

State of West Virginia
Department of Environmental Protection - Office of Oil and Gas
Well Operator's Report of Well Work

API 47 - 095 - 02820 County Tyler/Wetzel District Ellsworth/Magnolia
Quad Porter Falls 7.5' Pad Name Heintzman Field/Pool Name -----
Farm name Dennis & Clista Heintzman Well Number Mamba Unit 1H
Operator (as registered with the OOG) Antero Resources Corporation
Address 1615 Wynkoop Street City Denver State CO Zip 80202

As Drilled location NAD 83/UTM Attach an as-drilled plat, profile view, and deviation survey
Top hole Northing 4377047.774m Easting 512405.040m
Landing Point of Curve Northing 4377470.37m Easting 512207.61m
Bottom Hole Northing 4382084.073m Easting 510648.807m

Elevation (ft) 1193' GL Type of Well New Existing Type of Report Interim Final
Permit Type Deviated Horizontal Horizontal 6A Vertical Depth Type Deep Shallow
Type of Operation Convert Deepen Drill Plug Back Redrilling Rework Stimulate
Well Type Brine Disposal CBM Gas Oil Secondary Recovery Solution Mining Storage Other _____
Type of Completion Single Multiple Fluids Produced Brine Gas NGL Oil Other _____
Drilled with Cable Rotary

Drilling Media Surface hole Air Mud Fresh Water Intermediate hole Air Mud Fresh Water Brine
Production hole Air Mud Fresh Water Brine
Mud Type(s) and Additive(s)
Air - Foam & 4% KCL
Mud - Polymer

Date permit issued 9/20/2022 Date drilling commenced 10/31/2022 Date drilling ceased 1/10/2023
Date completion activities began 3/10/2023 Date completion activities ceased 4/26/2023
Verbal plugging (Y/N) N/A Date permission granted N/A Granted by N/A

Please note: Operator is required to submit a plugging application within 5 days of verbal permission to plug

Freshwater depth(s) ft 479' Open mine(s) (Y/N) depths No
Salt water depth(s) ft 1774' Void(s) encountered (Y/N) depths No
Coal depth(s) ft 412' Cavern(s) encountered (Y/N) depths No
Is coal being mined in area (Y/N) No

APPROVED

Reviewed by:

Smiley
12-22
02/09/2024

API 47-095 - 02820 Farm name Dennis & Clista Heintzman Well number Mamba Unit 1H

CASING STRINGS	Hole Size	Casing Size	Depth	New or Used	Grade wt/ft	Basket Depth(s)	Did cement circulate (Y/ N) * Provide details below*
Conductor	28"	20"	130'	New	78.67#, X-60	N/A	Y
Surface	17-1/2"	13-3/8"	581'	New	54.5#, K-55	N/A	Y
Coal							
Intermediate 1	12-1/4"	9-5/8"	3402'	New	36#, J-55	N/A	Y
Intermediate 2							
Intermediate 3							
Production	8-3/4"/8-1/2"	5-1/2"	23177'	New	23#, P-110/ICY	N/A	Y
Tubing		2-3/8"	6733'		4.7#, P-110		
Packer type and depth set		N/A					

Comment Details _____

CEMENT DATA	Class/Type of Cement	Number of Sacks	Slurry wt (ppg)	Yield (ft ³ /sks)	Volume (ft ³)	Cement Top (MD)	WOC (hrs)
Conductor	Class A	266 sx	15.6	1.18	313	0'	8 Hrs.
Surface	Class C	645 sx	15.8	1.17	754	0'	8 Hrs.
Coal							
Intermediate 1	Class C	1175 sx	15.8	1.16	1363	0'	8 Hrs.
Intermediate 2							
Intermediate 3							
Production	Class H	3760 sx (Tail)	13.5 (Lead), 15.2(Tail)	1.25 (Tail)	4700	-500' into Intermediate Casing	8 Hrs.
Tubing							

Drillers TD (ft) 23177' MD, 6600' TVD (BHL), 6642' TVD (Deepest Point Drilled) Loggers TD (ft) 23177' MD

Deepest formation penetrated Marcellus Plug back to (ft) N/A

Plug back procedure N/A

Kick off depth (ft) 6315'

Check all wireline logs run caliper density deviated/directional induction
 neutron resistivity gamma ray temperature sonic

Well cored Yes No Conventional Sidewall Were cuttings collected Yes No

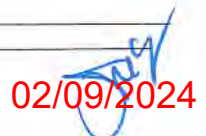
DESCRIBE THE CENTRALIZER PLACEMENT USED FOR EACH CASING STRING _____

Conductor - 0
Surface - 1 above guide shoe, 1 above insert float, 1 every 4th joint to surface
Intermediate - 1 above float joint, 1 above float collar, 1 every 4th joint to surface
Production - 1 above float joint, 1 below float collar, 1 every 3rd joint to top of cement

WAS WELL COMPLETED AS SHOT HOLE Yes No DETAILS _____

WAS WELL COMPLETED OPEN HOLE? Yes No DETAILS _____

WERE TRACERS USED Yes No TYPE OF TRACER(S) USED N/A


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API 47- 095 - 02820 Farm name Dennis & Clista Heintzman Well number Mamba Unit 1H

PRODUCING FORMATION(S)	DEPTHS		
Marcellus	6580' (TOP)	TVD	6969' (TOP) MD

Please insert additional pages as applicable.

GAS TEST Build up Drawdown Open Flow OIL TEST Flow Pump

SHUT-IN PRESSURE Surface _____ psi Bottom Hole --- _____ psi DURATION OF TEST --- _____ hrs

OPEN FLOW Gas 13119.90 mcfpd Oil 638.06 bpd NGL --- bpd Water 891.98 bpd GAS MEASURED BY Estimated Orifice Pilot

LITHOLOGY/ FORMATION	TOP		BOTTOM		DESCRIBE ROCK TYPE AND RECORD QUANTITY AND TYPE OF FLUID (FRESHWATER, BRINE, OIL, GAS, H ₂ S, ETC)
	DEPTH IN FT NAME TVD	DEPTH IN FT TVD	DEPTH IN FT MD	DEPTH IN FT MD	

***PLEASE SEE ATTACHED EXHIBIT 3**

Please insert additional pages as applicable.

Drilling Contractor H & P Drilling
Address 912 N Eagle Valley Rd City Howard State PA Zip 16841

Logging Company Nine Energy Services
Address 6500 West Fwy City Fort Worth State TX Zip 76116

Cementing Company Halliburton Energy Services
Address 3000 W. Sam Houston Pkwy City Houston State TX Zip 76114

Stimulating Company Halliburton
Address 3000 W. Sam Houston Pkwy City Houston State TX Zip 76114

Please insert additional pages as applicable.

Completed by Stefan Gaspar Telephone 303-357-6959
Signature *S Gaspar* Title Permitting Agent Date 8/7/23

Submission of Hydraulic Fracturing Chemical Disclosure Information Attach copy of FRACFOCUS Registry

02/09/2024

EXHIBIT 1

Stage No.	Perforation Date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formations
1	3/10/2023	23051	23009	60	Marcellus
2	3/10/2023	22970.69792	22806.1875	60	Marcellus
3	3/10/2023	22770.88542	22606.375	60	Marcellus
4	3/10/2023	22571.07292	22406.5625	60	Marcellus
5	3/11/2023	22371.26042	22206.75	60	Marcellus
6	3/11/2023	22171.44792	22006.9375	60	Marcellus
7	3/11/2023	21971.63542	21807.125	60	Marcellus
8	3/12/2023	21771.82292	21607.3125	60	Marcellus
9	3/12/2023	21572.01042	21407.5	60	Marcellus
10	3/12/2023	21372.19792	21207.6875	60	Marcellus
11	3/12/2023	21172.38542	21007.875	60	Marcellus
12	3/12/2023	20972.57292	20808.0625	60	Marcellus
13	3/12/2023	20772.76042	20608.25	60	Marcellus
14	3/13/2023	20572.94792	20408.4375	60	Marcellus
15	3/13/2023	20373.13542	20208.625	60	Marcellus
16	3/13/2023	20173.32292	20008.8125	60	Marcellus
17	3/13/2023	19973.51042	19809	60	Marcellus
18	3/13/2023	19773.69792	19609.1875	60	Marcellus
19	3/14/2023	19573.88542	19409.375	60	Marcellus
20	3/14/2023	19374.07292	19209.5625	60	Marcellus
21	3/14/2023	19174.26042	19009.75	60	Marcellus
22	3/14/2023	18974.44792	18809.9375	60	Marcellus
23	3/14/2023	18774.63542	18610.125	60	Marcellus
24	3/15/2023	18574.82292	18410.3125	60	Marcellus
25	3/15/2023	18375.01042	18210.5	60	Marcellus
26	3/15/2023	18175.19792	18010.6875	60	Marcellus
27	3/15/2023	17975.38542	17810.875	60	Marcellus
28	3/15/2023	17775.57292	17611.0625	60	Marcellus
29	3/15/2023	17575.76042	17411.25	60	Marcellus
30	3/16/2023	17375.94792	17211.4375	60	Marcellus
31	3/16/2023	17176.13542	17011.625	60	Marcellus
32	3/16/2023	16976.32292	16811.8125	60	Marcellus
33	3/16/2023	16776.51042	16612	60	Marcellus
34	3/16/2023	16576.69792	16412.1875	60	Marcellus
35	3/16/2023	16376.88542	16212.375	60	Marcellus
36	3/16/2023	16177.07292	16012.5625	60	Marcellus
37	3/17/2023	15977.26042	15812.75	60	Marcellus
38	3/17/2023	15777.44792	15612.9375	60	Marcellus
39	3/17/2023	15577.63542	15413.125	60	Marcellus
40	3/17/2023	15377.82292	15213.3125	60	Marcellus
41	3/17/2023	15178.01042	15013.5	60	Marcellus
42	3/17/2023	14978.19792	14813.6875	60	Marcellus
43	3/18/2023	14778.38542	14613.875	60	Marcellus
44	3/18/2023	14578.57292	14414.0625	60	Marcellus
45	3/18/2023	14378.76042	14214.25	60	Marcellus
46	3/18/2023	14178.94792	14014.4375	60	Marcellus
47	3/18/2023	13979.13542	13814.625	60	Marcellus
48	3/18/2023	13779.32292	13614.8125	60	Marcellus
49	3/18/2023	13579.51042	13415	60	Marcellus
50	3/18/2023	13379.69792	13215.1875	60	Marcellus
51	3/19/2023	13179.88542	13015.375	60	Marcellus
52	3/19/2023	12980.07292	12815.5625	60	Marcellus
53	3/19/2023	12780.26042	12615.75	60	Marcellus
54	3/19/2023	12580.44792	12415.9375	60	Marcellus
55	3/19/2023	12380.63542	12216.125	60	Marcellus
56	3/19/2023	12180.82292	12016.3125	60	Marcellus
57	3/20/2023	11981.01042	11816.5	60	Marcellus
58	3/20/2023	11781.19792	11616.6875	60	Marcellus
59	3/20/2023	11581.38542	11416.875	60	Marcellus
60	3/20/2023	11381.57292	11217.0625	60	Marcellus
61	3/20/2023	11181.76042	11017.25	60	Marcellus
62	3/20/2023	10981.94792	10817.4375	60	Marcellus
63	3/20/2023	10782.13542	10617.625	60	Marcellus
64	3/21/2023	10582.32292	10417.8125	60	Marcellus
65	3/21/2023	10382.51042	10218	60	Marcellus
66	3/21/2023	10182.69792	10018.1875	60	Marcellus
67	3/21/2023	9982.88542	9818.375	60	Marcellus
68	3/21/2023	9783.07292	9618.5625	60	Marcellus
69	3/21/2023	9583.26042	9418.75	60	Marcellus
70	3/21/2023	9383.44792	9218.9375	60	Marcellus
71	3/22/2023	9183.63542	9019.125	60	Marcellus
72	3/22/2023	8983.82292	8819.3125	60	Marcellus
73	3/22/2023	8784.01042	8619.5	60	Marcellus
74	3/22/2023	8584.19792	8419.6875	60	Marcellus
75	3/22/2023	8384.38542	8219.875	60	Marcellus
76	3/22/2023	8184.57292	8020.0625	60	Marcellus
77	3/22/2023	7984.76042	7820.25	60	Marcellus
78	3/23/2023	7784.94792	7620.4375	60	Marcellus
79	3/23/2023	7585.13542	7420.625	60	Marcellus
80	3/23/2023	7385.32292	7220.8125	60	Marcellus
81	3/23/2023	7185.51042	7021	60	Marcellus

02/09/2024




EXHIBIT 2

Stage No.	Stimulations Date	Avg Pump Rate	Avg			Amount of Proppant (lbs)	Amount of Water (bbbls)	Amount of Nitrogen/other (units)
			Treatment Pressure (PSI)	Breakdown Pressure (PSI)	ISIP (PSI)			
1	3/10/2023	79.31537	9497.035	6763	3870.259	171240	5429.7871	N/A
2	3/10/2023	91.27683	10016.55	5313.26	4132.334	398860	7515.1288	N/A
3	3/10/2023	97.70025	10240.11	4154.83	4081.331	395480	7369.7038	N/A
4	3/10/2023	95.34865	10148.14	4979.46	3781.993	395150	7248.1964	N/A
5	3/11/2023	96.94674	10255.68	5422.5	3939.784	412590	6985.8355	N/A
6	3/11/2023	97.82	10305	4869	3964	408930	7198.5362	N/A
7	3/11/2023	94.25	10193	5272	3642	396640	8596.075	N/A
8	3/12/2023	88.74	9844	5509	4050	391400	7454.7526	N/A
9	3/12/2023	93.34563	10076.74	4916.13	3751.137	395180	6841.5952	N/A
10	3/12/2023	91.14688	9866.026	5670.1	3647.078	396760	7102.0317	N/A
11	3/12/2023	94.11431	9921.459	5131.13	3684.53	411990	7233.185	N/A
12	3/12/2023	97.44546	10301.83	4833.11	3708.451	394890	6924.4845	N/A
13	3/12/2023	88.46592	9509.659	4967	3838.71	417930	7206.505	N/A
14	3/13/2023	96.54	9909	6089	3936	414170	7277.5562	N/A
15	3/13/2023	96.73223	10161.26	4998.58	4000.899	411530	7152.1843	N/A
16	3/13/2023	95.11089	10139.63	4803.72	3805.01	394310	6960.644	N/A
17	3/13/2023	96.66379	10260.96	5715.13	3875.16	413390	7059.9402	N/A
18	3/13/2023	94.02	10068	5245	3868	409780	7300.4988	N/A
19	3/14/2023	97.78042	10217.61	4832.42	3836.796	401730	7161.3133	N/A
20	3/14/2023	94.10975	9587.565	4259.67	4030.479	406970	7252.8236	N/A
21	3/14/2023	96.37696	10008.21	4859.44	3854.518	408870	7052.321	N/A
22	3/14/2023	97.41454	9702.734	5250.34	4160.714	394810	6864.7986	N/A
23	3/14/2023	96.85	9769	5018	3983	416730	7117.6864	N/A
24	3/15/2023	96.72597	9813.906	4914.54	3992.333	417380	7151.1852	N/A
25	3/15/2023	96.07898	9639.581	4939.54	4001.91	415110	7218.0779	N/A
26	3/15/2023	94.39295	9856.041	4257.47	3681.079	410400	6913.6526	N/A
27	3/15/2023	97.78395	10293.4	4865.23	3739.06	402670	6871.1086	N/A
28	3/15/2023	97.97553	9762.616	4792.46	3947.813	404540	6980.5936	N/A
29	3/15/2023	97.29689	9474.752	5175.76	4026.401	398900	6893.4231	N/A
30	3/16/2023	97.39079	9759.297	5696.64	4075.399	413890	7243.2531	N/A
31	3/16/2023	96.44719	9593.322	5244.63	3873.933	393320	6874.495	N/A
32	3/16/2023	96.9099	9877.646	5489.72	3969.257	408070	6977.0762	N/A
33	3/16/2023	97.29493	9562.422	4997.27	3967.009	411410	7049.0771	N/A
34	3/16/2023	97.17	9888	4836	3650	392640	6841.8469	N/A
35	3/16/2023	97.19795	9568.473	5855.85	3698.112	404098	7040.03	N/A
36	3/16/2023	96.75441	9632.97	5421.02	3476.978	396750	6886.2776	N/A
37	3/17/2023	94.59113	9519.826	5764.71	3882.441	393580	6960.9943	N/A
38	3/17/2023	97.69247	9967.023	4853.7	3882.97	394110	6880.0219	N/A
39	3/17/2023	97.53719	9411.933	5455.01	3712.035	396260	6768.4055	N/A
40	3/17/2023	98.03389	8918.926	5550.35	3840.584	393742	6814.0902	N/A
41	3/17/2023	97.82036	9365.248	5793.81	3910.608	397160	6847.7071	N/A
42	3/17/2023	97.4492	9097.488	5449.27	3832.18	398780	6863.5007	N/A
43	3/18/2023	97.80205	8978.226	5253.88	3736.124	412740	6956.825	N/A
44	3/18/2023	97.55998	8854.788	5949.9	4071.199	406960	6994.1988	N/A
45	3/18/2023	97.54324	8863.431	5321.51	3913.974	398140	6855.4555	N/A
46	3/18/2023	97.76655	9096.811	5608.73	3870.302	404740	7011.4886	N/A
47	3/18/2023	97.48548	8948.805	5407.49	3479.864	392680	6737.3133	N/A
48	3/18/2023	98.19949	8962.45	4919.85	3642.533	402050	6950.2031	N/A
49	3/18/2023	97.5455	8674.321	3798.3	4072.611	399230	6679.6488	N/A
50	3/18/2023	97.06322	8551.005	5344.72	3902.619	399140	6793.5795	N/A
51	3/19/2023	97.254	8737.765	5175.29	3745.918	394760	6684.3931	N/A
52	3/19/2023	97.19	8580	5545	4066	408380	6811.7576	N/A
53	3/19/2023	97.5911	8677.965	5174.52	3947.477	402480	6850.781	N/A
54	3/19/2023	98.06413	8723.179	5038.25	3755.398	412050	6994.0702	N/A
55	3/19/2023	98.10829	8625.884	4886.92	3618.199	392733	6677.2186	N/A
56	3/19/2023	97.62538	8398.903	5192.94	3720.693	410840	6957.2981	N/A
57	3/20/2023	98.07682	8365.547	5035.48	3662.021	398990	6788.3045	N/A
58	3/20/2023	97.8344	8231.282	4990.78	3597.611	414300	6975.9167	N/A
59	3/20/2023	97.55819	8214.006	4981	3686.171	393670	6764.9033	N/A
60	3/20/2023	96.95409	8250.267	3731.13	3546.077	397030	6737.415	N/A
61	3/20/2023	95.57333	8342.175	5644.33	3797.655	402710	9164.6505	N/A
62	3/20/2023	97.65566	7910.12	5336.3	3894.152	392970	6591.4952	N/A
63	3/20/2023	97.98943	7921.756	5237.58	3634.459	394540	6694.4793	N/A
64	3/21/2023	98.01854	7933.082	4334.06	3560.486	396780	6770.6155	N/A
65	3/21/2023	98.50172	8063.382	5399.36	3333.521	399660	6809.0233	N/A
66	3/21/2023	96.79	8006	5531	3238	396330	6823.6707	N/A
67	3/21/2023	98.2	7969	5246	3394	412570	7038.0029	N/A
68	3/21/2023	97.70927	7896.195	4219.14	3604.013	397340	7320.1217	N/A
69	3/21/2023	97.53345	7869.814	5645.23	3901.509	396500	7188.7469	N/A
70	3/21/2023	95.93358	7964.285	4203.01	3862.183	398740	7353.8114	N/A
71	3/22/2023	97.541	7796.456	5114.27	3829.766	413140	7526.4321	N/A
72	3/22/2023	97.96	7832	5327	3504	412070	8335.3029	N/A
73	3/22/2023	96.86999	8064.539	5039.92	3301.57	409030	7394.8869	N/A
74	3/22/2023	96.41	8289	5599	3498	399470	7318.6943	N/A
75	3/22/2023	96.93	8236	5313	3662	396610	7220.0995	N/A
76	3/22/2023	97.42877	8261.177	5524.29	3366.364	406820	7378.09	N/A
77	3/22/2023	95.81051	8031.717	5612.23	3465.362	391400	7359.3507	N/A
78	3/23/2023	96.56103	8140.193	5720.52	3796.022	411980	7489.6676	N/A
79	3/23/2023	96.62	7788	5972	3901	411030	7338.6824	N/A
80	3/23/2023	97.41	7862	5286	3440	404640	7164.535	N/A
81	3/23/2023	97.03	7808	5788	3493	399780	7267.831	N/A
	AVERAGE	96.4	9,095	6,193	3,779	32,387,073	573,149	0

EXHIBIT 3

LITHOLOGY/ FORMATION	TOP DEPTH (TVD)	BOTTOM DEPTH (TVD)	TOP DEPTH (MD)	BOTTOM DEPTH (MD)
	From Surface	From Surface	From Surface	From Surface
Shaley Siltstone	70	190	70	190
Shaley Sandstone	190	280	190	280
Shaley Siltstone	280	360	280	360
Limestone, Tr Shale	360	490	360	490
Sandstone	490	580	490	580
Limestone, Tr Shale	580	790	580	790
Shaley Sandstone	790	880	790	880
Shale, Tr Sandstone	880	1,130	880	1,130
Sandy Shale, Limestone	1,130	1,240	1,130	1,240
Sandy Shale	1,240	1,480	1,240	1,480
Sandstone, Tr Shale	1,480	1,660	1,480	1,660
Silty Shale, tr SS	1,660	1,750	1,660	1,750
Shale, Tr Sst	1,750	2,001	1,750	2,002
Big Lime	2,031	2,833	2,002	2,833
Fifty Foot Sandstone	2,833	2,895	2,803	2,896
Gordon	2,895	3,121	2,866	3,121
Fifth Sandstone	3,121	3,208	3,091	3,208
Bayard	3,208	4,033	3,178	4,040
Speechley	4,033	4,302	4,010	4,318
Balltown	4,302	4,761	4,288	4,809
Bradford	4,761	5,171	4,779	5,247
Benson	5,171	5,379	5,217	5,469
Alexander	5,379	6,451	5,439	6,660
Sycamore	6,316	6,421	6,482	6,630
Middlesex	6,421	6,510	6,630	6,794
Burkett	6,510	6,529	6,794	6,835
Tully	6,529	6,580	6,835	6,969
Marcellus	6,580	NA	6,969	NA

Antero Resources
Well No. Mamba 1H
As-Drilled
 Antero Resources Corporation



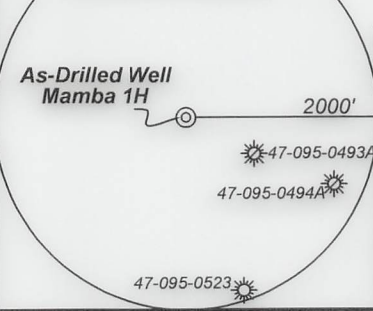
I, the undersigned, hereby certify that this plat is correct to the best of my knowledge and belief and shows all the information required by law and the rules issued and prescribed by the Department of Environmental Protection.

Bradley D. Miller
 Bradley D. Miller, P.S. 2167



Top Hole Coordinates, As-drilled data, and information was provided by Antero Resources Corporation. Allegheny Surveys Inc. (ASI) is not certifying the data and information provided. ASI is not responsible for any errors or inaccuracies with the data and information that has been provided.

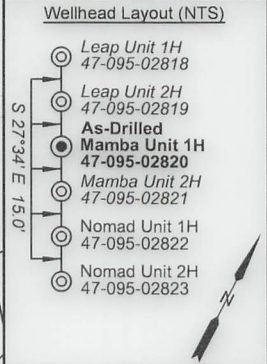
Note: 0 water wells or springs were found within 2000' of proposed well. No occupied dwellings or buildings 2,500 square feet or larger used to house or shelter dairy cattle or poultry husbandry are located within 625' of the center of the well pad.



Legend	
	As-Drilled gas well
	Monument, as noted
	Existing Well, as noted
	Digitized Well, as noted
	Creek or Drain
	Road
	Surface boundary (approx.)
	Interior surface tracts (approx.)
	County Line

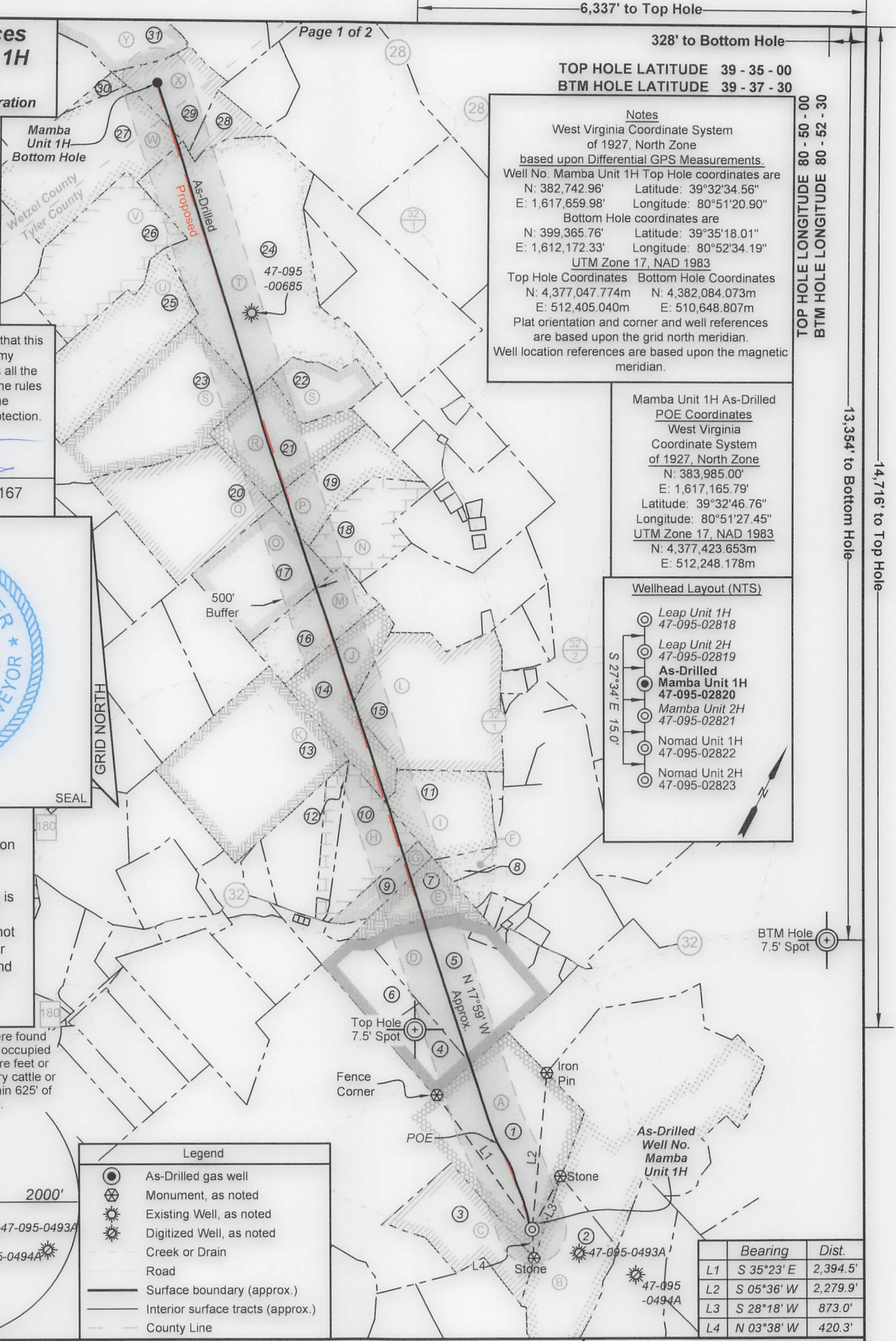
Notes
 West Virginia Coordinate System of 1927, North Zone based upon Differential GPS Measurements.
 Well No. Mamba Unit 1H Top Hole coordinates are
 N: 382,742.96' Latitude: 39°32'34.56"
 E: 1,617,659.98' Longitude: 80°51'20.90"
 Bottom Hole coordinates are
 N: 399,365.76' Latitude: 39°35'18.01"
 E: 1,612,172.33' Longitude: 80°52'34.19"
 UTM Zone 17, NAD 1983
 Top Hole Coordinates Bottom Hole Coordinates
 N: 4,377,047.774m N: 4,382,084.073m
 E: 512,405.040m E: 510,648.807m
 Plat orientation and corner and well references are based upon the grid north meridian.
 Well location references are based upon the magnetic meridian.

Mamba Unit 1H As-Drilled POE Coordinates
 West Virginia Coordinate System of 1927, North Zone
 N: 383,985.00'
 E: 1,617,165.79'
 Latitude: 39°32'46.76"
 Longitude: 80°51'27.45"
 UTM Zone 17, NAD 1983
 N: 4,377,423.653m
 E: 512,248.178m



TOP HOLE LATITUDE 39 - 35 - 00
 BTM HOLE LATITUDE 39 - 37 - 30
 TOP HOLE LONGITUDE 80 - 50 - 00
 BTM HOLE LONGITUDE 80 - 52 - 30

13,354' to Bottom Hole
 14,716' to Top Hole



FILE NO: 99-54-E-19
 DRAWING NO: Mamba Unit 1H As-Drilled
 SCALE: 1" = 2000'
 MINIMUM DEGREE OF ACCURACY: Submeter
 PROVEN SOURCE OF ELEVATION: WVDOT, Harrisville, WV

STATE OF WEST VIRGINIA
 DEPARTMENT OF ENVIRONMENTAL PROTECTION
OIL AND GAS DIVISION

DATE: July 28 2023
 OPERATOR'S WELL NO. Mamba Unit 1H
 API WELL NO
 47 - 095 - 02820
 STATE COUNTY PERMIT

WELL TYPE: OIL GAS LIQUID INJECTION WASTE DISPOSAL
 (IF GAS) PRODUCTION: STORAGE DEEP SHALLOW

LOCATION: ELEVATION: As-Built: 1,193' WATERSHED: Outlet Middle Island Creek QUADRANGLE: TH:Porter Falls 20; 82.06; BH:Paden City 42 46875;
 DISTRICT: Ellsworth/Magnolia COUNTY: Tyler/Wetzel 67; 133.4; 70;
 SURFACE OWNER: Dennis & Clista Heintzman ACREAGE: 417.6 51.162; 30.9625;
 ROYALTY OWNER: BRC Appalachian Minerals I, LLC; Judy P. Meyers; Linda J. & Jack E. Mason; LEASE NO: ACREAGE: 44; 164.28125;
 PROPOSED WORK: DRILL CONVERT DRILL DEEPER FRACTURE OR STIMULATE PLUG OFF OLD FORMATION
 PERFORATE NEW FORMATION OTHER PHYSICAL CHANGE IN WELL (SPECIFY) As-Drilled
 PLUG AND ABANDON CLEAN OUT AND REPLUG TARGET FORMATION: Marcellus Shale ESTIMATED DEPTH: 6,600' TVD 23,177' MD

WELL OPERATOR: Antero Resources Corporation DESIGNATED AGENT: Kevin Ellis
 ADDRESS: 1615 Wynkoop Street ADDRESS: 535 White Oaks Blvd.
 Denver, CO 80202 Charleston, WV 25313



ID	TM/Par	Owner	Bk/Pg	Acres
1	6-36	Dennis & Clista Heintzman	297/640	417.60
2	10-4	Stefan L. & Alberta B. Smolski	356/467	56.08
3	6-49	Dennis & Clista A. Heintzman	297/637	45.00
4	6-26.1	-	52/185	18.00
5	6-27	Ronnie L. VanCamp, et al	568/32	69.88
6	6-26	Ronnie L. VanCamp, et al	670/641	23.00
7	6-47	Jeffrey Seckman	545/70	18.99
8	6-20.1	Jeffrey Seckman	545/70	2.52
9	6-19	Linda J. & Jack E. Mason	OR 101/678	10.00
10	6-18	Kirk Family Trust	511/171	39.00
11	6-20	Jeffrey Seckman	545/70	36.15
12	6-18.2	Kirk Family Trust	511/169	11.00
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14	6-7	Gary A. & Penny K. Midcap	301/265	30.90
15	6-8	Matthew T. Ebert	361/219	98.50
16	3-26.1	Gary A. & Penny K. Midcap	301/265	40.00
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22	3-19	Gary A. & Penny K. Midcap	301/265	20.94
23	3-18	Gary A. Midcap	322/108	80.33
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25	3-13	Lomax R. Kunkel (L/E)	297/692	63.50
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27	16-67	Robert D. Wetzel	404/372	82.06
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31	16-63	Richard E. Kay, et ux	395/329	19.00

Leases	
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C	Dennis R. & Clista A. Heintzman
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T	Beverly Kay Campbell
U	Lowmax R. Kunkel
V	Joel Potts, III
W	Robert D. Wetzel
X	Michael Stillwagner
Y	Joel A. Potts, III

FILE NO: 99-54-E-19
 DRAWING NO: Mamba Unit 1H As-Drilled
 SCALE: 1" = 2000'
 MINIMUM DEGREE OF ACCURACY:
Submeter
 PROVEN SOURCE OF ELEVATION:
WVDOT, Harrisville, WV

STATE OF WEST VIRGINIA
 DEPARTMENT OF ENVIRONMENTAL PROTECTION
OIL AND GAS DIVISION

DATE: July 28 2023
 OPERATOR'S WELL NO. Mamba Unit 1H
API WELL NO
47 — 095 — 02820
 STATE COUNTY PERMIT

WELL TYPE: OIL GAS LIQUID INJECTION WASTE DISPOSAL
 (IF GAS) PRODUCTION: STORAGE DEEP SHALLOW

LOCATION: ELEVATION: As-Built: 1,193' WATERSHED: Middle Island Creek QUADRANGLE: TH:Porter Falls 20; 82.06; BH:Paden City 42.46875; 6.25.09.25

DISTRICT: Ellsworth/Magnolia COUNTY: Tyler/Wetzel ACREAGE: 417.6

SURFACE OWNER: Dennis & Clista Heintzman ROYALTY OWNER: BRC Appalachian Minerals I, LLC; Judy P. Meyers; Linda J. & Jack E. Mason; LEASE NO: _____ ACREAGE: 44; 164.28125;

PROPOSED WORK: DRILL CONVERT DRILL DEEPER FRACTURE OR STIMULATE PLUG OFF OLD FORMATION
 PERFORATE NEW FORMATION OTHER PHYSICAL CHANGE IN WELL (SPECIFY) As-Drilled
 PLUG AND ABANDON CLEAN OUT AND REPLUG TARGET FORMATION: Marcellus Shale ESTIMATED DEPTH: 6,600' TVD 23,177' MD

WELL OPERATOR: Antero Resources Corporation DESIGNATED AGENT: Kevin Ellis
 ADDRESS: 1615 Wynkoop Street ADDRESS: 535 White Oaks Blvd.
Denver, CO 80202 Charleston, WV 25313

02/09/2024

Antero Resources
Well No. Mamba 1H
As-Drilled
 Antero Resources Corporation



Mamba Unit 1H
 Bottom Hole

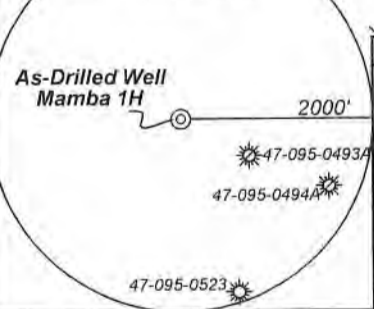
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Bradley D. Miller
 Bradley D. Miller, P.S. 2167



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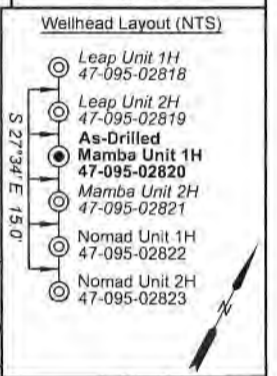
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Legend	
	As-Drilled gas well
	Monument, as noted
	Existing Well, as noted
	Digitized Well, as noted
	Creek or Drain
	Road
	Surface boundary (approx.)
	Interior surface tracts (approx.)
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 Latitude: 39°32'46.76"
 Longitude: 80°51'27.45"
 UTM Zone 17, NAD 1983
 N: 4,377,423.653m
 E: 512,248.176m



Bearing	Dist.
L1 S 35°23' E	2,394.5'
L2 S 05°36' W	2,279.9'
L3 S 28°18' W	873.0'
L4 N 03°38' W	420.3'

FILE NO: 99-54-E-19
 DRAWING NO: Mamba Unit 1H As-Drilled
 SCALE: 1" = 2000'
 MINIMUM DEGREE OF ACCURACY: Submeter
 PROVEN SOURCE OF ELEVATION: WVDOT, Harrisville, WV

STATE OF WEST VIRGINIA
 DEPARTMENT OF ENVIRONMENTAL PROTECTION
OIL AND GAS DIVISION

DATE: July 28 2023
 OPERATOR'S WELL NO. Mamba Unit 1H
 API WELL NO
 47 - 095 - 02820
 STATE COUNTY PERMIT

WELL TYPE: OIL GAS LIQUID INJECTION WASTE DISPOSAL
 (IF GAS) PRODUCTION: STORAGE DEEP SHALLOW
 LOCATION: ELEVATION: As-Built: 1,193' WATERSHED: Middle Island Creek Outlet: Porter Falls
 DISTRICT: Ellsworth/Magnolia COUNTY: Tyler/Wetzel
 SURFACE OWNER: Dennis & Clista Heintzman
 ROYALTY OWNER: BRC Appalachian Minerals I, LLC; Judy P. Meyers; Linda J. & Jack E. Mason; LEASE NO: ACREAGE: 417.6
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 PLUG AND ABANDON CLEAN OUT AND REPLUG TARGET FORMATION: Marcellus Shale ESTIMATED DEPTH: 23,177' MD
 6,800' TVD

WELL OPERATOR: Antero Resources Corporation DESIGNATED AGENT: Kevin Ellis
 ADDRESS: 1615 Wynkoop Street ADDRESS: 535 White Oaks Blvd.
 Denver, CO 80202 Charleston, WV 25313

02/09/2024



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5	6-27	Ronnie L. VanCamp, et al	568/32	69.88
6	6-26	Ronnie L. VanCamp, et al	670/641	23.00
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8	6-20.1	Jeffrey Seckman	545/70	2.52
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V	Joel Potts, III
W	Robert D. Wetzel
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Y	Joel A. Potts, III

FILE NO: 99-54-E-19
 DRAWING NO: Mamba Unit 1H As-Drilled
 SCALE: 1" = 2000'
 MINIMUM DEGREE OF ACCURACY:
 Submeter
 PROVEN SOURCE OF ELEVATION:
 WVDOT, Harrisville, WV

STATE OF WEST VIRGINIA
 DEPARTMENT OF ENVIRONMENTAL PROTECTION
OIL AND GAS DIVISION

DATE: July 28 2023
 OPERATOR'S WELL NO. Mamba Unit 1H
API WELL NO
 47 — 095 — 02820
 STATE COUNTY PERMIT

WELL TYPE: OIL GAS LIQUID INJECTION WASTE DISPOSAL
 (IF GAS) PRODUCTION: STORAGE DEEP SHALLOW

LOCATION: ELEVATION: As-Built: 1,193' WATERSHED: Middle Island Creek QUADRANGLE: TH:Porter Falls 20, 82.06; BH:Paden City 42, 46875;
 DISTRICT: Ellsworth/Magnolia Jeffrey A. Seckman, Robert D. Wetzel; Beverly Kay Campbell, Michael Stillwagner; COUNTY: Tyler/Wetzel 35, 21, 39, 51;
 SURFACE OWNER: Dennis & Clista Heintzman Gary A. Midcap, et ux (2); James D. VanCamp, et ux; William G. Baker; ACREAGE: 417.6 51, 162; 30, 9625;
 ROYALTY OWNER: BRC Appalachian Minerals I, LLC, Judy P. Meyers; Linda J. & Jack E. Mason; LEASE NO: ACREAGE: 44; 164, 28125;
 PROPOSED WORK: DRILL CONVERT DRILL DEEPER FRACTURE OR STIMULATE PLUG OFF OLD FORMATION
 PERFORATE NEW FORMATION OTHER PHYSICAL CHANGE IN WELL (SPECIFY) As-Drilled 6,600' TVD
 PLUG AND ABANDON CLEAN OUT AND REPLUG TARGET FORMATION: Marcellus Shale ESTIMATED DEPTH: 23,177' MD

WELL OPERATOR: Antero Resources Corporation DESIGNATED AGENT: Kevin Ellis
 ADDRESS: 1815 Wynkoop Street ADDRESS: 535 White Oaks Blvd.
 Denver, CO 80202 Charleston, WV 25313

Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	3/10/2023
Job End Date:	3/23/2023
State:	West Virginia
County:	Tyler
API Number:	47-095-02820-00-00
Operator Name:	Antero Resources Corporation
Well Name and Number:	Mamba Unit 1H
Latitude:	39.54293000
Longitude:	-80.85581000
Datum:	WGS84
Federal Well:	NO
Indian Well:	NO
True Vertical Depth:	6,641
Total Base Water Volume (gal):	25,259,926
Total Base Non Water Volume:	0



Hydraulic Fracturing Fluid Composition:

Trade Name	Supplier	Purpose	Ingredients	Chemical Abstract Service Number (CAS #)	Maximum Ingredient Concentration in Additive (% by mass)**	Maximum Ingredient Concentration in HF Fluid (% by mass)**	Comments
Produced Water	Halliburton	Base Fluid					
			Water	7732-18-5	100.00000	86.72065	Density = 8.50
Ingredients	Listed Above	Listed Above					
			Water	7732-18-5	100.00000	0.13484	

Handwritten signature or initials in blue ink.

HYDROCHLORIC ACID, 22 BAUME	Halliburton	Solvent					
				Listed Below			
Chemstream StimSTREAM FR 2800	Chemstream, Inc.	Friction Reducer					
				Listed Below			
OPTIFLO-II DELAYED RELEASE BREAKER	Halliburton	Breaker					
				Listed Below			
HAI-501	Halliburton	Acid Corrosion Inhibitor					
				Listed Below			
Sand-Common White-100 Mesh, SSA-2	Halliburton	Proppant					
				Listed Below			
WG-36 GELLING AGENT	Halliburton	Gelling Agent					
				Listed Below			
MC B-8614A	MultiChem	Biocide					
				Listed Below			
Items above are Trade Names with the exception of Base Water . Items below are the individual ingredients.							
			Crystalline silica, quartz	14808-60-7	100.00000	13.08108	
			Hydrochloric acid	7647-01-0	30.00000	0.03799	

			Distillates, (petroleum), hydrotreated light	64742-47-8	25.00000	0.01482	
			Guar gum	9000-30-0	100.00000	0.00384	
			Alcohols, C11-14-iso, C-13-rich, ethoxylated	78330-21-9	5.00000	0.00296	
			Glutaraldehyde	111-30-8	30.00000	0.00246	
			Alkyl (C12-16) dimethylbenzyl ammonium chloride	68424-85-1	5.00000	0.00041	
			Methanol	67-56-1	100.00000	0.00024	
			Ammonium persulfate	7727-54-0	100.00000	0.00009	
			Ethanol	64-17-5	1.00000	0.00008	
			Mixture of dimer and trimer fatty acids of indefinite composition derived from tall oil	61790-12-3	30.00000	0.00007	
			Modified thiourea polymer	Proprietary	30.00000	0.00007	
			Oxylated phenolic resin	Proprietary	30.00000	0.00003	
			Propargyl alcohol	107-19-7	5.00000	0.00001	
			Ethoxylated alcohols	Proprietary	5.00000	0.00001	
			Hexadecene	629-73-2	5.00000	0.00001	
			C.I. pigment Orange 5	3468-63-1	1.00000	0.00000	

* Total Water Volume sources may include various types of water including fresh water, produced water, and recycled water

** Information is based on the maximum potential for concentration and thus the total may be over 100%

*** If you are calculating a percentage of total ingredients do not add the water volume below the green line to the water volume above the green line

Note: For Field Development Products (products that begin with FDP), MSDS level only information has been provided.

Ingredient information for chemicals subject to 29 CFR 1910.1200(i) and Appendix D are obtained from suppliers Material Safety Data Sheets (MSDS)



ANTERO RESOURCES CORPORATION



Location: Tyler County, WV
 Field: Tyler
 Facility: Heintzman Pad

Slot: Slot C
 Well: Mamba Unit 1H
 Wellbore: Mamba Unit 1H PWB

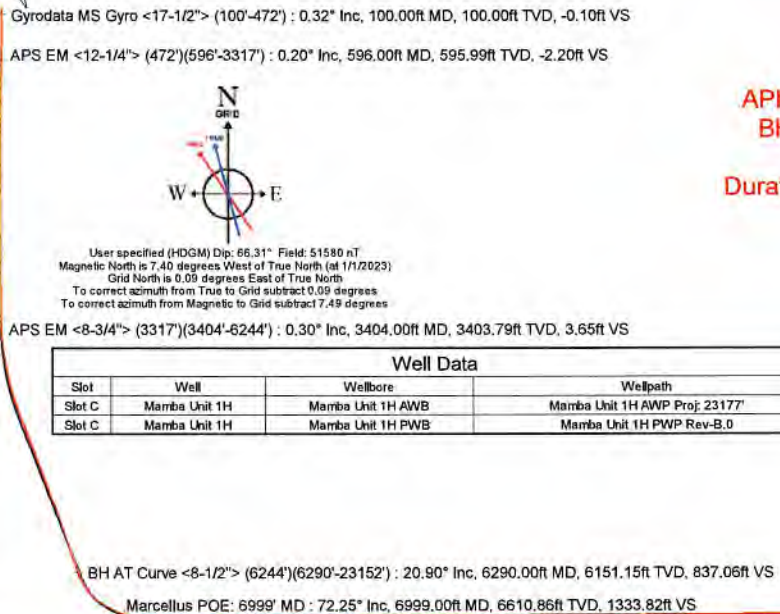
Plot reference wellpath is Mamba Unit 1H PWP Rev-B.0	Grid System: NAD27/UTM Zone 17 North, US feet
True vertical depths are referenced to H&P 519 (RKB)	North Reference: Grid north
Reference wellpath measured depths are referenced to H&P 519 (RKB)	Scale: True distance
H&P 519 (RKB) to Mean Sea Level: 1223 feet	Coordinates are in feet referenced to Slot
Mean Sea Level to Ground level (At Slot: Slot C): -1193 feet	Depths are in feet
Offset wellpath MDs are referenced to each path's default MD datum	Created by: redmaras on 2023-01-09, Database: WA_NPL_EASTERN_US_Data

Location Information					
Facility Name	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude	
Heintzman Pad	1681067.630	14359649.490	39°32'34.5540"N	80°51'20.8980"W	
Slot	Local N (ft)	Local E (ft)	Grid East (US ft)	Grid North (US ft)	Longitude
Slot C	0.04	0.03	1681067.660	14359649.530	39°32'34.5544"N 80°51'20.8976"W
Comment	Mamba Unit 1H		30R		
H&P 519 (RKB) to Ground level (At Slot: Slot C)			-1193ft		
Mean Sea Level to Ground level (At Slot: Slot C)			1223ft		
H&P 519 (RKB) to Mean Sea Level					

Well Profile Data								
Design Comment	MD (ft)	Inc (°)	Az (°)	TVD (ft)	Local N (ft)	Local E (ft)	DLS (°/100ft)	VS (ft)
Tie On	3317.00	0.330	18.220	3316.79	-1.98	-15.90	0.09	3.26
Proj. to Bottom	3402.00	0.330	18.220	3401.79	-1.52	-15.75	0.00	3.66
Drill Out	3482.00	0.330	18.220	3481.79	-1.08	-15.60	0.00	4.02
End of 3D Arc	4544.18	21.502	340.052	4516.90	186.97	-81.82	2.00	203.38
Curve KOP	6341.08	21.502	340.052	6190.75	806.08	-306.52	0.00	861.89
POE	6981.09	72.537	333.528	6613.00	1217.33	-495.35	8.00	1312.10
Landing Pt.	7203.14	90.300	333.528	6646.00	1413.08	-592.83	8.00	1528.84
On AZI	7456.76	90.300	341.137	6644.67	1646.94	-690.50	3.00	1781.72
BHL	23193.36	90.300	341.137	6562.28	16538.18	-5778.20	0.00	17516.11

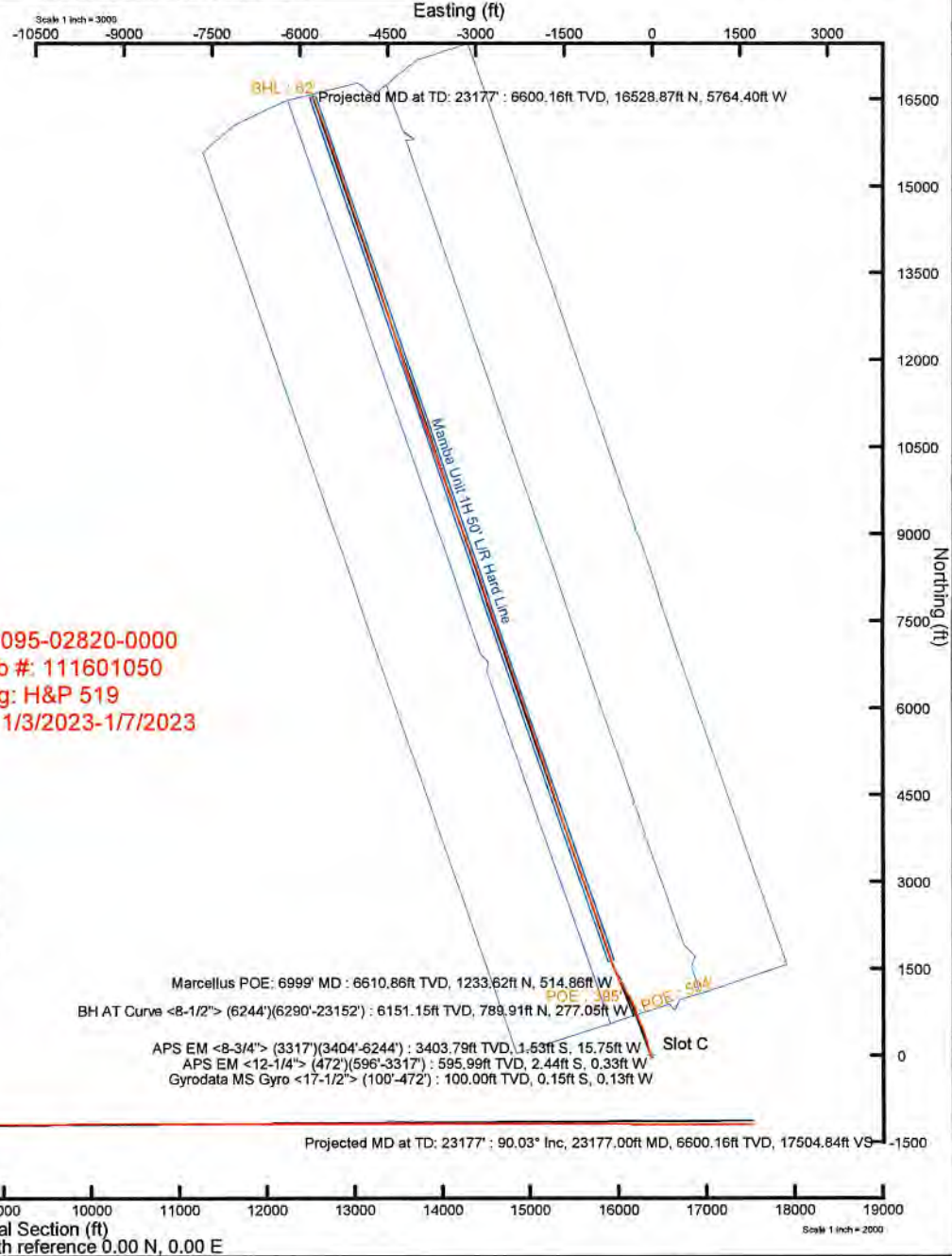
Scale 1 inch = 200'

True Vertical Depth (ft)



Well Data			
Slot	Well	Wellbore	Wellpath
Slot C	Mamba Unit 1H	Mamba Unit 1H AWB	Mamba Unit 1H AWP Proj: 23177'
Slot C	Mamba Unit 1H	Mamba Unit 1H PWB	Mamba Unit 1H PWP Rev-B.0

API: 47-095-02820-0000
 BH Job #: 111601050
 Rig: H&P 519
 Duration: 1/3/2023-1/7/2023



Vertical Section (ft)
 Azimuth 341.14° with reference 0.00 N, 0.00 E

Scale 1 inch = 2000'



Actual Wellpath Report

Mamba Unit 1H AWP Proj: 23177'

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REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Well	Mamba Unit 1H
Field	Tyler	API	47-095-02820-0000
Facility	Heintzman Pad	Wellbore	Mamba Unit 1H AWB
Slot	Slot C		

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	1/9/2023 at 11:21:36 AM
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	0.04	0.03	1681067.66	14359649.53	39°32'34.5544"N	80°51'20.8976"W
Facility Reference Pt			1681067.63	14359649.49	39°32'34.5540"N	80°51'20.8980"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	1223.00ft
Horizontal Reference Pt	Slot	H&P 519 (RKB) to Mean Sea Level	1223.00ft
Vertical Reference Pt	H&P 519 (RKB)	H&P 519 (RKB) to Ground Level at Slot (Slot C)	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	341.14°



Actual Wellpath Report

Mamba Unit 1H AWP Proj: 23177'

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REFERENCE WELLPATH IDENTIFICATION				
Operator	ANTERO RESOURCES CORPORATION		Well	Mamba Unit 1H
Field	Tyler		API	47-095-02820-0000
Facility	Heintzman Pad		Wellbore	Mamba Unit 1H AWB
Slot	Slot C			

WELLPATH DATA (253 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†	0.00	221.680	0.00	0.00	0.00	0.00	1681067.66	14359649.53	39°32'34.5544"N	80°51'20.8976"W	0.00	0.000	0.00	0.00	0.00	
30.00	0.00	221.680	30.00	0.00	0.00	0.00	1681067.66	14359649.53	39°32'34.5544"N	80°51'20.8976"W	0.00	0.000	0.00	0.00	0.00	
100.00	0.32	221.680	100.00	-0.10	-0.15	-0.13	1681067.53	14359649.38	39°32'34.5529"N	80°51'20.8992"W	0.20	221.680	0.46	0.46	0.00	Gyrodata MS Gyro <17-1/2"> (100'-472')
200.00	0.11	211.700	200.00	-0.29	-0.44	-0.37	1681067.29	14359649.09	39°32'34.5501"N	80°51'20.9023"W	0.57	220.006	0.21	-0.21	-9.98	
300.00	0.35	162.680	300.00	-0.66	-0.81	-0.33	1681067.33	14359648.72	39°32'34.5464"N	80°51'20.9018"W	0.87	201.914	0.29	0.24	-49.02	
400.00	0.46	168.820	400.00	-1.36	-1.49	-0.16	1681067.50	14359648.04	39°32'34.5396"N	80°51'20.8996"W	1.50	185.991	0.12	0.11	6.14	
472.00	0.34	183.010	471.99	-1.85	-1.99	-0.11	1681067.55	14359647.54	39°32'34.5347"N	80°51'20.8991"W	1.99	183.220	0.21	-0.17	19.71	
596.00	0.20	249.140	595.99	-2.20	-2.44	-0.33	1681067.33	14359647.09	39°32'34.5303"N	80°51'20.9019"W	2.46	187.797	0.26	-0.11	53.33	APS EM <12-1/4"> (472')(596'-331')
775.00	0.40	241.640	774.99	-2.31	-2.84	-1.18	1681066.49	14359646.69	39°32'34.5263"N	80°51'20.9126"W	3.08	202.453	0.11	0.11	-4.19	
866.00	0.44	234.970	865.99	-2.46	-3.20	-1.74	1681065.92	14359646.34	39°32'34.5228"N	80°51'20.9199"W	3.64	208.581	0.07	0.04	-7.33	
956.00	0.50	231.880	955.98	-2.69	-3.64	-2.33	1681065.33	14359645.89	39°32'34.5185"N	80°51'20.9274"W	4.32	212.682	0.07	0.07	-3.43	
1047.00	0.60	240.740	1046.98	-2.90	-4.11	-3.06	1681064.60	14359645.42	39°32'34.5138"N	80°51'20.9367"W	5.13	216.647	0.14	0.11	9.74	
1142.00	0.67	246.830	1141.97	-3.04	-4.58	-4.01	1681063.66	14359644.96	39°32'34.5092"N	80°51'20.9488"W	6.08	221.196	0.10	0.07	6.41	
1236.00	0.80	264.530	1235.97	-2.92	-4.85	-5.16	1681062.50	14359644.68	39°32'34.5065"N	80°51'20.9636"W	7.09	226.767	0.28	0.14	18.83	
1331.00	1.04	266.620	1330.95	-2.54	-4.97	-6.68	1681060.98	14359644.56	39°32'34.5054"N	80°51'20.9830"W	8.33	233.376	0.26	0.25	2.20	
1425.00	1.18	264.340	1424.94	-2.09	-5.11	-8.50	1681059.16	14359644.42	39°32'34.5040"N	80°51'21.0062"W	9.92	238.962	0.16	0.15	-2.43	
1520.00	0.68	195.090	1519.93	-2.34	-5.76	-9.62	1681058.04	14359643.78	39°32'34.4976"N	80°51'21.0205"W	11.21	239.108	1.19	-0.53	-72.89	
1615.00	0.97	258.800	1614.92	-2.70	-6.46	-10.56	1681057.11	14359643.08	39°32'34.4907"N	80°51'21.0324"W	12.37	238.549	0.95	0.31	67.06	
1709.00	0.97	255.160	1708.91	-2.54	-6.81	-12.11	1681055.56	14359642.72	39°32'34.4872"N	80°51'21.0522"W	13.89	240.623	0.07	0.00	-3.87	
1804.00	0.92	268.420	1803.89	-2.25	-7.04	-13.64	1681054.02	14359642.49	39°32'34.4850"N	80°51'21.0719"W	15.35	242.704	0.24	-0.05	13.96	
1898.00	0.87	270.160	1897.88	-1.80	-7.06	-15.11	1681052.55	14359642.47	39°32'34.4848"N	80°51'21.0906"W	16.68	244.960	0.06	-0.05	1.85	
1993.00	0.70	276.220	1992.87	-1.31	-7.00	-16.41	1681051.26	14359642.54	39°32'34.4855"N	80°51'21.1072"W	17.84	246.914	0.20	-0.18	6.38	
2087.00	0.71	282.430	2086.86	-0.77	-6.81	-17.55	1681050.12	14359642.73	39°32'34.4874"N	80°51'21.1217"W	18.82	248.799	0.08	0.01	6.61	
2182.00	0.81	287.450	2181.86	-0.07	-6.48	-18.77	1681048.90	14359643.05	39°32'34.4906"N	80°51'21.1373"W	19.85	250.951	0.13	0.11	5.28	
2276.00	0.71	294.250	2275.85	0.73	-6.04	-19.93	1681047.74	14359643.49	39°32'34.4950"N	80°51'21.1521"W	20.83	253.137	0.14	-0.11	7.23	
2371.00	0.71	268.810	2370.84	1.31	-5.81	-21.06	1681046.61	14359643.72	39°32'34.4973"N	80°51'21.1665"W	21.84	254.570	0.33	0.00	-26.78	
2465.00	0.56	274.800	2464.84	1.67	-5.79	-22.10	1681045.57	14359643.75	39°32'34.4975"N	80°51'21.1797"W	22.84	255.328	0.17	-0.16	6.37	
2560.00	0.64	78.630	2559.83	1.79	-5.64	-22.04	1681045.63	14359643.89	39°32'34.4990"N	80°51'21.1790"W	22.75	255.641	1.25	0.08	172.45	
2654.00	0.96	69.680	2653.82	1.74	-5.26	-20.79	1681046.88	14359644.27	39°32'34.5027"N	80°51'21.1630"W	21.44	255.786	0.36	0.34	-9.52	
2749.00	0.71	75.570	2748.81	1.71	-4.84	-19.47	1681048.20	14359644.69	39°32'34.5068"N	80°51'21.1462"W	20.06	256.034	0.28	-0.26	6.20	



Actual Wellpath Report

Mamba Unit 1H AWP Proj: 23177'

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REFERENCE WELLPATH IDENTIFICATION

Operator	ANTERO RESOURCES CORPORATION	Well	Mamba Unit 1H
Field	Tyler	API	47-095-02820-0000
Facility	Heintzman Pad	Wellbore	Mamba Unit 1H AWB
Slot	Slot C		

WELLPATH DATA (253 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
2843.00	0.610	68.520	2842.81	1.69	-4.51	-18.44	1681049.23	14359645.02	39°32'34.5101"N	80°51'21.1330"W	18.98	256.246	0.14	-0.11	-7.50	
2938.00	0.660	52.460	2937.80	1.89	-3.99	-17.53	1681050.13	14359645.54	39°32'34.5152"N	80°51'21.1215"W	17.98	257.165	0.19	0.05	-16.91	
3033.00	0.530	40.340	3032.80	2.29	-3.33	-16.82	1681050.85	14359646.20	39°32'34.5218"N	80°51'21.1123"W	17.14	258.810	0.19	-0.14	-12.76	
3127.00	0.200	69.090	3126.79	2.52	-2.94	-16.38	1681051.28	14359646.59	39°32'34.5256"N	80°51'21.1067"W	16.64	259.837	0.39	-0.35	30.59	
3222.00	0.410	20.730	3221.79	2.78	-2.56	-16.11	1681051.56	14359646.97	39°32'34.5293"N	80°51'21.1032"W	16.31	260.970	0.33	0.22	-50.91	
3317.00	0.330	18.220	3316.79	3.26	-1.98	-15.90	1681051.77	14359647.55	39°32'34.5350"N	80°51'21.1006"W	16.02	262.895	0.09	-0.08	-2.64	
3404.00	0.300	17.230	3403.79	3.65	-1.53	-15.75	1681051.91	14359648.00	39°32'34.5395"N	80°51'21.0987"W	15.83	264.466	0.04	-0.03	-1.14	APS EM <8-3/4"> (3317')(3404'-6244')
3501.00	2.450	334.010	3500.76	5.91	0.58	-16.59	1681051.08	14359650.11	39°32'34.5604"N	80°51'21.1093"W	16.60	272.003	2.31	2.22	-44.56	
3595.00	4.160	329.610	3594.60	11.25	5.33	-19.19	1681048.47	14359654.86	39°32'34.6073"N	80°51'21.1425"W	19.92	285.512	1.84	1.82	-4.68	
3690.00	7.890	341.910	3689.06	21.15	14.50	-22.96	1681044.71	14359664.03	39°32'34.6981"N	80°51'21.1904"W	27.16	302.273	4.13	3.93	12.95	
3785.00	10.280	345.670	3782.86	36.12	28.91	-27.09	1681040.58	14359678.43	39°32'34.8406"N	80°51'21.2427"W	39.62	316.870	2.59	2.52	3.96	
3879.00	10.900	343.450	3875.26	53.36	45.56	-31.69	1681035.98	14359695.07	39°32'35.0052"N	80°51'21.3012"W	55.50	325.176	0.79	0.66	-2.36	
3974.00	10.470	340.610	3968.61	70.97	62.31	-37.12	1681030.56	14359711.82	39°32'35.1708"N	80°51'21.3701"W	72.53	329.219	0.72	-0.45	-2.99	
4068.00	11.890	343.570	4060.83	89.18	79.66	-42.69	1681024.98	14359729.16	39°32'35.3423"N	80°51'21.4409"W	90.38	331.811	1.63	1.51	3.15	
4163.00	14.410	346.990	4153.33	110.72	100.57	-48.12	1681019.56	14359750.06	39°32'35.5491"N	80°51'21.5098"W	111.49	334.428	2.78	2.65	3.60	
4257.00	16.910	347.670	4243.84	135.95	125.32	-53.68	1681014.00	14359774.80	39°32'35.7938"N	80°51'21.5802"W	136.33	336.814	2.67	2.66	0.72	
4352.00	18.800	348.150	4334.26	164.87	153.80	-59.77	1681007.91	14359803.27	39°32'36.0754"N	80°51'21.6574"W	165.01	338.763	2.00	1.99	0.51	
4447.00	20.690	348.730	4423.67	196.70	185.25	-66.19	1681001.49	14359834.70	39°32'36.3863"N	80°51'21.7387"W	196.72	340.337	2.00	1.99	0.61	
4542.00	22.510	346.190	4511.99	231.45	219.37	-73.82	1680993.87	14359868.81	39°32'36.7236"N	80°51'21.8353"W	231.46	341.402	2.15	1.92	-2.67	
4636.00	21.390	343.140	4599.18	266.51	253.25	-83.08	1680984.61	14359902.68	39°32'37.0586"N	80°51'21.9529"W	266.53	341.837	1.70	-1.19	-3.24	
4731.00	19.880	339.400	4688.09	299.97	284.95	-93.79	1680973.91	14359934.37	39°32'37.3721"N	80°51'22.0890"W	299.99	341.781	2.11	-1.59	-3.94	
4826.00	19.910	341.970	4777.42	332.29	315.45	-104.48	1680963.22	14359964.86	39°32'37.6737"N	80°51'22.2248"W	332.31	341.674	0.92	0.03	2.71	
4921.00	21.760	345.970	4866.21	366.02	347.92	-113.76	1680953.95	14359997.31	39°32'37.9948"N	80°51'22.3426"W	366.05	341.894	2.46	1.95	4.21	
5015.00	21.750	343.160	4953.52	400.79	381.50	-123.03	1680944.68	14360030.87	39°32'38.3268"N	80°51'22.4602"W	400.84	342.126	1.11	-0.01	-2.99	
5110.00	20.130	338.690	5042.24	434.71	413.58	-134.07	1680933.64	14360062.94	39°32'38.6440"N	80°51'22.6005"W	434.77	342.039	2.39	-1.71	-4.71	
5205.00	20.930	339.600	5131.21	468.01	444.71	-145.93	1680921.79	14360094.06	39°32'38.9519"N	80°51'22.7512"W	468.04	341.833	0.91	0.84	0.96	
5300.00	20.220	338.940	5220.15	501.38	475.94	-157.74	1680909.98	14360125.28	39°32'39.2607"N	80°51'22.9014"W	501.40	341.663	0.79	-0.75	-0.69	
5394.00	20.640	336.850	5308.24	534.13	506.33	-170.09	1680897.64	14360155.66	39°32'39.5613"N	80°51'23.0584"W	534.14	341.431	0.90	0.45	-2.22	
5489.00	20.710	334.390	5397.12	567.51	536.87	-183.93	1680883.80	14360186.19	39°32'39.8633"N	80°51'23.2345"W	567.51	341.088	0.92	0.07	-2.59	
5583.00	20.390	338.460	5485.14	600.37	567.09	-197.13	1680870.61	14360216.40	39°32'40.1622"N	80°51'23.4023"W	600.38	340.832	1.56	-0.34	4.33	



Actual Wellpath Report

Mamba Unit 1H AWP Proj: 23177'

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REFERENCE WELLPATH IDENTIFICATION

Operator	ANTERO RESOURCES CORPORATION	Well	Mamba Unit 1H
Field	Tyler	API	47-095-02820-0000
Facility	Heintzman Pad	Wellbore	Mamba Unit 1H AWB
Slot	Slot C		

WELLPATH DATA (253 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
5678.00	19.880	337.900	5574.34	633.03	597.45	-209.29	1680858.46	14360246.75	39°32'40.4625"N	80°51'23.5569"W	633.05	340.695	0.57	-0.54	-0.59	
5773.00	19.950	337.450	5663.66	665.33	627.39	-221.58	1680846.17	14360276.67	39°32'40.7585"N	80°51'23.7132"W	665.37	340.548	0.18	0.07	-0.47	
5867.00	18.520	336.580	5752.41	696.22	655.90	-233.66	1680834.09	14360305.17	39°32'41.0405"N	80°51'23.8668"W	696.28	340.392	1.55	-1.52	-0.93	
5962.00	18.180	337.250	5842.58	726.04	683.41	-245.39	1680822.37	14360332.67	39°32'41.3126"N	80°51'24.0160"W	726.13	340.249	0.42	-0.36	0.71	
6056.00	20.070	345.190	5931.40	756.77	712.53	-255.19	1680812.58	14360361.78	39°32'41.6006"N	80°51'24.1404"W	756.85	340.296	3.42	2.01	8.45	
6151.00	19.860	344.910	6020.69	789.13	743.87	-263.55	1680804.21	14360393.11	39°32'41.9104"N	80°51'24.2466"W	789.18	340.491	0.24	-0.22	-0.29	
6244.00	20.180	342.910	6108.07	820.93	774.46	-272.38	1680795.39	14360423.68	39°32'42.2129"N	80°51'24.3587"W	820.96	340.623	0.81	0.34	-2.15	
6290.00	20.900	343.410	6151.15	837.06	789.91	-277.05	1680790.72	14360439.12	39°32'42.3656"N	80°51'24.4180"W	837.09	340.672	1.61	1.57	1.09	BH AT Curve <8-1/2"> (6244')(6290'-23152')
6355.00	23.530	340.810	6211.32	861.62	813.28	-284.63	1680783.14	14360462.48	39°32'42.5967"N	80°51'24.5143"W	861.65	340.711	4.32	4.05	-4.00	
6450.00	32.110	337.950	6295.26	905.88	854.67	-300.37	1680767.41	14360503.86	39°32'43.0060"N	80°51'24.7144"W	905.91	340.636	9.14	9.03	-3.01	
6512.00†	37.453	336.063	6346.17	941.14	887.20	-314.22	1680753.57	14360536.37	39°32'43.3277"N	80°51'24.8904"W	941.20	340.497	8.79	8.62	-3.04	Sycamore: 6512' MD
6544.00	40.220	335.260	6371.09	961.11	905.48	-322.49	1680745.30	14360554.64	39°32'43.5085"N	80°51'24.9957"W	961.19	340.396	8.79	8.65	-2.51	
6639.00	49.510	332.070	6438.36	1027.45	965.39	-352.32	1680715.48	14360614.53	39°32'44.1011"N	80°51'25.3752"W	1027.67	339.950	10.06	9.78	-3.36	
6660.00†	51.189	331.103	6451.76	1043.39	979.61	-360.01	1680707.79	14360628.75	39°32'44.2418"N	80°51'25.4731"W	1043.67	339.821	8.75	8.00	-4.61	Middlesex: 6660' MD
6733.00	57.080	328.060	6494.52	1101.30	1030.56	-390.00	1680677.82	14360679.68	39°32'44.7458"N	80°51'25.8549"W	1101.89	339.272	8.75	8.07	-4.17	
6824.00†	61.831	327.100	6540.75	1177.46	1096.69	-432.01	1680635.82	14360745.78	39°32'45.4000"N	80°51'26.3899"W	1178.71	338.499	5.30	5.22	-1.05	Burkett: 6824' MD
6828.00	62.040	327.060	6542.63	1180.88	1099.65	-433.93	1680633.90	14360748.74	39°32'45.4294"N	80°51'26.4143"W	1182.17	338.465	5.30	5.22	-1.00	
6865.00†	63.707	327.615	6559.50	1212.86	1127.37	-451.70	1680616.14	14360776.45	39°32'45.7036"N	80°51'26.6406"W	1214.50	338.166	4.70	4.51	1.50	Tully: 6865' MD
6922.00	66.280	328.440	6583.60	1263.17	1171.19	-479.05	1680588.80	14360820.25	39°32'46.1371"N	80°51'26.9888"W	1265.38	337.754	4.70	4.51	1.45	
6999.00†	72.247	331.816	6610.86	1333.82	1233.62	-514.86	1680553.01	14360882.65	39°32'46.7547"N	80°51'27.4446"W	1336.75	337.347	8.77	7.75	4.38	Marcellus POE: 6999' MD
7017.00	73.650	332.570	6616.13	1350.82	1248.84	-522.88	1680544.98	14360897.87	39°32'46.9052"N	80°51'27.5468"W	1353.89	337.281	8.77	7.80	4.19	
7112.00	81.630	335.770	6636.46	1442.85	1332.30	-563.24	1680504.64	14360981.30	39°32'47.7307"N	80°51'28.0603"W	1446.47	337.083	9.02	8.40	3.37	
7206.00	91.050	337.970	6642.45	1536.28	1418.47	-600.04	1680467.86	14361067.44	39°32'48.5830"N	80°51'28.5283"W	1540.17	337.071	10.29	10.02	2.34	
7301.00	90.680	338.090	6641.02	1631.13	1506.56	-635.58	1680432.34	14361155.49	39°32'49.4541"N	80°51'28.9801"W	1635.14	337.126	0.41	-0.39	0.13	
7395.00	89.820	341.540	6640.61	1725.09	1594.78	-668.01	1680399.92	14361243.67	39°32'50.3265"N	80°51'29.3923"W	1729.03	337.273	3.78	-0.91	3.67	
7490.00	90.090	340.720	6640.68	1820.09	1684.67	-698.73	1680369.21	14361333.53	39°32'51.2154"N	80°51'29.7827"W	1823.82	337.473	0.91	0.28	-0.86	
7584.00	90.370	341.030	6640.31	1914.09	1773.48	-729.53	1680338.42	14361422.30	39°32'52.0936"N	80°51'30.1741"W	1917.67	337.640	0.44	0.30	0.33	
7679.00	91.050	342.570	6639.13	2009.07	1863.72	-759.20	1680308.77	14361512.50	39°32'52.9859"N	80°51'30.5510"W	2012.42	337.836	1.77	0.72	1.62	
7774.00	90.220	341.410	6638.08	2104.05	1954.05	-788.57	1680279.41	14361602.80	39°32'53.8792"N	80°51'30.9241"W	2107.17	338.023	1.50	-0.87	-1.22	
7868.00	90.370	341.630	6637.59	2198.05	2043.21	-818.36	1680249.63	14361691.92	39°32'54.7608"N	80°51'31.3027"W	2201.00	338.172	0.28	0.16	0.23	



Actual Wellpath Report

Mamba Unit 1H AWP Proj: 23177'

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REFERENCE WELLPATH IDENTIFICATION

Operator	ANTERO RESOURCES CORPORATION	Well	Mamba Unit 1H
Field	Tyler	API	47-095-02820-0000
Facility	Heintzman Pad	Wellbore	Mamba Unit 1H AWB
Slot	Slot C		

WELLPATH DATA (253 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
7963.00	89.570	340.870	6637.64	2293.05	2133.16	-848.90	1680219.10	14361781.84	39°32'55.6503"N	80°51'31.6907"W	2295.87	338.300	1.16	-0.84	-0.80	
8057.00	90.520	340.700	6637.57	2387.05	2221.93	-879.83	1680188.18	14361870.57	39°32'56.5280"N	80°51'32.0838"W	2389.78	338.397	1.03	1.01	-0.18	
8152.00	89.690	341.900	6637.39	2482.04	2311.91	-910.29	1680157.73	14361960.51	39°32'57.4178"N	80°51'32.4709"W	2484.66	338.508	1.54	-0.87	1.26	
8247.00	90.650	340.790	6637.11	2577.04	2401.91	-940.68	1680127.36	14362050.48	39°32'58.3079"N	80°51'32.8570"W	2579.55	338.613	1.54	1.01	-1.17	
8341.00	90.250	338.450	6636.37	2671.00	2490.02	-973.41	1680094.84	14362138.55	39°32'59.1791"N	80°51'33.2730"W	2673.52	338.648	2.53	-0.43	-2.49	
8436.00	88.610	341.430	6637.32	2765.96	2579.24	-1005.99	1680062.07	14362227.74	39°33'0.0614"N	80°51'33.6872"W	2768.48	338.693	3.58	-1.73	3.14	
8531.00	91.200	341.380	6637.48	2860.95	2669.27	-1036.28	1680031.79	14362317.73	39°33'0.9517"N	80°51'34.0721"W	2863.37	338.783	2.73	2.73	-0.05	
8626.00	89.600	340.910	6636.81	2955.94	2759.17	-1066.98	1680001.11	14362407.60	39°33'1.8407"N	80°51'34.4622"W	2958.29	338.858	1.76	-1.66	-0.49	
8720.00	90.920	342.220	6636.39	3049.93	2848.34	-1096.70	1679971.39	14362496.73	39°33'2.7224"N	80°51'34.8399"W	3052.18	338.942	1.98	1.40	1.39	
8815.00	90.030	340.760	6635.60	3144.93	2938.42	-1126.86	1679941.25	14362586.77	39°33'3.6132"N	80°51'35.2231"W	3147.08	339.019	1.80	-0.94	-1.54	
8909.00	90.830	341.150	6634.89	3238.92	3027.27	-1157.53	1679910.59	14362675.59	39°33'4.4918"N	80°51'35.6129"W	3241.03	339.075	0.95	0.85	0.41	
9004.00	90.340	341.150	6633.92	3333.92	3117.17	-1188.23	1679879.91	14362765.45	39°33'5.3807"N	80°51'36.0029"W	3335.96	339.134	0.52	-0.52	0.00	
9099.00	90.310	340.970	6633.38	3428.91	3207.03	-1219.06	1679849.09	14362855.27	39°33'6.2693"N	80°51'36.3947"W	3430.91	339.187	0.19	-0.03	-0.19	
9193.00	90.250	341.220	6632.92	3522.91	3295.95	-1249.52	1679818.64	14362944.17	39°33'7.1487"N	80°51'36.7818"W	3524.86	339.238	0.27	-0.06	0.27	
9288.00	90.120	340.330	6632.62	3617.91	3385.66	-1280.80	1679787.38	14363033.83	39°33'8.0357"N	80°51'37.1793"W	3619.82	339.278	0.95	-0.14	-0.94	
9382.00	90.060	341.890	6632.47	3711.91	3474.59	-1311.23	1679756.96	14363122.73	39°33'8.9151"N	80°51'37.5661"W	3713.77	339.325	1.66	-0.06	1.66	
9477.00	91.080	340.770	6631.52	3806.90	3564.58	-1341.64	1679726.56	14363212.69	39°33'9.8050"N	80°51'37.9525"W	3808.71	339.375	1.59	1.07	-1.18	
9571.00	90.710	343.070	6630.06	3900.87	3653.92	-1370.80	1679697.40	14363301.99	39°33'10.6884"N	80°51'38.3231"W	3902.60	339.436	2.48	-0.39	2.45	
9666.00	90.580	340.150	6628.99	3995.85	3744.06	-1400.77	1679667.45	14363392.09	39°33'11.5797"N	80°51'38.7039"W	3997.51	339.488	3.08	-0.14	-3.07	
9760.00	90.220	340.670	6628.33	4089.84	3832.61	-1432.29	1679635.95	14363480.61	39°33'12.4554"N	80°51'39.1045"W	4091.50	339.509	0.67	-0.38	0.55	
9855.00	90.310	341.450	6627.89	4184.84	3922.47	-1463.12	1679605.13	14363570.43	39°33'13.3439"N	80°51'39.4964"W	4186.46	339.544	0.83	0.09	0.82	
9950.00	90.400	340.810	6627.30	4279.84	4012.36	-1493.84	1679574.41	14363660.29	39°33'14.2328"N	80°51'39.8868"W	4281.43	339.579	0.68	0.09	-0.67	
10045.00	89.970	340.380	6627.00	4374.83	4101.96	-1525.41	1679542.86	14363749.85	39°33'15.1189"N	80°51'40.2880"W	4376.41	339.601	0.64	-0.45	-0.45	
10139.00	90.650	343.300	6626.49	4468.81	4191.27	-1554.70	1679513.58	14363839.12	39°33'16.0020"N	80°51'40.6602"W	4470.33	339.648	3.19	0.72	3.11	
10234.00	89.540	339.550	6626.33	4563.79	4281.30	-1584.96	1679483.34	14363929.12	39°33'16.8922"N	80°51'41.0447"W	4565.27	339.685	4.12	-1.17	-3.95	
10329.00	90.340	344.090	6626.43	4658.76	4371.54	-1614.59	1679453.72	14364019.32	39°33'17.7845"N	80°51'41.4213"W	4660.18	339.729	4.85	0.84	4.78	
10423.00	89.970	341.790	6626.17	4752.71	4461.39	-1642.16	1679426.15	14364109.14	39°33'18.6730"N	80°51'41.7715"W	4754.02	339.792	2.48	-0.39	-2.45	
10518.00	90.060	341.860	6626.15	4847.70	4551.65	-1671.80	1679396.53	14364199.36	39°33'19.5655"N	80°51'42.1481"W	4848.97	339.832	0.12	0.09	0.07	
10613.00	89.720	342.400	6626.33	4942.69	4642.07	-1700.95	1679367.39	14364289.74	39°33'20.4596"N	80°51'42.5185"W	4943.89	339.876	0.67	-0.36	0.57	
10708.00	89.850	341.770	6626.69	5037.67	4732.46	-1730.17	1679338.18	14364380.10	39°33'21.3534"N	80°51'42.8898"W	5038.82	339.918	0.68	0.14	-0.66	



Actual Wellpath Report

Mamba Unit 1H AWP Proj: 23177'

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REFERENCE WELLPATH IDENTIFICATION

Operator	ANTERO RESOURCES CORPORATION	Well	Mamba Unit 1H
Field	Tyler	API	47-095-02820-0000
Facility	Heintzman Pad	Wellbore	Mamba Unit 1H AWB
Slot	Slot C		

WELLPATH DATA (253 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
10802.00	89.850	341.710	6626.93	5131.67	4821.73	-1759.62	1679308.74	14364469.33	39°33'22.2361"N	80°51'43.2641"W	5132.77	339.951	0.06	0.00	-0.06	
10897.00	89.510	341.720	6627.47	5226.66	4911.93	-1789.43	1679278.95	14364559.50	39°33'23.1280"N	80°51'43.6428"W	5227.73	339.983	0.36	-0.36	0.01	
10992.00	89.820	342.470	6628.02	5321.65	5002.33	-1818.63	1679249.75	14364649.86	39°33'24.0219"N	80°51'44.0139"W	5322.66	340.021	0.85	0.33	0.79	
11086.00	90.000	341.390	6628.17	5415.63	5091.69	-1847.79	1679220.61	14364739.18	39°33'24.9055"N	80°51'44.3844"W	5416.61	340.054	1.16	0.19	-1.15	
11181.00	89.940	340.970	6628.22	5510.63	5181.61	-1878.44	1679189.97	14364829.07	39°33'25.7947"N	80°51'44.7739"W	5511.59	340.073	0.45	-0.06	-0.44	
11276.00	91.170	343.500	6627.30	5605.60	5272.07	-1907.42	1679161.00	14364919.49	39°33'26.6891"N	80°51'45.1422"W	5606.51	340.110	2.96	1.29	2.66	
11371.00	89.170	341.290	6627.02	5700.57	5362.61	-1936.15	1679132.29	14365009.99	39°33'27.5844"N	80°51'45.5072"W	5701.42	340.148	3.14	-2.11	-2.33	
11465.00	90.180	341.550	6627.55	5794.57	5451.71	-1966.10	1679102.35	14365099.05	39°33'28.4654"N	80°51'45.8879"W	5795.40	340.169	1.11	1.07	0.28	
11560.00	89.820	342.020	6627.55	5889.56	5541.94	-1995.79	1679072.66	14365189.26	39°33'29.3577"N	80°51'46.2652"W	5890.36	340.195	0.62	-0.38	0.49	
11655.00	89.880	341.040	6627.80	5984.56	5632.05	-2025.89	1679042.58	14365279.33	39°33'30.2487"N	80°51'46.6477"W	5985.33	340.216	1.03	0.06	-1.03	
11749.00	90.520	342.800	6627.47	6078.54	5721.40	-2055.06	1679013.42	14365368.64	39°33'31.1322"N	80°51'47.0184"W	6079.29	340.242	1.99	0.68	1.87	
11844.00	90.220	341.430	6626.86	6173.52	5811.81	-2084.23	1678984.26	14365459.01	39°33'32.0262"N	80°51'47.3892"W	6174.23	340.271	1.48	-0.32	-1.44	
11939.00	90.250	342.300	6626.47	6268.51	5902.09	-2113.80	1678954.70	14365549.26	39°33'32.9189"N	80°51'47.7649"W	6269.20	340.295	0.92	0.03	0.92	
12033.00	89.480	340.610	6626.69	6362.51	5991.20	-2143.70	1678924.82	14365638.34	39°33'33.8001"N	80°51'48.1449"W	6363.17	340.312	1.98	-0.82	-1.80	
12128.00	90.430	340.090	6626.76	6457.50	6080.67	-2175.64	1678892.89	14365727.77	39°33'34.6848"N	80°51'48.5510"W	6458.17	340.313	1.14	1.00	-0.55	
12222.00	90.280	341.000	6626.18	6551.49	6169.30	-2206.95	1678861.59	14365816.36	39°33'35.5612"N	80°51'48.9490"W	6552.17	340.316	0.98	-0.16	0.97	
12317.00	89.850	340.370	6626.07	6646.49	6258.95	-2238.37	1678830.18	14365905.98	39°33'36.4477"N	80°51'49.3485"W	6647.16	340.322	0.80	-0.45	-0.66	
12412.00	90.430	339.960	6625.84	6741.47	6348.31	-2270.61	1678797.96	14365995.30	39°33'37.3314"N	80°51'49.7583"W	6742.16	340.319	0.75	0.61	-0.43	
12506.00	90.710	341.290	6624.91	6835.46	6436.98	-2301.79	1678766.79	14366083.94	39°33'38.2082"N	80°51'50.1547"W	6836.16	340.324	1.45	0.30	1.41	
12601.00	90.860	341.110	6623.60	6930.45	6526.91	-2332.40	1678736.19	14366173.83	39°33'39.0974"N	80°51'50.5439"W	6931.14	340.336	0.25	0.16	-0.19	
12695.00	90.830	340.710	6622.22	7024.44	6615.73	-2363.14	1678705.46	14366262.61	39°33'39.9757"N	80°51'50.9346"W	7025.12	340.343	0.43	-0.03	-0.43	
12790.00	90.770	341.180	6620.89	7119.43	6705.51	-2394.15	1678674.46	14366352.36	39°33'40.8635"N	80°51'51.3289"W	7120.11	340.351	0.50	-0.06	0.49	
12884.00	90.620	340.730	6619.75	7213.42	6794.36	-2424.83	1678643.80	14366441.17	39°33'41.7421"N	80°51'51.7188"W	7214.09	340.359	0.50	-0.16	-0.48	
12979.00	90.680	340.760	6618.67	7308.41	6884.04	-2456.15	1678612.49	14366530.82	39°33'42.6289"N	80°51'52.1170"W	7309.08	340.364	0.07	0.06	0.03	
13073.00	90.950	341.370	6617.34	7402.40	6972.95	-2486.65	1678582.00	14366619.69	39°33'43.5080"N	80°51'52.5047"W	7403.07	340.373	0.71	0.29	0.65	
13168.00	89.320	337.950	6617.11	7497.36	7062.01	-2519.67	1678549.00	14366708.71	39°33'44.3887"N	80°51'52.9245"W	7498.04	340.364	3.99	-1.72	-3.60	
13262.00	91.140	341.160	6616.73	7591.30	7150.07	-2552.50	1678516.19	14366796.74	39°33'45.2595"N	80°51'53.3420"W	7592.02	340.354	3.93	1.94	3.41	
13357.00	90.490	340.480	6615.38	7686.29	7239.79	-2583.70	1678484.99	14366886.42	39°33'46.1467"N	80°51'53.7388"W	7687.00	340.360	0.99	-0.68	-0.72	
13451.00	90.740	341.550	6614.37	7780.28	7328.67	-2614.28	1678454.43	14366975.26	39°33'47.0255"N	80°51'54.1275"W	7780.99	340.368	1.17	0.27	1.14	
13546.00	90.770	340.420	6613.12	7875.27	7418.47	-2645.23	1678423.49	14367065.03	39°33'47.9136"N	80°51'54.5209"W	7875.97	340.375	1.19	0.03	-1.19	



Actual Wellpath Report

Mamba Unit 1H AWP Proj: 23177'

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REFERENCE WELLPATH IDENTIFICATION				
Operator	ANTERO RESOURCES CORPORATION		Well	Mamba Unit 1H
Field	Tyler		API	47-095-02820-0000
Facility	Heintzman Pad		Wellbore	Mamba Unit 1H AWB
Slot	Slot C			

WELLPATH DATA (253 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	
13640.00	91.290	340.840	6611.43	7969.25	7507.14	-2676.40	1678392.33	14367153.66	39°33'48.7903"N	80°51'54.9172"W	7969.96	340.378	0.71	0.55	0.45		
13735.00	90.030	341.310	6610.34	8064.24	8064.24	7596.99	-2707.21	1678361.53	14367243.48	39°33'49.6789"N	80°51'55.3089"W	8064.94	340.386	1.42	-1.33	0.49	
13830.00	90.310	340.490	6610.06	8159.24	7686.76	-2738.30	1678330.46	14367333.22	39°33'50.5665"N	80°51'55.7041"W	8159.94	340.392	0.91	0.29	-0.86		
13924.00	90.890	340.480	6609.07	8253.23	7775.36	-2769.69	1678299.07	14367421.78	39°33'51.4426"N	80°51'56.1033"W	8253.93	340.393	0.62	0.62	-0.01		
14019.00	90.580	339.820	6607.85	8348.21	7864.70	-2801.95	1678266.83	14367511.09	39°33'52.3261"N	80°51'56.5135"W	8348.92	340.391	0.77	-0.33	-0.69		
14113.00	91.260	340.450	6606.34	8442.18	7953.10	-2833.89	1678234.91	14367599.45	39°33'53.2002"N	80°51'56.9196"W	8442.91	340.388	0.99	0.72	0.67		
14208.00	90.060	342.560	6605.25	8537.17	8043.18	-2864.02	1678204.79	14367689.49	39°33'54.0910"N	80°51'57.3026"W	8537.88	340.400	2.55	-1.26	2.22		
14303.00	91.450	342.960	6604.00	8632.12	8133.90	-2892.17	1678176.65	14367780.18	39°33'54.9880"N	80°51'57.6604"W	8632.79	340.426	1.52	1.46	0.42		
14397.00	89.260	338.540	6603.42	8726.08	8222.62	-2923.15	1678145.68	14367868.86	39°33'55.8652"N	80°51'58.0543"W	8726.75	340.430	5.25	-2.33	-4.70		
14492.00	90.740	343.210	6603.42	8821.05	8312.35	-2954.27	1678114.57	14367958.55	39°33'56.7525"N	80°51'58.4499"W	8821.72	340.434	5.16	1.56	4.92		
14587.00	89.420	339.220	6603.28	8916.03	8402.27	-2984.85	1678084.00	14368048.43	39°33'57.6417"N	80°51'58.8387"W	8916.69	340.443	4.42	-1.39	-4.20		
14681.00	91.390	340.260	6602.62	9010.00	8490.44	-3017.40	1678051.47	14368136.57	39°33'58.5136"N	80°51'59.2526"W	9010.68	340.435	2.37	2.10	1.11		
14776.00	90.520	341.940	6601.03	9104.98	8580.30	-3048.17	1678020.71	14368226.40	39°33'59.4022"N	80°51'59.6438"W	9105.65	340.442	1.99	-0.92	1.77		
14870.00	89.850	340.960	6600.73	9198.97	8669.42	-3078.07	1677990.82	14368315.48	39°34'0.2834"N	80°52'0.0239"W	9199.64	340.453	1.26	-0.71	-1.04		
14965.00	90.620	339.060	6600.34	9293.95	8758.69	-3110.54	1677958.36	14368404.71	39°34'1.1661"N	80°52'0.4369"W	9294.63	340.448	2.16	0.81	-2.00		
15060.00	90.550	342.430	6599.37	9388.93	8848.36	-3141.87	1677927.05	14368494.35	39°34'2.0528"N	80°52'0.8351"W	9389.61	340.451	3.55	-0.07	3.55		
15154.00	89.690	338.100	6599.17	9482.90	8936.81	-3173.60	1677895.33	14368582.77	39°34'2.9275"N	80°52'1.2387"W	9483.58	340.449	4.70	-0.91	-4.61		
15249.00	90.400	340.020	6599.10	9577.83	9025.53	-3207.55	1677861.39	14368671.45	39°34'3.8048"N	80°52'1.6705"W	9578.55	340.435	2.15	0.75	2.02		
15344.00	90.800	340.980	6598.11	9672.82	9115.08	-3239.26	1677829.70	14368760.96	39°34'4.6903"N	80°52'2.0737"W	9673.55	340.436	1.09	0.42	1.01		
15438.00	90.580	340.830	6596.97	9766.81	9203.90	-3270.01	1677798.96	14368849.75	39°34'5.5686"N	80°52'2.4647"W	9767.54	340.441	0.28	-0.23	-0.16		
15533.00	89.910	340.590	6596.57	9861.80	9293.57	-3301.39	1677767.59	14368939.38	39°34'6.4552"N	80°52'2.8637"W	9862.53	340.443	0.75	-0.71	-0.25		
15628.00	89.880	340.840	6596.74	9956.80	9383.23	-3332.77	1677736.23	14369029.01	39°34'7.3419"N	80°52'3.2627"W	9957.53	340.446	0.27	-0.03	0.26		
15723.00	89.820	340.180	6596.99	10051.79	9472.79	-3364.46	1677704.54	14369118.53	39°34'8.2275"N	80°52'3.6657"W	10052.53	340.446	0.70	-0.06	-0.69		
15818.00	89.880	338.790	6597.24	10146.75	9561.76	-3397.75	1677671.27	14369207.47	39°34'9.1073"N	80°52'4.0892"W	10147.51	340.437	1.46	0.06	-1.46		
15912.00	90.980	341.650	6596.53	10240.73	9650.20	-3429.56	1677639.47	14369295.87	39°34'9.9818"N	80°52'4.4937"W	10241.50	340.435	3.26	1.17	3.04		
16007.00	89.480	342.100	6596.15	10335.71	9740.49	-3459.11	1677609.93	14369386.12	39°34'10.8745"N	80°52'4.8694"W	10336.47	340.449	1.65	-1.58	0.47		
16101.00	91.540	340.580	6595.31	10429.70	9829.53	-3489.18	1677579.87	14369475.13	39°34'11.7551"N	80°52'5.2517"W	10430.44	340.457	2.72	2.19	-1.62		
16196.00	90.030	340.700	6594.01	10524.69	9919.15	-3520.67	1677548.40	14369564.71	39°34'12.6412"N	80°52'5.6521"W	10525.43	340.458	1.59	-1.59	0.13		
16290.00	89.910	340.660	6594.06	10618.68	10007.86	-3551.77	1677517.31	14369653.38	39°34'13.5184"N	80°52'6.0476"W	10619.43	340.460	0.13	-0.13	-0.04		
16385.00	89.850	340.480	6594.26	10713.68	10097.45	-3583.37	1677485.72	14369742.94	39°34'14.4043"N	80°52'6.4494"W	10714.43	340.461	0.20	-0.06	-0.19		



Actual Wellpath Report

Mamba Unit 1H AWP Proj: 23177'
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REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Well	Mamba Unit 1H
Field	Tyler	API	47-095-02820-0000
Facility	Heintzman Pad	Wellbore	Mamba Unit 1H AWB
Slot	Slot C		

WELLPATH DATA (253 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
16480.00	89.480	340.410	6594.82	10808.67	10186.97	-3615.17	1677453.93	14369832.42	39°34'15.2895"N	80°52'6.8538"W	10809.43	340.461	0.40	-0.39	-0.07	
16575.00	89.540	340.460	6595.63	10903.66	10276.48	-3646.98	1677422.14	14369921.90	39°34'16.1746"N	80°52'7.2584"W	10904.43	340.461	0.08	0.06	0.05	
16669.00	89.910	339.180	6596.08	10997.63	10364.70	-3679.41	1677389.72	14370010.09	39°34'17.0470"N	80°52'7.6708"W	10998.42	340.455	1.42	0.39	-1.36	
16764.00	91.140	340.490	6595.21	11092.60	10453.87	-3712.16	1677356.99	14370099.22	39°34'17.9288"N	80°52'8.0873"W	11093.40	340.450	1.89	1.29	1.38	
16858.00	90.280	341.410	6594.05	11186.59	10542.72	-3742.83	1677326.32	14370188.03	39°34'18.8073"N	80°52'8.4774"W	11187.39	340.454	1.34	-0.91	0.98	
16953.00	89.820	340.320	6593.96	11281.59	10632.47	-3773.97	1677295.20	14370277.74	39°34'19.6947"N	80°52'8.8734"W	11282.39	340.458	1.25	-0.48	-1.15	
17048.00	89.780	340.380	6594.29	11376.58	10721.93	-3805.92	1677263.26	14370367.17	39°34'20.5794"N	80°52'9.2797"W	11377.39	340.457	0.08	-0.04	0.06	
17142.00	89.910	339.710	6594.55	11470.56	10810.29	-3838.00	1677231.20	14370455.49	39°34'21.4531"N	80°52'9.6877"W	11471.38	340.454	0.73	0.14	-0.71	
17236.00	89.780	340.090	6594.80	11564.54	10898.56	-3870.30	1677198.90	14370543.73	39°34'22.3260"N	80°52'10.0986"W	11565.38	340.449	0.43	-0.14	0.40	
17331.00	90.340	340.890	6594.70	11659.53	10988.11	-3902.03	1677167.19	14370633.24	39°34'23.2115"N	80°52'10.5021"W	11660.38	340.449	1.03	0.59	0.84	
17426.00	90.090	340.520	6594.35	11754.52	11077.77	-3933.42	1677135.81	14370722.87	39°34'24.0981"N	80°52'10.9013"W	11755.37	340.451	0.47	-0.26	-0.39	
17520.00	89.290	339.970	6594.86	11848.51	11166.24	-3965.19	1677104.05	14370811.30	39°34'24.9728"N	80°52'11.3054"W	11849.37	340.450	1.03	-0.85	-0.59	
17615.00	90.090	339.570	6595.37	11943.48	11255.37	-3998.04	1677071.22	14370900.40	39°34'25.8543"N	80°52'11.7232"W	11944.36	340.444	0.94	0.84	-0.42	
17709.00	89.540	340.710	6595.67	12037.46	11343.78	-4029.97	1677039.30	14370988.77	39°34'26.7285"N	80°52'12.1294"W	12038.36	340.442	1.35	-0.59	1.21	
17804.00	90.150	342.050	6595.93	12132.46	11433.81	-4060.31	1677008.98	14371078.76	39°34'27.6186"N	80°52'12.5151"W	12133.34	340.449	1.55	0.64	1.41	
17898.00	89.690	341.660	6596.06	12226.45	11523.13	-4089.58	1676979.72	14371168.05	39°34'28.5019"N	80°52'12.8873"W	12227.31	340.460	0.64	-0.49	-0.41	
17993.00	90.490	341.880	6595.91	12321.45	11613.36	-4119.30	1676950.01	14371258.24	39°34'29.3941"N	80°52'13.2651"W	12322.29	340.470	0.87	0.84	0.23	
18087.00	90.830	344.500	6594.83	12415.37	11703.33	-4146.48	1676922.84	14371348.18	39°34'30.2837"N	80°52'13.6106"W	12416.17	340.491	2.81	0.36	2.79	
18182.00	89.450	342.000	6594.60	12510.30	11794.29	-4173.85	1676895.48	14371439.10	39°34'31.1830"N	80°52'13.9585"W	12511.05	340.512	3.01	-1.45	-2.63	
18277.00	89.910	342.450	6595.13	12605.28	11884.75	-4202.86	1676866.49	14371529.53	39°34'32.0775"N	80°52'14.3272"W	12606.01	340.525	0.68	0.48	0.47	
18371.00	90.220	342.790	6595.02	12699.25	11974.46	-4230.93	1676838.42	14371619.20	39°34'32.9645"N	80°52'14.6841"W	12699.94	340.540	0.49	0.33	0.36	
18466.00	90.000	342.760	6594.84	12794.21	12065.20	-4259.07	1676810.30	14371709.90	39°34'33.8617"N	80°52'15.0417"W	12794.87	340.557	0.23	-0.23	-0.03	
18560.00	89.880	342.260	6594.94	12888.18	12154.85	-4287.32	1676782.06	14371799.52	39°34'34.7482"N	80°52'15.4009"W	12888.82	340.571	0.55	-0.13	-0.53	
18655.00	89.750	342.290	6595.24	12983.16	12245.34	-4316.24	1676753.15	14371889.97	39°34'35.6429"N	80°52'15.7686"W	12983.77	340.583	0.14	-0.14	0.03	
18749.00	89.320	341.460	6596.01	13077.15	12334.68	-4345.48	1676723.92	14371979.27	39°34'36.5262"N	80°52'16.1404"W	13077.75	340.593	0.99	-0.46	-0.88	
18844.00	91.600	342.630	6595.24	13172.13	12425.04	-4374.76	1676694.65	14372069.60	39°34'37.4197"N	80°52'16.5127"W	13172.70	340.603	2.70	2.40	1.23	
18938.00	89.140	341.720	6594.64	13266.10	12514.52	-4403.53	1676665.89	14372159.04	39°34'38.3044"N	80°52'16.8785"W	13266.66	340.614	2.79	-2.62	-0.97	
19033.00	89.690	341.840	6595.61	13361.09	12604.75	-4433.24	1676636.20	14372249.24	39°34'39.1966"N	80°52'17.2561"W	13361.63	340.623	0.59	0.58	0.13	
19127.00	89.970	341.270	6595.89	13455.09	12693.92	-4462.98	1676606.47	14372338.37	39°34'40.0783"N	80°52'17.6343"W	13455.62	340.629	0.68	0.30	-0.61	
19222.00	90.120	341.840	6595.81	13550.08	12784.04	-4493.03	1676576.42	14372428.45	39°34'40.9694"N	80°52'18.0166"W	13550.61	340.636	0.62	0.16	0.60	



Actual Wellpath Report

Mamba Unit 1H AWP Proj: 23177'

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REFERENCE WELLPATH IDENTIFICATION				
Operator	ANTERO RESOURCES CORPORATION		Well	Mamba Unit 1H
Field	Tyler		API	47-095-02820-0000
Facility	Heintzman Pad		Wellbore	Mamba Unit 1H AWB
Slot	Slot C			

WELLPATH DATA (253 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
19317.00	90.460	342.140	6595.33	13645.07	12874.38	-4522.41	1676547.06	14372518.76	39°34'41.8627"N	80°52'18.3900"W	13645.58	340.645	0.48	0.36	0.32	
19411.00	90.030	342.090	6594.93	13739.06	12963.84	-4551.27	1676518.21	14372608.18	39°34'42.7473"N	80°52'18.7571"W	13739.55	340.655	0.46	-0.46	-0.05	
19506.00	90.180	342.240	6594.75	13834.04	13054.27	-4580.37	1676489.12	14372698.58	39°34'43.6415"N	80°52'19.1270"W	13834.52	340.665	0.22	0.16	0.16	
19600.00	90.180	341.520	6594.46	13928.03	13143.61	-4609.60	1676459.90	14372787.88	39°34'44.5248"N	80°52'19.4987"W	13928.49	340.674	0.77	0.00	-0.77	
19694.00	89.970	341.370	6594.34	14022.03	13232.72	-4639.52	1676430.00	14372876.96	39°34'45.4060"N	80°52'19.8791"W	14022.49	340.679	0.27	-0.22	-0.16	
19789.00	89.750	341.400	6594.57	14117.03	13322.75	-4669.84	1676399.69	14372966.95	39°34'46.2962"N	80°52'20.2648"W	14117.48	340.684	0.23	-0.23	0.03	
19883.00	89.820	340.850	6594.92	14211.03	13411.70	-4700.25	1676369.29	14373055.86	39°34'47.1756"N	80°52'20.6515"W	14211.47	340.687	0.59	0.07	-0.59	
19978.00	89.910	341.390	6595.14	14306.03	13501.59	-4730.99	1676338.56	14373145.71	39°34'48.0645"N	80°52'21.0425"W	14306.47	340.689	0.58	0.09	0.57	
20073.00	90.180	341.440	6595.07	14401.03	13591.63	-4761.27	1676308.30	14373235.72	39°34'48.9548"N	80°52'21.4276"W	14401.46	340.694	0.29	0.28	0.05	
20168.00	89.910	341.240	6594.99	14496.03	13681.64	-4791.66	1676277.91	14373325.69	39°34'49.8448"N	80°52'21.8141"W	14496.46	340.698	0.35	-0.28	-0.21	
20263.00	90.370	341.380	6594.76	14591.03	13771.63	-4822.11	1676247.48	14373415.65	39°34'50.7346"N	80°52'22.2013"W	14591.45	340.702	0.51	0.48	0.15	
20357.00	90.090	342.020	6594.39	14685.02	13860.87	-4851.62	1676217.98	14373504.86	39°34'51.6171"N	80°52'22.5767"W	14685.44	340.709	0.74	-0.30	0.68	
20452.00	89.910	340.890	6594.39	14780.02	13950.94	-4881.84	1676187.78	14373594.89	39°34'52.5076"N	80°52'22.9609"W	14780.43	340.714	1.20	-0.19	-1.19	
20547.00	90.340	340.800	6594.18	14875.01	14040.68	-4913.01	1676156.62	14373684.59	39°34'53.3950"N	80°52'23.3574"W	14875.42	340.714	0.46	0.45	-0.09	
20641.00	90.030	341.030	6593.87	14969.01	14129.51	-4943.74	1676125.90	14373773.39	39°34'54.2733"N	80°52'23.7483"W	14969.42	340.716	0.41	-0.33	0.24	
20736.00	89.910	341.610	6593.92	15064.01	14219.51	-4974.17	1676095.48	14373863.35	39°34'55.1632"N	80°52'24.1353"W	15064.42	340.719	0.62	-0.13	0.61	
20830.00	90.250	341.710	6593.79	15158.01	14308.73	-5003.75	1676065.92	14373952.54	39°34'56.0455"N	80°52'24.5115"W	15158.41	340.725	0.38	0.36	0.11	
20925.00	90.370	341.890	6593.28	15253.00	14398.98	-5033.42	1676036.26	14374042.75	39°34'56.9378"N	80°52'24.8888"W	15253.39	340.732	0.23	0.13	0.19	
21020.00	89.910	341.750	6593.05	15347.99	14489.23	-5063.06	1676006.63	14374132.97	39°34'57.8302"N	80°52'25.2658"W	15348.37	340.739	0.51	-0.48	-0.15	
21114.00	89.910	341.660	6593.19	15441.99	14578.48	-5092.56	1675977.13	14374222.18	39°34'58.7127"N	80°52'25.6410"W	15442.36	340.745	0.10	0.00	-0.10	
21209.00	89.380	341.430	6593.78	15536.98	14668.59	-5122.64	1675947.07	14374312.26	39°34'59.6037"N	80°52'26.0235"W	15537.34	340.750	0.61	-0.56	-0.24	
21304.00	89.480	341.340	6594.73	15631.98	14758.62	-5152.96	1675916.76	14374402.25	39°35'0.4939"N	80°52'26.4092"W	15632.33	340.753	0.14	0.11	-0.09	
21398.00	89.820	341.610	6595.30	15725.97	14847.75	-5182.83	1675886.91	14374491.34	39°35'1.3752"N	80°52'26.7890"W	15726.32	340.758	0.46	0.36	0.29	
21493.00	89.630	341.530	6595.76	15820.97	14937.87	-5212.86	1675856.89	14374581.43	39°35'2.2663"N	80°52'27.1710"W	15821.31	340.763	0.22	-0.20	-0.08	
21587.00	89.540	341.690	6596.44	15914.97	15027.07	-5242.51	1675827.24	14374670.59	39°35'3.1483"N	80°52'27.5482"W	15915.30	340.768	0.20	-0.10	0.17	
21682.00	89.820	341.580	6596.97	16009.96	15117.23	-5272.44	1675797.32	14374760.71	39°35'4.0398"N	80°52'27.9288"W	16010.29	340.773	0.32	0.29	-0.12	
21776.00	89.820	341.750	6597.27	16103.96	15206.46	-5302.01	1675767.77	14374849.90	39°35'4.9220"N	80°52'28.3049"W	16104.28	340.778	0.18	0.00	0.18	
21871.00	89.110	341.600	6598.15	16198.95	15296.64	-5331.88	1675737.91	14374940.05	39°35'5.8137"N	80°52'28.6848"W	16199.26	340.783	0.76	-0.75	-0.16	
21966.00	89.420	341.630	6599.37	16293.94	15386.78	-5361.84	1675707.96	14375030.15	39°35'6.7050"N	80°52'29.0658"W	16294.24	340.788	0.33	0.33	0.03	
22060.00	89.850	341.450	6599.97	16387.93	15475.94	-5391.61	1675678.21	14375119.28	39°35'7.5866"N	80°52'29.4444"W	16388.23	340.792	0.50	0.46	-0.19	



Actual Wellpath Report

Mamba Unit 1H AWP Proj: 23177'
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REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Well	Mamba Unit 1H
Field	Tyler	API	47-095-02820-0000
Facility	Heintzman Pad	Wellbore	Mamba Unit 1H AWB
Slot	Slot C		

WELLPATH DATA (253 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
22155.00	89.420	341.340	6600.58	16482.93	15565.97	-5421.91	1675647.92	14375209.28	39°35'8.4768"N	80°52'29.8299"W	16483.23	340.796	0.47	-0.45	-0.12	
22249.00	89.600	340.200	6601.38	16576.92	15654.72	-5452.87	1675616.97	14375297.99	39°35'9.3544"N	80°52'30.2237"W	16577.22	340.796	1.23	0.19	-1.21	
22344.00	90.220	340.470	6601.53	16671.91	15744.18	-5484.84	1675585.01	14375387.41	39°35'10.2390"N	80°52'30.6305"W	16672.22	340.793	0.71	0.65	0.28	
22439.00	90.030	340.450	6601.32	16766.90	15833.71	-5516.62	1675553.25	14375476.91	39°35'11.1242"N	80°52'31.0347"W	16767.21	340.791	0.20	-0.20	-0.02	
22533.00	90.220	340.570	6601.12	16860.90	15922.33	-5547.98	1675521.90	14375565.49	39°35'12.0005"N	80°52'31.4337"W	16861.21	340.790	0.24	0.20	0.13	
22627.00	89.880	340.320	6601.03	16954.89	16010.90	-5579.44	1675490.45	14375654.03	39°35'12.8763"N	80°52'31.8340"W	16955.21	340.788	0.45	-0.36	-0.27	
22722.00	90.180	340.350	6600.98	17049.88	16100.36	-5611.41	1675458.50	14375743.45	39°35'13.7609"N	80°52'32.2408"W	17050.21	340.785	0.32	0.32	0.03	
22817.00	90.090	340.360	6600.76	17144.87	16189.83	-5643.35	1675426.57	14375832.89	39°35'14.6456"N	80°52'32.6472"W	17145.21	340.783	0.10	-0.09	0.01	
22911.00	89.850	340.490	6600.81	17238.86	16278.40	-5674.84	1675395.09	14375921.42	39°35'15.5214"N	80°52'33.0479"W	17239.20	340.781	0.29	-0.26	0.14	
23006.00	90.280	340.170	6600.70	17333.85	16367.86	-5706.82	1675363.12	14376010.84	39°35'16.4059"N	80°52'33.4547"W	17334.20	340.778	0.56	0.45	-0.34	
23100.00	90.220	340.180	6600.29	17427.84	16456.28	-5738.70	1675331.26	14376099.23	39°35'17.2803"N	80°52'33.8603"W	17428.19	340.775	0.06	-0.06	0.01	
23152.00	90.030	340.670	6600.18	17479.84	16505.28	-5756.12	1675313.84	14376148.20	39°35'17.7647"N	80°52'34.0820"W	17480.19	340.774	1.01	-0.37	0.94	
23177.00‡	90.030	340.670	6600.16	17504.84	16528.87	-5764.40	1675305.57	14376171.79	39°35'17.9980"N	80°52'34.1873"W	17505.19	340.774	0.00	0.00	0.00	Projected MD at TD: 23177'

HOLE & CASING SECTIONS - Ref Wellbore: Mamba Unit 1H AWB Ref Wellpath: Mamba Unit 1H AWP Proj: 23177'									
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	-0.26	-0.23
17.5in Open Hole	130.00	581.00	451.00	130.00	580.99	-0.26	-0.23	-2.41	-0.29
13.375in Casing Surface	30.00	540.00	510.00	30.00	539.99	0.00	0.00	-2.31	-0.19
12.25in Open Hole	581.00	3402.00	2821.00	580.99	3401.79	-2.41	-0.29	-1.54	-15.76
9.625in Casing Intermediate	30.00	3376.00	3346.00	30.00	3375.79	0.00	0.00	-1.67	-15.80
8.75in Open Hole	3402.00	6315.00	2913.00	3401.79	6174.42	-1.54	-15.76	798.63	-279.74
8.5in Open Hole	6315.00	23177.00	16862.00	6174.42	6600.16	798.63	-279.74	16528.87	-5764.40
5.5in Casing Production	30.00	23157.00	23127.00	30.00	6600.18	0.00	0.00	16510.00	-5757.78



Actual Wellpath Report

Mamba Unit 1H AWP Proj: 23177'
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REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Well	Mamba Unit 1H
Field	Tyler	API	47-095-02820-0000
Facility	Heintzman Pad	Wellbore	Mamba Unit 1H AWB
Slot	Slot C		

TARGETS								
Name	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
Mamba Unit 1H BHL Rev-2	6562.28	16538.18	-5778.20	1675291.77	14376181.09	39°35'18.0902"N	80°52'34.3635"W	point
Mamba Unit 1H POE Rev-2	6613.00	1217.33	-495.35	1680572.51	14360866.37	39°32'46.5933"N	80°51'27.1959"W	point
Mamba Unit 1H AZI Rev-2	6644.67	1646.93	-690.50	1680377.44	14361295.81	39°32'50.8423"N	80°51'29.6784"W	point
Mamba Unit 1H LP Rev-2	6646.00	1413.08	-592.83	1680475.07	14361062.04	39°32'48.5295"N	80°51'28.4363"W	point
Mamba Unit 1H 50' L/R Hard Line	7000.00	9086.11	-3232.15	1677836.80	14368732.01	39°34'4.4039"N	80°52'1.9835"W	rectangle
2D Rectangle 15750 x 100.								

WELLPATH COMPOSITION - Ref Wellbore: Mamba Unit 1H AWB Ref Wellpath: Mamba Unit 1H AWP Proj: 23177'					
Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore	Survey Date
30.00	472.00	Gyrodata 2015 - GC+WIR+DPIPE	01 Gyrodata MS Gyro <17-1/2"> (100'-472')	Mamba Unit 1H AWB	12/7/2022
472.00	3317.00	BH NaviTrak (2019) (Axial Corr+HRGM)	02 APS EM <12-1/4"> (472')(596'-3317')	Mamba Unit 1H AWB	12/7/2022
3317.00	6244.00	BH NaviTrak (2019) (Axial Corr+HRGM)	03 APS EM <8-3/4"> (3317')(3404'-6244')	Mamba Unit 1H AWB	1/1/2023
6244.00	23177.00	BH AutoTrak Curve/eXpress (2019) (HRGM, Short spacing)	04 BH AT Curve <8-1/2"> (6244')(6290'-23152')	Mamba Unit 1H AWB	1/1/2023



Actual Wellpath Report

Mamba Unit 1H AWP Proj: 23177'
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REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Well	Mamba Unit 1H
Field	Tyler	API	47-095-02820-0000
Facility	Heintzman Pad	Wellbore	Mamba Unit 1H AWB
Slot	Slot C		

COMMENTS
<p>Wellpath general comments API: 47-095-02820-0000 BH Job #: 111601050 Rig: H&P 519 Duration: 1/3/2023-1/7/2023 Gyrodax MS Gyro <17-1/2"> (100'-472') APS EM <12-1/4"> (472')(596'-3317') APS EM <8-3/4"> (3317')(3404'-6244') BH AT Curve <8-1/2"> (6244')(6290'-23152') Sycamore: 6512' MD Middlesex: 6660' MD Burkett: 6824' MD Tully: 6865' MD Marcellus POE: 6999' MD Projected MD at TD: 23177'</p>