



ANTERO RESOURCES CORPORATION

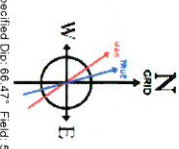


Location: Ritchie County, WV
 Field: Ritchie
 Facility: Highman Pad

Wellbore: Short Run Unit 2H PWB

API: 47-085-10340-0000
 BHI Job #: 109301663
 Rig: Frontier 22
 Duration: 07/15/2018-07/18/2018

BHI AT Curve <8-1/2"> (6892.50)(7063-18913) : 67.29° Inc. 7063.00ft MD, 6586.21ft TVD, 81.65ft VS
 Marcelius POE: 7113 MD : 73.02° Inc. 7113.00ft MD, 6603.8ft TVD, 128.65ft VS



User specified Dip: 66.47° Field: 51905 nT
 Magnetic North is 7.68 degrees West of True North (at 13.04/2018)
 Grid North is 0.07 degrees East of True North
 To correct magnetic to grid north:
 To correct azimuth from Magnetic to Grid subtract 7.75 degrees

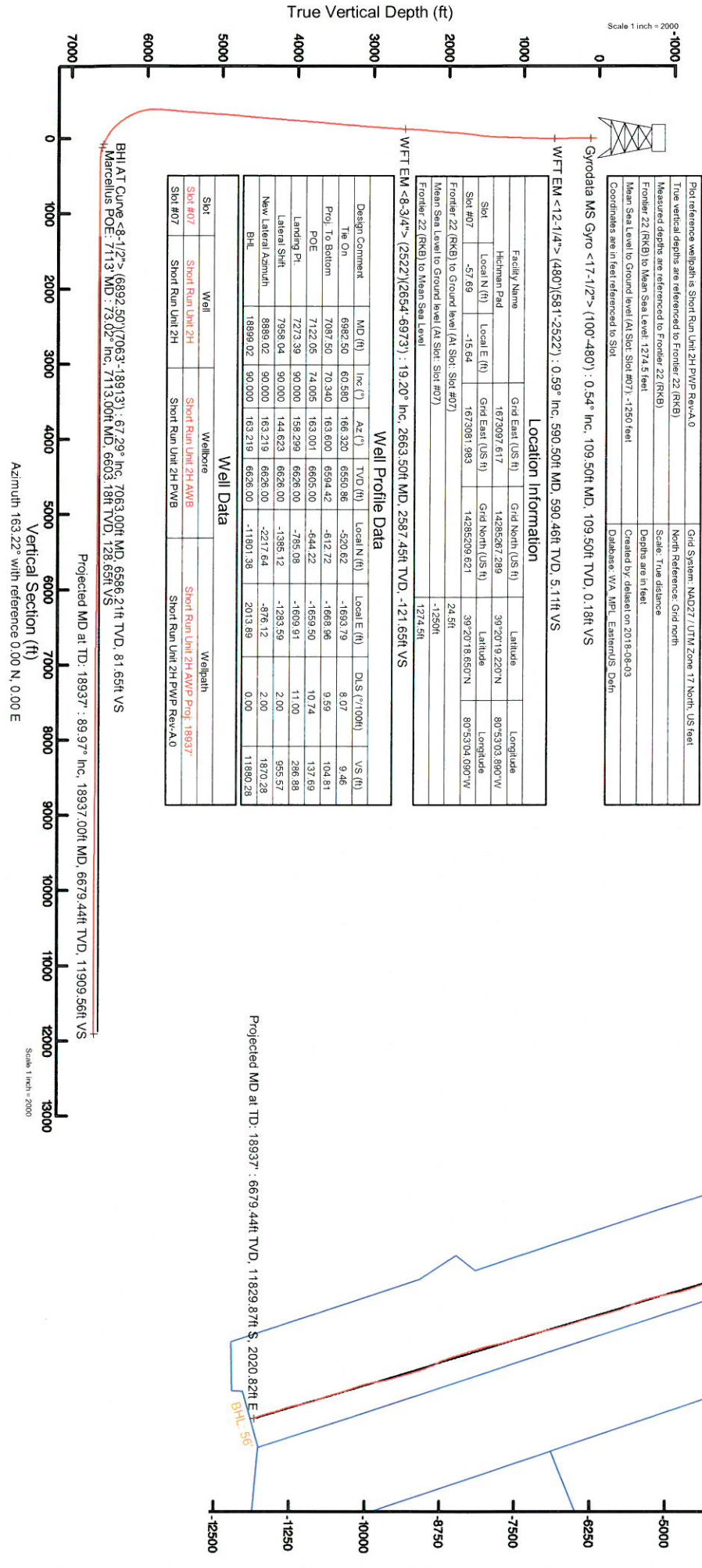
Plot reference wellbore is Short Run Unit 2H PWP Rev.A.0	Grid System: NAD27 / UTM Zone 17 North, US feet
True vertical depths are referenced to Frontier 22 (RKB)	North Reference: Grid north
Measured depths are referenced to Frontier 22 (RKB)	Scale: True distance
Frontier 22 (RKB) to Mean Sea Level: 1274.5 feet	Depths are in feet
Mean Sea Level to Ground level (At Slot: Slot #07) : -1250 feet	Created by: delaban@2018-08-03
Coordinates are in feet referenced to Slot	Database: WVA_MPL_EasternUS_DeIn

Gyrodata MS Gyro <17-1/2"> (100-480) : 0.54° Inc. 109.50ft MD, 109.50ft TVD, 0.18ft VS
 WFT EM <8-3/4"> (480)(581-2522) : 0.59° Inc. 590.50ft MD, 590.46ft TVD, 5.11ft VS

Location Information					
Facility Name	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude	
Highman Pad	1672907.617	14285267.289	39°20'19.220"N	80°53'03.890"W	
Slot #07	-57.69	-15.64	16729081.983	14285209.621	39°20'18.650"N 80°53'04.090"W
Frontier 22 (RKB) to Ground level (At Slot: Slot #07)			24.5ft		
Mean Sea Level to Ground level (At Slot: Slot #07)			-1250ft		
Frontier 22 (RKB) to Mean Sea Level			1274.5ft		

Well Profile Data							
Design Comment	MD (ft)	Inc (°)	Az (°)	Local N (ft)	Local E (ft)	DLS (V/100ft)	VS (ft)
The On	6982.50	60.580	166.320	6550.86	-520.62	-1693.79	9.46
Proj. To Bottom	7087.50	70.340	163.600	6594.42	-612.72	-1669.96	9.59
POE	7122.05	74.035	163.001	6605.00	-644.22	-1659.50	10.74
Landing Pt.	7273.39	90.000	158.299	6626.00	-795.08	-1609.91	11.00
Lateral Shift	7958.04	90.000	144.623	6626.00	-1283.59	-1283.59	955.57
New Lateral Azimuth	8898.02	90.000	163.219	6626.00	-2217.64	-876.12	2.00
BHI	18999.02	90.000	163.219	6626.00	-11801.38	2013.89	11890.28

Well Data			
Slot	Well	Wellbore	Wellpath
Slot #07	Short Run Unit 2H	Short Run Unit 2H AWB	Short Run Unit 2H AWB Proj: 18937
Slot #07	Short Run Unit 2H	Short Run Unit 2H PWB	Short Run Unit 2H PWB Rev.A.0





REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #07
Area	Ritchie County, WV	Well	Short Run Unit 2H
Field	Ritchie	Wellbore	Short Run Unit 2H AWB
Facility	Hichman Pad		

REPORT SETUP INFORMATION			
Projection System	NAD27 / UTM Zone 17 North, US feet	Software System	WellA architect@ 5.1
North Reference	Grid	User	Delaset
Scale	0.999601	Report Generated	03/Aug/2018 at 10:27
Convergence at slot	0.07° East	Database/Source file	WA_MPL_EasternUS_Defn/Short Run_Unit_2H_AWP_Proj_18937.xml

WELLPATH LOCATION						
	Local coordinates		Grid coordinates		Geographic coordinates	
	North(ft)	East(ft)	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	-57.69	-15.64	1673081.98	14285209.62	39°20'18.650"N	80°53'04.090"W
Facility Reference Pt			1673097.62	14285267.29	39°20'19.220"N	80°53'03.890"W
Field Reference Pt			0.00	0.00	0°00'00.000"	85°29'19.301"W

WELLPATH DATUM			
Calculation method	Minimum curvature	Frontier 22 (RKB) to Facility Vertical Datum	24.50ft
Horizontal Reference Pt	Slot	Frontier 22 (RKB) to Mean Sea Level	1274.50ft
Vertical Reference Pt	Frontier 22 (RKB)	Frontier 22 (RKB) to Ground Level at Slot (Slot #07)	24.50ft
MD Reference Pt	Frontier 22 (RKB)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	163.22°



Actual Wellpath Report

Short Run Unit 2H AWP Proj: 18937'
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REFERENCE WELLPATH IDENTIFICATION									
Operator	ANTERO RESOURCES CORPORATION								
Area	Ritchie County, WV								
Field	Ritchie								
Facility	Hichman Pad								

WELLPATH DATA (238 stations) + = interpolated/extrapolated station																
MD	Inclination	Azimuth	TVD	Vert Sect	North	East	Grid East	Grid North	Latitude	Longitude	Closure Dist	Closure Dir	DLS	Build Rate	Turn Rate	Comments
ft	°	°	ft	ft	ft	ft	US ft	US ft			ft	°	"/100ft	"/100ft	"/100ft	
0.00	0.000	226.640	0.00	0.00	0.00	0.00	1673081.98	14285209.62	39°20'18.650"N	80°53'04.090"W	0.00	0.000	0.00	0.00	0.00	
24.50	0.000	226.640	24.50	0.00	0.00	0.00	1673081.98	14285209.62	39°20'18.650"N	80°53'04.090"W	0.00	0.000	0.00	0.00	0.00	
109.50	0.540	226.640	109.50	0.18	-0.28	-0.29	1673081.69	14285209.35	39°20'18.647"N	80°53'04.094"W	0.40	226.640	0.64	0.64	-156.89	Gyrodata MS Gyro <17-112> (100.480)
134.50	0.310	217.100	134.50	0.27	-0.41	-0.42	1673081.57	14285209.21	39°20'18.646"N	80°53'04.095"W	0.59	225.542	0.96	-0.92	-38.16	
159.50	0.420	205.700	159.50	0.38	-0.55	-0.50	1673081.49	14285209.07	39°20'18.645"N	80°53'04.096"W	0.74	222.361	0.53	0.44	-45.60	
184.50	0.540	207.390	184.50	0.53	-0.73	-0.59	1673081.39	14285208.89	39°20'18.643"N	80°53'04.098"W	0.94	218.913	0.48	0.48	6.76	
209.50	0.570	194.630	209.50	0.72	-0.96	-0.68	1673081.31	14285208.66	39°20'18.641"N	80°53'04.099"W	1.17	215.265	0.51	0.12	-51.04	
234.50	0.590	199.410	234.49	0.93	-1.20	-0.75	1673081.23	14285208.42	39°20'18.638"N	80°53'04.100"W	1.42	212.068	0.21	0.08	19.12	
259.50	0.550	183.130	259.49	1.15	-1.44	-0.80	1673081.18	14285208.18	39°20'18.636"N	80°53'04.100"W	1.65	209.070	0.66	-0.16	-65.12	
284.50	0.510	191.620	284.49	1.36	-1.67	-0.83	1673081.15	14285207.95	39°20'18.634"N	80°53'04.101"W	1.87	206.431	0.35	-0.16	33.96	
309.50	0.630	194.960	309.49	1.57	-1.91	-0.89	1673081.10	14285207.71	39°20'18.631"N	80°53'04.101"W	2.11	204.915	0.50	0.48	13.36	
334.50	0.470	184.490	334.49	1.79	-2.15	-0.93	1673081.05	14285207.47	39°20'18.629"N	80°53'04.102"W	2.34	203.457	0.75	-0.64	-41.88	
359.50	0.700	191.560	359.49	2.02	-2.40	-0.97	1673081.01	14285207.22	39°20'18.626"N	80°53'04.102"W	2.59	202.022	0.96	0.92	28.28	
384.50	0.870	183.940	384.49	2.33	-2.74	-1.01	1673080.97	14285206.88	39°20'18.623"N	80°53'04.103"W	2.92	200.321	0.80	0.66	-30.48	
409.50	0.780	191.630	409.48	2.66	-3.09	-1.06	1673080.92	14285206.53	39°20'18.619"N	80°53'04.104"W	3.27	198.933	0.57	-0.36	30.76	
434.50	0.960	189.710	434.48	2.99	-3.47	-1.13	1673080.85	14285206.16	39°20'18.616"N	80°53'04.104"W	3.65	198.066	0.73	0.72	-7.68	
459.50	1.010	192.390	459.48	3.37	-3.89	-1.21	1673080.77	14285205.73	39°20'18.612"N	80°53'04.106"W	4.07	197.331	0.27	0.20	10.72	
484.50	1.000	188.390	484.47	3.76	-4.32	-1.29	1673080.69	14285205.30	39°20'18.607"N	80°53'04.107"W	4.51	196.659	0.28	-0.04	-16.00	
489.50	0.990	188.670	489.47	3.84	-4.41	-1.31	1673080.68	14285205.22	39°20'18.606"N	80°53'04.107"W	4.59	196.506	0.22	-0.20	5.60	
590.50	0.590	186.620	590.46	5.11	-5.78	-1.50	1673080.49	14285203.84	39°20'18.593"N	80°53'04.109"W	5.98	194.509	0.40	-0.40	-2.03	WFT EM <12-14> (480)(581.2522)
649.50	1.120	247.860	649.46	5.44	-6.30	-2.07	1673079.92	14285203.32	39°20'18.588"N	80°53'04.116"W	6.63	196.148	1.67	0.90	103.83	
739.50	3.420	270.630	739.38	4.72	-6.61	-5.57	1673076.42	14285203.02	39°20'18.585"N	80°53'04.161"W	8.64	220.119	2.70	2.56	25.28	
829.50	5.440	273.960	829.11	2.40	-6.28	-12.51	1673069.48	14285203.34	39°20'18.588"N	80°53'04.249"W	14.00	243.334	2.26	2.24	3.70	
924.50	6.200	269.700	923.62	0.65	-6.00	-22.13	1673059.86	14285203.63	39°20'18.591"N	80°53'04.372"W	22.93	254.838	0.92	0.80	-4.48	
1019.50	7.490	266.890	1017.94	-3.57	-6.36	-33.44	1673048.55	14285203.26	39°20'18.588"N	80°53'04.516"W	34.04	259.233	1.40	1.36	-2.96	
1113.50	9.570	266.890	1110.89	-6.86	-7.12	-47.36	1673048.55	14285203.26	39°20'18.580"N	80°53'04.693"W	47.90	261.456	2.21	2.21	0.00	
1208.50	11.150	263.190	1204.34	-10.32	-8.63	-64.37	1673017.64	14285200.99	39°20'18.565"N	80°53'04.909"W	64.95	262.361	1.80	1.66	-3.89	
1303.50	12.120	264.230	1297.39	-13.81	-10.73	-83.41	1672998.60	14285198.90	39°20'18.545"N	80°53'05.152"W	84.10	262.673	1.04	1.02	1.09	
1397.50	12.810	268.310	1389.18	-18.41	-12.03	-103.65	1672978.38	14285197.60	39°20'18.532"N	80°53'05.409"W	104.35	263.382	1.19	0.73	4.34	
1492.50	15.840	271.930	1481.21	-25.31	-11.90	-127.14	1672964.89	14285197.73	39°20'18.534"N	80°53'05.708"W	127.70	264.653	3.32	3.19	3.81	



Actual Wellpath Report

Short Run Unit 2H AWP Proj: 18937'
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REFERENCE WELLPATH IDENTIFICATION												
Operator	ANTERO RESOURCES CORPORATION										Slot	Slot #07
Area	Ritchie County, WV										Well	Short Run Unit 2H
Field	Ritchie										Wellbore	Short Run Unit 2H AWB
Facility	Hichman Pad											

WELLPATH DATA (238 stations)																
MD	Inclination	Azimuth	TVD	Vert Sect	North	East	Grid East	Grid North	Latitude	Longitude	Closure Dist	Closure Dir	DLS	Build Rate	Turn Rate	Comments
ftH	°	°	ftH	ftH	ftH	ftH	US ftH	US ftH			ftH	°	"/100ftH	"/100ftH	"/100ftH	
1586.50	19.050	274.330	1570.88	-34.96	-10.31	-155.27	1672926.78	14285199.32	39°20'18.550"N	80°53'06.066"W	155.61	266.202	3.50	3.41	2.55	
1681.50	19.890	274.720	1660.45	-46.46	-7.81	-186.83	1672895.23	14285201.82	39°20'18.575"N	80°53'06.468"W	187.00	267.607	0.89	0.88	0.41	
1775.50	20.240	273.570	1748.74	-57.98	-5.48	-219.00	1672863.07	14285204.14	39°20'18.599"N	80°53'06.877"W	219.06	268.567	0.56	0.37	-1.22	
1870.50	18.710	267.090	1838.31	-67.35	-5.23	-250.62	1672831.46	14285204.39	39°20'18.601"N	80°53'07.280"W	250.67	268.805	2.78	-1.61	-6.82	
1964.50	18.280	263.190	1927.46	-73.51	-7.74	-280.32	1672801.78	14285201.98	39°20'18.577"N	80°53'07.658"W	280.42	268.418	1.39	-0.46	-4.15	
2059.50	19.150	265.440	2017.44	-79.39	-10.75	-310.64	1672771.46	14285198.88	39°20'18.548"N	80°53'08.044"W	310.83	268.018	1.19	0.92	2.37	
2154.50	19.250	267.050	2107.16	-86.43	-12.79	-341.82	1672740.30	14285196.83	39°20'18.528"N	80°53'08.441"W	342.06	267.856	0.57	0.11	1.69	
2247.50	20.110	268.210	2194.72	-94.23	-14.08	-373.11	1672709.03	14285195.54	39°20'18.516"N	80°53'08.839"W	373.37	267.838	1.02	0.92	1.25	
2342.50	20.710	269.150	2283.76	-103.07	-14.84	-406.23	1672675.92	14285194.79	39°20'18.508"N	80°53'09.260"W	406.50	267.908	0.72	0.63	0.99	
2436.50	18.710	264.540	2372.25	-110.59	-16.52	-437.86	1672644.30	14285193.10	39°20'18.492"N	80°53'09.663"W	438.17	267.839	2.69	-2.13	-4.90	
2531.50	18.120	261.720	2462.39	-115.76	-20.10	-467.65	1672614.52	14285189.53	39°20'18.457"N	80°53'10.042"W	468.08	267.539	1.12	-0.62	-2.97	
2663.50	19.200	260.780	2587.45	-121.65	-26.53	-509.39	1672572.80	14285183.10	39°20'18.394"N	80°53'10.574"W	510.08	267.018	0.85	0.82	-0.71	WF EM -8-3/4" (2522)/2654-6973)
2758.50	18.250	263.450	2677.41	-126.36	-30.74	-539.61	1672542.59	14285178.90	39°20'18.353"N	80°53'10.958"W	540.48	266.740	1.32	-0.97	2.81	
2852.50	18.320	266.470	2766.66	-132.36	-33.33	-569.00	1672513.21	14285176.31	39°20'18.328"N	80°53'11.332"W	569.98	266.648	1.01	0.04	3.21	
2947.50	18.370	266.330	2856.83	-138.18	-35.21	-598.84	1672483.38	14285174.43	39°20'18.310"N	80°53'11.712"W	598.88	266.635	0.07	0.05	-0.15	
3041.50	18.490	265.540	2946.01	-145.72	-37.31	-628.48	1672453.75	14285172.32	39°20'18.289"N	80°53'12.090"W	629.59	266.602	0.29	0.13	-0.84	
3136.50	18.520	264.860	3036.10	-151.98	-39.84	-656.53	1672423.72	14285169.80	39°20'18.265"N	80°53'12.472"W	659.73	266.538	0.23	0.03	-0.72	
3230.50	18.710	267.740	3125.18	-158.77	-41.77	-688.46	1672393.80	14285167.87	39°20'18.246"N	80°53'12.853"W	689.73	266.528	1.00	0.20	3.06	
3325.50	18.560	267.710	3215.20	-168.37	-42.97	-718.80	1672363.48	14285166.66	39°20'18.234"N	80°53'13.239"W	720.08	266.579	0.16	-0.16	-0.03	
3419.50	18.170	266.940	3304.42	-173.59	-44.35	-748.38	1672333.90	14285165.29	39°20'18.222"N	80°53'13.616"W	749.69	266.608	0.49	-0.41	-0.82	
3519.50	19.130	267.600	3399.16	-181.36	-45.87	-780.32	1672301.97	14285163.77	39°20'18.206"N	80°53'14.022"W	781.67	266.636	0.98	0.96	0.66	
3613.50	18.750	267.570	3488.07	-188.93	-47.16	-810.80	1672271.50	14285162.48	39°20'18.194"N	80°53'14.410"W	812.17	266.671	1.40	-0.40	-0.03	
3708.50	19.830	268.220	3577.74	-196.88	-48.31	-842.17	1672240.16	14285161.33	39°20'18.183"N	80°53'14.809"W	843.55	266.717	1.16	1.14	0.68	
3802.50	19.720	267.740	3666.20	-204.99	-49.43	-873.95	1672208.39	14285160.21	39°20'18.172"N	80°53'15.214"W	875.34	266.763	0.21	-0.12	-0.51	
3896.50	19.080	267.440	3754.86	-212.74	-50.74	-905.14	1672177.20	14285158.90	39°20'18.160"N	80°53'15.611"W	906.56	266.792	0.69	-0.68	-0.32	
3991.50	18.400	266.180	3844.82	-219.91	-52.43	-935.62	1672146.74	14285157.21	39°20'18.143"N	80°53'15.999"W	937.08	266.793	0.83	-0.72	-1.33	
4086.50	18.750	266.380	3934.88	-226.75	-54.39	-966.80	1672116.57	14285155.25	39°20'18.124"N	80°53'16.383"W	967.33	266.717	0.35	0.35	0.21	
4180.50	19.610	266.970	4023.67	-233.93	-56.18	-996.61	1672085.77	14285153.46	39°20'18.107"N	80°53'16.775"W	998.19	266.774	0.96	0.94	0.63	
4274.50	19.220	266.530	4112.32	-241.24	-57.95	-1027.81	1672054.59	14285151.70	39°20'18.090"N	80°53'17.172"W	1029.44	266.773	0.44	-0.41	-0.47	
4368.50	19.870	267.060	4200.90	-248.63	-59.70	-1059.21	1672023.20	14285149.94	39°20'18.073"N	80°53'17.572"W	1060.89	266.774	0.72	0.69	0.56	



Actual Wellpath Report

Short Run Unit 2H AWP Proj: 18937
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REFERENCE WELLPATH IDENTIFICATION

Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #07
Area	Ritchie County, WV	Well	Short Run Unit 2H
Field	Ritchie	Wellbore	Short Run Unit 2H AWP
Facility	Hichman Pad		

WELLPATH DATA (238 stations)

MD	Inclination	Azimuth	TVD	Vert Sect	North	East	Grid East	Grid North	Latitude	Longitude	Closure Dist	Closure Dir	DLS	Build Rate	Turn Rate	Comments
ft	°	°	ft	ft	ft	ft	US ft	US ft			ft	°	ft/100ft	ft/100ft	ft/100ft	
4462.50	19.630	265.870	4289.37	-255.91	-61.66	-1090.91	1671991.51	14285147.98	39°20'18.054"N	80°53'17.975"W	1092.65	266.765	0.50	-0.26	-1.27	
4557.50	18.800	265.230	4379.08	-262.59	-64.08	-1122.08	1671960.35	14285145.56	39°20'18.031"N	80°53'18.372"W	1123.91	266.731	0.90	-0.87	-0.67	
4651.50	19.290	267.080	4467.94	-269.46	-66.13	-1152.68	1671929.76	14285143.51	39°20'18.011"N	80°53'18.762"W	1154.58	266.716	0.83	0.52	1.97	
4746.50	18.960	266.730	4557.69	-276.82	-67.81	-1183.76	1671898.70	14285141.83	39°20'17.994"N	80°53'19.157"W	1185.70	266.721	0.37	-0.35	-0.37	
4841.50	19.660	268.160	4647.35	-284.55	-69.21	-1215.14	1671867.33	14285140.44	39°20'17.981"N	80°53'19.557"W	1217.11	266.740	0.89	0.74	1.51	
4936.50	19.600	268.610	4736.83	-292.90	-70.11	-1247.04	1671835.44	14285139.54	39°20'17.973"N	80°53'19.963"W	1249.01	266.782	0.17	-0.06	0.47	
5030.50	19.370	268.070	4825.44	-301.08	-71.01	-1278.38	1671804.11	14285138.64	39°20'17.964"N	80°53'20.362"W	1280.36	266.820	0.31	-0.24	-0.57	
5125.50	19.140	267.080	4915.13	-308.84	-72.34	-1309.68	1671772.82	14285137.31	39°20'17.951"N	80°53'20.760"W	1311.68	266.839	0.42	-0.24	-1.04	
5219.50	18.680	265.870	5004.06	-315.83	-74.21	-1340.09	1671742.43	14285135.44	39°20'17.933"N	80°53'21.147"W	1342.14	266.830	0.64	-0.49	-1.29	
5313.50	18.520	264.970	5093.15	-322.17	-76.60	-1369.97	1671712.56	14285133.05	39°20'17.910"N	80°53'21.527"W	1372.11	266.800	0.35	-0.17	-0.96	
5408.50	20.160	265.570	5182.78	-328.74	-79.19	-1401.33	1671681.22	14285130.46	39°20'17.885"N	80°53'21.926"W	1403.56	266.766	1.74	1.73	0.63	
5502.50	20.180	265.070	5271.02	-335.54	-81.83	-1433.63	1671648.93	14285127.82	39°20'17.859"N	80°53'22.338"W	1435.96	266.733	0.18	0.02	-0.53	
5596.50	20.480	263.550	5359.16	-341.82	-85.07	-1466.12	1671616.45	14285124.58	39°20'17.827"N	80°53'22.751"W	1468.59	266.679	0.65	0.32	-1.62	
5691.50	20.490	264.980	5448.16	-348.18	-88.40	-1499.20	1671583.38	14285121.26	39°20'17.795"N	80°53'23.172"W	1501.81	266.626	0.53	0.01	1.51	
5785.50	19.750	268.690	5536.42	-355.77	-90.20	-1531.47	1671551.13	14285119.46	39°20'17.777"N	80°53'23.583"W	1534.13	266.629	1.57	-0.79	3.95	
5880.50	18.940	267.440	5626.06	-363.84	-91.25	-1562.92	1671519.69	14285118.40	39°20'17.767"N	80°53'23.983"W	1565.58	266.658	0.96	-0.85	-1.32	
5974.50	19.390	265.740	5714.85	-370.97	-93.09	-1593.72	1671488.90	14285116.56	39°20'17.750"N	80°53'24.375"W	1596.44	266.657	0.76	0.48	-1.81	
6069.50	18.940	264.430	5804.59	-377.39	-95.76	-1624.79	1671457.84	14285113.90	39°20'17.724"N	80°53'24.771"W	1627.61	266.627	0.66	-0.47	-1.38	
6164.50	18.260	254.100	5894.65	-380.62	-101.34	-1654.46	1671428.19	14285108.32	39°20'17.669"N	80°53'25.148"W	1657.56	266.495	3.54	-0.72	-10.87	
6195.50	17.850	247.030	5984.12	-380.18	-104.52	-1663.51	1671419.14	14285105.14	39°20'17.637"N	80°53'25.264"W	1666.79	266.405	7.19	-1.32	-22.81	
6227.50	17.670	229.560	5954.60	-378.50	-108.90	-1672.21	1671410.44	14285100.77	39°20'17.594"N	80°53'25.374"W	1675.75	266.274	7.14	-0.56	-23.34	
6258.50	18.110	231.620	5984.11	-375.62	-114.27	-1680.04	1671402.61	14285095.39	39°20'17.541"N	80°53'25.474"W	1683.93	266.109	7.99	1.42	-25.61	
6289.50	18.790	224.370	6013.52	-371.43	-120.83	-1687.31	1671388.43	14285088.83	39°20'17.476"N	80°53'25.567"W	1691.63	265.904	7.71	2.19	-23.39	
6321.50	20.110	217.070	6043.70	-365.70	-128.91	-1694.24	1671382.24	14285080.76	39°20'17.397"N	80°53'25.734"W	1706.02	265.960	7.89	4.68	-17.87	
6352.50	21.560	211.530	6102.29	-350.33	-148.60	-1706.30	1671376.37	14285061.08	39°20'17.202"N	80°53'25.809"W	1712.76	265.023	7.20	4.31	-15.25	
6384.50	22.940	206.650	6130.69	-340.96	-159.93	-1711.41	1671371.26	14285049.75	39°20'17.090"N	80°53'25.874"W	1718.86	264.661	7.53	4.58	-14.90	
6415.50	24.360	202.030	6159.67	-330.04	-172.71	-1715.94	1671366.73	14285036.98	39°20'16.964"N	80°53'25.932"W	1724.61	264.253	7.85	4.53	-15.13	
6447.50	25.810	197.190	6187.36	-318.27	-186.13	-1719.70	1671362.98	14285023.57	39°20'16.832"N	80°53'25.960"W	1729.74	263.823	7.36	5.90	-9.77	
6478.50	27.640	194.160	6214.65	-305.45	-200.48	-1722.90	1671359.78	14285009.22	39°20'16.690"N	80°53'26.021"W	1734.52	263.363	6.51	4.42	-10.06	
6509.50	29.010	191.040	6242.91	-292.74	-215.44	-1727.61	1671357.03	14284994.95	39°20'16.544"N	80°53'26.079"W	1739.65	262.903	5.82	3.88	-10.37	



Actual Wellpath Report

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REFERENCE WELLPATH IDENTIFICATION									
Operator	ANTERO RESOURCES CORPORATION								
Area	Ritchie County, WV								
Field	Ritchie								
Facility	Hichman Pad								
Slot	Slot #07								
Well	Wellbore								
Wellbore	Short Run Unit 2H AWP								

WELLPATH DATA (238 stations)																
MD	Inclination	Azimuth	TVD	Vert Sect	+ = interpolated/extrapolated station				Closure	Dist	Dir	DLS	Build Rate	Turn Rate	Comments	
					ft	ft	ft	ft								ft
6541.50	30.500	188.410	6242.43	-291.24	-216.13	-1725.57	1671357.10	14284993.58	39°20'16.535"N	80°53'26.055"W	1739.05	262.861	6.19	4.66	-8.22	
6572.50	32.170	185.380	6268.91	-276.48	-232.13	-1727.49	1671355.18	14284977.58	39°20'16.377"N	80°53'26.080"W	1743.02	262.347	7.41	5.39	-9.77	
6604.50	34.250	182.560	6295.69	-260.09	-249.61	-1728.70	1671353.98	14284960.11	39°20'16.204"N	80°53'26.096"W	1746.62	261.784	8.09	6.50	-8.81	
6636.50	36.930	180.460	6321.71	-242.41	-268.22	-1729.18	1671353.50	14284941.50	39°20'16.020"N	80°53'26.102"W	1749.85	261.183	9.20	8.37	-6.56	
6667.50	38.800	178.240	6346.18	-224.13	-287.25	-1728.95	1671353.72	14284922.49	39°20'15.832"N	80°53'26.099"W	1752.65	260.567	7.46	6.03	-7.16	
6699.50	40.240	176.940	6370.86	-204.40	-307.59	-1728.09	1671354.58	14284902.15	39°20'15.631"N	80°53'26.089"W	1755.25	259.907	5.19	4.50	-4.06	
6730.50	41.620	175.850	6394.29	-184.63	-327.86	-1726.81	1671355.86	14284881.89	39°20'15.431"N	80°53'26.073"W	1757.66	259.250	5.01	4.45	-3.52	
6762.50	43.300	174.530	6417.89	-163.50	-349.38	-1725.00	1671357.68	14284860.38	39°20'15.218"N	80°53'26.050"W	1760.02	258.550	5.94	5.25	-4.12	
6793.50	45.010	172.650	6439.98	-142.10	-370.99	-1722.56	1671360.11	14284838.78	39°20'15.004"N	80°53'26.019"W	1762.06	257.846	9.15	8.10	-6.06	
6825.50	46.090	171.550	6461.62	-118.82	-394.34	-1719.32	1671363.36	14284815.44	39°20'14.774"N	80°53'25.978"W	1763.96	257.082	10.56	10.25	-3.44	
6856.50	45.580	170.880	6481.19	-95.02	-418.09	-1715.64	1671367.03	14284791.70	39°20'14.539"N	80°53'25.932"W	1765.85	256.304	11.38	11.26	-2.16	
6887.50	54.500	169.500	6499.62	-70.27	-442.65	-1711.39	1671371.28	14284767.15	39°20'14.296"N	80°53'25.878"W	1767.71	255.498	7.15	6.19	-4.45	
6919.50	56.480	167.580	6517.75	-44.02	-468.49	-1706.15	1671376.52	14284741.32	39°20'14.041"N	80°53'25.812"W	1769.30	254.646	7.90	6.19	-5.97	
6950.50	58.000	166.400	6534.52	-18.01	-493.89	-1700.28	1671382.38	14284715.93	39°20'13.790"N	80°53'25.738"W	1770.56	253.803	5.87	4.90	-3.84	
6960.00	58.766	166.376	6539.50	-9.93	-501.75	-1698.38	1671384.29	14284708.07	39°20'13.722"N	80°53'25.714"W	1770.94	253.541	8.07	8.06	-0.25	Burkett: 6960' MD
7026.00	60.580	166.320	6550.86	9.46	-520.62	-1693.79	1671388.87	14284689.21	39°20'13.525"N	80°53'25.656"W	1772.00	252.914	8.07	8.33	-0.25	
7063.00	67.290	165.480	6586.21	81.65	-590.71	-1676.17	1671406.48	14284619.14	39°20'13.832"N	80°53'25.432"W	1774.55	251.672	8.39	8.34	-1.07	Tully: 7026' MD
7113.00	73.020	163.780	6603.18	128.65	-636.04	-1663.70	1671418.95	14284573.84	39°20'12.384"N	80°53'25.274"W	1781.14	249.078	11.90	11.46	-3.40	BH: AT Curve <-8-1/2'> (6892.50)(7063-18913)
7138.00	75.890	162.970	6609.88	152.73	-659.11	-1656.81	1671425.84	14284550.77	39°20'12.156"N	80°53'25.187"W	1783.10	248.306	11.90	11.48	-3.24	Marcellus POE: 7113' MD
7185.00	81.690	162.350	6619.01	198.81	-703.10	-1643.07	1671439.57	14284506.80	39°20'11.721"N	80°53'25.013"W	1787.19	246.833	12.41	12.34	-1.32	
7233.00	86.800	162.960	6623.82	246.55	-748.67	-1628.84	1671453.80	14284461.25	39°20'11.270"N	80°53'24.832"W	1792.66	245.315	10.72	10.65	-1.27	
7280.00	89.750	162.510	6625.24	293.52	-793.53	-1614.90	1671467.73	14284416.41	39°20'10.827"N	80°53'24.656"W	1799.33	243.831	6.35	6.28	-0.96	
7327.00	89.820	160.360	6625.42	340.50	-838.08	-1599.94	1671482.69	14284371.88	39°20'10.386"N	80°53'24.486"W	1806.15	242.353	4.58	4.57	-4.57	
7421.00	89.750	157.830	6625.77	434.25	-925.89	-1566.60	1671516.21	14284284.11	39°20'09.518"N	80°53'24.040"W	1819.58	239.413	2.69	2.69	-0.07	
7516.00	89.820	156.690	6626.12	528.73	-1013.50	-1529.68	1671552.92	14284196.53	39°20'08.652"N	80°53'23.574"W	1834.96	236.473	1.20	1.20	0.07	
7612.00	89.290	152.540	6626.87	623.63	-1100.21	-1488.53	1671594.05	14284109.85	39°20'07.794"N	80°53'23.052"W	1851.00	233.531	4.36	-0.55	-4.32	
7708.00	89.290	147.080	6628.06	716.97	-1183.15	-1440.28	1671642.28	14284026.95	39°20'06.974"N	80°53'22.439"W	1863.93	230.598	5.69	0.00	-5.69	
7803.00	90.980	146.000	6627.84	807.96	-1262.40	-1387.90	1671694.64	14283947.73	39°20'06.190"N	80°53'21.771"W	1876.15	227.711	2.11	1.78	-1.14	
7898.00	90.150	145.160	6626.90	898.49	-1340.76	-1334.21	1671748.31	14283869.40	39°20'05.415"N	80°53'21.092"W	1891.49	224.860	1.24	-0.87	-0.88	



Actual Wellpath Report

Short Run Unit 2H AWP Proj: 18937

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REFERENCE WELLPATH IDENTIFICATION

Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #07
Area	Ritchie County, WV	Well	Short Run Unit 2H
Field	Ritchie	Wellbore	Short Run Unit 2H AWB
Facility	Hichman Pad		

WELLPATH DATA (238 stations)

MD	Inclination	Azimuth	TVD	Vert Sect	North	East	Grid East	Grid North	Latitude	Longitude	Closure Dist	Closure Dir	DLS	Build Rate	Turn Rate	Comments
ft	°	°	ft	ft	ft	ft	US ft	US ft			ft	°	"/100ft	"/100ft	"/100ft	
7993.00	89.720	146.590	6627.01	989.17	-1419.40	-1280.91	1671801.58	14283790.79	39°20'04.637"N	80°53'20.415"W	1911.92	222.064	1.57	-0.45	1.51	
8088.00	89.380	151.300	6627.75	1081.21	-1500.76	-1231.92	1671850.56	14283709.46	39°20'03.832"N	80°53'19.793"W	1941.63	219.381	4.97	-0.36	4.96	
8182.00	89.080	158.630	6629.02	1174.16	-1585.86	-1192.17	1671890.29	14283624.39	39°20'02.991"N	80°53'19.288"W	1984.00	216.934	7.80	-0.32	7.80	
8277.00	89.510	156.090	6630.19	1268.65	-1673.53	-1155.61	1671926.84	14283536.76	39°20'02.124"N	80°53'18.824"W	2033.75	214.626	2.71	0.45	-2.67	
8373.00	89.350	154.920	6631.14	1363.77	-1760.88	-1115.81	1671966.62	14283449.44	39°20'01.260"N	80°53'18.319"W	2084.64	212.361	1.23	-0.17	-1.22	
8468.00	89.420	157.460	6632.16	1458.05	-1847.78	-1077.46	1672004.95	14283362.58	39°20'00.401"N	80°53'17.832"W	2138.98	210.247	2.67	0.07	2.67	
8563.00	89.420	157.020	6633.13	1552.52	-1935.38	-1040.71	1672041.69	14283275.01	39°19'59.534"N	80°53'17.366"W	2197.45	208.268	0.46	0.00	-0.46	
8657.00	89.350	155.340	6634.13	1645.81	-2021.37	-1002.75	1672079.63	14283189.06	39°19'58.684"N	80°53'16.884"W	2256.42	206.385	1.79	-0.07	-1.79	
8752.00	89.350	154.670	6635.21	1739.82	-2107.46	-962.61	1672119.75	14283103.00	39°19'57.833"N	80°53'16.375"W	2316.90	204.549	0.71	0.00	-0.71	
8846.00	89.260	155.610	6636.35	1832.88	-2192.75	-923.10	1672159.25	14283017.75	39°19'56.989"N	80°53'15.873"W	2379.13	202.830	1.00	-0.10	-1.00	
8942.00	89.350	155.610	6637.52	1928.03	-2280.17	-883.46	1672198.88	14282930.36	39°19'56.125"N	80°53'15.370"W	2445.34	201.179	0.09	0.09	0.09	
9036.00	89.940	157.150	6638.10	2021.36	-2366.29	-845.80	1672236.52	14282844.28	39°19'55.273"N	80°53'14.892"W	2512.91	199.669	1.75	0.63	1.64	
9131.00	89.940	158.220	6638.20	2115.91	-2454.18	-809.73	1672272.58	14282756.43	39°19'54.404"N	80°53'14.409"W	2584.31	198.260	1.13	0.00	1.13	
9226.00	89.820	160.390	6638.40	2210.69	-2543.04	-776.16	1672306.14	14282667.60	39°19'53.525"N	80°53'13.930"W	2658.85	196.973	2.29	-0.13	-2.28	
9321.00	89.850	163.470	6638.67	2305.65	-2633.35	-746.70	1672335.59	14282577.33	39°19'52.632"N	80°53'13.635"W	2737.16	195.831	3.24	0.03	3.24	
9416.00	89.850	165.040	6638.92	2400.63	-2724.78	-720.92	1672361.35	14282485.94	39°19'51.728"N	80°53'13.309"W	2818.53	194.820	1.65	0.00	1.65	
9512.00	89.880	166.150	6639.15	2496.55	-2817.76	-697.04	1672385.23	14282392.99	39°19'50.809"N	80°53'13.006"W	2902.69	193.894	1.16	0.03	1.16	
9606.00	90.000	164.800	6639.24	2590.47	-2908.75	-673.46	1672408.79	14282302.04	39°19'49.909"N	80°53'12.708"W	2985.70	193.036	1.44	0.13	-1.44	
9701.00	90.000	163.520	6639.24	2685.46	-3000.14	-647.53	1672434.71	14282210.68	39°19'49.006"N	80°53'12.379"W	3069.23	192.180	1.35	0.00	-1.35	
9795.00	89.880	162.130	6639.34	2779.45	-3089.95	-619.77	1672462.46	14282120.91	39°19'48.118"N	80°53'12.027"W	3151.49	191.342	1.48	-0.13	-1.48	
9890.00	89.630	161.500	6639.75	2874.42	-3180.20	-590.13	1672492.09	14282030.69	39°19'47.225"N	80°53'11.652"W	3234.49	190.512	0.71	-0.26	-0.66	
9984.00	89.820	162.360	6640.20	2968.40	-3269.56	-560.97	1672521.24	14281941.37	39°19'46.342"N	80°53'11.282"W	3317.34	189.736	0.94	0.20	0.91	
10079.00	89.880	163.760	6640.45	3063.39	-3360.44	-533.29	1672548.91	14281850.53	39°19'45.443"N	80°53'10.931"W	3402.49	189.017	1.48	0.06	1.47	
10174.00	89.750	166.100	6640.76	3158.34	-3452.17	-508.59	1672573.59	14281758.84	39°19'44.536"N	80°53'10.618"W	3489.43	188.381	2.47	-0.14	-2.46	
10268.00	89.820	164.190	6641.11	3252.29	-3543.02	-484.49	1672597.68	14281668.02	39°19'43.638"N	80°53'10.313"W	3575.99	187.787	2.03	0.07	-2.03	
10363.00	89.780	162.990	6641.44	3347.28	-3634.15	-457.66	1672624.51	14281576.93	39°19'42.737"N	80°53'09.973"W	3662.85	187.178	1.26	-0.04	-1.26	
10458.00	89.690	163.760	6641.88	3442.28	-3725.17	-430.48	1672651.68	14281485.94	39°19'41.837"N	80°53'09.629"W	3749.96	186.592	0.82	-0.09	0.81	
10552.00	89.670	164.040	6642.41	3536.27	-3815.49	-404.41	1672677.74	14281395.66	39°19'40.944"N	80°53'09.298"W	3836.86	186.050	0.30	-0.03	0.30	
10647.00	89.960	160.080	6642.72	3631.23	-3905.85	-375.15	1672706.98	14281305.34	39°19'40.051"N	80°53'08.928"W	3923.82	185.466	4.18	0.33	-4.17	
10742.00	90.680	161.100	6642.18	3726.13	-3995.45	-343.58	1672738.54	14281215.78	39°19'39.165"N	80°53'08.527"W	4010.19	184.915	1.31	0.75	1.07	



Actual Wellpath Report

Short Run Unit 2H AWP Proj: 18937

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REFERENCE WELLPATH IDENTIFICATION

Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #07
Area	Ritche County, WV	Well	Short Run Unit 2H
Field	Ritche	Wellbore	Short Run Unit 2H AWB
Facility	Hichman Pad		

WELLPATH DATA (238 stations)

MD	Inclination	Azimuth	TVD	Vert Sect	North	East	Grid East	Grid North	Latitude	Longitude	Closure Dist	Closure Dir	DLS	Build Rate	Turn Rate	Comments
ft	°	°	ft	ft	ft	ft	US ft	US ft			ft	°	ft/100ft	ft/100ft	ft/100ft	
10837.00	89.940	160.870	6641.67	3821.05	-4085.26	-312.63	1672769.48	14281126.00	39°19'38.277"N	80°53'08.135"W	4097.20	184.376	0.82	-0.78	-0.24	
10932.00	89.910	159.470	6641.79	3915.92	-4174.62	-280.41	1672801.69	14281036.67	39°19'37.393"N	80°53'07.726"W	4184.03	183.843	1.47	-0.03	-1.47	
11027.00	89.820	159.900	6642.02	4010.74	-4263.71	-247.42	1672834.66	14280947.62	39°19'36.512"N	80°53'07.308"W	4270.89	183.321	0.46	-0.09	0.45	
11122.00	89.910	161.550	6642.24	4105.64	-4353.39	-216.07	1672866.00	14280857.98	39°19'35.625"N	80°53'06.910"W	4358.74	182.841	1.74	0.09	1.74	
11217.00	89.850	160.200	6642.44	4200.56	-4443.14	-184.94	1672897.12	14280768.26	39°19'34.738"N	80°53'06.516"W	4446.99	182.384	1.42	-0.06	-1.42	
11311.00	89.690	161.170	6642.82	4294.47	-4531.85	-153.85	1672928.19	14280679.59	39°19'33.861"N	80°53'06.121"W	4534.46	181.944	1.05	-0.17	1.03	
11406.00	89.660	161.920	6643.35	4389.42	-4621.96	-123.78	1672958.25	14280589.51	39°19'32.970"N	80°53'05.740"W	4623.62	181.534	0.79	-0.03	0.79	
11501.00	89.510	164.700	6644.04	4484.41	-4712.55	-96.50	1672988.52	14280498.56	39°19'32.070"N	80°53'05.395"W	4713.93	181.173	2.93	-0.16	2.93	
11596.00	89.750	166.860	6644.66	4579.31	-4805.03	-73.16	1673008.85	14280406.52	39°19'31.160"N	80°53'05.099"W	4805.58	180.872	2.29	0.25	2.27	
11689.00	89.780	168.130	6645.04	4672.05	-4895.82	-53.03	1673028.98	14280315.76	39°19'30.262"N	80°53'04.844"W	4896.11	180.621	1.37	0.03	1.37	
11783.00	89.850	168.400	6645.34	4765.68	-4987.65	-33.91	1673048.09	14280223.77	39°19'29.352"N	80°53'04.603"W	4987.97	180.390	0.30	0.07	0.29	
11878.00	89.820	167.360	6645.61	4860.37	-5080.73	-13.96	1673068.02	14280130.92	39°19'28.434"N	80°53'04.350"W	5080.75	180.157	1.10	-0.03	-1.09	
11970.00	89.820	167.390	6645.90	4952.12	-5170.51	6.14	1673088.13	14280041.18	39°19'27.546"N	80°53'04.096"W	5170.51	179.932	0.03	0.00	0.03	
12065.00	89.850	164.520	6646.18	5047.01	-5262.66	29.20	1673111.17	14279949.07	39°19'26.635"N	80°53'03.804"W	5262.74	179.682	3.02	0.03	-3.02	
12160.00	89.720	162.280	6646.53	5142.00	-5353.69	56.34	1673138.30	14279858.07	39°19'25.735"N	80°53'03.460"W	5353.99	179.397	2.36	-0.14	-2.36	
12254.00	89.690	158.870	6647.02	5235.88	-5442.33	87.59	1673169.54	14279769.47	39°19'24.859"N	80°53'03.064"W	5443.03	179.078	3.63	-0.03	-3.63	
12349.00	89.690	157.950	6647.53	5330.49	-5530.43	123.13	1673205.07	14279681.41	39°19'23.988"N	80°53'02.613"W	5531.80	178.725	1.77	0.00	-1.77	
12443.00	89.690	157.950	6648.04	5424.03	-5617.31	159.00	1673240.92	14279594.56	39°19'23.128"N	80°53'02.158"W	5619.56	178.379	0.81	0.00	0.81	
12538.00	89.290	159.470	6648.89	5518.73	-5705.82	193.49	1673275.39	14279506.09	39°19'22.253"N	80°53'01.721"W	5709.10	178.058	1.65	-0.42	1.60	
12633.00	89.350	162.710	6650.01	5613.65	-5795.68	224.27	1673306.16	14279416.27	39°19'21.365"N	80°53'01.331"W	5800.01	177.784	3.41	0.06	3.41	
12728.00	89.480	164.770	6650.98	5708.63	-5886.87	250.87	1673332.75	14279325.11	39°19'20.463"N	80°53'00.994"W	5892.21	177.560	2.17	0.14	2.17	
12823.00	89.510	164.420	6651.82	5803.60	-5978.45	276.10	1673357.97	14279233.57	39°19'19.558"N	80°53'00.674"W	5984.82	177.356	0.37	0.03	-0.37	
12918.00	89.510	163.940	6652.63	5898.58	-6069.65	302.00	1673383.86	14279142.20	39°19'18.654"N	80°53'00.346"W	6077.36	177.152	0.51	0.00	-0.51	
13012.00	89.450	164.390	6653.49	5992.57	-6160.28	327.65	1673409.50	14279051.81	39°19'17.760"N	80°53'00.021"W	6168.98	176.955	0.48	-0.06	0.48	
13106.00	89.510	164.890	6654.34	6086.53	-6250.92	352.55	1673434.39	14278961.21	39°19'16.864"N	80°52'59.706"W	6260.85	176.772	0.54	0.06	0.53	
13201.00	89.320	163.400	6655.31	6181.51	-6342.29	378.50	1673460.33	14278869.87	39°19'15.960"N	80°52'59.377"W	6353.58	176.585	1.58	-0.20	-1.57	
13296.00	88.680	161.880	6656.97	6276.49	-6432.95	406.84	1673488.66	14278779.25	39°19'15.064"N	80°52'59.018"W	6445.80	176.391	1.74	-0.67	-1.60	
13391.00	89.320	162.370	6658.63	6371.46	-6523.55	435.99	1673517.80	14278688.89	39°19'14.170"N	80°52'58.648"W	6537.90	176.176	0.85	0.67	0.52	
13486.00	89.110	162.840	6659.93	6466.44	-6614.00	464.39	1673546.19	14278598.28	39°19'13.274"N	80°52'58.289"W	6630.28	175.994	0.54	-0.22	0.49	
13580.00	89.170	164.130	6661.34	6560.43	-6704.11	491.11	1673572.89	14278508.20	39°19'12.383"N	80°52'57.950"W	6722.07	175.810	1.37	0.06	1.37	



Actual Wellpath Report

Short Run Unit 2H AWP Proj: 18937'
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REFERENCE WELLPATH IDENTIFICATION									
Operator	ANTERO RESOURCES CORPORATION								
Area	Ritchie County, WV								
Field	Ritchie								
Facility	Hichman Pad								

WELLPATH DATA (238 stations)																
MD	Inclination	Azimuth	TVD	Vert Sect	North	East	Grid East	Grid North	Latitude	Longitude	Closure Dist	Closure Dir	DLS	Build Rate	Turn Rate	Comments
ft	°	°	ft	ft	ft	ft	US ft	US ft			ft	°	ft/100ft	ft/100ft	ft/100ft	
13675.00	89.230	164.860	6662.67	6655.40	-6795.64	516.50	1673598.28	14278416.70	39°19'11.478"N	80°52'57.629"W	6815.24	175.654	0.77	0.06	0.77	
13770.00	89.540	166.010	6663.68	6750.32	-6887.58	540.39	1673822.16	14278324.80	39°19'10.569"N	80°52'57.326"W	6908.75	175.514	1.25	0.33	1.21	
13865.00	89.570	166.780	6664.42	6845.17	-6979.91	562.74	1673644.49	14278232.51	39°19'09.656"N	80°52'57.043"W	7002.56	175.391	0.81	0.03	0.81	
13961.00	89.630	165.670	6665.09	6941.03	-7073.15	585.59	1673667.34	14278139.31	39°19'08.734"N	80°52'56.754"W	7097.34	175.267	1.16	0.06	-1.16	
14054.00	89.570	166.020	6665.74	7033.93	-7163.32	608.34	1673690.07	14278049.17	39°19'07.843"N	80°52'56.466"W	7189.10	175.146	0.38	-0.06	0.38	
14148.00	89.720	163.900	6666.32	7127.88	-7254.09	632.73	1673714.46	14277958.44	39°19'06.949"N	80°52'56.157"W	7281.63	175.015	2.26	0.16	-2.26	
14244.00	89.780	162.750	6666.74	7223.88	-7346.05	660.27	1673741.99	14277866.51	39°19'06.036"N	80°52'55.808"W	7375.67	174.864	1.20	0.06	-1.20	
14338.00	89.920	160.630	6667.07	7317.84	-7435.29	689.80	1673771.51	14277777.31	39°19'05.153"N	80°52'55.434"W	7467.22	174.700	2.26	0.04	-2.26	
14431.00	89.910	162.370	6667.29	7410.79	-7523.48	719.31	1673801.00	14277689.16	39°19'04.281"N	80°52'55.060"W	7557.79	174.539	1.87	0.10	1.87	
14526.00	89.880	164.330	6667.46	7505.79	-7614.49	746.53	1673828.21	14277598.18	39°19'03.382"N	80°52'54.715"W	7651.00	174.401	2.06	-0.03	2.06	
14621.00	89.880	166.310	6667.66	7600.72	-7706.39	770.60	1673852.28	14277506.32	39°19'02.473"N	80°52'54.411"W	7744.82	174.290	2.08	0.00	2.08	
14716.00	89.940	166.990	6667.81	7695.55	-7798.82	792.54	1673874.20	14277413.93	39°19'01.559"N	80°52'54.133"W	7838.98	174.197	0.72	0.06	0.72	
14811.00	89.780	168.810	6668.05	7790.23	-7891.70	812.45	1673894.11	14277321.08	39°18'59.724"N	80°52'53.619"W	7933.41	174.122	1.92	-0.17	1.92	
14906.00	89.820	166.020	6668.38	7884.96	-7984.41	833.15	1673914.80	14277228.41	39°18'59.724"N	80°52'53.619"W	8027.76	174.043	2.94	0.04	-2.94	
15001.00	89.970	162.320	6668.55	7979.93	-8075.79	859.06	1673940.69	14277137.07	39°18'58.821"N	80°52'53.291"W	8121.35	173.928	3.90	0.16	-3.89	
15096.00	89.880	162.840	6668.68	8074.93	-8166.43	887.50	1673969.12	14277046.46	39°18'57.924"N	80°52'52.931"W	8214.52	173.798	0.56	-0.09	0.55	
15192.00	89.910	163.500	6668.85	8170.93	-8258.32	915.29	1673996.91	14276954.61	39°18'57.016"N	80°52'52.579"W	8308.89	173.676	0.69	0.03	0.69	
15287.00	90.000	162.270	6668.93	8265.92	-8349.11	943.25	1674024.85	14276863.85	39°18'56.118"N	80°52'52.225"W	8402.23	173.554	1.30	0.09	-1.29	
15382.00	89.970	162.640	6668.95	8360.92	-8439.69	971.89	1674053.48	14276773.31	39°18'55.223"N	80°52'51.862"W	8495.47	173.431	0.39	-0.03	0.39	
15476.00	89.880	163.060	6669.07	8454.91	-8529.51	999.60	1674081.19	14276683.53	39°18'54.334"N	80°52'51.511"W	8587.89	173.316	0.46	-0.10	0.45	
15569.00	89.820	159.460	6669.32	8547.84	-8617.57	1029.48	1674111.05	14276595.51	39°18'53.464"N	80°52'51.132"W	8678.84	173.188	3.87	-0.06	-3.87	
15665.00	89.750	156.010	6669.68	8643.39	-8706.40	1065.85	1674147.40	14276506.71	39°18'52.585"N	80°52'50.671"W	8771.39	173.021	3.59	-0.07	-3.59	
15759.00	89.200	154.100	6670.54	8736.43	-8791.62	1105.49	1674187.03	14276421.52	39°18'51.743"N	80°52'50.168"W	8860.85	172.853	2.11	-0.59	-2.03	
15854.00	89.540	156.940	6671.58	8830.55	-8878.07	1144.85	1674226.37	14276335.11	39°18'50.888"N	80°52'49.669"W	8951.58	172.652	3.01	0.36	2.99	
15949.00	89.570	160.450	6672.32	8925.24	-8966.56	1179.36	1674260.87	14276246.66	39°18'50.013"N	80°52'49.231"W	9043.78	172.507	3.69	0.03	3.69	
16044.00	89.510	160.710	6673.08	9020.14	-9056.15	1210.94	1674292.44	14276157.10	39°18'49.127"N	80°52'48.831"W	9136.75	172.384	0.28	-0.06	0.27	
16139.00	89.570	162.050	6673.85	9115.08	-9146.17	1241.27	1674322.76	14276067.12	39°18'48.236"N	80°52'48.446"W	9230.02	172.271	1.41	0.06	1.41	
16234.00	89.540	164.100	6674.59	9210.07	-9237.05	1266.93	1674350.40	14275976.27	39°18'47.338"N	80°52'48.096"W	9323.80	172.178	2.16	-0.03	2.16	
16328.00	89.540	164.460	6675.34	9304.06	-9327.53	1294.39	1674437.86	14275885.83	39°18'46.443"N	80°52'47.773"W	9416.91	172.099	0.38	0.00	0.38	
16423.00	89.540	165.110	6676.10	9399.02	-9419.20	1319.32	1674400.78	14275794.20	39°18'45.537"N	80°52'47.458"W	9511.15	172.027	0.68	0.00	0.68	



Actual Wellpath Report

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REFERENCE WELLPATH IDENTIFICATION									
Operator	ANTERO RESOURCES CORPORATION								
Area	Ritchie County, WV								
Field	Ritchie								
Facility	Hichman Pad								
Slot	Slot #07								
Well	Short Run Unit 2H								
Wellbore	Short Run Unit 2H AWB								

WELLPATH DATA (238 stations)																
MD	Inclination	Azimuth	TVD	Vert Sect	North	East	Grid East	Grid North	Latitude	Longitude	Closure Dist	Closure Dir	DLS	Build Rate	Turn Rate	Comments
ftH	°	°	ftH	ftH	ftH	ftH	US ftH	US ftH			ftH	°	ft/100ft	ft/100ft	ft/100ft	
16519.00	89.450	162.870	6676.95	9495.00	-9511.46	1345.60	1674427.24	14275701.97	39°18'44.625"N	80°52'47.123"W	9606.20	171.947	2.34	-0.09	-2.33	
16613.00	89.480	165.650	6677.83	9588.97	-9601.93	1371.29	1674452.73	14275611.54	39°18'43.730"N	80°52'46.800"W	9699.35	171.872	2.96	0.03	2.96	
16709.00	89.480	169.030	6678.70	9684.70	-9695.57	1392.33	1674473.76	14275517.93	39°18'42.804"N	80°52'46.534"W	9795.04	171.828	3.52	0.00	3.52	
16804.00	89.480	169.410	6679.56	9779.18	-9788.89	1410.10	1674491.52	14275424.65	39°18'41.882"N	80°52'46.309"W	9889.94	171.803	0.40	0.00	0.40	
16899.00	89.480	168.290	6680.42	9873.71	-9882.10	1428.47	1674509.88	14275331.49	39°18'40.960"N	80°52'46.077"W	9984.81	171.775	1.18	0.00	-1.18	
16993.00	89.660	166.170	6681.13	9967.48	-9973.76	1449.24	1674530.65	14275239.66	39°18'40.054"N	80°52'45.814"W	10078.50	171.732	2.26	0.19	-2.26	
17088.00	89.720	160.790	6681.64	10062.44	-10064.81	1476.25	1674557.64	14275148.65	39°18'39.154"N	80°52'45.472"W	10172.49	171.656	5.66	0.06	-5.66	
17183.00	90.060	161.980	6681.83	10157.39	-10154.83	1506.57	1674587.95	14275058.66	39°18'38.264"N	80°52'45.088"W	10265.98	171.561	1.30	0.36	1.25	
17277.00	90.220	161.320	6681.60	10251.35	-10244.05	1536.16	1674617.53	14274969.67	39°18'37.381"N	80°52'44.713"W	10358.59	171.472	0.72	0.17	-0.70	
17372.00	90.180	162.010	6681.26	10346.32	-10334.23	1566.05	1674647.40	14274879.53	39°18'36.490"N	80°52'44.334"W	10452.22	171.383	0.73	-0.04	0.73	
17467.00	90.120	163.490	6681.02	10441.31	-10424.95	1594.22	1674675.56	14274788.84	39°18'35.593"N	80°52'43.978"W	10546.15	171.305	1.56	-0.06	1.56	
17562.00	90.120	163.990	6680.82	10536.31	-10516.15	1620.82	1674702.15	14274697.68	39°18'34.691"N	80°52'43.641"W	10640.33	171.238	0.53	0.00	0.53	
17657.00	90.180	162.510	6680.57	10631.30	-10607.12	1648.20	1674729.52	14274606.75	39°18'33.792"N	80°52'43.294"W	10734.41	171.168	1.56	0.06	-1.56	
17752.00	90.030	158.870	6680.39	10726.19	-10696.76	1679.61	1674760.92	14274517.15	39°18'32.905"N	80°52'42.896"W	10827.82	171.076	3.83	-0.16	-3.83	
17847.00	90.180	159.720	6680.22	10820.97	-10785.62	1713.19	1674794.49	14274428.32	39°18'32.026"N	80°52'42.470"W	10920.84	170.975	0.91	0.16	0.89	
17942.00	90.000	163.640	6680.07	10915.92	-10875.79	1743.05	1674824.33	14274338.19	39°18'31.135"N	80°52'42.092"W	11014.58	170.895	4.13	-0.19	4.13	
18037.00	90.000	166.220	6680.07	11010.87	-10967.52	1767.75	1674849.02	14274246.50	39°18'30.228"N	80°52'41.779"W	11109.07	170.844	2.72	0.00	2.72	
18132.00	89.910	168.730	6680.14	11105.60	-11060.25	1788.35	1674869.61	14274153.81	39°18'29.311"N	80°52'41.519"W	11203.90	170.815	2.64	-0.09	2.64	
18227.00	89.850	167.570	6680.34	11200.24	-11153.22	1807.65	1674889.11	14274060.87	39°18'28.392"N	80°52'41.272"W	11298.79	170.793	1.22	-0.06	-1.22	
18322.00	90.120	163.640	6680.37	11295.14	-11245.22	1831.47	1674912.72	14273968.91	39°18'27.482"N	80°52'40.973"W	11393.39	170.750	4.15	0.28	-4.14	
18417.00	90.000	160.430	6680.27	11390.11	-11335.58	1860.76	1674942.00	14273878.59	39°18'26.589"N	80°52'40.602"W	11487.29	170.678	3.38	-0.13	-3.38	
18512.00	90.220	160.290	6680.09	11484.99	-11425.05	1892.69	1674973.92	14273789.15	39°18'25.704"N	80°52'40.198"W	11580.76	170.594	0.27	0.23	-0.15	
18606.00	90.060	164.870	6679.86	11578.96	-11514.71	1920.83	1675002.04	14273699.52	39°18'24.818"N	80°52'39.841"W	11673.83	170.529	4.88	-0.17	4.87	
18701.00	90.060	165.720	6679.76	11673.90	-11606.60	1944.94	1675026.15	14273607.67	39°18'23.909"N	80°52'39.536"W	11768.43	170.487	0.89	0.00	0.89	
18796.00	90.060	161.710	6679.66	11768.87	-11697.77	1971.56	1675052.77	14273516.54	39°18'23.008"N	80°52'39.199"W	11862.76	170.433	4.22	0.00	-4.22	
18890.00	90.180	158.270	6679.46	11862.71	-11766.08	2003.74	1675084.92	14273428.26	39°18'22.134"N	80°52'38.791"W	11955.20	170.351	3.66	0.13	-3.66	
18913.00	89.970	158.830	6679.43	11885.63	-11807.49	2012.15	1675093.33	14273406.86	39°18'21.923"N	80°52'38.684"W	11977.71	170.329	2.60	-0.91	2.43	
18937.00	89.970	158.830	6679.44	11909.56	-11829.87	2020.82	1675101.99	14273384.49	39°18'21.701"N	80°52'38.575"W	12001.23	170.306	0.00	0.00	0.00	Projected MD at TD: 18937



Actual Wellpath Report

Short Run Unit 2H AWP Proj: 18937'

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REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #07
Area	Ritchie County, WV	Well	Short Run Unit 2H
Field	Ritchie	Wellbore	Short Run Unit 2H AWB
Facility	Hichman Pad		

HOLE & CASING SECTIONS - Ref Wellbore: Short Run Unit 2H AWB Ref Wellpath: Short Run Unit 2H AWP Proj: 18937'											
String/Diameter	Start MD	End MD	Interval	Start TVD	End TVD	Start N/S	Start EW	End N/S	End EW		
	[ft]	[ft]	[ft]	[ft]	[ft]	[ft]	[ft]	[ft]	[ft]		[ft]
20in Conductor	24.50	104.50	80.00	24.50	104.50	0.00	0.00	-0.24	-0.26		-0.26
17.5in Open Hole	104.50	475.50	371.00	104.50	475.47	-0.24	-0.26	-4.16	-4.16		-1.27
13.375in Casing Surface	24.50	475.50	451.00	24.50	475.47	0.00	0.00	-4.16	-4.16		-1.27
12.25in Open Hole	475.50	2673.10	2197.60	475.47	2586.52	-4.16	-1.27	-27.03	-27.03		-512.50
9.625in Casing Intermediate	24.50	2673.10	2648.60	24.50	2586.52	0.00	0.00	-27.03	-27.03		-512.50
8.75in Open Hole	2673.10	7087.50	4414.40	2586.52	6595.11	-27.03	-512.50	-612.76	-612.76		-1670.29
8.5in Open Hole	7087.50	18937.00	11849.50	6595.11	6679.44	-612.76	-1670.29	-11829.87	-11829.87		2020.82
5.5in Casing Production	24.50	18937.00	18912.50	24.50	6679.44	0.00	0.00	-11829.87	-11829.87		2020.82

TARGETS											
Name	TVD	North	East	Grid East	Grid North	Latitude	Longitude	Shape			
	[ft]	[ft]	[ft]	[US ft]	[US ft]						
Short Run Unit 2H POE Rev-4	6605.00	-644.22	-1659.50	1671423.14	14284565.66	39°20'12.303"N	80°53'25.221"W	point			
Short Run Unit 2H BHL Rev-4	6626.00	-11801.38	2013.89	1675095.07	14273412.97	39°18'21.983"N	80°52'38.662"W	point			
Short Run Unit 2H LP Rev-4	6626.00	-785.08	-1609.91	1671472.72	14284424.85	39°20'10.910"N	80°53'24.592"W	point			



Actual Wellpath Report

Short Run Unit 2H AWP Proj: 18937'
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REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #07
Area	Ritchie County, WV	Well	Short Run Unit 2H
Field	Ritchie	Wellbore	Short Run Unit 2H AWB
Facility	Hichman Pad		

WELLPATH COMPOSITION - Ref Wellbore: Short Run Unit 2H AWB				Ref Wellpath: Short Run Unit 2H AWP Proj: 18937'	
Start MD	End MD	Positional Uncertainty Model	Log Name/Comment	Wellbore	
24.50	489.50	Gyrodata standard - Single-shot	01 Gyrodata \$\$ Gyro <17-1/2">(100-480)	Short Run Unit 2H AWB	
489.50	2531.50	ISCWSA MWD, Rev. 4 (Standard)	02 WFT EM <12-1/4">(480)(581'-2522')	Short Run Unit 2H AWB	
2531.50	6982.50	ISCWSA MWD, Rev. 4 (Standard)	04 WFT EM <8-3/4">(2522')(2654'-6973')	Short Run Unit 2H AWB	
6982.50	18913.00	BHl AutoTrak Curve (Short)	05 AT Curve <8-1/2">(6892.50')(7063'-18913')	Short Run Unit 2H AWB	
18913.00	18937.00	Blind Drilling (std)	Projection to bit	Short Run Unit 2H AWB	



Actual Wellpath Report

Short Run Unit 2H AWP Proj: 18937'
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REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #07
Area	Ritchie County, WV	Well	Short Run Unit 2H
Field	Ritchie	Wellbore	Short Run Unit 2H AWP
Facility	Hitchman Pad		

COMMENTS
<p>Wellpath general comments</p> <p>API: 47-085-10340-0000</p> <p>BHI Job #: 109301663</p> <p>Rig: Frontier 22</p> <p>Duration: 07/15/2018-07/18/2018</p> <p>Gyrodatta MS Gyro <17-1/2"> (100'-480')</p> <p>WFT EM <12-1/4"> (480')(581'-2522')</p> <p>WFT EM <8-3/4"> (2522')(2654'-6973')</p> <p>BHI AT Curve <8-1/2"> (6892.50')(7063'-18913')</p> <p>Burkett: 6960' MD</p> <p>Tully: 7026' MD</p> <p>Marcellus POE: 7113' MD</p> <p>Projected MD at TD: 18937'</p>