

ANTERO RESOURCES CORPORATION

Location: Tyler County, WV
 Field: Tyler
 Facility: Ritchie Petroleum Pad

Slot: Slot #11
 Well: Packers Unit 2H
 Wellbore: Packers Unit 2H PWB



API: 47-095-02391-0000
 BHI Job #: 8696143
 Rig: Frontier 32
 Duration: 08/17/2017-08/20/2017



Plot reference wellpath is Packers Unit 2H PWP Rev-A.0	Grid System: NAD27 / UTM Zone 17 North, US feet
True vertical depths are referenced to Frontier 32 (RKB)	* = Wellpath was transformed from a different geodetic datum
Measured depths are referenced to Frontier 32 (RKB)	North Reference: Grid north
Frontier 32 (RKB) to Mean Sea Level: 1210 feet	Scale: True distance
Mean Sea Level to Mud line (At Slot: Slot #11): -1178 feet	Depths are in feet
Coordinates are in feet referenced to Slot	Created by: delaset on 2017-09-13
	Database: WA_MPL_EasternUS_Defn

- Gyrodata MS Gyro <17-1/2"> (100'-370') : 0.22° Inc, 117.00ft MD, 117.00ft TVD, -0.13ft VS
- Gyrodata MS Gyro <12-1/4"> (370')(390'-567') : 0.50° Inc, 407.00ft MD, 407.00ft TVD, 0.01ft VS
- Directional ONE MWD <12-1/4"> (567')(621'-2497') : 4.00° Inc, 638.00ft MD, 637.88ft TVD, -4.95ft VS

Location Information				
Facility Name	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude
Ritchie Petroleum Pad	1647374.770	14292736.540	39°21'33.290"N	80°58'31.380"W
Slot	Local N (ft)	Local E (ft)	Grid East (US ft)	Grid North (US ft)
Slot #11	-38.45	-32.98	1647341.804	14292700.104
Comment	Packers Unit 2H			
Frontier 32 (RKB) to Mud line (At Slot: Slot #11)	32ft			
Mean Sea Level to Mud line (At Slot: Slot #11)	-1178ft			
Frontier 32 (RKB) to Mean Sea Level	1210ft			

- Directional ONE MWD <8-3/4"> (2497')(2625'-6341') : 1.70° Inc, 2642.00ft MD, 2639.32ft TVD, -59.27ft VS

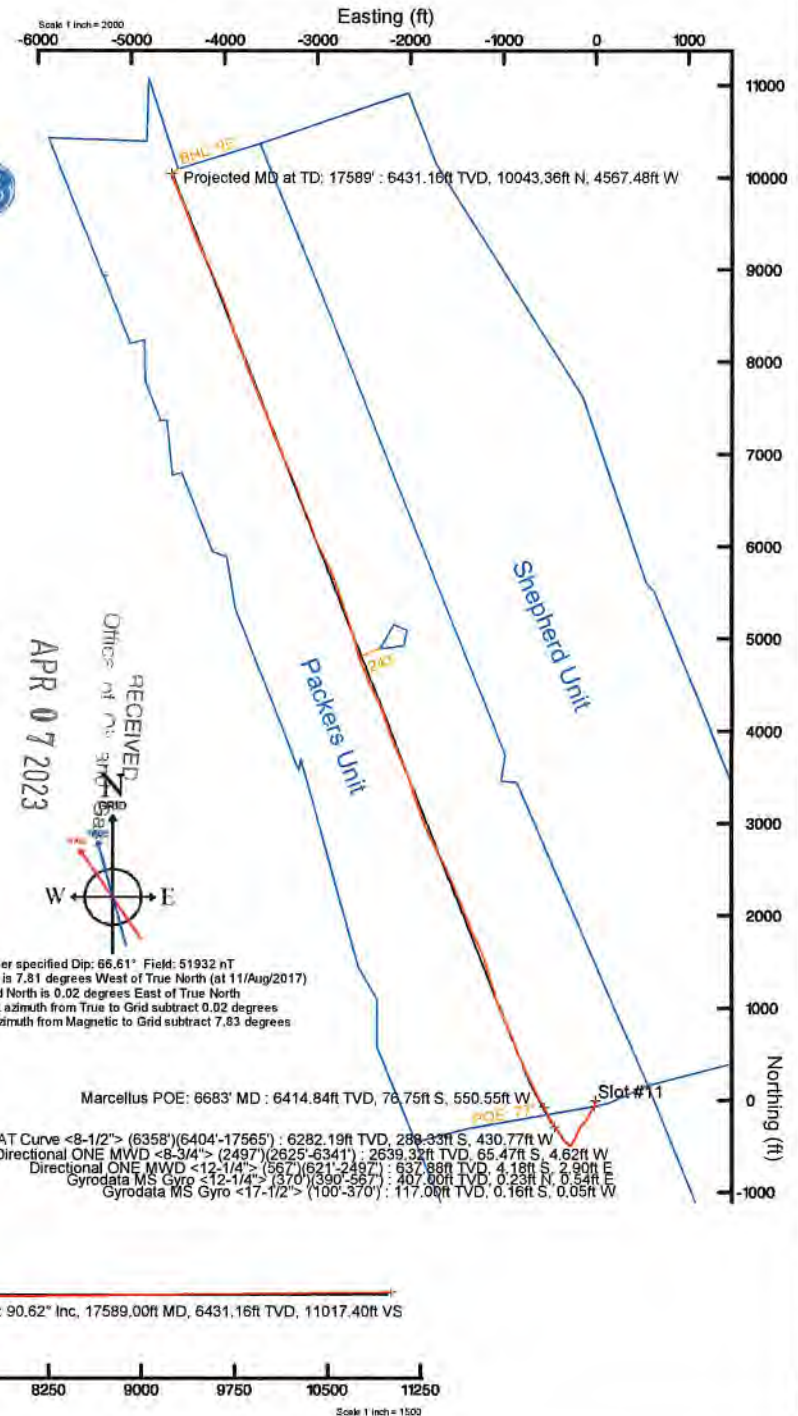
Well Profile Data							
Design Comment	MD (ft)	Inc (°)	Az (°)	TVD (ft)	Local N (ft)	Local E (ft)	VS (ft)
Tie On	6358.00	44.390	324.890	6250.53	-315.87	-411.94	6.04
Proj. To Bottom	6444.00	52.000	323.500	6307.81	-264.00	-449.54	8.91
End of 3D Arc	6556.86	61.399	329.688	6369.75	-185.26	-501.14	9.50
POE	6659.82	70.104	332.000	6412.00	-103.33	-546.78	8.70
Landing Pt.	6880.89	90.000	332.000	6450.00	87.97	-648.49	9.00
On Azimuth	7101.29	90.000	338.612	6450.00	288.09	-740.51	3.00
BHL	17546.29	90.000	338.612	6450.00	10013.76	-4549.64	0.00

Well Data			
Slot	Well	Wellbore	Wellpath
Slot #11	Packers Unit 2H	Packers Unit 2H AWB	Packers Unit 2H AWP Prof: 17589*
Slot #11	Packers Unit 2H	Packers Unit 2H PWB	Packers Unit 2H PWP Rev-A.0

- BHI AT Curve <8-1/2"> (6358')(6404'-17565') : 48.61° Inc, 6404.00ft MD, 6282.19ft TVD, -111.36ft VS
- Marcellus POE: 6683' MD : 71.95° Inc, 6683.00ft MD, 6414.84ft TVD, 129.33ft VS

Projected MD at TD: 17589' : 90.62° Inc, 17589.00ft MD, 6431.16ft TVD, 11017.40ft VS

Vertical Section (ft)
 Azimuth 338.61° with reference 0.00 N, 0.00 E





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Packers Unit 2H AWP Proj: 17589'
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REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #11
Area	Tyler County, WV	Well	Packers Unit 2H
Field	Tyler	Wellbore	Packers Unit 2H AWB
Facility	Ritchie Petroleum Pad		

REPORT SETUP INFORMATION			
Projection System	NAD27 / UTM Zone 17 North, US feet	Software System	WellArchitect® 5.0
North Reference	Grid	User	Delaset
Scale	0.999600	Report Generated	13/Sep/2017 at 14:41
Convergence at slot	0.02° East	Database/Source file	WA_MPL_EasternUS_Defn/Packers_Unit_2H_AWP_Proj_17589_.xml

WELLPATH LOCATION						
	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	-38.45	-32.98	1647341.80	14292700.10	39°21'32.910"N	80°58'31.800"W
Facility Reference Pt			1647374.77	14292738.54	39°21'33.290"N	80°58'31.380"W
Field Reference Pt			0.00	0.00	0°00'00.000"	85°29'19.301"W

WELLPATH DATUM			
Calculation method	Minimum curvature	Frontier 32 (RKB) to Facility Vertical Datum	32.00ft
Horizontal Reference Pt	Slot	Frontier 32 (RKB) to Mean Sea Level	1210.00ft
Vertical Reference Pt	Frontier 32 (RKB)	Frontier 32 (RKB) to Mud Line at Slot (Slot #11)	32.00ft
MD Reference Pt	Frontier 32 (RKB)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	338.61°

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Field	Tyler	Wellbore	Packers Unit 2H AWB
Facility	Ritchie Petroleum Pad		

WELLPATH DATA (211 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	0.000	197.490	0.00	0.00	0.00	0.00	1647341.80	14292700.10	39°21'32.910"N	80°58'31.800"W	0.00	0.000	0.00	0.00	0.00	
32.00	0.000	197.490	32.00	0.00	0.00	0.00	1647341.80	14292700.10	39°21'32.910"N	80°58'31.800"W	0.00	0.000	0.00	0.00	0.00	
117.00	0.220	197.490	117.00	-0.13	-0.16	-0.05	1647341.75	14292699.95	39°21'32.908"N	80°58'31.801"W	0.16	197.490	0.26	0.26	-191.19	Gyrodata MS Gyro <17-1/2"> (100'-370')
217.00	0.130	47.840	217.00	-0.24	-0.26	-0.02	1647341.78	14292699.84	39°21'32.907"N	80°58'31.800"W	0.26	184.929	0.34	-0.09	-149.65	
317.00	0.150	44.640	317.00	-0.14	-0.09	0.15	1647341.86	14292700.01	39°21'32.909"N	80°58'31.798"W	0.18	121.311	0.02	0.02	-3.20	
370.00	0.430	70.400	370.00	-0.12	0.02	0.39	1647342.19	14292700.13	39°21'32.910"N	80°58'31.795"W	0.39	86.657	0.57	0.53	48.60	
407.00	0.500	8.680	407.00	0.01	0.23	0.54	1647342.35	14292700.33	39°21'32.912"N	80°58'31.793"W	0.59	67.204	1.30	0.19	-166.81	Gyrodata MS Gyro <12-1/4"> (370')(390'-567')
495.00	0.670	97.680	494.99	0.10	0.54	1.11	1647342.92	14292700.64	39°21'32.915"N	80°58'31.786"W	1.24	64.120	0.94	0.19	101.14	
584.00	2.370	160.570	583.96	-2.00	-1.27	2.24	1647344.04	14292698.84	39°21'32.897"N	80°58'31.771"W	2.57	119.457	2.41	1.91	70.66	
638.00	4.000	171.170	637.88	-4.95	-4.18	2.90	1647344.70	14292695.93	39°21'32.869"N	80°58'31.763"W	5.09	145.236	3.20	3.02	19.63	Directional ONE MWD <12-1/4"> (567')(621'-2497')
730.00	5.820	178.710	729.54	-12.46	-12.01	3.50	1647345.30	14292688.09	39°21'32.791"N	80°58'31.755"W	12.51	163.764	2.09	1.98	8.20	
819.00	5.190	179.480	818.13	-20.46	-20.55	3.64	1647345.44	14292679.56	39°21'32.707"N	80°58'31.754"W	20.87	169.965	0.71	-0.71	0.87	
895.00	4.680	187.330	893.85	-26.39	-27.06	3.27	1647345.07	14292673.05	39°21'32.643"N	80°58'31.758"W	27.26	173.105	1.11	-0.67	10.33	
984.00	4.550	196.260	982.56	-32.37	-34.05	1.82	1647343.62	14292666.06	39°21'32.573"N	80°58'31.777"W	34.10	176.939	0.82	-0.15	10.03	
1072.00	4.870	195.610	1070.28	-38.12	-41.00	-0.16	1647341.64	14292659.12	39°21'32.505"N	80°58'31.802"W	41.00	180.226	0.37	0.36	-0.74	
1160.00	4.950	193.930	1157.94	-44.20	-48.28	-2.08	1647339.72	14292651.84	39°21'32.433"N	80°58'31.827"W	48.33	182.468	0.19	0.09	-1.91	
1248.00	3.740	192.430	1245.68	-49.68	-54.77	-3.61	1647338.19	14292645.35	39°21'32.369"N	80°58'31.846"W	54.89	183.774	1.38	-1.37	-1.70	
1337.00	1.310	141.800	1334.60	-53.07	-58.41	-3.61	1647338.20	14292641.72	39°21'32.333"N	80°58'31.846"W	58.52	183.535	3.46	-2.73	-56.89	
1425.00	1.720	110.300	1422.57	-54.91	-59.66	-1.75	1647340.06	14292640.47	39°21'32.320"N	80°58'31.822"W	59.68	181.678	1.04	0.47	-35.80	
1513.00	1.780	128.480	1510.53	-56.97	-60.97	0.56	1647342.36	14292639.16	39°21'32.307"N	80°58'31.793"W	60.97	179.473	0.63	0.07	20.66	
1602.00	1.070	207.350	1599.51	-58.71	-62.56	1.26	1647343.06	14292637.57	39°21'32.292"N	80°58'31.784"W	62.58	178.845	2.13	-0.80	88.62	
1690.00	1.530	275.800	1687.49	-58.72	-63.17	-0.29	1647341.52	14292636.95	39°21'32.286"N	80°58'31.804"W	63.18	180.258	1.72	0.52	77.78	
1778.00	1.650	290.890	1775.46	-57.33	-62.60	-2.64	1647339.17	14292637.52	39°21'32.291"N	80°58'31.834"W	62.66	182.412	0.49	0.14	17.15	
1866.00	1.310	291.120	1863.43	-55.80	-61.79	-4.76	1647337.05	14292638.34	39°21'32.299"N	80°58'31.861"W	61.97	184.405	0.39	-0.39	0.26	
1955.00	0.710	277.480	1952.41	-54.84	-61.35	-6.26	1647335.55	14292638.78	39°21'32.304"N	80°58'31.880"W	61.67	185.822	0.72	-0.67	-15.33	
2043.00	0.210	178.280	2040.41	-54.73	-61.44	-6.79	1647335.02	14292638.69	39°21'32.303"N	80°58'31.887"W	61.82	186.307	0.88	-0.57	-112.73	
2131.00	0.440	117.480	2128.41	-55.14	-61.76	-6.49	1647335.32	14292638.37	39°21'32.300"N	80°58'31.883"W	62.10	185.996	0.44	0.26	-69.09	
2220.00	0.780	100.400	2217.40	-55.72	-62.03	-5.59	1647336.22	14292638.10	39°21'32.297"N	80°58'31.871"W	62.28	185.147	0.43	0.38	-19.19	
2308.00	1.020	92.840	2305.39	-56.35	-62.17	-4.22	1647337.59	14292637.96	39°21'32.296"N	80°58'31.854"W	62.32	183.879	0.30	0.27	-8.59	
2396.00	1.210	89.790	2393.38	-57.01	-62.21	-2.50	1647339.30	14292637.92	39°21'32.295"N	80°58'31.832"W	62.26	182.305	0.23	0.22	-3.47	

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REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #11
Area	Tyler County, WV	Well	Packers Unit 2H
Field	Tyler	Wellbore	Packers Unit 2H AWB
Facility	Ritchie Petroleum Pad		

WELLPATH DATA (211 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]	
2485.00	0.920	213.520	2482.37	-57.76	-62.80	-1.96	1647339.84	14292637.33	39°21'32.289"N	80°58'31.825"W	62.83	181.787	2.12	-0.33	139.02	
2514.00	1.210	220.630	2511.36	-58.04	-63.23	-2.29	1647339.52	14292636.90	39°21'32.285"N	80°58'31.829"W	63.27	182.072	1.10	1.00	24.52	
2642.00	1.700	230.150	2639.32	-59.27	-65.47	-4.62	1647337.18	14292634.66	39°21'32.263"N	80°58'31.859"W	65.63	184.041	0.43	0.38	7.44	Directional ONE MWD <8-3/4"> (2497')(2625'-6341')
2730.00	2.940	217.710	2727.25	-60.85	-68.09	-7.01	1647334.80	14292632.04	39°21'32.237"N	80°58'31.889"W	68.45	185.876	1.51	1.41	-14.14	
2819.00	6.430	218.230	2815.94	-64.54	-73.81	-11.49	1647330.32	14292626.32	39°21'32.180"N	80°58'31.947"W	74.70	188.847	3.92	3.92	0.58	
2907.00	8.500	217.700	2903.19	-70.37	-82.83	-18.52	1647323.29	14292617.31	39°21'32.091"N	80°58'32.036"W	84.88	192.601	2.35	2.35	-0.60	
2997.00	7.370	202.170	2992.33	-77.97	-93.44	-24.76	1647317.05	14292606.70	39°21'31.987"N	80°58'32.116"W	96.67	194.843	2.68	-1.26	-17.26	
3086.00	6.810	203.530	3080.65	-85.85	-103.57	-29.02	1647312.79	14292596.58	39°21'31.886"N	80°58'32.170"W	107.56	195.655	0.66	-0.63	1.53	
3174.00	7.790	217.260	3167.95	-92.64	-113.10	-34.72	1647307.10	14292587.05	39°21'31.792"N	80°58'32.242"W	118.31	197.065	2.27	1.11	15.60	
3262.00	8.230	217.260	3255.09	-99.02	-122.86	-42.14	1647299.68	14292577.30	39°21'31.696"N	80°58'32.337"W	129.88	198.933	0.50	0.50	0.00	
3351.00	7.250	205.950	3343.28	-106.14	-132.98	-48.46	1647293.37	14292567.18	39°21'31.596"N	80°58'32.417"W	141.53	200.022	2.03	-1.10	-12.71	
3439.00	8.150	209.980	3430.49	-113.80	-143.37	-54.00	1647287.82	14292556.79	39°21'31.493"N	80°58'32.488"W	153.21	200.640	1.19	1.02	4.58	
3527.00	9.360	209.870	3517.46	-122.17	-154.98	-60.68	1647281.14	14292545.18	39°21'31.378"N	80°58'32.573"W	166.44	201.383	1.38	1.37	-0.13	
3616.00	10.430	205.500	3605.14	-132.21	-168.53	-67.76	1647274.07	14292531.64	39°21'31.245"N	80°58'32.663"W	181.64	201.903	1.47	1.20	-4.91	
3704.00	9.890	204.760	3691.76	-142.89	-182.58	-74.35	1647267.48	14292517.60	39°21'31.106"N	80°58'32.747"W	197.14	202.157	0.63	-0.61	-0.84	
3792.00	8.960	212.130	3778.57	-152.20	-195.25	-81.16	1647260.67	14292504.93	39°21'30.980"N	80°58'32.834"W	211.45	202.572	1.73	-1.06	8.37	
3880.00	7.830	214.660	3865.63	-159.62	-205.98	-88.22	1647253.62	14292494.20	39°21'30.874"N	80°58'32.924"W	224.08	203.184	1.35	-1.28	2.87	
3969.00	9.490	211.890	3953.61	-167.39	-217.20	-95.54	1647246.30	14292482.99	39°21'30.764"N	80°58'33.017"W	237.28	203.743	1.92	1.87	-3.11	
4057.00	10.540	213.200	4040.27	-176.39	-230.09	-103.78	1647238.07	14292470.10	39°21'30.636"N	80°58'33.122"W	252.42	204.277	1.22	1.19	1.49	
4145.00	9.380	220.120	4126.94	-184.48	-242.31	-112.81	1647229.04	14292457.89	39°21'30.515"N	80°58'33.237"W	267.29	204.964	1.89	-1.32	7.86	
4233.00	9.240	231.160	4213.79	-190.02	-252.23	-122.93	1647218.92	14292447.98	39°21'30.417"N	80°58'33.366"W	280.59	205.984	2.03	-0.16	12.55	
4321.00	9.710	235.790	4300.59	-193.78	-260.83	-134.57	1647207.28	14292439.38	39°21'30.332"N	80°58'33.514"W	293.50	207.291	1.02	0.53	5.26	
4409.00	11.920	223.880	4387.03	-199.23	-271.56	-147.01	1647194.85	14292428.66	39°21'30.226"N	80°58'33.673"W	308.80	208.430	3.56	2.51	-13.53	
4497.00	10.520	213.930	4473.36	-207.61	-284.78	-157.80	1647184.07	14292415.44	39°21'30.096"N	80°58'33.810"W	325.57	208.991	2.71	-1.59	-11.31	
4586.00	8.300	191.360	4561.18	-217.64	-297.82	-163.60	1647178.27	14292402.40	39°21'29.967"N	80°58'33.884"W	339.80	208.781	4.79	-2.49	-25.36	
4674.00	8.470	195.960	4648.24	-228.13	-310.28	-166.63	1647175.24	14292389.95	39°21'29.844"N	80°58'33.922"W	352.19	208.238	0.79	0.19	5.23	
4763.00	9.570	213.480	4736.16	-237.60	-322.75	-172.52	1647169.35	14292377.48	39°21'29.720"N	80°58'33.997"W	365.97	208.125	3.31	1.24	19.69	
4852.00	11.120	218.930	4823.71	-246.11	-335.60	-181.99	1647159.88	14292364.64	39°21'29.594"N	80°58'34.118"W	381.77	208.471	2.06	1.74	6.12	
4941.00	11.110	207.240	4911.05	-256.03	-349.91	-191.31	1647150.57	14292350.34	39°21'29.452"N	80°58'34.237"W	398.79	208.668	2.53	-0.01	-13.13	
5030.00	11.170	197.550	4998.39	-268.40	-365.75	-197.84	1647144.04	14292334.50	39°21'29.296"N	80°58'34.320"W	415.83	208.409	2.10	0.07	-10.89	

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Field	Tyler	Wellbore	Packers Unit 2H AWB
Facility	Ritchie Petroleum Pad		

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(ft)	(°)	(°)	(ft)	(ft)	(ft)	(ft)	(US ft)	(US ft)			(ft)	(°)	(°/100ft)	(°/100ft)	(°/100ft)	
5119.00	11.630	191.460	5085.63	-282.64	-382.76	-202.22	1647139.66	14292317.50	39°21'29.127"N	80°58'34.376"W	432.90	207.848	1.45	0.52	-6.84	
5208.00	11.590	206.400	5172.83	-296.19	-399.57	-207.98	1647133.91	14292300.70	39°21'28.961"N	80°58'34.449"W	450.45	207.498	3.37	-0.04	16.79	
5297.00	12.790	218.290	5259.84	-307.17	-415.31	-218.06	1647123.83	14292284.96	39°21'28.806"N	80°58'34.578"W	469.08	207.702	3.12	1.35	13.36	
5386.00	11.770	211.650	5346.80	-317.60	-430.77	-228.93	1647112.97	14292269.51	39°21'28.653"N	80°58'34.716"W	487.82	207.988	1.96	-1.15	-7.46	
5475.00	10.600	205.830	5434.11	-328.62	-445.87	-237.26	1647104.64	14292254.42	39°21'28.504"N	80°58'34.822"W	505.06	208.019	1.83	-1.31	-6.54	
5563.00	9.560	203.030	5520.75	-339.34	-459.88	-243.64	1647098.26	14292240.41	39°21'28.365"N	80°58'34.903"W	520.43	207.915	1.31	-1.18	-3.18	
5652.00	8.800	199.040	5608.61	-349.80	-473.11	-248.76	1647093.15	14292227.18	39°21'28.235"N	80°58'34.969"W	534.52	207.735	1.11	-0.85	-4.48	
5696.00	9.340	195.100	5652.06	-355.23	-479.74	-250.79	1647091.12	14292220.55	39°21'28.169"N	80°58'34.994"W	541.34	207.598	1.87	1.23	-8.95	
5740.00	8.750	215.180	5695.53	-359.95	-485.93	-253.64	1647088.26	14292214.37	39°21'28.108"N	80°58'35.031"W	548.14	207.564	7.26	-1.34	45.64	
5784.00	8.910	248.080	5739.03	-361.82	-489.94	-258.74	1647083.17	14292210.36	39°21'28.068"N	80°58'35.096"W	554.06	207.839	11.33	0.36	74.77	
5828.00	10.290	281.630	5782.45	-359.71	-490.42	-265.75	1647076.16	14292209.88	39°21'28.064"N	80°58'35.185"W	557.79	208.453	12.90	3.14	76.25	
5872.00	11.560	304.690	5825.67	-353.91	-487.11	-273.23	1647068.68	14292213.19	39°21'28.096"N	80°58'35.280"W	558.51	209.289	10.27	2.89	52.41	
5916.00	15.040	310.340	5868.49	-345.22	-480.91	-281.21	1647060.71	14292219.39	39°21'28.158"N	80°58'35.382"W	557.09	210.317	8.43	7.91	12.84	
5960.00	18.110	308.210	5910.65	-334.29	-472.98	-290.94	1647050.98	14292227.31	39°21'28.236"N	80°58'35.506"W	555.30	211.596	7.11	6.98	-4.84	
6004.00	20.570	309.450	5952.17	-321.64	-463.84	-302.28	1647039.64	14292236.45	39°21'28.326"N	80°58'35.650"W	553.64	213.092	5.67	5.59	2.82	
6049.00	22.040	316.370	5994.10	-306.92	-452.70	-314.21	1647027.72	14292247.59	39°21'28.437"N	80°58'35.802"W	551.06	214.764	6.47	3.27	15.38	
6093.00	24.740	319.620	6034.48	-290.57	-439.71	-325.88	1647016.06	14292260.57	39°21'28.565"N	80°58'35.950"W	547.30	216.543	6.80	6.14	7.39	
6137.00	27.740	322.440	6073.94	-272.02	-424.57	-338.09	1647003.85	14292275.70	39°21'28.715"N	80°58'36.106"W	542.74	218.530	7.38	6.82	6.41	
6181.00	30.880	324.600	6112.31	-251.23	-407.25	-350.87	1646991.07	14292293.02	39°21'28.886"N	80°58'36.268"W	537.55	220.747	7.53	7.14	4.91	
6225.00	35.380	327.870	6149.15	-227.74	-387.24	-364.20	1646977.75	14292313.02	39°21'29.084"N	80°58'36.438"W	531.60	223.243	11.00	10.23	7.43	
6269.00	39.040	326.580	6184.19	-201.67	-364.88	-378.61	1646963.35	14292335.37	39°21'29.305"N	80°58'36.621"W	525.82	226.058	8.50	8.32	-2.93	
6314.00	41.880	325.970	6218.42	-173.14	-340.60	-394.82	1646947.14	14292359.64	39°21'29.545"N	80°58'36.828"W	521.44	229.217	6.37	6.31	-1.36	
6358.00	44.390	324.690	6250.53	-143.87	-315.87	-411.94	1646930.03	14292384.36	39°21'29.789"N	80°58'37.045"W	519.10	232.520	6.04	5.70	-2.91	
6404.00	48.610	326.500	6282.19	-111.36	-288.33	-430.77	1646911.20	14292411.89	39°21'30.061"N	80°58'37.285"W	518.37	236.204	9.61	9.17	3.93	BHI AT Curve <8-1/2"> (6358')(6404'-17565')
6417.00†	49.917	326.877	6290.67	-101.73	-280.10	-436.18	1646905.79	14292420.11	39°21'30.143"N	80°58'37.354"W	518.38	237.293	10.29	10.05	2.90	Middlesex: 6417' MD
6451.00	53.340	327.800	6311.77	-75.59	-257.66	-450.56	1646891.42	14292442.54	39°21'30.365"N	80°58'37.537"W	519.03	240.236	10.29	10.07	2.71	
6499.00	58.210	331.090	6338.77	-36.42	-223.49	-470.70	1646871.29	14292476.71	39°21'30.702"N	80°58'37.793"W	521.06	244.602	11.62	10.15	6.85	
6546.00	62.460	332.380	6362.02	4.11	-187.52	-490.03	1646851.97	14292512.66	39°21'31.058"N	80°58'38.039"W	524.68	249.059	9.35	9.04	2.74	
6595.00	65.990	332.010	6383.33	47.96	-148.50	-510.61	1646831.40	14292551.67	39°21'31.444"N	80°58'38.301"W	531.76	253.784	7.24	7.20	-0.76	Burket: 6595' MD
6642.00	69.250	330.790	6401.22	91.07	-110.35	-531.41	1646810.60	14292589.80	39°21'31.821"N	80°58'38.566"W	542.75	258.269	7.34	6.94	-2.60	

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Actual Wellpath Report

Packers Unit 2H AWP Proj: 17589'

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REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #11
Area	Tyler County, WV	Well	Packers Unit 2H
Field	Tyler	Wellbore	Packers Unit 2H AWB
Facility	Ritchie Petroleum Pad		

WELLPATH DATA (211 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
6655.00†	70.105	330.504	6405.74	103.14	-99.72	-537.39	1646804.63	14292600.42	39°21'31.926"N	80°58'38.642"W	546.56	259.487	6.89	6.58	-2.20	Tully: 6655' MD
6683.00†	71.949	329.899	6414.84	129.33	-76.75	-550.55	1646791.48	14292623.39	39°21'32.153"N	80°58'38.809"W	555.87	262.064	6.89	6.58	-2.16	Marcellus POE: 6683' MD
6690.00	72.410	329.750	6416.98	135.92	-70.99	-553.90	1646788.13	14292629.15	39°21'32.210"N	80°58'38.852"W	558.43	262.697	6.89	6.59	-2.13	
6737.00	75.220	329.970	6430.08	180.52	-31.96	-576.56	1646765.48	14292668.16	39°21'32.596"N	80°58'39.140"W	577.44	266.828	6.00	5.98	0.47	
6785.00	80.170	331.810	6440.31	226.98	9.01	-599.36	1646742.69	14292709.11	39°21'33.001"N	80°58'39.430"W	599.43	270.861	10.97	10.31	3.83	
6832.00	85.570	333.020	6446.14	273.33	50.33	-620.94	1646721.11	14292750.41	39°21'33.409"N	80°58'39.705"W	622.98	274.634	11.77	11.49	2.57	
6881.00	89.230	334.410	6448.36	322.09	94.21	-642.62	1646699.45	14292794.27	39°21'33.843"N	80°58'39.981"W	649.48	278.340	7.99	7.47	2.84	
6975.00	89.970	335.300	6449.02	415.88	179.30	-682.55	1646659.52	14292879.33	39°21'34.684"N	80°58'40.489"W	705.71	284.718	1.23	0.79	0.95	
7070.00	90.060	334.590	6448.99	510.69	265.36	-722.79	1646619.31	14292965.35	39°21'35.535"N	80°58'41.001"W	769.96	290.160	0.75	0.09	-0.75	
7164.00	90.060	336.660	6448.89	604.56	350.97	-761.58	1646580.53	14293050.94	39°21'36.381"N	80°58'41.495"W	838.56	294.743	2.20	0.00	2.20	
7260.00	89.690	338.680	6449.10	700.54	439.77	-798.05	1646544.07	14293139.70	39°21'37.259"N	80°58'41.959"W	911.20	298.857	2.14	-0.39	2.10	
7355.00	89.880	337.630	6449.46	795.53	527.95	-833.40	1646508.74	14293227.84	39°21'38.130"N	80°58'42.408"W	986.55	302.354	1.12	0.20	-1.11	
7451.00	89.750	340.240	6449.77	891.52	617.52	-867.90	1646474.25	14293317.38	39°21'39.016"N	80°58'42.847"W	1065.17	305.432	2.72	-0.14	2.72	
7546.00	89.750	339.690	6450.19	986.49	706.77	-900.45	1646441.72	14293406.59	39°21'39.898"N	80°58'43.262"W	1144.70	308.129	0.58	0.00	-0.58	
7641.00	89.720	336.540	6450.62	1081.48	794.91	-935.85	1646406.33	14293494.70	39°21'40.769"N	80°58'43.712"W	1227.89	310.345	3.32	-0.03	-3.32	
7736.00	89.780	335.190	6451.04	1176.37	881.61	-974.70	1646367.50	14293581.35	39°21'41.626"N	80°58'44.206"W	1314.25	312.129	1.42	0.06	-1.42	
7831.00	89.380	339.140	6451.74	1271.31	969.14	-1011.56	1646330.66	14293668.85	39°21'42.491"N	80°58'44.675"W	1400.88	313.773	4.18	-0.42	4.16	
7926.00	89.200	341.490	6452.91	1366.26	1058.58	-1043.55	1646298.67	14293758.25	39°21'43.375"N	80°58'45.082"W	1486.47	315.409	2.48	-0.19	2.47	
8022.00	88.980	342.920	6454.44	1462.05	1149.97	-1072.89	1646269.35	14293849.61	39°21'44.278"N	80°58'45.456"W	1572.74	316.986	1.51	-0.23	1.49	
8117.00	89.420	344.120	6455.76	1556.69	1241.05	-1099.83	1646242.41	14293940.66	39°21'45.179"N	80°58'45.798"W	1658.27	318.452	1.35	0.46	1.26	
8213.00	89.320	345.410	6456.82	1652.13	1333.67	-1125.06	1646217.20	14294033.24	39°21'46.094"N	80°58'46.119"W	1744.83	319.850	1.35	-0.10	1.34	
8307.00	89.320	343.770	6457.94	1745.61	1424.28	-1150.03	1646192.23	14294123.82	39°21'46.990"N	80°58'46.437"W	1830.62	321.081	1.74	0.00	-1.74	
8403.00	89.230	340.100	6459.15	1841.43	1515.53	-1179.79	1646162.48	14294215.02	39°21'47.892"N	80°58'46.816"W	1920.61	322.100	3.82	-0.09	-3.82	
8497.00	89.290	336.480	6460.37	1935.40	1602.84	-1214.56	1646127.74	14294302.30	39°21'48.755"N	80°58'47.258"W	2011.03	322.847	3.85	0.06	-3.85	
8593.00	89.480	335.320	6461.40	2031.29	1690.47	-1253.75	1646088.55	14294389.89	39°21'49.621"N	80°58'47.757"W	2104.65	323.437	1.22	0.20	-1.21	
8688.00	89.570	336.010	6462.18	2126.16	1777.02	-1292.90	1646049.42	14294476.41	39°21'50.477"N	80°58'48.255"W	2197.59	323.962	0.73	0.09	0.73	
8783.00	89.510	337.930	6462.95	2221.11	1864.44	-1330.06	1646012.28	14294563.80	39°21'51.341"N	80°58'48.728"W	2290.24	324.497	2.02	-0.06	2.02	
8878.00	89.600	339.140	6463.68	2316.11	1952.85	-1364.82	1645977.53	14294652.17	39°21'52.214"N	80°58'49.170"W	2382.51	325.051	1.28	0.09	1.27	
8974.00	89.540	338.350	6464.40	2412.10	2042.32	-1399.62	1645942.74	14294741.60	39°21'53.099"N	80°58'49.613"W	2475.88	325.577	0.83	-0.06	-0.82	
9069.00	89.540	339.140	6465.17	2507.10	2130.85	-1434.06	1645908.32	14294830.10	39°21'53.974"N	80°58'50.051"W	2568.47	326.059	0.83	0.00	0.83	

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Actual Wellpath Report

Packers Unit 2H AWP Proj: 17589'

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REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #11
Area	Tyler County, WV	Well	Packers Unit 2H
Field	Tyler	Wellbore	Packers Unit 2H AWB
Facility	Ritchie Petroleum Pad		

WELLPATH DATA (211 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
9163.00	89.600	337.110	6465.87	2601.09	2218.07	-1469.08	1645873.31	14294917.29	39°21'54.836"N	80°58'50.497"W	2660.46	326.483	2.16	0.06	-2.16	
9257.00	89.630	336.520	6466.50	2695.04	2304.48	-1506.09	1645836.32	14295003.66	39°21'55.690"N	80°58'50.968"W	2752.99	326.833	0.63	0.03	-0.63	
9352.00	89.600	336.310	6467.14	2789.97	2391.54	-1544.10	1645798.33	14295090.69	39°21'56.551"N	80°58'51.452"W	2846.70	327.152	0.22	-0.03	-0.22	
9447.00	89.630	335.520	6467.78	2884.86	2478.27	-1582.87	1645759.57	14295177.38	39°21'57.408"N	80°58'51.945"W	2940.63	327.434	0.83	0.03	-0.83	
9542.00	89.630	335.240	6468.39	2979.71	2564.63	-1622.44	1645720.01	14295263.70	39°21'58.262"N	80°58'52.449"W	3034.74	327.682	0.29	0.00	-0.29	
9637.00	89.420	333.140	6469.18	3074.41	2650.15	-1663.80	1645678.67	14295349.19	39°21'59.107"N	80°58'52.975"W	3129.14	327.879	2.22	-0.22	-2.21	
9732.00	89.450	332.770	6470.12	3168.95	2734.75	-1706.99	1645635.50	14295433.76	39°21'59.943"N	80°58'53.525"W	3223.77	328.028	0.39	0.03	-0.39	
9827.00	89.540	333.890	6470.96	3263.54	2819.64	-1749.63	1645592.88	14295518.61	39°22'00.782"N	80°58'54.067"W	3318.37	328.180	1.18	0.09	1.18	
9923.00	90.120	336.440	6471.24	3359.36	2906.76	-1789.95	1645552.58	14295605.69	39°22'01.643"N	80°58'54.581"W	3413.67	328.376	2.72	0.60	2.66	
10017.00	90.250	338.100	6470.94	3453.33	2993.45	-1826.27	1645516.27	14295692.35	39°22'02.500"N	80°58'55.043"W	3506.57	328.613	1.77	0.14	1.77	
10112.00	90.220	340.440	6470.55	3548.31	3082.30	-1859.89	1645482.66	14295781.16	39°22'03.378"N	80°58'55.471"W	3599.96	328.893	2.46	-0.03	2.46	
10207.00	90.370	341.680	6470.06	3643.22	3172.15	-1890.72	1645451.84	14295870.98	39°22'04.267"N	80°58'55.863"W	3692.88	329.203	1.31	0.16	1.31	
10301.00	90.520	341.880	6469.33	3737.08	3261.43	-1920.11	1645422.46	14295960.23	39°22'05.149"N	80°58'56.237"W	3784.68	329.513	0.27	0.16	0.21	
10397.00	90.650	342.220	6468.35	3832.90	3352.76	-1949.70	1645392.89	14296051.51	39°22'06.052"N	80°58'56.613"W	3878.44	329.821	0.38	0.14	0.35	
10491.00	90.800	341.010	6467.16	3926.76	3441.95	-1979.34	1645363.26	14296140.67	39°22'06.933"N	80°58'56.991"W	3970.49	330.098	1.30	0.16	-1.29	
10586.00	91.260	338.830	6465.45	4021.71	3531.15	-2011.95	1645330.66	14296229.84	39°22'07.815"N	80°58'57.406"W	4064.11	330.327	2.34	0.48	-2.29	
10680.00	90.680	336.780	6463.86	4115.69	3618.17	-2047.46	1645295.17	14296316.82	39°22'08.675"N	80°58'57.858"W	4157.31	330.495	2.27	-0.62	-2.18	
10775.00	90.710	336.850	6462.71	4210.63	3705.49	-2084.85	1645257.79	14296404.11	39°22'09.538"N	80°58'58.334"W	4251.74	330.636	0.08	0.03	0.07	
10870.00	90.490	335.880	6461.71	4305.55	3792.52	-2122.94	1645219.72	14296491.10	39°22'10.399"N	80°58'58.818"W	4346.27	330.761	1.05	-0.23	-1.02	
10965.00	90.120	335.780	6461.21	4400.44	3879.19	-2161.83	1645180.84	14296577.73	39°22'11.255"N	80°58'59.313"W	4440.90	330.869	0.40	-0.39	-0.11	
11060.00	90.430	339.300	6460.75	4495.41	3966.97	-2198.12	1645144.56	14296665.48	39°22'12.123"N	80°58'59.775"W	4535.26	331.009	3.72	0.33	3.71	
11154.00	90.680	340.800	6459.84	4589.37	4055.32	-2230.19	1645112.51	14296753.79	39°22'12.996"N	80°59'00.183"W	4628.11	331.192	1.62	0.27	1.60	
11249.00	91.010	342.120	6458.44	4684.24	4145.38	-2260.40	1645082.32	14296843.82	39°22'13.886"N	80°59'00.568"W	4721.60	331.397	1.43	0.35	1.39	
11344.00	90.620	338.800	6457.09	4779.17	4234.88	-2292.16	1645050.56	14296933.29	39°22'14.771"N	80°59'00.972"W	4815.42	331.575	3.52	-0.41	-3.49	
11438.00	90.650	335.890	6456.05	4873.13	4321.62	-2328.36	1645014.38	14297019.98	39°22'15.628"N	80°59'01.433"W	4908.94	331.685	3.10	0.03	-3.10	
11533.00	90.620	330.530	6454.99	4967.67	4406.38	-2371.16	1644971.59	14297104.72	39°22'16.466"N	80°59'01.977"W	5003.86	331.714	5.64	-0.03	-5.64	
11627.00	90.550	336.850	6454.03	5061.27	4490.60	-2412.80	1644929.97	14297188.90	39°22'17.299"N	80°59'02.508"W	5097.75	331.751	6.72	-0.07	6.72	
11723.00	90.650	338.850	6453.03	5157.25	4579.51	-2448.99	1644893.79	14297277.77	39°22'18.177"N	80°59'02.968"W	5193.21	331.863	2.09	0.10	2.08	
11818.00	90.220	339.220	6452.30	5252.24	4668.21	-2482.98	1644859.82	14297366.44	39°22'19.054"N	80°59'03.401"W	5287.48	331.992	0.60	-0.45	0.39	
11913.00	89.880	339.530	6452.22	5347.24	4757.12	-2516.45	1644826.37	14297455.32	39°22'19.933"N	80°59'03.827"W	5381.70	332.122	0.48	-0.36	0.33	

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Packers Unit 2H AWP Proj: 17589'
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REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #11
Area	Tyler County, WV	Well	Packers Unit 2H
Field	Tyler	Wellbore	Packers Unit 2H AWB
Facility	Ritchie Petroleum Pad		

WELLPATH DATA (211 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
12008.00	89.750	341.680	6452.53	5442.17	4846.73	-2547.99	1644794.83	14297544.88	39°22'20.819"N	80°59'04.228"W	5475.68	332.268	2.27	-0.14	2.26	
12102.00	89.820	344.680	6452.88	5535.86	4936.69	-2575.19	1644767.65	14297634.81	39°22'21.708"N	80°59'04.574"W	5567.99	332.452	3.19	0.07	3.19	
12196.00	89.850	343.790	6453.15	5629.41	5027.16	-2600.73	1644742.12	14297725.24	39°22'22.602"N	80°59'04.899"W	5660.04	332.646	0.95	0.03	-0.95	
12291.00	89.780	343.440	6453.46	5724.04	5118.30	-2627.53	1644715.33	14297816.35	39°22'23.503"N	80°59'05.240"W	5753.34	332.826	0.38	-0.07	-0.37	
12386.00	89.780	342.590	6453.82	5818.76	5209.15	-2655.28	1644687.59	14297907.16	39°22'24.401"N	80°59'05.593"W	5846.86	332.991	0.89	0.00	-0.89	
12481.00	89.850	341.100	6454.13	5913.61	5299.42	-2684.88	1644658.00	14297997.39	39°22'25.293"N	80°59'05.970"W	5940.74	333.132	1.57	0.07	-1.57	
12576.00	90.250	342.070	6454.05	6008.48	5389.56	-2714.89	1644628.01	14298087.49	39°22'26.184"N	80°59'06.352"W	6034.73	333.264	1.10	0.42	1.02	
12671.00	90.150	342.350	6453.72	6103.29	5480.01	-2743.91	1644598.99	14298177.91	39°22'27.078"N	80°59'06.722"W	6128.59	333.402	0.31	-0.11	0.29	
12766.00	90.280	340.760	6453.36	6198.16	5570.13	-2773.97	1644568.95	14298267.99	39°22'27.969"N	80°59'07.104"W	6222.64	333.526	1.68	0.14	-1.67	
12861.00	90.150	338.000	6453.00	6293.14	5659.03	-2807.42	1644535.51	14298356.86	39°22'28.848"N	80°59'07.530"W	6317.14	333.614	2.91	-0.14	-2.91	
12956.00	90.090	334.210	6452.80	6388.03	5745.87	-2845.90	1644497.05	14298443.67	39°22'29.706"N	80°59'08.020"W	6412.04	333.651	3.99	-0.06	-3.99	
13051.00	90.180	332.980	6452.58	6482.67	5830.96	-2888.14	1644454.82	14298528.72	39°22'30.547"N	80°59'08.557"W	6507.03	333.650	1.30	0.09	-1.29	
13146.00	90.250	333.010	6452.22	6577.21	5915.60	-2931.28	1644411.70	14298613.33	39°22'31.384"N	80°59'09.107"W	6602.03	333.641	0.08	0.07	0.03	
13241.00	89.880	336.260	6452.12	6671.97	6001.43	-2971.97	1644371.03	14298699.12	39°22'32.232"N	80°59'09.625"W	6697.00	333.655	3.44	-0.39	3.42	
13336.00	89.820	338.450	6452.36	6766.94	6089.10	-3008.54	1644334.47	14298786.76	39°22'33.099"N	80°59'10.090"W	6791.80	333.707	2.31	-0.06	2.31	
13430.00	89.910	339.180	6452.59	6860.94	6176.75	-3042.51	1644300.51	14298874.37	39°22'33.965"N	80°59'10.523"W	6885.43	333.776	0.78	0.10	0.78	
13525.00	89.940	339.600	6452.71	6955.93	6265.67	-3075.95	1644267.09	14298963.25	39°22'34.844"N	80°59'10.948"W	6979.98	333.853	0.44	0.03	0.44	
13620.00	89.570	340.070	6453.12	7050.91	6354.84	-3108.70	1644234.35	14299052.39	39°22'35.725"N	80°59'11.365"W	7074.47	333.933	0.63	-0.39	0.49	
13715.00	89.690	340.190	6453.73	7145.87	6444.19	-3140.99	1644202.07	14299141.70	39°22'36.608"N	80°59'11.776"W	7168.92	334.015	0.18	0.13	0.13	
13810.00	89.570	339.520	6454.34	7240.85	6533.37	-3173.71	1644169.37	14299230.85	39°22'37.490"N	80°59'12.193"W	7263.43	334.091	0.72	-0.13	-0.71	
13904.00	89.690	337.860	6454.95	7334.84	6620.94	-3207.87	1644135.23	14299318.38	39°22'38.355"N	80°59'12.627"W	7357.12	334.150	1.77	0.13	-1.77	
13999.00	89.570	337.620	6455.56	7429.83	6708.86	-3243.85	1644099.25	14299406.27	39°22'39.224"N	80°59'13.085"W	7451.94	334.195	0.28	-0.13	-0.25	
14093.00	89.600	336.050	6456.24	7523.78	6795.28	-3280.83	1644062.29	14299492.65	39°22'40.078"N	80°59'13.556"W	7545.83	334.228	1.67	0.03	-1.67	
14188.00	89.630	335.310	6456.88	7618.65	6881.84	-3319.95	1644023.19	14299579.18	39°22'40.934"N	80°59'14.054"W	7640.80	334.246	0.78	0.03	-0.78	
14283.00	89.110	337.640	6457.93	7713.57	6968.94	-3357.87	1643985.29	14299666.24	39°22'41.795"N	80°59'14.537"W	7735.72	334.274	2.51	-0.55	2.45	
14378.00	89.780	338.200	6458.85	7808.56	7056.96	-3393.57	1643949.59	14299754.23	39°22'42.665"N	80°59'14.991"W	7830.52	334.318	0.92	0.71	0.59	
14473.00	89.780	335.130	6459.21	7903.49	7144.18	-3431.20	1643911.98	14299841.41	39°22'43.527"N	80°59'15.470"W	7925.43	334.346	3.23	0.00	-3.23	
14568.00	90.710	339.700	6458.81	7998.45	7231.87	-3467.67	1643875.52	14299929.07	39°22'44.394"N	80°59'15.935"W	8020.27	334.382	4.91	0.98	4.81	
14663.00	90.400	341.730	6457.89	8093.37	7321.53	-3499.05	1643844.16	14300018.69	39°22'45.280"N	80°59'16.334"W	8114.69	334.456	2.16	-0.33	2.14	
14758.00	90.220	337.410	6457.37	8188.34	7410.53	-3532.20	1643811.02	14300107.66	39°22'46.160"N	80°59'16.756"W	8209.29	334.515	4.55	-0.19	-4.55	

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Operator	ANTERO RESOURCES CORPORATION		Slot	Slot #11
Area	Tyler County, WV		Well	Packers Unit 2H
Field	Tyler		Wellbore	Packers Unit 2H AWB
Facility	Ritchie Petroleum Pad			

WELLPATH DATA (211 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
14853.00	90.620	337.030	6456.68	8283.30	7498.12	-3568.98	1643774.26	14300195.21	39°22'47.025"N	80°59'17.224"W	8304.18	334.546	0.58	0.42	-0.40	
14948.00	90.650	337.030	6455.62	8378.26	7585.58	-3606.05	1643737.20	14300282.64	39°22'47.890"N	80°59'17.696"W	8399.09	334.574	0.03	0.03	0.00	
15044.00	90.460	337.890	6454.69	8474.24	7674.24	-3642.85	1643700.42	14300371.26	39°22'48.766"N	80°59'18.165"W	8494.96	334.607	0.92	-0.20	0.90	
15139.00	90.550	339.150	6453.86	8569.23	7762.64	-3677.64	1643665.65	14300459.62	39°22'49.640"N	80°59'18.608"W	8589.74	334.650	1.33	0.09	1.33	
15234.00	90.550	338.680	6452.94	8664.23	7851.28	-3711.81	1643631.49	14300548.22	39°22'50.516"N	80°59'19.043"W	8684.47	334.697	0.49	0.00	-0.49	
15329.00	90.520	339.360	6452.06	8759.22	7939.97	-3745.82	1643597.49	14300636.89	39°22'51.393"N	80°59'19.476"W	8779.20	334.744	0.72	-0.03	0.72	
15424.00	90.520	339.840	6451.19	8854.20	8029.01	-3778.94	1643564.39	14300725.89	39°22'52.273"N	80°59'19.897"W	8873.86	334.796	0.51	0.00	0.51	
15519.00	90.520	338.230	6450.33	8949.19	8117.72	-3812.92	1643530.41	14300814.56	39°22'53.150"N	80°59'20.330"W	8968.60	334.840	1.69	0.00	-1.69	
15614.00	90.460	337.860	6449.52	9044.18	8205.82	-3848.44	1643494.91	14300902.63	39°22'54.020"N	80°59'20.782"W	9063.44	334.874	0.39	-0.06	-0.39	
15709.00	90.490	339.140	6448.73	9139.18	8294.21	-3883.26	1643460.11	14300990.98	39°22'54.894"N	80°59'21.225"W	9158.25	334.912	1.35	0.03	1.35	
15804.00	90.580	344.880	6447.84	9233.97	8384.52	-3912.58	1643430.79	14301081.26	39°22'55.787"N	80°59'21.599"W	9252.49	334.984	6.04	0.09	6.04	
15899.00	90.520	344.180	6446.93	9328.45	8476.07	-3937.92	1643405.46	14301172.77	39°22'56.692"N	80°59'21.921"W	9346.18	335.081	0.74	-0.06	-0.74	
15994.00	90.550	338.850	6446.04	9423.29	8566.14	-3968.03	1643375.37	14301262.80	39°22'57.582"N	80°59'22.305"W	9440.55	335.145	5.61	0.03	-5.61	
16089.00	90.550	338.320	6445.13	9518.29	8654.57	-4002.72	1643340.70	14301351.20	39°22'58.456"N	80°59'22.746"W	9535.38	335.180	0.56	0.00	-0.56	
16183.00	90.650	338.060	6444.15	9612.28	8741.84	-4037.64	1643305.79	14301438.43	39°22'59.318"N	80°59'23.191"W	9629.24	335.209	0.30	0.11	-0.28	
16279.00	90.550	336.770	6443.14	9708.25	8830.47	-4074.50	1643268.94	14301527.03	39°23'00.194"N	80°59'23.660"W	9725.16	335.231	1.35	-0.10	-1.34	
16374.00	90.490	338.670	6442.28	9803.23	8918.37	-4110.52	1643232.94	14301614.89	39°23'01.063"N	80°59'24.119"W	9820.07	335.255	2.00	-0.06	2.00	
16469.00	90.520	336.480	6441.44	9898.21	9006.18	-4146.75	1643196.72	14301702.66	39°23'01.931"N	80°59'24.580"W	9914.98	335.277	2.31	0.03	-2.31	
16564.00	90.460	333.110	6440.63	9992.98	9092.12	-4187.20	1643156.28	14301788.57	39°23'02.781"N	80°59'25.095"W	10009.96	335.272	3.55	-0.06	-3.55	
16659.00	90.650	335.990	6439.71	10087.73	9177.89	-4228.02	1643115.48	14301874.30	39°23'03.628"N	80°59'25.615"W	10104.94	335.266	3.04	0.20	3.03	
16754.00	90.550	336.510	6438.72	10182.64	9264.84	-4266.28	1643077.24	14301961.22	39°23'04.488"N	80°59'26.102"W	10199.92	335.275	0.56	-0.11	0.55	
16850.00	90.520	337.650	6437.82	10278.60	9353.25	-4303.66	1643039.87	14302049.60	39°23'05.362"N	80°59'26.578"W	10295.87	335.292	1.19	-0.03	1.19	
16944.00	90.550	338.490	6436.94	10372.59	9440.45	-4338.77	1643004.78	14302136.75	39°23'06.223"N	80°59'27.025"W	10389.75	335.317	0.89	0.03	0.89	
17039.00	90.490	340.890	6436.08	10467.57	9529.53	-4371.74	1642971.82	14302225.80	39°23'07.104"N	80°59'27.445"W	10484.47	335.356	2.53	-0.06	2.53	
17134.00	90.550	340.920	6435.22	10562.49	9619.30	-4402.82	1642940.76	14302315.54	39°23'07.991"N	80°59'27.841"W	10579.02	335.406	0.07	0.06	0.03	
17230.00	90.460	338.540	6434.37	10658.46	9709.34	-4436.07	1642907.52	14302405.54	39°23'08.881"N	80°59'28.264"W	10674.74	335.445	2.48	-0.09	-2.48	
17325.00	90.460	337.550	6433.61	10753.45	9797.45	-4471.59	1642872.01	14302493.61	39°23'09.752"N	80°59'28.716"W	10769.64	335.468	1.04	0.00	-1.04	
17420.00	90.430	337.750	6432.87	10848.43	9885.31	-4507.71	1642835.90	14302581.44	39°23'10.620"N	80°59'29.176"W	10864.57	335.487	0.21	-0.03	0.21	
17515.00	90.650	339.700	6431.97	10943.42	9973.83	-4542.18	1642801.45	14302669.92	39°23'11.495"N	80°59'29.615"W	10959.41	335.515	2.07	0.23	2.05	
17565.00	90.620	340.160	6431.42	10993.41	10020.79	-4559.34	1642784.30	14302716.86	39°23'11.959"N	80°59'29.833"W	11009.26	335.535	0.92	-0.06	0.92	

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REFERENCE WELLPATH IDENTIFICATION

Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #11
Area	Tyler County, WV	Well	Packers Unit 2H
Field	Tyler	Wellbore	Packers Unit 2H AWB
Facility	Ritchie Petroleum Pad		

WELLPATH DATA (211 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
17589.00	90.620	340.160	6431.16	11017.40	10043.36	-4567.48	1642776.16	14302739.43	39°23'12.183"N	80°59'29.937"W	11033.18	335.545	0.00	0.00	0.00	Projected MD at TD: 17589'

HOLE & CASING SECTIONS - Ref Wellbore: Packers Unit 2H AWB Ref Wellpath: Packers Unit 2H AWP Proj: 17589'

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	32.00	112.00	80.00	32.00	112.00	0.00	0.00	-0.14	-0.04
17.5in Open Hole	112.00	373.00	261.00	112.00	373.00	-0.14	-0.04	0.03	0.41
13.375in Casing Surface	32.00	373.00	341.00	32.00	373.00	0.00	0.00	0.03	0.41
12.25in Open Hole	373.00	2587.00	2214.00	373.00	2584.34	0.03	0.41	-64.46	-3.48
9.625in Casing Intermediate	32.00	2587.00	2555.00	32.00	2584.34	0.00	0.00	-64.46	-3.48
8.75in Open Hole	2587.00	6444.00	3857.00	2584.34	6307.56	-64.46	-3.48	-262.39	-447.58
8.5in Open Hole	6444.00	17589.00	11145.00	6307.56	6431.16	-262.39	-447.58	10043.36	-4567.48
5.5in Casing Production	32.00	17589.00	17557.00	32.00	6431.16	0.00	0.00	10043.36	-4567.48

TARGETS

Name	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
Packers Unit 2H POE - Rev-2	6412.00	-103.33	-546.78	1646795.25	14292596.82	39°21'31.890"N	80°58'38.761"W	point
Packers Unit 2H BHL - Rev-2	6450.00	10013.76	-4549.64	1642793.99	14302709.84	39°23'11.890"N	80°59'29.710"W	point
Packers Unit 2H LP - Rev-1	6450.00	87.97	-648.49	1646693.57	14292788.04	39°21'33.781"N	80°58'40.056"W	point

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Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #11
Area	Tyler County, WV	Well	Packers Unit 2H
Field	Tyler	Wellbore	Packers Unit 2H AWB
Facility	Ritchie Petroleum Pad		

WELLPATH COMPOSITION - Ref Wellbore: Packers Unit 2H AWB Ref Wellpath: Packers Unit 2H AWP Proj: 17589'				
Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
32.00	370.00	Gyrodata standard - Drop gyro or Multi-shot	01 Gyrodata MS Gyro <17-1/2">(100'-353')	Packers Unit 2H AWB
370.00	584.00	Gyrodata standard - Drop gyro or Multi-shot	02 Gyrodata MS Gyro <12-1/4">(353')(390'-567')	Packers Unit 2H AWB
584.00	2514.00	ISCWSA MWD, Rev. 4 (Standard)	03 Directional ONE MWD <12-1/4">(567')(621'-2497')	Packers Unit 2H AWB
2514.00	6358.00	ISCWSA MWD, Rev. 4 (Standard)	04 Directional ONE MWD <8-3/4">(2497')(2625'-6341')	Packers Unit 2H AWB
6358.00	17565.00	BHI AutoTrak Curve (Short)	05 BHI AT Curve <8-1/2">(6358')(6404'-17565')	Packers Unit 2H AWB
17565.00	17589.00	Blind Drilling (std)	Projection to bit	Packers Unit 2H AWB

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Actual Wellpath Report

Packers Unit 2H AWP Proj: 17589'

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REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #11
Area	Tyler County, WV	Well	Packers Unit 2H
Field	Tyler	Wellbore	Packers Unit 2H AWB
Facility	Ritchie Petroleum Pad		

COMMENTS
<p>Wellpath general comments API: 47-095-02391-0000 BHI Job #: 8696143 Rig: Frontier 32 Duration: 08/17/2017-08/20/2017 Gyrodata MS Gyro <17-1/2"> (100'-370') Gyrodata MS Gyro <12-1/4"> (370')(390'-567') Directional ONE MWD <12-1/4"> (567')(621'-2497') Directional ONE MWD <8-3/4"> (2497')(2625'-6341') BHI AT Curve <8-1/2"> (6358')(6404'-17565') Middlesex: 6417' MD Burket: 6595' MD Tully: 6655' MD Marcellus POE: 6683' MD Projected MD at TD: 17589'</p>

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