ANTERO RESOURCES CORPORATION

Location:	Tyler County, WV	Slot:	Slot #12
Field:	Tyler	Well:	Packers Unit 1H
Facility:	Ritchie Petroleum Pad	Wellbore:	Packers Unit 1H PWB

API: 47-095-02397-0000
BHI Job #: 8686650
Rig: Frontier 32
Duration: 08/08/2017-08/12/2017

Plot reference wellpath is Packers Unit 1H PWP Rev-B.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 #12): -1178 feet	Depths are in feet
Coordinates are in feet referenced to Slot	Created by: dalaet on 2017-09-13
	Database: WA_MFL_EasternUS_Defn

Gyrodata MS Gyro <17-1/2"> (100'-385') : 0.31° Inc, 117.00ft MD, 117.00ft TVD, -0.03ft VS

Directional ONE MWD <12-1/4"> (385')(411'-2540') : 0.10° Inc, 428.00ft MD, 427.99ft TVD, 0.09ft VS

Location Information

Facility Name			Grid East (US ft)	Grid North (US ft)	Latitude	Longitude
Ritchie Petroleum Pad			1647374.770	14292738.540	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)	Latitude	Longitude
Slot #12	-45.54	-39.26	1647335.524	14292693.022	39°21'32.840"N	80°58'31.880"W
Comment	Packers Unit 1H					
Frontier 32 (RKB) to Mud line (At Slot: Slot #12)					32ft	
Mean Sea Level to Mud line (At Slot: Slot #12)					-1178ft	
Frontier 32 (RKB) to Mean Sea Level					1210ft	

Directional ONE MWD <8-3/4"> (2540')(2627'-6419') : 13.19° Inc, 2644.00ft MD, 2601.57ft TVD, -80.44ft VS

Well Profile Data

Design Comment	MD (ft)	Inc (°)	Az (°)	TVD (ft)	Local N (ft)	Local E (ft)	DLS (°/100ft)	VS (ft)
Tie On	6436.00	41.660	325.900	6246.25	-422.51	-1110.20	0.00	10.25
Proj. To Bottom	6522.00	49.000	330.000	6306.69	-370.66	-1142.50	9.18	70.31
POE	6695.00	66.990	331.000	6398.00	-243.44	-1214.33	10.41	214.94
Landing Pt.	6886.81	90.000	331.000	6436.00	-80.15	-1304.84	12.00	399.96
On Azimuth	7162.87	90.000	338.668	6436.00	169.52	-1422.15	2.78	675.20
BHL	18116.09	90.000	338.668	6436.00	10372.32	-5406.62	0.00	11628.42

Well Data

Slot	Well	Wellbore	Wellpath
Slot #12	Packers Unit 1H	Packers Unit 1H AWB	Packers Unit 1H AWP Proj: 18118'
Slot #12	Packers Unit 1H	Packers Unit 1H PWB	Packers Unit 1H PWP Rev-B.0

BHI AT Curve <8-1/2"> (6436')(6502'-18087') : 45.48° Inc, 6502.00ft MD, 6294.07ft TVD, 54.76ft VS
Marcellus POE: 6721' MD : 70.69° Inc, 6721.00ft MD, 6411.09ft TVD, 235.40ft VS

Projected MD at TD: 18118' : 90.43° Inc, 18118.00ft MD, 6418.23ft TVD, 11616.37ft VS

Vertical Section (ft)
Azimuth 338.67° with reference 0.00 N, 0.00 E
Scale 1 inch = 1500

True Vertical Depth (ft)
Scale 1 inch = 1500

Easting (ft)
Scale 1 inch = 2000

Northing (ft)

BHI: 70'
Projected MD at TD: 18118' : 6418.23ft TVD, 10354.14ft N, 5420.04ft W

Shepherd Unit
Packers Unit
POE: 44'
Slot #12

User specified Dip: 66.61° Field: 51934 nT
Magnetic North is 7.81 degrees West of True North (at 02/Aug/2017)
Grid North is 0.02 degrees East of True North
To correct azimuth from True to Grid subtract 0.02 degrees
To correct azimuth from Magnetic to Grid subtract 7.83 degrees

Marcellus POE: 6721' MD : 6411.09ft TVD, 226.35ft S, 1226.83ft W
BHI AT Curve <8-1/2"> (6436')(6502'-18087') : 6294.07ft TVD, 384.46ft S, 1135.10ft W
Directional ONE MWD <8-3/4"> (2540')(2627'-6419') : 2601.57ft TVD, 219.77ft S, 341.65ft W
Directional ONE MWD <12-1/4"> (385')(411'-2540') : 427.99ft TVD, 0.57ft S, 1.73ft W
Gyrodata MS Gyro <17-1/2"> (100'-385') : 117.00ft TVD, 0.11ft S, 0.20ft W

Actual Wellpath Report

Packers Unit 1H AWP Proj: 18118'

REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #12
Area	Tyler County, WV	Well	Packers Unit 1H
Field	Tyler	Wellbore	Packers Unit 1H 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 13:26
Convergence at slot	0.02° East	Database/Source file	WA_MPL_EasternUS_Defn/Packers_Unit_1H_AWP_Proj__18118_.xml

WELLPATH LOCATION	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	-45.54	-39.26	1647335.52	14292693.02	39°21'32.840"N	80°58'31.880"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 #12)	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	338.67°

Actual Wellpath Report

Packers Unit 1H AWP Proj: 18118'

REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #12
Area	Tyler County, WV	Well	Packers Unit 1H
Field	Tyler	Wellbore	Packers Unit 1H AWB
Facility	Ritchie Petroleum Pad		

WELLPATH DATA (217 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	241.940	0.00	0.00	0.00	0.00	1647335.52	14292693.02	39°21'32.840"N	80°58'31.880"W	0.00	0.000	0.00	0.00	0.00	
32.00	0.000	241.940	32.00	0.00	0.00	0.00	1647335.52	14292693.02	39°21'32.840"N	80°58'31.880"W	0.00	0.000	0.00	0.00	0.00	
117.00	0.310	241.940	117.00	-0.03	-0.11	-0.20	1647335.32	14292692.91	39°21'32.839"N	80°58'31.883"W	0.23	241.940	0.36	0.36	-138.89	Gyrodata MS Gyro <17-1/2"> (100'-385')
217.00	0.550	232.330	217.00	-0.19	-0.53	-0.82	1647334.70	14292692.49	39°21'32.835"N	80°58'31.890"W	0.98	237.236	0.25	0.24	-9.61	
317.00	0.220	288.050	316.99	-0.21	-0.76	-1.38	1647334.14	14292692.26	39°21'32.832"N	80°58'31.898"W	1.58	241.146	0.46	-0.33	55.72	
402.00	0.260	302.860	401.99	0.05	-0.61	-1.70	1647333.82	14292692.42	39°21'32.834"N	80°58'31.902"W	1.81	250.352	0.09	0.05	17.42	
428.00	0.100	84.050	427.99	0.09	-0.57	-1.73	1647333.80	14292692.45	39°21'32.834"N	80°58'31.902"W	1.82	251.656	1.32	-0.62	543.04	Directional ONE MWD <12-1/4"> (385')(411'-2540')
516.00	0.470	167.330	515.99	-0.28	-0.92	-1.57	1647333.95	14292692.11	39°21'32.831"N	80°58'31.900"W	1.82	239.748	0.53	0.42	94.64	
607.00	2.260	219.760	606.97	-1.52	-2.66	-2.64	1647332.89	14292690.36	39°21'32.814"N	80°58'31.914"W	3.75	224.758	2.21	1.97	57.62	
697.00	4.930	234.110	696.78	-3.35	-6.29	-6.91	1647328.62	14292686.73	39°21'32.778"N	80°58'31.968"W	9.34	227.665	3.11	2.97	15.94	
788.00	7.480	232.190	787.24	-6.01	-12.22	-14.76	1647320.77	14292680.81	39°21'32.719"N	80°58'32.068"W	19.16	230.377	2.81	2.80	-2.11	
894.00	9.310	242.480	892.11	-8.90	-20.41	-27.81	1647307.72	14292672.62	39°21'32.638"N	80°58'32.234"W	34.50	233.728	2.23	1.73	9.71	
982.00	10.340	245.640	978.82	-10.08	-26.96	-41.32	1647294.22	14292666.08	39°21'32.574"N	80°58'32.406"W	49.34	236.880	1.32	1.17	3.59	
1070.00	12.110	247.070	1065.13	-10.76	-33.81	-57.02	1647278.53	14292659.23	39°21'32.506"N	80°58'32.606"W	66.29	239.332	2.04	2.01	1.63	
1158.00	12.920	246.240	1151.04	-11.43	-41.37	-74.52	1647261.03	14292651.67	39°21'32.431"N	80°58'32.829"W	85.24	240.963	0.94	0.92	-0.94	
1246.00	12.010	240.960	1236.96	-13.08	-49.78	-91.53	1647244.03	14292643.26	39°21'32.348"N	80°58'33.045"W	104.19	241.461	1.66	-1.03	-6.00	
1335.00	11.050	234.270	1324.17	-16.44	-59.26	-106.55	1647229.01	14292633.79	39°21'32.255"N	80°58'33.237"W	121.92	240.921	1.85	-1.08	-7.52	
1423.00	11.480	236.060	1410.48	-20.45	-69.07	-120.66	1647214.91	14292623.98	39°21'32.158"N	80°58'33.416"W	139.03	240.213	0.63	0.49	2.03	
1512.00	12.440	240.220	1497.55	-23.79	-78.78	-136.33	1647199.25	14292614.28	39°21'32.062"N	80°58'33.616"W	157.46	239.980	1.45	1.08	4.67	
1600.00	12.580	237.740	1583.46	-27.00	-88.60	-152.66	1647182.92	14292604.46	39°21'31.965"N	80°58'33.824"W	176.51	239.871	0.63	0.16	-2.82	
1688.00	12.410	234.310	1669.37	-31.16	-99.23	-168.45	1647167.14	14292593.83	39°21'31.860"N	80°58'34.025"W	195.50	239.498	0.86	-0.19	-3.90	
1776.00	12.350	230.200	1755.33	-36.49	-110.77	-183.36	1647152.24	14292582.29	39°21'31.746"N	80°58'34.215"W	214.22	238.863	1.00	-0.07	-4.67	
1865.00	12.920	227.720	1842.17	-43.06	-123.56	-198.03	1647137.57	14292569.51	39°21'31.619"N	80°58'34.402"W	233.42	238.039	0.88	0.64	-2.79	
1953.00	13.320	226.780	1927.88	-50.36	-137.12	-212.70	1647122.91	14292555.96	39°21'31.485"N	80°58'34.588"W	253.07	237.192	0.52	0.45	-1.07	
2041.00	12.430	231.760	2013.67	-56.89	-149.92	-227.52	1647108.09	14292543.16	39°21'31.359"N	80°58'34.777"W	272.48	236.618	1.62	-1.01	5.66	
2129.00	11.990	238.190	2099.68	-61.31	-160.60	-242.73	1647092.89	14292532.48	39°21'31.253"N	80°58'34.971"W	291.05	236.509	1.62	-0.50	7.31	
2218.00	13.520	243.000	2186.48	-64.02	-170.20	-259.86	1647075.77	14292522.89	39°21'31.158"N	80°58'35.189"W	310.64	236.776	2.09	1.72	5.40	
2306.00	13.770	242.300	2272.00	-66.20	-179.74	-278.30	1647057.34	14292513.36	39°21'31.064"N	80°58'35.424"W	331.29	237.143	0.34	0.28	-0.80	
2394.00	12.700	238.050	2357.66	-69.14	-189.73	-295.78	1647039.86	14292503.37	39°21'30.966"N	80°58'35.646"W	351.40	237.322	1.64	-1.22	-4.83	
2482.00	11.920	235.860	2443.64	-72.94	-199.95	-311.51	1647024.14	14292493.16	39°21'30.865"N	80°58'35.847"W	370.16	237.305	1.03	-0.89	-2.49	

REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #12
Area	Tyler County, WV	Well	Packers Unit 1H
Field	Tyler	Wellbore	Packers Unit 1H AWB
Facility	Ritchie Petroleum Pad		

WELLPATH DATA (217 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
2557.00	13.130	236.570	2516.85	-76.45	-208.99	-325.03	1647010.63	14292484.12	39°21'30.775"N	80°58'36.019"W	386.42	237.260	1.63	1.61	0.95	
2644.00	13.190	237.480	2601.57	-80.44	-219.77	-341.65	1646994.02	14292473.34	39°21'30.669"N	80°58'36.230"W	406.23	237.248	0.25	0.07	1.05	Directional ONE MWD <8-3/4"> (2540')(2627'-6419')
2732.00	12.080	229.740	2687.44	-85.38	-231.12	-357.14	1646978.53	14292462.00	39°21'30.557"N	80°58'36.428"W	425.40	237.092	2.30	-1.26	-8.80	
2820.00	12.250	233.420	2773.47	-90.82	-242.63	-371.66	1646964.01	14292450.49	39°21'30.443"N	80°58'36.612"W	443.85	236.863	0.90	0.19	4.18	
2908.00	13.780	243.520	2859.22	-94.22	-252.87	-388.54	1646947.14	14292440.25	39°21'30.342"N	80°58'36.827"W	463.58	236.943	3.11	1.74	11.48	
2996.00	12.550	244.270	2944.90	-95.89	-261.69	-406.54	1646929.15	14292431.43	39°21'30.255"N	80°58'37.057"W	483.49	237.230	1.41	-1.40	0.85	
3084.00	11.530	243.230	3030.96	-97.46	-269.81	-423.01	1646912.69	14292423.33	39°21'30.174"N	80°58'37.266"W	501.73	237.469	1.18	-1.16	-1.18	
3173.00	12.810	238.710	3117.96	-100.01	-278.94	-439.38	1646896.32	14292414.20	39°21'30.084"N	80°58'37.475"W	520.44	237.591	1.79	1.44	-5.08	
3261.00	12.630	236.530	3203.80	-103.72	-289.31	-455.74	1646879.97	14292403.83	39°21'29.982"N	80°58'37.683"W	539.81	237.592	0.58	-0.20	-2.48	
3349.00	11.520	232.030	3289.86	-108.26	-300.02	-470.69	1646865.02	14292393.12	39°21'29.876"N	80°58'37.873"W	558.18	237.486	1.65	-1.26	-5.11	
3437.00	10.840	228.250	3376.19	-113.66	-310.94	-483.80	1646851.92	14292382.21	39°21'29.768"N	80°58'38.040"W	575.10	237.271	1.14	-0.77	-4.30	
3526.00	11.950	232.200	3463.43	-119.20	-322.16	-497.32	1646838.40	14292370.99	39°21'29.657"N	80°58'38.212"W	592.55	237.065	1.52	1.25	4.44	
3614.00	13.520	230.570	3549.27	-124.98	-334.28	-512.47	1646823.26	14292358.88	39°21'29.537"N	80°58'38.405"W	611.85	236.884	1.83	1.78	-1.85	
3702.00	12.690	224.900	3634.98	-132.07	-347.66	-527.23	1646808.50	14292345.50	39°21'29.405"N	80°58'38.593"W	631.54	236.599	1.74	-0.94	-6.44	
3790.00	12.730	224.800	3720.82	-139.89	-361.39	-540.89	1646794.85	14292331.78	39°21'29.270"N	80°58'38.767"W	650.51	236.252	0.05	0.05	-0.11	
3879.00	12.310	229.820	3807.71	-146.92	-374.46	-555.05	1646780.70	14292318.71	39°21'29.140"N	80°58'38.948"W	669.55	235.994	1.31	-0.47	5.64	
3967.00	12.620	232.410	3893.63	-152.64	-386.38	-569.83	1646765.92	14292306.80	39°21'29.023"N	80°58'39.136"W	688.48	235.860	0.73	0.35	2.94	
4055.00	11.620	238.320	3979.68	-156.93	-396.90	-584.99	1646750.77	14292296.28	39°21'28.919"N	80°58'39.329"W	706.93	235.844	1.81	-1.14	6.72	
4143.00	10.680	248.250	4066.02	-158.58	-404.58	-600.11	1646735.65	14292288.61	39°21'28.843"N	80°58'39.521"W	723.75	236.013	2.43	-1.07	11.28	
4232.00	8.970	240.790	4153.72	-159.59	-411.02	-613.83	1646721.94	14292282.17	39°21'28.779"N	80°58'39.696"W	738.73	236.194	2.39	-1.92	-8.38	
4320.00	11.430	236.330	4240.32	-162.40	-419.20	-627.08	1646708.70	14292273.99	39°21'28.698"N	80°58'39.865"W	754.29	236.237	2.93	2.80	-5.07	
4408.00	12.510	242.600	4326.41	-165.27	-428.42	-642.79	1646692.99	14292264.77	39°21'28.607"N	80°58'40.065"W	772.48	236.316	1.92	1.23	7.13	
4497.00	11.060	234.900	4413.54	-168.32	-437.77	-658.34	1646677.45	14292255.43	39°21'28.515"N	80°58'40.263"W	790.60	236.378	2.40	-1.63	-8.65	
4585.00	12.060	236.830	4499.75	-172.22	-447.65	-672.94	1646662.85	14292245.55	39°21'28.417"N	80°58'40.449"W	808.23	236.367	1.22	1.14	2.19	
4673.00	13.050	243.790	4585.65	-174.95	-457.07	-689.55	1646646.25	14292236.13	39°21'28.324"N	80°58'40.660"W	827.28	236.461	2.05	1.12	7.91	
4761.00	14.210	243.210	4671.17	-176.82	-466.33	-708.11	1646627.70	14292226.88	39°21'28.233"N	80°58'40.896"W	847.87	236.633	1.33	1.32	-0.66	
4849.00	13.890	240.030	4756.54	-179.43	-476.47	-726.90	1646608.92	14292216.74	39°21'28.133"N	80°58'41.136"W	869.14	236.756	0.95	-0.36	-3.61	
4940.00	13.380	228.470	4844.99	-184.71	-488.91	-744.25	1646591.58	14292204.31	39°21'28.010"N	80°58'41.357"W	890.47	236.698	3.04	-0.56	-12.70	
5028.00	14.070	237.670	4930.49	-190.27	-501.39	-760.91	1646574.92	14292191.84	39°21'27.886"N	80°58'41.569"W	911.25	236.618	2.60	0.78	10.45	
5117.00	14.120	242.650	5016.81	-193.47	-512.16	-779.69	1646556.14	14292181.07	39°21'27.780"N	80°58'41.808"W	932.86	236.700	1.36	0.06	5.60	

Actual Wellpath Report

Packers Unit 1H AWP Proj: 18118'

REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #12
Area	Tyler County, WV	Well	Packers Unit 1H
Field	Tyler	Wellbore	Packers Unit 1H AWB
Facility	Ritchie Petroleum Pad		

WELLPATH DATA (217 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
5205.00	14.010	237.240	5102.18	-196.71	-522.86	-798.19	1646537.66	14292170.38	39°21'27.674"N	80°58'42.043"W	954.19	236.773	1.50	-0.12	-6.15	
5293.00	12.680	238.530	5187.80	-200.52	-533.66	-815.38	1646520.47	14292159.57	39°21'27.568"N	80°58'42.262"W	974.50	236.795	1.55	-1.51	1.47	
5380.00	11.420	244.500	5272.88	-202.83	-542.36	-831.30	1646504.56	14292150.88	39°21'27.482"N	80°58'42.465"W	992.58	236.879	2.04	-1.45	6.86	
5466.00	12.700	241.000	5356.98	-204.71	-550.61	-847.26	1646488.61	14292142.64	39°21'27.400"N	80°58'42.668"W	1010.45	236.981	1.71	1.49	-4.07	
5553.00	11.950	236.430	5441.98	-207.90	-560.22	-863.12	1646472.75	14292133.03	39°21'27.305"N	80°58'42.870"W	1029.00	237.014	1.41	-0.86	-5.25	
5641.00	11.460	229.590	5528.16	-212.68	-570.93	-877.37	1646458.50	14292122.32	39°21'27.199"N	80°58'43.052"W	1046.78	236.947	1.67	-0.56	-7.77	
5729.00	11.710	232.260	5614.36	-218.07	-582.06	-891.09	1646444.79	14292111.20	39°21'27.089"N	80°58'43.226"W	1064.35	236.847	0.67	0.28	3.03	
5773.00	13.080	243.700	5657.34	-219.76	-587.00	-899.09	1646436.80	14292106.26	39°21'27.041"N	80°58'43.328"W	1073.75	236.860	6.38	3.11	26.00	
5818.00	13.760	247.750	5701.11	-220.29	-591.28	-908.61	1646427.28	14292101.98	39°21'26.998"N	80°58'43.449"W	1084.06	236.946	2.58	1.51	9.00	
5862.00	13.920	265.790	5743.86	-218.81	-593.65	-918.73	1646417.16	14292099.61	39°21'26.975"N	80°58'43.578"W	1093.84	237.131	9.78	0.36	41.00	
5906.00	13.240	285.620	5786.65	-214.22	-592.69	-928.87	1646407.03	14292100.57	39°21'26.984"N	80°58'43.707"W	1101.85	237.459	10.64	-1.55	45.07	
5950.00	14.270	306.200	5829.41	-206.61	-588.12	-938.10	1646397.80	14292105.14	39°21'27.030"N	80°58'43.825"W	1107.22	237.915	11.30	2.34	46.77	
5994.00	17.050	313.120	5871.78	-196.22	-580.51	-947.19	1646388.71	14292112.75	39°21'27.105"N	80°58'43.940"W	1110.93	238.497	7.60	6.32	15.73	
6038.00	20.560	308.600	5913.43	-183.70	-571.28	-957.94	1646377.97	14292121.98	39°21'27.196"N	80°58'44.077"W	1115.35	239.190	8.63	7.98	-10.27	
6082.00	24.090	305.620	5954.12	-169.49	-561.22	-971.28	1646364.63	14292132.02	39°21'27.296"N	80°58'44.247"W	1121.77	239.980	8.42	8.02	-6.77	
6127.00	27.170	304.450	5994.69	-153.29	-550.06	-987.22	1646348.70	14292143.18	39°21'27.406"N	80°58'44.450"W	1130.12	240.874	6.94	6.84	-2.60	
6171.00	29.650	308.510	6033.39	-135.57	-537.60	-1004.03	1646331.90	14292155.64	39°21'27.529"N	80°58'44.664"W	1138.90	241.834	7.14	5.64	9.23	
6215.00	32.400	312.510	6071.10	-115.57	-522.85	-1021.24	1646314.69	14292170.38	39°21'27.675"N	80°58'44.883"W	1147.30	242.889	7.81	6.25	9.09	
6259.00	34.640	314.430	6107.78	-93.58	-506.13	-1038.86	1646297.08	14292187.10	39°21'27.840"N	80°58'45.107"W	1155.60	244.025	5.63	5.09	4.36	
6303.00	37.110	316.550	6143.43	-69.88	-487.73	-1056.93	1646279.02	14292205.48	39°21'28.022"N	80°58'45.337"W	1164.03	245.228	6.28	5.61	4.82	
6347.00	38.900	318.710	6178.10	-44.60	-467.72	-1075.17	1646260.78	14292225.50	39°21'28.220"N	80°58'45.569"W	1172.50	246.490	5.07	4.07	4.91	
6391.00	39.760	322.010	6212.14	-18.13	-446.24	-1092.95	1646243.01	14292246.96	39°21'28.432"N	80°58'45.796"W	1180.54	247.790	5.14	1.95	7.50	
6436.00	41.660	325.900	6246.25	10.25	-422.51	-1110.20	1646225.77	14292270.68	39°21'28.667"N	80°58'46.015"W	1187.88	249.165	7.04	4.22	8.64	
6499.00†	45.306	327.566	6291.96	52.66	-386.26	-1133.96	1646202.02	14292306.92	39°21'29.025"N	80°58'46.318"W	1197.94	251.190	6.07	5.79	2.64	Middlesex: 6499' MD
6502.00	45.480	327.640	6294.07	54.76	-384.46	-1135.10	1646200.88	14292308.72	39°21'29.043"N	80°58'46.332"W	1198.44	251.289	6.07	5.81	2.47	BHI AT Curve <8-1/2"> (6436')(6502'-18087')
6530.00	47.740	327.380	6313.30	74.72	-367.30	-1146.03	1646189.95	14292325.87	39°21'29.213"N	80°58'46.471"W	1203.45	252.230	8.10	8.07	-0.93	
6562.00	51.030	328.000	6334.13	98.56	-346.77	-1159.01	1646176.98	14292346.40	39°21'29.416"N	80°58'46.636"W	1209.77	253.343	10.39	10.28	1.94	
6594.00	54.980	329.190	6353.38	123.72	-324.95	-1172.32	1646163.68	14292368.20	39°21'29.631"N	80°58'46.806"W	1216.52	254.507	12.70	12.34	3.72	
6642.00	61.070	330.520	6378.79	163.94	-289.75	-1192.74	1646143.26	14292403.39	39°21'29.979"N	80°58'47.066"W	1227.43	256.346	12.90	12.69	2.77	
6650.00†	62.027	330.759	6382.60	170.91	-283.62	-1196.19	1646139.81	14292409.51	39°21'30.040"N	80°58'47.110"W	1229.35	256.661	12.25	11.97	2.99	Burket: 6650' MD

Actual Wellpath Report

Packers Unit 1H AWP Proj: 18118'

REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #12
Area	Tyler County, WV	Well	Packers Unit 1H
Field	Tyler	Wellbore	Packers Unit 1H AWB
Facility	Ritchie Petroleum Pad		

WELLPATH DATA (217 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
6689.00	66.700	331.870	6399.47	205.77	-252.78	-1213.06	1646122.96	14292440.34	39°21'30.345"N	80°58'47.324"W	1239.12	258.229	12.25	11.98	2.85	
6706.00†	68.819	332.525	6405.90	221.40	-238.87	-1220.39	1646115.62	14292454.25	39°21'30.482"N	80°58'47.418"W	1243.55	258.926	12.97	12.47	3.85	Tully: 6706' MD
6721.00†	70.691	333.087	6411.09	235.40	-226.35	-1226.83	1646109.19	14292466.77	39°21'30.606"N	80°58'47.499"W	1247.53	259.547	12.97	12.48	3.75	Marcellus POE: 6721' MD
6735.00	72.440	333.600	6415.52	248.62	-214.48	-1232.78	1646103.24	14292478.63	39°21'30.723"N	80°58'47.575"W	1251.30	260.131	12.97	12.49	3.67	
6784.00	76.770	334.290	6428.53	295.69	-172.05	-1253.53	1646082.50	14292521.04	39°21'31.143"N	80°58'47.839"W	1265.28	262.185	8.94	8.84	1.41	
6824.00	81.250	334.740	6436.15	334.85	-136.61	-1270.42	1646065.62	14292556.47	39°21'31.493"N	80°58'48.054"W	1277.74	263.862	11.25	11.20	1.12	
6879.00	85.900	335.420	6442.30	389.38	-87.06	-1293.44	1646042.61	14292606.00	39°21'31.983"N	80°58'48.347"W	1296.36	266.149	8.54	8.45	1.24	
6929.00	90.120	336.370	6444.04	439.28	-41.46	-1313.84	1646022.21	14292651.58	39°21'32.433"N	80°58'48.607"W	1314.49	268.193	8.65	8.44	1.90	
6974.00	89.940	335.120	6444.01	484.22	-0.43	-1332.33	1646003.73	14292692.59	39°21'32.839"N	80°58'48.842"W	1332.33	269.982	2.81	-0.40	-2.78	
7070.00	89.850	334.760	6444.19	580.02	86.53	-1372.99	1645963.09	14292779.52	39°21'33.699"N	80°58'49.359"W	1375.71	273.606	0.39	-0.09	-0.38	
7164.00	88.710	334.810	6445.37	673.79	171.57	-1413.03	1645923.06	14292864.52	39°21'34.539"N	80°58'49.869"W	1423.41	276.923	1.21	-1.21	0.05	
7260.00	88.890	335.600	6447.38	769.59	258.70	-1453.28	1645882.83	14292951.62	39°21'35.400"N	80°58'50.381"W	1476.13	280.094	0.84	0.19	0.82	
7355.00	88.860	337.410	6449.25	864.50	345.80	-1491.15	1645844.98	14293038.69	39°21'36.261"N	80°58'50.863"W	1530.72	283.056	1.91	-0.03	1.91	
7451.00	88.830	338.660	6451.18	960.48	434.82	-1527.05	1645809.09	14293127.66	39°21'37.141"N	80°58'51.320"W	1587.74	285.894	1.30	-0.03	1.30	
7547.00	88.890	339.960	6453.09	1056.45	524.60	-1560.96	1645775.20	14293217.42	39°21'38.029"N	80°58'51.751"W	1646.75	288.576	1.36	0.06	1.35	
7641.00	89.050	340.010	6454.78	1150.41	612.91	-1593.12	1645743.04	14293305.69	39°21'38.902"N	80°58'52.161"W	1706.96	291.043	0.18	0.17	0.05	
7736.00	88.890	339.060	6456.49	1245.38	701.90	-1626.33	1645709.84	14293394.64	39°21'39.781"N	80°58'52.583"W	1771.33	293.344	1.01	-0.17	-1.00	
7831.00	88.950	338.470	6458.28	1340.36	790.43	-1660.74	1645675.46	14293483.14	39°21'40.656"N	80°58'53.021"W	1839.25	295.452	0.62	0.06	-0.62	
7927.00	88.770	337.110	6460.19	1436.33	879.29	-1697.02	1645639.19	14293571.96	39°21'41.535"N	80°58'53.483"W	1911.29	297.391	1.43	-0.19	-1.42	
8022.00	89.260	338.730	6461.82	1531.31	967.31	-1732.72	1645603.50	14293659.94	39°21'42.405"N	80°58'53.937"W	1984.44	299.173	1.78	0.52	1.71	
8117.00	89.910	339.410	6462.51	1626.30	1056.04	-1766.65	1645569.58	14293748.64	39°21'43.282"N	80°58'54.369"W	2058.22	300.869	0.99	0.68	0.72	
8213.00	90.550	338.400	6462.13	1722.30	1145.60	-1801.21	1645535.04	14293838.16	39°21'44.167"N	80°58'54.808"W	2134.65	302.457	1.25	0.67	-1.05	
8308.00	89.350	338.410	6462.21	1817.29	1233.93	-1836.17	1645500.09	14293926.46	39°21'45.040"N	80°58'55.253"W	2212.26	303.902	1.26	-1.26	0.01	
8404.00	89.690	339.470	6463.01	1913.29	1323.51	-1870.66	1645465.61	14294016.01	39°21'45.925"N	80°58'55.692"W	2291.52	305.280	1.16	0.35	1.10	
8498.00	90.680	336.010	6462.71	2007.26	1410.49	-1906.27	1645430.02	14294102.95	39°21'46.785"N	80°58'56.145"W	2371.36	306.499	3.83	1.05	-3.68	
8593.00	89.690	333.780	6462.40	2102.05	1496.51	-1946.57	1645389.74	14294188.93	39°21'47.635"N	80°58'56.658"W	2455.34	307.553	2.57	-1.04	-2.35	
8689.00	89.510	335.060	6463.07	2197.78	1583.10	-1988.02	1645348.31	14294275.49	39°21'48.491"N	80°58'57.186"W	2541.34	308.531	1.35	-0.19	1.33	
8784.00	89.350	336.580	6464.02	2292.65	1669.76	-2026.93	1645309.41	14294362.11	39°21'49.348"N	80°58'57.681"W	2626.12	309.481	1.61	-0.17	1.60	
8879.00	89.510	340.410	6464.96	2387.63	1758.12	-2061.74	1645274.61	14294450.44	39°21'50.221"N	80°58'58.124"W	2709.57	310.455	4.03	0.17	4.03	
8974.00	90.280	339.520	6465.14	2482.60	1847.37	-2094.29	1645242.08	14294539.65	39°21'51.103"N	80°58'58.538"W	2792.64	311.416	1.24	0.81	-0.94	

REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #12
Area	Tyler County, WV	Well	Packers Unit 1H
Field	Tyler	Wellbore	Packers Unit 1H AWB
Facility	Ritchie Petroleum Pad		

WELLPATH DATA (217 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
9070.00	90.000	336.990	6464.90	2578.59	1936.53	-2129.85	1645206.53	14294628.78	39°21'51.985"N	80°58'58.991"W	2878.62	312.278	2.65	-0.29	-2.64	
9164.00	90.710	335.650	6464.32	2672.51	2022.62	-2167.60	1645168.79	14294714.82	39°21'52.836"N	80°58'59.471"W	2964.71	313.018	1.61	0.76	-1.43	
9258.00	89.450	336.870	6464.19	2766.42	2108.66	-2205.45	1645130.97	14294800.83	39°21'53.686"N	80°58'59.953"W	3051.30	313.715	1.87	-1.34	1.30	
9353.00	90.030	342.180	6464.62	2861.38	2197.62	-2238.66	1645097.76	14294889.76	39°21'54.565"N	80°59'00.375"W	3137.06	314.470	5.62	0.61	5.59	
9448.00	90.490	342.630	6464.19	2956.17	2288.18	-2267.38	1645069.05	14294980.28	39°21'55.461"N	80°59'00.741"W	3221.30	315.262	0.68	0.48	0.47	
9543.00	90.610	339.640	6463.28	3051.07	2378.06	-2298.09	1645038.35	14295070.13	39°21'56.349"N	80°59'01.132"W	3307.02	315.980	3.15	0.13	-3.15	
9639.00	90.460	338.320	6462.38	3147.06	2467.67	-2332.53	1645003.94	14295159.70	39°21'57.235"N	80°59'01.570"W	3395.59	316.613	1.38	-0.16	-1.37	
9734.00	90.370	337.840	6461.69	3242.06	2555.79	-2367.99	1644968.49	14295247.79	39°21'58.106"N	80°59'02.021"W	3484.17	317.184	0.51	-0.09	-0.51	
9829.00	90.310	335.900	6461.13	3337.00	2643.15	-2405.30	1644931.19	14295335.11	39°21'58.969"N	80°59'02.496"W	3573.76	317.697	2.04	-0.06	-2.04	
9924.00	89.260	335.800	6461.49	3431.89	2729.84	-2444.17	1644892.34	14295421.76	39°21'59.826"N	80°59'02.991"W	3664.15	318.160	1.11	-1.11	-0.11	
10020.00	90.220	339.920	6461.92	3527.85	2818.74	-2480.34	1644856.18	14295510.63	39°22'00.705"N	80°59'03.451"W	3754.65	318.654	4.41	1.00	4.29	
10114.00	90.120	341.500	6461.64	3621.79	2907.46	-2511.39	1644825.14	14295599.31	39°22'01.582"N	80°59'03.846"W	3841.93	319.180	1.68	-0.11	1.68	
10209.00	90.370	342.830	6461.24	3716.61	2997.89	-2540.49	1644796.06	14295689.71	39°22'02.475"N	80°59'04.217"W	3929.56	319.721	1.42	0.26	1.40	
10303.00	91.080	342.270	6460.05	3810.39	3087.55	-2568.67	1644767.88	14295779.34	39°22'03.362"N	80°59'04.575"W	4016.35	320.241	0.96	0.76	-0.60	
10398.00	91.050	340.220	6458.28	3905.27	3177.49	-2599.21	1644737.36	14295869.23	39°22'04.251"N	80°59'04.964"W	4105.16	320.717	2.16	-0.03	-2.16	
10493.00	90.180	336.030	6457.26	4000.24	3265.62	-2634.60	1644701.99	14295957.33	39°22'05.122"N	80°59'05.414"W	4195.88	321.105	4.50	-0.92	-4.41	
10588.00	90.060	332.020	6457.06	4094.91	3351.01	-2676.20	1644660.40	14296042.68	39°22'05.966"N	80°59'05.944"W	4288.51	321.388	4.22	-0.13	-4.22	
10683.00	89.350	334.920	6457.55	4189.50	3436.00	-2718.62	1644617.99	14296127.64	39°22'06.806"N	80°59'06.484"W	4381.44	321.648	3.14	-0.75	3.05	
10777.00	89.880	343.160	6458.18	4283.42	3523.70	-2752.22	1644584.41	14296215.30	39°22'07.673"N	80°59'06.911"W	4471.15	322.008	8.78	0.56	8.77	
10872.00	90.310	344.440	6458.03	4378.03	3614.92	-2778.72	1644557.92	14296306.49	39°22'08.574"N	80°59'07.249"W	4559.49	322.451	1.42	0.45	1.35	
10967.00	91.110	342.870	6456.85	4472.66	3706.07	-2805.45	1644531.20	14296397.61	39°22'09.475"N	80°59'07.589"W	4648.18	322.875	1.85	0.84	-1.65	
11062.00	90.250	337.080	6455.72	4567.59	3795.28	-2837.97	1644498.70	14296486.78	39°22'10.357"N	80°59'08.003"W	4739.01	323.212	6.16	-0.91	-6.09	
11157.00	90.060	339.700	6455.46	4662.58	3883.60	-2872.95	1644463.73	14296575.06	39°22'11.230"N	80°59'08.448"W	4830.76	323.507	2.77	-0.20	2.76	
11251.00	90.250	343.680	6455.21	4756.43	3972.82	-2902.48	1644434.21	14296664.25	39°22'12.112"N	80°59'08.824"W	4920.13	323.849	4.24	0.20	4.23	
11346.00	90.030	343.330	6454.98	4851.09	4063.91	-2929.45	1644407.25	14296755.30	39°22'13.012"N	80°59'09.167"W	5009.70	324.214	0.44	-0.23	-0.37	
11441.00	90.060	340.640	6454.90	4945.93	4154.25	-2958.83	1644377.88	14296845.60	39°22'13.905"N	80°59'09.541"W	5100.24	324.540	2.83	0.03	-2.83	
11535.00	90.220	339.300	6454.67	5039.90	4242.56	-2991.02	1644345.70	14296933.87	39°22'14.778"N	80°59'09.951"W	5190.91	324.816	1.44	0.17	-1.43	
11630.00	90.180	339.390	6454.34	5134.89	4331.45	-3024.53	1644312.20	14297022.73	39°22'15.657"N	80°59'10.377"W	5282.92	325.074	0.10	-0.04	0.09	
11725.00	90.250	338.620	6453.99	5229.89	4420.14	-3058.57	1644278.18	14297111.39	39°22'16.533"N	80°59'10.810"W	5375.18	325.318	0.81	0.07	-0.81	
11820.00	90.150	337.330	6453.65	5324.88	4508.21	-3094.20	1644242.57	14297199.42	39°22'17.404"N	80°59'11.264"W	5467.90	325.536	1.36	-0.11	-1.36	

REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #12
Area	Tyler County, WV	Well	Packers Unit 1H
Field	Tyler	Wellbore	Packers Unit 1H AWB
Facility	Ritchie Petroleum Pad		

WELLPATH DATA (217 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
11915.00	90.060	337.300	6453.48	5419.85	4595.86	-3130.83	1644205.95	14297287.03	39°22'18.270"N	80°59'11.730"W	5560.94	325.736	0.10	-0.09	-0.03	
12010.00	89.820	334.750	6453.58	5514.74	4682.65	-3169.43	1644167.36	14297373.79	39°22'19.128"N	80°59'12.222"W	5654.43	325.908	2.70	-0.25	-2.68	
12105.00	90.000	334.530	6453.73	5609.51	4768.50	-3210.12	1644126.69	14297459.60	39°22'19.977"N	80°59'12.740"W	5748.34	326.052	0.30	0.19	-0.23	
12199.00	89.880	334.850	6453.83	5703.28	4853.48	-3250.31	1644086.52	14297544.55	39°22'20.816"N	80°59'13.251"W	5841.30	326.190	0.36	-0.13	0.34	
12294.00	89.820	336.840	6454.08	5798.16	4940.15	-3289.18	1644047.66	14297631.19	39°22'21.673"N	80°59'13.746"W	5934.97	326.344	2.10	-0.06	2.09	
12388.00	90.060	338.440	6454.17	5892.14	5027.08	-3324.94	1644011.92	14297718.08	39°22'22.532"N	80°59'14.201"W	6027.17	326.519	1.72	0.26	1.70	
12483.00	90.000	339.260	6454.12	5987.14	5115.68	-3359.22	1643977.66	14297806.65	39°22'23.408"N	80°59'14.637"W	6120.01	326.709	0.87	-0.06	0.86	
12578.00	89.970	338.100	6454.15	6082.14	5204.18	-3393.76	1643943.13	14297895.11	39°22'24.283"N	80°59'15.077"W	6212.98	326.891	1.22	-0.03	-1.22	
12673.00	89.910	336.930	6454.25	6177.12	5291.96	-3430.09	1643906.82	14297982.85	39°22'25.150"N	80°59'15.540"W	6306.37	327.050	1.23	-0.06	-1.23	
12768.00	90.060	338.870	6454.27	6272.10	5379.97	-3465.83	1643871.09	14298070.83	39°22'26.020"N	80°59'15.994"W	6399.69	327.210	2.05	0.16	2.04	
12862.00	89.820	340.580	6454.37	6366.09	5468.14	-3498.40	1643838.53	14298158.97	39°22'26.892"N	80°59'16.409"W	6491.49	327.390	1.84	-0.26	1.82	
12957.00	89.850	342.030	6454.65	6460.98	5558.13	-3528.85	1643808.09	14298248.92	39°22'27.781"N	80°59'16.797"W	6583.74	327.589	1.53	0.03	1.53	
13052.00	90.030	338.400	6454.75	6555.93	5647.51	-3561.00	1643775.96	14298338.26	39°22'28.665"N	80°59'17.206"W	6676.45	327.767	3.83	0.19	-3.82	
13148.00	89.720	339.350	6454.95	6651.93	5737.05	-3595.60	1643741.37	14298427.77	39°22'29.550"N	80°59'17.646"W	6770.68	327.923	1.04	-0.32	0.99	
13243.00	90.000	339.540	6455.19	6746.92	5826.00	-3628.95	1643708.03	14298516.69	39°22'30.429"N	80°59'18.071"W	6863.79	328.082	0.36	0.29	0.20	
13337.00	89.850	336.930	6455.31	6840.91	5913.30	-3663.81	1643673.19	14298603.94	39°22'31.292"N	80°59'18.515"W	6956.33	328.218	2.78	-0.16	-2.78	
13432.00	90.000	335.580	6455.43	6935.82	6000.25	-3702.06	1643634.95	14298690.86	39°22'32.151"N	80°59'19.002"W	7050.41	328.326	1.43	0.16	-1.42	
13526.00	90.370	332.120	6455.13	7029.48	6084.62	-3743.48	1643593.55	14298775.19	39°22'32.985"N	80°59'19.529"W	7143.96	328.399	3.70	0.39	-3.68	
13621.00	90.400	335.470	6454.49	7124.12	6169.84	-3785.42	1643551.62	14298860.38	39°22'33.828"N	80°59'20.063"W	7238.53	328.469	3.53	0.03	3.53	
13717.00	90.150	333.580	6454.03	7219.86	6256.50	-3826.71	1643510.35	14298947.01	39°22'34.684"N	80°59'20.589"W	7334.00	328.548	1.99	-0.26	-1.97	
13811.00	90.030	333.390	6453.88	7313.47	6340.61	-3868.68	1643468.40	14299031.09	39°22'35.515"N	80°59'21.123"W	7427.65	328.611	0.24	-0.13	-0.20	
13906.00	90.980	340.320	6453.05	7408.36	6427.91	-3905.99	1643431.10	14299118.35	39°22'36.378"N	80°59'21.598"W	7521.62	328.715	7.36	1.00	7.29	
14000.00	90.520	337.320	6451.81	7502.34	6515.54	-3939.95	1643397.16	14299205.94	39°22'37.244"N	80°59'22.030"W	7614.16	328.839	3.23	-0.49	-3.19	
14095.00	90.280	336.070	6451.15	7597.28	6602.79	-3977.53	1643359.59	14299293.15	39°22'38.107"N	80°59'22.509"W	7708.28	328.935	1.34	-0.25	-1.32	
14190.00	90.340	340.160	6450.64	7692.26	6690.92	-4012.93	1643324.20	14299381.25	39°22'38.978"N	80°59'22.959"W	7802.05	329.046	4.31	0.06	4.31	
14285.00	90.490	343.100	6449.95	7787.12	6781.07	-4042.87	1643294.28	14299471.36	39°22'39.869"N	80°59'23.340"W	7894.79	329.197	3.10	0.16	3.09	
14380.00	91.350	345.200	6448.42	7881.67	6872.44	-4068.81	1643268.35	14299562.70	39°22'40.772"N	80°59'23.671"W	7986.59	329.372	2.39	0.91	2.21	
14475.00	90.860	343.460	6446.59	7976.18	6963.89	-4094.46	1643242.71	14299654.11	39°22'41.676"N	80°59'23.997"W	8078.39	329.546	1.90	-0.52	-1.83	
14570.00	90.920	339.480	6445.12	8071.04	7053.93	-4124.65	1643212.54	14299744.12	39°22'42.566"N	80°59'24.381"W	8171.33	329.684	4.19	0.06	-4.19	
14665.00	90.430	337.610	6444.00	8166.03	7142.34	-4159.39	1643177.81	14299832.49	39°22'43.440"N	80°59'24.824"W	8265.20	329.785	2.03	-0.52	-1.97	

Actual Wellpath Report

Packers Unit 1H AWP Proj: 18118'

REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #12
Area	Tyler County, WV	Well	Packers Unit 1H
Field	Tyler	Wellbore	Packers Unit 1H AWB
Facility	Ritchie Petroleum Pad		

WELLPATH DATA (217 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
14760.00	90.620	338.570	6443.13	8261.02	7230.47	-4194.84	1643142.37	14299920.59	39°22'44.311"N	80°59'25.275"W	8359.21	329.879	1.03	0.20	1.01	
14855.00	90.650	340.920	6442.07	8355.99	7319.58	-4227.72	1643109.50	14300009.67	39°22'45.192"N	80°59'25.694"W	8452.81	329.990	2.47	0.03	2.47	
14950.00	90.680	342.460	6440.97	8450.85	7409.77	-4257.56	1643079.67	14300099.81	39°22'46.083"N	80°59'26.074"W	8545.85	330.119	1.62	0.03	1.62	
15045.00	90.920	342.650	6439.64	8545.62	7500.39	-4286.04	1643051.21	14300190.40	39°22'46.979"N	80°59'26.436"W	8638.63	330.255	0.32	0.25	0.20	
15140.00	90.740	339.620	6438.27	8640.51	7590.26	-4316.75	1643020.51	14300280.24	39°22'47.867"N	80°59'26.827"W	8731.92	330.372	3.19	-0.19	-3.19	
15235.00	90.830	339.560	6436.97	8735.49	7679.29	-4349.88	1642987.39	14300369.23	39°22'48.747"N	80°59'27.249"W	8825.70	330.471	0.11	0.09	-0.06	
15330.00	90.740	342.240	6435.66	8830.40	7769.05	-4380.96	1642956.33	14300458.95	39°22'49.634"N	80°59'27.645"W	8919.13	330.581	2.82	-0.09	2.82	
15425.00	90.150	342.160	6434.93	8925.21	7859.49	-4410.00	1642927.30	14300549.36	39°22'50.526"N	80°59'28.014"W	9012.20	330.703	0.63	-0.62	-0.08	
15520.00	90.180	341.800	6434.65	9020.06	7949.83	-4439.39	1642897.92	14300639.66	39°22'51.421"N	80°59'28.388"W	9105.38	330.820	0.38	0.03	-0.38	
15615.00	90.120	340.420	6434.40	9114.97	8039.72	-4470.14	1642867.18	14300729.51	39°22'52.309"N	80°59'28.780"W	9198.87	330.926	1.45	-0.06	-1.45	
15710.00	90.370	337.750	6434.00	9209.96	8128.45	-4504.05	1642833.28	14300818.20	39°22'53.186"N	80°59'29.212"W	9292.91	331.009	2.82	0.26	-2.81	
15805.00	90.180	337.830	6433.54	9304.94	8216.40	-4539.96	1642797.39	14300906.12	39°22'54.056"N	80°59'29.669"W	9387.25	331.077	0.22	-0.20	0.08	
15900.00	90.030	334.890	6433.37	9399.85	8303.42	-4578.05	1642759.31	14300993.10	39°22'54.916"N	80°59'30.154"W	9481.84	331.130	3.10	-0.16	-3.09	
15995.00	90.060	335.890	6433.29	9494.70	8389.79	-4617.61	1642719.77	14301079.44	39°22'55.769"N	80°59'30.658"W	9576.58	331.172	1.05	0.03	1.05	
16090.00	90.250	336.040	6433.04	9589.59	8476.55	-4656.30	1642681.09	14301166.16	39°22'56.627"N	80°59'31.150"W	9671.25	331.219	0.25	0.20	0.16	
16184.00	90.120	334.320	6432.73	9683.41	8561.86	-4695.76	1642641.65	14301251.44	39°22'57.470"N	80°59'31.653"W	9765.02	331.257	1.83	-0.14	-1.83	
16280.00	90.120	336.640	6432.53	9779.26	8649.20	-4735.60	1642601.83	14301338.74	39°22'58.333"N	80°59'32.160"W	9860.76	331.298	2.42	0.00	2.42	
16375.00	90.490	337.130	6432.03	9874.21	8736.57	-4772.89	1642564.55	14301426.08	39°22'59.197"N	80°59'32.635"W	9955.31	331.352	0.65	0.39	0.52	
16470.00	90.490	338.870	6431.21	9969.20	8824.65	-4808.48	1642528.98	14301514.12	39°23'00.068"N	80°59'33.088"W	10049.67	331.414	1.83	0.00	1.83	
16564.00	90.550	339.360	6430.36	10063.19	8912.47	-4841.99	1642495.48	14301601.91	39°23'00.936"N	80°59'33.515"W	10142.82	331.486	0.53	0.06	0.52	
16659.00	90.490	340.450	6429.50	10158.16	9001.68	-4874.63	1642462.86	14301691.08	39°23'01.817"N	80°59'33.930"W	10236.80	331.563	1.15	-0.06	1.15	
16755.00	90.520	340.800	6428.65	10254.10	9092.24	-4906.47	1642431.02	14301781.60	39°23'02.712"N	80°59'34.336"W	10331.61	331.647	0.37	0.03	0.36	
16850.00	90.280	341.120	6427.99	10349.02	9182.04	-4937.46	1642400.05	14301871.37	39°23'03.600"N	80°59'34.730"W	10425.37	331.732	0.42	-0.25	0.34	
16945.00	90.400	340.110	6427.42	10443.97	9271.65	-4968.99	1642368.53	14301960.94	39°23'04.486"N	80°59'35.132"W	10519.24	331.812	1.07	0.13	-1.06	
17040.00	90.620	338.510	6426.58	10538.95	9360.52	-5002.56	1642334.98	14302049.78	39°23'05.364"N	80°59'35.559"W	10613.43	331.879	1.70	0.23	-1.68	
17135.00	90.550	336.950	6425.61	10633.93	9448.42	-5038.56	1642298.99	14302137.65	39°23'06.233"N	80°59'36.017"W	10707.93	331.930	1.64	-0.07	-1.64	
17230.00	90.310	336.820	6424.90	10728.88	9535.79	-5075.85	1642261.71	14302224.98	39°23'07.096"N	80°59'36.492"W	10802.57	331.974	0.29	-0.25	-0.14	
17326.00	90.340	337.910	6424.35	10824.86	9624.40	-5112.79	1642224.78	14302313.55	39°23'07.972"N	80°59'36.963"W	10898.15	332.021	1.14	0.03	1.14	
17421.00	90.430	338.560	6423.71	10919.85	9712.62	-5148.02	1642189.57	14302401.74	39°23'08.844"N	80°59'37.411"W	10992.59	332.075	0.69	0.09	0.68	
17516.00	90.520	338.160	6422.92	11014.85	9800.92	-5183.05	1642154.56	14302490.00	39°23'09.717"N	80°59'37.857"W	11087.02	332.129	0.43	0.09	-0.42	

Actual Wellpath Report

Packers Unit 1H AWP Proj: 18118'

REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #12
Area	Tyler County, WV	Well	Packers Unit 1H
Field	Tyler	Wellbore	Packers Unit 1H AWB
Facility	Ritchie Petroleum Pad		

WELLPATH DATA (217 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
17611.00	90.520	337.140	6422.06	11109.83	9888.78	-5219.18	1642118.45	14302577.83	39°23'10.585"N	80°59'38.317"W	11181.58	332.175	1.07	0.00	-1.07	
17707.00	90.580	337.400	6421.14	11205.79	9977.32	-5256.27	1642081.37	14302666.33	39°23'11.460"N	80°59'38.790"W	11277.20	332.219	0.28	0.06	0.27	
17802.00	90.310	338.230	6420.40	11300.78	10065.28	-5292.14	1642045.51	14302754.26	39°23'12.330"N	80°59'39.246"W	11371.75	332.265	0.92	-0.28	0.87	
17897.00	90.370	337.280	6419.84	11395.76	10153.21	-5328.10	1642009.57	14302842.15	39°23'13.199"N	80°59'39.704"W	11466.31	332.311	1.00	0.06	-1.00	
17992.00	90.430	335.340	6419.18	11490.68	10240.20	-5366.27	1641971.41	14302929.11	39°23'14.059"N	80°59'40.190"W	11561.08	332.344	2.04	0.06	-2.04	
18087.00	90.430	334.370	6418.46	11585.46	10326.19	-5406.63	1641931.07	14303015.07	39°23'14.909"N	80°59'40.705"W	11655.98	332.364	1.02	0.00	-1.02	
18118.00	90.430	334.370	6418.23	11616.37	10354.14	-5420.04	1641917.66	14303043.00	39°23'15.185"N	80°59'40.875"W	11686.96	332.369	0.00	0.00	0.00	Projected MD at TD: 18118'

HOLE & CASING SECTIONS - Ref Wellbore: Packers Unit 1H AWB Ref Wellpath: Packers Unit 1H AWP Proj: 18118'

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	-0.10	-0.18
17.5in Open Hole	112.00	406.00	294.00	112.00	405.99	-0.10	-0.18	-0.60	-1.71
13.375in Casing Surface	32.00	406.00	374.00	32.00	405.99	0.00	0.00	-0.60	-1.71
12.25in Open Hole	406.00	2586.50	2180.50	405.99	2545.58	-0.60	-1.71	-212.67	-330.64
9.625in Casing Intermediate	32.00	2586.50	2554.50	32.00	2545.58	0.00	0.00	-212.67	-330.64

Actual Wellpath Report

Packers Unit 1H AWP Proj: 18118'

REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #12
Area	Tyler County, WV	Well	Packers Unit 1H
Field	Tyler	Wellbore	Packers Unit 1H AWB
Facility	Ritchie Petroleum Pad		

TARGETS

Name	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
Packers Unit 1H POE - Rev-3	6398.00	-243.44	-1214.33	1646121.68	14292449.68	39°21'30.437"N	80°58'47.340"W	point
Packers Unit 1H LP - Rev-2	6436.00	-80.15	-1304.84	1646031.21	14292612.90	39°21'32.051"N	80°58'48.492"W	point
Packers Unit 1H BHL - Rev-2	6436.00	10372.32	-5406.62	1641931.08	14303061.17	39°23'15.364"N	80°59'40.704"W	point

WELLPATH COMPOSITION - Ref Wellbore: Packers Unit 1H AWB Ref Wellpath: Packers Unit 1H AWP Proj: 18118'

Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
32.00	402.00	Gyrodata standard - Drop gyro or Multi-shot	01_Gyrodata MS Gyro <17-1/2">(100'-385')	Packers Unit 1H AWB
402.00	2557.00	ISCWSA MWD, Rev. 4 (Standard)	02_Directional ONE MWD <12-1/4">(385')(411'-2540')	Packers Unit 1H AWB
2557.00	6436.00	ISCWSA MWD, Rev. 4 (Standard)	03_Directional ONE MWD <8-3/4">(2540')(2627'-6419')	Packers Unit 1H AWB
6436.00	18087.00	BHI AutoTrak Curve (Short)	04_BHI AT Curve <8-1/2">(6436')(6502'-18087')	Packers Unit 1H AWB
18087.00	18118.00	Blind Drilling (std)	Projection to bit	Packers Unit 1H AWB

REFERENCE WELLPATH IDENTIFICATION			
Operator	**ANTERO RESOURCES CORPORATION**	Slot	**Slot #12**
Area	**Tyler County, WV**	Well	**Packers Unit 1H**
Field	**Tyler**	Wellbore	**Packers Unit 1H AWB**
Facility	**Ritchie Petroleum Pad**		

COMMENTS

Wellpath general comments

API: 47-095-02397-0000
BHI Job #: 8686650
Rig: Frontier 32
Duration: 08/08/2017-08/12/2017
Gyrodata MS Gyro <17-1/2"> (100'-385')
Directional ONE MWD <12-1/4"> (385')(411'-2540')
Directional ONE MWD <8-3/4"> (2540')(2627'-6419')
BHI AT Curve <8-1/2"> (6436')(6502'-18087')
Middlesex: 6499' MD
Burket: 6650' MD
Tully: 6706' MD
Marcellus POE: 6721' MD
Projected MD at TD: 18118'