160.94	39°32'19.8326"N	80°51'17.9270"W	13693.45	338.549	0.27	-0.20	-0.17	
20886.00	90.550	341.210	6544.74	13767.90	12829.27	-5036.13	1681274.31	14358245.26	39°32'20.6667"N	80°51'18.2876"W	13782.33	338.568	0.50	0.27	-0.42	
20974.00	90.550	341.470	6543.90	13855.90	12912.64	-5064.28	1681246.16	14358328.59	39°32'21.4911"N	80°51'18.6453"W	13870.23	338.585	0.30	0.00	0.30	

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Actual Wellpath Report

Friend Unit 1H AWP Proj: 22956'

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REFERENCE WELLPATH IDENTIFICATION				
Operator	ANTERO RESOURCES CORPORATION		Well	Friend Unit 1H
Field	Tyler		API	47-095-02695-0000
Facility	Pyles Pad		Wellbore	Friend Unit 1H AWB
Slot	Slot #05			

WELLPATH DATA (264 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
21063.00	90.430	341.360	6543.14	13944.89	12997.00	-5092.65	1681217.81	14358412.91	39°32'22.3253"N	80°51'19.0056"W	13959.12	338.603	0.18	-0.13	-0.12	
21151.00	90.400	341.280	6542.50	14032.89	13080.36	-5120.83	1681189.64	14358496.24	39°32'23.1496"N	80°51'19.3636"W	14047.02	338.620	0.10	-0.03	-0.09	
21240.00	90.370	341.270	6541.90	14121.89	13164.65	-5149.40	1681161.08	14358580.50	39°32'23.9831"N	80°51'19.7266"W	14135.92	338.637	0.04	-0.03	-0.01	
21328.00	90.120	340.820	6541.53	14209.89	13247.87	-5177.99	1681132.51	14358663.69	39°32'24.8061"N	80°51'20.0897"W	14223.84	338.652	0.58	-0.28	-0.51	
21417.00	90.490	341.190	6541.05	14298.88	13332.02	-5206.95	1681103.55	14358747.81	39°32'25.6383"N	80°51'20.4577"W	14312.76	338.666	0.59	0.42	0.42	
21505.00	90.370	341.080	6540.39	14386.88	13415.29	-5235.41	1681075.11	14358831.05	39°32'26.4617"N	80°51'20.8192"W	14400.68	338.681	0.18	-0.14	-0.12	
21593.00	90.180	340.490	6539.97	14474.88	13498.39	-5264.37	1681046.16	14358914.11	39°32'27.2834"N	80°51'21.1872"W	14488.62	338.694	0.70	-0.22	-0.67	
21682.00	90.310	341.110	6539.59	14563.87	13582.44	-5293.64	1681016.90	14358998.12	39°32'28.1146"N	80°51'21.5591"W	14577.56	338.707	0.71	0.15	0.70	
21770.00	90.220	340.900	6539.18	14651.87	13665.65	-5322.28	1680988.27	14359081.30	39°32'28.9374"N	80°51'21.9230"W	14665.49	338.721	0.26	-0.10	-0.24	
21859.00	90.370	341.160	6538.72	14740.87	13749.81	-5351.21	1680959.35	14359165.43	39°32'29.7697"N	80°51'22.2905"W	14754.42	338.735	0.34	0.17	0.29	
21947.00	90.150	340.720	6538.32	14828.87	13832.99	-5379.95	1680930.63	14359248.57	39°32'30.5922"N	80°51'22.6556"W	14842.35	338.748	0.56	-0.25	-0.50	
22036.00	90.370	340.750	6537.92	14917.87	13917.00	-5409.31	1680901.27	14359332.55	39°32'31.4230"N	80°51'23.0288"W	14931.30	338.760	0.25	0.25	0.03	
22124.00	90.370	340.920	6537.35	15005.86	14000.12	-5438.20	1680872.40	14359415.64	39°32'32.2449"N	80°51'23.3958"W	15019.24	338.772	0.19	0.00	0.19	
22213.00	90.250	340.910	6536.87	15094.86	14084.23	-5467.30	1680843.31	14359499.71	39°32'33.0766"N	80°51'23.7655"W	15108.17	338.784	0.14	-0.13	-0.01	
22301.00	90.400	341.020	6536.37	15182.86	14167.42	-5496.00	1680814.62	14359582.87	39°32'33.8993"N	80°51'24.1302"W	15196.11	338.797	0.21	0.17	0.12	
22390.00	90.280	340.930	6535.84	15271.86	14251.55	-5525.01	1680785.62	14359666.97	39°32'34.7313"N	80°51'24.4988"W	15285.04	338.810	0.17	-0.13	-0.10	
22478.00	90.310	340.810	6535.39	15359.85	14334.69	-5553.85	1680756.79	14359750.08	39°32'35.5534"N	80°51'24.8652"W	15372.98	338.822	0.14	0.03	-0.14	
22567.00	90.550	341.310	6534.72	15448.85	14418.87	-5582.74	1680727.92	14359834.22	39°32'36.3858"N	80°51'25.2323"W	15461.91	338.834	0.62	0.27	0.56	
22655.00	90.370	340.730	6534.02	15536.85	14502.08	-5611.36	1680699.31	14359917.40	39°32'37.2087"N	80°51'25.5959"W	15549.85	338.847	0.69	-0.20	-0.66	
22743.00	90.220	340.790	6533.56	15624.84	14585.17	-5640.35	1680670.32	14360000.45	39°32'38.0303"N	80°51'25.9644"W	15637.80	338.858	0.18	-0.17	0.07	
22832.00	90.340	340.990	6533.13	15713.84	14669.26	-5669.49	1680641.20	14360084.51	39°32'38.8619"N	80°51'26.3346"W	15726.74	338.869	0.26	0.13	0.22	
22920.00	90.370	341.060	6532.58	15801.84	14752.48	-5698.10	1680612.59	14360167.70	39°32'39.6848"N	80°51'26.6981"W	15814.68	338.881	0.09	0.03	0.08	
22933.00	90.310	340.970	6532.51	15814.84	14764.77	-5702.33	1680608.37	14360179.98	39°32'39.8063"N	80°51'26.7519"W	15827.67	338.883	0.83	-0.46	-0.69	
22956.00†	90.310	340.970	6532.38	15837.84	14786.51	-5709.83	1680600.87	14360201.72	39°32'40.0213"N	80°51'26.8472"W	15850.65	338.886	0.00	0.00	0.00	Projected MD at TD: 22956'

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Actual Wellpath Report

Friend Unit 1H AWP Proj: 22956'
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REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Well	Friend Unit 1H
Field	Tyler	API	47-095-02695-0000
Facility	Pyles Pad	Wellbore	Friend Unit 1H AWB
Slot	Slot #05		

HOLE & CASING SECTIONS - Ref Wellbore: Friend Unit 1H AWB Ref Wellpath: Friend Unit 1H AWP Proj: 22956'										
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	-0.13	-0.06	
17.5in Open Hole	105.50	392.00	286.50	105.50	392.00	-0.13	-0.06	-0.92	-0.56	
13.375in Casing Surface	25.50	371.90	346.40	25.50	371.90	0.00	0.00	-0.87	-0.52	
12.25in Open Hole	392.00	2594.00	2202.00	392.00	2592.00	-0.92	-0.56	5.52	-53.27	
9.625in Casing Intermediate	25.50	2574.70	2549.20	25.50	2572.70	0.00	0.00	5.56	-53.00	
8.75in Open Hole	2594.00	5866.00	3272.00	2592.00	5746.03	5.52	-53.27	-768.07	-297.55	
8.5in Open Hole	5866.00	22956.00	17090.00	5746.03	6532.38	-768.07	-297.55	14786.51	-5709.83	
5.5in Casing Production	25.50	22956.00	22930.50	25.50	6532.38	0.00	0.00	14786.51	-5709.83	

TARGETS								
Name	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
Friend Unit 1H POE Rev-1	6606.00	-314.15	-590.30	1685718.36	14345107.09	39°30'10.6916"N	80°50'21.8408"W	point
Friend Unit 1H BHL Rev-1	6629.00	14801.08	-5739.13	1680571.59	14360216.28	39°32'40.1658"N	80°51'27.2208"W	point
Friend Unit 1H LP Rev-1	6629.00	-143.72	-648.35	1685660.33	14345277.45	39°30'12.3771"N	80°50'22.5776"W	point
Friend Unit 1H 50' L/R Hard Line	7000.00	7243.47	-3164.71	1683144.98	14352661.69	39°31'25.4301"N	80°50'54.5211"W	rectangle
2D Rectangle 15968.1 x 100.								

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Friend Unit 1H AWP Proj: 22956'
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REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Well	Friend Unit 1H
Field	Tyler	API	47-095-02695-0000
Facility	Pyles Pad	Wellbore	Friend Unit 1H AWB
Slot	Slot #05		

WELLPATH COMPOSITION - Ref Wellbore: Friend Unit 1H AWB Ref Wellpath: Friend Unit 1H AWP Proj: 22956'					
Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore	Survey Date
25.50	381.00	Gyrodata 2015 - GC+WIR+DPIPE	01 Gyrodata MS Gyro <17-1/2"> (100'-381')	Friend Unit 1H AWB	24/Aug/2020
381.00	2518.00	BH NaviTrak (2019) (Axial)	02 APS EM <12-1/4"> (381')(416'-2518')	Friend Unit 1H AWB	24/Aug/2020
2518.00	5796.00	BH NaviTrak (2019) (Axial)	03 APS EM <8-3/4"> (2518')(2664'-5796')	Friend Unit 1H AWB	24/Aug/2020
5796.00	22956.00	BH AutoTrak Curve (2019) (Short spacing)	04 BH AT Curve <8-1/2"> (5796')(5841'-22933')	Friend Unit 1H AWB	24/Aug/2020

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REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Well	Friend Unit 1H
Field	Tyler	API	47-095-02695-0000
Facility	Pyles Pad	Wellbore	Friend Unit 1H AWB
Slot	Slot #05		

COMMENTS
<p>Wellpath general comments API: 47-095-02695-0000 BH Job #: 110531791 Rig: H&P 317 Duration: 8/25/2020-9/2/2020 Gyrodatta MS Gyro <17-1/2"> (100'-381') APS EM <12-1/4"> (381')(416'-2518') APS EM <8-3/4"> (2518')(2664'-5796') BH AT Curve <8-1/2"> (5796')(5841'-22933') Sycamore: 6467' MD Middlesex: 6617' MD Burkett: 6778' MD Tully: 6832' MD Marcellus POE: 7008' MD Projected MD at TD: 22956'</p>

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