



ANTERO RESOURCES CORPORATION



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

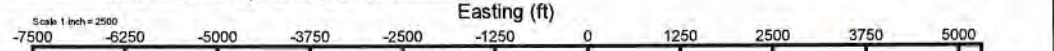
Slot: Slot A
 Well: Shays Unit 1H
 Wellbore: Shays Unit 1H PWB

Plot reference wellpath is Shays Unit 1H PWP Rev-B.0	Grid System: NAD27 / UTM/Zone 17 North, US feet
True vertical depths are referenced to H&P 531 (RKB)	North Reference: Grid north
Reference wellpath measured depths are referenced to H&P 531 (RKB)	Scale: True distance
H&P 531 (RKB) to Mean Sea Level: 1049 feet	Coordinates are in feet referenced to Slot
Mean Sea Level to Ground level (At Slot: Slot A): -1019 feet	Depths are in feet
Offset wellpath MDs are referenced to each well's detail MD datum	Created by: eduardon on 2022-09-06, Database: WA_MPL_EASTERNUS_Defn

Location Information				
Facility Name	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude
Cashew Pad	1680670.880	14224370.270	39°10'16.9800"N	80°51'28.6800"W
Slot	Local N (ft)	Local E (ft)	Grid East (US ft)	Grid North (US ft)
Slot A	0.00	0.00	1680670.880	14224370.270
			39°10'16.9800"N	80°51'28.6800"W
Comment				
Shays Unit 1H				
H&P 531 (RKB) to Ground level (At Slot: Slot A)				30ft
Mean Sea Level to Ground level (At Slot: Slot A)				-1019ft
H&P 531 (RKB) to Mean Sea Level				1049ft

Well Profile Data								
Design Comment	MD (ft)	Inc (°)	Az (°)	TVD (ft)	Local N (ft)	Local E (ft)	DLS (°/100ft)	VS (ft)
Tie On	30.00	0.000	277.087	30.00	0.00	0.00	0.00	0.00
KOP 1	410.00	0.000	277.087	410.00	0.00	0.00	0.00	0.00
End of Build	948.96	16.169	277.087	941.84	9.32	-74.97	3.00	-33.01
Curve KOP	5744.90	16.169	277.087	5548.07	174.08	-1400.29	0.00	-616.50
POE	5929.10	75.440	161.183	6424.00	-463.30	-1374.38	7.00	-4.64
Landing Pt.	7111.10	90.000	161.183	6447.00	-633.72	-1316.31	8.00	175.20
BHL	20773.00	90.000	161.183	6447.00	-13565.43	3090.31	0.00	13837.10

Well Data			
Slot	Well	Wellbore	Wellpath
Slot A	Shays Unit 1H	Shays Unit 1H AWB	Shays Unit 1H AWP Proj: 20682'
Slot A	Shays Unit 1H	Shays Unit 1H PWB	Shays Unit 1H PWP Rev-B.0

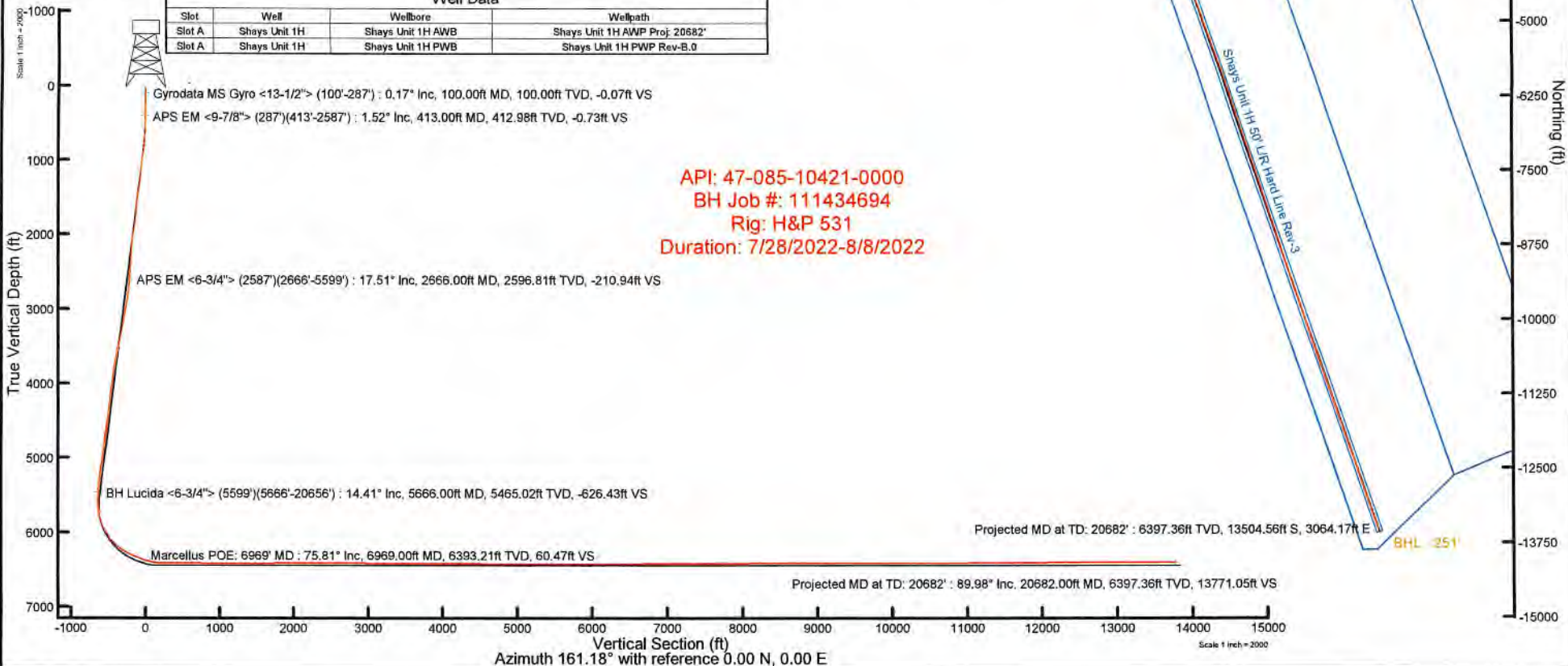


Gyrodatta MS Gyro <13-1/2"> (100'-287') : 100.00ft TVD, 0.09ft N, 0.05ft E
 APS EM <9-7/8"> (287')(413'-2587') : 412.98ft TVD, 0.09ft N, 1.99ft W
 APS EM <6-3/4"> (2587')(2666'-5599') : 2596.81ft TVD, 43.01ft N, 527.68ft W
 BH Lucida <6-3/4"> (5599')(5666'-20656') : 5465.02ft TVD, 190.38ft N, 1383.24ft W

Marcellus POE: 6969' MD : 6393.21ft TVD, 531.30ft S, 1371.46ft W



User specified (HDGM) Dip: 65.85° Field: 51409 nT
 Magnetic North is 7.42 degrees West of True North (at 7/27/2022)
 Grid North is 0.09 degrees East of True North
 To correct azimuth from True to Grid subtract 0.09 degrees
 To correct azimuth from Magnetic to Grid subtract 7.51 degrees





Actual Wellpath Report

Shays Unit 1H AWP Proj: 20682'
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REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Well	Shays Unit 1H
Field	Ritchie	API	47-085-10421-0000
Facility	Cashew Pad	Wellbore	Shays Unit 1H AWB
Slot	Slot A		

REPORT SETUP INFORMATION			
Projection System	NAD27 / UTM Zone 17 North, US feet	Software System	WellArchitect® 6.0
North Reference	Grid	User	Edsaryar
Scale	0.999602	Report Generated	9/6/2022 at 11:34:46 PM
Convergence at slot	0.09° East	Database	WA_MPL_EASTERNUS_Defn

WELLPATH LOCATION						
	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	0.00	0.00	1680670.88	14224370.27	39°10'16.9800"N	80°51'28.6800"W
Facility Reference Pt			1680670.88	14224370.27	39°10'16.9800"N	80°51'28.6800"W
Field Reference Pt			0.00	0.00	0°00'0.0000"	85°29'19.3013"W

WELLPATH DATUM			
Calculation method	Minimum curvature	H&P 531 (RKB) to Facility Vertical Datum	1049.00ft
Horizontal Reference Pt	Slot	H&P 531 (RKB) to Mean Sea Level	1049.00ft
Vertical Reference Pt	H&P 531 (RKB)	H&P 531 (RKB) to Ground Level at Slot (Slot A)	30.00ft
MD Reference Pt	H&P 531 (RKB)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	161.18°



Actual Wellpath Report

Shays Unit 1H AWP Proj: 20682'
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REFERENCE WELLPATH IDENTIFICATION				
Operator	ANTERO RESOURCES CORPORATION		Well	Shays Unit 1H
Field	Ritchie		API	47-085-10421-0000
Facility	Cashew Pad		Wellbore	Shays Unit 1H AWB
Slot	Slot A			

WELLPATH DATA (228 stations) † = interpolated, ‡ = extrapolated station																
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Closure Dist [ft]	Closure Dir [°]	DLS ["/100ft]	Build Rate ["/100ft]	Turn Rate ["/100ft]	Comments
0.00†	0.000	28.350	0.00	0.00	0.00	0.00	1680670.88	14224370.27	39°10'16.9800"N	80°51'28.6800"W	0.00	0.000	0.00	0.00	0.00	
30.00	0.000	28.350	30.00	0.00	0.00	0.00	1680670.88	14224370.27	39°10'16.9800"N	80°51'28.6800"W	0.00	0.000	0.00	0.00	0.00	
100.00	0.170	28.350	100.00	-0.07	0.09	0.05	1680670.93	14224370.36	39°10'16.9809"N	80°51'28.6794"W	0.10	28.350	0.24	0.24	0.00	Gyrodata MS Gyro <13-1/2"> (100'-287')
200.00	0.170	316.010	200.00	-0.31	0.33	0.02	1680670.90	14224370.60	39°10'16.9833"N	80°51'28.6798"W	0.33	2.913	0.20	0.00	-72.34	
287.00	0.310	314.020	287.00	-0.63	0.59	-0.24	1680670.64	14224370.85	39°10'16.9858"N	80°51'28.6831"W	0.63	337.516	0.16	0.16	-2.29	
413.00	1.520	244.070	412.98	-0.73	0.09	-1.99	1680668.89	14224370.36	39°10'16.9810"N	80°51'28.7053"W	1.99	272.624	1.15	0.96	-55.52	APS EM <9-7/8"> (287')(413'-2587')
503.00	4.610	251.320	502.84	-0.59	-1.59	-6.49	1680664.39	14224368.68	39°10'16.9644"N	80°51'28.7624"W	6.68	256.240	3.45	3.43	8.06	
593.00	7.400	260.220	592.34	-1.51	-3.73	-15.63	1680655.26	14224366.54	39°10'16.9434"N	80°51'28.8785"W	16.07	256.588	3.26	3.10	9.89	
683.00	8.870	270.980	681.44	-4.77	-4.60	-28.28	1680642.61	14224365.67	39°10'16.9350"N	80°51'29.0392"W	28.65	260.764	2.34	1.63	11.96	
773.00	11.060	278.570	770.08	-11.09	-3.19	-43.76	1680627.14	14224367.08	39°10'16.9492"N	80°51'29.2357"W	43.87	265.826	2.83	2.43	8.43	
864.00	12.390	284.220	859.18	-20.43	0.51	-61.85	1680609.05	14224370.78	39°10'16.9860"N	80°51'29.4654"W	61.86	270.468	1.93	1.46	6.21	
953.00	14.570	287.530	945.73	-32.28	6.22	-81.79	1680589.13	14224376.49	39°10'17.0428"N	80°51'29.7183"W	82.02	274.352	2.60	2.45	3.72	
1048.00	13.710	279.930	1037.86	-44.77	11.76	-104.27	1680566.65	14224382.03	39°10'17.0979"N	80°51'30.0037"W	104.93	276.437	2.15	-0.91	-8.00	
1142.00	13.880	275.080	1129.15	-54.70	14.68	-126.48	1680544.45	14224384.95	39°10'17.1271"N	80°51'30.2856"W	127.33	276.623	1.24	0.18	-5.16	
1237.00	13.290	277.290	1221.49	-64.12	17.08	-148.66	1680522.28	14224387.34	39°10'17.1511"N	80°51'30.5672"W	149.64	276.554	0.83	-0.62	2.33	
1331.00	13.440	280.220	1312.94	-74.18	20.39	-170.13	1680500.82	14224390.65	39°10'17.1842"N	80°51'30.8397"W	171.34	276.834	0.74	0.16	3.12	
1426.00	17.190	284.170	1404.56	-87.19	25.79	-194.61	1680476.35	14224396.05	39°10'17.2379"N	80°51'31.1505"W	196.31	277.548	4.10	3.95	4.16	
1520.00	17.230	281.340	1494.35	-101.75	31.92	-221.73	1680449.24	14224402.18	39°10'17.2990"N	80°51'31.4947"W	224.02	278.193	0.89	0.04	-3.01	
1615.00	15.540	270.520	1585.51	-113.03	34.81	-248.26	1680422.72	14224405.06	39°10'17.3279"N	80°51'31.8315"W	250.69	277.981	3.67	-1.78	-11.39	
1710.00	13.200	267.700	1677.53	-120.33	34.49	-271.83	1680399.16	14224404.74	39°10'17.3251"N	80°51'32.1307"W	274.00	277.230	2.57	-2.46	-2.97	
1805.00	11.620	280.500	1770.33	-128.10	35.80	-292.08	1680378.92	14224406.05	39°10'17.3383"N	80°51'32.3878"W	294.26	276.987	3.33	-1.66	13.47	
1895.00	15.050	289.100	1857.90	-139.73	41.27	-312.04	1680358.97	14224411.53	39°10'17.3928"N	80°51'32.6412"W	314.76	277.535	4.39	3.81	9.56	
1989.00	18.280	287.190	1947.94	-155.90	49.63	-337.66	1680333.36	14224419.88	39°10'17.4757"N	80°51'32.9663"W	341.29	278.361	3.48	3.44	-2.03	
2084.00	16.710	279.510	2038.55	-171.14	56.29	-365.37	1680305.66	14224426.53	39°10'17.5420"N	80°51'33.3180"W	369.68	278.758	2.94	-1.65	-8.08	
2179.00	13.450	270.170	2130.28	-181.22	58.58	-389.90	1680281.14	14224428.82	39°10'17.5650"N	80°51'33.6294"W	394.27	278.544	4.27	-3.43	-9.83	
2274.00	13.610	261.280	2222.66	-186.78	56.91	-412.00	1680259.05	14224427.16	39°10'17.5489"N	80°51'33.9100"W	415.91	277.865	2.19	0.17	-9.36	
2369.00	17.100	261.330	2314.25	-191.20	53.11	-436.86	1680234.20	14224423.36	39°10'17.5117"N	80°51'34.2258"W	440.08	276.932	3.67	3.67	0.05	
2463.00	17.940	261.490	2403.89	-196.23	48.89	-464.84	1680206.23	14224419.14	39°10'17.4704"N	80°51'34.5812"W	467.40	276.004	0.90	0.89	0.17	
2558.00	18.370	265.030	2494.16	-202.43	45.43	-494.22	1680176.85	14224415.68	39°10'17.4366"N	80°51'34.9543"W	496.31	275.251	1.25	0.45	3.73	
2587.00	18.490	268.360	2521.68	-204.88	44.90	-503.37	1680167.71	14224415.15	39°10'17.4316"N	80°51'35.0705"W	505.37	275.097	3.65	0.41	11.48	



Actual Wellpath Report

Shays Unit 1H AWP Proj: 20682'

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REFERENCE WELLPATH IDENTIFICATION				
Operator	ANTERO RESOURCES CORPORATION		Well	Shays Unit 1H
Field	Ritchie		API	47-085-10421-0000
Facility	Cashew Pad		Wellbore	Shays Unit 1H AWB
Slot	Slot A			

WELLPATH DATA (228 stations)																
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Closure Dist [ft]	Closure Dir [°]	DLS [°/100ft]	Build Rate [°/100ft]	Turn Rate [°/100ft]	Comments
2666.00	17.510	262.610	2596.81	-210.94	43.01	-527.68	1680143.41	14224413.26	39°10'17.4133"N	80°51'35.3792"W	529.43	274.660	2.57	-1.24	-7.28	APS EM <6-3/4"> (2587')(2666'-5599')
2760.00	15.750	266.420	2686.88	-217.10	40.39	-554.44	1680116.66	14224410.65	39°10'17.3878"N	80°51'35.7190"W	555.91	274.167	2.20	-1.87	4.05	
2855.00	16.340	275.100	2778.19	-225.91	40.78	-580.63	1680090.49	14224411.03	39°10'17.3920"N	80°51'36.0515"W	582.06	274.017	2.60	0.62	9.14	
2949.00	17.120	283.940	2868.23	-238.76	45.29	-607.23	1680063.89	14224415.54	39°10'17.4370"N	80°51'36.3892"W	608.92	274.265	2.83	0.83	9.40	
3043.00	17.810	290.530	2957.90	-255.36	53.66	-634.12	1680037.01	14224423.91	39°10'17.5202"N	80°51'36.7305"W	636.39	274.837	2.23	0.73	7.01	
3143.00	15.090	282.100	3053.82	-271.75	61.76	-661.18	1680009.96	14224432.00	39°10'17.6006"N	80°51'37.0739"W	664.06	275.336	3.61	-2.72	-8.43	
3238.00	14.900	287.380	3145.58	-285.32	68.00	-684.93	1679986.22	14224438.24	39°10'17.6626"N	80°51'37.3753"W	688.30	275.670	1.45	-0.20	5.56	
3332.00	15.560	301.270	3236.31	-302.13	78.16	-707.25	1679963.92	14224448.39	39°10'17.7634"N	80°51'37.6585"W	711.55	276.306	3.94	0.70	14.78	
3427.00	16.950	299.940	3327.51	-322.32	91.68	-730.14	1679941.03	14224461.91	39°10'17.8974"N	80°51'37.9489"W	735.87	277.157	1.51	1.46	-1.40	
3521.00	17.400	293.150	3417.33	-342.02	104.05	-754.94	1679916.24	14224474.28	39°10'18.0200"N	80°51'38.2635"W	762.07	277.847	2.18	0.48	-7.22	
3616.00	17.800	291.540	3507.88	-360.93	114.96	-781.51	1679889.69	14224485.19	39°10'18.1283"N	80°51'38.6006"W	789.92	278.368	0.66	0.42	-1.69	
3710.00	18.080	286.820	3597.32	-378.73	124.46	-808.83	1679862.37	14224494.68	39°10'18.2226"N	80°51'38.9474"W	818.35	278.748	1.57	0.30	-5.02	
3804.00	17.050	284.310	3686.94	-394.76	132.09	-836.15	1679835.06	14224502.30	39°10'18.2984"N	80°51'39.2941"W	846.52	278.977	1.36	-1.10	-2.67	
3899.00	15.350	284.510	3778.16	-409.29	138.68	-861.82	1679809.41	14224508.89	39°10'18.3639"N	80°51'39.6199"W	872.91	279.141	1.79	-1.79	0.21	
3993.00	16.230	280.900	3868.61	-422.63	144.28	-886.76	1679784.47	14224514.49	39°10'18.4197"N	80°51'39.9366"W	898.43	279.241	1.40	0.94	-3.84	
4088.00	17.510	278.090	3959.53	-435.68	148.80	-913.95	1679757.29	14224519.01	39°10'18.4648"N	80°51'40.2817"W	925.99	279.247	1.60	1.35	-2.96	
4182.00	18.480	279.400	4048.93	-449.13	153.23	-942.65	1679728.61	14224523.44	39°10'18.5089"N	80°51'40.6460"W	955.02	279.233	1.12	1.03	1.39	
4276.00	17.180	279.280	4138.41	-462.71	157.90	-971.05	1679700.22	14224528.11	39°10'18.5555"N	80°51'41.0065"W	983.80	279.236	1.38	-1.38	-0.13	
4370.00	17.450	270.910	4228.16	-474.01	160.36	-998.85	1679672.43	14224530.57	39°10'18.5803"N	80°51'41.3594"W	1011.64	279.121	2.66	0.29	-8.90	
4465.00	17.810	270.550	4318.70	-483.64	160.73	-1027.62	1679643.67	14224530.93	39°10'18.5844"N	80°51'41.7247"W	1040.11	278.889	0.40	0.38	-0.38	
4559.00	17.240	274.780	4408.34	-493.98	162.03	-1055.88	1679615.43	14224532.23	39°10'18.5976"N	80°51'42.0835"W	1068.23	278.724	1.48	-0.61	4.50	
4654.00	16.540	275.570	4499.24	-505.21	164.51	-1083.36	1679587.95	14224534.72	39°10'18.6226"N	80°51'42.4324"W	1095.78	278.635	0.78	-0.74	0.83	
4748.00	16.880	278.280	4589.28	-516.95	167.78	-1110.19	1679561.14	14224537.98	39°10'18.6553"N	80°51'42.7730"W	1122.79	278.594	0.90	0.36	2.88	
4842.00	16.430	278.100	4679.33	-529.18	171.61	-1136.85	1679534.48	14224541.82	39°10'18.6936"N	80°51'43.1115"W	1149.73	278.584	0.48	-0.48	-0.19	
4937.00	15.940	277.760	4770.57	-541.10	175.27	-1163.08	1679508.27	14224545.47	39°10'18.7301"N	80°51'43.4444"W	1176.21	278.570	0.53	-0.52	-0.36	
5031.00	16.440	278.500	4860.84	-552.98	178.98	-1189.02	1679482.33	14224549.18	39°10'18.7672"N	80°51'43.7738"W	1202.42	278.560	0.58	0.53	0.79	
5126.00	17.220	274.750	4951.77	-564.78	182.13	-1216.33	1679455.03	14224552.33	39°10'18.7987"N	80°51'44.1205"W	1229.89	278.516	1.41	0.82	-3.95	
5220.00	19.770	277.160	5040.91	-577.31	185.26	-1245.98	1679425.40	14224555.46	39°10'18.8302"N	80°51'44.4968"W	1259.68	278.457	2.83	2.71	2.56	
5316.00	19.410	274.470	5131.36	-590.73	188.53	-1277.99	1679393.40	14224558.72	39°10'18.8629"N	80°51'44.9032"W	1291.82	278.392	1.01	-0.37	-2.80	
5410.00	17.600	272.380	5220.49	-602.04	190.34	-1307.77	1679363.64	14224560.53	39°10'18.8812"N	80°51'45.2812"W	1321.54	278.281	2.05	-1.93	-2.22	



Actual Wellpath Report

Shays Unit 1H AWP Proj: 20682'
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REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Well	Shays Unit 1H
Field	Ritchie	API	47-085-10421-0000
Facility	Cashew Pad	Wellbore	Shays Unit 1H AWB
Slot	Slot A		

WELLPATH DATA (228 stations) † = interpolated, ‡ = extrapolated station																
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Closure Dist [ft]	Closure Dir [°]	DLS ["/100ft]	Build Rate ["/100ft]	Turn Rate ["/100ft]	Comments
5505.00	18.500	272.830	5310.82	-812.80	191.68	-1337.17	1679334.24	14224561.87	39°10'18.8949"N	80°51'45.6546"W	1350.84	278.158	0.96	0.95	0.47	
5599.00	16.560	268.240	5400.45	-622.23	192.00	-1365.46	1679305.97	14224562.20	39°10'18.8986"N	80°51'46.0138"W	1378.89	278.004	2.53	-2.06	-4.88	
5666.00	14.410	260.850	5465.02	-626.43	190.38	-1383.24	1679288.20	14224560.58	39°10'18.8828"N	80°51'46.2395"W	1396.28	277.837	4.35	-3.21	-11.03	BH Lucida <6-3/4"> (5599')(5666'-20656')
5761.00	16.150	260.820	5556.66	-630.63	186.40	-1407.95	1679263.49	14224556.59	39°10'18.8438"N	80°51'46.5534"W	1420.24	277.541	1.83	1.83	-0.03	
5856.00	16.270	239.570	5647.96	-630.17	177.54	-1432.49	1679238.96	14224547.74	39°10'18.7566"N	80°51'46.8652"W	1443.45	277.065	6.21	0.13	-22.37	
5951.00	18.440	218.880	5738.72	-619.45	159.08	-1453.42	1679218.04	14224529.29	39°10'18.5745"N	80°51'47.1312"W	1462.10	276.246	6.84	2.28	-21.78	
6045.00	21.800	202.530	5827.04	-598.38	131.36	-1469.46	1679202.01	14224501.58	39°10'18.3007"N	80°51'47.3354"W	1475.32	275.108	6.94	3.57	-17.39	
6140.00	25.990	193.100	5913.91	-567.44	94.76	-1480.94	1679190.53	14224464.99	39°10'17.9392"N	80°51'47.4819"W	1483.97	273.661	5.96	4.41	-9.93	
6234.00	31.260	184.390	5996.43	-527.50	50.33	-1487.49	1679183.99	14224420.58	39°10'17.5001"N	80°51'47.5659"W	1488.34	271.938	7.14	5.61	-9.27	
6302.00†	35.849	181.346	6053.09	-492.57	12.81	-1489.31	1679182.17	14224383.08	39°10'17.1293"N	80°51'47.5897"W	1489.36	270.493	7.19	6.75	-4.48	Sycamore: 6302' MD
6329.00	37.690	180.320	6074.71	-477.35	-3.35	-1489.54	1679181.94	14224366.92	39°10'16.9696"N	80°51'47.5929"W	1489.54	269.871	7.19	6.82	-3.80	
6423.00	47.580	175.470	6143.80	-416.41	-66.84	-1486.95	1679184.52	14224303.45	39°10'16.3419"N	80°51'47.5613"W	1488.45	267.426	11.08	10.52	-5.16	
6517.00	53.940	171.350	6203.25	-345.30	-139.09	-1478.48	1679192.99	14224231.24	39°10'15.6278"N	80°51'47.4552"W	1485.01	264.626	7.57	6.77	-4.38	
6557.00†	56.418	170.291	6226.09	-312.93	-171.50	-1473.24	1679198.23	14224198.84	39°10'15.3073"N	80°51'47.3893"W	1483.19	263.360	6.57	6.20	-2.65	Middlesex: 6557' MD
6612.00	59.840	168.930	6255.12	-266.73	-217.43	-1464.81	1679206.66	14224152.92	39°10'14.8532"N	80°51'47.2831"W	1480.86	261.557	6.57	6.22	-2.47	
6659.00	61.750	167.970	6278.06	-226.04	-257.62	-1456.59	1679214.87	14224112.75	39°10'14.4558"N	80°51'47.1795"W	1479.20	259.970	4.44	4.06	-2.04	
6706.00	63.330	167.290	6299.73	-184.60	-298.36	-1447.66	1679223.80	14224072.03	39°10'14.0531"N	80°51'47.0668"W	1478.08	258.355	3.60	3.36	-1.45	
6791.00†	66.694	162.282	6335.65	-107.75	-372.65	-1427.41	1679244.04	14223997.77	39°10'13.3185"N	80°51'46.8111"W	1475.25	255.369	6.65	3.96	-5.89	Burkett: 6791' MD
6801.00	67.100	161.710	6339.57	-98.55	-381.40	-1424.56	1679246.89	14223989.03	39°10'13.2320"N	80°51'46.7752"W	1474.74	255.012	6.65	4.06	-5.72	
6895.00	71.790	160.000	6372.57	-10.57	-464.51	-1395.69	1679275.75	14223905.95	39°10'12.4101"N	80°51'46.4102"W	1470.96	251.592	5.27	4.99	-1.82	
6897.00†	71.899	160.003	6373.19	-8.67	-466.30	-1395.04	1679276.40	14223904.16	39°10'12.3924"N	80°51'46.4020"W	1470.91	251.518	5.44	5.44	0.17	Tully: 6897' MD
6969.00†	75.813	160.127	6393.21	60.47	-531.30	-1371.46	1679299.97	14223839.18	39°10'11.7496"N	80°51'46.1039"W	1470.78	248.824	5.44	5.44	0.17	Marcellus POE: 6969' MD
6989.00	76.900	160.160	6397.93	79.90	-549.58	-1364.86	1679306.56	14223820.91	39°10'11.5688"N	80°51'46.0204"W	1471.35	248.067	5.44	5.44	0.17	
7084.00	87.020	162.560	6411.20	173.83	-638.60	-1334.86	1679336.55	14223731.93	39°10'10.6885"N	80°51'45.6412"W	1479.75	244.434	10.94	10.65	2.53	
7178.00	89.950	160.860	6413.68	267.78	-727.80	-1305.37	1679366.03	14223642.76	39°10'9.8064"N	80°51'45.2685"W	1494.56	240.858	3.60	3.12	-1.81	
7272.00	90.020	160.700	6413.71	361.78	-816.56	-1274.43	1679396.96	14223554.03	39°10'8.9286"N	80°51'44.8774"W	1513.59	237.351	0.19	0.07	-0.17	
7367.00	89.830	160.800	6413.83	456.78	-906.25	-1243.11	1679428.27	14223464.38	39°10'8.0417"N	80°51'44.4814"W	1538.38	233.907	0.23	-0.20	0.11	
7462.00	89.860	160.670	6414.09	551.78	-995.93	-1211.77	1679459.60	14223374.74	39°10'7.1548"N	80°51'44.0852"W	1568.52	230.584	0.14	0.03	-0.14	
7556.00	89.890	161.920	6414.30	645.77	-1084.96	-1181.62	1679489.73	14223285.74	39°10'6.2744"N	80°51'43.7042"W	1604.18	227.442	1.33	0.03	1.33	
7651.00	88.880	160.700	6415.31	740.76	-1174.95	-1151.18	1679520.16	14223195.79	39°10'5.3845"N	80°51'43.3194"W	1644.91	224.415	1.67	-1.06	-1.28	



Actual Wellpath Report

Shays Unit 1H AWP Proj: 20682'

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REFERENCE WELLPATH IDENTIFICATION				
Operator	ANTERO RESOURCES CORPORATION		Well	Shays Unit 1H
Field	Ritchie		API	47-085-10421-0000
Facility	Cashew Pad		Wellbore	Shays Unit 1H AWB
Slot	Slot A			

WELLPATH DATA (228 stations)																
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Closure Dist [ft]	Closure Dir [°]	DLS [°/100ft]	Build Rate [°/100ft]	Turn Rate [°/100ft]	Comments
7745.00	89.520	161.100	6416.63	834.75	-1263.76	-1120.43	1679550.90	14223107.01	39°10'4.5062"N	80°51'42.9306"W	1688.92	221.560	0.80	0.68	0.43	
7840.00	89.770	160.840	6417.22	929.75	-1353.57	-1089.45	1679581.87	14223017.24	39°10'3.6181"N	80°51'42.5391"W	1737.54	218.830	0.38	0.26	-0.27	
7934.00	89.920	160.810	6417.47	1023.75	-1442.35	-1058.58	1679612.73	14222928.49	39°10'2.7401"N	80°51'42.1488"W	1789.13	216.276	0.16	0.16	-0.03	
8028.00	89.860	160.460	6417.65	1117.74	-1531.04	-1027.41	1679643.88	14222839.85	39°10'1.8631"N	80°51'41.7548"W	1843.81	213.864	0.38	-0.06	-0.37	
8123.00	89.950	160.380	6417.81	1212.74	-1620.54	-995.57	1679675.71	14222750.38	39°10'0.9780"N	80°51'41.3523"W	1901.92	211.564	0.13	0.09	-0.08	
8217.00	89.770	160.790	6418.04	1306.73	-1709.20	-964.32	1679706.94	14222661.76	39°10'0.1012"N	80°51'40.9573"W	1962.47	209.432	0.48	-0.19	0.44	
8311.00	89.980	160.710	6418.24	1400.73	-1797.94	-933.33	1679737.92	14222573.05	39°09'59.2236"N	80°51'40.5656"W	2025.76	207.434	0.24	0.22	-0.09	
8406.00	89.680	160.960	6418.52	1495.72	-1887.67	-902.15	1679769.09	14222483.35	39°09'58.3362"N	80°51'40.1714"W	2092.17	205.544	0.41	-0.32	0.26	
8500.00	90.820	160.820	6418.11	1589.72	-1976.49	-871.37	1679799.86	14222394.57	39°09'57.4579"N	80°51'39.7824"W	2160.05	203.791	1.22	1.21	-0.15	
8594.00	90.970	160.880	6416.65	1683.71	-2065.28	-840.54	1679830.68	14222305.82	39°09'56.5799"N	80°51'39.3927"W	2229.77	202.148	0.17	0.16	0.06	
8689.00	90.780	160.790	6415.20	1778.69	-2155.00	-809.36	1679861.85	14222216.13	39°09'55.6926"N	80°51'38.9985"W	2301.98	200.585	0.22	-0.20	-0.09	
8783.00	90.570	160.160	6414.09	1872.68	-2243.59	-777.94	1679893.25	14222127.58	39°09'54.8165"N	80°51'38.6014"W	2374.64	199.123	0.71	-0.22	-0.67	
8878.00	90.570	160.650	6413.14	1967.67	-2333.09	-746.08	1679925.09	14222038.12	39°09'53.9315"N	80°51'38.1987"W	2449.48	197.733	0.52	0.00	0.52	
8972.00	89.950	160.660	6412.72	2061.66	-2421.78	-714.95	1679956.22	14221949.46	39°09'53.0544"N	80°51'37.8051"W	2525.10	196.447	0.66	-0.66	0.01	
9067.00	89.980	160.710	6412.77	2156.66	-2511.43	-683.52	1679987.63	14221859.85	39°09'52.1678"N	80°51'37.4079"W	2602.78	195.225	0.06	0.03	0.05	
9161.00	89.980	160.980	6412.81	2250.66	-2600.23	-652.68	1680018.46	14221771.09	39°09'51.2896"N	80°51'37.0180"W	2680.89	194.091	0.29	0.00	0.29	
9256.00	89.830	160.790	6412.96	2345.65	-2689.99	-621.57	1680049.56	14221681.36	39°09'50.4020"N	80°51'36.6248"W	2760.87	193.011	0.25	-0.16	-0.20	
9350.00	90.290	160.850	6412.87	2439.65	-2778.77	-590.69	1680080.43	14221592.61	39°09'49.5240"N	80°51'36.2345"W	2840.86	192.001	0.49	0.49	0.06	
9444.00	90.480	160.880	6412.23	2533.65	-2867.57	-559.88	1680111.23	14221503.84	39°09'48.6458"N	80°51'35.8450"W	2921.72	191.048	0.20	0.20	0.03	
9539.00	89.490	160.180	6412.26	2628.64	-2957.14	-528.21	1680142.88	14221414.31	39°09'47.7600"N	80°51'35.4448"W	3003.94	190.128	1.28	-1.04	-0.74	
9633.00	89.400	160.910	6413.17	2722.63	-3045.77	-496.91	1680174.17	14221325.72	39°09'46.8836"N	80°51'35.0491"W	3086.04	189.266	0.78	-0.10	0.78	
9727.00	89.460	160.820	6414.11	2816.62	-3134.57	-466.10	1680204.97	14221236.96	39°09'46.0054"N	80°51'34.6597"W	3169.03	188.458	0.12	0.06	-0.10	
9822.00	89.430	161.010	6415.03	2911.62	-3224.34	-435.03	1680236.02	14221147.22	39°09'45.1176"N	80°51'34.2671"W	3253.56	187.684	0.20	-0.03	0.20	
9916.00	89.580	160.670	6415.84	3005.61	-3313.13	-404.18	1680266.86	14221058.46	39°09'44.2395"N	80°51'33.8772"W	3337.70	186.955	0.40	0.16	-0.36	
10010.00	89.580	160.700	6416.53	3099.61	-3401.84	-373.09	1680297.94	14220969.79	39°09'43.3623"N	80°51'33.4842"W	3422.24	186.259	0.03	0.00	0.03	
10105.00	89.400	160.770	6417.37	3194.60	-3491.52	-341.75	1680329.27	14220880.15	39°09'42.4754"N	80°51'33.0881"W	3508.20	185.590	0.20	-0.19	0.07	
10200.00	90.020	160.850	6417.85	3289.60	-3581.24	-310.52	1680360.48	14220790.47	39°09'41.5882"N	80°51'32.6934"W	3594.67	184.956	0.66	0.65	0.08	
10294.00	90.170	160.710	6417.70	3383.59	-3670.00	-279.58	1680391.41	14220701.74	39°09'40.7104"N	80°51'32.3023"W	3680.63	184.356	0.22	0.16	-0.15	
10389.00	90.050	160.600	6417.52	3478.59	-3759.63	-248.11	1680422.87	14220612.14	39°09'39.8240"N	80°51'31.9046"W	3767.81	183.776	0.17	-0.13	-0.12	
10483.00	90.260	160.900	6417.26	3572.59	-3848.38	-217.12	1680453.85	14220523.43	39°09'38.9463"N	80°51'31.5129"W	3854.50	183.229	0.39	0.22	0.32	



Actual Wellpath Report

Shays Unit 1H AWP Proj: 20682'
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REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Well	Shays Unit 1H
Field	Ritchie	API	47-085-10421-0000
Facility	Cashew Pad	Wellbore	Shays Unit 1H AWB
Slot	Slot A		

WELLPATH DATA (228 stations)																
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Closure Dist [ft]	Closure Dir [°]	DLS ["/100ft]	Build Rate ["/100ft]	Turn Rate ["/100ft]	Comments
10578.00	89.650	160.900	6417.34	3667.59	-3938.15	-186.03	1680484.92	14220433.70	39°09'38.0586"N	80°51'31.1200"W	3942.54	182.705	0.64	-0.64	0.00	
10672.00	89.770	160.750	6417.81	3761.58	-4026.93	-155.16	1680515.78	14220344.95	39°09'37.1806"N	80°51'30.7298"W	4029.92	182.207	0.20	0.13	-0.16	
10767.00	89.710	160.970	6418.24	3856.58	-4116.68	-124.01	1680546.92	14220255.24	39°09'36.2930"N	80°51'30.3362"W	4118.54	181.725	0.24	-0.06	0.23	
10862.00	89.580	160.850	6418.83	3951.58	-4206.45	-92.94	1680577.97	14220165.50	39°09'35.4052"N	80°51'29.9435"W	4207.48	181.266	0.19	-0.14	-0.13	
10956.00	89.710	160.840	6419.41	4045.57	-4295.24	-62.10	1680608.80	14220076.74	39°09'34.5271"N	80°51'29.5537"W	4295.69	180.828	0.14	0.14	-0.01	
11051.00	89.680	161.020	6419.92	4140.57	-4385.03	-31.06	1680639.83	14219986.99	39°09'33.6392"N	80°51'29.1615"W	4385.14	180.406	0.19	-0.03	0.19	
11145.00	89.680	161.080	6420.44	4234.57	-4473.93	-0.54	1680670.34	14219898.13	39°09'32.7600"N	80°51'28.7757"W	4473.93	180.007	0.06	0.00	0.06	
11240.00	89.770	160.730	6420.90	4329.57	-4563.71	30.54	1680701.41	14219808.39	39°09'31.8722"N	80°51'28.3830"W	4563.81	179.617	0.38	0.09	-0.37	
11335.00	89.520	160.780	6421.49	4424.56	-4653.40	61.85	1680732.71	14219718.74	39°09'30.9853"N	80°51'27.9873"W	4653.81	179.238	0.27	-0.26	0.05	
11429.00	89.680	160.710	6422.14	4518.56	-4742.13	92.85	1680763.69	14219630.03	39°09'30.1077"N	80°51'27.5955"W	4743.04	178.878	0.19	0.17	-0.07	
11524.00	89.650	160.980	6422.70	4613.55	-4831.87	124.02	1680794.85	14219540.33	39°09'29.2202"N	80°51'27.2016"W	4833.46	178.530	0.29	-0.03	0.28	
11618.00	89.980	160.670	6423.00	4707.55	-4920.66	154.90	1680825.71	14219451.58	39°09'28.3422"N	80°51'26.8114"W	4923.09	178.197	0.48	0.35	-0.33	
11713.00	89.950	160.680	6423.06	4802.55	-5010.30	186.33	1680857.14	14219361.97	39°09'27.4557"N	80°51'26.4141"W	5013.77	177.870	0.03	-0.03	0.01	
11807.00	89.770	160.620	6423.29	4896.54	-5098.99	217.48	1680888.27	14219273.32	39°09'26.5786"N	80°51'26.0205"W	5103.63	177.558	0.20	-0.19	-0.06	
11901.00	89.860	160.430	6423.59	4990.54	-5187.62	248.82	1680919.60	14219184.73	39°09'25.7022"N	80°51'25.6244"W	5193.58	177.254	0.22	0.10	-0.20	
11995.00	90.020	160.680	6423.69	5084.53	-5276.25	280.11	1680950.88	14219096.13	39°09'24.8256"N	80°51'25.2290"W	5283.68	176.961	0.32	0.17	0.27	
12090.00	89.860	160.930	6423.79	5179.53	-5365.97	311.35	1680982.10	14219006.44	39°09'23.9383"N	80°51'24.8342"W	5375.00	176.679	0.31	-0.17	0.26	
12185.00	89.830	160.680	6424.05	5274.53	-5455.69	342.58	1681013.32	14218916.76	39°09'23.0511"N	80°51'24.4395"W	5466.44	176.407	0.27	-0.03	-0.26	
12279.00	89.800	160.700	6424.35	5368.52	-5544.40	373.66	1681044.40	14218828.09	39°09'22.1738"N	80°51'24.0467"W	5556.98	176.144	0.04	-0.03	0.02	
12374.00	90.080	160.870	6424.45	5463.52	-5634.11	404.93	1681075.65	14218738.42	39°09'21.2866"N	80°51'23.6516"W	5648.64	175.889	0.34	0.29	0.18	
12469.00	90.140	160.660	6424.27	5558.52	-5723.81	436.23	1681106.93	14218648.75	39°09'20.3996"N	80°51'23.2561"W	5740.40	175.642	0.23	0.06	-0.22	
12563.00	90.170	160.710	6424.02	5652.51	-5812.51	467.32	1681138.01	14218560.08	39°09'19.5223"N	80°51'22.8632"W	5831.27	175.403	0.06	0.03	0.05	
12658.00	90.020	160.820	6423.86	5747.51	-5902.21	498.62	1681169.30	14218470.42	39°09'18.6353"N	80°51'22.4677"W	5923.24	175.171	0.20	-0.16	0.12	
12752.00	90.140	160.770	6423.73	5841.51	-5990.98	529.54	1681200.21	14218381.69	39°09'17.7574"N	80°51'22.0770"W	6014.34	174.949	0.14	0.13	-0.05	
12847.00	89.980	160.580	6423.63	5936.51	-6080.63	560.98	1681231.63	14218292.08	39°09'16.8708"N	80°51'21.6797"W	6106.45	174.729	0.26	-0.17	-0.20	
12941.00	89.980	160.400	6423.66	6030.50	-6169.23	592.37	1681263.01	14218203.51	39°09'15.9946"N	80°51'21.2830"W	6197.60	174.515	0.19	0.00	-0.19	
13036.00	89.950	160.380	6423.72	6125.49	-6258.72	624.25	1681294.88	14218114.05	39°09'15.1096"N	80°51'20.8801"W	6289.77	174.304	0.04	-0.03	-0.02	
13130.00	89.950	160.730	6423.80	6219.48	-6347.36	655.54	1681326.16	14218025.45	39°09'14.2330"N	80°51'20.4846"W	6381.12	174.103	0.37	0.00	0.37	
13225.00	90.170	161.080	6423.70	6314.48	-6437.13	686.62	1681357.23	14217935.72	39°09'13.3452"N	80°51'20.0919"W	6473.65	173.912	0.44	0.23	0.37	
13319.00	90.020	160.800	6423.55	6408.48	-6525.98	717.32	1681387.91	14217846.90	39°09'12.4866"N	80°51'19.7041"W	6565.28	173.727	0.34	-0.16	-0.30	



Actual Wellpath Report

Shays Unit 1H AWP Proj: 20682'
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REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Well	Shays Unit 1H
Field	Ritchie	API	47-085-10421-0000
Facility	Cashew Pad	Wellbore	Shays Unit 1H AWB
Slot	Slot A		

WELLPATH DATA (228 stations)																
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Closure Dist [ft]	Closure Dir [°]	DLS ["/100ft]	Build Rate ["/100ft]	Turn Rate ["/100ft]	Comments
13414.00	90.320	162.070	6423.26	6503.48	-6616.03	747.56	1681418.15	14217756.89	39°09'11.5760"N	80°51'19.3220"W	6658.13	173.553	1.37	0.32	1.34	
13509.00	90.350	161.770	6422.71	6598.47	-6706.34	777.05	1681447.62	14217666.61	39°09'10.6829"N	80°51'18.9496"W	6751.21	173.391	0.32	0.03	-0.32	
13603.00	90.350	161.320	6422.13	6692.46	-6795.50	806.80	1681477.36	14217577.49	39°09'9.8012"N	80°51'18.5736"W	6843.23	173.229	0.48	0.00	-0.48	
13698.00	90.200	160.830	6421.68	6787.46	-6885.37	837.61	1681508.16	14217487.66	39°09'8.9125"N	80°51'18.1844"W	6936.13	173.064	0.54	-0.16	-0.52	
13792.00	90.450	161.660	6421.14	6881.46	-6974.37	867.84	1681538.37	14217398.69	39°09'8.0323"N	80°51'17.8025"W	7028.16	172.907	0.92	0.27	0.88	
13887.00	90.390	161.370	6420.45	6976.46	-7064.47	897.96	1681568.48	14217308.63	39°09'7.1413"N	80°51'17.4220"W	7121.31	172.756	0.31	-0.06	-0.31	
13981.00	90.140	161.380	6420.01	7070.45	-7153.54	927.98	1681598.48	14217219.59	39°09'6.2604"N	80°51'17.0428"W	7213.48	172.609	0.27	-0.27	0.01	
14076.00	90.350	161.340	6419.61	7165.45	-7243.56	958.34	1681628.84	14217129.61	39°09'5.3702"N	80°51'16.6592"W	7306.68	172.463	0.23	0.22	-0.04	
14171.00	90.320	161.710	6419.05	7260.45	-7333.66	988.44	1681658.93	14217039.54	39°09'4.4791"N	80°51'16.2789"W	7399.98	172.324	0.39	-0.03	0.39	
14265.00	90.230	161.600	6418.80	7354.44	-7422.88	1018.03	1681688.50	14216950.36	39°09'3.5968"N	80°51'15.9052"W	7492.37	172.191	0.15	-0.10	-0.12	
14360.00	90.230	161.550	6418.22	7449.44	-7513.01	1048.05	1681718.51	14216860.26	39°09'2.7055"N	80°51'15.5259"W	7585.76	172.059	0.05	0.00	-0.05	
14454.00	90.170	161.900	6417.89	7543.44	-7602.27	1077.53	1681747.98	14216771.04	39°09'1.8228"N	80°51'15.1535"W	7678.26	171.933	0.38	-0.06	0.37	
14548.00	90.230	161.520	6417.56	7637.43	-7691.52	1107.03	1681777.47	14216681.83	39°09'0.9402"N	80°51'14.7809"W	7770.78	171.810	0.41	0.06	-0.40	
14643.00	90.140	161.880	6417.26	7732.43	-7781.72	1136.86	1681807.28	14216591.67	39°09'0.0482"N	80°51'14.4041"W	7864.32	171.688	0.39	-0.09	0.38	
14738.00	90.230	161.500	6416.95	7827.42	-7871.91	1166.70	1681837.12	14216501.51	39°08'59.1563"N	80°51'14.0271"W	7957.90	171.570	0.41	0.09	-0.40	
14832.00	90.320	161.690	6416.50	7921.42	-7961.10	1196.38	1681866.78	14216412.36	39°08'58.2743"N	80°51'13.6522"W	8050.49	171.454	0.22	0.10	0.20	
14926.00	90.320	161.680	6415.97	8015.41	-8050.33	1225.92	1681896.31	14216323.16	39°08'57.3918"N	80°51'13.2791"W	8143.14	171.341	0.01	0.00	-0.01	
15020.00	90.200	161.710	6415.55	8109.41	-8139.58	1255.44	1681925.82	14216233.95	39°08'56.5093"N	80°51'12.9062"W	8235.83	171.232	0.13	-0.13	0.03	
15115.00	90.290	161.830	6415.14	8204.40	-8229.81	1285.16	1681955.53	14216143.76	39°08'55.6170"N	80°51'12.5308"W	8329.55	171.124	0.16	0.09	0.13	
15209.00	90.290	161.750	6414.68	8298.40	-8319.10	1314.54	1681984.89	14216054.50	39°08'54.7340"N	80°51'12.1598"W	8422.32	171.021	0.09	0.00	-0.09	
15304.00	90.230	161.850	6414.23	8393.39	-8409.35	1344.21	1682014.55	14215964.29	39°08'53.8415"N	80°51'11.7850"W	8516.10	170.918	0.12	-0.06	0.11	
15399.00	90.290	161.830	6413.80	8488.38	-8499.61	1373.82	1682044.15	14215874.06	39°08'52.9488"N	80°51'11.4111"W	8609.92	170.819	0.07	0.06	-0.02	
15493.00	90.290	161.920	6413.33	8582.38	-8588.95	1403.06	1682073.38	14215784.76	39°08'52.0654"N	80°51'11.0417"W	8702.79	170.722	0.10	0.00	0.10	
15588.00	90.260	162.120	6412.87	8677.36	-8679.31	1432.38	1682102.69	14215694.44	39°08'51.1718"N	80°51'10.6714"W	8796.71	170.629	0.21	-0.03	0.21	
15682.00	90.350	161.970	6412.37	8771.35	-8768.73	1461.36	1682131.66	14215605.05	39°08'50.2875"N	80°51'10.3054"W	8889.67	170.538	0.19	0.10	-0.16	
15777.00	90.480	161.790	6411.68	8866.34	-8859.01	1490.91	1682161.19	14215514.80	39°08'49.3946"N	80°51'9.9323"W	8983.59	170.447	0.23	0.14	-0.19	
15871.00	90.260	161.700	6411.08	8960.34	-8948.28	1520.35	1682190.62	14215425.57	39°08'48.5119"N	80°51'9.5604"W	9076.52	170.357	0.25	-0.23	-0.10	
15966.00	89.400	160.630	6411.36	9055.33	-9038.19	1551.02	1682221.28	14215335.70	39°08'47.6227"N	80°51'9.1730"W	9170.31	170.262	1.45	-0.91	-1.13	
16060.00	90.200	161.800	6411.69	9149.33	-9127.18	1581.29	1682251.54	14215246.74	39°08'46.7426"N	80°51'8.7906"W	9263.15	170.171	1.51	0.85	1.24	
16154.00	90.170	161.840	6411.38	9243.32	-9216.49	1610.62	1682280.85	14215157.47	39°08'45.8595"N	80°51'8.4202"W	9356.16	170.087	0.05	-0.03	0.04	



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REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Well	Shays Unit 1H
Field	Ritchie	API	47-085-10421-0000
Facility	Cashew Pad	Wellbore	Shays Unit 1H AWB
Slot	Slot A		

WELLPATH DATA (228 stations)																
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Closure Dist [ft]	Closure Dir [°]	DLS [°/100ft]	Build Rate [°/100ft]	Turn Rate [°/100ft]	Comments
16249.00	90.350	161.590	6410.95	9338.32	-9306.69	1640.42	1682310.65	14215067.30	39°08'44.9674"N	80°51'8.0438"W	9450.16	170.004	0.32	0.19	-0.26	
16343.00	90.050	161.540	6410.62	9432.32	-9395.87	1670.15	1682340.36	14214978.16	39°08'44.0855"N	80°51'7.6683"W	9543.15	169.921	0.32	-0.32	-0.05	
16437.00	90.260	159.700	6410.37	9526.31	-9484.54	1701.34	1682371.54	14214889.53	39°08'43.2086"N	80°51'7.2743"W	9635.92	169.830	1.97	0.22	-1.96	
16532.00	89.740	161.880	6410.37	9621.30	-9574.24	1732.59	1682402.78	14214799.86	39°08'42.3215"N	80°51'6.8794"W	9729.75	169.743	2.36	-0.55	2.29	
16626.00	89.710	161.890	6410.82	9715.29	-9663.58	1761.82	1682432.00	14214710.56	39°08'41.4380"N	80°51'6.5103"W	9822.87	169.668	0.03	-0.03	0.01	
16721.00	89.920	161.650	6411.13	9810.28	-9753.81	1791.54	1682461.70	14214620.36	39°08'40.5457"N	80°51'6.1350"W	9916.98	169.592	0.34	0.22	-0.25	
16815.00	89.680	161.720	6411.45	9904.28	-9843.05	1821.08	1682491.23	14214531.16	39°08'39.6632"N	80°51'5.7619"W	10010.09	169.518	0.27	-0.26	0.07	
16909.00	89.710	161.820	6411.95	9998.27	-9932.33	1850.48	1682520.62	14214441.91	39°08'38.7802"N	80°51'5.3905"W	10103.24	169.446	0.11	0.03	0.11	
17004.00	89.710	161.720	6412.44	10093.27	-10022.56	1880.20	1682550.33	14214351.72	39°08'37.8879"N	80°51'5.0152"W	10197.40	169.375	0.11	0.00	-0.11	
17098.00	89.710	161.790	6412.91	10187.26	-10111.83	1909.63	1682579.75	14214262.48	39°08'37.0051"N	80°51'4.6435"W	10290.57	169.306	0.07	0.00	0.07	
17193.00	90.110	161.870	6413.06	10282.26	-10202.10	1939.26	1682609.36	14214172.26	39°08'36.1124"N	80°51'4.2694"W	10384.77	169.237	0.43	0.42	0.08	
17287.00	90.260	162.350	6412.76	10376.24	-10291.55	1968.13	1682638.22	14214082.84	39°08'35.2278"N	80°51'3.9048"W	10478.05	169.174	0.53	0.16	0.51	
17382.00	90.140	161.940	6412.43	10471.23	-10381.97	1997.26	1682667.34	14213992.45	39°08'34.3336"N	80°51'3.5370"W	10572.34	169.111	0.45	-0.13	-0.43	
17476.00	90.080	162.050	6412.25	10565.22	-10471.37	2026.31	1682696.38	14213903.09	39°08'33.4495"N	80°51'3.1701"W	10665.62	169.048	0.13	-0.06	0.12	
17571.00	90.380	161.710	6411.86	10660.21	-10561.66	2055.86	1682725.92	14213812.84	39°08'32.5567"N	80°51'2.7970"W	10759.89	168.985	0.48	0.32	-0.36	
17665.00	90.320	161.410	6411.29	10754.21	-10650.83	2085.59	1682755.64	14213723.70	39°08'31.6748"N	80°51'2.4215"W	10853.10	168.921	0.33	-0.06	-0.32	
17760.00	90.790	160.910	6410.37	10849.20	-10740.74	2116.27	1682786.30	14213633.83	39°08'30.7857"N	80°51'2.0340"W	10947.24	168.854	0.72	0.49	-0.53	
17854.00	90.320	161.310	6409.46	10943.20	-10829.67	2146.70	1682816.72	14213544.93	39°08'29.9062"N	80°51'1.6496"W	11040.38	168.788	0.66	-0.50	0.43	
17949.00	90.350	160.680	6408.90	11038.19	-10919.49	2177.64	1682847.64	14213455.15	39°08'29.0179"N	80°51'1.2589"W	11134.51	168.722	0.66	0.03	-0.66	
18043.00	90.350	160.610	6408.33	11132.19	-11008.17	2208.79	1682878.79	14213366.50	39°08'28.1408"N	80°51'0.8654"W	11227.58	168.654	0.07	0.00	-0.07	
18138.00	91.030	160.990	6407.19	11227.18	-11097.88	2240.03	1682910.01	14213276.83	39°08'27.2536"N	80°51'0.4707"W	11321.69	168.589	0.82	0.72	0.40	
18232.00	90.050	160.580	6406.30	11321.17	-11186.64	2270.96	1682940.94	14213188.11	39°08'26.3759"N	80°51'0.0800"W	11414.82	168.525	1.13	-1.04	-0.44	
18327.00	90.660	161.270	6405.71	11416.17	-11276.42	2302.01	1682971.97	14213098.36	39°08'25.4880"N	80°50'59.6879"W	11508.99	168.462	0.97	0.64	0.73	
18421.00	90.140	160.780	6405.05	11510.16	-11365.31	2332.57	1683002.52	14213009.51	39°08'24.6089"N	80°50'59.3018"W	11602.21	168.402	0.76	-0.55	-0.52	
18515.00	90.020	161.580	6404.92	11604.16	-11454.28	2362.90	1683032.83	14212920.57	39°08'23.7290"N	80°50'58.9188"W	11695.47	168.344	0.86	-0.13	0.85	
18610.00	90.320	161.680	6404.64	11699.16	-11544.44	2392.84	1683062.76	14212830.45	39°08'22.8374"N	80°50'58.5408"W	11789.82	168.290	0.33	0.32	0.11	
18704.00	89.980	160.910	6404.40	11793.16	-11633.48	2422.98	1683092.89	14212741.45	39°08'21.9569"N	80°50'58.1600"W	11883.12	168.235	0.90	-0.36	-0.82	
18798.00	90.480	161.070	6404.02	11887.16	-11722.35	2453.60	1683123.50	14212652.61	39°08'21.0779"N	80°50'57.7733"W	11976.38	168.178	0.56	0.53	0.17	
18893.00	90.450	161.310	6403.25	11982.15	-11812.27	2484.23	1683154.12	14212562.72	39°08'20.1886"N	80°50'57.3865"W	12070.67	168.123	0.25	-0.03	0.25	
18987.00	90.570	160.850	6402.41	12076.15	-11901.19	2514.71	1683184.58	14212473.84	39°08'19.3093"N	80°50'57.0016"W	12163.97	168.069	0.51	0.13	-0.49	



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REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Well	Shays Unit 1H
Field	Ritchie	API	47-085-10421-0000
Facility	Cashew Pad	Wellbore	Shays Unit 1H AWB
Slot	Slot A		

WELLPATH DATA (228 stations) † = interpolated, ‡ = extrapolated station																
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Closure Dist [ft]	Closure Dir [°]	DLS ["/100ft]	Build Rate ["/100ft]	Turn Rate ["/100ft]	Comments
19081.00	89.950	161.170	6401.98	12170.15	-11990.07	2545.29	1683215.16	14212384.99	39°08'18.4303"N	80°50'56.6152"W	12257.26	168.015	0.74	-0.66	0.34	
19176.00	90.140	161.000	6401.91	12265.15	-12079.94	2576.09	1683245.94	14212295.16	39°08'17.5415"N	80°50'56.2263"W	12351.57	167.962	0.27	0.20	-0.18	
19270.00	90.600	159.810	6401.30	12359.13	-12168.50	2607.61	1683277.45	14212206.64	39°08'16.6657"N	80°50'55.8281"W	12444.75	167.905	1.36	0.49	-1.27	
19365.00	90.080	160.790	6400.74	12454.12	-12257.93	2639.64	1683309.46	14212117.24	39°08'15.7812"N	80°50'55.4236"W	12538.92	167.847	1.17	-0.55	1.03	
19459.00	89.680	160.950	6400.94	12548.12	-12346.74	2670.44	1683340.25	14212028.47	39°08'14.9029"N	80°50'55.0345"W	12632.23	167.796	0.46	-0.43	0.17	
19553.00	90.200	161.230	6401.03	12642.12	-12435.67	2700.91	1683370.70	14211939.58	39°08'14.0235"N	80°50'54.6498"W	12725.59	167.746	0.63	0.55	0.30	
19648.00	89.620	161.890	6401.18	12737.11	-12525.79	2730.95	1683400.74	14211849.49	39°08'13.1322"N	80°50'54.2703"W	12820.04	167.700	0.92	-0.61	0.69	
19742.00	90.260	160.260	6401.28	12831.11	-12614.70	2761.44	1683431.22	14211760.61	39°08'12.2529"N	80°50'53.8853"W	12913.42	167.652	1.86	0.68	-1.73	
19836.00	90.050	162.390	6401.03	12925.10	-12703.75	2791.54	1683461.30	14211671.60	39°08'11.3723"N	80°50'53.5053"W	13006.84	167.607	2.28	-0.22	2.27	
20025.00	89.680	160.820	6401.47	13114.09	-12883.09	2851.18	1683520.92	14211492.34	39°08'9.5987"N	80°50'52.7522"W	13194.81	167.521	0.85	-0.20	-0.83	
20120.00	89.920	160.990	6401.80	13209.09	-12972.86	2882.25	1683551.98	14211402.60	39°08'8.7109"N	80°50'52.3597"W	13289.18	167.474	0.31	0.25	0.18	
20214.00	89.980	160.970	6401.89	13303.09	-13061.73	2912.89	1683582.60	14211313.77	39°08'7.8320"N	80°50'51.9728"W	13382.59	167.428	0.07	0.06	-0.02	
20309.00	90.720	161.080	6401.31	13398.09	-13151.56	2943.78	1683613.48	14211223.97	39°08'6.9436"N	80°50'51.5827"W	13476.99	167.383	0.79	0.78	0.12	
20403.00	89.830	161.050	6400.85	13492.08	-13240.47	2974.28	1683643.97	14211135.10	39°08'5.0643"N	80°50'51.1975"W	13570.43	167.339	0.95	-0.95	-0.03	
20498.00	90.940	161.180	6400.22	13587.08	-13330.36	3005.03	1683674.71	14211045.25	39°08'5.1754"N	80°50'50.8092"W	13664.87	167.296	1.18	1.17	0.14	
20593.00	91.520	161.290	6398.18	13682.06	-13420.28	3035.58	1683705.25	14210955.36	39°08'4.2860"N	80°50'50.4234"W	13759.32	167.255	0.62	0.61	0.12	
20656.00	89.980	161.250	6397.35	13745.05	-13479.94	3055.81	1683725.47	14210895.72	39°08'3.6960"N	80°50'50.1680"W	13821.97	167.227	2.45	-2.44	-0.06	
20682.00‡	89.980	161.250	6397.36	13771.05	-13504.56	3064.17	1683733.82	14210871.11	39°08'3.4525"N	80°50'50.0625"W	13847.83	167.216	0.00	0.00	0.00	Projected MD at TD: 20682'



Actual Wellpath Report

Shays Unit 1H AWP Proj: 20682'
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REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Well	Shays Unit 1H
Field	Ritchie	API	47-085-10421-0000
Facility	Cashew Pad	Wellbore	Shays Unit 1H AWB
Slot	Slot A		

HOLE & CASING SECTIONS - Ref Wellbore: Shays Unit 1H AWB Ref Wellpath: Shays Unit 1H AWP Proj: 20682'									
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]
16in Conductor	30.00	130.00	100.00	30.00	130.00	0.00	0.00	0.17	0.08
13.5in Open Hole	130.00	354.00	224.00	130.00	354.00	0.17	0.08	0.56	-0.86
10.75in Casing Surface	30.00	334.00	304.00	30.00	334.00	0.00	0.00	0.63	-0.60
9.875in Open Hole	354.00	2657.00	2303.00	354.00	2588.23	0.56	-0.86	43.34	-524.99
7.625in Casing Intermediate	30.00	2637.00	2607.00	30.00	2569.18	0.00	0.00	43.98	-518.93
6.75in Open Hole	2657.00	20682.00	18025.00	2588.23	6397.36	43.34	-524.99	-13504.56	3064.17
5in Casing Production	30.00	20662.00	20632.00	30.00	6397.35	0.00	0.00	-13485.62	3057.74



Actual Wellpath Report

Shays Unit 1H AWP Proj: 20682'
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REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Well	Shays Unit 1H
Field	Ritchie	API	47-085-10421-0000
Facility	Cashew Pad	Wellbore	Shays Unit 1H AWB
Slot	Slot A		

TARGETS								
Name	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
Shays Unit 1H POE Rev-3	6424.00	-463.30	-1374.38	1679297.05	14223907.16	39°10'12.4218"N	80°51'46.1396"W	point
Shays Unit 1H BHL Rev-3	6447.00	-13707.41	3138.70	1683808.32	14210668.34	39°08'1.4463"N	80°50'49.1210"W	point
Shays Unit 1H BHL Rev-4	6447.00	-13565.43	3090.31	1683759.96	14210810.27	39°08'2.8505"N	80°50'49.7320"W	point
Shays Unit 1H LP Rev-3	6447.00	-633.72	-1316.31	1679355.10	14223736.81	39°10'10.7365"N	80°51'45.4055"W	point
Shays Unit 1H 50' L/R Hard Line Rev-3	7000.00	-7014.36	857.97	1681528.50	14217358.71	39°09'7.6372"N	80°51'17.9286"W	rectangle
2D Rectangle 13841.9 x 100.								

WELLPATH COMPOSITION - Ref Wellbore: Shays Unit 1H AWB Ref Wellpath: Shays Unit 1H AWP Proj: 20682'					
Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore	Survey Date
30.00	287.00	Gyrodata 2015 - GC+WIR+DPIPE	01 Gyrodata MS Gyro <13-1/2'> (100'-287')	Shays Unit 1H AWB	7/27/2022
287.00	2587.00	BH NaviTrak (2019) (Axial Corr+HRGM)	02 APS EM <9-7/8'> (287')(413'-2587')	Shays Unit 1H AWB	7/27/2022
2587.00	5599.00	BH NaviTrak (2019) (Axial Corr+HRGM)	03 APS EM <6-3/4'> (2587')(2666'-5599')	Shays Unit 1H AWB	7/27/2022
5599.00	20682.00	BH OnTrak (2019) (HRGM, Short spacing)	04 BH Lucida <6-3/4'> (5599')(5666'-20656')	Shays Unit 1H AWB	7/27/2022



Actual Wellpath Report

Shays Unit 1H AWP Proj: 20682'

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REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Well	Shays Unit 1H
Field	Ritchie	API	47-085-10421-0000
Facility	Cashew Pad	Wellbore	Shays Unit 1H AWB
Slot	Slot A		

COMMENTS
<p>Wellpath general comments API: 47-085-10421-0000 BH Job #: 111434694 Rig: H&P 531 Duration: 7/28/2022-8/8/2022 Gyrodata MS Gyro <13-1/2"> (100'-287') APS EM <9-7/8"> (287')(413'-2587') APS EM <6-3/4"> (2587')(2666'-5599') BH Lucida <6-3/4"> (5599')(5666'-20656') Sycamore: 6302' MD Middlesex: 6557' MD Burkett: 6791' MD Tully: 6897' MD Marcellus POE: 6969' MD Projected MD at TD: 20682'</p>

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 Office of Oil and Gas
APR 07 2023
 WV Department of
 Environmental Protection