



# ANTERO RESOURCES CORPORATION

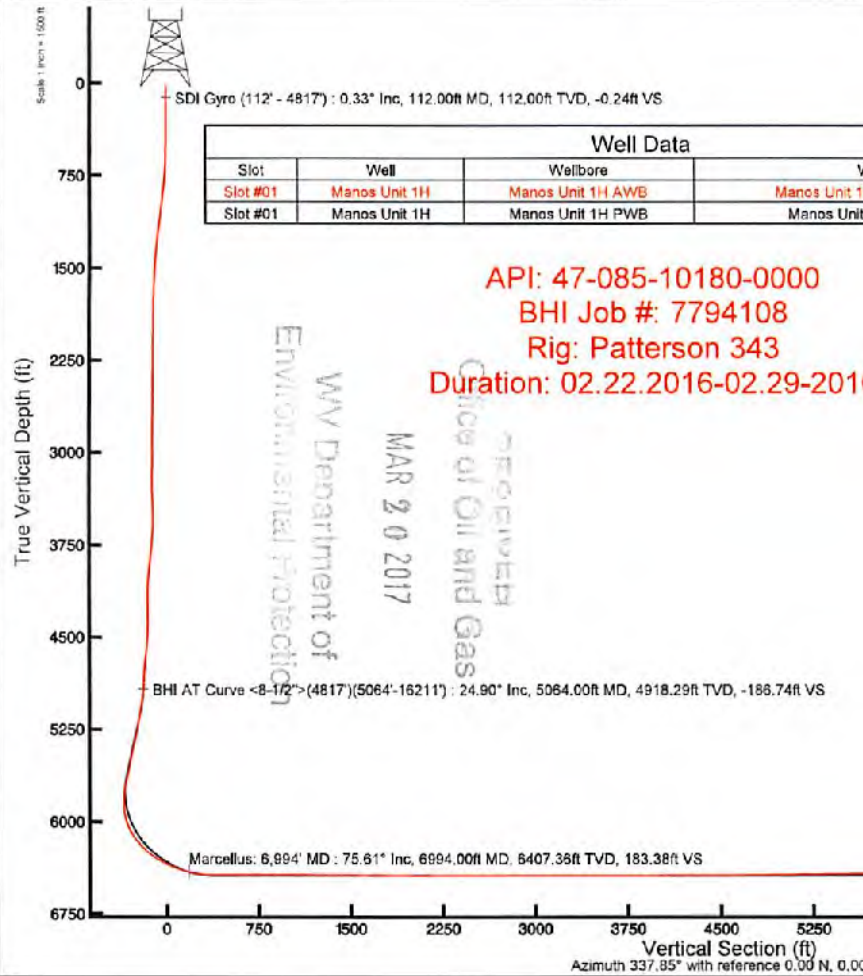
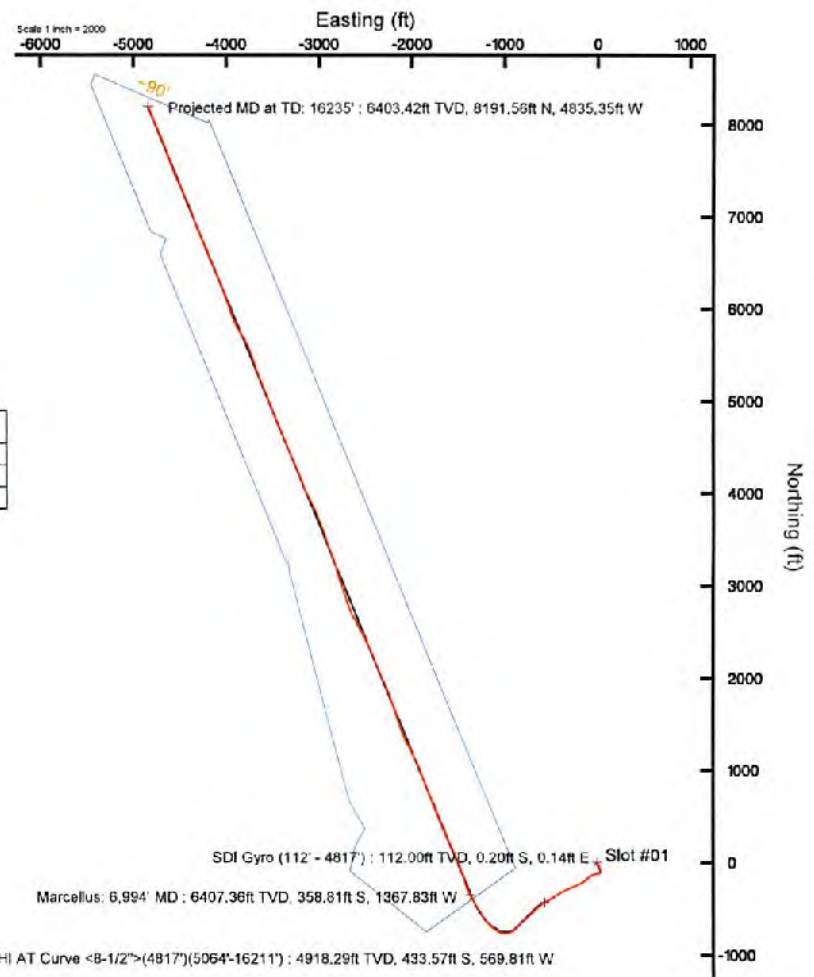
Location: Ritchie County, WV  
 Field: Ritchie  
 Facility: Buck Run Pad

Slot: Slot #01  
 Well: Manos Unit 1H  
 Wellbore: Manos Unit 1H PWB



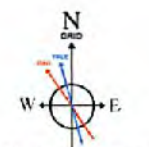
Plot reference wellpath is Manos Unit 1H PWP Rev-A.0	
True vertical depths are referenced to Patterson 343 (RKB)	Grid System: NAD27 / UTM Zone 17 North, US feet
Measured depths are referenced to Patterson 343 (RKB)	North Reference: Grid north
Patterson 343 (RKB) to Mean Sea Level: 1152 feet	Scale: True distance
Mean Sea Level to Mud line (At Slot: Slot #01): -1127 feet	Depths are in feet
Coordinates are in feet referenced to Slot	Created by: hareluk on 03/Mar/2016

Location Information						
Facility Name	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude		
Buck Run Pad	1655300.580	14276964.620	39°18'57.290"N	80°56'50.552"W		
Slot	Local N (ft)	Local E (ft)	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude
Slot #01	0.00	0.00	1655300.580	14276964.620	39°18'57.290"N	80°56'50.552"W
Comment	Manos Unit 1H					
Patterson 343 (RKB) to Mud line (At Slot: Slot #01)	25ft					
Mean Sea Level to Mud line (At Slot: Slot #01)	-1127ft					
Patterson 343 (RKB) to Mean Sea Level	1152ft					



Well Data			
Slot	Well	Wellbore	Wellpath
Slot #01	Manos Unit 1H	Manos Unit 1H AWB	Manos Unit 1H AWP Proj: 16235'
Slot #01	Manos Unit 1H	Manos Unit 1H PWB	Manos Unit 1H PWP Rev-A.0

API: 47-085-10180-0000  
 BHI Job #: 7794108  
 Rig: Patterson 343  
 Duration: 02.22.2016-02.29-2016



B00M (1945.0 to 2017.0) Dip: 66.74° Field: 52105 nT  
 Magnetic North is 8.43 degrees West of True North (at 03/Feb/2016)  
 Grid North is 0.03 degrees East of True North  
 To correct azimuth from True to Grid subtract 0.03 degrees  
 To correct azimuth from Magnetic to Grid subtract 8.46 degrees

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# Actual Wellpath Report

Manos Unit 1H AWP Proj: 16235'  
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REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #01
Area	Ritchie County, WV	Well	Manos Unit 1H
Field	Ritchie	Wellbore	Manos Unit 1H AWB
Facility	Buck Run Pad		

REPORT SETUP INFORMATION			
Projection System	NAD27 / UTM Zone 17 North, US feet	Software System	WellArchitect® 4.0.1
North Reference	Grid	User	Hareluk
Scale	0.9996	Report Generated	04/Mar/2016 at 09:48
Convergence at slot	0.03° East	Database/Source file	WA_MPL_EASTERNUS_Defn/Manos_Unit_1H_AWB.xml

WELL PATH LOCATION						
	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	0.00	0.00	1655300.58	14276964.62	39°18'57.290"N	80°56'50.552"W
Facility Reference Pt			1655300.58	14276964.62	39°18'57.290"N	80°56'50.552"W
Field Reference Pt			0.00	0.00	0°00'00.000"	85°29'19.301"W

WELL PATH DATUM			
Calculation method	Minimum curvature	Patterson 343 (RKB) to Facility Vertical Datum	25.00ft
Horizontal Reference Pt	Slot	Patterson 343 (RKB) to Mean Sea Level	1152.00ft
Vertical Reference Pt	Patterson 343 (RKB)	Patterson 343 (RKB) to Mud Line at Slot (Slot #01)	25.00ft
MD Reference Pt	Patterson 343 (RKB)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	337.85°



# Actual Wellpath Report

Manos Unit 1H AWP Proj: 16235'

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REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #01
Area	Ritchie County, WV	Well	Manos Unit 1H
Field	Ritchie	Wellbore	Manos Unit 1H AWP
Facility	Buck Run Pad		

WELLPATH DATA (331 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]	Comments
0.00†	0.000	144.670	0.00	0.00	0.00	0.00	1655300.58	14276964.62	39°18'57.290"N	80°56'50.552"W	0.00	0.000	0.00	
25.00	0.000	144.670	25.00	0.00	0.00	0.00	1655300.58	14276964.62	39°18'57.290"N	80°56'50.552"W	0.00	0.000	0.00	
112.00	0.330	144.670	112.00	-0.24	-0.20	0.14	1655300.72	14276964.42	39°18'57.288"N	80°56'50.550"W	0.25	144.670	0.38	SDI Gyro (112° - 4817)
137.00	0.320	133.760	137.00	-0.38	-0.31	0.24	1655300.82	14276964.31	39°18'57.287"N	80°56'50.549"W	0.39	142.735	0.25	
162.00	0.430	139.500	162.00	-0.53	-0.43	0.35	1655300.93	14276964.19	39°18'57.286"N	80°56'50.548"W	0.55	141.061	0.46	
187.00	0.230	129.140	187.00	-0.66	-0.53	0.45	1655301.03	14276964.09	39°18'57.285"N	80°56'50.546"W	0.70	139.999	0.83	
212.00	0.220	135.590	212.00	-0.75	-0.60	0.52	1655301.10	14276964.02	39°18'57.284"N	80°56'50.545"W	0.79	139.051	0.11	
237.00	0.250	152.430	237.00	-0.85	-0.68	0.58	1655301.16	14276963.94	39°18'57.283"N	80°56'50.545"W	0.90	139.673	0.30	
262.00	0.210	175.640	262.00	-0.95	-0.78	0.61	1655301.19	14276963.84	39°18'57.282"N	80°56'50.544"W	0.99	141.936	0.40	
287.00	0.220	223.250	287.00	-1.01	-0.86	0.58	1655301.16	14276963.76	39°18'57.282"N	80°56'50.545"W	1.03	145.976	0.70	
312.00	0.240	188.060	312.00	-1.08	-0.94	0.54	1655301.12	14276963.68	39°18'57.281"N	80°56'50.545"W	1.09	150.298	0.56	
337.00	0.030	86.150	337.00	-1.12	-1.00	0.54	1655301.12	14276963.62	39°18'57.280"N	80°56'50.545"W	1.13	151.623	0.99	
362.00	0.060	62.280	362.00	-1.13	-0.99	0.56	1655301.14	14276963.63	39°18'57.280"N	80°56'50.545"W	1.13	150.662	0.14	
387.00	0.160	96.450	387.00	-1.14	-0.99	0.60	1655301.18	14276963.63	39°18'57.280"N	80°56'50.544"W	1.16	148.609	0.46	
412.00	0.090	138.770	412.00	-1.18	-1.01	0.65	1655301.23	14276963.61	39°18'57.280"N	80°56'50.544"W	1.20	147.129	0.45	
437.00	0.130	116.100	437.00	-1.22	-1.03	0.69	1655301.27	14276963.59	39°18'57.280"N	80°56'50.543"W	1.24	146.322	0.23	
462.00	0.110	113.230	462.00	-1.25	-1.05	0.74	1655301.32	14276963.57	39°18'57.280"N	80°56'50.543"W	1.29	145.102	0.08	
487.00	0.250	158.110	487.00	-1.33	-1.11	0.78	1655301.36	14276963.51	39°18'57.279"N	80°56'50.542"W	1.36	145.086	0.76	
512.00	0.320	137.640	512.00	-1.45	-1.22	0.85	1655301.43	14276963.40	39°18'57.278"N	80°56'50.541"W	1.48	145.211	0.49	
537.00	0.230	137.910	537.00	-1.56	-1.31	0.93	1655301.51	14276963.31	39°18'57.277"N	80°56'50.540"W	1.60	144.654	0.36	
562.00	0.150	138.520	562.00	-1.64	-1.37	0.98	1655301.56	14276963.25	39°18'57.277"N	80°56'50.540"W	1.68	144.334	0.32	
587.00	0.380	148.050	587.00	-1.75	-1.46	1.05	1655301.63	14276963.16	39°18'57.276"N	80°56'50.539"W	1.80	144.400	0.93	
612.00	1.150	166.800	611.99	-2.08	-1.78	1.15	1655301.73	14276962.84	39°18'57.272"N	80°56'50.537"W	2.12	147.133	3.20	
637.00	1.750	170.730	636.99	-2.70	-2.40	1.27	1655301.85	14276962.22	39°18'57.266"N	80°56'50.536"W	2.71	152.151	2.43	
662.00	2.410	171.530	661.97	-3.58	-3.29	1.41	1655301.99	14276961.33	39°18'57.257"N	80°56'50.534"W	3.58	156.892	2.64	
687.00	2.890	171.150	686.94	-4.71	-4.44	1.58	1655302.16	14276960.18	39°18'57.246"N	80°56'50.532"W	4.71	160.398	1.92	
712.00	3.210	169.360	711.91	-6.00	-5.75	1.81	1655302.39	14276958.87	39°18'57.233"N	80°56'50.529"W	6.03	162.553	1.34	
737.00	4.050	163.700	736.86	-7.57	-7.28	2.18	1655302.76	14276957.34	39°18'57.218"N	80°56'50.524"W	7.60	163.312	3.65	
762.00	5.120	157.900	761.78	-9.56	-9.16	2.85	1655303.43	14276955.46	39°18'57.199"N	80°56'50.516"W	9.60	162.719	4.66	
787.00	6.170	153.640	786.65	-12.02	-11.40	3.87	1655304.45	14276953.22	39°18'57.177"N	80°56'50.503"W	12.04	161.264	4.52	



# Actual Wellpath Report

Manos Unit 1H AWP Proj: 16235'  
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REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #01
Area	Ritchie County, WV	Well	Manos Unit 1H
Field	Ritchie	Wellbore	Manos Unit 1H AWB
Facility	Buck Run Pad		

WELLPATH DATA (331 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 [ft/100ft]	Comments	
812.00	6.880	151.640	811.49	-14.85	-13.92	5.17	1655305.75	14276950.70	39°18'57.152"N	80°56'50.486"W	14.85	159.611	2.98		
837.00	7.070	151.340	836.31	-17.86	-16.59	6.62	1655307.20	14276948.04	39°18'57.126"N	80°56'50.468"W	17.86	158.235	0.77		
862.00	7.070	151.520	861.12	-20.92	-19.29	8.10	1655308.67	14276945.33	39°18'57.099"N	80°56'50.449"W	20.92	157.236	0.09		
887.00	7.050	153.030	885.93	-23.98	-22.01	9.53	1655310.10	14276942.62	39°18'57.072"N	80°56'50.431"W	23.99	156.601	0.75		
912.00	6.960	157.560	910.74	-27.02	-24.78	10.80	1655311.37	14276939.85	39°18'57.045"N	80°56'50.415"W	27.03	156.453	2.24		
937.00	6.940	158.070	935.56	-30.05	-27.58	11.94	1655312.52	14276937.05	39°18'57.017"N	80°56'50.400"W	30.06	156.590	0.26		
962.00	6.940	159.450	960.37	-33.07	-30.40	13.04	1655313.61	14276934.24	39°18'56.990"N	80°56'50.386"W	33.07	156.788	0.67		
987.00	7.140	161.950	985.19	-36.13	-33.29	14.05	1655314.62	14276931.35	39°18'56.961"N	80°56'50.374"W	36.13	157.121	1.46		
1012.00	7.200	164.140	1009.99	-39.23	-36.27	14.96	1655315.53	14276928.36	39°18'56.931"N	80°56'50.362"W	39.24	157.591	1.12		
1037.00	7.210	164.010	1034.79	-42.35	-39.29	15.82	1655316.39	14276925.35	39°18'56.902"N	80°56'50.351"W	42.35	158.070	0.08		
1062.00	7.440	163.680	1059.59	-45.52	-42.35	16.70	1655317.28	14276922.29	39°18'56.871"N	80°56'50.340"W	45.52	158.474	0.94		
1087.00	7.470	163.700	1084.38	-48.75	-45.46	17.62	1655318.19	14276919.18	39°18'56.841"N	80°56'50.328"W	48.76	158.820	0.12		
1112.00	7.520	163.420	1109.16	-51.99	-48.59	18.54	1655319.11	14276916.05	39°18'56.810"N	80°56'50.317"W	52.01	159.117	0.25		
1137.00	7.580	164.200	1133.95	-55.26	-51.74	19.45	1655320.03	14276912.90	39°18'56.779"N	80°56'50.305"W	55.28	159.396	0.48		
1162.00	7.610	163.810	1158.73	-58.55	-54.92	20.36	1655320.94	14276909.72	39°18'56.747"N	80°56'50.293"W	58.57	159.656	0.24		
1187.00	7.400	163.590	1183.51	-61.79	-58.05	21.28	1655321.85	14276906.59	39°18'56.716"N	80°56'50.282"W	61.83	159.869	0.85		
1212.00	7.060	163.030	1208.32	-64.93	-61.07	22.18	1655322.75	14276903.58	39°18'56.686"N	80°56'50.270"W	64.97	160.036	1.39		
1237.00	6.590	162.600	1233.14	-67.89	-63.91	23.06	1655323.63	14276900.74	39°18'56.658"N	80°56'50.259"W	67.94	160.158	1.89		
1262.00	6.050	164.630	1257.99	-70.62	-66.55	23.84	1655324.41	14276898.10	39°18'56.632"N	80°56'50.249"W	70.69	160.290	2.34		
1287.00	5.870	162.770	1282.85	-73.21	-69.04	24.57	1655325.14	14276895.61	39°18'56.608"N	80°56'50.240"W	73.28	160.412	1.06		
1312.00	5.330	164.230	1307.73	-75.63	-71.38	25.26	1655325.83	14276893.27	39°18'56.584"N	80°56'50.231"W	75.71	160.510	2.23		
1337.00	5.320	162.960	1332.62	-77.94	-73.60	25.92	1655326.49	14276891.05	39°18'56.562"N	80°56'50.223"W	78.03	160.602	0.47		
1362.00	5.100	163.490	1357.52	-80.20	-75.78	26.57	1655327.14	14276888.88	39°18'56.541"N	80°56'50.215"W	80.30	160.676	0.90		
1387.00	4.810	165.270	1382.43	-82.35	-77.85	27.15	1655327.72	14276886.80	39°18'56.520"N	80°56'50.207"W	82.45	160.772	1.31		
1412.00	4.370	167.440	1407.35	-84.33	-79.80	27.63	1655328.20	14276884.85	39°18'56.501"N	80°56'50.201"W	84.45	160.903	1.89		
1437.00	3.930	168.110	1432.28	-86.11	-81.57	28.01	1655328.58	14276883.09	39°18'56.484"N	80°56'50.196"W	86.24	161.046	1.77		
1462.00	3.730	168.590	1457.23	-87.75	-83.20	28.35	1655328.92	14276881.45	39°18'56.468"N	80°56'50.192"W	87.90	161.184	0.81		
1487.00	3.480	169.200	1482.18	-89.29	-84.74	28.65	1655329.22	14276879.91	39°18'56.452"N	80°56'50.188"W	89.46	161.319	1.01		
1512.00	3.230	169.310	1507.13	-90.73	-86.18	28.93	1655329.49	14276878.47	39°18'56.438"N	80°56'50.185"W	90.91	161.447	1.00		
1537.00	2.990	170.570	1532.10	-92.05	-87.52	29.16	1655329.73	14276877.14	39°18'56.425"N	80°56'50.182"W	92.25	161.571	1.00		



# Actual Wellpath Report

Manos Unit 1H AWP Proj: 16235'  
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REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #01
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Field	Ritchie	Wellbore	Manos Unit 1H AWB
Facility	Buck Run Pad		

WELLPATH DATA (331 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]	Comments
1562.00	2.660	171.140	1557.07	-93.25	-88.73	29.36	1655329.93	14276875.92	39°18'56.413"N	80°56'50.179"W	93.46	161.692	1.32	
1587.00	2.420	169.690	1582.04	-94.33	-89.83	29.54	1655330.11	14276874.83	39°18'56.402"N	80°56'50.177"W	94.56	161.795	0.99	
1612.00	2.210	171.170	1607.02	-95.32	-90.82	29.71	1655330.28	14276873.84	39°18'56.392"N	80°56'50.175"W	95.56	161.885	0.87	
1637.00	2.000	173.540	1632.00	-96.21	-91.73	29.83	1655330.40	14276872.93	39°18'56.383"N	80°56'50.173"W	96.46	161.984	0.91	
1662.00	1.850	168.960	1656.99	-97.03	-92.56	29.96	1655330.53	14276872.10	39°18'56.375"N	80°56'50.172"W	97.29	162.064	0.86	
1687.00	1.620	168.750	1681.98	-97.77	-93.30	30.11	1655330.67	14276871.35	39°18'56.368"N	80°56'50.170"W	98.04	162.116	0.92	
1712.00	1.590	168.400	1706.97	-98.46	-93.99	30.25	1655330.81	14276870.67	39°18'56.361"N	80°56'50.168"W	98.74	162.162	0.13	
1737.00	1.430	162.670	1731.96	-99.11	-94.63	30.41	1655330.98	14276870.03	39°18'56.355"N	80°56'50.166"W	99.39	162.185	0.88	
1762.00	1.210	160.740	1756.95	-99.68	-95.17	30.59	1655331.16	14276869.48	39°18'56.349"N	80°56'50.164"W	99.97	162.183	0.90	
1787.00	1.270	166.650	1781.95	-100.22	-95.69	30.74	1655331.31	14276868.97	39°18'56.344"N	80°56'50.162"W	100.51	162.192	0.56	
1812.00	1.020	162.930	1806.94	-100.72	-96.17	30.87	1655331.44	14276868.48	39°18'56.339"N	80°56'50.160"W	101.01	162.205	1.04	
1837.00	1.050	163.690	1831.94	-101.16	-96.61	31.00	1655331.57	14276868.05	39°18'56.335"N	80°56'50.158"W	101.46	162.210	0.13	
1862.00	0.880	161.360	1856.93	-101.58	-97.01	31.12	1655331.69	14276867.65	39°18'56.331"N	80°56'50.157"W	101.88	162.212	0.70	
1887.00	0.780	158.030	1881.93	-101.95	-97.35	31.25	1655331.82	14276867.31	39°18'56.328"N	80°56'50.155"W	102.24	162.204	0.44	
1912.00	0.840	159.690	1906.93	-102.30	-97.68	31.38	1655331.94	14276866.98	39°18'56.324"N	80°56'50.154"W	102.59	162.192	0.26	
1937.00	0.960	154.320	1931.93	-102.63	-97.98	31.50	1655332.07	14276866.68	39°18'56.321"N	80°56'50.152"W	102.92	162.177	0.77	
1962.00	0.650	151.220	1956.93	-102.91	-98.23	31.63	1655332.20	14276866.43	39°18'56.319"N	80°56'50.150"W	103.20	162.151	0.15	
1987.00	0.510	133.090	1981.92	-103.15	-98.43	31.78	1655332.35	14276866.23	39°18'56.317"N	80°56'50.148"W	103.44	162.106	0.92	
2012.00	0.630	140.510	2006.92	-103.38	-98.62	31.95	1655332.52	14276866.04	39°18'56.315"N	80°56'50.146"W	103.66	162.048	0.56	
2037.00	0.620	149.980	2031.92	-103.65	-98.84	32.11	1655332.67	14276865.82	39°18'56.313"N	80°56'50.144"W	103.92	162.005	0.41	
2062.00	0.570	149.020	2056.92	-103.91	-99.06	32.24	1655332.80	14276865.60	39°18'56.311"N	80°56'50.143"W	104.18	161.974	0.20	
2087.00	0.550	151.650	2081.92	-104.15	-99.28	32.36	1655332.93	14276865.38	39°18'56.309"N	80°56'50.141"W	104.42	161.947	0.13	
2112.00	0.580	137.080	2106.92	-104.39	-99.47	32.50	1655333.07	14276865.19	39°18'56.307"N	80°56'50.139"W	104.65	161.906	0.59	
2137.00	0.700	141.630	2131.92	-104.65	-99.69	32.68	1655333.25	14276864.97	39°18'56.305"N	80°56'50.137"W	104.91	161.848	0.52	
2162.00	0.710	143.290	2156.91	-104.95	-99.93	32.87	1655333.44	14276864.73	39°18'56.302"N	80°56'50.135"W	105.20	161.792	0.09	
2187.00	0.600	148.980	2181.91	-105.23	-100.17	33.03	1655333.60	14276864.49	39°18'56.300"N	80°56'50.133"W	105.47	161.750	0.51	
2212.00	0.430	147.120	2206.91	-105.45	-100.36	33.15	1655333.71	14276864.30	39°18'56.298"N	80°56'50.131"W	105.69	161.721	0.68	
2237.00	0.480	141.970	2231.91	-105.64	-100.52	33.26	1655333.83	14276864.14	39°18'56.296"N	80°56'50.130"W	105.88	161.690	0.26	
2262.00	0.390	128.130	2256.91	-105.82	-100.65	33.40	1655333.96	14276864.01	39°18'56.295"N	80°56'50.128"W	106.05	161.645	0.55	
2287.00	0.390	114.880	2281.91	-105.95	-100.74	33.54	1655334.11	14276863.92	39°18'56.294"N	80°56'50.126"W	106.18	161.586	0.36	



# Actual Wellpath Report

Manos Unit 1H AWP Proj: 16235'  
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REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #01
Area	Ritchie County, WV	Well	Manos Unit 1H
Field	Ritchie	Wellbore	Manos Unit 1H AWB
Facility	Buck Run Pad		

WELLPATH DATA (331 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]	Comments
2312.00	0.460	127.620	2306.91	-106.10	-100.84	33.70	1655334.26	14276863.82	39°18'56.293"N	80°56'50.124"W	106.32	161.523	0.47	
2337.00	0.430	133.050	2331.91	-106.27	-100.96	33.84	1655334.41	14276863.70	39°18'56.292"N	80°56'50.122"W	106.49	161.468	0.21	
2362.00	0.420	138.680	2356.91	-106.45	-101.10	33.97	1655334.54	14276863.56	39°18'56.291"N	80°56'50.121"W	106.65	161.425	0.17	
2387.00	0.410	138.990	2381.91	-106.62	-101.23	34.09	1655334.66	14276863.43	39°18'56.289"N	80°56'50.119"W	106.82	161.388	0.04	
2412.00	0.450	119.220	2408.91	-106.78	-101.35	34.24	1655334.80	14276863.31	39°18'56.288"N	80°56'50.117"W	106.98	161.335	0.61	
2437.00	0.590	145.680	2431.91	-106.98	-101.50	34.39	1655334.96	14276863.16	39°18'56.287"N	80°56'50.115"W	107.17	161.281	1.10	
2462.00	0.410	119.960	2456.90	-107.18	-101.65	34.54	1655335.11	14276863.01	39°18'56.285"N	80°56'50.113"W	107.36	161.231	1.13	
2487.00	0.430	107.590	2481.90	-107.31	-101.73	34.71	1655335.28	14276862.93	39°18'56.284"N	80°56'50.111"W	107.49	161.159	0.37	
2512.00	0.480	138.520	2506.90	-107.47	-101.83	34.87	1655335.44	14276862.83	39°18'56.283"N	80°56'50.109"W	107.64	161.097	0.99	
2537.00	0.420	140.800	2531.90	-107.65	-101.98	35.00	1655335.56	14276862.68	39°18'56.282"N	80°56'50.108"W	107.82	161.059	0.25	
2562.00	0.510	140.110	2556.90	-107.85	-102.14	35.13	1655335.69	14276862.52	39°18'56.280"N	80°56'50.106"W	108.01	161.021	0.36	
2587.00	0.420	154.700	2581.90	-108.04	-102.31	35.24	1655335.80	14276862.35	39°18'56.279"N	80°56'50.104"W	108.21	160.995	0.59	
2612.00	0.430	139.040	2606.90	-108.22	-102.46	35.34	1655335.90	14276862.20	39°18'56.277"N	80°56'50.103"W	108.38	160.971	0.46	
2637.00	0.410	144.940	2631.90	-108.40	-102.61	35.45	1655336.02	14276862.06	39°18'56.276"N	80°56'50.102"W	108.56	160.939	0.19	
2662.00	0.530	142.930	2656.90	-108.60	-102.77	35.57	1655336.14	14276861.89	39°18'56.274"N	80°56'50.100"W	108.75	160.908	0.48	
2687.00	0.390	141.470	2681.90	-108.79	-102.93	35.70	1655336.26	14276861.73	39°18'56.273"N	80°56'50.099"W	108.94	160.874	0.56	
2712.00	0.270	163.950	2706.90	-108.93	-103.05	35.76	1655336.33	14276861.61	39°18'56.271"N	80°56'50.098"W	109.08	160.861	0.70	
2737.00	0.360	189.360	2731.90	-109.06	-103.19	35.77	1655336.33	14276861.47	39°18'56.270"N	80°56'50.098"W	109.21	160.882	0.66	
2762.00	0.230	151.990	2756.90	-109.17	-103.31	35.78	1655336.34	14276861.35	39°18'56.269"N	80°56'50.098"W	109.33	160.898	0.90	
2787.00	0.190	159.550	2781.90	-109.27	-103.39	35.82	1655336.38	14276861.27	39°18'56.268"N	80°56'50.097"W	109.42	160.893	0.19	
2812.00	0.210	151.100	2806.90	-109.35	-103.47	35.85	1655336.42	14276861.19	39°18'56.267"N	80°56'50.097"W	109.51	160.889	0.14	
2837.00	0.160	221.470	2831.90	-109.41	-103.54	35.85	1655336.42	14276861.12	39°18'56.267"N	80°56'50.097"W	109.57	160.900	0.87	
2862.00	0.140	171.940	2856.90	-109.46	-103.59	35.83	1655336.40	14276861.07	39°18'56.266"N	80°56'50.097"W	109.62	160.919	0.51	
2887.00	0.200	182.910	2881.90	-109.53	-103.67	35.84	1655336.40	14276860.99	39°18'56.265"N	80°56'50.097"W	109.69	160.931	0.27	
2912.00	0.180	207.430	2906.90	-109.59	-103.75	35.82	1655336.38	14276860.92	39°18'56.264"N	80°56'50.097"W	109.75	160.954	0.33	
2937.00	0.230	205.720	2931.90	-109.65	-103.83	35.78	1655336.34	14276860.84	39°18'56.264"N	80°56'50.098"W	109.82	160.988	0.20	
2962.00	0.270	160.910	2956.90	-109.74	-103.93	35.77	1655336.34	14276860.73	39°18'56.263"N	80°56'50.098"W	109.91	161.006	0.78	
2987.00	0.210	163.070	2981.89	-109.85	-104.03	35.81	1655336.37	14276860.64	39°18'56.262"N	80°56'50.097"W	110.02	161.007	0.24	
3012.00	0.490	219.830	3006.89	-109.94	-104.15	35.75	1655336.32	14276860.51	39°18'56.260"N	80°56'50.098"W	110.12	161.055	1.66	
3037.00	1.780	241.780	3031.89	-110.04	-104.42	35.34	1655335.91	14276860.24	39°18'56.258"N	80°56'50.103"W	110.24	161.302	5.35	



# Actual Wellpath Report

Manos Unit 1H AWP Proj: 16235'

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REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #01
Area	Ritchie County, WV	Well	Manos Unit 1H
Field	Ritchie	Wellbore	Manos Unit 1H AWB
Facility	Buck Run Pad		

WELLPATH DATA (331 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 ["/1000]	Comments
3062.00	2.820	240.280	3056.87	-110.16	-104.91	34.46	1655335.03	14276859.76	39°18'56.253"N	80°56'50.114"W	110.42	161.814	4.17	
3087.00	4.240	238.310	3081.82	-110.39	-105.70	33.14	1655333.71	14276858.97	39°18'56.245"N	80°56'50.131"W	110.77	162.590	5.70	
3112.00	5.500	236.210	3106.73	-110.79	-106.85	31.36	1655331.93	14276857.81	39°18'56.234"N	80°56'50.154"W	111.36	163.643	5.09	
3137.00	6.830	236.000	3131.58	-111.33	-108.35	29.13	1655329.70	14276856.32	39°18'56.219"N	80°56'50.182"W	112.19	164.950	5.32	
3162.00	7.190	235.620	3156.40	-111.97	-110.06	26.61	1655327.18	14276854.60	39°18'56.202"N	80°56'50.214"W	113.23	166.409	1.45	
3187.00	7.590	238.940	3181.19	-112.56	-111.80	23.90	1655324.47	14276852.87	39°18'56.185"N	80°56'50.249"W	114.32	167.931	2.34	
3212.00	8.350	242.630	3205.95	-112.98	-113.48	20.88	1655321.45	14276851.18	39°18'56.168"N	80°56'50.287"W	115.39	169.576	3.66	
3237.00	8.750	249.910	3230.67	-113.08	-114.97	17.48	1655318.05	14276849.70	39°18'56.154"N	80°56'50.331"W	116.29	171.356	4.61	
3262.00	8.990	254.920	3255.37	-112.77	-116.13	13.81	1655314.38	14276848.53	39°18'56.142"N	80°56'50.377"W	116.95	173.220	3.23	
3287.00	9.160	255.040	3280.06	-112.28	-117.15	10.00	1655310.57	14276847.51	39°18'56.132"N	80°56'50.426"W	117.58	175.122	0.68	
3312.00	9.610	255.220	3304.73	-111.76	-118.20	6.06	1655306.64	14276846.47	39°18'56.122"N	80°56'50.476"W	118.36	177.066	1.80	
3337.00	10.390	258.520	3329.35	-111.08	-119.18	1.83	1655302.41	14276845.49	39°18'56.112"N	80°56'50.530"W	119.20	179.120	3.87	
3362.00	11.360	259.840	3353.90	-110.15	-120.06	-2.80	1655297.78	14276844.60	39°18'56.103"N	80°56'50.589"W	120.10	181.337	4.01	
3387.00	12.490	259.330	3378.36	-109.10	-121.00	-7.88	1655292.70	14276843.67	39°18'56.094"N	80°56'50.653"W	121.26	183.727	4.54	
3412.00	13.640	257.900	3402.71	-108.04	-122.12	-13.42	1655287.16	14276842.55	39°18'56.083"N	80°56'50.724"W	122.85	186.272	4.78	
3437.00	14.350	256.190	3426.97	-107.08	-123.47	-19.31	1655281.28	14276841.19	39°18'56.070"N	80°56'50.799"W	124.98	188.889	3.29	
3462.00	15.140	255.690	3451.14	-106.19	-125.02	-25.48	1655275.11	14276839.65	39°18'56.055"N	80°56'50.877"W	127.59	191.521	3.20	
3487.00	15.850	253.020	3475.23	-105.43	-126.83	-31.91	1655268.68	14276837.85	39°18'56.037"N	80°56'50.959"W	130.78	194.124	4.03	
3512.00	16.020	252.910	3499.27	-104.82	-128.84	-38.48	1655262.12	14276835.84	39°18'56.017"N	80°56'51.043"W	134.46	196.628	0.69	
3537.00	16.000	251.360	3523.30	-104.31	-130.95	-45.04	1655255.56	14276833.72	39°18'55.996"N	80°56'51.126"W	138.48	198.979	1.71	
3562.00	15.690	247.970	3547.36	-104.09	-133.32	-51.44	1655249.16	14276831.35	39°18'55.973"N	80°56'51.207"W	142.90	201.097	3.90	
3587.00	15.070	242.810	3571.46	-104.37	-136.07	-57.46	1655243.14	14276828.60	39°18'55.945"N	80°56'51.284"W	147.71	202.893	6.01	
3612.00	15.030	237.610	3595.60	-105.23	-139.30	-63.09	1655237.52	14276825.38	39°18'55.914"N	80°56'51.356"W	152.92	204.367	5.40	
3637.00	15.260	234.480	3619.74	-106.57	-142.94	-68.50	1655232.10	14276821.73	39°18'55.878"N	80°56'51.425"W	158.51	205.606	3.40	
3662.00	15.820	233.260	3643.82	-108.18	-146.89	-73.91	1655226.70	14276817.79	39°18'55.839"N	80°56'51.494"W	164.44	206.710	2.59	
3687.00	16.370	232.840	3667.84	-109.96	-151.06	-79.45	1655221.16	14276813.62	39°18'55.797"N	80°56'51.564"W	170.68	207.743	2.25	
3712.00	16.600	232.620	3691.81	-111.81	-155.36	-85.10	1655215.52	14276809.33	39°18'55.755"N	80°56'51.636"W	177.13	208.712	0.95	
3737.00	16.930	232.630	3715.75	-113.70	-159.73	-90.83	1655209.79	14276804.95	39°18'55.712"N	80°56'51.709"W	183.75	209.623	1.32	
3762.00	16.820	232.700	3739.68	-115.60	-164.13	-96.60	1655204.02	14276800.55	39°18'55.668"N	80°56'51.782"W	190.45	210.478	0.45	
3787.00	16.740	232.550	3763.61	-117.50	-168.52	-102.33	1655198.29	14276796.17	39°18'55.625"N	80°56'51.855"W	197.15	211.269	0.36	



# Actual Wellpath Report

Manos Unit 1H AWP Proj: 16235'  
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REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #01
Area	Ritchie County, WV	Well	Manos Unit 1H
Field	Ritchie	Wellbore	Manos Unit 1H AWB
Facility	Buck Run Pad		

WELLPATH DATA (331 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]	Comments
3812.00	17.120	231.700	3787.53	-119.47	-172.99	-108.08	1655192.54	14276791.70	39°18'55.581"N	80°56'51.928"W	203.97	211.997	1.81	
3837.00	17.370	230.690	3811.40	-121.59	-177.63	-113.85	1655186.77	14276787.06	39°18'55.535"N	80°56'52.002"W	210.99	212.658	1.56	
3862.00	17.760	229.290	3835.24	-123.91	-182.48	-119.63	1655181.00	14276782.21	39°18'55.487"N	80°56'52.076"W	218.20	213.248	2.30	
3887.00	18.170	229.130	3859.02	-126.37	-187.52	-125.47	1655175.16	14276777.18	39°18'55.437"N	80°56'52.150"W	225.62	213.787	1.65	
3912.00	18.620	229.160	3882.74	-128.90	-192.68	-131.44	1655169.20	14276772.02	39°18'55.386"N	80°56'52.226"W	233.24	214.300	1.80	
3937.00	19.400	229.580	3906.38	-131.48	-197.98	-137.62	1655163.02	14276766.72	39°18'55.334"N	80°56'52.304"W	241.11	214.803	3.17	
3962.00	20.250	230.990	3929.90	-134.04	-203.40	-144.14	1655156.50	14276761.30	39°18'55.281"N	80°56'52.387"W	249.29	215.324	3.90	
3987.00	21.080	233.010	3953.29	-136.45	-208.83	-151.09	1655149.55	14276755.88	39°18'55.227"N	80°56'52.476"W	257.75	215.887	4.38	
4012.00	21.930	234.780	3976.55	-138.65	-214.22	-158.50	1655142.15	14276750.48	39°18'55.174"N	80°56'52.570"W	266.48	216.497	4.28	
4037.00	22.730	236.180	3999.67	-140.69	-219.60	-166.32	1655134.32	14276745.10	39°18'55.121"N	80°56'52.670"W	275.48	217.140	3.84	
4062.00	23.370	237.570	4022.68	-142.55	-224.95	-174.52	1655126.13	14276739.76	39°18'55.068"N	80°56'52.774"W	284.71	217.805	3.36	
4087.00	24.260	239.250	4045.55	-144.20	-230.24	-183.12	1655117.53	14276734.48	39°18'55.016"N	80°56'52.884"W	294.18	218.498	4.48	
4112.00	25.320	241.420	4068.25	-145.57	-235.42	-192.23	1655108.43	14276729.29	39°18'54.964"N	80°56'53.000"W	303.93	219.233	5.59	
4137.00	26.060	244.040	4090.77	-146.53	-240.38	-201.86	1655098.80	14276724.34	39°18'54.915"N	80°56'53.122"W	313.90	220.022	5.42	
4162.00	26.740	247.730	4113.17	-146.91	-244.92	-212.01	1655088.66	14276719.80	39°18'54.871"N	80°56'53.251"W	323.93	220.880	7.10	
4187.00	27.090	249.080	4135.46	-146.80	-249.08	-222.53	1655078.14	14276715.64	39°18'54.829"N	80°56'53.385"W	334.01	221.777	2.82	
4212.00	26.590	249.030	4157.77	-146.56	-253.12	-233.07	1655067.60	14276711.61	39°18'54.790"N	80°56'53.519"W	344.08	222.639	2.00	
4237.00	26.050	248.280	4180.18	-146.40	-257.15	-243.39	1655057.28	14276707.57	39°18'54.750"N	80°56'53.651"W	354.07	223.426	2.54	
4262.00	25.120	247.670	4202.72	-146.38	-261.20	-253.40	1655047.28	14276703.53	39°18'54.710"N	80°56'53.778"W	363.92	224.132	3.87	
4287.00	24.980	247.060	4225.37	-146.47	-265.27	-263.17	1655037.51	14276699.46	39°18'54.670"N	80°56'53.902"W	373.67	224.772	1.18	
4312.00	24.510	246.730	4248.08	-146.64	-269.38	-272.80	1655027.89	14276695.35	39°18'54.629"N	80°56'54.025"W	383.38	225.361	1.96	
4337.00	24.760	246.540	4270.80	-146.86	-273.51	-282.36	1655018.33	14276691.22	39°18'54.588"N	80°56'54.147"W	393.11	225.912	1.05	
4362.00	25.570	246.930	4293.43	-147.07	-277.71	-292.13	1655008.57	14276687.02	39°18'54.547"N	80°56'54.271"W	403.07	226.450	3.31	
4387.00	24.920	248.220	4316.04	-147.12	-281.78	-301.98	1654998.72	14276682.96	39°18'54.507"N	80°56'54.396"W	413.03	226.983	3.41	
4412.00	24.650	248.880	4338.74	-147.00	-285.61	-311.74	1654988.97	14276679.12	39°18'54.469"N	80°56'54.520"W	422.79	227.505	1.55	
4437.00	24.710	248.880	4361.45	-146.81	-289.37	-321.48	1654979.23	14276675.37	39°18'54.432"N	80°56'54.644"W	432.53	228.009	0.24	
4462.00	24.610	247.770	4384.17	-146.72	-293.22	-331.17	1654969.54	14276671.51	39°18'54.394"N	80°56'54.768"W	442.33	228.478	1.90	
4487.00	24.710	246.240	4406.90	-146.88	-297.30	-340.77	1654959.95	14276667.44	39°18'54.354"N	80°56'54.890"W	452.23	228.898	2.58	
4512.00	24.770	244.380	4429.60	-147.34	-301.67	-350.28	1654950.45	14276663.07	39°18'54.310"N	80°56'55.011"W	462.27	229.264	3.12	
4537.00	25.410	242.430	4452.24	-148.16	-306.42	-359.75	1654940.97	14276658.33	39°18'54.264"N	80°56'55.131"W	472.56	229.578	4.18	





Actual Wellpath Report  
Manos Unit IH AWP Proj: 16235  
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Operator	ANTERO RESOURCES CORPORATION
Area	Ritchie County, WV
Field	Ritchie
Facility	Buck Run Pad
Slot	Slot #01
Well	Manos Unit IH
Wellbore	Manos Unit IH AWB

WELLPATH DATA (331 stations)											
MD	Inclination	Azimuth	TVD	Vert Sect	North	East	Grid East	Grid North	Latitude	Longitude	Closure Dist
(ft)	(°)	(°)	(ft)	(ft)	(ft)	(ft)	(US ft)	(US ft)	(N)	(W)	(ft)
25,520	240.890	4174.81	-149.32	-311.52	-369.21	1654931.52	14276633.23	39°18'54.21"N	80°56'55.25"W	483.07	229.844
4587.00	26,360	4497.29	-150.70	-316.88	-378.74	1654921.99	14276647.86	39°18'54.160"N	80°56'55.373"W	493.82	230.082
4612.00	27,160	4519.62	-152.26	-322.53	-388.48	1654912.26	14276642.22	39°18'54.104"N	80°56'55.497"W	504.92	230.299
4637.00	27,910	4541.79	-153.98	-328.43	-398.41	1654902.33	14276636.32	39°18'54.046"N	80°56'55.624"W	516.34	230.500
4662.00	28,070	4563.86	-155.81	-334.49	-408.46	1654892.28	14276630.26	39°18'53.986"N	80°56'55.751"W	527.95	230.685
4687.00	27,630	4585.97	-157.74	-340.63	-418.40	1654882.35	14276624.13	39°18'53.926"N	80°56'55.878"W	539.52	230.850
4712.00	28,140	4608.06	-159.79	-346.87	-428.28	1654872.47	14276617.89	39°18'53.864"N	80°56'56.004"W	551.13	230.956
4737.00	28,140	4630.11	-161.97	-353.26	-438.20	1654862.56	14276611.51	39°18'53.801"N	80°56'56.130"W	562.86	231.126
4762.00	28,850	4652.08	-164.27	-359.79	-448.17	1654852.59	14276604.97	39°18'53.736"N	80°56'56.257"W	574.73	231.242
4787.00	30,640	4673.78	-166.68	-366.62	-458.53	1654842.24	14276598.15	39°18'53.669"N	80°56'56.389"W	587.08	231.356
4812.00	30,470	4695.31	-169.09	-373.55	-469.18	1654831.59	14276591.22	39°18'53.601"N	80°56'56.524"W	599.73	231.474
4817.00	30,460	4699.62	-169.55	-374.92	-471.31	1654829.46	14276589.85	39°18'53.587"N	80°56'56.551"W	602.25	231.498
5064.00	24,900	4918.29	-186.74	-433.57	-569.81	1654731.00	14276531.22	39°18'53.008"N	80°56'57.805"W	716.01	232.732
5158.00	27,070	5002.82	-195.02	-456.40	-603.92	1654696.90	14276508.41	39°18'52.783"N	80°56'58.239"W	756.98	232.921
5252.00	23,990	5087.64	-207.44	-482.43	-634.94	1654665.90	14276482.38	39°18'52.625"N	80°56'58.634"W	797.43	232.772
5347.00	25,080	5174.06	-221.56	-509.40	-663.72	1654637.13	14276455.43	39°18'52.259"N	80°56'59.000"W	836.66	232.494
5441.00	29,230	5257.68	-237.72	-539.34	-694.42	1654606.44	14276425.49	39°18'51.963"N	80°56'59.391"W	879.27	232.164
5536.00	31,540	5339.63	-255.50	-572.64	-729.06	1654571.81	14276392.21	39°18'51.634"N	80°56'59.832"W	927.06	231.852
5630.00	31,530	5419.75	-272.77	-605.99	-765.18	1654535.71	14276358.88	39°18'51.305"N	80°57'00.292"W	976.07	231.622
5725.00	30,570	5501.14	-289.73	-639.03	-801.36	1654499.54	14276325.85	39°18'50.979"N	80°57'00.752"W	1024.95	231.430
5820.00	29,750	5583.28	-307.50	-672.19	-835.68	1654465.23	14276292.70	39°18'50.651"N	80°57'01.189"W	1072.47	231.188
5914.00	29,290	5665.08	-324.85	-704.44	-868.91	1654432.02	14276260.46	39°18'50.332"N	80°57'01.612"W	1118.59	230.968
5963.00	29,810	5707.70	-333.79	-721.19	-886.33	1654414.60	14276243.72	39°18'50.167"N	80°57'01.834"W	1142.67	230.865
6099.00	29,500	5747.69	-340.88	-735.89	-903.64	1654397.30	14276229.02	39°18'50.022"N	80°57'02.054"W	1165.38	230.842
6058.00	29,400	5790.98	-345.39	-748.55	-922.77	1654378.18	14276216.37	39°18'49.897"N	80°57'02.298"W	1188.21	230.951
6103.00	25,650	5831.42	-347.45	-757.86	-940.17	1654360.79	14276207.07	39°18'49.805"N	80°57'02.519"W	1207.59	231.128
6152.00	26,750	5875.41	-347.00	-765.56	-960.32	1654340.65	14276199.36	39°18'49.729"N	80°57'02.776"W	1228.13	231.438
6198.00	26,100	5916.64	-342.46	-768.83	-980.39	1654320.59	14276196.10	39°18'49.697"N	80°57'03.031"W	1245.90	231.896
6247.00	26,200	5960.64	-333.67	-768.11	-1001.92	1654299.82	14276196.82	39°18'49.704"N	80°57'03.305"W	1262.48	232.525
6292.00	28,390	6000.64	-322.69	-764.51	-1022.20	1654278.79	14276200.41	39°18'49.740"N	80°57'03.563"W	1276.47	233.207

BH AT Curve <8-L/2 > (4817)(5064-16211)

DLS Comments



# Actual Wellpath Report

Manos Unit 1H AWP Proj: 16235'  
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REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #01
Area	Ritchie County, WV	Well	Manos Unit 1H
Field	Ritchie	Wellbore	Manos Unit 1H AWP
Facility	Buck Run Pad		

WELLPATH DATA (331 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]	Comments
6341.00	32.110	291.340	6042.98	-306.86	-756.96	-1045.65	1654255.35	14276207.96	39°18'49.814"N	80°57'03.861"W	1290.88	234.099	10.74	
6387.00	35.450	297.550	6081.22	-288.26	-746.34	-1068.88	1654232.13	14276218.58	39°18'49.919"N	80°57'04.157"W	1303.66	235.076	10.44	
6436.00	38.770	303.590	6120.30	-264.72	-731.27	-1094.27	1654206.75	14276233.61	39°18'50.068"N	80°57'04.480"W	1316.13	236.246	10.05	
6481.00	42.090	310.280	6154.57	-239.69	-713.71	-1117.53	1654183.50	14276251.20	39°18'50.242"N	80°57'04.776"W	1326.00	237.436	12.13	
6483.00†	42.194	310.481	6156.05	-238.50	-712.84	-1118.56	1654182.47	14276252.07	39°18'50.251"N	80°57'04.789"W	1326.39	237.491	8.53	Sycamore: 6,483' MD
6530.00	44.740	314.990	6190.17	-209.23	-690.89	-1142.27	1654158.77	14276274.01	39°18'50.468"N	80°57'05.090"W	1334.96	238.833	8.53	
6576.00	47.890	317.020	6221.93	-178.36	-666.95	-1165.36	1654135.69	14276297.93	39°18'50.705"N	80°57'05.384"W	1342.72	240.217	7.55	
6625.00	51.830	320.810	6253.52	-142.93	-638.71	-1189.94	1654111.12	14276326.16	39°18'50.984"N	80°57'05.696"W	1350.52	241.775	9.98	
6626.00†	51.894	320.860	6254.14	-142.18	-638.10	-1190.43	1654110.63	14276326.77	39°18'50.990"N	80°57'05.703"W	1350.67	241.808	7.54	Middlesex: 6,626' MD
6670.00	54.740	322.990	6280.43	-108.25	-610.32	-1212.18	1654088.89	14276354.54	39°18'51.265"N	80°57'05.979"W	1357.16	243.275	7.54	
6719.00	59.410	325.240	6307.05	-68.31	-577.00	-1236.26	1654064.82	14276387.85	39°18'51.594"N	80°57'06.285"W	1364.28	244.980	10.28	
6765.00	62.660	326.960	6329.33	-28.91	-543.60	-1258.70	1654042.39	14276421.24	39°18'51.924"N	80°57'06.570"W	1371.06	246.642	7.79	
6814.00	65.950	327.920	6350.57	14.51	-506.38	-1282.45	1654018.64	14276458.44	39°18'52.292"N	80°57'06.872"W	1378.81	248.453	6.94	
6839.00†	67.555	328.397	6360.44	37.15	-486.87	-1294.57	1654006.53	14276477.94	39°18'52.485"N	80°57'07.026"W	1383.10	249.389	6.65	Burkett: 6,839' MD
6859.00	68.840	328.770	6367.87	55.48	-471.02	-1304.25	1653996.86	14276493.78	39°18'52.642"N	80°57'07.150"W	1386.70	250.143	6.65	
6909.00	72.310	329.640	6384.49	102.09	-430.52	-1328.38	1653972.73	14276534.27	39°18'53.042"N	80°57'07.456"W	1396.41	252.043	7.13	
6923.00†	73.124	330.114	6388.65	115.33	-418.96	-1335.09	1653966.03	14276545.83	39°18'53.157"N	80°57'07.542"W	1399.28	252.578	6.65	Fully: 6,923' MD
6954.00	74.930	331.150	6397.18	144.90	-392.99	-1349.70	1653951.42	14276571.79	39°18'53.413"N	80°57'07.727"W	1405.75	253.766	6.65	
6994.00†	75.606	332.972	6407.36	183.38	-358.81	-1367.83	1653933.30	14276605.95	39°18'53.751"N	80°57'07.958"W	1414.11	255.301	4.72	Marcellus: 6,994' MD
7003.00	75.760	333.380	6409.58	192.07	-351.03	-1371.76	1653929.37	14276613.73	39°18'53.828"N	80°57'08.008"W	1415.97	255.646	4.72	
7048.00	78.510	337.210	6419.60	235.89	-311.19	-1390.09	1653911.05	14276653.56	39°18'54.222"N	80°57'08.241"W	1424.49	257.382	10.30	
7097.00	82.590	339.970	6427.65	284.20	-266.20	-1407.72	1653893.43	14276698.53	39°18'54.667"N	80°57'08.465"W	1432.67	259.292	10.01	
7143.00	86.980	341.860	6431.83	329.93	-222.92	-1422.69	1653878.46	14276741.79	39°18'55.095"N	80°57'08.655"W	1440.05	261.095	10.38	
7171.00	89.940	342.320	6432.58	357.84	-196.29	-1431.30	1653869.86	14276768.41	39°18'55.358"N	80°57'08.764"W	1444.69	262.191	10.70	
7237.00	89.940	341.670	6432.65	423.67	-133.52	-1451.70	1653849.47	14276831.15	39°18'55.978"N	80°57'09.023"W	1457.82	264.745	0.98	
7331.00	90.000	339.530	6432.70	517.56	-44.86	-1482.92	1653818.26	14276919.78	39°18'56.855"N	80°57'09.420"W	1483.60	268.267	2.28	
7426.00	90.090	338.360	6432.63	612.54	43.79	-1517.05	1653784.14	14277008.40	39°18'57.731"N	80°57'09.854"W	1517.68	271.654	1.24	
7520.00	90.060	336.050	6432.50	706.53	130.45	-1553.46	1653747.74	14277095.01	39°18'58.588"N	80°57'10.316"W	1558.93	274.800	2.46	
7615.00	89.940	333.880	6432.50	801.40	216.52	-1593.66	1653707.56	14277181.05	39°18'59.439"N	80°57'10.827"W	1608.30	277.737	2.29	
7709.00	89.850	335.560	6432.67	895.26	301.51	-1633.80	1653667.43	14277266.01	39°19'00.279"N	80°57'11.337"W	1661.39	280.456	1.79	



# Actual Wellpath Report

Manos Unit IH AWP Proj: 16235

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Operator	ANTERO RESOURCES CORPORATION
Area	Ritchie County, WV
Field	Ritchie
Facility	Buck Run Pad
Slot	Slot #01
Well	Manos Unit IH
Wellbore	Manos Unit IH AWB

## REFERENCE WELLPATH IDENTIFICATION

MD	Inclination	Azimuth	TVD	Vert Sect	North	East	Grid East	Grid North	Latitude	Longitude	Closure Dist	Closure Dir	DLS	Comments
(ft)	(°)	(°)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(N)	(W)	(ft)	(ft)	(ft)	(ft)
7804.00	89.970	337.750	6432.82	990.23	388.73	-1671.45	1653629.81	14277353.19	39°19'01.141"N	80°57'11.816"W	1716.05	283.093	2.31	
7898.00	89.970	338.590	6432.87	1084.23	475.99	-1706.40	1653594.87	14277440.42	39°19'02.004"N	80°57'12.260"W	1771.54	285.986	0.89	
7992.00	89.910	338.970	6432.97	1178.21	563.61	-1740.42	1653560.86	14277528.01	39°19'02.870"N	80°57'12.692"W	1829.41	287.944	0.41	
8087.00	89.750	338.710	6433.25	1273.20	652.21	-1774.72	1653526.58	14277616.56	39°19'03.746"N	80°57'13.128"W	1890.76	290.178	0.32	
8182.00	89.660	338.850	6433.74	1368.19	740.76	-1809.10	1653492.21	14277705.05	39°19'04.621"N	80°57'13.565"W	1954.89	292.257	0.18	
8276.00	89.480	338.790	6434.45	1462.17	828.41	-1843.06	1653458.26	14277792.70	39°19'05.488"N	80°57'13.996"W	2020.68	294.203	0.20	
8370.00	89.290	339.220	6435.46	1556.14	916.17	-1876.74	1653424.60	14277880.42	39°19'06.355"N	80°57'14.424"W	2088.42	296.020	0.50	
8465.00	90.680	339.070	6435.48	1651.12	1004.94	-1910.56	1653390.79	14277969.16	39°19'07.233"N	80°57'14.854"W	2158.74	297.744	1.47	
8559.00	89.660	335.630	6435.20	1745.10	1091.68	-1946.75	1653354.61	14278055.86	39°19'08.090"N	80°57'15.314"W	2231.95	299.282	3.82	
8654.00	89.050	332.720	6436.27	1839.89	1177.17	-1988.13	1653313.25	14278141.32	39°19'08.936"N	80°57'15.840"W	2310.50	300.630	3.13	
8748.00	89.420	332.040	6437.53	1933.45	1260.45	-2031.70	1653269.69	14278224.57	39°19'09.759"N	80°57'16.394"W	2390.93	301.815	0.82	
8843.00	89.970	335.480	6438.03	2028.19	1345.65	-2073.70	1653227.71	14278309.73	39°19'10.601"N	80°57'16.928"W	2472.04	302.980	3.67	
8938.00	90.060	339.450	6438.01	2123.17	1433.38	-2110.10	1653191.33	14278397.42	39°19'11.468"N	80°57'17.390"W	2550.90	304.188	4.18	
9032.00	90.600	342.650	6437.91	2217.01	1522.27	-2140.62	1653160.82	14278486.28	39°19'12.347"N	80°57'17.778"W	2626.70	305.418	3.40	
9126.00	90.000	342.800	6437.86	2310.67	1612.03	-2168.54	1653132.92	14278576.00	39°19'13.234"N	80°57'18.133"W	2702.07	306.626	0.17	
9221.00	90.150	341.130	6437.74	2405.42	1702.36	-2197.95	1653103.52	14278666.30	39°19'14.127"N	80°57'18.506"W	2780.11	307.759	1.76	
9315.00	90.030	338.770	6437.59	2499.35	1790.66	-2230.17	1653071.30	14278754.56	39°19'15.000"N	80°57'18.916"W	2860.09	308.762	2.51	
9409.00	90.090	337.960	6437.49	2593.35	1878.03	-2264.83	1653036.66	14278841.90	39°19'15.864"N	80°57'19.356"W	2942.19	309.666	0.86	
9504.00	90.090	336.030	6437.34	2688.33	1965.47	-2301.95	1652999.55	14278929.30	39°19'16.728"N	80°57'19.828"W	3026.89	310.492	2.03	
9599.00	90.120	337.370	6437.17	2783.31	2052.72	-2339.53	1652961.99	14279016.52	39°19'17.591"N	80°57'20.306"W	3112.41	311.264	1.41	
9693.00	90.090	338.420	6436.99	2877.31	2139.81	-2374.90	1652926.63	14279103.57	39°19'18.452"N	80°57'20.755"W	3196.71	312.019	1.12	
9788.00	90.060	337.990	6436.87	2972.31	2228.02	-2410.17	1652891.37	14279191.75	39°19'19.324"N	80°57'21.203"W	3282.23	312.751	0.45	
9882.00	90.120	335.850	6436.72	3066.29	2314.49	-2447.02	1652854.54	14279278.18	39°19'20.179"N	80°57'21.672"W	3368.20	313.406	2.28	
9977.00	90.090	334.130	6436.55	3161.17	2400.58	-2487.18	1652814.40	14279364.24	39°19'21.030"N	80°57'22.182"W	3456.71	313.985	1.81	
10071.00	90.060	331.220	6436.43	3254.78	2484.08	-2530.33	1652771.27	14279447.71	39°19'21.855"N	80°57'22.731"W	3545.85	314.472	3.10	
10166.00	90.030	333.880	6436.35	3349.36	2568.38	-2574.12	1652727.50	14279531.97	39°19'22.689"N	80°57'23.287"W	3636.30	314.936	2.80	
10261.00	90.030	330.560	6436.30	3443.89	2652.42	-2618.39	1652683.24	14279615.97	39°19'23.519"N	80°57'23.850"W	3727.10	315.370	3.49	
10355.00	90.030	337.110	6436.25	3537.61	2736.74	-2659.81	1652641.83	14279700.26	39°19'24.353"N	80°57'24.377"W	3816.33	315.817	6.97	
10450.00	90.220	343.640	6436.04	3632.46	2826.17	-2691.70	1652609.96	14279789.66	39°19'25.237"N	80°57'24.782"W	3902.89	316.396	6.88	
10544.00	89.970	340.160	6435.89	3726.21	2915.51	-2720.90	1652580.77	14279878.96	39°19'26.120"N	80°57'25.153"W	3987.92	316.977	3.71	



# Actual Wellpath Report

Manos Unit 1H AWP Proj: 16235'

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REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #01
Area	Ritchie County, WV	Well	Manos Unit 1H
Field	Ritchie	Wellbore	Manos Unit 1H AWB
Facility	Buck Run Pad		

WELLPATH DATA (331 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 (ft/100ft)	Comments
10638.00	90.120	340.620	6435.81	3820.12	3004.06	-2752.45	1652549.23	14279967.47	39°19'26.996"N	80°57'25.554"W	4074.35	317.503	0.51	
10733.00	90.090	344.480	6435.64	3914.78	3094.67	-2780.93	1652520.76	14280058.04	39°19'27.891"N	80°57'25.916"W	4160.60	318.056	4.06	
10827.00	90.120	344.240	6435.47	4008.18	3185.19	-2806.28	1652495.43	14280148.53	39°19'28.786"N	80°57'26.238"W	4245.07	318.619	0.26	
10921.00	89.940	339.890	6435.42	4101.90	3274.60	-2835.21	1652466.50	14280237.90	39°19'29.670"N	80°57'26.606"W	4331.45	319.113	4.63	
11016.00	90.000	337.410	6435.47	4196.88	3363.07	-2869.80	1652431.93	14280326.34	39°19'30.544"N	80°57'27.045"W	4421.08	319.525	2.61	
11111.00	90.060	340.430	6435.42	4291.86	3451.70	-2903.96	1652397.78	14280414.94	39°19'31.421"N	80°57'27.479"W	4510.79	319.926	3.18	
11205.00	90.030	342.020	6435.34	4385.69	3540.70	-2934.22	1652367.54	14280503.90	39°19'32.300"N	80°57'27.864"W	4598.50	320.351	1.69	
11300.00	90.220	338.670	6435.14	4480.59	3630.15	-2966.17	1652335.61	14280593.31	39°19'33.185"N	80°57'28.270"W	4687.87	320.748	3.53	
11395.00	90.680	338.130	6434.39	4575.58	3718.48	-3001.14	1652300.65	14280681.60	39°19'34.058"N	80°57'28.714"W	4778.48	321.093	0.75	
11489.00	90.650	337.170	6433.30	4669.57	3805.41	-3036.88	1652264.92	14280768.50	39°19'34.917"N	80°57'29.169"W	4868.65	321.409	1.02	
11583.00	90.800	333.510	6432.11	4763.46	3890.81	-3076.09	1652225.73	14280853.87	39°19'35.761"N	80°57'29.667"W	4959.91	321.670	3.90	
11678.00	90.650	332.170	6430.91	4858.08	3975.33	-3119.45	1652182.38	14280938.35	39°19'36.597"N	80°57'30.218"W	5053.14	321.879	1.42	
11772.00	90.620	338.880	6429.87	4951.95	4060.83	-3158.37	1652143.48	14281023.82	39°19'37.442"N	80°57'30.713"W	5144.47	322.126	7.14	
11867.00	90.740	340.140	6428.74	5046.90	4149.81	-3191.62	1652110.24	14281112.76	39°19'38.322"N	80°57'31.136"W	5235.20	322.436	1.33	
11961.00	90.680	336.750	6427.57	5140.87	4237.22	-3226.15	1652075.73	14281200.14	39°19'39.186"N	80°57'31.575"W	5325.60	322.715	3.61	
12056.00	90.580	336.420	6426.53	5235.84	4324.39	-3263.90	1652038.00	14281287.27	39°19'40.048"N	80°57'32.054"W	5417.87	322.956	0.36	
12150.00	90.680	337.190	6425.49	5329.82	4410.78	-3300.92	1652000.99	14281373.63	39°19'40.902"N	80°57'32.525"W	5509.18	323.190	0.83	
12245.00	90.520	338.970	6424.50	5424.81	4498.91	-3336.38	1651965.54	14281461.72	39°19'41.773"N	80°57'32.976"W	5601.03	323.439	1.88	
12339.00	90.890	337.480	6423.34	5518.80	4586.19	-3371.24	1651930.69	14281548.97	39°19'42.636"N	80°57'33.419"W	5691.96	323.681	1.63	
12434.00	91.050	338.190	6421.74	5613.79	4674.16	-3407.08	1651894.87	14281636.90	39°19'43.505"N	80°57'33.874"W	5784.11	323.911	0.77	
12528.00	90.370	336.140	6420.57	5707.77	4760.78	-3443.55	1651858.41	14281723.49	39°19'44.362"N	80°57'34.338"W	5875.64	324.121	2.30	
12623.00	90.280	335.950	6420.03	5802.72	4847.60	-3482.13	1651819.85	14281810.27	39°19'45.220"N	80°57'34.829"W	5968.62	324.310	0.22	
12718.00	90.150	339.890	6419.67	5897.70	4935.61	-3517.83	1651784.16	14281898.25	39°19'46.090"N	80°57'35.282"W	6060.97	324.521	4.15	
12812.00	90.180	341.800	6419.40	5991.57	5024.40	-3548.67	1651753.33	14281987.00	39°19'46.968"N	80°57'35.674"W	6151.23	324.767	2.03	
12907.00	90.740	336.780	6418.64	6086.50	5113.23	-3582.25	1651719.76	14282075.80	39°19'47.846"N	80°57'36.101"W	6243.21	324.985	5.32	
13001.00	90.180	336.830	6417.89	6180.48	5199.63	-3619.28	1651682.76	14282162.16	39°19'48.700"N	80°57'36.572"W	6335.24	325.160	0.60	
13095.00	90.090	340.430	6417.66	6274.46	5287.15	-3653.52	1651648.52	14282249.65	39°19'49.565"N	80°57'37.007"W	6426.68	325.355	3.83	
13190.00	90.400	342.530	6417.26	6369.26	5377.23	-3683.70	1651618.36	14282339.69	39°19'50.455"N	80°57'37.391"W	6517.99	325.587	2.23	
13284.00	90.620	340.370	6416.42	6463.07	5466.33	-3713.60	1651588.47	14282428.76	39°19'51.336"N	80°57'37.771"W	6608.45	325.809	2.31	
13379.00	90.550	338.620	6415.45	6558.02	5555.31	-3746.87	1651555.21	14282517.70	39°19'52.216"N	80°57'38.194"W	6700.78	326.002	1.84	



Actual Wellpath Report  
Manos Unit 1H AWP Proj.: 16235  
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Operator	ANTERO RESOURCES CORPORATION
Area	Richie County, WV
Field	Richie
Facility	Buck Run Pad
Well	Manos Unit 1H
Wellbore	Manos Unit 1H AWB
Slot	Slot #01

WELLPATH DATA (331 stations)		MD	Inclination	Azimuth	TVD	Vert Sect	North	East	Grid East	Grid North	Latitude	Longitude	Closure Dist	Closure Dir	DLS	Comments
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	
13473.00	90.150	330.440	6414.88	6651.78	5640.10	-3787.26	1651514.84	14282602.45	14282602.45	39°19'53.054"N	80°57'38.707"W	6793.68	326.119	8.71		
13568.00	90.090	328.590	6414.68	6745.77	5721.96	-3835.45	1651466.67	14282684.28	14282684.28	39°19'53.863"N	80°57'39.320"W	6888.51	326.166	1.95		
13662.00	90.150	331.420	6414.48	6838.88	5803.36	-3882.44	1651419.70	14282765.65	14282765.65	39°19'54.668"N	80°57'39.918"W	6982.29	326.218	3.01		
13757.00	90.120	338.780	6414.26	6933.71	5889.47	-3922.41	1651379.74	14282851.73	14282851.73	39°19'55.519"N	80°57'40.426"W	7076.10	326.336	7.75		
13851.00	90.120	341.170	6414.06	7027.64	5977.78	-3954.60	1651347.57	14282940.00	14282940.00	39°19'56.392"N	80°57'40.835"W	7167.48	326.513	2.54		
13945.00	90.060	340.970	6413.91	7121.49	6066.70	-3985.09	1651317.09	14283028.88	14283028.88	39°19'57.271"N	80°57'41.222"W	7258.50	326.700	0.22		
14040.00	90.340	342.340	6413.58	7216.27	6156.87	-4014.99	1651287.20	14283119.01	14283119.01	39°19'58.162"N	80°57'41.603"W	7350.32	326.891	1.47		
14134.00	90.400	339.910	6412.97	7310.11	6245.81	-4045.40	1651258.81	14283207.92	14283207.92	39°19'59.042"N	80°57'41.989"W	7441.46	327.069	2.59		
14229.00	90.460	334.670	6412.26	7405.07	6333.41	-4082.06	1651220.16	14283295.48	14283295.48	39°19'59.908"N	80°57'42.455"W	7534.94	327.197	5.52		
14323.00	90.310	336.000	6411.63	7498.98	6418.83	-4121.29	1651180.95	14283380.87	14283380.87	39°20'00.752"N	80°57'42.954"W	7628.00	327.297	1.42		
14418.00	90.490	337.380	6410.96	7593.95	6506.07	-4158.38	1651143.37	14283468.07	14283468.07	39°20'01.614"N	80°57'43.432"W	7721.73	327.412	1.46		
14513.00	90.490	338.240	6410.15	7688.95	6594.03	-4194.75	1651107.51	14283556.00	14283556.00	39°20'02.484"N	80°57'43.888"W	7815.19	327.538	0.91		
14607.00	91.510	338.540	6408.51	7782.93	6681.41	-4229.37	1651072.91	14283643.34	14283643.34	39°20'03.348"N	80°57'44.328"W	7907.51	327.666	1.13		
14702.00	90.710	337.910	6406.67	7877.91	6769.61	-4264.60	1651037.69	14283731.51	14283731.51	39°20'04.220"N	80°57'44.776"W	8000.90	327.791	1.07		
14796.00	90.460	337.910	6405.71	7971.90	6856.71	-4299.95	1651002.36	14283818.57	14283818.57	39°20'05.081"N	80°57'45.225"W	8093.45	327.908	0.27		
14890.00	90.550	340.230	6404.88	8065.87	6944.49	-4333.53	1650968.79	14283906.32	14283906.32	39°20'05.948"N	80°57'45.652"W	8185.69	328.035	2.47		
14985.00	90.090	340.720	6404.35	8160.77	7034.03	-4365.28	1650937.06	14283995.82	14283995.82	39°20'06.833"N	80°57'46.056"W	8278.48	328.177	0.71		
15080.00	90.090	336.090	6404.20	8255.74	7122.34	-4400.23	1650902.12	14284084.10	14284084.10	39°20'07.706"N	80°57'46.500"W	8371.96	328.292	4.87		
15174.00	90.090	336.730	6404.06	8349.71	7208.48	-4437.85	1650864.51	14284170.20	14284170.20	39°20'08.558"N	80°57'46.978"W	8465.03	328.382	0.68		
15269.00	90.120	336.610	6403.88	8444.69	7295.71	-4475.47	1650826.91	14284257.40	14284257.40	39°20'09.420"N	80°57'47.457"W	8559.05	328.473	0.13		
15363.00	90.090	334.800	6403.71	8538.62	7381.38	-4514.14	1650788.25	14284343.04	14284343.04	39°20'10.267"N	80°57'47.949"W	8652.30	328.552	1.93		
15458.00	90.220	335.890	6403.45	8633.53	7467.72	-4553.77	1650748.64	14284429.34	14284429.34	39°20'11.121"N	80°57'48.452"W	8746.64	328.625	1.16		
15552.00	89.970	341.120	6403.30	8727.49	7555.15	-4588.20	1650714.22	14284516.74	14284516.74	39°20'11.985"N	80°57'48.890"W	8839.23	328.730	5.57		
15647.00	90.030	342.140	6403.30	8822.28	7645.31	-4618.14	1650684.29	14284606.86	14284606.86	39°20'12.876"N	80°57'49.271"W	8931.86	328.866	1.08		
15741.00	89.970	339.670	6403.30	8916.14	7734.13	-4648.89	1650653.56	14284695.65	14284695.65	39°20'13.754"N	80°57'49.662"W	9023.80	328.990	2.63		
15836.00	90.030	337.120	6403.30	9011.13	7822.45	-4683.87	1650618.59	14284783.93	14284783.93	39°20'14.627"N	80°57'50.106"W	9117.53	329.088	2.68		
15930.00	89.940	336.890	6403.32	9105.12	7908.98	-4720.59	1650581.89	14284870.42	14284870.42	39°20'15.483"N	80°57'50.573"W	9210.64	329.169	0.26		
16024.00	90.000	337.600	6403.37	9199.11	7995.67	-4756.95	1650543.54	14284957.07	14284957.07	39°20'16.339"N	80°57'51.036"W	9303.72	329.250	0.76		
16119.00	89.970	338.350	6403.39	9294.11	8083.73	-4792.57	1650509.93	14285045.10	14285045.10	39°20'17.210"N	80°57'51.489"W	9397.63	329.338	0.79		
16211.00	90.000	338.370	6403.42	9386.11	8169.25	-4826.50	1650476.02	14285130.59	14285130.59	39°20'18.055"N	80°57'51.920"W	9488.50	329.425	0.04		



# Actual Wellpath Report

Manos Unit 1H AWP Proj: 16235'

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REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #01
Area	Ritchie County, WV	Well	Manos Unit 1H
Field	Ritchie	Wellbore	Manos Unit 1H AWB
Facility	Buck Run Pad		

WELLPATH DATA (331 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 ["/1000]	Comments
16235.00	90.000	338.370	6403.42	9410.10	8191.56	-4835.35	1650467.18	14285152.89	39°20'18.276"N	80°57'52.032"W	9512.21	329.447	0.00	Projected MD at TD: 16235'

HOLE & CASING SECTIONS - Ref Wellbore: Manos Unit 1H AWB Ref Wellpath: Manos Unit 1H AWP Proj: 16235'									
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	25.00	65.00	40.00	25.00	65.00	0.00	0.00	-0.04	0.03
13.375in Casing Surface	25.00	591.00	566.00	25.00	591.00	0.00	0.00	-1.49	1.06
9.625in Casing Intermediate	25.00	2520.00	2495.00	25.00	2514.90	0.00	0.00	-101.88	34.91

TARGETS									
Name	MD [ft]	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
Manos Unit 1H POE Rev-2		6412.00	-346.24	-1365.46	1653935.67	14276618.52	39°18'53.875"N	80°57'07.927"W	point
Manos Unit 1H BHL Rev-1		6436.00	8180.84	-4835.94	1650466.58	14285142.18	39°20'18.170"N	80°57'52.040"W	point
Manos Unit 1H Landing Pt. Rev-1		6436.00	-181.13	-1432.66	1653868.49	14276783.57	39°18'55.508"N	80°57'08.781"W	point

WELLPATH COMPOSITION - Ref Wellbore: Manos Unit 1H AWB Ref Wellpath: Manos Unit 1H AWP Proj: 16235'				
Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
25.00	4817.00	Generic gyro - northseeking (Standard)	01_SDI Gyro (100' - 4805')	Manos Unit 1H AWB
4817.00	16211.00	NaviTrak (AT Curve Short Spaced)	02_BHI AT Curve <8-1/2">(4817')(5064'-16211')	Manos Unit 1H AWB
16211.00	16235.00	Blind Drilling (std)	Projection to bit	Manos Unit 1H AWB



# Actual Wellpath Report

Manos Unit 1H AWP Proj: 16235'

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REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #01
Area	Ritchie County, WV	Well	Manos Unit 1H
Field	Ritchie	Wellbore	Manos Unit 1H AWB
Facility	Buck Run Pad		

WELLPATH COMMENTS					
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]		Comment
112.00	0.330	144.670	112.00	SDI Gyro (112' - 4817')	
5064.00	24.900	241.420	4918.29	BHI AT Curve <8-1/2">(4817')(5064'-16211')	
6483.00	42.194	310.481	6156.05	Sycamore: 6,483' MD	
6626.00	51.894	320.860	6254.14	Middlesex: 6,626' MD	
6839.00	67.555	328.397	6360.44	Burkett: 6,839' MD	
6923.00	73.124	330.114	6388.65	Tully: 6,923' MD	
6994.00	75.606	332.972	6407.36	Marcellus: 6,994' MD	
16235.00	90.000	338.370	6403.42	Projected MD at TD: 16235'	

COMMENTS
Wellpath general comments API: 47-085-10180-0000 BHI Job #: 7794108 Rig: Patterson 343 Duration: 02.22.2016-02.29-2016 SDI Gyro (112' - 4817') BHI AT Curve <8-1/2">(4817')(5064'-16211') Sycamore: 6,483' MD Middlesex: 6,626' MD Burkett: 6,839' MD Tully: 6,923' MD Marcellus: 6,994' MD Projected MD at TD: 16235'