

ANTERO RESOURCES CORPORATION

Location: Tyler County, WV
 Field: Tylor
 Facility: Gamehenge East Pad

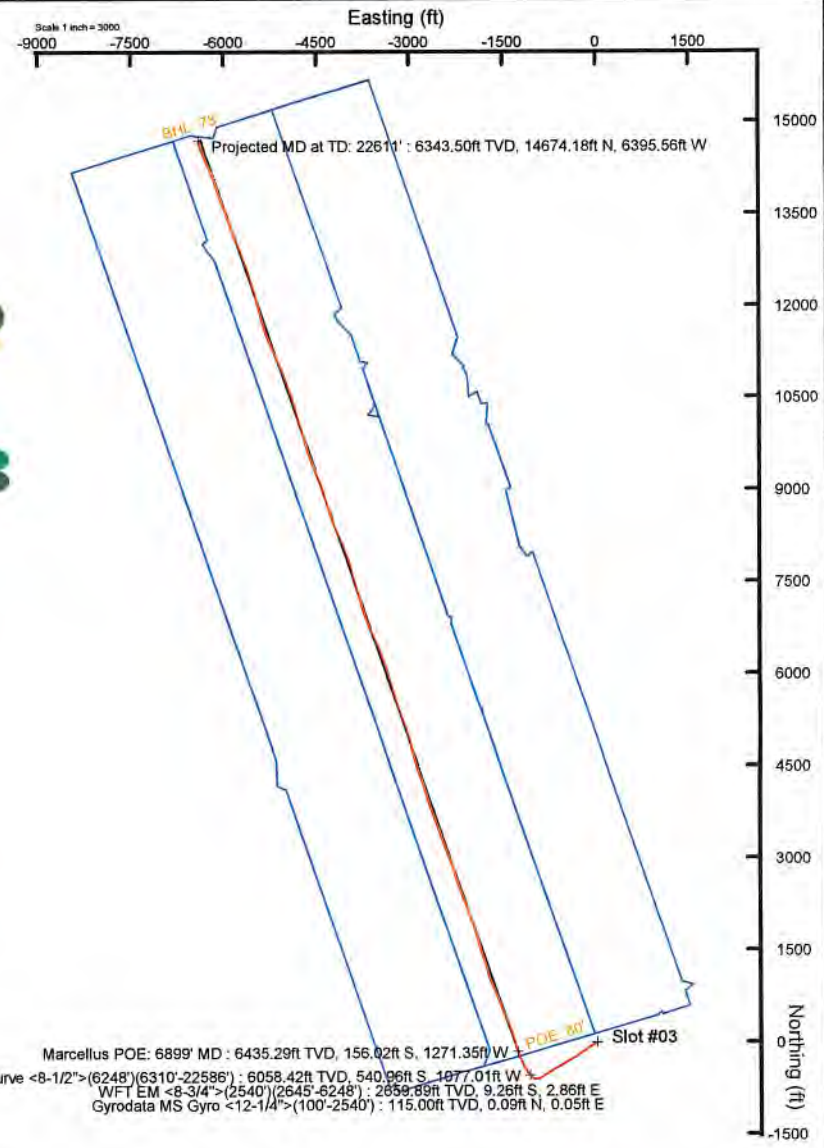
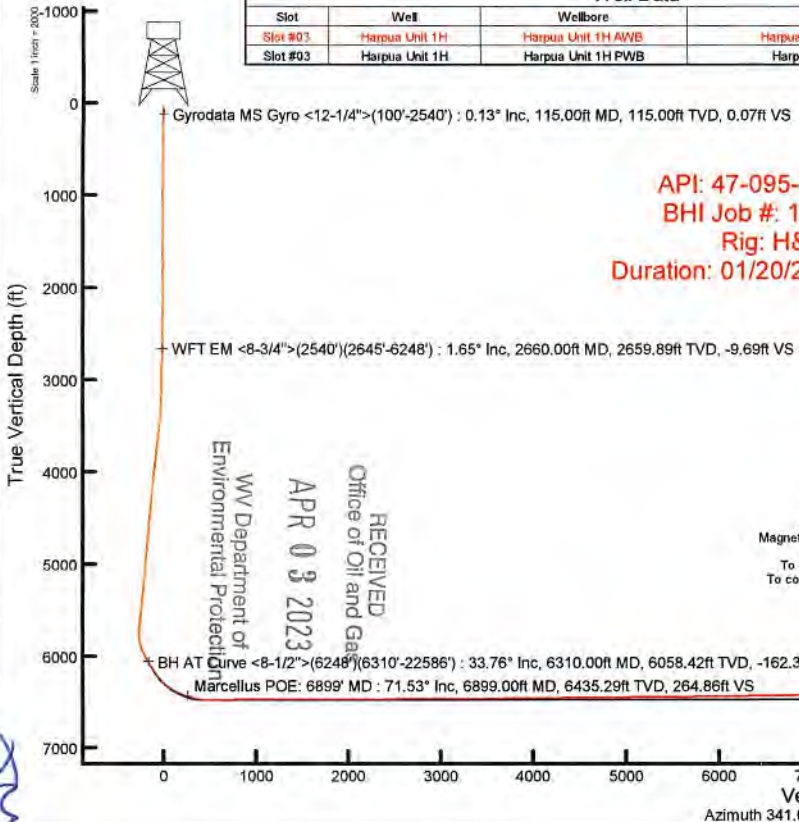
Slot: Slot #03
 Well: Harpua Unit 1H
 Wellbore: Harpua Unit 1H PWB

PKI reference wellpath is Harpua Unit 1H PWP Rev-A.0	Grid System: NAD83 / UTM Zone 17 North, US feet
True vertical depths are referenced to H&P 519 (RKB)	North Reference: Grid north
Reference wellpath measured depths are referenced to H&P 519 (RKB)	Scale: True distance
H&P 519 (RKB) to Mean Sea Level: 1991 feet	Coordinates are in feet referenced to Slot
Mean Sea Level to Ground level (At Slot: Slot #03): -1091 feet	Depths are in feet
Offset wellpath MDs are referenced to each path's default MD datum	Created by: dabanat on 2020-01-29; Database: WA_MPL_EasternUS_Data

Location Information					
Facility Name	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude	
Gamehenge East Pad	1672504.896	14347540.047	39°30'34.9460"N	80°53'10.4370"W	
Slot	Local N (ft)	Local E (ft)	Grid East (US ft)	Grid North (US ft)	Longitude
Slot #03	-9.02	-11.90	1672493.000	14347531.030	39°30'34.8570"N 80°53'10.5890"W
H&P 519 (RKB) to Ground level (At Slot: Slot #03)	30ft				
Mean Sea Level to Ground level (At Slot: Slot #03)	-1091ft				
H&P 519 (RKB) to Mean Sea Level	1091ft				

Well Profile Data								
Design Comment	MD (ft)	Inc (")	Az (°)	TVD (ft)	Local N (ft)	Local E (ft)	DLS (°/100ft)	VS (ft)
Tie On	6263.00	30.940	319.170	6018.72	-560.64	-1061.38	8.91	-186.00
PTB	6335.00	33.550	327.150	6079.63	-529.90	-1084.29	6.93	-149.49
Build/Turn	6396.21	29.217	320.397	6131.90	-504.16	-1103.00	9.11	-119.07
POE	6880.28	70.795	341.074	6438.00	-180.82	-1260.28	9.11	237.81
LP	7091.09	90.000	341.074	6473.00	14.88	-1327.38	9.11	444.69
BHL	22609.72	90.000	341.074	6473.00	14694.58	-6360.71	0.00	15963.33

Well Data			
Slot	Well	Wellbore	Wellpath
Slot #03	Harpua Unit 1H	Harpua Unit 1H AWE	Harpua Unit 1H AWP Proj: 22611'
Slot #03	Harpua Unit 1H	Harpua Unit 1H PWB	Harpua Unit 1H PWP Rev-A.0



User specified (HDGM) Dip: 66.52° Field: 51785 nT
 Magnetic North is 7.56 degrees West of True North (at 1/16/2020)
 Grid North is 0.07 degrees East of True North
 To correct azimuth from True to Grid subtract 0.07 degrees
 To correct azimuth from Magnetic to Grid subtract 7.63 degrees



Azimuth 341.07° with reference 0.00 N, 0.00 E



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Harpua Unit 1H AWP Proj: 22611'
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REFERENCE WELLPATH IDENTIFICATION

Operator	ANTERO RESOURCES CORPORATION	Well	Harpua Unit 1H
Field	Tyler	API	47-095-02636-0000
Facility	Gamehenge East Pad	Wellbore	Harpua Unit 1H AWB
Slot	Slot #03		

REPORT SETUP INFORMATION

Projection System	NAD27 / UTM Zone 17 North, US feet	Software System	WellArchitect® 6.0
North Reference	Grid	User	Delaset
Scale	0.999601	Report Generated	1/29/2020 at 4:28:00 PM
Convergence at slot	0.07° 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	-9.02	-11.90	1672493.00	14347531.03	39°30'34.8570"N	80°53'10.5890"W
Facility Reference Pt			1672504.90	14347540.05	39°30'34.9460"N	80°53'10.4370"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 519 (RKB) to Facility Vertical Datum	1091.00ft
Horizontal Reference Pt	Slot	H&P 519 (RKB) to Mean Sea Level	1091.00ft
Vertical Reference Pt	H&P 519 (RKB)	H&P 519 (RKB) to Ground Level at Slot (Slot #03)	30.00ft
MD Reference Pt	H&P 519 (RKB)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	341.07°

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Field	Tyler		API	47-095-02636-0000
Facility	Gamehenge East Pad		Wellbore	Harpua Unit 1H AWB
Slot	Slot #03			

WELLPATH DATA (258 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	27.990	0.00	0.00	0.00	0.00	1672493.00	14347531.03	39°30'34.8570"N	80°53'10.5890"W	0.00	0.000	0.00	
30.00	0.000	27.990	30.00	0.00	0.00	0.00	1672493.00	14347531.03	39°30'34.8570"N	80°53'10.5890"W	0.00	0.000	0.00	
115.00	0.130	27.990	115.00	0.07	0.09	0.05	1672493.05	14347531.12	39°30'34.8578"N	80°53'10.5884"W	0.10	27.990	0.15	Gyrodatta MS Gyro <12-1/4">(100'-2540')
215.00	0.140	34.550	215.00	0.22	0.29	0.17	1672493.17	14347531.32	39°30'34.8598"N	80°53'10.5868"W	0.33	30.403	0.02	
315.00	0.100	37.280	315.00	0.34	0.46	0.29	1672493.29	14347531.49	39°30'34.8615"N	80°53'10.5853"W	0.54	32.448	0.04	
415.00	0.150	47.600	415.00	0.44	0.61	0.44	1672493.44	14347531.64	39°30'34.8631"N	80°53'10.5834"W	0.75	35.605	0.05	
515.00	0.070	21.250	515.00	0.54	0.76	0.56	1672493.56	14347531.79	39°30'34.8645"N	80°53'10.5818"W	0.94	36.338	0.09	
615.00	0.070	333.370	615.00	0.64	0.87	0.55	1672493.55	14347531.90	39°30'34.8656"N	80°53'10.5819"W	1.03	32.429	0.06	
715.00	0.130	178.040	715.00	0.60	0.81	0.53	1672493.53	14347531.84	39°30'34.8650"N	80°53'10.5822"W	0.97	33.119	0.20	
815.00	0.130	169.710	815.00	0.38	0.59	0.55	1672493.55	14347531.62	39°30'34.8628"N	80°53'10.5819"W	0.81	43.341	0.02	
915.00	0.140	175.230	915.00	0.14	0.35	0.58	1672493.58	14347531.38	39°30'34.8605"N	80°53'10.5815"W	0.68	58.831	0.02	
1015.00	0.130	170.700	1015.00	-0.09	0.12	0.61	1672493.61	14347531.15	39°30'34.8582"N	80°53'10.5812"W	0.62	78.952	0.01	
1115.00	0.130	152.040	1115.00	-0.31	-0.09	0.68	1672493.68	14347530.94	39°30'34.8561"N	80°53'10.5802"W	0.69	97.705	0.04	
1215.00	0.110	144.280	1215.00	-0.51	-0.27	0.79	1672493.79	14347530.76	39°30'34.8543"N	80°53'10.5789"W	0.84	108.840	0.03	
1315.00	0.110	138.820	1315.00	-0.69	-0.42	0.91	1672493.91	14347530.61	39°30'34.8528"N	80°53'10.5773"W	1.00	114.759	0.01	
1415.00	0.120	139.430	1415.00	-0.88	-0.57	1.04	1672494.04	14347530.46	39°30'34.8513"N	80°53'10.5757"W	1.19	118.749	0.01	
1515.00	0.080	193.130	1515.00	-1.04	-0.72	1.10	1672494.10	14347530.31	39°30'34.8499"N	80°53'10.5750"W	1.31	123.306	0.10	
1615.00	0.090	200.340	1615.00	-1.16	-0.86	1.05	1672494.05	14347530.17	39°30'34.8485"N	80°53'10.5756"W	1.36	129.299	0.01	
1715.00	0.070	72.930	1715.00	-1.22	-0.92	1.08	1672494.08	14347530.11	39°30'34.8479"N	80°53'10.5752"W	1.42	130.244	0.14	
1815.00	0.110	230.790	1815.00	-1.25	-0.96	1.07	1672494.07	14347530.07	39°30'34.8475"N	80°53'10.5754"W	1.44	131.958	0.18	
1915.00	0.450	137.390	1915.00	-1.65	-1.31	1.26	1672494.26	14347529.72	39°30'34.8440"N	80°53'10.5729"W	1.82	136.124	0.47	
2015.00	0.470	135.200	2014.99	-2.38	-1.89	1.81	1672494.81	14347529.14	39°30'34.8383"N	80°53'10.5659"W	2.62	136.169	0.03	
2115.00	0.630	130.260	2114.99	-3.22	-2.54	2.52	1672495.52	14347528.49	39°30'34.8319"N	80°53'10.5568"W	3.58	135.152	0.17	
2215.00	0.750	128.050	2214.98	-4.24	-3.30	3.46	1672496.46	14347527.74	39°30'34.8244"N	80°53'10.5449"W	4.78	133.619	0.12	
2315.00	0.910	128.940	2314.97	-5.46	-4.20	4.59	1672497.59	14347526.83	39°30'34.8155"N	80°53'10.5305"W	6.22	132.437	0.16	
2415.00	1.130	132.310	2414.95	-7.00	-5.36	5.94	1672498.94	14347525.67	39°30'34.8039"N	80°53'10.5133"W	8.00	132.074	0.23	
2515.00	1.250	217.240	2514.94	-8.47	-6.89	6.01	1672499.00	14347524.14	39°30'34.7888"N	80°53'10.5124"W	9.14	138.928	1.81	
2555.00	1.590	233.470	2554.93	-8.88	-7.57	5.30	1672498.29	14347523.46	39°30'34.7821"N	80°53'10.5215"W	9.24	145.019	1.31	
2660.00	1.650	236.970	2659.89	-9.69	-9.26	2.86	1672495.86	14347521.77	39°30'34.7654"N	80°53'10.5526"W	9.69	162.844	0.11	WFT EM <8-3/4">(2540')(2645'-6248')
2755.00	3.940	232.900	2754.77	-11.04	-11.98	-0.89	1672492.11	14347519.06	39°30'34.7386"N	80°53'10.6005"W	12.01	184.256	2.42	

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Harpua Unit 1H AWP Proj: 22611'
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Operator	ANTERO RESOURCES CORPORATION		Well	Harpua Unit 1H
Field	Tyler		API	47-095-02636-0000
Facility	Gamehenge East Pad		Wellbore	Harpua Unit 1H AWB
Slot	Slot #03			

WELLPATH DATA (258 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
2849.00	7.590	245.870	2848.28	-12.61	-16.46	-9.14	1672483.87	14347514.57	39°30'34.6944"N	80°53'10.7058"W	18.83	209.026	4.10	
2944.00	10.050	247.270	2942.15	-13.73	-22.23	-22.51	1672470.50	14347508.81	39°30'34.6375"N	80°53'10.8765"W	31.64	225.354	2.60	
3039.00	11.230	245.600	3035.51	-15.16	-29.26	-38.58	1672454.44	14347501.79	39°30'34.5683"N	80°53'11.0817"W	48.42	232.825	1.28	
3133.00	11.760	238.540	3127.63	-18.11	-38.04	-55.09	1672437.94	14347493.01	39°30'34.4817"N	80°53'11.2924"W	66.94	235.375	1.60	
3228.00	13.770	239.910	3220.28	-22.40	-48.76	-73.13	1672419.90	14347482.29	39°30'34.3760"N	80°53'11.5228"W	87.89	236.306	2.14	
3327.00	15.700	237.860	3316.02	-27.74	-61.79	-94.67	1672398.37	14347469.26	39°30'34.2474"N	80°53'11.7978"W	113.05	236.866	2.02	
3422.00	17.000	236.070	3407.18	-34.27	-76.38	-117.08	1672375.97	14347454.68	39°30'34.1035"N	80°53'12.0839"W	139.79	236.878	1.47	
3516.00	20.550	233.910	3496.16	-42.70	-93.78	-141.82	1672351.24	14347437.29	39°30'33.9319"N	80°53'12.3999"W	170.02	236.525	3.85	
3611.00	22.980	234.870	3584.38	-52.79	-114.27	-170.46	1672322.61	14347416.80	39°30'33.7297"N	80°53'12.7657"W	205.22	236.163	2.59	
3706.00	22.260	233.830	3672.07	-63.30	-135.57	-200.15	1672292.93	14347395.52	39°30'33.5196"N	80°53'13.1448"W	241.74	235.890	0.87	
3800.00	21.950	236.720	3759.17	-72.93	-155.71	-229.22	1672263.88	14347375.38	39°30'33.3209"N	80°53'13.5159"W	277.10	235.810	1.20	
3895.00	20.760	235.000	3847.64	-81.99	-175.12	-257.85	1672235.25	14347355.98	39°30'33.1295"N	80°53'13.8816"W	311.69	235.818	1.42	
3990.00	22.510	232.510	3935.95	-92.44	-195.84	-286.08	1672207.04	14347335.27	39°30'32.9250"N	80°53'14.2420"W	346.69	235.605	2.08	
4084.00	23.830	235.400	4022.37	-103.30	-217.58	-315.99	1672177.14	14347313.54	39°30'32.7105"N	80°53'14.6240"W	383.65	235.450	1.85	
4179.00	23.990	239.850	4109.22	-112.24	-238.18	-348.49	1672144.65	14347292.95	39°30'32.5073"N	80°53'15.0389"W	422.10	235.649	1.91	
4273.00	22.460	238.320	4195.60	-119.92	-257.21	-380.29	1672112.86	14347273.93	39°30'32.3197"N	80°53'15.4450"W	459.10	235.928	1.75	
4368.00	20.550	235.810	4283.99	-128.32	-276.11	-409.53	1672083.63	14347255.03	39°30'32.1332"N	80°53'15.8184"W	493.91	236.012	2.23	
4463.00	20.390	234.370	4372.99	-137.46	-295.12	-436.77	1672056.40	14347236.03	39°30'31.9456"N	80°53'16.1662"W	527.13	235.954	0.56	
4558.00	21.320	236.540	4461.77	-146.55	-314.28	-464.63	1672028.55	14347216.87	39°30'31.7566"N	80°53'16.5220"W	560.94	235.925	1.27	
4652.00	22.150	240.130	4549.09	-154.20	-332.53	-494.26	1671998.94	14347198.83	39°30'31.5766"N	80°53'16.9002"W	595.71	236.068	1.67	
4747.00	23.180	239.380	4636.75	-161.39	-350.97	-525.88	1671967.33	14347180.20	39°30'31.3947"N	80°53'17.3040"W	632.24	236.281	1.13	
4842.00	24.220	241.320	4723.74	-168.48	-369.85	-559.07	1671934.16	14347161.33	39°30'31.2086"N	80°53'17.7277"W	670.33	236.513	1.37	
4936.00	24.590	240.750	4809.34	-175.25	-388.66	-593.05	1671900.19	14347142.53	39°30'31.0231"N	80°53'18.1615"W	709.06	236.761	0.47	
5031.00	22.790	238.030	4896.33	-182.94	-408.06	-625.90	1671867.35	14347123.13	39°30'30.8317"N	80°53'18.5810"W	747.17	236.897	2.22	
5126.00	23.310	239.610	4983.75	-190.83	-427.31	-657.73	1671835.54	14347103.89	39°30'30.6418"N	80°53'18.9873"W	784.35	236.989	0.85	
5221.00	23.200	239.670	5071.03	-198.26	-446.27	-690.09	1671803.19	14347084.94	39°30'30.4549"N	80°53'19.4005"W	821.82	237.110	0.12	
5316.00	21.650	237.540	5158.85	-206.06	-465.13	-721.03	1671772.26	14347066.09	39°30'30.2689"N	80°53'19.7956"W	858.04	237.175	1.84	
5411.00	21.880	237.080	5247.07	-214.44	-484.15	-750.68	1671742.62	14347047.07	39°30'30.0812"N	80°53'20.1741"W	893.26	237.180	0.30	
5506.00	22.340	235.780	5335.09	-223.48	-503.93	-780.47	1671712.85	14347027.31	39°30'29.8861"N	80°53'20.5545"W	929.02	237.151	0.71	
5600.00	22.140	237.750	5422.10	-232.27	-523.43	-810.22	1671683.11	14347007.81	39°30'29.6938"N	80°53'20.9344"W	964.59	237.136	0.82	

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Field	Tyler		API	47-095-02636-0000
Facility	Gamehenge East Pad		Wellbore	Harpua Unit 1H AWB
Slot	Slot #03			

WELLPATH DATA (258 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 (ft/100ft)	Comments
5695.00	22.050	236.740	5510.12	-240.81	-542.76	-840.27	1671653.07	14346988.49	39°30'29.5031"N	80°53'21.3181"W	1000.32	237.140	0.41	
5790.00	22.380	236.210	5598.07	-249.86	-562.60	-870.21	1671623.14	14346968.66	39°30'29.3074"N	80°53'21.7004"W	1036.23	237.117	0.41	
5885.00	23.440	236.910	5685.57	-259.12	-582.97	-901.07	1671592.29	14346948.29	39°30'29.1064"N	80°53'22.0945"W	1073.21	237.098	1.15	
5916.00	25.100	241.760	5713.84	-261.69	-589.45	-912.03	1671581.33	14346941.82	39°30'29.0425"N	80°53'22.2344"W	1085.94	237.125	8.36	
5948.00	26.440	248.230	5742.66	-263.15	-595.30	-924.63	1671568.74	14346935.96	39°30'28.9848"N	80°53'22.3952"W	1099.70	237.225	9.73	
5980.00	27.800	254.330	5771.14	-263.07	-599.96	-938.44	1671554.94	14346931.31	39°30'28.9389"N	80°53'22.5714"W	1113.83	237.408	9.67	
6011.00	28.080	260.530	5798.54	-261.46	-603.12	-952.60	1671540.79	14346928.15	39°30'28.9079"N	80°53'22.7521"W	1127.47	237.661	9.41	
6043.00	28.030	267.810	5826.79	-258.06	-604.64	-967.54	1671525.84	14346926.63	39°30'28.8930"N	80°53'22.9428"W	1140.94	237.998	10.70	
6074.00	27.770	275.530	5854.19	-252.97	-604.23	-982.01	1671511.38	14346927.05	39°30'28.8973"N	80°53'23.1275"W	1153.01	238.396	11.68	
6106.00	28.220	282.730	5882.45	-245.91	-601.84	-996.82	1671496.58	14346929.43	39°30'28.9211"N	80°53'23.3163"W	1164.41	238.878	10.65	
6138.00	29.370	291.050	5910.51	-236.89	-597.35	-1011.53	1671481.88	14346933.92	39°30'28.9656"N	80°53'23.5039"W	1174.74	239.436	13.02	
6169.00	30.110	298.680	5937.44	-226.26	-590.89	-1025.45	1671467.96	14346940.38	39°30'29.0296"N	80°53'23.6814"W	1183.51	240.048	12.43	
6201.00	29.860	307.470	5965.17	-213.69	-582.18	-1038.82	1671454.60	14346949.08	39°30'29.1158"N	80°53'23.8519"W	1190.84	240.732	13.74	
6232.00	30.170	313.950	5992.02	-200.33	-572.08	-1050.56	1671442.86	14346959.18	39°30'29.2158"N	80°53'24.0014"W	1196.22	241.429	10.50	
6263.00	30.940	319.170	6018.72	-186.00	-560.64	-1061.38	1671432.05	14346970.61	39°30'29.3290"N	80°53'24.1393"W	1200.35	242.156	8.91	
6310.00	33.760	323.740	6058.42	-162.31	-540.96	-1077.01	1671416.42	14346990.28	39°30'29.5237"N	80°53'24.3384"W	1205.23	243.330	7.94	BH AT Curve <8-1/2">(6248')(6310'-22586')
6380.00	33.120	325.270	6116.84	-125.34	-509.56	-1099.41	1671394.03	14347021.67	39°30'29.8343"N	80°53'24.6237"W	1211.75	245.133	1.51	
6475.00	36.360	327.500	6194.89	-72.98	-464.47	-1129.33	1671364.12	14347066.75	39°30'30.2803"N	80°53'25.0048"W	1221.12	247.644	3.66	
6569.00	43.430	329.810	6266.97	-14.12	-412.97	-1160.59	1671332.87	14347118.22	39°30'30.7897"N	80°53'25.4028"W	1231.88	250.413	7.68	
6609.00†	47.697	332.104	6294.97	13.99	-388.00	-1174.44	1671319.03	14347143.19	39°30'31.0366"N	80°53'25.5790"W	1236.87	251.718	11.43	Middlesex: 6609' MD
6663.00	53.520	334.750	6329.23	55.33	-350.68	-1193.06	1671300.42	14347180.49	39°30'31.4057"N	80°53'25.8160"W	1243.53	253.620	11.43	
6710.00	58.030	336.520	6355.66	94.01	-315.28	-1209.07	1671284.41	14347215.87	39°30'31.7557"N	80°53'26.0198"W	1249.50	255.385	10.09	
6758.00	62.900	338.030	6379.32	135.66	-276.77	-1225.19	1671268.31	14347254.37	39°30'32.1366"N	80°53'26.2248"W	1256.06	257.270	10.51	
6759.00†	62.949	338.045	6379.77	136.55	-275.95	-1225.52	1671267.97	14347255.19	39°30'32.1447"N	80°53'26.2290"W	1256.20	257.311	5.06	Burkett: 6759' MD
6802.00†	65.053	338.658	6398.62	175.15	-240.03	-1239.77	1671253.72	14347291.10	39°30'32.4999"N	80°53'26.4104"W	1262.79	259.043	5.06	Tully: 6802' MD
6805.00	65.200	338.700	6399.88	177.87	-237.49	-1240.76	1671252.73	14347293.64	39°30'32.5250"N	80°53'26.4229"W	1263.29	259.164	5.06	
6852.00	67.350	339.250	6418.79	220.87	-197.33	-1256.20	1671237.31	14347333.78	39°30'32.9221"N	80°53'26.6192"W	1271.60	261.073	4.70	
6899.00	71.530	340.440	6435.29	264.86	-156.02	-1271.35	1671222.16	14347375.07	39°30'33.3305"N	80°53'26.8119"W	1280.89	263.003	9.20	Marcellus POE: 6899' MD
6946.00	75.700	342.060	6448.55	309.94	-113.34	-1285.84	1671207.68	14347417.74	39°30'33.7526"N	80°53'26.9961"W	1290.82	264.963	9.47	
6993.00	80.140	344.230	6458.38	355.85	-69.36	-1299.15	1671194.37	14347461.70	39°30'34.1873"N	80°53'27.1653"W	1301.00	266.944	10.47	

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Actual Wellpath Report

Harpua Unit 1H AWP Proj: 22611'

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REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Well	Harpua Unit 1H
Field	Tyler	API	47-095-02636-0000
Facility	Gamehenge East Pad	Wellbore	Harpua Unit 1H AWB
Slot	Slot #03		

WELLPATH DATA (258 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
7041.00	84.480	344.540	6464.80	403.33	-23.56	-1311.95	1671181.58	14347507.48	39°30'34.6402"N	80°53'27.3279"W	1312.16	268.971	9.06	
7088.00	87.070	344.590	6468.27	450.11	21.62	-1324.42	1671169.11	14347552.64	39°30'35.0868"N	80°53'27.4863"W	1324.60	270.935	5.51	
7136.00	90.430	344.820	6469.31	497.99	67.90	-1337.08	1671156.45	14347598.90	39°30'35.5444"N	80°53'27.6471"W	1338.80	272.907	7.02	
7231.00	90.550	342.840	6468.50	592.87	159.13	-1363.54	1671130.01	14347690.10	39°30'36.4464"N	80°53'27.9832"W	1372.79	276.657	2.09	
7326.00	90.740	339.680	6467.43	687.86	249.08	-1394.05	1671099.51	14347780.01	39°30'37.3358"N	80°53'28.3711"W	1416.13	280.130	3.33	
7420.00	90.890	336.400	6466.09	781.70	336.24	-1429.19	1671064.38	14347867.13	39°30'38.1976"N	80°53'28.8182"W	1468.21	283.239	3.49	
7515.00	90.310	335.420	6465.10	876.31	422.96	-1467.97	1671025.62	14347953.82	39°30'39.0551"N	80°53'29.3116"W	1527.69	286.073	1.20	
7610.00	90.180	337.470	6464.69	971.00	510.04	-1505.93	1670987.67	14348040.86	39°30'39.9162"N	80°53'29.7946"W	1589.96	288.711	2.16	
7705.00	89.780	340.410	6464.73	1065.92	598.68	-1540.06	1670953.55	14348129.47	39°30'40.7927"N	80°53'30.2287"W	1652.34	291.243	3.12	
7799.00	90.060	340.710	6464.86	1159.92	687.32	-1571.35	1670922.28	14348218.08	39°30'41.6692"N	80°53'30.6265"W	1715.09	293.625	0.44	
7894.00	90.180	337.130	6464.66	1254.83	775.95	-1605.51	1670888.13	14348306.67	39°30'42.5455"N	80°53'31.0610"W	1783.19	295.795	3.77	
7998.00	90.030	335.650	6464.47	1358.48	871.24	-1647.16	1670846.50	14348401.92	39°30'43.4878"N	80°53'31.5910"W	1863.39	297.876	1.43	
8084.00	90.120	337.840	6464.36	1444.23	950.25	-1681.12	1670812.56	14348480.90	39°30'44.2691"N	80°53'32.0230"W	1931.10	299.477	2.55	
8179.00	89.880	341.260	6464.36	1539.19	1039.25	-1714.30	1670779.38	14348569.86	39°30'45.1491"N	80°53'32.4451"W	2004.71	301.225	3.61	
8274.00	89.910	344.930	6464.53	1634.11	1130.13	-1741.92	1670751.77	14348660.71	39°30'46.0476"N	80°53'32.7961"W	2076.41	302.975	3.86	
8369.00	90.120	343.830	6464.50	1728.95	1221.62	-1767.50	1670726.21	14348752.16	39°30'46.9521"N	80°53'33.1211"W	2148.59	304.651	1.18	
8464.00	90.000	340.790	6464.41	1823.92	1312.12	-1796.37	1670697.35	14348842.62	39°30'47.8469"N	80°53'33.4880"W	2224.54	306.145	3.20	
8559.00	90.000	340.230	6464.41	1918.91	1401.67	-1828.06	1670665.67	14348932.14	39°30'48.7324"N	80°53'33.8910"W	2303.58	307.479	0.59	
8653.00	90.000	343.400	6464.41	2012.89	1490.97	-1857.39	1670636.35	14349021.40	39°30'49.6152"N	80°53'34.2639"W	2381.78	308.755	3.37	
8748.00	90.800	345.400	6463.74	2107.72	1582.46	-1882.94	1670610.81	14349112.86	39°30'50.5198"N	80°53'34.5885"W	2459.60	310.044	2.27	
8843.00	90.460	343.750	6462.70	2202.54	1674.03	-1908.21	1670585.56	14349204.39	39°30'51.4251"N	80°53'34.9095"W	2538.43	311.260	1.77	
8938.00	90.490	343.180	6461.91	2297.45	1765.10	-1935.24	1670558.53	14349295.42	39°30'52.3255"N	80°53'35.2530"W	2619.30	312.367	0.60	
9033.00	90.460	343.440	6461.12	2392.37	1856.09	-1962.52	1670531.26	14349386.38	39°30'53.2251"N	80°53'35.5998"W	2701.22	313.403	0.28	
9128.00	90.550	342.800	6460.28	2487.31	1946.99	-1990.11	1670503.69	14349477.24	39°30'54.1239"N	80°53'35.9504"W	2784.12	314.373	0.68	
9222.00	90.550	341.290	6459.38	2581.29	2036.41	-2019.08	1670474.73	14349566.62	39°30'55.0079"N	80°53'36.3187"W	2867.69	315.245	1.61	
9316.00	90.460	339.680	6458.55	2675.28	2125.00	-2050.48	1670443.34	14349655.18	39°30'55.8839"N	80°53'36.7180"W	2952.98	316.022	1.72	
9411.00	90.250	338.810	6457.97	2770.23	2213.84	-2084.15	1670409.69	14349743.98	39°30'56.7622"N	80°53'37.1462"W	3040.52	316.728	0.94	
9506.00	90.090	338.500	6457.68	2865.14	2302.32	-2118.72	1670375.13	14349832.43	39°30'57.6371"N	80°53'37.5861"W	3128.84	317.378	0.37	
9601.00	90.250	339.270	6457.40	2960.07	2390.94	-2152.95	1670340.92	14349921.01	39°30'58.5134"N	80°53'38.0214"W	3217.42	317.998	0.83	
9696.00	90.220	340.230	6457.01	3055.04	2480.07	-2185.83	1670308.05	14350010.10	39°30'59.3947"N	80°53'38.4396"W	3305.84	318.608	1.01	

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Actual Wellpath Report

Harpua Unit 1H AWP Proj: 22611'
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REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Well	Harpua Unit 1H
Field	Tyler	API	47-095-02636-0000
Facility	Gamehenge East Pad	Wellbore	Harpua Unit 1H AWB
Slot	Slot #03		

WELLPATH DATA (258 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
9790.00	90.280	341.090	6456.60	3149.04	2568.76	-2216.96	1670276.93	14350098.76	39°31'0.2716"N	80°53'38.8355"W	3393.14	319.204	0.92	
9885.00	90.150	343.140	6456.25	3244.02	2659.16	-2246.13	1670247.77	14350189.13	39°31'1.1654"N	80°53'39.2064"W	3480.84	319.813	2.16	
9979.00	90.310	344.050	6455.87	3337.92	2749.33	-2272.68	1670221.23	14350279.26	39°31'2.0569"N	80°53'39.5438"W	3567.06	320.422	0.98	
10074.00	90.280	342.210	6455.38	3432.86	2840.24	-2300.25	1670193.68	14350370.13	39°31'2.9557"N	80°53'39.8942"W	3654.87	320.997	1.94	
10168.00	90.370	339.060	6454.95	3526.84	2928.91	-2331.41	1670162.52	14350458.77	39°31'3.8324"N	80°53'40.2905"W	3743.53	321.480	3.35	
10263.00	90.620	339.510	6454.02	3621.79	3017.77	-2365.01	1670128.94	14350547.59	39°31'4.7110"N	80°53'40.7180"W	3834.08	321.914	0.54	
10358.00	90.490	339.050	6453.10	3716.74	3106.62	-2398.62	1670095.34	14350636.40	39°31'5.5895"N	80°53'41.1455"W	3924.85	322.328	0.50	
10452.00	90.680	338.990	6452.14	3810.68	3194.38	-2432.28	1670061.70	14350724.13	39°31'6.4573"N	80°53'41.5736"W	4014.98	322.714	0.21	
10547.00	90.620	340.760	6451.07	3905.64	3283.57	-2464.96	1670029.03	14350813.28	39°31'7.3392"N	80°53'41.9893"W	4105.83	323.105	1.86	
10641.00	90.580	341.360	6450.08	3999.64	3372.48	-2495.47	1669998.53	14350902.15	39°31'8.2182"N	80°53'42.3773"W	4195.35	323.500	0.64	
10736.00	90.740	340.330	6448.99	4094.63	3462.21	-2526.64	1669967.38	14350991.85	39°31'9.1054"N	80°53'42.7737"W	4286.11	323.879	1.10	
10830.00	90.650	339.180	6447.85	4188.60	3550.39	-2559.16	1669934.87	14351080.00	39°31'9.9774"N	80°53'43.1874"W	4376.60	324.216	1.23	
10925.00	90.580	339.990	6446.83	4283.56	3639.42	-2592.30	1669901.74	14351168.99	39°31'10.8576"N	80°53'43.6089"W	4468.26	324.538	0.86	
11020.00	90.460	339.470	6445.97	4378.53	3728.53	-2625.21	1669868.85	14351258.07	39°31'11.7387"N	80°53'44.0275"W	4560.01	324.851	0.56	
11115.00	90.340	340.620	6445.30	4473.51	3817.83	-2657.63	1669836.44	14351347.33	39°31'12.6216"N	80°53'44.4399"W	4651.75	325.158	1.22	
11209.00	90.310	341.710	6444.77	4567.51	3906.79	-2687.97	1669806.10	14351436.25	39°31'13.5012"N	80°53'44.8258"W	4742.17	325.471	1.16	
11303.00	91.050	344.740	6443.65	4661.42	3996.77	-2715.10	1669778.99	14351526.20	39°31'14.3909"N	80°53'45.1706"W	4831.76	325.811	3.32	
11397.00	90.520	343.060	6442.37	4755.29	4087.07	-2741.16	1669752.94	14351616.47	39°31'15.2836"N	80°53'45.5019"W	4921.19	326.151	1.87	
11490.00	90.460	342.400	6441.57	4848.25	4175.88	-2768.77	1669725.34	14351705.23	39°31'16.1616"N	80°53'45.8529"W	5010.39	326.454	0.71	
11585.00	90.550	340.460	6440.73	4943.24	4265.92	-2799.02	1669695.10	14351795.24	39°31'17.0519"N	80°53'46.2376"W	5102.22	326.730	2.04	
11680.00	90.550	339.510	6439.82	5038.22	4355.18	-2831.54	1669662.60	14351884.46	39°31'17.9345"N	80°53'46.6512"W	5194.73	326.970	1.00	
11773.00	90.650	340.220	6438.85	5131.19	4442.49	-2863.55	1669630.60	14351971.74	39°31'18.7977"N	80°53'47.0584"W	5285.42	327.195	0.77	
11868.00	90.520	342.630	6437.88	5226.18	4532.53	-2893.81	1669600.35	14352061.74	39°31'19.6880"N	80°53'47.4432"W	5377.54	327.444	2.54	
11963.00	90.490	343.920	6437.04	5321.10	4623.51	-2921.14	1669573.03	14352152.68	39°31'20.5874"N	80°53'47.7907"W	5468.99	327.715	1.36	
12058.00	90.460	345.180	6436.25	5415.92	4715.07	-2946.45	1669547.73	14352244.21	39°31'21.4927"N	80°53'48.1123"W	5559.99	327.989	1.33	
12153.00	90.490	347.250	6435.46	5510.53	4807.32	-2969.08	1669525.11	14352336.43	39°31'22.4047"N	80°53'48.3998"W	5650.29	328.300	2.18	
12248.00	90.580	346.380	6434.58	5605.05	4899.82	-2990.75	1669503.45	14352428.88	39°31'23.3191"N	80°53'48.6749"W	5740.45	328.601	0.92	
12342.00	90.620	341.790	6433.59	5698.89	4990.18	-3016.52	1669477.69	14352519.21	39°31'24.2125"N	80°53'49.0024"W	5831.06	328.847	4.88	
12437.00	90.550	339.970	6432.62	5793.88	5079.93	-3047.63	1669446.59	14352608.93	39°31'25.0999"N	80°53'49.3981"W	5924.00	329.039	1.92	
12532.00	90.830	339.470	6431.48	5888.85	5169.04	-3080.56	1669413.68	14352698.00	39°31'25.9809"N	80°53'49.8170"W	6017.37	329.207	0.60	

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Facility	Gamehenge East Pad	Wellbore	Harpua Unit 1H AWB
Slot	Slot #03		

WELLPATH DATA (258 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
12626.00	90.550	339.290	6430.35	5982.80	5257.01	-3113.66	1669380.59	14352785.93	39°31'26.8507"N	80°53'50.2381"W	6109.91	329.362	0.35	
12721.00	90.580	339.880	6429.41	6077.76	5346.04	-3146.80	1669347.47	14352874.92	39°31'27.7310"N	80°53'50.6597"W	6203.42	329.518	0.62	
12815.00	90.680	340.890	6428.38	6171.75	5434.58	-3178.35	1669315.92	14352963.43	39°31'28.6064"N	80°53'51.0611"W	6295.75	329.679	1.08	
12909.00	90.650	343.900	6427.29	6265.71	5524.16	-3206.77	1669287.51	14353052.97	39°31'29.4921"N	80°53'51.4225"W	6387.47	329.865	3.20	
13005.00	91.110	344.750	6425.81	6361.54	5616.58	-3232.71	1669261.59	14353145.35	39°31'30.4058"N	80°53'51.7521"W	6480.46	330.077	1.01	
13099.00	90.580	342.580	6424.42	6455.43	5706.77	-3259.14	1669235.16	14353235.51	39°31'31.2974"N	80°53'52.0881"W	6571.85	330.269	2.38	
13194.00	90.710	343.170	6423.35	6550.37	5797.55	-3287.11	1669207.20	14353326.25	39°31'32.1950"N	80°53'52.4438"W	6664.58	330.447	0.64	
13288.00	90.740	345.160	6422.17	6644.22	5887.97	-3312.76	1669181.57	14353416.64	39°31'33.0889"N	80°53'52.7698"W	6755.93	330.637	2.12	
13383.00	90.680	345.290	6420.99	6738.97	5979.82	-3336.98	1669157.35	14353508.45	39°31'33.9970"N	80°53'53.0776"W	6847.90	330.837	0.15	
13477.00	90.740	344.320	6419.82	6832.76	6070.53	-3361.62	1669132.73	14353599.12	39°31'34.8937"N	80°53'53.3907"W	6939.15	331.024	1.03	
13572.00	90.580	339.340	6418.73	6927.71	6160.75	-3391.23	1669103.13	14353689.31	39°31'35.7858"N	80°53'53.7673"W	7032.45	331.169	5.24	
13667.00	90.620	337.360	6417.73	7022.60	6249.04	-3426.28	1669068.09	14353777.57	39°31'36.6588"N	80°53'54.2132"W	7126.71	331.265	2.08	
13762.00	90.580	337.640	6416.74	7117.41	6336.81	-3462.63	1669031.76	14353865.30	39°31'37.5266"N	80°53'54.6759"W	7221.15	331.346	0.30	
13857.00	90.520	337.860	6415.83	7212.24	6424.73	-3498.60	1668995.80	14353953.18	39°31'38.3960"N	80°53'55.1337"W	7315.56	331.429	0.24	
13952.00	90.580	337.190	6414.91	7307.06	6512.51	-3534.92	1668959.50	14354040.93	39°31'39.2639"N	80°53'55.5958"W	7410.02	331.507	0.71	
14046.00	90.340	334.730	6414.16	7400.67	6598.35	-3573.21	1668921.23	14354126.73	39°31'40.1127"N	80°53'56.0833"W	7503.73	331.563	2.63	
14141.00	90.490	335.870	6413.47	7495.19	6684.65	-3612.90	1668881.55	14354213.00	39°31'40.9661"N	80°53'56.5886"W	7598.53	331.610	1.21	
14236.00	90.370	337.650	6412.76	7589.91	6771.94	-3650.38	1668844.08	14354300.25	39°31'41.8292"N	80°53'57.0657"W	7693.14	331.673	1.88	
14330.00	90.430	338.380	6412.10	7683.77	6859.10	-3685.57	1668808.90	14354387.38	39°31'42.6910"N	80°53'57.5135"W	7786.57	331.750	0.78	
14425.00	90.400	340.740	6411.41	7778.73	6948.11	-3718.75	1668775.74	14354476.35	39°31'43.5711"N	80°53'57.9356"W	7880.69	331.844	2.48	
14519.00	90.520	343.580	6410.66	7872.70	7037.58	-3747.54	1668746.96	14354565.79	39°31'44.4557"N	80°53'58.3018"W	7973.18	331.964	3.02	
14613.00	90.620	343.680	6409.72	7966.60	7127.76	-3774.03	1668720.48	14354655.93	39°31'45.3473"N	80°53'58.6386"W	8065.25	332.100	0.15	
14707.00	90.460	343.650	6408.84	8060.50	7217.96	-3800.47	1668694.05	14354746.10	39°31'46.2391"N	80°53'58.9747"W	8157.36	332.232	0.17	
14801.00	90.430	342.800	6408.11	8154.43	7307.96	-3827.60	1668666.94	14354836.06	39°31'47.1288"N	80°53'59.3197"W	8249.65	332.356	0.90	
14895.00	90.370	343.390	6407.45	8248.37	7397.89	-3854.93	1668639.61	14354925.96	39°31'48.0180"N	80°53'59.6672"W	8342.02	332.477	0.63	
14989.00	90.520	344.230	6406.72	8342.26	7488.16	-3881.14	1668613.42	14355016.19	39°31'48.9104"N	80°54'0.0004"W	8434.21	332.602	0.91	
15084.00	90.490	344.160	6405.88	8437.12	7579.57	-3907.01	1668587.55	14355107.56	39°31'49.8141"N	80°54'0.3293"W	8527.29	332.730	0.08	
15178.00	90.680	345.870	6404.92	8530.89	7670.36	-3931.32	1668563.26	14355198.32	39°31'50.7117"N	80°54'0.6382"W	8619.15	332.863	1.83	
15273.00	90.460	344.550	6403.98	8625.63	7762.21	-3955.57	1668539.02	14355290.13	39°31'51.6197"N	80°54'0.9464"W	8711.97	332.997	1.41	
15368.00	90.460	339.370	6403.22	8720.58	7852.50	-3984.97	1668509.62	14355380.39	39°31'52.5126"N	80°54'1.3205"W	8805.79	333.093	5.45	

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Actual Wellpath Report

Harpua Unit 1H AWP Proj: 22611'
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REFERENCE WELLPATH IDENTIFICATION				
Operator	ANTERO RESOURCES CORPORATION		Well	Harpua Unit 1H
Field	Tyler		API	47-095-02636-0000
Facility	Gamehenge East Pad		Wellbore	Harpua Unit 1H AWP
Slot	Slot #03			

WELLPATH DATA (258 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
15463.00	90.400	340.250	6402.50	8815.56	7941.66	-4017.76	1668476.85	14355469.51	39°31'53.3940"N	80°54'1.7376"W	8900.14	333.165	0.93	
15557.00	90.460	340.540	6401.80	8909.55	8030.21	-4049.30	1668445.32	14355558.02	39°31'54.2695"N	80°54'2.1389"W	8993.39	333.240	0.32	
15653.00	90.520	337.220	6400.98	9005.46	8119.75	-4083.88	1668410.75	14355647.52	39°31'55.1548"N	80°54'2.5790"W	9088.92	333.300	3.46	
15747.00	90.460	336.340	6400.17	9099.19	8206.13	-4120.94	1668373.71	14355733.87	39°31'56.0089"N	80°54'3.0508"W	9182.74	333.335	0.94	
15842.00	90.430	336.410	6399.44	9193.87	8293.16	-4159.01	1668335.65	14355820.87	39°31'56.8695"N	80°54'3.5354"W	9277.61	333.366	0.08	
15937.00	90.490	337.740	6398.67	9288.64	8380.66	-4196.02	1668298.67	14355908.33	39°31'57.7347"N	80°54'4.0065"W	9372.40	333.404	1.40	
16032.00	90.550	339.610	6397.81	9383.54	8469.14	-4230.56	1668264.13	14355996.78	39°31'58.6096"N	80°54'4.4461"W	9467.00	333.457	1.97	
16126.00	90.370	341.370	6397.06	9477.53	8557.74	-4261.95	1668232.76	14356085.34	39°31'59.4856"N	80°54'4.8455"W	9560.29	333.526	1.88	
16221.00	90.520	342.630	6396.32	9572.52	8648.09	-4291.31	1668203.41	14356175.65	39°32'0.3788"N	80°54'5.2189"W	9654.26	333.609	1.34	
16316.00	90.800	344.380	6395.22	9667.42	8739.17	-4318.28	1668176.45	14356266.69	39°32'1.2793"N	80°54'5.5619"W	9747.85	333.705	1.87	
16410.00	90.430	342.070	6394.21	9761.34	8829.16	-4345.40	1668149.34	14356356.65	39°32'2.1689"N	80°54'5.9068"W	9840.56	333.795	2.49	
16505.00	90.430	341.920	6393.50	9856.33	8919.50	-4374.77	1668119.99	14356446.96	39°32'3.0622"N	80°54'6.2803"W	9934.59	333.873	0.16	
16600.00	90.120	342.190	6393.05	9951.31	9009.88	-4404.04	1668090.73	14356537.30	39°32'3.9557"N	80°54'6.6526"W	10028.63	333.951	0.43	
16694.00	90.310	340.730	6392.69	10045.31	9099.00	-4433.92	1668060.85	14356626.38	39°32'4.8368"N	80°54'7.0328"W	10121.83	334.020	1.57	
16789.00	90.430	337.300	6392.08	10140.23	9187.68	-4467.94	1668026.85	14356715.03	39°32'5.7137"N	80°54'7.4658"W	10216.46	334.066	3.61	
16883.00	90.310	336.700	6391.47	10233.99	9274.21	-4504.67	1667990.14	14356801.52	39°32'6.5692"N	80°54'7.9333"W	10310.33	334.093	0.65	
16978.00	90.180	337.750	6391.07	10328.77	9361.80	-4541.44	1667953.38	14356889.07	39°32'7.4353"N	80°54'8.4015"W	10405.19	334.122	1.11	
17072.00	89.850	337.840	6391.04	10422.62	9448.83	-4576.97	1667917.87	14356976.07	39°32'8.2958"N	80°54'8.8537"W	10499.00	334.155	0.36	
17167.00	90.220	340.560	6390.98	10517.56	9537.63	-4610.70	1667884.15	14357064.83	39°32'9.1738"N	80°54'9.2830"W	10593.62	334.200	2.89	
17261.00	90.310	342.850	6390.55	10611.55	9626.87	-4640.21	1667854.65	14357154.04	39°32'10.0561"N	80°54'9.6583"W	10686.82	334.266	2.44	
17356.00	90.220	344.710	6390.11	10706.43	9718.08	-4666.74	1667828.13	14357245.22	39°32'10.9579"N	80°54'9.9957"W	10780.52	334.349	1.96	
17451.00	90.280	345.370	6389.69	10801.21	9809.86	-4691.26	1667803.62	14357336.96	39°32'11.8652"N	80°54'10.3075"W	10873.88	334.442	0.70	
17545.00	90.280	344.880	6389.23	10894.97	9900.71	-4715.39	1667779.50	14357427.77	39°32'12.7634"N	80°54'10.6142"W	10966.26	334.533	0.52	
17640.00	90.310	343.630	6388.75	10989.82	9992.14	-4741.17	1667753.73	14357519.17	39°32'13.6673"N	80°54'10.9420"W	11059.91	334.616	1.32	
17735.00	90.280	340.680	6388.26	11084.79	10082.56	-4770.28	1667724.63	14357609.55	39°32'14.5612"N	80°54'11.3123"W	11154.08	334.680	3.11	
17830.00	90.250	342.560	6387.82	11179.78	10172.71	-4800.23	1667694.69	14357699.66	39°32'15.4525"N	80°54'11.6933"W	11248.39	334.739	1.98	
17925.00	90.370	344.950	6387.30	11274.67	10263.91	-4826.81	1667668.13	14357790.82	39°32'16.3541"N	80°54'12.0313"W	11342.22	334.814	2.52	
18020.00	90.340	343.900	6386.71	11369.50	10355.42	-4852.31	1667642.63	14357882.29	39°32'17.2588"N	80°54'12.3556"W	11435.89	334.893	1.11	
18114.00	90.400	342.340	6386.11	11463.44	10445.36	-4879.61	1667615.35	14357972.20	39°32'18.1481"N	80°54'12.7027"W	11528.93	334.960	1.66	
18209.00	90.340	340.050	6385.49	11558.43	10535.28	-4910.23	1667584.74	14358062.09	39°32'19.0371"N	80°54'13.0923"W	11623.36	335.011	2.41	

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Actual Wellpath Report

Harpua Unit 1H AWP Proj: 22611'

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REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Well	Harpua Unit 1H
Field	Tyler	API	47-095-02636-0000
Facility	Gamehenge East Pad	Wellbore	Harpua Unit 1H AWB
Slot	Slot #03		

WELLPATH DATA (258 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
18304.00	90.460	340.860	6384.83	11653.42	10624.80	-4942.01	1667552.97	14358151.58	39°32'19.9222"N	80°54'13.4967"W	11717.93	335.055	0.86	
18398.00	90.400	341.060	6384.12	11747.42	10713.66	-4972.67	1667522.32	14358240.40	39°32'20.8007"N	80°54'13.8869"W	11811.43	335.102	0.22	
18493.00	90.430	340.540	6383.44	11842.41	10803.37	-5003.91	1667491.09	14358330.07	39°32'21.6877"N	80°54'14.2845"W	11905.97	335.147	0.55	
18588.00	90.460	339.670	6382.70	11937.40	10892.70	-5036.24	1667458.78	14358419.36	39°32'22.5709"N	80°54'14.6959"W	12000.61	335.187	0.92	
18683.00	90.370	337.230	6382.01	12032.29	10981.05	-5071.13	1667423.90	14358507.68	39°32'23.4445"N	80°54'15.1400"W	12095.45	335.212	2.57	
18777.00	90.250	335.950	6381.50	12126.00	11067.31	-5108.48	1667386.57	14358593.90	39°32'24.2974"N	80°54'15.6155"W	12189.42	335.223	1.37	
18872.00	90.310	336.200	6381.04	12220.63	11154.15	-5147.00	1667348.06	14358680.70	39°32'25.1560"N	80°54'16.1061"W	12284.40	335.229	0.27	
18967.00	90.250	336.940	6380.57	12315.34	11241.31	-5184.78	1667310.30	14358767.83	39°32'26.0179"N	80°54'16.5871"W	12379.38	335.240	0.78	
19062.00	90.310	336.160	6380.11	12410.04	11328.46	-5222.58	1667272.51	14358854.95	39°32'26.8796"N	80°54'17.0684"W	12474.35	335.250	0.82	
19156.00	90.250	336.750	6379.65	12503.74	11414.64	-5260.13	1667234.98	14358941.09	39°32'27.7317"N	80°54'17.5466"W	12568.33	335.259	0.63	
19251.00	90.340	339.110	6379.16	12598.58	11502.67	-5295.82	1667199.30	14359029.09	39°32'28.6021"N	80°54'18.0010"W	12663.22	335.279	2.49	
19346.00	90.280	341.200	6378.65	12693.57	11592.02	-5328.07	1667167.06	14359118.40	39°32'29.4855"N	80°54'18.4114"W	12757.87	335.315	2.20	
19441.00	90.400	344.140	6378.08	12788.52	11682.69	-5356.37	1667138.78	14359209.04	39°32'30.3820"N	80°54'18.7713"W	12852.08	335.369	3.10	
19537.00	90.490	344.000	6377.34	12884.38	11775.01	-5382.71	1667112.44	14359301.32	39°32'31.2946"N	80°54'19.1064"W	12946.98	335.433	0.17	
19631.00	90.400	345.240	6376.61	12978.20	11865.63	-5407.64	1667087.52	14359391.91	39°32'32.1906"N	80°54'19.4234"W	13039.78	335.499	1.32	
19726.00	90.460	345.170	6375.89	13072.95	11957.48	-5431.90	1667063.27	14359483.72	39°32'33.0986"N	80°54'19.7318"W	13133.43	335.569	0.10	
19821.00	90.430	344.430	6375.16	13167.74	12049.16	-5456.81	1667038.38	14359575.36	39°32'34.0049"N	80°54'20.0485"W	13227.20	335.635	0.78	
19916.00	91.200	344.900	6373.81	13262.55	12140.76	-5481.93	1667013.27	14359666.93	39°32'34.9105"N	80°54'20.3679"W	13321.02	335.699	0.95	
20011.00	91.080	343.780	6371.92	13357.37	12232.22	-5507.57	1666987.64	14359758.34	39°32'35.8147"N	80°54'20.6940"W	13414.93	335.760	1.19	
20106.00	91.230	342.190	6370.00	13452.29	12323.04	-5535.36	1666959.86	14359849.13	39°32'36.7126"N	80°54'21.0475"W	13509.16	335.811	1.68	
20200.00	91.290	343.700	6367.93	13546.22	12412.88	-5562.92	1666932.31	14359938.93	39°32'37.6008"N	80°54'21.3981"W	13602.41	335.860	1.61	
20295.00	91.200	342.460	6365.87	13641.14	12503.74	-5590.56	1666904.68	14360029.76	39°32'38.4991"N	80°54'21.7498"W	13696.64	335.910	1.31	
20390.00	91.170	341.120	6363.90	13736.11	12593.96	-5620.24	1666875.01	14360119.95	39°32'39.3911"N	80°54'22.1274"W	13791.12	335.950	1.41	
20485.00	91.260	339.870	6361.89	13831.08	12683.49	-5651.96	1666843.31	14360209.44	39°32'40.2762"N	80°54'22.5310"W	13885.80	335.982	1.32	
20580.00	91.230	339.210	6359.83	13926.02	12772.48	-5685.16	1666810.12	14360298.39	39°32'41.1560"N	80°54'22.9536"W	13980.60	336.008	0.70	
20675.00	91.140	338.580	6357.86	14020.93	12861.08	-5719.36	1666775.94	14360386.96	39°32'42.0321"N	80°54'23.3890"W	14075.46	336.025	0.67	
20770.00	90.550	338.190	6356.46	14115.82	12949.39	-5754.35	1666740.96	14360475.23	39°32'42.9053"N	80°54'23.8345"W	14170.37	336.041	0.74	
20865.00	90.520	337.650	6355.57	14210.67	13037.42	-5790.06	1666705.27	14360563.23	39°32'43.7756"N	80°54'24.2892"W	14265.31	336.053	0.57	
20960.00	90.620	339.350	6354.63	14305.57	13125.80	-5824.87	1666670.46	14360651.57	39°32'44.6495"N	80°54'24.7324"W	14360.22	336.070	1.79	
21054.00	89.780	340.280	6354.30	14399.54	13214.03	-5857.30	1666638.04	14360739.76	39°32'45.5218"N	80°54'25.1453"W	14454.02	336.094	1.33	

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Harpua Unit 1H AWP Proj: 22611'

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Operator	ANTERO RESOURCES CORPORATION	Well	Harpua Unit 1H
Field	Tyler	API	47-095-02636-0000
Facility	Gamehenge East Pad	Wellbore	Harpua Unit 1H AWB
Slot	Slot #03		

WELLPATH DATA (258 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
21149.00	89.970	341.390	6354.51	14494.54	13303.76	-5888.49	1666606.87	14360829.46	39°32'46.4090"N	80°54'25.5422"W	14548.69	336.125	1.19	
21245.00	89.510	341.580	6354.94	14590.53	13394.79	-5918.98	1666576.40	14360920.45	39°32'47.3089"N	80°54'25.9301"W	14644.27	336.160	0.52	
21340.00	89.510	340.550	6355.75	14685.53	13484.65	-5949.80	1666545.58	14361010.27	39°32'48.1973"N	80°54'26.3225"W	14738.92	336.192	1.08	
21435.00	89.450	339.700	6356.62	14780.51	13573.98	-5982.10	1666513.30	14361099.57	39°32'49.0806"N	80°54'26.7336"W	14833.69	336.217	0.90	
21530.00	89.320	340.290	6357.64	14875.49	13663.25	-6014.59	1666480.82	14361188.80	39°32'49.9631"N	80°54'27.1472"W	14928.48	336.241	0.64	
21625.00	89.230	339.970	6358.84	14970.47	13752.58	-6046.88	1666448.54	14361278.10	39°32'50.8464"N	80°54'27.5582"W	15023.26	336.265	0.35	
21720.00	90.430	341.920	6359.12	15065.46	13842.37	-6077.89	1666417.54	14361367.85	39°32'51.7341"N	80°54'27.9529"W	15117.94	336.295	2.41	
21815.00	91.170	341.710	6357.79	15160.44	13932.62	-6107.54	1666387.91	14361458.06	39°32'52.6263"N	80°54'28.3302"W	15212.49	336.329	0.81	
21910.00	91.080	340.340	6355.93	15255.42	14022.43	-6138.42	1666357.04	14361547.84	39°32'53.5143"N	80°54'28.7232"W	15307.15	336.358	1.44	
22005.00	90.920	339.330	6354.27	15350.38	14111.60	-6171.17	1666324.31	14361636.97	39°32'54.3959"N	80°54'29.1401"W	15401.96	336.380	1.08	
22100.00	91.170	336.200	6352.54	15445.20	14199.51	-6207.10	1666288.38	14361724.85	39°32'55.2651"N	80°54'29.5977"W	15496.91	336.388	3.30	
22195.00	90.980	335.780	6350.76	15539.81	14286.27	-6245.75	1666249.75	14361811.58	39°32'56.1230"N	80°54'30.0899"W	15591.89	336.386	0.49	
22289.00	91.110	338.540	6349.04	15633.57	14372.88	-6282.23	1666213.29	14361898.15	39°32'56.9793"N	80°54'30.5545"W	15685.85	336.390	2.94	
22384.00	90.890	340.590	6347.38	15728.51	14461.88	-6315.39	1666180.14	14361987.12	39°32'57.8593"N	80°54'30.9767"W	15780.69	336.409	2.17	
22478.00	91.020	337.670	6345.82	15822.44	14549.69	-6348.87	1666146.67	14362074.89	39°32'58.7275"N	80°54'31.4029"W	15874.56	336.426	3.11	
22572.00	91.020	340.130	6344.14	15916.35	14637.37	-6382.70	1666112.86	14362162.53	39°32'59.5944"N	80°54'31.8337"W	15968.45	336.440	2.62	
22586.00	90.920	340.890	6343.90	15930.34	14650.57	-6387.37	1666108.19	14362175.72	39°32'59.7248"N	80°54'31.8931"W	15982.42	336.444	5.47	
22611.00‡	90.920	340.890	6343.50	15955.34	14674.18	-6395.56	1666100.01	14362199.33	39°32'59.9584"N	80°54'31.9973"W	16007.34	336.451	0.00	Projected MD at TD: 22611'

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Actual Wellpath Report

Harpua Unit 1H AWP Proj: 22611'
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REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Well	Harpua Unit 1H
Field	Tyler	API	47-095-02636-0000
Facility	Gamehenge East Pad	Wellbore	Harpua Unit 1H AWB
Slot	Slot #03		

HOLE & CASING SECTIONS - Ref Wellbore: Harpua Unit 1H AWB Ref Wellpath: Harpua Unit 1H AWP Proj: 22611'									
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	30.00	110.00	80.00	30.00	110.00	0.00	0.00	0.08	0.04
17.5in Open Hole	110.00	474.20	364.20	110.00	474.20	0.08	0.04	0.71	0.53
13.375in Casing Surface	30.00	474.20	444.20	30.00	474.20	0.00	0.00	0.71	0.53
12.25in Open Hole	474.20	2600.50	2126.30	474.20	2600.41	0.71	0.53	-8.31	4.26
9.625in Casing Intermediate	30.00	2600.50	2570.50	30.00	2600.41	0.00	0.00	-8.31	4.26
8.75in Open Hole	2600.50	6335.00	3734.50	2600.41	6079.24	-8.31	4.26	-529.76	-1085.15
8.5in Open Hole	6335.00	22611.00	16276.00	6079.24	6343.50	-529.76	-1085.15	14674.18	-6395.56
5.5in Casing Production	30.00	22611.00	22581.00	30.00	6343.50	0.00	0.00	14674.18	-6395.56

TARGETS								
Name	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
Harpua Unit 1H POE Rev-1	6438.00	-180.82	-1260.28	1671233.23	14347350.28	39°30'33.0853"N	80°53'26.8711"W	point
Harpua Unit 1H BHL Rev-1	6473.00	14694.58	-6360.71	1666134.84	14362219.72	39°33'0.1596"N	80°54'31.5522"W	point

WELLPATH COMPOSITION - Ref Wellbore: Harpua Unit 1H AWB Ref Wellpath: Harpua Unit 1H AWP Proj: 22611'					
Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore	Survey Date
30.00	2555.00	Gyrodatta 2015 - GC+WIR+DPIPE	01 Gyrodatta MS Gyro <12-1/4">(100'-2540')	Harpua Unit 1H AWB	1/3/2020
2555.00	6263.00	OWSG MWD rev2 + HRGM	02 WFT EM <8-3/4">(2540')(2645'-6248')	Harpua Unit 1H AWB	1/3/2020
6263.00	22611.00	BH AutoTrak Curve (2019) (Short spacing)	03 BH AT Curve <8-1/2">(6248')(6310'-22586')	Harpua Unit 1H AWB	1/16/2020

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Actual Wellpath Report

Harpua Unit 1H AWP Proj: 22611'

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REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Well	Harpua Unit 1H
Field	Tyler	API	47-095-02636-0000
Facility	Gamehenge East Pad	Wellbore	Harpua Unit 1H AWB
Slot	Slot #03		

COMMENTS

Wellpath general comments

API: 47-095-02636-0000

BHI Job #: 110231213A

Rig: H&P 519

Duration: 01/20/2020-01/23/2020

Gyrodata MS Gyro <12-1/4">(100'-2540')

WFT EM <8-3/4">(2540')(2645'-6248')

BH AT Curve <8-1/2">(6248')(6310'-22586')

Middlesex: 6609' MD

Burkett: 6759' MD

Tully: 6802' MD

Marcellus POE: 6899' MD

Projected MD at TD: 22611'

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