ANTERO RESOURCES CORPORATION

Area: Wetzel County, WV
Field: Wetzel
Facility: Harbour Pad
Slot: Slot A

Well: Twain Unit 2H
UWI: 47-103-03793-0000
Wellbore: Twain Unit 2H PWB
Wellpath: Twain Unit 2H PWP Rev-C.0

Plot reference wellpath is Twain Unit 2H PWP Rev-C.0	Grid System: NAD27 / 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: 1440 feet	Coordinates are in feet referenced to Slot
Mean Sea Level to Ground level (At Slot: Slot A): -1410 feet	Depths are in feet
Offset wellpath MDs are referenced to each path's default MD datum	Created by: edsaryar on 2026-03-04, Database: WA_MPL_EASTERNUS_Deft

Easting (ft)
Scale 1 inch = 2000
-3000 -2000 -1000 0 1000 2000 3000 4000 5000 6000 7000

BH Lucida <8-1/2"> (6719')(6769'-18865') : 6530.16ft TVD, 903.85ft N, 1402.50ft E
APS EM <8-3/4"> (3745')(3876'-6719') : 3754.62ft TVD, 453.54ft N, 726.95ft E
APS EM <12-1/4"> (470')(503'-3745') : 503.00ft TVD, 1.34ft S, 0.59ft E
Gyrodata MS Gyro <17-1/2"> (100'-470') : 100.00ft TVD, 0.12ft S, 0.00ft E

POE : 65'
Marcellus POE: 7847' MD : 7351.55ft TVD, 472.32ft N, 1740.06ft E
Slot A
Twain Unit 2H 50' LR Hard Line
BHL : 65'

Scale 1 inch = 1500
-750 0 750 1500 2250 3000 3750 4500 5250 6000 6750 7500

1000 0 -1000 -2000 -3000 -4000 -5000 -6000 -7000 -8000 -9000 -10000 -11000

True Vertical Depth (ft)
Northing (ft)

Well Data

Slot	Well	Wellbore	Wellpath
Slot A	Twain Unit 2H	Twain Unit 2H AWB	Twain Unit 2H AWP Proj: 18890'
Slot A	Twain Unit 2H	Twain Unit 2H PWB	Twain Unit 2H PWP Rev-C.0

Gyrodata MS Gyro <17-1/2"> (100'-470') : 0.20° Inc, 100.00ft MD, 100.00ft TVD, 0.12ft VS

APS EM <12-1/4"> (470')(503'-3745') : 0.47° Inc, 503.00ft MD, 503.00ft TVD, 1.46ft VS

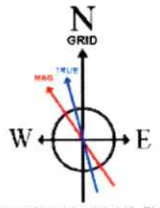
Location Information

Facility Name			Grid East (US ft)	Grid North (US ft)	Latitude	Longitude
Harbour Pad			1724986.450	14383874.430	39°36'32.9960N	80°41'59.0388W
Slot	Local N (ft)	Local E (ft)	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude
Slot A	0.00	0.00	1724986.450	14383874.430	39°36'32.9960N	80°41'59.0388W
Comment	Twain Unit 2H					
H&P 519 (RKB) to Ground level (At Slot: Slot A)					30ft	
Mean Sea Level to Ground level (At Slot: Slot A)					-1410ft	
H&P 519 (RKB) to Mean Sea Level					1440ft	

Well Profile Data

Design Comment	MD (ft)	Inc (°)	Az (°)	TVD (ft)	Local N (ft)	Local E (ft)	DLS (°/100ft)	VS (ft)
Tie On	3745.00	15.360	55.920	3627.84	434.62	699.96	0.61	-182.07
Proj. to Bottom	3821.00	15.360	55.920	3701.13	445.90	716.63	0.00	-187.29
Drill Out	3901.00	15.360	55.920	3778.27	457.77	734.18	0.00	-192.77
Turn	3951.12	16.358	55.569	3826.48	465.48	745.50	2.00	-196.36
Curve KOP	6865.79	16.358	55.569	6623.18	929.61	1422.56	0.00	-413.81
POE	7847.55	73.639	160.934	7350.00	491.81	1742.13	8.00	104.37
Landing Pt.	8052.06	90.000	160.934	7379.00	301.14	1808.03	8.00	306.11
BHL	18916.40	90.000	160.934	7379.00	-9967.23	5356.92	0.00	11170.45

APS EM <8-3/4"> (3745')(3876'-6719') : 13.79° Inc, 3876.00ft MD, 3754.62ft TVD, -191.14ft VS



User specified (HDGM) Dip: 66.14° Field: 51424.2 nT
Magnetic North is 8.06 degrees West of True North (at 2025-12-31)
Grid North is 0.19 degrees East of True North
To correct azimuth from True to Grid subtract 0.19 degrees
To correct azimuth from Magnetic to Grid subtract 8.25 degrees

API: 47-103-03793-0000
BH Job #: 112930780
Rig: H&P 519
Duration: 2/8/2026-2/11/2026

BH Lucida <8-1/2"> (6719')(6769'-18865') : 13.18° Inc, 6769.00ft MD, 6530.16ft TVD, -396.02ft VS

Projected MD at TD: 18890' : 7361.49ft TVD, 9959.05ft S, 5354.45ft E

Marcellus POE: 7847' MD : 75.15° Inc, 7847.00ft MD, 7351.55ft TVD, 122.12ft VS

Projected MD at TD: 18890' : 89.88° Inc, 18890.00ft MD, 7361.49ft TVD, 11161.92ft VS

-750 0 750 1500 2250 3000 3750 4500 5250 6000 6750 7500 8250 9000 9750 10500 11250 12000
Vertical Section (ft)
Azimuth 160.930° with reference 0.00 N, 0.00 E
Scale 1 inch = 1500

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Actual Wellpath Report

Twain Unit 2H AWP Proj: 18890'

REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Well	Twain Unit 2H
Field	Wetzel	UWI	47-103-03793-0000
Facility	Harbour Pad	Wellbore	Twain Unit 2H AWB
Slot	Slot A		

REPORT SETUP INFORMATION			
Projection System	NAD27 / UTM Zone 17 North, US feet [32067]	Software System	WellArchitect® 7.0.1
North Reference	Grid	Report Generated By	Edsaryar on 2026-03-04 at 4:09:28 PM
Scale	0.999608	Last Updated	2026-03-04
Convergence at slot	0.19° 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	1724986.45	14383874.43	39°36'32.9960"N	80°41'59.0388"W
Facility Reference Pt			1724986.45	14383874.43	39°36'32.9960"N	80°41'59.0388"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	1440.00ft
Horizontal Reference Pt	Slot	H&P 519 (RKB) to Mean Sea Level	1440.00ft
Vertical Reference Pt	H&P 519 (RKB)	H&P 519 (RKB) to Ground Level at Slot (Slot A)	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	160.930°

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REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Well	Twain Unit 2H
Field	Wetzel	UWI	47-103-03793-0000
Facility	Harbour Pad	Wellbore	Twain Unit 2H AWB
Slot	Slot A		

WELLPATH DATA (209 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	178.670	0.00	0.00	0.00	0.00	1724986.45	14383874.43	39°36'32.9960"N	80°41'59.0388"W	0.00	0.000	0.00	0.00	0.00	
30.00	0.000	178.670	30.00	0.00	0.00	0.00	1724986.45	14383874.43	39°36'32.9960"N	80°41'59.0388"W	0.00	0.000	0.00	0.00	0.00	
100.00	0.200	178.670	100.00	0.12	-0.12	0.00	1724986.45	14383874.31	39°36'32.9948"N	80°41'59.0387"W	0.12	178.670	0.29	0.29	0.00	Gyrodata MS Gyro <17-1/2"> (100'-470')
200.00	0.110	186.490	200.00	0.37	-0.39	0.00	1724986.45	14383874.04	39°36'32.9921"N	80°41'59.0388"W	0.39	180.579	0.09	-0.09	7.82	
300.00	0.160	165.510	300.00	0.59	-0.62	0.02	1724986.47	14383873.81	39°36'32.9899"N	80°41'59.0385"W	0.62	178.149	0.07	0.05	-20.98	
400.00	0.180	126.930	400.00	0.86	-0.85	0.18	1724986.63	14383873.58	39°36'32.9876"N	80°41'59.0365"W	0.87	168.032	0.11	0.02	-38.58	
470.00	0.440	142.780	470.00	1.21	-1.13	0.43	1724986.88	14383873.30	39°36'32.9848"N	80°41'59.0333"W	1.21	159.156	0.39	0.37	22.64	
503.00	0.470	145.190	503.00	1.46	-1.34	0.59	1724987.03	14383873.09	39°36'32.9827"N	80°41'59.0313"W	1.47	156.482	0.11	0.09	7.30	APS EM <12-1/4"> (470')(503'-3745')
591.00	1.570	86.140	590.98	2.13	-1.56	1.99	1724988.44	14383872.87	39°36'32.9805"N	80°41'59.0134"W	2.53	128.029	1.58	1.25	-67.10	
681.00	3.700	68.850	680.88	2.34	-0.43	5.93	1724992.38	14383874.00	39°36'32.9916"N	80°41'58.9630"W	5.95	94.131	2.50	2.37	-19.21	
770.00	6.120	62.290	769.55	1.53	2.81	12.81	1724999.26	14383877.24	39°36'33.0234"N	80°41'58.8749"W	13.12	77.612	2.79	2.72	-7.37	
860.00	8.460	57.890	858.82	-0.69	8.56	22.67	1725009.11	14383882.99	39°36'33.0799"N	80°41'58.7488"W	24.23	69.302	2.67	2.60	-4.89	
950.00	10.240	53.900	947.62	-4.53	16.80	34.74	1725021.18	14383891.22	39°36'33.1609"N	80°41'58.5942"W	38.59	64.195	2.10	1.98	-4.43	
1040.00	12.090	55.070	1035.91	-9.44	26.91	48.93	1725035.36	14383901.33	39°36'33.2603"N	80°41'58.4124"W	55.84	61.193	2.07	2.06	1.30	
1134.00	14.620	57.820	1127.36	-14.83	38.87	67.05	1725053.47	14383913.28	39°36'33.3779"N	80°41'58.1805"W	77.50	59.900	2.77	2.69	2.93	
1229.00	17.010	59.840	1218.76	-20.22	52.23	89.21	1725075.63	14383926.64	39°36'33.5093"N	80°41'57.8967"W	103.38	59.651	2.58	2.52	2.13	
1323.00	17.940	59.570	1308.42	-25.72	66.47	113.58	1725099.99	14383940.88	39°36'33.6492"N	80°41'57.5847"W	131.61	59.662	0.99	0.99	-0.29	
1418.00	17.230	56.520	1398.99	-32.10	81.65	137.94	1725124.33	14383956.05	39°36'33.7984"N	80°41'57.2729"W	160.29	59.378	1.22	-0.75	-3.21	
1512.00	16.420	54.070	1488.96	-39.42	97.12	160.31	1725146.69	14383971.52	39°36'33.9506"N	80°41'56.9864"W	187.43	58.790	1.15	-0.86	-2.61	
1607.00	17.510	51.920	1579.83	-47.97	113.82	182.43	1725168.81	14383988.20	39°36'34.1149"N	80°41'56.7031"W	215.02	58.040	1.32	1.15	-2.26	
1701.00	17.830	49.050	1669.39	-57.94	131.97	204.43	1725190.80	14384006.35	39°36'34.2936"N	80°41'56.4212"W	243.33	57.155	0.99	0.34	-3.05	
1796.00	18.640	50.530	1759.62	-68.65	151.16	227.14	1725213.50	14384025.53	39°36'34.4824"N	80°41'56.1303"W	272.83	56.357	0.98	0.85	1.56	
1890.00	20.400	55.480	1848.22	-78.25	169.99	252.23	1725238.58	14384044.35	39°36'34.6677"N	80°41'55.8088"W	304.17	56.022	2.57	1.87	5.27	
1985.00	20.730	56.500	1937.17	-86.85	188.65	279.90	1725266.24	14384063.01	39°36'34.8513"N	80°41'55.4545"W	337.54	56.020	0.51	0.35	1.07	
2079.00	18.510	58.410	2025.71	-94.23	205.65	306.48	1725292.81	14384080.00	39°36'35.0184"N	80°41'55.1141"W	369.09	56.138	2.46	-2.36	2.03	
2174.00	16.990	59.770	2116.18	-100.19	220.54	331.32	1725317.64	14384094.89	39°36'35.1647"N	80°41'54.7961"W	398.01	56.350	1.66	-1.60	1.43	
2269.00	16.330	56.130	2207.20	-106.29	234.98	354.40	1725340.72	14384109.31	39°36'35.3066"N	80°41'54.5006"W	425.22	56.455	1.30	-0.69	-3.83	
2363.00	15.860	53.840	2297.51	-113.44	249.92	375.75	1725362.05	14384124.25	39°36'35.4536"N	80°41'54.2272"W	451.27	56.371	0.84	-0.50	-2.44	
2458.00	15.210	50.090	2389.04	-121.69	265.57	395.79	1725382.08	14384139.90	39°36'35.6076"N	80°41'53.9705"W	476.63	56.138	1.26	-0.68	-3.95	
2553.00	15.260	55.170	2480.71	-129.52	280.71	415.61	1725401.90	14384155.03	39°36'35.7566"N	80°41'53.7166"W	501.53	55.964	1.41	0.05	5.35	

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Operator	ANTERO RESOURCES CORPORATION	Well	Twain Unit 2H
Field	Wetzel	UWI	47-103-03793-0000
Facility	Harbour Pad	Wellbore	Twain Unit 2H AWB
Slot	Slot A		

WELLPATH DATA (209 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
2647.00	16.070	64.240	2571.23	-134.39	293.43	437.49	1725423.76	14384167.75	39°36'35.8816"N	80°41'53.4366"W	526.78	56.149	2.74	0.86	9.65	
2742.00	16.600	67.090	2662.40	-136.83	304.43	461.83	1725448.10	14384178.74	39°36'35.9894"N	80°41'53.1251"W	553.14	56.608	1.01	0.56	3.00	
2836.00	16.260	65.430	2752.56	-138.99	315.13	486.16	1725472.42	14384189.43	39°36'36.0944"N	80°41'52.8137"W	579.36	57.049	0.62	-0.36	-1.77	
2931.00	15.750	64.560	2843.88	-141.70	326.20	509.90	1725496.15	14384200.50	39°36'36.2030"N	80°41'52.5099"W	605.31	57.392	0.59	-0.54	-0.92	
3025.00	15.510	63.160	2934.40	-144.81	337.35	532.64	1725518.88	14384211.65	39°36'36.3125"N	80°41'52.2189"W	630.48	57.651	0.48	-0.26	-1.49	
3120.00	15.020	60.940	3026.05	-148.67	349.07	554.73	1725540.96	14384223.36	39°36'36.4275"N	80°41'51.9361"W	655.42	57.820	0.80	-0.52	-2.34	
3215.00	14.500	59.680	3117.91	-153.12	361.05	575.76	1725561.98	14384235.34	39°36'36.5452"N	80°41'51.6670"W	679.60	57.909	0.64	-0.55	-1.33	
3309.00	15.650	61.320	3208.68	-157.53	373.08	597.04	1725583.26	14384247.36	39°36'36.6634"N	80°41'51.3945"W	704.02	58.000	1.30	1.22	1.74	
3404.00	16.420	61.180	3299.98	-161.95	385.70	620.05	1725606.25	14384259.98	39°36'36.7874"N	80°41'51.1000"W	730.22	58.116	0.81	0.81	-0.15	
3498.00	16.250	59.560	3390.19	-166.79	398.77	643.03	1725629.22	14384273.04	39°36'36.9158"N	80°41'50.8059"W	756.64	58.195	0.52	-0.18	-1.72	
3593.00	15.910	58.120	3481.47	-172.30	412.38	665.54	1725651.73	14384286.65	39°36'37.0495"N	80°41'50.5176"W	782.95	58.217	0.55	-0.36	-1.52	
3687.00	15.580	56.960	3571.94	-178.20	426.06	687.07	1725673.25	14384300.33	39°36'37.1841"N	80°41'50.2420"W	808.45	58.196	0.49	-0.35	-1.23	
3745.00	15.360	55.920	3627.84	-182.07	434.62	699.96	1725686.13	14384308.87	39°36'37.2682"N	80°41'50.0769"W	823.91	58.163	0.61	-0.38	-1.79	
3876.00	13.790	53.910	3754.62	-191.14	453.54	726.95	1725713.11	14384327.79	39°36'37.4543"N	80°41'49.7313"W	856.82	58.040	1.26	-1.20	-1.53	APS EM <8-3/4"> (3745')(3876'-6719')
3971.00	13.970	57.970	3846.85	-197.02	466.29	745.82	1725731.97	14384340.53	39°36'37.5797"N	80°41'49.4896"W	879.58	57.986	1.04	0.19	4.27	
4066.00	14.520	57.810	3938.93	-202.30	478.71	765.62	1725751.77	14384352.96	39°36'37.7018"N	80°41'49.2361"W	902.96	57.984	0.58	0.58	-0.17	
4161.00	14.830	59.480	4030.83	-207.41	491.23	786.17	1725772.31	14384365.47	39°36'37.8248"N	80°41'48.9730"W	927.02	58.001	0.55	0.33	1.76	
4259.00	17.910	60.070	4124.85	-212.74	505.12	810.04	1725796.17	14384379.35	39°36'37.9613"N	80°41'48.6674"W	954.63	58.053	3.15	3.14	0.60	
4353.00	17.890	59.230	4214.30	-218.39	519.72	834.97	1725821.09	14384393.95	39°36'38.1048"N	80°41'48.3482"W	983.51	58.100	0.28	-0.02	-0.89	
4448.00	17.150	56.390	4304.89	-224.87	534.94	859.17	1725845.29	14384409.16	39°36'38.2544"N	80°41'48.0383"W	1012.10	58.093	1.19	-0.78	-2.99	
4543.00	17.560	53.340	4395.57	-232.72	551.25	882.34	1725868.44	14384425.46	39°36'38.4148"N	80°41'47.7417"W	1040.38	58.004	1.05	0.43	-3.21	
4637.00	17.550	54.460	4485.19	-241.02	567.95	905.24	1725891.34	14384442.16	39°36'38.5791"N	80°41'47.4483"W	1068.66	57.896	0.36	-0.01	1.19	
4732.00	16.130	51.290	4576.12	-249.52	584.53	927.20	1725913.28	14384458.73	39°36'38.7422"N	80°41'47.1670"W	1096.07	57.771	1.78	-1.49	-3.34	
4827.00	16.700	49.680	4667.25	-258.90	601.62	947.90	1725933.98	14384475.81	39°36'38.9104"N	80°41'46.9018"W	1122.70	57.597	0.77	0.60	-1.69	
4921.00	15.770	49.100	4757.50	-268.55	618.72	967.85	1725953.92	14384492.91	39°36'39.0788"N	80°41'46.6461"W	1148.72	57.410	1.00	-0.99	-0.62	
5016.00	15.720	50.140	4848.93	-277.91	635.42	987.49	1725973.55	14384509.60	39°36'39.2432"N	80°41'46.3945"W	1174.26	57.240	0.30	-0.05	1.09	
5110.00	15.110	52.010	4939.55	-286.41	651.12	1006.92	1725992.97	14384525.30	39°36'39.3977"N	80°41'46.1455"W	1199.11	57.111	0.84	-0.65	1.99	
5205.00	15.230	50.700	5031.24	-294.74	666.65	1026.34	1726012.38	14384540.82	39°36'39.5505"N	80°41'45.8968"W	1223.84	56.995	0.38	0.13	-1.38	
5299.00	15.470	52.940	5121.89	-302.88	682.02	1045.89	1726031.93	14384556.19	39°36'39.7018"N	80°41'45.6462"W	1248.62	56.892	0.68	0.26	2.38	
5394.00	15.720	54.310	5213.39	-310.47	697.17	1066.46	1726052.49	14384571.32	39°36'39.8508"N	80°41'45.3828"W	1274.12	56.826	0.47	0.26	1.44	

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Actual Wellpath Report

Twain Unit 2H AWP Proj: 18890'

REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Well	Twain Unit 2H
Field	Wetzel	UWI	47-103-03793-0000
Facility	Harbour Pad	Wellbore	Twain Unit 2H AWB
Slot	Slot A		

WELLPATH DATA (209 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
5489.00	17.180	58.540	5304.50	-317.16	712.00	1088.88	1726074.90	14384586.15	39°36'39.9966"N	80°41'45.0957"W	1301.00	56.820	1.99	1.54	4.45	
5583.00	16.270	57.290	5394.53	-323.25	726.36	1111.80	1726097.81	14384600.51	39°36'40.1378"N	80°41'44.8022"W	1328.05	56.843	1.04	-0.97	-1.33	
5678.00	16.420	55.910	5485.69	-329.87	741.08	1134.12	1726120.12	14384615.22	39°36'40.2825"N	80°41'44.5164"W	1354.78	56.838	0.44	0.16	-1.45	
5773.00	17.300	59.110	5576.60	-336.24	755.86	1157.36	1726143.36	14384629.99	39°36'40.4278"N	80°41'44.2188"W	1382.32	56.852	1.35	0.93	3.37	
5867.00	16.800	56.220	5666.47	-342.55	770.59	1180.65	1726166.63	14384644.71	39°36'40.5725"N	80°41'43.9207"W	1409.87	56.868	1.05	-0.53	-3.07	
5962.00	16.780	57.750	5757.42	-349.16	785.54	1203.66	1726189.63	14384659.66	39°36'40.7195"N	80°41'43.6260"W	1437.31	56.870	0.47	-0.02	1.61	
6057.00	19.430	62.320	5847.72	-354.66	800.20	1229.25	1726215.22	14384674.31	39°36'40.8636"N	80°41'43.2983"W	1466.76	56.937	3.16	2.79	4.81	
6152.00	18.480	62.280	5937.57	-359.29	814.54	1256.57	1726242.53	14384688.65	39°36'41.0044"N	80°41'42.9486"W	1497.48	57.048	1.00	-1.00	-0.04	
6246.00	17.280	58.490	6027.03	-364.54	828.77	1281.67	1726267.61	14384702.87	39°36'41.1442"N	80°41'42.6274"W	1526.28	57.112	1.78	-1.28	-4.03	
6341.00	17.430	58.580	6117.70	-370.62	843.56	1305.84	1726291.77	14384717.66	39°36'41.2896"N	80°41'42.3179"W	1554.61	57.138	0.16	0.16	0.09	
6435.00	16.390	60.370	6207.64	-376.06	857.46	1329.38	1726315.31	14384731.55	39°36'41.4261"N	80°41'42.0165"W	1581.92	57.178	1.24	-1.11	1.90	
6530.00	15.220	59.350	6299.04	-381.02	870.44	1351.76	1726337.68	14384744.53	39°36'41.5537"N	80°41'41.7300"W	1607.77	57.221	1.27	-1.23	-1.07	
6625.00	15.850	56.260	6390.57	-386.81	884.00	1373.28	1726359.19	14384758.09	39°36'41.6870"N	80°41'41.4545"W	1633.20	57.230	1.09	0.66	-3.25	
6719.00	13.480	55.690	6481.51	-392.94	897.31	1393.00	1726378.90	14384771.39	39°36'41.8179"N	80°41'41.2019"W	1656.99	57.212	2.53	-2.52	-0.61	
6769.00	13.180	55.160	6530.16	-396.02	903.85	1402.50	1726388.39	14384777.93	39°36'41.8822"N	80°41'41.0803"W	1668.52	57.200	0.65	-0.60	-1.06	BH Lucida <8-1/2"> (6719')(6769'-18865')
6843.00	15.220	62.670	6601.90	-399.71	913.13	1418.05	1726403.94	14384787.20	39°36'41.9734"N	80°41'40.8811"W	1686.62	57.221	3.71	2.76	10.15	
6937.00	15.280	86.750	6692.68	-398.11	919.51	1441.40	1726427.29	14384793.58	39°36'42.0356"N	80°41'40.5825"W	1709.72	57.465	6.69	0.06	25.62	
7032.00	15.220	109.920	6784.42	-386.84	915.97	1465.65	1726451.52	14384790.03	39°36'41.9998"N	80°41'40.2729"W	1728.33	57.996	6.37	-0.06	24.39	
7126.00	21.170	120.610	6873.71	-366.11	903.10	1491.89	1726477.75	14384777.18	39°36'41.8718"N	80°41'39.9382"W	1743.94	58.812	7.23	6.33	11.37	
7221.00	26.230	134.880	6960.74	-334.12	879.52	1521.57	1726507.42	14384753.60	39°36'41.6377"N	80°41'39.5599"W	1757.48	59.971	8.02	5.33	15.02	
7276.00†	29.486	141.673	7009.37	-310.41	860.32	1538.59	1726524.43	14384734.41	39°36'41.4473"N	80°41'39.3434"W	1762.78	60.788	8.26	5.92	12.35	Sycamore: 7276' MD
7315.00	31.970	145.690	7042.89	-291.38	844.25	1550.36	1726536.20	14384718.35	39°36'41.2882"N	80°41'39.1936"W	1765.33	61.429	8.26	6.37	10.30	
7410.00	40.000	148.430	7119.71	-237.22	797.39	1580.57	1726566.40	14384671.50	39°36'40.8240"N	80°41'38.8096"W	1770.32	63.229	8.62	8.45	2.88	
7431.00†	41.661	149.085	7135.60	-223.79	785.65	1587.69	1726573.52	14384659.77	39°36'40.7077"N	80°41'38.7191"W	1771.44	63.672	8.17	7.91	3.12	Middlesex: 7431' MD
7504.00	47.460	151.070	7187.59	-173.51	741.25	1613.19	1726599.01	14384615.39	39°36'40.2681"N	80°41'38.3953"W	1775.34	65.321	8.17	7.94	2.72	
7570.00†	52.606	153.333	7229.97	-123.53	696.51	1636.74	1726622.54	14384570.67	39°36'39.8251"N	80°41'38.0964"W	1778.77	66.948	8.23	7.80	3.43	Burkett: 7570' MD
7599.00	54.880	154.230	7247.12	-100.33	675.53	1647.06	1726632.87	14384549.70	39°36'39.6175"N	80°41'37.9653"W	1780.22	67.699	8.23	7.84	3.09	
7617.00†	56.307	154.534	7257.29	-85.57	662.14	1653.49	1726639.28	14384536.31	39°36'39.4849"N	80°41'37.8839"W	1781.14	68.176	8.05	7.93	1.69	Tully: 7617' MD
7694.00	62.420	155.730	7296.52	-19.69	602.05	1681.31	1726667.10	14384476.25	39°36'38.8901"N	80°41'37.5310"W	1785.86	70.298	8.05	7.94	1.55	
7788.00	70.420	154.950	7334.09	65.98	523.83	1717.24	1726703.02	14384398.05	39°36'38.1158"N	80°41'37.0753"W	1795.36	73.036	8.54	8.51	-0.83	

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7847.00†	75.146	157.247	7351.55	122.12	472.32	1740.06	1726725.82	14384346.56	39°36'37.6060"N	80°41'36.7860"W	1803.02	74.814	8.83	8.01	3.89	Marcellus POE: 7847' MD
7882.00	77.960	158.560	7359.69	156.11	440.78	1752.86	1726738.62	14384315.04	39°36'37.2939"N	80°41'36.6239"W	1807.43	75.885	8.83	8.04	3.75	
7977.00	84.170	158.140	7374.44	249.81	353.60	1787.47	1726773.21	14384227.89	39°36'36.4310"N	80°41'36.1855"W	1822.11	78.810	6.55	6.54	-0.44	
8071.00	90.000	160.830	7379.21	343.61	265.72	1820.34	1726806.08	14384140.05	39°36'35.5614"N	80°41'35.7692"W	1839.64	81.695	6.83	6.20	2.86	
8166.00	90.090	161.350	7379.14	438.61	175.85	1851.13	1726836.85	14384050.21	39°36'34.6721"N	80°41'35.3798"W	1859.47	84.573	0.56	0.09	0.55	
8260.00	90.710	161.710	7378.48	532.60	86.69	1880.91	1726866.62	14383961.09	39°36'33.7900"N	80°41'35.0032"W	1882.91	87.361	0.76	0.66	0.38	
8354.00	89.170	159.620	7378.58	626.59	-2.00	1912.03	1726897.73	14383872.43	39°36'32.9124"N	80°41'34.6094"W	1912.03	90.060	2.76	-1.64	-2.22	
8449.00	89.940	161.120	7379.32	721.58	-91.47	1943.94	1726929.63	14383783.00	39°36'32.0271"N	80°41'34.2056"W	1946.09	92.694	1.77	0.81	1.58	
8543.00	89.820	160.890	7379.52	815.58	-180.35	1974.54	1726960.21	14383694.15	39°36'31.1476"N	80°41'33.8186"W	1982.76	95.219	0.28	-0.13	-0.24	
8637.00	89.970	160.640	7379.69	909.58	-269.10	2005.51	1726991.17	14383605.43	39°36'30.2694"N	80°41'33.4268"W	2023.48	97.642	0.31	0.16	-0.27	
8732.00	89.380	158.870	7380.23	1004.56	-358.23	2038.38	1727024.03	14383516.34	39°36'29.3875"N	80°41'33.0107"W	2069.62	99.968	1.96	-0.62	-1.86	
8826.00	89.780	160.600	7380.92	1098.53	-446.41	2070.93	1727056.57	14383428.20	39°36'28.5149"N	80°41'32.5986"W	2118.50	102.164	1.89	0.43	1.84	
8920.00	89.880	161.050	7381.20	1192.53	-535.19	2101.81	1727087.43	14383339.45	39°36'27.6364"N	80°41'32.2080"W	2168.88	104.286	0.49	0.11	0.48	
9015.00	89.910	161.210	7381.37	1287.53	-625.08	2132.53	1727118.14	14383249.59	39°36'26.7469"N	80°41'31.8194"W	2222.26	106.337	0.17	0.03	0.17	
9110.00	90.220	160.910	7381.26	1382.53	-714.94	2163.37	1727148.97	14383159.77	39°36'25.8578"N	80°41'31.4294"W	2278.44	108.287	0.45	0.33	-0.32	
9204.00	89.780	160.790	7381.26	1476.53	-803.74	2194.20	1727179.79	14383071.01	39°36'24.9792"N	80°41'31.0393"W	2336.78	110.118	0.49	-0.47	-0.13	
9299.00	90.150	161.020	7381.32	1571.53	-893.51	2225.28	1727210.86	14382981.27	39°36'24.0909"N	80°41'30.6462"W	2397.97	111.877	0.46	0.39	0.24	
9394.00	90.000	161.220	7381.20	1666.53	-983.40	2256.02	1727241.58	14382891.42	39°36'23.2015"N	80°41'30.2574"W	2461.04	113.552	0.26	-0.16	0.21	
9488.00	90.000	160.800	7381.20	1760.53	-1072.28	2286.61	1727272.16	14382802.57	39°36'22.3220"N	80°41'29.8705"W	2525.55	115.124	0.45	0.00	-0.45	
9582.00	89.940	160.910	7381.25	1854.53	-1161.08	2317.44	1727302.98	14382713.80	39°36'21.4433"N	80°41'29.4805"W	2592.03	116.612	0.13	-0.06	0.12	
9677.00	90.060	160.390	7381.25	1949.52	-1250.72	2348.92	1727334.44	14382624.20	39°36'20.5564"N	80°41'29.0823"W	2661.15	118.034	0.56	0.13	-0.55	
9771.00	89.850	161.050	7381.32	2043.52	-1339.45	2379.95	1727365.47	14382535.51	39°36'19.6784"N	80°41'28.6897"W	2730.99	119.371	0.74	-0.22	0.70	
9866.00	89.820	160.990	7381.59	2138.52	-1429.28	2410.85	1727396.35	14382445.71	39°36'18.7895"N	80°41'28.2988"W	2802.68	120.662	0.07	-0.03	-0.06	
9961.00	90.120	160.700	7381.64	2233.52	-1519.02	2442.02	1727427.51	14382356.01	39°36'17.9016"N	80°41'27.9045"W	2875.92	121.883	0.44	0.32	-0.31	
10055.00	90.220	160.280	7381.36	2327.52	-1607.62	2473.42	1727458.89	14382267.44	39°36'17.0248"N	80°41'27.5074"W	2949.95	123.022	0.46	0.11	-0.45	
10150.00	90.220	160.520	7381.00	2422.51	-1697.12	2505.28	1727490.75	14382177.98	39°36'16.1393"N	80°41'27.1042"W	3026.00	124.114	0.25	0.00	0.25	
10245.00	90.340	160.850	7380.53	2517.51	-1786.77	2536.71	1727522.16	14382088.36	39°36'15.2522"N	80°41'26.7067"W	3102.81	125.160	0.37	0.13	0.35	
10339.00	90.150	160.810	7380.13	2611.51	-1875.56	2567.57	1727553.01	14381999.61	39°36'14.3736"N	80°41'26.3162"W	3179.64	126.147	0.21	-0.20	-0.04	
10434.00	90.310	160.920	7379.75	2706.51	-1965.31	2598.71	1727584.14	14381909.90	39°36'13.4855"N	80°41'25.9223"W	3258.18	127.099	0.20	0.17	0.12	
10529.00	90.180	160.530	7379.34	2801.51	-2054.98	2630.07	1727615.49	14381820.26	39°36'12.5982"N	80°41'25.5256"W	3337.70	128.002	0.43	-0.14	-0.41	

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10623.00	90.060	160.710	7379.15	2895.51	-2143.65	2661.26	1727646.67	14381731.62	39°36'11.7208"N	80°41'25.1310"W	3417.25	128.852	0.23	-0.13	0.19	
10718.00	90.180	161.140	7378.95	2990.51	-2233.44	2692.31	1727677.70	14381641.87	39°36'10.8324"N	80°41'24.7384"W	3498.11	129.678	0.47	0.13	0.45	
10812.00	90.030	160.280	7378.78	3084.50	-2322.16	2723.36	1727708.74	14381553.19	39°36'9.9545"N	80°41'24.3455"W	3578.98	130.454	0.93	-0.16	-0.91	
10907.00	90.220	160.790	7378.57	3179.50	-2411.73	2755.02	1727740.38	14381463.65	39°36'9.0682"N	80°41'23.9451"W	3661.50	131.199	0.57	0.20	0.54	
11002.00	90.120	160.770	7378.29	3274.50	-2501.43	2786.29	1727771.65	14381373.98	39°36'8.1806"N	80°41'23.5495"W	3744.41	131.916	0.11	-0.11	-0.02	
11096.00	90.030	160.840	7378.16	3368.50	-2590.21	2817.20	1727802.54	14381285.24	39°36'7.3021"N	80°41'23.1586"W	3826.98	132.596	0.12	-0.10	0.07	
11190.00	90.120	160.570	7378.04	3462.50	-2678.93	2848.26	1727833.59	14381196.56	39°36'6.4242"N	80°41'22.7657"W	3910.14	133.245	0.30	0.10	-0.29	
11285.00	89.970	160.510	7377.97	3557.50	-2768.50	2879.91	1727865.22	14381107.02	39°36'5.5379"N	80°41'22.3653"W	3994.80	133.870	0.17	-0.16	-0.06	
11380.00	89.910	160.710	7378.07	3652.50	-2858.11	2911.45	1727896.75	14381017.44	39°36'4.6512"N	80°41'21.9663"W	4079.87	134.470	0.22	-0.06	0.21	
11474.00	90.980	161.230	7377.34	3746.49	-2946.97	2942.10	1727927.39	14380928.62	39°36'3.7719"N	80°41'21.5787"W	4164.20	135.047	1.27	1.14	0.55	
11569.00	90.550	160.530	7376.07	3841.48	-3036.72	2973.21	1727958.49	14380838.91	39°36'2.8839"N	80°41'21.1852"W	4249.90	135.605	0.86	-0.45	-0.74	
11664.00	90.400	159.390	7375.28	3936.46	-3125.96	3005.76	1727991.03	14380749.70	39°36'2.0007"N	80°41'20.7733"W	4336.62	136.123	1.21	-0.16	-1.20	
11758.00	90.740	161.450	7374.35	4030.45	-3214.52	3037.26	1728022.52	14380661.18	39°36'1.1245"N	80°41'20.3748"W	4422.45	136.624	2.22	0.36	2.19	
11853.00	89.420	159.420	7374.21	4125.44	-3304.03	3069.07	1728054.31	14380571.70	39°36'0.2388"N	80°41'19.9724"W	4509.52	137.111	2.55	-1.39	-2.14	
11948.00	89.780	159.950	7374.88	4220.41	-3393.11	3102.05	1728087.28	14380482.65	39°35'59.3572"N	80°41'19.5550"W	4597.39	137.566	0.67	0.38	0.56	
12042.00	90.090	159.850	7374.98	4314.40	-3481.39	3134.36	1728119.57	14380394.41	39°35'58.4836"N	80°41'19.1462"W	4684.47	138.003	0.35	0.33	-0.11	
12137.00	89.820	160.410	7375.06	4409.39	-3570.73	3166.65	1728151.85	14380305.10	39°35'57.5995"N	80°41'18.7376"W	4772.61	138.432	0.65	-0.28	0.59	
12232.00	90.060	160.790	7375.16	4504.39	-3660.34	3198.20	1728183.39	14380215.53	39°35'56.7129"N	80°41'18.3385"W	4860.72	138.855	0.47	0.25	0.40	
12326.00	90.250	160.760	7374.90	4598.39	-3749.10	3229.15	1728214.33	14380126.81	39°35'55.8346"N	80°41'17.9470"W	4948.05	139.261	0.20	0.20	-0.03	
12421.00	90.090	161.670	7374.62	4693.38	-3839.03	3259.74	1728244.91	14380036.91	39°35'54.9447"N	80°41'17.5602"W	5036.28	139.665	0.97	-0.17	0.96	
12516.00	90.030	161.500	7374.52	4788.38	-3929.17	3289.75	1728274.91	14379946.81	39°35'54.0528"N	80°41'17.1808"W	5124.54	140.062	0.19	-0.06	-0.18	
12610.00	90.090	161.620	7374.42	4882.37	-4018.34	3319.49	1728304.63	14379857.67	39°35'53.1705"N	80°41'16.8050"W	5212.11	140.440	0.14	0.06	0.13	
12704.00	89.970	161.630	7374.37	4976.36	-4107.55	3349.12	1728334.25	14379768.50	39°35'52.2878"N	80°41'16.4304"W	5299.87	140.808	0.13	-0.13	0.01	
12799.00	90.120	161.560	7374.30	5071.36	-4197.69	3379.11	1728364.23	14379678.39	39°35'51.3959"N	80°41'16.0512"W	5388.79	141.166	0.17	0.16	-0.07	
12893.00	90.220	161.490	7374.02	5165.35	-4286.85	3408.90	1728394.01	14379589.27	39°35'50.5138"N	80°41'15.6746"W	5477.01	141.508	0.13	0.11	-0.07	
12988.00	90.280	161.330	7373.61	5260.35	-4376.89	3439.19	1728424.28	14379499.26	39°35'49.6228"N	80°41'15.2918"W	5566.43	141.841	0.18	0.06	-0.17	
13083.00	90.090	161.470	7373.30	5355.34	-4466.93	3469.49	1728454.57	14379409.26	39°35'48.7319"N	80°41'14.9087"W	5656.04	142.163	0.25	-0.20	0.15	
13177.00	90.370	161.760	7372.92	5449.34	-4556.13	3499.14	1728484.21	14379320.10	39°35'47.8493"N	80°41'14.5339"W	5744.76	142.476	0.43	0.30	0.31	
13272.00	90.120	161.700	7372.51	5544.33	-4646.34	3528.92	1728513.98	14379229.92	39°35'46.9568"N	80°41'14.1575"W	5834.53	142.783	0.27	-0.26	-0.06	
13461.00	90.220	161.540	7371.95	5733.31	-4825.70	3588.51	1728573.55	14379050.64	39°35'45.1821"N	80°41'13.4042"W	6013.71	143.365	0.10	0.05	-0.08	

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Actual Wellpath Report

Twain Unit 2H AWP Proj: 18890'

REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Well	Twain Unit 2H
Field	Wetzel	UWI	47-103-03793-0000
Facility	Harbour Pad	Wellbore	Twain Unit 2H AWB
Slot	Slot A		

WELLPATH DATA (209 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
13556.00	90.250	161.620	7371.56	5828.30	-4915.83	3618.53	1728603.56	14378960.54	39°35'44.2903"N	80°41'13.0247"W	6104.02	143.643	0.09	0.03	0.08	
13650.00	90.090	162.010	7371.29	5922.29	-5005.13	3647.87	1728632.88	14378871.27	39°35'43.4067"N	80°41'12.6540"W	6193.41	143.914	0.45	-0.17	0.41	
13745.00	90.250	161.630	7371.00	6017.28	-5095.39	3677.51	1728662.51	14378781.05	39°35'42.5136"N	80°41'12.2794"W	6283.87	144.181	0.43	0.17	-0.40	
13839.00	90.150	161.830	7370.68	6111.27	-5184.65	3706.97	1728691.96	14378691.82	39°35'41.6304"N	80°41'11.9069"W	6373.56	144.436	0.24	-0.11	0.21	
13934.00	90.220	161.630	7370.37	6206.26	-5274.86	3736.76	1728721.73	14378601.65	39°35'40.7378"N	80°41'11.5305"W	6464.32	144.686	0.22	0.07	-0.21	
14029.00	90.180	161.520	7370.04	6301.25	-5364.99	3766.78	1728751.75	14378511.55	39°35'39.8460"N	80°41'11.1509"W	6555.29	144.927	0.12	-0.04	-0.12	
14123.00	90.220	161.580	7369.71	6395.25	-5454.16	3796.53	1728781.49	14378422.42	39°35'38.9638"N	80°41'10.7749"W	6645.41	145.159	0.08	0.04	0.06	
14218.00	90.120	161.730	7369.43	6490.24	-5544.33	3826.43	1728811.37	14378332.28	39°35'38.0715"N	80°41'10.3970"W	6736.55	145.388	0.19	-0.11	0.16	
14313.00	90.060	161.850	7369.28	6585.23	-5634.57	3856.12	1728841.05	14378242.08	39°35'37.1787"N	80°41'10.0218"W	6827.74	145.614	0.14	-0.06	0.13	
14407.00	90.180	161.510	7369.08	6679.22	-5723.81	3885.66	1728870.58	14378152.88	39°35'36.2957"N	80°41'9.6484"W	6918.12	145.829	0.38	0.13	-0.36	
14502.00	90.150	161.940	7368.81	6774.21	-5814.01	3915.45	1728900.36	14378062.71	39°35'35.4031"N	80°41'9.2719"W	7009.53	146.042	0.45	-0.03	0.45	
14596.00	90.220	161.720	7368.50	6868.20	-5903.33	3944.77	1728929.66	14377973.43	39°35'34.5194"N	80°41'8.9014"W	7100.03	146.248	0.25	0.07	-0.23	
14691.00	90.150	161.670	7368.20	6963.19	-5993.52	3974.60	1728959.49	14377883.27	39°35'33.6270"N	80°41'8.5243"W	7191.64	146.450	0.09	-0.07	-0.05	
14786.00	90.150	161.770	7367.95	7058.18	-6083.72	4004.40	1728989.27	14377793.10	39°35'32.7345"N	80°41'8.1477"W	7283.33	146.646	0.11	0.00	0.11	
14880.00	90.180	161.850	7367.68	7152.17	-6173.03	4033.75	1729018.61	14377703.83	39°35'31.8509"N	80°41'7.7769"W	7374.10	146.838	0.09	0.03	0.09	
14975.00	90.120	161.840	7367.43	7247.16	-6263.30	4063.35	1729048.20	14377613.60	39°35'30.9577"N	80°41'7.4028"W	7465.90	147.026	0.06	-0.06	-0.01	
15069.00	90.150	161.990	7367.21	7341.14	-6352.65	4092.53	1729077.36	14377524.28	39°35'30.0736"N	80°41'7.0341"W	7556.78	147.209	0.16	0.03	0.16	
15164.00	90.120	161.620	7366.98	7436.13	-6442.90	4122.19	1729107.02	14377434.07	39°35'29.1806"N	80°41'6.6592"W	7648.75	147.389	0.39	-0.03	-0.39	
15259.00	90.460	161.880	7366.50	7531.12	-6533.12	4151.94	1729136.76	14377343.88	39°35'28.2879"N	80°41'6.2832"W	7740.82	147.563	0.45	0.36	0.27	
15353.00	90.370	161.770	7365.82	7625.11	-6622.43	4181.26	1729166.06	14377254.61	39°35'27.4043"N	80°41'5.9127"W	7831.95	147.733	0.15	-0.10	-0.12	
15448.00	90.460	161.980	7365.13	7720.09	-6712.71	4210.81	1729195.60	14377164.36	39°35'26.5110"N	80°41'5.5393"W	7924.11	147.900	0.24	0.09	0.22	
15542.00	90.400	161.720	7364.43	7814.08	-6802.03	4240.09	1729224.87	14377075.07	39°35'25.6272"N	80°41'5.1693"W	8015.36	148.062	0.28	-0.06	-0.28	
15637.00	89.780	159.640	7364.28	7909.07	-6891.68	4271.52	1729256.29	14376985.47	39°35'24.7401"N	80°41'4.7718"W	8108.09	148.209	2.28	-0.65	-2.19	
15731.00	90.550	160.320	7364.01	8003.05	-6980.00	4303.70	1729288.46	14376897.18	39°35'23.8661"N	80°41'4.3647"W	8200.13	148.343	1.09	0.82	0.72	
15826.00	90.400	160.700	7363.22	8098.05	-7069.55	4335.40	1729320.14	14376807.66	39°35'22.9800"N	80°41'3.9639"W	8293.02	148.481	0.43	-0.16	0.40	
15920.00	90.370	160.740	7362.59	8192.05	-7158.28	4366.43	1729351.16	14376718.97	39°35'22.1020"N	80°41'3.5715"W	8384.91	148.617	0.05	-0.03	0.04	
16015.00	90.490	160.270	7361.88	8287.04	-7247.83	4398.14	1729382.85	14376629.46	39°35'21.2159"N	80°41'3.1705"W	8477.89	148.750	0.51	0.13	-0.49	
16109.00	90.430	160.430	7361.12	8381.03	-7336.35	4429.75	1729414.45	14376540.97	39°35'20.3399"N	80°41'2.7708"W	8569.99	148.876	0.18	-0.06	0.17	
16204.00	90.490	160.650	7360.36	8476.03	-7425.92	4461.39	1729446.09	14376451.43	39°35'19.4535"N	80°41'2.3706"W	8663.04	149.003	0.24	0.06	0.23	
16299.00	90.460	160.480	7359.57	8571.02	-7515.50	4493.00	1729477.68	14376361.89	39°35'18.5671"N	80°41'1.9708"W	8756.13	149.128	0.18	-0.03	-0.18	

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Field	Wetzel	UWI	47-103-03793-0000
Facility	Harbour Pad	Wellbore	Twain Unit 2H AWB
Slot	Slot A		

WELLPATH DATA (209 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
16393.00	90.400	160.500	7358.87	8665.02	-7604.10	4524.39	1729509.06	14376273.32	39°35'17.6903"N	80°41'1.5739"W	8848.31	149.248	0.07	-0.06	0.02	
16488.00	90.280	160.240	7358.30	8760.01	-7693.58	4556.31	1729540.96	14376183.88	39°35'16.8049"N	80°41'1.1702"W	8941.54	149.365	0.30	-0.13	-0.27	
16583.00	90.220	160.870	7357.89	8855.01	-7783.16	4587.93	1729572.58	14376094.33	39°35'15.9185"N	80°41'0.7703"W	9034.75	149.482	0.67	-0.06	0.66	
16677.00	90.770	161.850	7357.08	8949.00	-7872.23	4617.98	1729602.61	14376005.30	39°35'15.0372"N	80°41'0.3906"W	9126.75	149.603	1.20	0.59	1.04	
16772.00	89.540	160.510	7356.82	9043.99	-7962.14	4648.62	1729633.24	14375915.42	39°35'14.1475"N	80°41'0.0032"W	9219.84	149.722	1.91	-1.29	-1.41	
16866.00	90.030	160.650	7357.17	9137.99	-8050.79	4679.88	1729664.48	14375826.81	39°35'13.2702"N	80°40'59.6080"W	9312.17	149.831	0.54	0.52	0.15	
16961.00	90.060	160.390	7357.10	9232.99	-8140.36	4711.56	1729696.15	14375737.28	39°35'12.3840"N	80°40'59.2074"W	9405.54	149.938	0.28	0.03	-0.27	
17055.00	89.690	160.030	7357.30	9326.98	-8228.80	4743.38	1729727.96	14375648.87	39°35'11.5087"N	80°40'58.8049"W	9498.05	150.039	0.55	-0.39	-0.38	
17150.00	90.370	160.160	7357.25	9421.97	-8318.13	4775.73	1729760.29	14375559.58	39°35'10.6248"N	80°40'58.3958"W	9591.60	150.138	0.73	0.72	0.14	
17244.00	89.970	160.570	7356.97	9515.96	-8406.66	4807.31	1729791.87	14375471.08	39°35'9.7487"N	80°40'57.9964"W	9684.12	150.237	0.61	-0.43	0.44	
17339.00	90.000	160.930	7357.00	9610.96	-8496.35	4838.63	1729823.18	14375381.43	39°35'8.8612"N	80°40'57.6004"W	9777.54	150.339	0.38	0.03	0.38	
17433.00	90.030	160.790	7356.97	9704.96	-8585.15	4869.45	1729853.99	14375292.66	39°35'7.9825"N	80°40'57.2107"W	9869.98	150.438	0.15	0.03	-0.15	
17528.00	89.850	160.570	7357.07	9799.96	-8674.80	4900.88	1729885.40	14375203.04	39°35'7.0954"N	80°40'56.8133"W	9963.48	150.535	0.30	-0.19	-0.23	
17622.00	89.750	160.490	7357.40	9893.96	-8763.43	4932.21	1729916.72	14375114.45	39°35'6.2184"N	80°40'56.4172"W	10056.06	150.628	0.14	-0.11	-0.09	
17717.00	89.880	160.340	7357.71	9988.96	-8852.93	4964.06	1729948.55	14375024.99	39°35'5.3327"N	80°40'56.0145"W	10149.69	150.720	0.21	0.14	-0.16	
17812.00	89.850	160.470	7357.93	10083.95	-8942.43	4995.92	1729980.40	14374935.52	39°35'4.4471"N	80°40'55.6116"W	10243.35	150.809	0.14	-0.03	0.14	
17906.00	89.630	160.600	7358.36	10177.95	-9031.05	5027.24	1730011.71	14374846.93	39°35'3.5701"N	80°40'55.2155"W	10336.01	150.897	0.27	-0.23	0.14	
18001.00	89.880	160.220	7358.76	10272.94	-9120.55	5059.09	1730043.55	14374757.47	39°35'2.6844"N	80°40'54.8128"W	10429.71	150.983	0.48	0.26	-0.40	
18095.00	89.910	160.450	7358.94	10366.94	-9209.07	5090.73	1730075.17	14374668.98	39°35'1.8085"N	80°40'54.4127"W	10522.48	151.066	0.25	0.03	0.24	
18190.00	89.750	160.500	7359.22	10461.93	-9298.61	5122.48	1730106.91	14374579.48	39°35'0.9225"N	80°40'54.0113"W	10616.21	151.150	0.18	-0.17	0.05	
18284.00	89.780	160.470	7359.60	10555.93	-9387.21	5153.88	1730138.30	14374490.92	39°35'0.0457"N	80°40'53.6142"W	10708.97	151.232	0.05	0.03	-0.03	
18379.00	89.850	160.890	7359.91	10650.93	-9476.86	5185.31	1730169.72	14374401.30	39°34'59.1586"N	80°40'53.2169"W	10802.70	151.315	0.45	0.07	0.44	
18473.00	89.820	160.810	7360.18	10744.93	-9565.66	5216.14	1730200.54	14374312.54	39°34'58.2799"N	80°40'52.8271"W	10895.41	151.396	0.09	-0.03	-0.09	
18568.00	89.910	160.610	7360.41	10839.93	-9655.32	5247.53	1730231.91	14374222.91	39°34'57.3926"N	80°40'52.4303"W	10989.17	151.477	0.23	0.09	-0.21	
18662.00	89.880	160.520	7360.58	10933.92	-9743.97	5278.80	1730263.18	14374134.30	39°34'56.5155"N	80°40'52.0348"W	11082.00	151.553	0.10	-0.03	-0.10	
18757.00	89.690	160.560	7360.93	11028.92	-9833.54	5310.45	1730294.81	14374044.76	39°34'55.6291"N	80°40'51.6347"W	11175.84	151.629	0.20	-0.20	0.04	
18851.00	89.750	160.650	7361.39	11122.92	-9922.20	5341.67	1730326.01	14373956.13	39°34'54.7517"N	80°40'51.2400"W	11268.70	151.704	0.12	0.06	0.10	
18865.00	89.880	160.910	7361.44	11136.92	-9935.42	5346.28	1730330.62	14373942.92	39°34'54.6209"N	80°40'51.1818"W	11282.52	151.715	2.08	0.93	1.86	
18890.00‡	89.880	160.910	7361.49	11161.92	-9959.05	5354.45	1730338.79	14373919.30	39°34'54.3871"N	80°40'51.0784"W	11307.20	151.735	0.00	0.00	0.00	Projected MD at TD: 18890'

DIRECTIONAL DIFFICULTY INDEX

Directional Difficulty Index @ TD = **6.89**

Values	Wellpath characterized as:
< 6.0	Relatively short or simple profiles with low tortuosity
< 6.0-6.4	Shorter with high tortuosity or longer with lower tortuosity

Reference: IADC/SPE 59196

Values	Wellpath characterized as:
6.4-6.8	Longer with relatively tortuous well paths
> 6.8	Long tortuous profiles, high degree of difficulty

HOLE & CASING SECTIONS - Ref Wellbore: Twain Unit 2H AWB Ref Wellpath: Twain Unit 2H AWP Proj: 18890'

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	130.00	100.00	30.00	130.00	0.00	0.00	-0.22	0.00
17 1/2in Open Hole	130.00	501.00	371.00	130.00	501.00	-0.22	0.00	-1.33	0.58
13 3/8in Casing Surface	30.00	481.00	451.00	30.00	481.00	0.00	0.00	-1.20	0.48
12 1/4in Open Hole	501.00	3821.00	3320.00	501.00	3701.29	-1.33	0.58	445.72	716.04
9 5/8in Casing Intermediate	30.00	3791.00	3761.00	30.00	3672.26	0.00	0.00	441.38	709.83
8 3/4in Open Hole	3821.00	6794.00	2973.00	3701.29	6554.47	445.72	716.04	907.07	1407.37
8 1/2in Open Hole	6794.00	18890.00	12096.00	6554.47	7361.49	907.07	1407.37	-9959.05	5354.45
5 1/2in Casing Production	30.00	18870.00	18840.00	30.00	7361.45	0.00	0.00	-9940.15	5347.91

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REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Well	Twain Unit 2H
Field	Wetzel	UWI	47-103-03793-0000
Facility	Harbour Pad	Wellbore	Twain Unit 2H AWB
Slot	Slot A		

TARGETS

Name	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
Twain Unit 2H POE Rev-1	7300.50	491.81	1742.13	1726727.89	14384366.05	39°36'37.7985"N	80°41'36.7587"W	point
Twain Unit 2H POE Rev-2	7310.00	491.81	1742.13	1726727.89	14384366.05	39°36'37.7985"N	80°41'36.7587"W	point
Twain Unit 2H POE Rev-3	7325.00	491.81	1742.13	1726727.89	14384366.05	39°36'37.7985"N	80°41'36.7587"W	point
Twain Unit 2H BHL Rev-1	7325.50	-9967.23	5356.92	1730341.26	14373911.13	39°34'54.3062"N	80°40'51.0473"W	point
Twain Unit 2H BHL Rev-2	7338.00	-9967.23	5356.92	1730341.26	14373911.13	39°34'54.3062"N	80°40'51.0473"W	point
Twain Unit 2H LP Rev-2	7338.00	304.39	1806.90	1726792.64	14384178.70	39°36'35.9440"N	80°41'35.9393"W	point
Twain Unit 2H POE Rev-4	7350.00	491.81	1742.13	1726727.89	14384366.05	39°36'37.7985"N	80°41'36.7587"W	point
Twain Unit 2H BHL Rev-3	7351.00	-9967.23	5356.92	1730341.26	14373911.13	39°34'54.3062"N	80°40'51.0473"W	point

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REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Well	Twain Unit 2H
Field	Wetzel	UWI	47-103-03793-0000
Facility	Harbour Pad	Wellbore	Twain Unit 2H AWB
Slot	Slot A		

TARGETS

Name	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
Twain Unit 2H LP Rev-3	7351.00	311.08	1804.59	**1726790.33**	**14384185.39**	39°36'36.0102"N	80°41'35.9685"W	point
Twain Unit 2H BHL Rev-4	7379.00	-9967.23	5356.92	**1730341.26**	**14373911.13**	39°34'54.3062"N	80°40'51.0473"W	point
Twain Unit 2H LP Rev-4	7379.00	301.14	1808.03	**1726793.76**	**14384175.45**	39°36'35.9119"N	80°41'35.9251"W	point
Twain Unit 2H 50' L/R Hard Line	7500.00	-4737.71	3549.52	1728534.58	14379138.59	39°35'46.0530"N	80°41'13.8983"W	rectangle
	2D Rectangle: 11066.1 x 100.							

WELLPATH COMPOSITION - Ref Wellbore: Twain Unit 2H AWB Ref Wellpath: Twain Unit 2H AWP Proj: 18890'

Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore	Survey Date
30.00	470.00	Gyrodata 2015 - GC+WIR+DPIPE	01_Gyrodata MS Gyro <17-1/2"> (100'-470')	Twain Unit 2H AWB	2026-01-10
470.00	3745.00	BH NaviTrak (2019) (Axial Corr+HRGM)	02_APS EM <12-1/4"> (470')(503'-3745')	Twain Unit 2H AWB	2026-01-10
3745.00	6719.00	BH NaviTrak (2019) (Axial Corr+HRGM)	03_APS EM <8-3/4"> (3745')(3876'-6719')	Twain Unit 2H AWB	2026-02-05
6719.00	18890.00	BH AutoTrak Curve/eXpress (2019) (HRGM, Short spacing)	04_BH Lucida <8-1/2"> (6719')(6769'-18865')	Twain Unit 2H AWB	2026-02-05

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REFERENCE WELLPATH IDENTIFICATION			
Operator	**ANTERO RESOURCES CORPORATION**	Well	**Twain Unit 2H**
Field	**Wetzel**	UWI	**47-103-03793-0000**
Facility	**Harbour Pad**	Wellbore	**Twain Unit 2H AWB**
Slot	**Slot A**		

COMMENTS

Wellpath general comments

API: 47-103-03793-0000
BH Job #: 112930780
Rig: H&P 519
Duration: 2/8/2026-2/11/2026
Gyrodata MS Gyro <17-1/2"> (100'-470')
APS EM <12-1/4"> (470')(503'-3745')
APS EM <8-3/4"> (3745')(3876'-6719')
BH Lucida <8-1/2"> (6719')(6769'-18865')
Sycamore: 7276' MD
Middlesex: 7431' MD
Burkett: 7570' MD
Tully: 7617' MD
Marcellus POE: 7847' MD
Projected MD at TD: 18890'

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