



# ANTERO RESOURCES CORPORATION



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

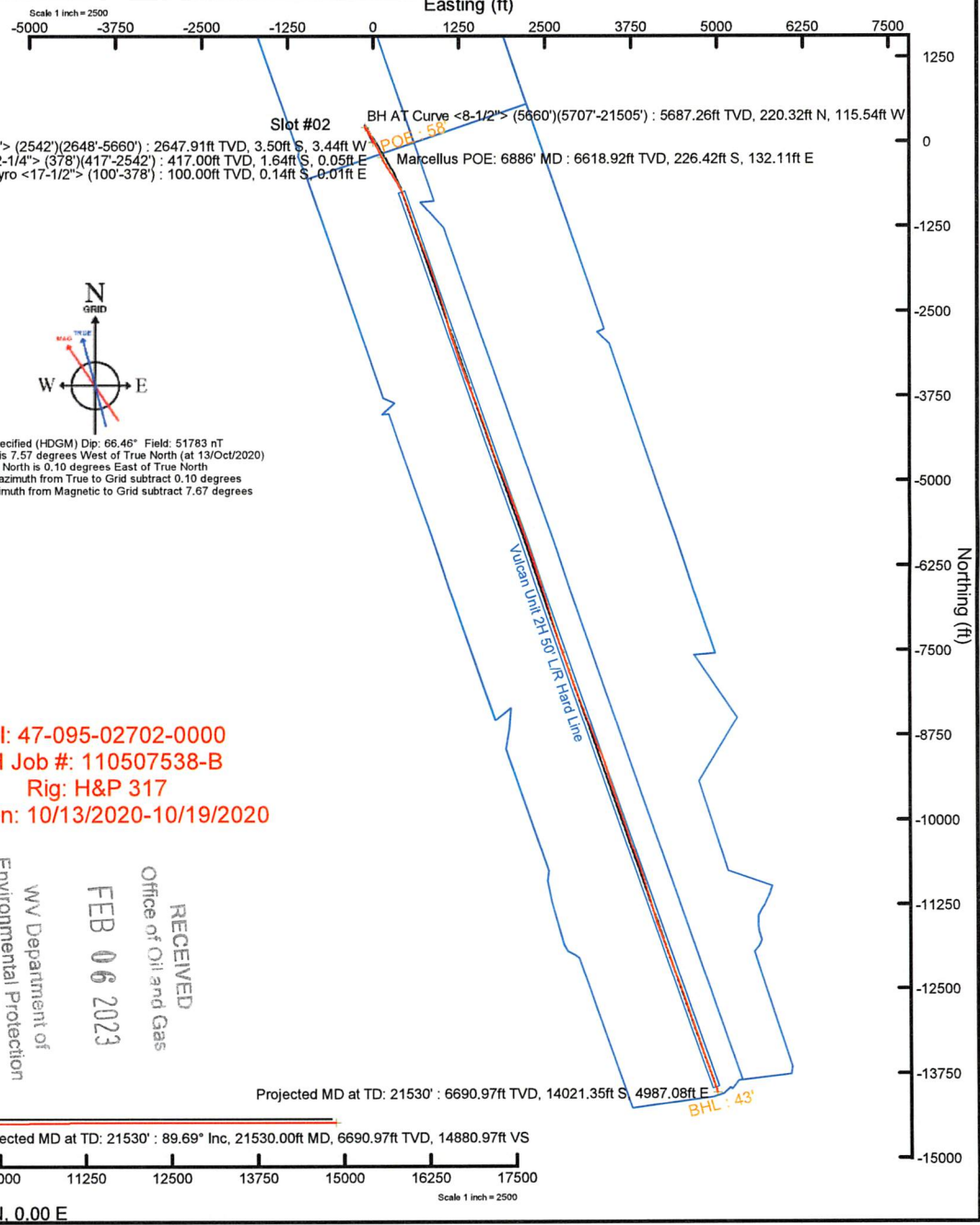
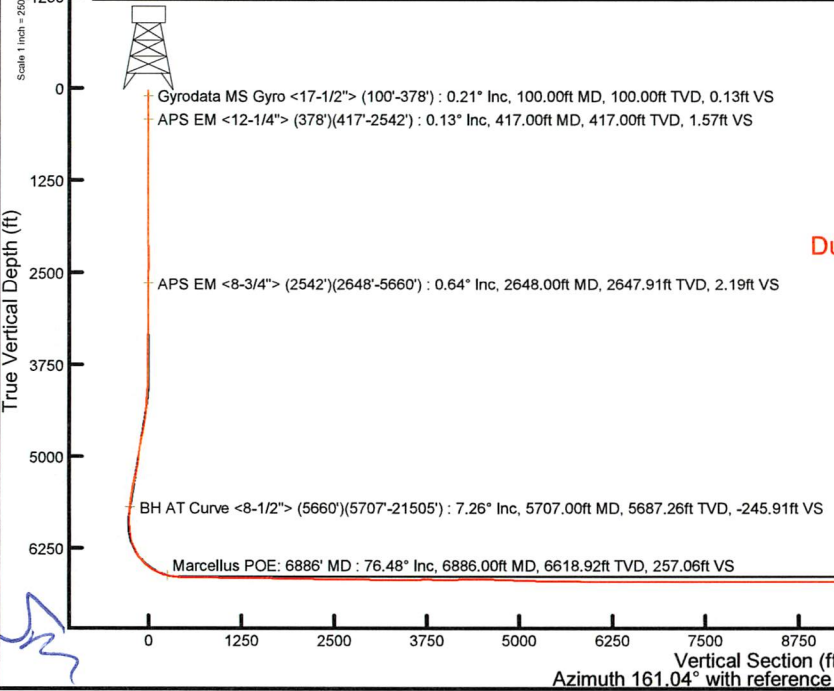
Slot: Slot #02  
 Well: Vulcan Unit 2H  
 Wellbore: Vulcan Unit 2H PWB

Plot reference wellpath is Vulcan Unit 2H PWP Rev-B.0	Grid System: NAD27 / UTM Zone 17 North, US feet
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: 1106.5 feet	Coordinates are in feet referenced to Slot
Mean Sea Level to Ground level (At Slot: Slot #02): -1081 feet	Depths are in feet
Offset wellpath MDs are referenced to each path's default MD datum	Created by: edsaryan on 2020-10-21; Database: WA_MPL_EASTERNUS_Defn

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)	Longitude
Slot #02	29.95	15.51	1686310.614	14345466.023	39°30'14.2300"N 80°50'14.2740"W
Comment	Vulcan Unit 2H				
H&P 317 (RKB) to Ground level (At Slot: Slot #02)	25.5ft				
Mean Sea Level to Ground level (At Slot: Slot #02)	-1081ft				
H&P 317 (RKB) to Mean Sea Level	1106.5ft				

Well Profile Data							
Design Comment	MD (ft)	Inc (")	Az (°)	TVD (ft)	Local N (ft)	Local E (ft)	VS (ft)
Tie On	2542.00	0.620	37.220	2541.92	-4.37	-4.22	2.76
Proj. To Bottom	2620.00	0.620	37.220	2619.91	-3.70	-3.70	2.29
Drill Out Csg.	2720.00	0.620	37.220	2719.91	-2.84	-3.05	1.69
End of Drop	2751.00	0.000	333.876	2750.91	-2.70	-2.95	1.60
KOP 1	3922.74	0.000	333.876	3922.65	-2.70	-2.95	1.60
End of Build	4376.62	9.077	333.876	4374.63	29.51	-18.75	-34.00
Curve KOP	5831.47	9.077	333.876	5811.26	235.60	-119.81	0.00
POE	6887.54	75.440	148.993	6617.00	-211.82	159.29	252.08
Landing Pt.	7069.54	90.000	148.993	6640.00	-366.14	252.04	428.16
On Azimuth	7471.17	90.000	161.042	6640.00	-729.52	421.35	826.84
BHL	21445.51	90.000	161.042	6640.00	-13945.85	4961.27	14801.19

Well Data			
Slot	Well	Wellbore	Wellpath
Slot #02	Vulcan Unit 2H	Vulcan Unit 2H AWB	Vulcan Unit 2H AWP Proj: 21530'
Slot #02	Vulcan Unit 2H	Vulcan Unit 2H PWB	Vulcan Unit 2H PWP Rev-B.0



User specified (HDGM) Dip: 66.46° Field: 51783 nT  
 Magnetic North is 7.57 degrees West of True North (at 13/Oct/2020)  
 Grid North is 0.10 degrees East of True North  
 To correct azimuth from True to Grid subtract 0.10 degrees  
 To correct azimuth from Magnetic to Grid subtract 7.67 degrees

API: 47-095-02702-0000  
 BH Job #: 110507538-B  
 Rig: H&P 317  
 Duration: 10/13/2020-10/19/2020

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# Actual Wellpath Report

Vulcan Unit 2H AWP Proj: 21530'

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REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Well	Vulcan Unit 2H
Field	Tyler	API	47-095-02702-0000
Facility	Pyles Pad	Wellbore	Vulcan Unit 2H AWB
Slot	Slot #02		

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	21/Oct/2020 at 16:01
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	29.95	1.51	1686310.61	14345466.02	39°30'14.2300"N	80°50'14.2740"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 #02)	25.50ft
MD Reference Pt	H&P 317 (RKB)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	161.04°

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Vulcan Unit 2H AWP Proj: 21530'  
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REFERENCE WELLPATH IDENTIFICATION			
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Field	Tyler	API	47-095-02702-0000
Facility	Pyles Pad	Wellbore	Vulcan Unit 2H AWB
Slot	Slot #02		

WELLPATH DATA (252 stations) † = interpolated, ‡ = extrapolated station																
MD	Inclination	Azimuth	TVD	Vert Sect	North	East	Grid East	Grid North	Latitude	Longitude	Closure Dist	Closure Dir	DLS	Build Rate	Turn Rate	Comments
[ft]	[°]	[°]	[ft]	[ft]	[ft]	[ft]	[US ft]	[US ft]			[ft]	[°]	[°/100ft]	[°/100ft]	[°/100ft]	
0.00	0.00	175.370	0.00	0.00	0.00	0.00	1686310.61	14345466.02	39°30'14.2300"N	80°50'14.2740"W	0.00	0.000	0.00	0.00	0.00	
25.50	0.000	175.370	25.50	0.00	0.00	0.00	1686310.61	14345466.02	39°30'14.2300"N	80°50'14.2740"W	0.00	0.000	0.00	0.00	0.00	
100.00	0.210	175.370	100.00	0.13	-0.14	0.01	1686310.62	14345465.89	39°30'14.2287"N	80°50'14.2739"W	0.14	175.370	0.28	0.28	0.00	Gyrodata MS Gyro <17-1/2"> (100'-378')
200.00	0.280	172.610	200.00	0.55	-0.56	0.06	1686310.67	14345465.46	39°30'14.2245"N	80°50'14.2733"W	0.56	174.175	0.07	0.07	-2.76	
300.00	0.360	176.780	300.00	1.09	-1.12	0.11	1686310.72	14345464.91	39°30'14.2190"N	80°50'14.2727"W	1.12	174.563	0.08	0.08	4.17	
378.00	0.250	186.160	378.00	1.48	-1.53	0.10	1686310.72	14345464.49	39°30'14.2149"N	80°50'14.2727"W	1.53	176.195	0.15	-0.14	12.03	
417.00	0.130	239.870	417.00	1.57	-1.64	0.05	1686310.67	14345464.39	39°30'14.2138"N	80°50'14.2733"W	1.64	178.097	0.52	-0.31	137.72	APS EM <12-1/4"> (378')(417'-2542')
507.00	0.100	286.870	507.00	1.54	-1.67	-0.11	1686310.50	14345464.36	39°30'14.2135"N	80°50'14.2754"W	1.67	183.744	0.11	-0.03	52.22	
598.00	0.140	249.080	598.00	1.50	-1.68	-0.29	1686310.33	14345464.34	39°30'14.2134"N	80°50'14.2777"W	1.71	189.741	0.09	0.04	-41.53	
690.00	0.100	255.960	690.00	1.49	-1.74	-0.47	1686310.14	14345464.28	39°30'14.2128"N	80°50'14.2801"W	1.81	195.150	0.05	-0.04	7.48	
780.00	0.130	303.870	780.00	1.41	-1.70	-0.63	1686309.98	14345464.32	39°30'14.2132"N	80°50'14.2821"W	1.82	200.365	0.11	0.03	53.23	
872.00	0.280	293.630	871.99	1.17	-1.56	-0.93	1686309.69	14345464.47	39°30'14.2146"N	80°50'14.2858"W	1.81	210.735	0.17	0.16	-11.13	
963.00	0.410	302.730	962.99	0.77	-1.29	-1.40	1686309.21	14345464.73	39°30'14.2173"N	80°50'14.2919"W	1.91	227.377	0.15	0.14	10.00	
1054.00	0.500	303.910	1053.99	0.19	-0.89	-2.01	1686308.61	14345465.13	39°30'14.2212"N	80°50'14.2996"W	2.20	245.994	0.10	0.10	1.30	
1149.00	0.400	276.930	1148.99	-0.28	-0.62	-2.68	1686307.94	14345465.40	39°30'14.2239"N	80°50'14.3082"W	2.75	256.925	0.24	-0.11	-28.40	
1244.00	0.470	254.510	1243.98	-0.45	-0.69	-3.38	1686307.23	14345465.34	39°30'14.2233"N	80°50'14.3172"W	3.45	258.535	0.19	0.07	-23.60	
1339.00	0.440	247.660	1338.98	-0.45	-0.93	-4.10	1686306.52	14345465.09	39°30'14.2209"N	80°50'14.3263"W	4.20	257.224	0.07	-0.03	-7.21	
1434.00	0.330	255.200	1433.98	-0.45	-1.14	-4.70	1686305.92	14345464.89	39°30'14.2188"N	80°50'14.3340"W	4.83	256.391	0.13	-0.12	7.94	
1529.00	0.430	222.590	1528.98	-0.30	-1.47	-5.20	1686305.41	14345464.55	39°30'14.2156"N	80°50'14.3404"W	5.41	254.229	0.25	0.11	-34.33	
1624.00	0.500	230.880	1623.97	0.01	-1.99	-5.77	1686304.85	14345464.03	39°30'14.2104"N	80°50'14.3476"W	6.10	250.929	0.10	0.07	8.73	
1719.00	0.550	221.160	1718.97	0.38	-2.60	-6.39	1686304.23	14345463.43	39°30'14.2044"N	80°50'14.3556"W	6.90	247.867	0.11	0.05	-10.23	
1813.00	0.570	207.500	1812.97	0.93	-3.35	-6.90	1686303.71	14345462.67	39°30'14.1970"N	80°50'14.3621"W	7.67	244.089	0.14	0.02	-14.53	
1908.00	0.550	203.330	1907.96	1.59	-4.19	-7.30	1686303.32	14345461.83	39°30'14.1887"N	80°50'14.3672"W	8.42	240.143	0.05	-0.02	-4.39	
2003.00	0.690	205.220	2002.96	2.34	-5.13	-7.73	1686302.89	14345460.90	39°30'14.1795"N	80°50'14.3727"W	9.27	236.428	0.15	0.15	1.99	
2098.00	0.510	217.570	2097.95	2.98	-5.98	-8.23	1686302.39	14345460.05	39°30'14.1710"N	80°50'14.3791"W	10.17	233.988	0.23	-0.19	13.00	
2193.00	0.360	85.370	2192.95	3.29	-6.29	-8.19	1686302.43	14345459.73	39°30'14.1680"N	80°50'14.3786"W	10.32	232.462	0.84	-0.16	-139.16	
2288.00	0.770	72.780	2287.94	3.38	-6.08	-7.28	1686303.34	14345459.95	39°30'14.1701"N	80°50'14.3670"W	9.48	230.143	0.45	0.43	-13.25	
2383.00	0.900	71.940	2382.93	3.41	-5.66	-5.96	1686304.66	14345460.37	39°30'14.1742"N	80°50'14.3502"W	8.22	226.496	0.14	0.14	-0.88	
2478.00	0.820	46.610	2477.92	3.14	-4.96	-4.76	1686305.86	14345461.07	39°30'14.1811"N	80°50'14.3348"W	6.87	223.811	0.41	-0.08	-26.66	
2542.00	0.620	37.220	2541.92	2.76	-4.37	-4.22	1686306.40	14345461.66	39°30'14.1869"N	80°50'14.3279"W	6.07	223.975	0.36	-0.31	-14.67	

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# Actual Wellpath Report

Vulcan Unit 2H AWP Proj: 21530'  
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REFERENCE WELLPATH IDENTIFICATION				
Operator	ANTERO RESOURCES CORPORATION		Well	Vulcan Unit 2H
Field	Tyler		API	47-095-02702-0000
Facility	Pyles Pad		Wellbore	Vulcan Unit 2H AWB
Slot	Slot #02			

WELLPATH DATA (252 stations)																
MD	Inclination	Azimuth	TVD	Vert Sect	North	East	Grid East	Grid North	Latitude	Longitude	Closure Dist	Closure Dir	DLS	Build Rate	Turn Rate	Comments
[ft]	[°]	[°]	[ft]	[ft]	[ft]	[ft]	[US ft]	[US ft]			[ft]	[°]	[°/100ft]	[°/100ft]	[°/100ft]	
2648.00	0.640	45.730	2647.91	2.19	-3.50	-3.44	1686307.17	14345462.53	39°30'14.1955"N	80°50'14.3180"W	4.91	224.550	0.09	0.02	8.03	APS EM <8-3/4"> (2542')(2648'-5660')
2737.00	0.940	48.870	2736.90	1.70	-2.67	-2.54	1686308.08	14345463.35	39°30'14.2036"N	80°50'14.3064"W	3.69	223.536	0.34	0.34	3.53	
2825.00	0.700	60.510	2824.90	1.33	-1.93	-1.53	1686309.09	14345464.09	39°30'14.2109"N	80°50'14.2935"W	2.46	218.317	0.33	-0.27	13.23	
2914.00	0.830	37.850	2913.89	0.88	-1.16	-0.66	1686309.96	14345464.87	39°30'14.2186"N	80°50'14.2824"W	1.33	209.664	0.37	0.15	-25.46	
3002.00	1.080	29.250	3001.88	-0.02	0.07	0.14	1686310.75	14345466.09	39°30'14.2307"N	80°50'14.2722"W	0.16	62.719	0.33	0.28	-9.77	
3095.00	1.140	27.880	3094.86	-1.24	1.65	1.00	1686311.61	14345467.68	39°30'14.2463"N	80°50'14.2612"W	1.93	31.136	0.07	0.06	-1.47	
3184.00	0.980	24.100	3183.84	-2.40	3.13	1.72	1686312.34	14345469.15	39°30'14.2609"N	80°50'14.2519"W	3.57	28.835	0.20	-0.18	-4.25	
3272.00	1.260	16.470	3271.83	-3.74	4.75	2.31	1686312.92	14345470.77	39°30'14.2769"N	80°50'14.2445"W	5.28	25.909	0.36	0.32	-8.67	
3361.00	1.480	14.880	3360.80	-5.49	6.79	2.88	1686313.49	14345472.82	39°30'14.2971"N	80°50'14.2371"W	7.38	22.954	0.25	0.25	-1.79	
3449.00	1.470	357.920	3448.77	-7.52	9.02	3.13	1686313.74	14345475.04	39°30'14.3191"N	80°50'14.2339"W	9.55	19.128	0.49	-0.01	-19.27	
3538.00	0.260	3.710	3537.76	-8.79	10.36	3.10	1686313.71	14345476.38	39°30'14.3324"N	80°50'14.2342"W	10.82	16.655	1.36	-1.36	6.51	
3626.00	0.470	144.760	3625.76	-8.63	10.27	3.32	1686313.93	14345476.29	39°30'14.3314"N	80°50'14.2314"W	10.79	17.926	0.79	0.24	160.28	
3715.00	0.060	160.510	3714.76	-8.23	9.93	3.55	1686314.16	14345475.94	39°30'14.3280"N	80°50'14.2285"W	10.54	19.668	0.46	-0.46	17.70	
3803.00	0.030	333.460	3802.76	-8.21	9.90	3.55	1686314.17	14345475.92	39°30'14.3278"N	80°50'14.2284"W	10.52	19.736	0.10	-0.03	196.53	
3892.00	0.250	313.900	3891.76	-8.41	10.06	3.40	1686314.01	14345476.08	39°30'14.3294"N	80°50'14.2304"W	10.62	18.689	0.25	0.25	-21.98	
3980.00	1.400	315.860	3979.75	-9.55	10.96	2.52	1686313.13	14345476.98	39°30'14.3383"N	80°50'14.2417"W	11.25	12.923	1.31	1.31	2.23	
4069.00	3.720	314.670	4068.65	-13.12	13.77	-0.30	1686310.32	14345479.79	39°30'14.3661"N	80°50'14.2774"W	13.78	358.772	2.61	2.61	-1.34	
4157.00	4.780	311.130	4156.41	-18.86	18.19	-5.09	1686305.53	14345484.21	39°30'14.4099"N	80°50'14.3385"W	18.89	344.377	1.24	1.20	-4.02	
4246.00	4.250	303.740	4245.13	-24.70	22.46	-10.62	1686300.00	14345488.48	39°30'14.4522"N	80°50'14.4090"W	24.85	334.691	0.88	-0.60	-8.30	
4334.00	3.660	327.630	4332.93	-30.02	26.65	-14.84	1686295.78	14345492.66	39°30'14.4936"N	80°50'14.4627"W	30.50	330.889	1.97	-0.67	27.15	
4423.00	5.760	347.940	4421.63	-37.22	33.42	-17.29	1686293.33	14345499.42	39°30'14.5606"N	80°50'14.4938"W	37.62	332.638	2.98	2.36	22.82	
4511.00	8.430	339.450	4508.95	-48.06	43.78	-20.48	1686290.14	14345509.78	39°30'14.6630"N	80°50'14.5343"W	48.33	334.927	3.25	3.03	-9.65	
4600.00	10.810	336.350	4596.69	-62.90	57.53	-26.12	1686284.50	14345523.53	39°30'14.7991"N	80°50'14.6059"W	63.18	335.582	2.74	2.67	-3.48	
4688.00	11.100	332.740	4683.09	-79.50	72.62	-33.31	1686277.32	14345538.62	39°30'14.9483"N	80°50'14.6973"W	79.90	335.360	0.85	0.33	-4.10	
4777.00	10.250	327.870	4770.55	-95.69	86.94	-41.45	1686269.18	14345552.93	39°30'15.0900"N	80°50'14.8007"W	96.32	334.513	1.39	-0.96	-5.47	
4865.00	9.560	321.960	4857.24	-110.22	99.33	-50.11	1686260.52	14345565.31	39°30'15.2126"N	80°50'14.9110"W	111.25	333.228	1.40	-0.78	-6.72	
4954.00	8.020	327.360	4945.19	-123.24	110.38	-58.02	1686252.62	14345576.36	39°30'15.3219"N	80°50'15.0116"W	124.70	332.273	1.96	-1.73	6.07	
5042.00	7.190	331.330	5032.42	-134.63	120.38	-63.97	1686246.67	14345586.36	39°30'15.4209"N	80°50'15.0873"W	136.32	332.014	1.12	-0.94	4.51	
5130.00	8.250	336.930	5119.62	-146.36	131.02	-69.09	1686241.56	14345596.99	39°30'15.5262"N	80°50'15.1523"W	148.12	332.198	1.48	1.20	6.36	
5219.00	11.950	335.230	5207.23	-161.90	145.27	-75.45	1686235.19	14345611.23	39°30'15.6671"N	80°50'15.2332"W	163.69	332.553	4.17	4.16	-1.91	

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Operator	ANTERO RESOURCES CORPORATION		Well	Vulcan Unit 2H
Field	Tyler		API	47-095-02702-0000
Facility	Pyles Pad		Wellbore	Vulcan Unit 2H AWB
Slot	Slot #02			

WELLPATH DATA (252 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
5307.00	12.550	329.390	5293.23	-180.33	161.77	-84.14	1686226.51	14345627.73	89°30'15.8303"N	80°50'15.3436"W	182.34	332.521	1.56	0.68	-6.64	
5396.00	12.610	326.230	5380.09	-199.19	178.17	-94.46	1686216.19	14345644.12	89°30'15.9926"N	80°50'15.4750"W	201.66	332.068	0.78	0.07	-3.55	
5485.00	10.320	326.920	5467.31	-216.32	192.92	-104.21	1686206.44	14345658.87	89°30'16.1386"N	80°50'15.5991"W	219.27	331.623	2.58	-2.57	0.78	
5573.00	7.590	338.690	5554.24	-229.77	204.95	-110.63	1686200.03	14345670.89	89°30'16.2575"N	80°50'15.6806"W	232.90	331.640	3.72	-3.10	13.37	
5660.00	6.380	343.150	5640.59	-240.34	214.93	-114.12	1686196.54	14345680.86	89°30'16.3562"N	80°50'15.7249"W	243.34	332.033	1.52	-1.39	5.13	
5707.00	7.260	347.160	5687.26	-245.91	220.32	-115.54	1686195.12	14345686.26	89°30'16.4096"N	80°50'15.7429"W	248.78	332.328	2.13	1.87	8.53	BH AT Curve <8-1/2"> (5660')(5707'-2150')
5792.00	3.480	349.760	5771.87	-253.80	228.10	-117.19	1686193.47	14345694.03	89°30'16.4865"N	80°50'15.7638"W	256.44	332.808	4.46	-4.45	3.06	
5880.00	0.100	249.860	5859.81	-256.44	230.70	-117.74	1686192.93	14345696.63	89°30'16.5122"N	80°50'15.7707"W	259.01	332.963	3.98	-3.84	-113.52	
5969.00	2.220	158.510	5948.79	-254.71	229.07	-117.18	1686193.48	14345695.00	89°30'16.4961"N	80°50'15.7636"W	257.30	332.909	2.50	2.38	-102.64	
6057.00	7.560	146.730	6036.44	-247.40	222.64	-113.37	1686197.29	14345688.57	89°30'16.4325"N	80°50'15.7152"W	249.85	333.014	6.14	6.07	-13.39	
6146.00	13.320	148.660	6123.93	-231.70	208.98	-104.82	1686205.83	14345674.92	89°30'16.2973"N	80°50'15.6065"W	233.79	333.362	6.48	6.47	2.17	
6234.00	20.460	146.740	6208.08	-206.86	187.43	-91.10	1686219.55	14345653.38	89°30'16.0841"N	80°50'15.4319"W	208.40	334.079	8.14	8.11	-2.18	
6323.00	27.540	145.450	6289.34	-171.92	157.44	-70.87	1686239.77	14345623.40	89°30'15.7873"N	80°50'15.1745"W	172.65	335.765	7.98	7.96	-1.45	
6362.00†	31.213	147.047	6323.32	-153.43	141.53	-60.26	1686250.38	14345607.49	89°30'15.6298"N	80°50'15.0395"W	153.82	336.937	9.63	9.42	4.09	Sycamore: 6362' MD
6411.00	35.850	148.630	6364.15	-127.08	118.61	-45.87	1686264.76	14345584.58	89°30'15.4031"N	80°50'14.8565"W	127.17	338.855	9.63	9.46	3.23	
6500.00	43.440	151.090	6432.64	-71.40	69.50	-17.47	1686293.15	14345535.49	89°30'14.9172"N	80°50'14.4953"W	71.66	345.889	8.71	8.53	2.76	
6515.00†	44.790	151.541	6443.41	-61.11	60.34	-12.46	1686298.16	14345526.34	89°30'14.8266"N	80°50'14.4316"W	61.61	348.332	9.24	9.00	3.01	Middlesex: 6515' MD
6588.00	51.380	153.470	6492.15	-7.42	12.16	12.56	1686323.17	14345478.18	89°30'14.3500"N	80°50'14.1135"W	17.48	45.929	9.24	9.03	2.64	
6669.00†	58.642	154.232	6538.56	58.38	-47.38	41.77	1686352.37	14345418.67	89°30'13.7610"N	80°50'13.7422"W	63.16	138.600	9.00	8.97	0.94	Burkett: 6669' MD
6677.00	59.360	154.300	6542.68	65.19	-53.55	44.75	1686355.34	14345412.49	89°30'13.6999"N	80°50'13.7044"W	69.79	140.120	9.00	8.97	0.86	
6721.00†	63.210	153.730	6563.82	103.48	-88.23	61.65	1686372.24	14345377.82	89°30'13.3569"N	80°50'13.4895"W	107.64	145.056	8.82	8.75	-1.30	Tully: 6721' MD
6725.00	63.560	153.680	6565.61	107.03	-91.44	63.24	1686373.83	14345374.62	89°30'13.3251"N	80°50'13.4694"W	111.18	145.333	8.82	8.75	-1.25	
6765.00	67.360	152.810	6582.22	143.07	-123.92	79.62	1686390.20	14345342.15	89°30'13.0038"N	80°50'13.2611"W	147.30	147.280	9.70	9.50	-2.18	
6814.00	71.590	152.590	6599.40	188.46	-164.69	100.66	1686411.24	14345301.40	89°30'12.6005"N	80°50'12.9936"W	193.02	148.566	8.64	8.63	-0.45	
6854.00	74.770	153.310	6610.97	226.36	-198.79	118.07	1686428.64	14345267.31	89°30'12.2632"N	80°50'12.7723"W	231.21	149.292	8.13	7.95	1.80	
6886.00†	76.482	152.824	6618.92	257.06	-226.42	132.11	1686442.67	14345239.69	89°30'11.9898"N	80°50'12.5938"W	262.15	149.738	5.55	5.35	-1.52	Marcellus POE: 6886' MD
6942.00	79.480	151.990	6630.58	311.21	-274.96	157.48	1686468.03	14345191.17	89°30'11.5097"N	80°50'12.2713"W	316.86	150.199	5.55	5.35	-1.49	
7030.00	85.380	149.440	6642.17	396.98	-351.00	200.14	1686510.67	14345115.17	89°30'10.7574"N	80°50'11.7289"W	404.05	150.308	7.29	6.70	-2.90	
7119.00	89.910	148.040	6645.82	483.84	-426.99	246.27	1686556.79	14345039.21	89°30'10.0055"N	80°50'11.1421"W	492.92	150.025	5.33	5.09	-1.57	
7207.00	89.480	148.070	6646.29	569.59	-501.66	292.83	1686603.33	14344964.56	89°30'9.2667"N	80°50'10.5498"W	580.87	149.727	0.49	-0.49	0.03	

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# Actual Wellpath Report

Vulcan Unit 2H AWP Proj: 21530'  
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REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Well	Vulcan Unit 2H
Field	Tyler	API	47-095-02702-0000
Facility	Pyles Pad	Wellbore	Vulcan Unit 2H AWB
Slot	Slot #02		

WELLPATH DATA (252 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
7296.00	89.450	147.900	6647.12	656.28	-577.12	340.01	1686650.49	14344889.13	39°30'8.5200"N	80°50'9.9497"W	669.83	149.495	0.19	-0.03	-0.19	
7384.00	89.380	151.730	6648.02	742.58	-653.17	384.25	1686694.71	14344813.11	39°30'7.7676"N	80°50'9.3871"W	757.81	149.532	4.35	-0.08	4.35	
7472.00	89.230	156.160	6649.09	829.88	-732.20	422.89	1686733.33	14344734.11	39°30'6.9858"N	80°50'8.8960"W	845.55	149.991	5.04	-0.17	5.03	
7561.00	89.260	160.820	6650.26	918.76	-814.97	455.51	1686765.94	14344651.38	39°30'6.1672"N	80°50'8.4818"W	933.63	150.798	5.24	0.03	5.24	
7649.00	89.630	161.070	6651.11	1006.75	-898.15	484.24	1686794.66	14344568.24	39°30'5.3446"N	80°50'8.1173"W	1020.37	151.669	0.51	0.42	0.28	
7738.00	90.310	160.070	6651.16	1095.75	-982.08	513.84	1686824.25	14344484.34	39°30'4.5146"N	80°50'7.7415"W	1108.38	152.380	1.36	0.76	-1.12	
7826.00	89.050	161.310	6651.65	1183.74	-1065.12	542.94	1686853.34	14344401.33	39°30'3.6933"N	80°50'7.3723"W	1195.52	152.990	2.01	-1.43	1.41	
7915.00	89.170	161.490	6653.03	1272.73	-1149.46	571.33	1686881.71	14344317.02	39°30'2.8592"N	80°50'7.0122"W	1283.62	153.571	0.24	0.13	0.20	
8003.00	89.420	160.660	6654.12	1360.72	-1232.70	599.86	1686910.24	14344233.82	39°30'2.0360"N	80°50'6.6500"W	1370.91	154.051	0.98	0.28	-0.94	
8092.00	89.380	159.880	6655.05	1449.71	-1316.47	629.91	1686940.27	14344150.08	39°30'1.2076"N	80°50'6.2687"W	1459.41	154.430	0.88	-0.04	-0.88	
8180.00	88.890	160.230	6656.38	1537.68	-1399.18	659.92	1686970.27	14344067.40	39°30'0.3896"N	80°50'5.8878"W	1547.00	154.749	0.68	-0.56	0.40	
8269.00	89.010	159.730	6658.01	1626.65	-1482.79	690.39	1687000.72	14343983.83	39°29'59.5627"N	80°50'5.5011"W	1635.63	155.033	0.58	0.13	-0.56	
8357.00	88.920	158.550	6659.60	1714.59	-1565.00	721.72	1687032.04	14343901.64	39°29'58.7495"N	80°50'5.1034"W	1723.40	155.243	1.34	-0.10	-1.34	
8446.00	88.980	159.060	6661.23	1803.51	-1647.97	753.89	1687064.20	14343818.71	39°29'57.9290"N	80°50'4.6949"W	1812.22	155.418	0.58	0.07	0.57	
8534.00	89.630	158.000	6662.30	1891.41	-1729.86	786.09	1687096.39	14343736.86	39°29'57.1191"N	80°50'4.2860"W	1900.09	155.562	1.41	0.74	-1.20	
8623.00	89.050	158.190	6663.32	1980.29	-1812.42	819.30	1687129.58	14343654.32	39°29'56.3024"N	80°50'3.8644"W	1989.00	155.675	0.69	-0.65	0.21	
8711.00	88.890	160.590	6664.90	2068.23	-1894.77	850.26	1687160.54	14343572.01	39°29'55.4880"N	80°50'3.4713"W	2076.80	155.832	2.73	-0.18	2.73	
8799.00	89.380	161.650	6666.23	2156.22	-1978.03	878.74	1687189.00	14343488.79	39°29'54.6646"N	80°50'3.1100"W	2164.43	156.047	1.33	0.56	1.20	
8888.00	88.890	162.400	6667.58	2245.20	-2062.67	906.20	1687216.45	14343404.17	39°29'53.8276"N	80°50'2.7617"W	2252.96	156.283	1.01	-0.55	0.84	
8976.00	89.450	162.360	6668.85	2333.16	-2146.54	932.83	1687243.07	14343320.34	39°29'52.9982"N	80°50'2.4239"W	2340.47	156.511	0.64	0.64	-0.05	
9065.00	90.150	162.430	6669.16	2422.14	-2231.37	959.75	1687269.98	14343235.55	39°29'52.1593"N	80°50'2.0825"W	2429.02	156.727	0.79	0.79	0.08	
9153.00	89.820	162.460	6669.18	2510.11	-2315.27	986.29	1687296.51	14343151.68	39°29'51.3296"N	80°50'1.7459"W	2516.59	156.926	0.38	-0.37	0.03	
9242.00	89.170	163.310	6669.97	2599.06	-2400.32	1012.49	1687322.69	14343066.66	39°29'50.4885"N	80°50'1.4138"W	2605.12	157.129	1.20	-0.73	0.96	
9330.00	89.290	163.530	6671.15	2686.97	-2484.66	1037.59	1687347.79	14342982.36	39°29'49.6546"N	80°50'1.0955"W	2692.60	157.335	0.28	0.14	0.25	
9419.00	88.920	164.730	6672.54	2775.83	-2570.25	1061.93	1687372.12	14342896.80	39°29'48.8082"N	80°50'0.7871"W	2780.99	157.551	1.41	-0.42	1.35	
9507.00	89.570	164.190	6673.70	2863.67	-2655.03	1085.50	1687395.68	14342812.06	39°29'47.9699"N	80°50'0.4884"W	2868.36	157.763	0.96	0.74	-0.61	
9596.00	88.890	165.030	6674.90	2952.49	-2740.83	1109.12	1687419.29	14342726.29	39°29'47.1214"N	80°50'0.1891"W	2956.73	157.968	1.21	-0.76	0.94	
9684.00	89.480	163.260	6676.15	3040.34	-2825.47	1133.16	1687443.32	14342641.69	39°29'46.2845"N	80°49'59.8845"W	3044.22	158.147	2.12	0.67	-2.01	
9773.00	90.000	162.750	6676.55	3129.29	-2910.58	1159.17	1687469.32	14342556.61	39°29'45.4428"N	80°49'59.5547"W	3132.91	158.285	0.82	0.58	-0.57	
9861.00	89.450	161.930	6676.98	3217.26	-2994.43	1185.87	1687496.01	14342472.79	39°29'44.6136"N	80°49'59.2161"W	3220.70	158.395	1.12	-0.63	-0.93	

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# Actual Wellpath Report

Vulcan Unit 2H AWP Proj: 21530'  
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REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Well	Vulcan Unit 2H
Field	Tyler	API	47-095-02702-0000
Facility	Pyles Pad	Wellbore	Vulcan Unit 2H AWB
Slot	Slot #02		

WELLPATH DATA (252 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
9950.00	89.110	162.170	6678.09	3306.24	-3079.09	1213.29	1687523.42	14342388.16	39°29'43.7764"N	80°49'58.8683"W	3309.51	158.493	0.47	-0.38	0.27	
10038.00	90.650	160.890	6678.28	3394.24	-3162.55	1241.17	1687551.29	14342304.73	39°29'42.9510"N	80°49'58.5147"W	3397.39	158.572	2.28	1.75	-1.45	
10127.00	90.340	160.740	6677.51	3483.23	-3246.61	1270.42	1687580.52	14342220.71	39°29'42.1197"N	80°49'58.1436"W	3486.32	158.629	0.39	-0.35	-0.17	
10215.00	89.970	160.560	6677.27	3571.23	-3329.63	1299.57	1687609.67	14342137.72	39°29'41.2985"N	80°49'57.7736"W	3574.26	158.679	0.47	-0.42	-0.20	
10304.00	91.290	159.790	6676.29	3660.21	-3413.35	1329.76	1687639.84	14342054.03	39°29'40.4706"N	80°49'57.3906"W	3663.23	158.715	1.72	1.48	-0.87	
10392.00	90.090	158.700	6675.23	3748.16	-3495.63	1360.94	1687671.01	14341971.79	39°29'39.6568"N	80°49'56.9948"W	3751.21	158.728	1.84	-1.36	-1.24	
10481.00	89.450	158.760	6675.59	3837.09	-3578.57	1393.22	1687703.28	14341888.88	39°29'38.8365"N	80°49'56.5850"W	3840.21	158.728	0.72	-0.72	0.07	
10569.00	89.940	158.950	6676.06	3925.02	-3660.64	1424.97	1687735.01	14341806.84	39°29'38.0248"N	80°49'56.1820"W	3928.21	158.731	0.60	0.56	0.22	
10657.00	89.660	159.060	6676.37	4012.96	-3742.80	1456.50	1687766.53	14341724.72	39°29'37.2122"N	80°49'55.7818"W	4016.21	158.737	0.34	-0.32	0.13	
10746.00	90.370	159.550	6676.34	4101.92	-3826.06	1487.95	1687797.97	14341641.50	39°29'36.3888"N	80°49'55.3826"W	4105.20	158.749	0.97	0.80	0.55	
10834.00	90.740	160.830	6675.49	4189.91	-3908.84	1517.77	1687827.78	14341558.74	39°29'35.5700"N	80°49'55.0042"W	4193.17	158.779	1.51	0.42	1.45	
10923.00	90.030	160.310	6674.89	4278.90	-3992.77	1547.37	1687857.37	14341474.85	39°29'34.7400"N	80°49'54.6286"W	4282.12	158.816	0.99	-0.80	-0.58	
11012.00	90.430	158.680	6674.53	4367.86	-4076.13	1578.55	1687888.53	14341391.52	39°29'33.9155"N	80°49'54.2329"W	4371.11	158.830	1.89	0.45	-1.83	
11100.00	89.910	160.480	6674.27	4455.83	-4158.59	1609.25	1687919.22	14341309.09	39°29'33.0999"N	80°49'53.8432"W	4459.10	158.845	2.13	-0.59	2.05	
11189.00	90.180	161.350	6674.20	4544.83	-4242.70	1638.35	1687948.31	14341225.02	39°29'32.2681"N	80°49'53.4741"W	4548.04	158.886	1.02	0.30	0.98	
11277.00	88.890	162.070	6674.92	4632.82	-4326.25	1665.96	1687975.91	14341141.50	39°29'31.4419"N	80°49'53.1238"W	4635.93	158.939	1.68	-1.47	0.82	
11366.00	88.000	161.420	6677.33	4721.78	-4410.74	1693.83	1688003.77	14341057.05	39°29'30.6063"N	80°49'52.7704"W	4724.80	158.992	1.24	-1.00	-0.73	
11454.00	88.460	161.880	6680.05	4809.73	-4494.22	1721.52	1688031.45	14340973.59	39°29'29.7807"N	80°49'52.4192"W	4812.66	159.041	0.74	0.52	0.52	
11543.00	88.250	161.510	6682.61	4898.69	-4578.69	1749.46	1688059.38	14340889.17	39°29'28.9454"N	80°49'52.0648"W	4901.53	159.089	0.48	-0.24	-0.42	
11631.00	87.810	160.870	6685.63	4986.63	-4661.94	1777.82	1688087.73	14340805.95	39°29'28.1221"N	80°49'51.7051"W	4989.42	159.126	0.88	-0.50	-0.73	
11720.00	88.460	160.280	6688.53	5075.58	-4745.83	1807.40	1688117.30	14340722.09	39°29'27.2925"N	80°49'51.3298"W	5078.34	159.151	0.99	0.73	-0.66	
11808.00	88.890	158.280	6690.56	5163.51	-4828.11	1838.53	1688148.41	14340639.85	39°29'26.4787"N	80°49'50.9347"W	5166.31	159.153	2.32	0.49	-2.27	
11896.00	88.520	156.550	6692.55	5251.31	-4909.33	1872.32	1688182.18	14340558.65	39°29'25.6752"N	80°49'50.5057"W	5254.25	159.124	2.01	-0.42	-1.97	
11985.00	87.910	156.030	6695.32	5339.96	-4990.78	1908.09	1688217.94	14340477.24	39°29'24.8696"N	80°49'50.0514"W	5343.10	159.077	0.90	-0.69	-0.58	
12073.00	89.260	158.130	6697.50	5427.72	-5071.80	1942.34	1688252.18	14340396.25	39°29'24.0682"N	80°49'49.6164"W	5431.01	159.045	2.84	1.53	2.39	
12163.00	90.060	159.080	6698.03	5517.63	-5155.60	1975.17	1688285.00	14340312.48	39°29'23.2394"N	80°49'49.1997"W	5521.01	159.038	1.38	0.89	1.06	
12250.00	89.290	159.870	6698.52	5604.60	-5237.07	2005.68	1688315.49	14340231.04	39°29'22.4336"N	80°49'48.8126"W	5608.00	159.044	1.27	-0.89	0.91	
12339.00	89.570	160.010	6699.41	5693.58	-5320.67	2036.20	1688346.00	14340147.48	39°29'21.6068"N	80°49'48.4253"W	5696.99	159.058	0.35	0.31	0.16	
12427.00	89.510	159.810	6700.12	5781.56	-5403.31	2066.43	1688376.22	14340064.87	39°29'20.7895"N	80°49'48.0417"W	5784.97	159.071	0.24	-0.07	-0.23	
12515.00	89.140	162.390	6701.15	5869.54	-5486.55	2094.93	1688404.71	14339981.66	39°29'19.9662"N	80°49'47.6802"W	5872.90	159.102	2.96	-0.42	2.93	

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# Actual Wellpath Report

Vulcan Unit 2H AWP Proj: 21530'  
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REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Well	Vulcan Unit 2H
Field	Tyler	API	47-095-02702-0000
Facility	Pyles Pad	Wellbore	Vulcan Unit 2H AWB
Slot	Slot #02		

WELLPATH DATA (252 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
12604.00	89.850	162.010	6701.94	5958.52	-5571.29	2122.14	1688431.90	14339896.96	39°29'19.1282"N	80°49'47.3352"W	5961.77	159.148	0.90	0.80	-0.43	
12692.00	90.800	161.830	6701.44	6046.51	-5654.94	2149.44	1688459.20	14339813.34	39°29'18.3010"N	80°49'46.9889"W	6049.67	159.188	1.10	1.08	-0.20	
12781.00	89.380	161.620	6701.30	6135.50	-5739.45	2177.35	1688487.10	14339728.86	39°29'17.4652"N	80°49'46.6350"W	6138.58	159.225	1.61	-1.60	-0.24	
12958.00	90.060	160.890	6702.16	6312.49	-5907.06	2234.23	1688543.95	14339561.32	39°29'15.8076"N	80°49'45.9136"W	6315.47	159.282	0.56	0.38	-0.41	
13046.00	89.380	160.730	6702.59	6400.49	-5990.17	2263.16	1688572.87	14339478.25	39°29'14.9857"N	80°49'45.5467"W	6403.44	159.303	0.79	-0.77	-0.18	
13135.00	89.570	161.160	6703.41	6489.49	-6074.29	2292.21	1688601.91	14339394.16	39°29'14.1538"N	80°49'45.1781"W	6492.40	159.325	0.53	0.21	0.48	
13223.00	89.910	160.460	6703.81	6577.49	-6157.40	2321.14	1688630.82	14339311.09	39°29'13.3318"N	80°49'44.8112"W	6580.36	159.345	0.88	0.39	-0.80	
13312.00	89.570	160.660	6704.21	6666.48	-6241.32	2350.76	1688660.43	14339227.20	39°29'12.5018"N	80°49'44.4355"W	6669.34	159.361	0.44	-0.38	0.22	
13400.00	89.660	160.230	6704.80	6754.47	-6324.24	2380.21	1688689.87	14339144.31	39°29'11.6817"N	80°49'44.0618"W	6757.33	159.376	0.50	0.10	-0.49	
13489.00	89.290	162.040	6705.62	6843.47	-6408.45	2408.99	1688718.64	14339060.13	39°29'10.8489"N	80°49'43.6969"W	6846.28	159.398	2.08	-0.42	2.03	
13577.00	89.540	162.560	6706.52	6931.44	-6492.28	2435.74	1688745.38	14338976.33	39°29'10.0198"N	80°49'43.3577"W	6934.16	159.435	0.66	0.28	0.59	
13667.00	90.180	163.830	6706.74	7021.37	-6578.44	2461.76	1688771.39	14338890.21	39°29'9.1679"N	80°49'43.0279"W	7023.97	159.483	1.58	0.71	1.41	
13754.00	90.030	164.140	6706.58	7108.26	-6662.06	2485.76	1688795.38	14338806.62	39°29'8.3409"N	80°49'42.7238"W	7110.70	159.538	0.40	-0.17	0.36	
13843.00	90.090	163.270	6706.49	7197.16	-6747.49	2510.73	1688820.34	14338721.23	39°29'7.4962"N	80°49'42.4074"W	7199.47	159.590	0.98	0.07	-0.98	
13931.00	89.780	163.230	6706.59	7285.10	-6831.75	2536.09	1688845.69	14338637.00	39°29'6.6629"N	80°49'42.0860"W	7287.29	159.634	0.36	-0.35	-0.05	
14019.00	91.320	162.980	6705.74	7373.03	-6915.95	2561.67	1688871.26	14338552.84	39°29'5.8303"N	80°49'41.7619"W	7375.12	159.675	1.77	1.75	-0.28	
14108.00	89.820	163.080	6704.86	7461.97	-7001.07	2587.64	1688897.22	14338467.76	39°29'4.9885"N	80°49'41.4327"W	7463.97	159.715	1.69	-1.69	0.11	
14196.00	89.630	162.900	6705.28	7549.92	-7085.21	2613.38	1688922.95	14338383.64	39°29'4.1564"N	80°49'41.1064"W	7551.82	159.753	0.30	-0.22	-0.20	
14285.00	89.600	162.560	6705.88	7638.88	-7170.20	2639.81	1688949.36	14338298.69	39°29'3.3159"N	80°49'40.7715"W	7640.70	159.788	0.38	-0.03	-0.38	
14373.00	89.690	162.010	6706.42	7726.86	-7254.03	2666.58	1688976.13	14338214.90	39°29'2.4869"N	80°49'40.4320"W	7728.62	159.817	0.63	0.10	-0.62	
14462.00	89.750	162.270	6706.86	7815.84	-7338.74	2693.88	1689003.41	14338130.22	39°29'1.6492"N	80°49'40.0860"W	7817.54	159.843	0.30	0.07	0.29	
14550.00	89.600	162.040	6707.35	7903.82	-7422.50	2720.84	1689030.37	14338046.49	39°29'0.8208"N	80°49'39.7441"W	7905.47	159.869	0.31	-0.17	-0.26	
14638.00	90.740	160.930	6707.09	7991.81	-7505.94	2748.79	1689058.30	14337963.08	39°28'59.9956"N	80°49'39.3897"W	7993.43	159.887	1.81	1.30	-1.26	
14727.00	89.450	161.500	6706.95	8080.81	-7590.20	2777.45	1689086.95	14337878.86	39°28'59.1623"N	80°49'39.0263"W	8082.41	159.901	1.58	-1.45	0.64	
14815.00	89.690	160.990	6707.61	8168.81	-7673.52	2805.74	1689115.23	14337795.57	39°28'58.3382"N	80°49'38.6675"W	8170.38	159.916	0.64	0.27	-0.58	
14904.00	90.620	160.690	6707.37	8257.81	-7757.59	2834.95	1689144.43	14337711.53	39°28'57.5068"N	80°49'38.2970"W	8259.37	159.926	1.10	1.04	-0.34	
14992.00	89.690	160.960	6707.13	8345.80	-7840.71	2863.85	1689173.32	14337628.45	39°28'56.6848"N	80°49'37.9304"W	8347.36	159.935	1.10	-1.06	0.31	
15081.00	90.120	160.710	6707.28	8434.80	-7924.78	2893.07	1689202.53	14337544.41	39°28'55.8534"N	80°49'37.5598"W	8436.35	159.945	0.56	0.48	-0.28	
15169.00	89.820	160.590	6707.32	8522.80	-8007.80	2922.23	1689231.67	14337461.42	39°28'55.0322"N	80°49'37.1900"W	8524.34	159.952	0.37	-0.34	-0.14	
15257.00	90.310	160.100	6707.22	8610.79	-8090.68	2951.83	1689261.26	14337378.58	39°28'54.2126"N	80°49'36.8146"W	8612.34	159.956	0.79	0.56	-0.56	

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# Actual Wellpath Report

Vulcan Unit 2H AWP Proj: 21530'  
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REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Well	Vulcan Unit 2H
Field	Tyler	API	47-095-02702-0000
Facility	Pyles Pad	Wellbore	Vulcan Unit 2H AWB
Slot	Slot #02		

WELLPATH DATA (252 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
15346.00	90.340	160.030	6706.72	8699.78	-8174.34	2982.17	1689291.59	14337294.95	39°28'53.3851"N	80°49'36.4296"W	8701.33	159.957	0.09	0.03	-0.08	
15434.00	90.310	159.800	6706.22	8787.76	-8256.99	3012.39	1689321.80	14337212.33	39°28'52.5677"N	80°49'36.0462"W	8789.33	159.957	0.26	-0.03	-0.26	
15523.00	91.020	159.830	6705.18	8876.73	-8340.52	3043.10	1689352.50	14337128.84	39°28'51.7416"N	80°49'35.6567"W	8878.33	159.955	0.80	0.80	0.03	
15611.00	89.720	158.930	6704.62	8964.69	-8422.88	3074.09	1689383.47	14337046.51	39°28'50.9270"N	80°49'35.2635"W	8966.32	159.949	1.80	-1.48	-1.02	
15700.00	89.690	159.050	6705.07	9053.63	-8505.96	3106.00	1689415.37	14336963.46	39°28'50.1053"N	80°49'34.8586"W	9055.30	159.940	0.14	-0.03	0.13	
15788.00	90.920	158.680	6704.61	9141.57	-8588.03	3137.73	1689447.09	14336881.42	39°28'49.2935"N	80°49'34.4560"W	9143.29	159.930	1.46	1.40	-0.42	
15877.00	89.750	158.510	6704.09	9230.48	-8670.89	3170.21	1689479.55	14336798.59	39°28'48.4740"N	80°49'34.0438"W	9232.26	159.917	1.33	-1.31	-0.19	
15965.00	89.820	158.210	6704.42	9318.39	-8752.69	3202.66	1689511.99	14336716.83	39°28'47.6649"N	80°49'33.6319"W	9320.23	159.902	0.35	0.08	-0.34	
16053.00	90.310	157.180	6704.32	9406.24	-8834.10	3236.06	1689545.38	14336635.45	39°28'46.8596"N	80°49'33.2080"W	9408.16	159.882	1.30	0.56	-1.17	
16142.00	89.850	156.810	6704.19	9495.01	-8916.03	3270.84	1689580.14	14336553.56	39°28'46.0493"N	80°49'32.7664"W	9497.05	159.854	0.66	-0.52	-0.42	
16230.00	90.460	157.290	6703.95	9582.80	-8997.06	3305.15	1689614.44	14336472.56	39°28'45.2478"N	80°49'32.3308"W	9584.94	159.829	0.88	0.69	0.55	
16319.00	89.630	159.120	6703.88	9671.69	-9079.69	3338.19	1689647.47	14336389.96	39°28'44.4304"N	80°49'31.9115"W	9673.90	159.814	2.26	-0.93	2.06	
16407.00	89.660	162.000	6704.43	9759.67	-9162.67	3367.48	1689676.75	14336307.02	39°28'43.6098"N	80°49'31.5401"W	9761.88	159.821	3.27	0.03	3.27	
16496.00	89.230	163.710	6705.29	9848.62	-9247.70	3393.71	1689702.97	14336222.01	39°28'42.7688"N	80°49'31.2076"W	9850.75	159.848	1.98	-0.48	1.92	
16584.00	90.920	162.890	6705.18	9936.55	-9331.99	3419.00	1689728.25	14336137.76	39°28'41.9353"N	80°49'30.8872"W	9938.59	159.878	2.13	1.92	-0.93	
16673.00	90.150	161.500	6704.35	10025.52	-9416.72	3446.21	1689755.45	14336053.07	39°28'41.0974"N	80°49'30.5423"W	10027.51	159.899	1.79	-0.87	-1.56	
16761.00	90.830	161.700	6703.59	10113.51	-9500.22	3473.99	1689783.21	14335969.60	39°28'40.2716"N	80°49'30.1901"W	10115.47	159.914	0.81	0.77	0.23	
16849.00	90.400	161.440	6702.65	10201.51	-9583.70	3501.81	1689811.02	14335886.15	39°28'39.4460"N	80°49'29.8374"W	10203.43	159.928	0.57	-0.49	-0.30	
16938.00	90.340	162.800	6702.07	10290.49	-9668.40	3529.13	1689838.33	14335801.49	39°28'38.6084"N	80°49'29.4911"W	10292.36	159.947	1.53	-0.07	1.53	
17027.00	90.890	163.140	6701.12	10379.43	-9753.49	3555.19	1689864.39	14335716.43	39°28'37.7669"N	80°49'29.1608"W	10381.23	159.973	0.73	0.62	0.38	
17115.00	89.970	161.780	6700.46	10467.40	-9837.39	3581.71	1689890.90	14335632.56	39°28'36.9371"N	80°49'28.8247"W	10469.14	159.994	1.87	-1.05	-1.55	
17203.00	91.200	161.250	6699.56	10555.39	-9920.84	3609.61	1689918.78	14335549.14	39°28'36.1118"N	80°49'28.4710"W	10557.10	160.007	1.52	1.40	-0.60	
17292.00	90.250	161.140	6698.43	10644.38	-10005.09	3638.30	1689947.46	14335464.93	39°28'35.2787"N	80°49'28.1073"W	10646.08	160.016	1.07	-1.07	-0.12	
17380.00	90.920	162.570	6697.53	10732.36	-10088.70	3665.70	1689974.85	14335381.35	39°28'34.4517"N	80°49'27.7599"W	10734.03	160.032	1.79	0.76	1.62	
17469.00	90.710	163.570	6696.27	10821.30	-10173.84	3691.62	1690000.75	14335296.25	39°28'33.6098"N	80°49'27.4316"W	10822.89	160.057	1.15	-0.24	1.12	
17557.00	91.750	162.440	6694.38	10909.22	-10257.97	3717.33	1690026.46	14335212.15	39°28'32.7778"N	80°49'27.1057"W	10910.75	160.080	1.74	1.18	-1.28	
17646.00	90.620	161.030	6692.54	10998.19	-10342.47	3745.22	1690054.33	14335127.69	39°28'31.9421"N	80°49'26.7522"W	10999.69	160.094	2.03	-1.27	-1.58	
17735.00	91.110	159.390	6691.20	11087.17	-10426.20	3775.35	1690084.45	14335043.99	39°28'31.1140"N	80°49'26.3701"W	11088.68	160.095	1.92	0.55	-1.84	
17823.00	89.290	159.010	6690.89	11175.12	-10508.46	3806.59	1690115.69	14334961.76	39°28'30.3004"N	80°49'25.9737"W	11176.66	160.088	2.11	-2.07	-0.43	
17911.00	90.770	159.500	6690.84	11263.07	-10590.75	3837.76	1690146.84	14334879.51	39°28'29.4865"N	80°49'25.5782"W	11264.65	160.081	1.77	1.68	0.56	

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# Actual Wellpath Report

Vulcan Unit 2H AWP Proj: 21530'  
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REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Well	Vulcan Unit 2H
Field	Tyler	API	47-095-02702-0000
Facility	Pyles Pad	Wellbore	Vulcan Unit 2H AWB
Slot	Slot #02		

WELLPATH DATA (252 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
18000.00	90.620	162.030	6689.76	11352.06	-10674.77	3867.08	1690176.15	14334795.52	39°28'28.6555"N	80°49'25.2065"W	11353.63	160.086	2.85	-0.17	2.84	
18088.00	91.290	163.510	6688.30	11440.00	-10758.80	3893.14	1690202.20	14334711.52	39°28'27.8245"N	80°49'24.8762"W	11441.52	160.107	1.85	0.76	1.68	
18177.00	90.000	162.920	6687.29	11528.93	-10844.00	3918.84	1690227.89	14334626.35	39°28'26.9819"N	80°49'24.5507"W	11530.38	160.131	1.59	-1.45	-0.66	
18265.00	90.000	163.100	6687.29	11616.88	-10928.16	3944.55	1690253.59	14334542.23	39°28'26.1496"N	80°49'24.2248"W	11618.27	160.153	0.20	0.00	0.20	
18354.00	89.970	163.960	6687.32	11705.80	-11013.51	3969.79	1690278.81	14334456.91	39°28'25.3056"N	80°49'23.9052"W	11707.12	160.178	0.97	-0.03	0.97	
18442.00	90.030	163.800	6687.32	11793.69	-11098.05	3994.22	1690303.24	14334372.41	39°28'24.4696"N	80°49'23.5958"W	11794.94	160.206	0.19	0.07	-0.18	
18531.00	89.570	163.240	6687.63	11882.60	-11183.39	4019.47	1690328.47	14334287.10	39°28'23.6256"N	80°49'23.2759"W	11883.79	160.231	0.81	-0.52	-0.63	
18619.00	90.120	163.660	6687.87	11970.52	-11267.75	4044.53	1690353.53	14334202.78	39°28'22.7914"N	80°49'22.9584"W	11971.65	160.255	0.79	0.63	0.48	
18708.00	89.720	163.370	6687.99	12059.44	-11353.09	4069.79	1690378.78	14334117.47	39°28'21.9475"N	80°49'22.6385"W	12060.51	160.279	0.56	-0.45	-0.33	
18796.00	89.690	164.260	6688.44	12147.34	-11437.60	4094.32	1690403.29	14334032.99	39°28'21.1118"N	80°49'22.3278"W	12148.34	160.304	1.01	-0.03	1.01	
18885.00	89.720	161.540	6688.90	12236.28	-11522.66	4120.48	1690429.45	14333947.97	39°28'20.2706"N	80°49'21.9963"W	12237.24	160.323	3.06	0.03	-3.06	
18973.00	89.660	160.280	6689.38	12324.28	-11605.81	4149.26	1690458.22	14333864.85	39°28'19.4482"N	80°49'21.6314"W	12325.23	160.327	1.43	-0.07	-1.43	
19062.00	90.000	159.370	6689.64	12413.25	-11689.35	4179.96	1690488.90	14333781.34	39°28'18.6219"N	80°49'21.2421"W	12414.22	160.324	1.09	0.38	-1.02	
19150.00	89.570	158.580	6689.97	12501.20	-11771.49	4211.53	1690520.46	14333699.24	39°28'17.8095"N	80°49'20.8416"W	12502.20	160.314	1.02	-0.49	-0.90	
19239.00	89.510	159.420	6690.69	12590.14	-11854.58	4243.42	1690552.34	14333616.18	39°28'16.9877"N	80°49'20.4437"W	12591.17	160.305	0.95	-0.07	0.94	
19327.00	90.370	160.320	6690.78	12678.12	-11937.20	4273.71	1690582.61	14333533.59	39°28'16.1705"N	80°49'20.0529"W	12679.17	160.302	1.41	0.98	1.02	
19416.00	89.660	161.100	6690.76	12767.11	-12021.20	4303.11	1690612.00	14333449.63	39°28'15.3397"N	80°49'19.6801"W	12768.16	160.305	1.19	-0.80	0.88	
19504.00	90.580	162.120	6690.57	12855.11	-12104.70	4330.87	1690639.75	14333366.15	39°28'14.5139"N	80°49'19.3282"W	12856.14	160.314	1.56	1.05	1.16	
19593.00	89.540	160.560	6690.48	12944.10	-12189.02	4359.34	1690668.22	14333281.87	39°28'13.6800"N	80°49'18.9672"W	12945.12	160.321	2.11	-1.17	-1.75	
19681.00	90.680	160.630	6690.31	13032.10	-12272.02	4388.58	1690697.44	14333198.90	39°28'12.8591"N	80°49'18.5965"W	13033.12	160.323	1.30	1.30	0.08	
19770.00	90.620	159.740	6689.30	13121.08	-12355.75	4418.75	1690727.60	14333115.21	39°28'12.0310"N	80°49'18.2139"W	13122.11	160.322	1.00	-0.07	-1.00	
19858.00	90.000	159.580	6688.82	13209.05	-12438.26	4449.34	1690758.17	14333032.74	39°28'11.2149"N	80°49'17.8260"W	13210.10	160.317	0.73	-0.70	-0.18	
19947.00	90.000	160.770	6688.82	13298.04	-12521.98	4479.52	1690788.34	14332949.04	39°28'10.3869"N	80°49'17.4432"W	13299.10	160.316	1.34	0.00	1.34	
20036.00	89.970	161.860	6688.85	13387.04	-12606.29	4508.03	1690816.84	14332864.77	39°28'9.5531"N	80°49'17.0818"W	13388.09	160.323	1.23	-0.03	1.22	
20124.00	89.820	161.450	6689.01	13475.03	-12689.82	4535.73	1690844.53	14332781.28	39°28'8.7270"N	80°49'16.7307"W	13476.06	160.332	0.50	-0.17	-0.47	
20213.00	89.660	160.980	6689.41	13564.03	-12774.07	4564.39	1690873.18	14332697.05	39°28'7.8937"N	80°49'16.3674"W	13565.05	160.337	0.56	-0.18	-0.53	
20301.00	90.090	161.650	6689.60	13652.03	-12857.44	4592.58	1690901.36	14332613.72	39°28'7.0699"N	80°49'16.0101"W	13653.04	160.344	0.90	0.49	0.76	
20389.00	89.780	160.830	6689.70	13740.03	-12940.76	4620.88	1690929.65	14332530.43	39°28'6.2452"N	80°49'15.6513"W	13741.03	160.349	1.00	-0.35	-0.93	
20478.00	90.060	161.220	6689.83	13829.03	-13024.92	4649.82	1690958.58	14332446.30	39°28'5.4128"N	80°49'15.2845"W	13830.02	160.354	0.54	0.31	0.44	
20566.00	90.000	161.040	6689.78	13917.03	-13108.19	4678.28	1690987.03	14332363.07	39°28'4.5892"N	80°49'14.9237"W	13918.01	160.359	0.22	-0.07	-0.20	

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# Actual Wellpath Report

Vulcan Unit 2H AWP Proj: 21530'

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REFERENCE WELLPATH IDENTIFICATION				
Operator	ANTERO RESOURCES CORPORATION		Well	Vulcan Unit 2H
Field	Tyler		API	47-095-02702-0000
Facility	Pyles Pad		Wellbore	Vulcan Unit 2H AWB
Slot	Slot #02			

WELLPATH DATA (252 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
20655.00	89.570	161.580	6690.12	14006.03	-13192.50	4706.80	1691015.53	14332278.79	39°28'3.7554"N	80°49'14.5622"W	14007.00	160.365	0.78	-0.48	0.61	
20743.00	89.780	161.580	6690.61	14094.02	-13275.99	4734.61	1691043.33	14332195.34	39°28'2.9297"N	80°49'14.2097"W	14094.98	160.372	0.24	0.24	0.00	
20832.00	90.150	162.260	6690.67	14183.01	-13360.59	4762.23	1691070.94	14332110.77	39°28'2.0930"N	80°49'13.8597"W	14183.94	160.382	0.87	0.42	0.76	
20920.00	90.620	161.460	6690.08	14271.00	-13444.22	4789.62	1691098.32	14332027.18	39°28'1.2660"N	80°49'13.5125"W	14271.91	160.391	1.05	0.53	-0.91	
21008.00	90.180	159.910	6689.46	14358.99	-13527.26	4818.73	1691127.42	14331944.17	39°28'0.4447"N	80°49'13.1435"W	14359.91	160.393	1.83	-0.50	-1.76	
21097.00	89.750	161.000	6689.52	14447.98	-13611.13	4848.50	1691157.18	14331860.33	39°27'59.6152"N	80°49'12.7660"W	14448.90	160.393	1.32	-0.48	1.22	
21185.00	90.090	161.340	6689.64	14535.98	-13694.42	4876.91	1691185.57	14331777.07	39°27'58.7914"N	80°49'12.4059"W	14536.90	160.398	0.55	0.39	0.39	
21274.00	89.660	161.240	6689.83	14624.98	-13778.72	4905.46	1691214.11	14331692.81	39°27'57.9577"N	80°49'12.0441"W	14625.89	160.403	0.50	-0.48	-0.11	
21362.00	89.820	161.790	6690.23	14712.98	-13862.17	4933.36	1691242.00	14331609.39	39°27'57.1323"N	80°49'11.6904"W	14713.87	160.410	0.65	0.18	0.62	
21451.00	89.750	161.540	6690.57	14801.97	-13946.66	4961.35	1691269.98	14331524.94	39°27'56.2968"N	80°49'11.3356"W	14802.85	160.418	0.29	-0.08	-0.28	
21505.00	89.690	160.710	6690.83	14855.97	-13997.75	4978.82	1691287.45	14331473.86	39°27'55.7915"N	80°49'11.1142"W	14856.84	160.420	1.54	-0.11	-1.54	
21530.00#	89.690	160.710	6690.97	14880.97	-14021.35	4987.08	1691295.70	14331450.28	39°27'55.5581"N	80°49'11.0095"W	14881.84	160.421	0.00	0.00	0.00	Projected MD at TD: 21530'

HOLE & CASING SECTIONS - Ref Wellbore: Vulcan Unit 2H AWB Ref Wellpath: Vulcan Unit 2H AWP Proj: 21530'									
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	-0.16	0.01
17.5in Open Hole	105.50	391.00	285.50	105.50	391.00	-0.16	0.01	-1.58	0.09
13.375in Casing Surface	25.50	371.00	345.50	25.50	371.00	0.00	0.00	-1.50	0.10
12.25in Open Hole	391.00	2620.00	2229.00	391.00	2619.91	-1.58	0.09	-3.72	-3.66
9.625in Casing Intermediate	25.50	2600.00	2574.50	25.50	2599.92	0.00	0.00	-3.88	-3.81
8.75in Open Hole	2620.00	5732.00	3112.00	2619.91	5712.09	-3.72	-3.66	223.17	-116.17
8.5in Open Hole	5732.00	21530.00	15798.00	5712.09	6690.97	223.17	-116.17	-14021.35	4987.08
5.5in Casing Production	25.50	21530.00	21504.50	25.50	6690.97	0.00	0.00	-14021.35	4987.08

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# Actual Wellpath Report

Vulcan Unit 2H AWP Proj: 21530'  
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REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Well	Vulcan Unit 2H
Field	Tyler	API	47-095-02702-0000
Facility	Pyles Pad	Wellbore	Vulcan Unit 2H AWB
Slot	Slot #02		

TARGETS								
Name	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
Vulcan Unit 2H POE Rev-2	6617.00	-211.82	159.29	1686469.84	14345254.29	39°30'12.1337"N	80°50'12.2468"W	point
Vulcan Unit 2H AZI Rev-2	6640.00	-729.52	421.35	1686731.80	14344736.79	39°30'7.0123"N	80°50'8.9156"W	point
Vulcan Unit 2H BHL Rev-2	6640.00	-13945.85	4961.27	1691269.91	14331525.74	39°27'56.3047"N	80°49'11.3366"W	point
Vulcan Unit 2H LP Rev-2	6640.00	-366.14	252.04	1686562.55	14345100.03	39°30'10.6068"N	80°50'11.0671"W	point
Vulcan Unit 2H 50' L/R Hard Line	6750.00	-7337.69	2691.31	1689000.85	14338131.27	39°29'1.6596"N	80°49'40.1186"W	rectangle
2D Rectangle 13974.3 x 100.								

WELLPATH COMPOSITION - Ref Wellbore: Vulcan Unit 2H AWB    Ref Wellpath: Vulcan Unit 2H AWP Proj: 21530'					
Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore	Survey Date
25.50	378.00	Gyrodata 2015 - GC+WIR+DPIPE	01_Gyrodata MS Gyro <17-1/2"> (100'-378')	Vulcan Unit 2H AWB	08/Aug/2020
378.00	2542.00	BH NaviTrak (2019) (Axial)	02_APS EM <12-1/4"> (378')(417'-2542')	Vulcan Unit 2H AWB	08/Aug/2020
2542.00	5660.00	BH NaviTrak (2019) (Axial)	03_APS EM <8-3/4"> (2542')(2648'-5660')	Vulcan Unit 2H AWB	13/Oct/2020
5660.00	21530.00	BH AutoTrak Curve (2019) (Short spacing)	04_BH AT Curve <8-1/2"> (5660')(5707'-21505')	Vulcan Unit 2H AWB	13/Oct/2020



# Actual Wellpath Report

Vulcan Unit 2H AWP Proj: 21530'

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REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Well	Vulcan Unit 2H
Field	Tyler	API	47-095-02702-0000
Facility	Pyles Pad	Wellbore	Vulcan Unit 2H AWB
Slot	Slot #02		

COMMENTS
<p><b>Wellpath general comments</b> API: 47-095-02702-0000 BH Job #: 110507538-B Rig: H&amp;P 317 Duration: 10/13/2020-10/19/2020 Gyrodata MS Gyro &lt;17-1/2"&gt; (100'-378') APS EM &lt;12-1/4"&gt; (378')(417'-2542') APS EM &lt;8-3/4"&gt; (2542')(2648'-5660') BH AT Curve &lt;8-1/2"&gt; (5660')(5707'-21505') Sycamore: 6362' MD Middlesex: 6515' MD Burkett: 6669' MD Tully: 6721' MD Marcellus POE: 6886' MD Projected MD at TD: 21530'</p>

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