

12/28/2018

ANTERO RESOURCES CORPORATION

Location: Doodridge Co., WV
 Facility: Doodridge
 Field: Addie Pad
 Slot: Slot #02
 Well: Michels Unit 1H
 Wellbore: Michels Unit 1H PWB



API: 47-017-06811-0-0000
 BHI Job #: 8819583

Rig: Frontier 22

Duration: 10/17/2017-10/21/2017

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Plot reference wellpath is Michels Unit 1H PWP Rev-A.1	Grid System: NAD27 / UTM Zone 17 North, US feet
True vertical depths are referenced to Frontier 22 (RKB)	North Reference: Grid north
Measured depths are referenced to Frontier 22 (RKB)	Scale: True distance
Frontier 22 (RKB) to Mean Sea Level: 914.5 feet	Depths are in feet
Mean Sea Level to Ground level (At Slot: Slot #02): -839 feet	Created by: dslabst on 2016-01-22
Coordinates are in feet referenced to Slot	Database: WA_MPL_EasternUS_Obsh

Location Information			
Facility Name	Grid East (US ft)	Latitude	Longitude
Addie Pad	14283415.126	39°20'00.530"N	80°48'20.930"W
Slot	Local N (ft)	Grid North (US ft)	Longitude
Slot #02	0.00	14283415.126	80°48'20.930"W
Comment	Michels Unit 1H		
Frontier 22 (RKB) to Ground level (At Slot: Slot #02)		24.5ft	
Mean Sea Level to Ground level (At Slot: Slot #02)		-839ft	
Frontier 22 (RKB) to Mean Sea Level		914.5ft	

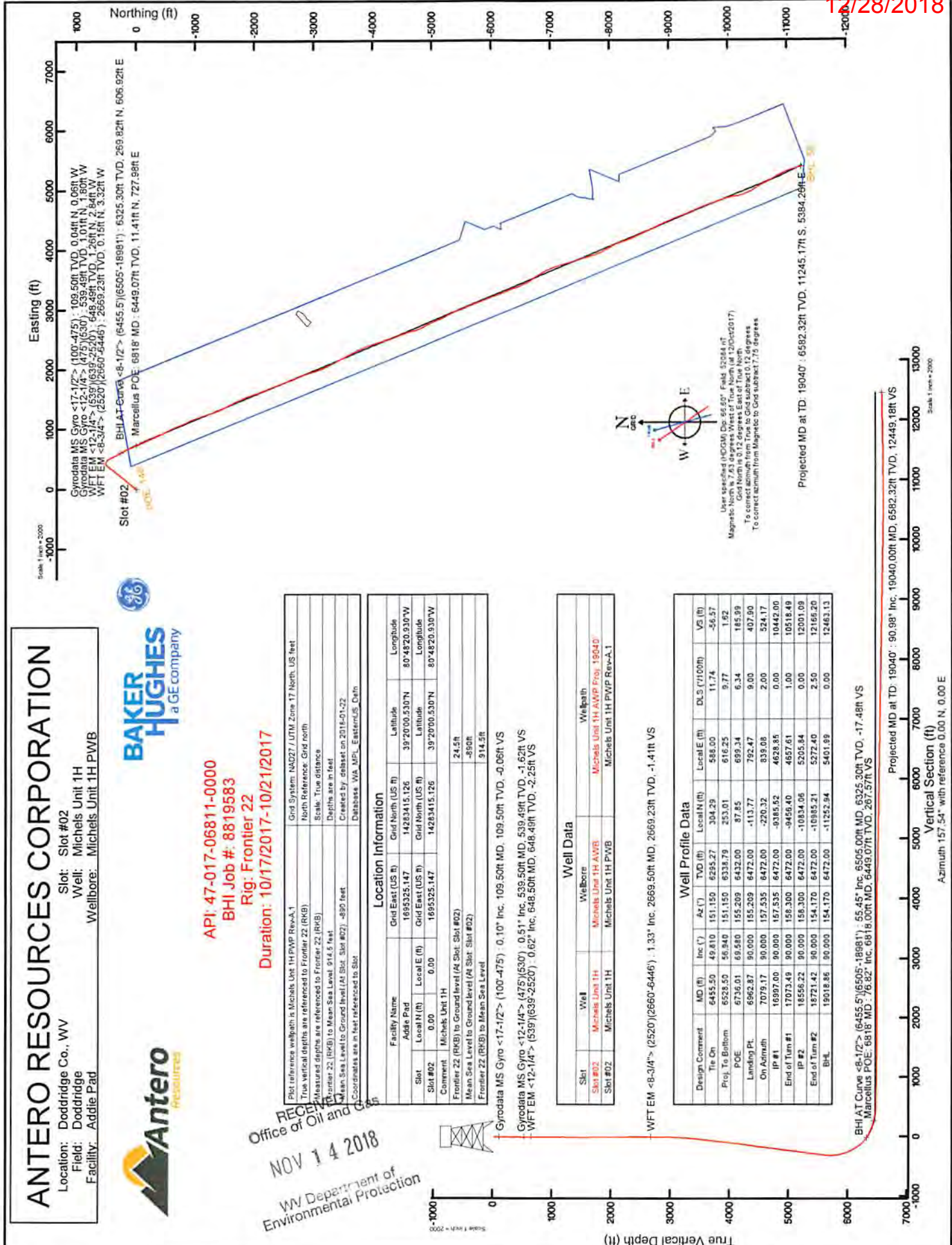
Gyrodatta MS Gyro <17-1/2"> (100-475) : 0.10" Inc. 109.50ft MD, 109.50ft TVD, -0.06ft VS
 Gyrodatta MS Gyro <12-1/4"> (475)(530) : 0.51" Inc. 539.50ft MD, 539.49ft TVD, -1.62ft VS
 WFTEM <12-1/4"> (539)(639-2520) : 0.62" Inc. 648.50ft MD, 648.49ft TVD, -2.25ft VS

Slot	Well	Wellbore	Wellpath
Slot #02	Michels Unit 1H	Michels Unit 1H AWP	Michels Unit 1H AWP Proj. 19040
Slot #02	Michels Unit 1H	Michels Unit 1H PWB	Michels Unit 1H PWP Rev-A.1

WFTEM <8-3/4"> (2520)(2660-6446) : 1.33" Inc. 2669.50ft MD, 2669.23ft TVD, -1.41ft VS

Well Profile Data						
Design Comment	MD (ft)	Inc (")	Az (°)	TVD (ft)	Local N (ft)	VS (ft)
The On	6455.50	49.810	151.150	6295.27	304.29	588.00
Proj. To Bottom	6528.50	56.940	151.150	6338.79	253.01	616.25
POE	6736.01	69.580	155.209	6432.00	87.85	699.34
Landing PL	6962.87	90.000	155.209	6472.00	-113.77	792.47
On Airpath	7079.17	90.000	157.535	6472.00	-220.32	839.08
IP #1	16997.00	90.000	157.535	6472.00	-9365.52	4628.85
End of Turn #1	17073.49	90.000	158.300	6472.00	-9456.40	4657.61
IP #2	18556.22	90.000	158.300	6472.00	-10834.06	5205.84
End of Turn #2	18721.42	90.000	154.170	6472.00	-10985.21	5272.40
BHL	19018.86	90.000	154.170	6472.00	-11252.94	5401.99
						12483.13

BHI AT Curve <8-1/2"> (6455.5)(6505-18981) : 55.45" Inc. 6505.00ft MD, 6525.30ft TVD, -17.48ft VS
 Marcellus POE: 6818 MD : 78.82" Inc. 6818.00ft MD, 6449.07ft TVD, 267.57ft VS



Vertical Section (ft)
 Azimuth 157.54" with reference 0.00 N, 0.00 E

Scale 1 inch = 2000



Actual Wellpath Report

Michels Unit 1H AWP Proj: 19040'

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REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #02
Area	Doddridge Co., WV	Well	Michels Unit 1H
Field	Doddridge	Wellbore	Michels Unit 1H AWB
Facility	Addie Pad		

REPORT SETUP INFORMATION			
Projection System	NAD27 / UTM Zone 17 North, US feet	Software System	WellArchitect® 5.1
North Reference	Grid	User	Delaset
Scale	0.999603	Report Generated	22/Jan/2018 at 14:04
Convergence at slot	0.12" East	Database/Source file	WA_MPL_EasternUS_Defn/Michels_Unit_1H_AWP_Proj_19040_.xml

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	1695325.15	14283415.13	39°20'00.530"N	80°48'20.930"W
Facility Reference Pt			1695325.15	14283415.13	39°20'00.530"N	80°48'20.930"W
Field Reference Pt			0.00	0.00	0°00'00.000"	85°29'19.301"W

WELLPATH DATUM			
Calculation method	Minimum curvature	Frontier 22 (RKB) to Facility Vertical Datum	24.50ft
Horizontal Reference Pt	Slot	Frontier 22 (RKB) to Mean Sea Level	914.50ft
Vertical Reference Pt	Frontier 22 (RKB)	Frontier 22 (RKB) to Ground Level at Slot (Slot #02)	24.50ft
MD Reference Pt	Frontier 22 (RKB)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	157.54°

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Michels Unit 1H AWP Proj: 19040'

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REFERENCE WELLPATH IDENTIFICATION				
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Area	Doddridge Co., WV		Well	Michels Unit 1H
Field	Doddridge		Wellbore	Michels Unit 1H AWB
Facility	Addie Pad			

WELLPATH DATA (228 stations) † = interpolated/extrapolated station																
MD (ft)	Inclination (°)	Azimuth (°)	TVD (ft)	Vert Sect (ft)	North (ft)	East (ft)	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude	Closure Dist (ft)	Closure Dir (°)	DLS (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	Comments
0.00†	0.000	305.580	0.00	0.00	0.00	0.00	1695325.15	14283415.13	39°20'00.530"N	80°48'20.930"W	0.00	0.000	0.00	0.00	0.00	
24.50	0.000	305.580	24.50	0.00	0.00	0.00	1695325.15	14283415.13	39°20'00.530"N	80°48'20.930"W	0.00	0.000	0.00	0.00	0.00	
109.50	0.100	305.580	109.50	-0.06	0.04	-0.06	1695325.09	14283415.17	39°20'00.530"N	80°48'20.931"W	0.07	305.580	0.12	0.12	-64.02	Syrodata MS Gyro <17-1/2"> (100'-475')
209.50	0.170	295.740	209.50	-0.25	0.16	-0.26	1695324.88	14283415.28	39°20'00.532"N	80°48'20.933"W	0.31	300.868	0.07	0.07	-9.84	
309.50	0.220	320.920	309.50	-0.54	0.37	-0.52	1695324.63	14283415.50	39°20'00.534"N	80°48'20.937"W	0.64	305.587	0.10	0.05	25.18	
409.50	0.280	288.640	409.50	-0.89	0.60	-0.87	1695324.27	14283415.72	39°20'00.536"N	80°48'20.941"W	1.06	304.479	0.15	0.06	-32.28	
484.50	0.520	299.670	484.50	-1.28	0.83	-1.34	1695323.81	14283415.95	39°20'00.538"N	80°48'20.947"W	1.58	301.621	0.33	0.32	14.71	
539.50	0.510	283.690	539.49	-1.62	1.01	-1.80	1695323.35	14283416.13	39°20'00.540"N	80°48'20.953"W	2.06	299.288	0.26	-0.02	-29.05	Syrodata MS Gyro <12-1/4"> (475')(530')
648.50	0.620	283.160	648.49	-2.25	1.26	-2.84	1695322.31	14283416.38	39°20'00.542"N	80°48'20.966"W	3.11	293.854	0.10	0.10	-0.49	WFT EM <12-1/4"> (539')(639'-2520')
738.50	0.700	299.510	738.48	-2.96	1.64	-3.79	1695321.35	14283416.76	39°20'00.546"N	80°48'20.978"W	4.13	293.352	0.23	0.09	18.17	
828.50	0.560	300.960	828.48	-3.75	2.14	-4.65	1695320.50	14283417.26	39°20'00.551"N	80°48'20.989"W	5.12	294.665	0.16	-0.16	1.61	
923.50	0.630	296.770	923.47	-4.52	2.61	-5.51	1695319.63	14283417.73	39°20'00.556"N	80°48'21.000"W	6.10	295.323	0.09	0.07	-4.41	
1017.50	0.790	309.690	1017.47	-5.48	3.26	-6.47	1695318.67	14283418.38	39°20'00.562"N	80°48'21.012"W	7.25	296.698	0.24	0.17	13.74	
1112.50	0.830	306.810	1112.46	-6.65	4.09	-7.53	1695317.62	14283419.21	39°20'00.571"N	80°48'21.026"W	8.57	298.491	0.06	0.04	-3.03	
1207.50	0.540	304.160	1207.45	-7.62	4.75	-8.45	1695316.70	14283419.87	39°20'00.577"N	80°48'21.037"W	9.69	299.340	0.31	-0.31	-2.79	
1301.50	0.560	312.530	1301.44	-8.40	5.31	-9.16	1695315.99	14283420.43	39°20'00.583"N	80°48'21.046"W	10.58	300.109	0.09	0.02	8.90	
1396.50	0.250	9.630	1396.44	-9.00	5.83	-9.46	1695315.69	14283420.95	39°20'00.588"N	80°48'21.050"W	11.11	301.625	0.50	-0.33	60.11	
1490.50	0.650	87.370	1490.44	-8.99	6.05	-8.90	1695316.25	14283421.18	39°20'00.590"N	80°48'21.043"W	10.76	304.237	0.69	0.43	82.70	
1585.50	1.080	97.920	1585.43	-8.36	5.96	-7.47	1695317.68	14283421.08	39°20'00.589"N	80°48'21.025"W	9.55	308.560	0.48	0.45	11.11	
1679.50	1.360	99.530	1679.41	-7.32	5.65	-5.49	1695319.66	14283420.77	39°20'00.586"N	80°48'21.000"W	7.88	315.798	0.30	0.30	1.71	
1774.50	1.680	101.660	1774.37	-5.94	5.18	-3.02	1695322.13	14283420.30	39°20'00.581"N	80°48'20.968"W	6.00	329.778	0.34	0.34	2.24	
1869.50	1.890	100.830	1869.33	-4.30	4.60	-0.12	1695325.03	14283419.73	39°20'00.576"N	80°48'20.931"W	4.61	358.565	0.22	0.22	-0.87	
1964.50	1.020	109.480	1964.30	-2.87	4.03	2.22	1695327.37	14283419.15	39°20'00.570"N	80°48'20.902"W	4.60	28.864	0.94	-0.92	9.11	
2059.50	0.280	140.940	2059.29	-2.09	3.57	3.16	1695328.31	14283418.69	39°20'00.565"N	80°48'20.890"W	4.77	41.579	0.84	-0.78	33.12	
2154.50	0.320	213.830	2154.29	-1.72	3.17	3.16	1695328.31	14283418.29	39°20'00.561"N	80°48'20.890"W	4.47	44.972	0.38	0.04	76.73	
2249.50	0.490	218.080	2249.29	-1.37	2.63	2.76	1695327.91	14283417.75	39°20'00.556"N	80°48'20.895"W	3.81	46.475	0.18	0.18	4.47	
2343.50	0.790	226.150	2343.28	-0.94	1.86	2.05	1695327.20	14283416.99	39°20'00.548"N	80°48'20.904"W	2.77	47.766	0.33	0.32	8.59	
2437.50	0.950	233.890	2437.27	-0.52	0.95	0.95	1695326.10	14283416.08	39°20'00.539"N	80°48'20.918"W	1.35	45.005	0.21	0.17	8.23	
2529.50	1.020	259.450	2529.26	-0.51	0.35	-0.47	1695324.68	14283415.48	39°20'00.533"N	80°48'20.936"W	0.59	306.941	0.48	0.08	27.78	
2669.50	1.330	270.930	2669.23	-1.41	0.15	-3.32	1695321.83	14283415.28	39°20'00.532"N	80°48'20.972"W	3.32	272.603	0.28	0.22	8.20	WFT EM <8-3/4"> (2520')(2660'-6446')

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Michels Unit 1H AWP Proj: 19040'

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Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #02
Area	Doddridge Co., WV	Well	Michels Unit 1H
Field	Doddridge	Wellbore	Michels Unit 1H AWB
Facility	Addie Pad		

WELLPATH DATA (228 stations)																
MD (ft)	Inclination [°]	Azimuth [°]	TVD (ft)	Vert Sect (ft)	North (ft)	East (ft)	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude	Closure Dist (ft)	Closure Dir [°]	DLS [°/100ft]	Build Rate [°/100ft]	Turn Rate [°/100ft]	Comments
2768.50	1.300	61.470	2768.22	-1.98	0.71	-3.48	1695321.67	14283415.83	39°20'00.537"N	80°48'20.974"W	3.55	281.465	2.57	-0.03	152.06	
2862.50	4.200	58.570	2862.10	-2.63	3.01	0.39	1695325.54	14283418.14	39°20'00.560"N	80°48'20.925"W	3.04	7.457	3.09	3.09	-3.09	
2957.50	5.730	45.630	2956.74	-4.94	8.14	6.75	1695331.90	14283423.26	39°20'00.610"N	80°48'20.844"W	10.58	39.674	1.99	1.61	-13.62	
3053.50	5.700	43.670	3052.27	-8.66	14.94	13.47	1695338.61	14283430.06	39°20'00.677"N	80°48'20.758"W	20.12	42.037	0.21	-0.03	-2.04	
3147.50	5.450	45.180	3145.82	-12.25	21.46	19.86	1695345.00	14283436.58	39°20'00.742"N	80°48'20.677"W	29.24	42.777	0.31	-0.27	1.61	
3242.50	6.940	35.600	3240.27	-17.00	29.31	26.40	1695351.54	14283444.43	39°20'00.819"N	80°48'20.593"W	39.45	42.011	1.90	1.57	-10.08	
3337.50	8.370	30.260	3334.42	-24.23	39.95	33.23	1695358.36	14283455.06	39°20'00.924"N	80°48'20.506"W	51.96	39.751	1.68	1.51	-5.62	
3431.50	10.380	31.570	3427.16	-33.35	53.08	41.11	1695366.24	14283468.18	39°20'01.054"N	80°48'20.405"W	67.14	37.759	2.15	2.14	1.39	
3526.50	12.820	34.150	3520.21	-44.17	69.09	51.51	1695376.63	14283484.19	39°20'01.212"N	80°48'20.273"W	86.18	36.704	2.63	2.57	2.72	
3620.50	14.360	39.400	3611.58	-55.41	86.73	64.76	1695389.88	14283501.83	39°20'01.386"N	80°48'20.103"W	108.24	36.748	2.10	1.64	5.59	
3715.50	14.180	39.700	3703.65	-66.40	104.79	79.67	1695404.79	14283519.87	39°20'01.564"N	80°48'19.913"W	131.64	37.246	0.20	-0.19	0.32	
3809.50	13.520	39.360	3794.92	-76.97	122.14	94.00	1695419.11	14283537.22	39°20'01.735"N	80°48'19.730"W	154.12	37.580	0.71	-0.70	-0.36	
3904.50	14.400	40.490	3887.11	-87.58	139.71	108.71	1695433.81	14283554.78	39°20'01.909"N	80°48'19.543"W	177.02	37.886	0.97	0.93	1.19	
3998.50	13.970	40.120	3978.24	-98.13	157.28	123.61	1695448.71	14283572.34	39°20'02.082"N	80°48'19.353"W	200.04	38.165	0.47	-0.46	-0.39	
4093.50	14.800	42.620	4070.26	-108.52	174.98	139.22	1695464.31	14283590.03	39°20'02.256"N	80°48'19.153"W	223.60	38.507	1.09	0.87	2.63	
4188.50	14.470	41.350	4162.18	-118.87	192.82	155.27	1695480.36	14283607.87	39°20'02.432"N	80°48'18.949"W	247.56	38.844	0.48	-0.35	-1.34	
4282.50	15.880	38.350	4252.90	-130.33	211.72	171.01	1695496.09	14283626.76	39°20'02.619"N	80°48'18.748"W	272.16	38.929	1.72	1.50	-3.19	
4377.50	15.840	36.980	4344.29	-143.26	232.27	186.88	1695511.95	14283647.30	39°20'02.822"N	80°48'18.545"W	298.11	38.819	0.40	-0.04	-1.44	
4471.50	15.600	35.140	4434.77	-156.55	252.85	201.87	1695526.93	14283667.88	39°20'03.025"N	80°48'18.354"W	323.55	38.602	0.59	-0.26	-1.96	
4566.50	15.910	40.640	4526.21	-169.29	273.18	217.70	1695542.76	14283688.20	39°20'03.225"N	80°48'18.152"W	349.32	38.552	1.60	0.33	5.79	
4660.50	15.580	39.730	4616.68	-181.01	292.67	234.16	1695559.22	14283707.68	39°20'03.418"N	80°48'17.942"W	374.81	38.663	0.44	-0.35	-0.97	
4755.50	14.800	37.710	4708.36	-193.00	312.08	249.74	1695574.79	14283727.08	39°20'03.609"N	80°48'17.743"W	399.70	38.668	0.99	-0.82	-2.13	
4849.50	14.540	35.720	4799.30	-205.19	331.16	263.97	1695589.01	14283746.15	39°20'03.797"N	80°48'17.561"W	423.49	38.559	0.60	-0.28	-2.12	
4943.50	14.820	41.740	4890.23	-216.64	349.71	278.86	1695603.90	14283764.69	39°20'03.980"N	80°48'17.371"W	447.28	38.570	1.65	0.30	6.40	
5037.50	14.360	40.730	4981.20	-227.13	367.51	294.47	1695619.50	14283782.49	39°20'04.156"N	80°48'17.172"W	470.93	38.704	0.56	-0.49	-1.07	
5132.50	14.560	38.490	5073.19	-238.24	385.78	309.59	1695634.62	14283800.76	39°20'04.336"N	80°48'16.979"W	494.65	38.747	0.63	0.21	-2.36	
5226.50	14.310	36.010	5164.23	-250.06	404.43	323.78	1695648.79	14283819.39	39°20'04.520"N	80°48'16.798"W	518.07	38.680	0.71	-0.27	-2.64	
5321.50	14.350	33.610	5256.27	-262.77	423.73	337.20	1695662.21	14283838.69	39°20'04.711"N	80°48'16.627"W	541.53	38.512	0.63	0.04	-2.53	
5415.50	14.030	39.800	5347.41	-274.57	442.19	350.94	1695675.95	14283857.14	39°20'04.893"N	80°48'16.452"W	564.52	38.437	1.65	-0.34	6.59	
5510.50	14.140	36.950	5439.56	-285.84	460.31	365.29	1695690.29	14283875.25	39°20'05.072"N	80°48'16.269"W	587.64	38.434	0.74	0.12	-3.00	

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Area	Doddridge Co., WV	Well	Michels Unit 1H
Field	Doddridge	Wellbore	Michels Unit 1H AWB
Facility	Addie Pad		

WELLPATH DATA (228 stations) † = interpolated/extrapolated station																
MD	Inclination	Azimuth	TVD	Vert Sect	North	East	Grid East	Grid North	Latitude	Longitude	Closure Dist	Closure Dir	DLS	Build Rate	Turn Rate	Comments
(ft)	(°)	(°)	(ft)	(ft)	(ft)	(ft)	(US ft)	(US ft)			(ft)	(°)	(ft/100ft)	(ft/100ft)	(ft/100ft)	
5604.50	14.530	37.510	5530.63	-297.58	478.84	379.37	1695704.36	14283893.77	39°20'05.255"N	80°48'16.089"W	610.91	38.389	0.44	0.41	0.60	
5698.50	14.240	40.810	5621.68	-308.69	496.94	394.10	1695719.09	14283911.87	39°20'05.433"N	80°48'15.901"W	634.25	38.416	0.92	-0.31	3.51	
5761.50	12.270	53.600	5683.01	-313.78	506.78	404.56	1695729.54	14283921.71	39°20'05.530"N	80°48'15.767"W	648.46	38.600	5.59	-3.13	20.30	
5793.50	12.510	65.240	5714.27	-314.74	510.25	410.44	1695735.43	14283925.18	39°20'05.564"N	80°48'15.692"W	654.85	38.813	7.83	0.75	36.37	
5825.50	13.850	75.460	5745.43	-314.35	512.67	417.30	1695742.28	14283927.59	39°20'05.588"N	80°48'15.605"W	661.03	39.145	8.38	4.19	31.94	
5856.50	15.260	85.280	5775.44	-312.60	513.93	424.96	1695749.94	14283928.86	39°20'05.600"N	80°48'15.508"W	666.87	39.586	9.15	4.55	31.68	
5888.50	16.740	91.890	5806.21	-309.42	514.13	433.76	1695758.74	14283929.05	39°20'05.602"N	80°48'15.396"W	672.66	40.154	7.33	4.62	20.66	
5919.50	18.270	99.560	5835.77	-305.00	513.17	443.02	1695767.99	14283928.10	39°20'05.593"N	80°48'15.278"W	677.95	40.804	8.92	4.94	24.74	
5951.50	19.650	106.800	5866.04	-298.93	510.79	453.12	1695778.08	14283925.71	39°20'05.569"N	80°48'15.149"W	682.80	41.576	8.51	4.31	22.62	
5982.50	20.290	113.000	5895.18	-291.80	507.18	463.06	1695788.02	14283922.10	39°20'05.533"N	80°48'15.023"W	686.77	42.396	7.13	2.06	20.00	
6014.50	20.740	119.470	5925.15	-283.39	502.22	473.10	1695798.06	14283917.15	39°20'05.484"N	80°48'14.895"W	689.96	43.290	7.22	1.41	20.22	
6046.50	20.620	129.120	5955.10	-273.97	495.88	482.40	1695807.36	14283910.81	39°20'05.421"N	80°48'14.777"W	691.82	44.211	10.65	-0.38	30.16	
6077.50	21.070	139.240	5984.08	-263.87	488.21	490.28	1695815.23	14283903.14	39°20'05.345"N	80°48'14.677"W	691.90	45.121	11.69	1.45	32.65	
6108.50	22.830	147.050	6012.84	-252.66	478.94	497.19	1695822.14	14283893.88	39°20'05.253"N	80°48'14.589"W	690.35	46.071	10.98	5.68	25.19	
6140.50	25.870	150.780	6041.99	-239.62	467.63	503.98	1695828.92	14283882.57	39°20'05.141"N	80°48'14.503"W	687.51	47.142	10.64	9.50	11.66	
6171.50	28.210	152.940	6069.60	-225.60	455.21	510.81	1695835.56	14283870.15	39°20'05.018"N	80°48'14.419"W	684.06	48.283	8.18	7.55	6.97	
6203.50	29.780	154.520	6097.59	-210.13	441.29	517.47	1695842.41	14283856.25	39°20'04.881"N	80°48'14.332"W	680.09	49.543	5.46	4.91	4.94	
6234.50	31.020	154.550	6124.33	-194.46	427.13	524.22	1695849.16	14283842.09	39°20'04.740"N	80°48'14.247"W	676.20	50.827	4.00	4.00	0.10	
6266.50	32.340	153.850	6151.56	-177.68	412.00	531.53	1695856.47	14283826.97	39°20'04.591"N	80°48'14.154"W	672.51	52.220	4.28	4.13	-2.19	
6297.50	34.730	153.260	6177.40	-160.60	396.67	539.16	1695864.09	14283811.64	39°20'04.439"N	80°48'14.057"W	668.36	53.657	7.78	7.71	-1.90	
6329.50	36.900	152.640	6203.34	-141.94	380.00	547.68	1695872.61	14283794.97	39°20'04.274"N	80°48'13.950"W	666.60	55.246	6.88	6.78	-1.94	
6361.50	39.620	152.120	6228.47	-122.21	362.44	556.87	1695881.79	14283777.42	39°20'04.100"N	80°48'13.833"W	664.43	56.942	8.56	8.50	-1.63	
6376.00†	41.196	152.091	6239.51	-112.85	354.14	561.27	1695886.19	14283769.12	39°20'04.018"N	80°48'13.777"W	663.65	57.750	10.87	10.87	-0.20	Middlesex: 6376' MD
6392.50	42.990	152.060	6251.75	-101.84	344.36	566.45	1695891.37	14283759.35	39°20'03.921"N	80°48'13.712"W	662.91	58.703	10.87	10.87	-0.19	
6424.50	46.210	151.870	6274.54	-79.48	324.53	577.01	1695901.92	14283739.53	39°20'03.725"N	80°48'13.578"W	662.01	60.645	10.07	10.06	-0.59	
6455.50	49.810	151.150	6295.27	-56.57	304.29	588.00	1695912.91	14283719.29	39°20'03.525"N	80°48'13.438"W	662.07	62.638	11.74	11.61	-2.32	
6505.00	55.450	151.330	6325.30	-17.48	269.82	606.92	1695931.82	14283684.83	39°20'03.184"N	80°48'13.199"W	664.19	66.032	11.40	11.39	0.36	BHI AT Curve <8-1/2"> (6455.5')(6505'-18981')
6585.00	61.940	152.620	6366.85	50.51	209.50	638.99	1695963.88	14283624.54	39°20'02.587"N	80°48'12.792"W	672.46	71.848	8.23	8.11	1.61	
6607.00†	63.098	153.434	6377.00	69.97	192.10	647.84	1695972.73	14283607.15	39°20'02.415"N	80°48'12.680"W	675.72	73.483	6.21	5.26	3.70	Burkett: 6607' MD
6632.00	64.420	154.340	6388.06	92.34	171.97	657.71	1695982.59	14283587.03	39°20'02.216"N	80°48'12.555"W	679.82	75.347	6.21	5.29	3.62	



Actual Wellpath Report

Michels Unit 1H AWP Proj: 19040



Operator	ANTERO RESOURCES CORPORATION
Area	Doddridge Co., WV
Field	Doddridge
Facility	Addie Pad
Slot	Slot #02
Well	Michels Unit 1H
Wellbore	Michels Unit 1H AWB

MD	Inclination	Azimuth	TVD	Vert Sect	North	East	Grid East	Grid North	Latitude	Longitude	Closure Dist	Closure Dir	DLS	Build Rate	Turn Rate	Comments
8957.00	89.780	6499.66	6499.66	-194.28	1571.09	1696895.61	14281468.62	39.1941.250°N	80.4800.990°W	2502.05	141.103	1.45	-0.59	1.33		
9052.00	90.060	6499.79	6499.79	-203.31	1601.40	1696925.91	14281378.63	39.1940.359°N	80.4800.607°W	2591.36	141.831	0.96	0.29	0.92		
9146.00	90.460	6499.36	6499.36	-258.49	1634.10	1696958.59	14281290.56	39.1939.488°N	80.4800.194°W	2680.98	142.446	4.68	0.43	-4.66		
9241.00	90.400	6498.65	6498.65	-268.48	1670.02	1696994.50	14281202.65	39.1938.618°N	80.4759.739°W	2772.71	142.965	0.71	-0.06	0.71		
9336.00	90.280	6498.09	6498.09	-278.47	1705.33	1697029.79	14281114.49	39.1937.746°N	80.4759.292°W	2864.49	143.464	0.18	-0.13	0.13		
9431.00	90.710	6497.26	6497.26	-283.45	1739.99	1697064.45	14281026.08	39.1936.871°N	80.4758.654°W	2956.29	143.944	0.87	0.45	0.75		
9526.00	89.970	6496.70	6496.70	-298.43	1774.67	1697099.11	14280937.67	39.1935.996°N	80.4758.415°W	3048.30	144.396	1.09	-0.78	-0.76		
9621.00	89.940	6496.78	6496.78	-306.37	1807.94	1697132.37	14280848.73	39.1935.116°N	80.4757.994°W	3140.11	144.847	2.67	-0.03	2.67		
9716.00	89.880	6496.92	6496.92	-315.31	1841.43	1697165.84	14280759.88	39.1934.236°N	80.4757.570°W	3232.16	145.269	2.98	-0.06	-2.98		
9810.00	90.250	6496.82	6496.82	-325.27	1879.54	1697203.94	14280674.00	39.1933.386°N	80.4757.088°W	3324.52	145.573	3.99	0.39	-3.97		
9905.00	89.940	6496.66	6496.66	-334.72	1915.96	1697240.35	14280586.35	39.1932.519°N	80.4756.627°W	3417.49	145.900	6.82	-0.33	6.81		
10000.00	89.940	6496.76	6496.76	-344.18	1944.77	1697269.14	14280495.88	39.1931.624°N	80.4756.263°W	3508.70	146.339	3.51	0.00	3.51		
10094.00	89.910	6496.88	6496.88	-353.39	1971.73	1697296.09	14280405.86	39.1930.733°N	80.4755.922°W	3598.70	146.777	1.44	-0.03	-1.44		
10190.00	89.880	6497.06	6497.06	-363.12	2003.43	1697327.78	14280315.30	39.1929.837°N	80.4755.521°W	3691.92	147.136	4.05	-0.03	-4.05		
10284.00	89.940	6497.21	6497.21	-372.50	2040.31	1697364.64	14280228.89	39.1928.982°N	80.4755.055°W	3784.58	147.377	3.99	0.06	-3.99		
10379.00	89.630	6497.56	6497.56	-382.02	2081.83	1697406.15	14280143.49	39.1928.136°N	80.4754.529°W	3878.94	147.541	2.01	-0.33	-1.98		
10474.00	89.820	6498.02	6498.02	-391.77	2124.39	1697448.69	14280058.59	39.1927.296°N	80.4753.989°W	3973.46	147.880	0.55	0.20	0.52		
10569.00	89.910	6498.24	6498.24	-400.42	2167.97	1697492.25	14279974.21	39.1926.461°N	80.4753.437°W	4068.10	147.797	1.97	0.09	-1.97		
10664.00	89.260	6498.93	6498.93	-410.07	2211.65	1697535.91	14279889.89	39.1925.626°N	80.4752.884°W	4162.76	147.907	1.95	-0.68	1.82		
10759.00	88.680	6500.64	6500.64	-419.57	2256.48	1697580.73	14279806.20	39.1924.798°N	80.4752.316°W	4257.52	147.995	3.55	-0.61	-3.49		
10854.00	88.460	6503.01	6503.01	-429.89	2302.76	1697626.98	14279723.30	39.1923.977°N	80.4751.729°W	4352.37	148.057	1.43	-0.23	1.41		
10949.00	88.460	6505.57	6505.57	-438.68	2343.41	1697667.62	14279637.57	39.1923.128°N	80.4751.215°W	4446.67	148.197	6.59	0.00	6.59		
11043.00	88.520	6508.04	6508.04	-448.16	2377.84	1697702.04	14279550.17	39.1922.263°N	80.4750.779°W	4539.15	148.409	1.56	0.06	1.56		
11137.00	88.680	6510.34	6510.34	-457.53	2410.28	1697734.47	14279462.01	39.1921.391°N	80.4750.369°W	4631.31	148.639	1.21	0.17	1.20		
11232.00	89.110	6512.17	6512.17	-467.00	2442.16	1697766.33	14279372.58	39.1920.506°N	80.4749.966°W	4724.34	148.873	0.45	0.45	0.04		
11327.00	89.480	6513.34	6513.34	-476.90	2469.71	1697793.87	14279281.74	39.1919.607°N	80.4749.618°W	4816.43	149.152	5.75	0.39	5.74		
11422.00	88.920	6514.67	6514.67	-485.96	2493.35	1697817.50	14279189.77	39.1918.697°N	80.4749.319°W	4907.61	149.465	0.82	-0.59	-0.57		
11517.00	89.450	6516.02	6516.02	-495.55	2521.84	1697845.98	14279099.23	39.1917.802°N	80.4748.959°W	5000.15	149.712	5.89	0.56	-5.86		
11611.00	89.080	6517.23	6517.23	-504.57	2557.47	1697881.60	14279012.31	39.1916.941°N	80.4748.509°W	5093.22	149.859	4.34	-0.39	-4.32		
11706.00	89.020	6518.80	6518.80	-514.28	2595.63	1697919.74	14278925.36	39.1916.081°N	80.4748.026°W	5187.61	149.977	1.32	-0.06	1.32		

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Actual Wellpath Report

Michels Unit 1H AWP Proj: 19040'

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REFERENCE WELLPATH IDENTIFICATION				
Operator	ANTERO RESOURCES CORPORATION		Slot	Slot #02
Area	Doddridge Co., WV		Well	Michels Unit 1H
Field	Doddridge		Wellbore	Michels Unit 1H AWB
Facility	Addie Pad			

WELLPATH DATA (228 stations)																
MD (ft)	Inclination (°)	Azimuth (°)	TVD (ft)	Vort 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
11801.00	88.980	164.760	6520.46	5237.24	-4581.21	2626.76	1697950.86	14278835.74	39°19'15.194"N	80°47'47.632"W	5280.85	150.171	8.23	-0.04	8.23	
11896.00	89.080	166.760	6522.07	5331.24	-4673.28	2650.13	1697974.22	14278743.71	39°19'14.283"N	80°47'47.337"W	5372.40	150.443	2.11	0.11	2.11	
11991.00	89.080	159.330	6523.60	5425.73	-4764.07	2677.81	1698001.89	14278652.95	39°19'13.385"N	80°47'46.988"W	5465.07	150.660	7.82	0.00	-7.82	
12085.00	89.050	153.050	6525.13	5519.64	-4850.02	2715.73	1698039.80	14278567.04	39°19'12.535"N	80°47'46.508"W	5558.58	150.754	6.68	-0.03	-6.68	
12180.00	89.140	153.340	6526.63	5614.35	-4934.80	2758.57	1698082.61	14278482.29	39°19'11.696"N	80°47'45.966"W	5653.49	150.795	0.32	0.09	0.31	
12275.00	88.950	157.650	6528.22	5709.26	-5021.21	2797.96	1698121.99	14278395.92	39°19'10.841"N	80°47'45.466"W	5748.14	150.872	4.54	-0.20	4.54	
12370.00	89.050	157.420	6529.88	5804.24	-5108.99	2834.25	1698158.27	14278308.18	39°19'09.973"N	80°47'45.007"W	5842.49	150.980	0.26	0.11	-0.24	
12466.00	89.080	153.510	6531.44	5900.15	-5196.29	2874.10	1698198.10	14278220.91	39°19'09.109"N	80°47'44.502"W	5938.17	151.053	4.07	0.03	-4.07	
12561.00	89.170	151.140	6532.89	5994.74	-5280.40	2918.22	1698242.20	14278136.83	39°19'08.277"N	80°47'43.944"W	6033.13	151.073	2.50	0.09	-2.49	
12655.00	88.980	155.620	6534.41	6088.45	-5364.41	2960.32	1698284.29	14278052.86	39°19'07.446"N	80°47'43.410"W	6127.02	151.108	4.77	-0.20	4.77	
12749.00	89.050	160.850	6536.03	6182.40	-5451.66	2995.16	1698319.11	14277965.63	39°19'06.582"N	80°47'42.970"W	6220.26	151.215	5.56	0.07	5.56	
12844.00	89.140	158.860	6537.53	6277.31	-5540.84	3027.87	1698351.81	14277876.50	39°19'05.700"N	80°47'42.556"W	6314.18	151.345	2.10	0.09	-2.09	
12939.00	89.080	156.600	6539.01	6372.29	-5628.73	3063.87	1698387.79	14277788.64	39°19'04.831"N	80°47'42.100"W	6408.58	151.439	2.38	-0.06	-2.38	
13034.00	89.020	158.130	6540.58	6467.27	-5716.40	3100.42	1698424.33	14277701.00	39°19'03.963"N	80°47'41.638"W	6503.07	151.526	1.61	-0.06	1.61	
13129.00	89.110	158.680	6542.13	6562.25	-5804.72	3135.38	1698459.28	14277612.72	39°19'03.090"N	80°47'41.196"W	6597.38	151.625	0.59	0.09	0.58	
13223.00	89.170	157.090	6543.54	6656.23	-5891.79	3170.76	1698494.65	14277525.68	39°19'02.228"N	80°47'40.748"W	6690.81	151.712	1.69	0.06	-1.69	
13318.00	89.050	159.330	6545.02	6751.21	-5979.99	3206.02	1698529.89	14277437.52	39°19'01.356"N	80°47'40.302"W	6785.19	151.803	2.36	-0.13	2.36	
13413.00	89.050	161.050	6546.59	6846.09	-6069.35	3238.21	1698562.07	14277348.19	39°19'00.472"N	80°47'39.895"W	6879.17	151.919	1.81	0.00	1.81	
13508.00	89.170	159.780	6548.07	6940.96	-6158.84	3270.05	1698593.89	14277258.74	39°18'59.587"N	80°47'39.492"W	6973.13	152.034	1.34	0.13	-1.34	
13602.00	89.170	155.600	6549.43	7034.93	-6245.78	3305.72	1698629.55	14277171.84	39°18'58.727"N	80°47'39.041"W	7066.65	152.109	4.45	0.00	-4.45	
13696.00	89.080	157.120	6550.87	7128.89	-6331.88	3343.41	1698667.23	14277085.77	39°18'57.875"N	80°47'38.564"W	7160.38	152.165	1.62	-0.10	1.62	
13792.00	89.110	161.080	6552.38	7224.83	-6421.53	3377.65	1698701.45	14276996.15	39°18'56.988"N	80°47'38.131"W	7255.66	152.256	4.12	0.03	4.13	
13886.00	89.170	159.020	6553.79	7318.72	-6509.88	3409.71	1698733.50	14276907.84	39°18'56.114"N	80°47'37.726"W	7348.79	152.356	2.19	0.06	-2.19	
13981.00	88.920	152.600	6555.38	7413.61	-6596.48	3448.62	1698772.39	14276821.28	39°18'55.257"N	80°47'37.233"W	7443.55	152.400	6.76	-0.26	-6.76	
14076.00	88.980	145.070	6557.12	7507.44	-6677.69	3497.73	1698821.49	14276740.09	39°18'54.453"N	80°47'36.811"W	7538.29	152.355	7.93	0.06	-7.93	
14171.00	88.980	146.480	6558.81	7600.42	-6756.23	3551.16	1698874.89	14276661.59	39°18'53.676"N	80°47'35.933"W	7632.65	152.273	1.48	0.00	1.48	
14265.00	89.020	149.660	6560.46	7693.12	-6835.98	3600.86	1698924.57	14276581.87	39°18'52.887"N	80°47'35.303"W	7726.37	152.222	3.38	0.04	3.38	
14360.00	88.860	152.940	6562.21	7787.53	-6919.29	3646.47	1698970.16	14276498.60	39°18'52.062"N	80°47'34.725"W	7821.33	152.211	3.46	-0.17	3.45	
14455.00	88.950	156.390	6564.03	7882.37	-7005.12	3687.10	1699010.78	14276412.80	39°18'51.213"N	80°47'34.211"W	7916.22	152.240	3.63	0.09	3.63	
14550.00	88.980	161.340	6565.75	7977.30	-7093.69	3721.34	1699045.00	14276324.26	39°18'50.337"N	80°47'33.778"W	8010.54	152.319	5.21	0.03	5.21	

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Actual Wellpath Report

Michels Unit 1H AWP Proj: 19040'

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REFERENCE Wellpath IDENTIFICATION

Operator	ANTERO RESOURCES CORPORATION
Area	Doddridge Co., WV
Field	Doddridge
Facility	Addie Pad
Slot	Michels Unit 1H
Slot #02	Michels Unit 1H AWB

WellPath DATA (228 stations)

MD	Inclination	Azimuth	TVD	Vent Sect	North	East	Grid East	Grid North	Latitude	Longitude	Closure Dist	Closure Dir	DLS	Build Rate	Turn Rate	Comments
14645.00	89.170	165.100	6567.28	-7184.62	3748.76	1699072.41	14276233.37	80°47'33.432"W	39°18'49.438"N	80°47'33.432"W	8103.82	152.446	3.96	0.20	3.96	
14739.00	89.020	163.740	6568.77	-7275.15	3774.00	1699097.64	14276142.88	80°47'33.113"W	39°18'48.542"N	80°47'33.113"W	8195.78	152.582	1.46	-0.16	-1.45	
14834.00	89.110	162.310	6570.32	-7366.00	3801.73	1699125.36	14276052.07	80°47'32.763"W	39°18'47.644"N	80°47'32.763"W	8289.21	152.701	1.51	0.09	-1.51	
14928.00	89.020	163.170	6571.85	-7456.75	3829.62	1699153.24	14275962.35	80°47'32.411"W	39°18'46.766"N	80°47'32.411"W	8381.78	152.813	0.92	-0.10	0.91	
15023.00	89.080	163.110	6573.42	-7546.65	3857.17	1699180.78	14275871.48	80°47'32.063"W	39°18'45.857"N	80°47'32.063"W	8475.24	152.928	0.09	0.06	-0.06	
15117.00	89.140	164.260	6574.88	-7636.86	3883.57	1699207.17	14275781.31	80°47'31.730"W	39°18'44.965"N	80°47'31.730"W	8567.60	153.045	1.22	0.06	1.22	
15211.00	89.260	162.470	6576.20	-7726.91	3910.48	1699234.07	14275691.30	80°47'31.390"W	39°18'44.074"N	80°47'31.390"W	8660.08	153.157	1.91	0.13	-1.90	
15289.00	89.110	160.200	6577.52	-7816.34	3942.44	1699266.01	14275601.90	80°47'30.986"W	39°18'43.189"N	80°47'30.986"W	8754.31	153.234	4.50	-0.13	-4.49	
15399.00	89.110	153.170	6578.95	-7901.05	3980.71	1699304.27	14275517.22	80°47'30.501"W	39°18'42.351"N	80°47'30.501"W	8847.19	153.260	5.41	-0.03	-5.41	
15494.00	89.080	149.650	6580.46	-7984.32	4026.38	1699349.92	14275433.88	80°47'29.923"W	39°18'41.627"N	80°47'29.923"W	8942.10	153.239	4.02	-0.03	-4.02	
15589.00	89.110	150.200	6581.95	-8066.40	4074.19	1699397.72	14275351.94	80°47'29.317"W	39°18'40.715"N	80°47'29.317"W	9036.92	153.202	0.90	0.03	0.89	
15684.00	89.230	161.470	6583.33	-8152.93	4113.02	1699436.52	14275265.45	80°47'28.826"W	39°18'39.859"N	80°47'28.826"W	9131.65	153.230	11.86	0.13	11.86	
15779.00	89.110	163.040	6584.70	-8243.39	4141.97	1699465.46	14275175.02	80°47'28.460"W	39°18'38.964"N	80°47'28.460"W	9225.48	153.322	1.66	-0.13	1.66	
15873.00	88.980	157.400	6586.27	-8331.80	4173.76	1699497.24	14275086.65	80°47'28.058"W	39°18'38.090"N	80°47'28.058"W	9318.75	153.392	6.00	-0.14	-6.00	
15968.00	89.080	154.020	6587.88	-8418.36	4212.83	1699536.30	14275000.12	80°47'27.564"W	39°18'37.233"N	80°47'27.564"W	9413.65	153.415	3.56	0.11	-3.56	
16062.00	89.080	155.480	6589.39	-8503.37	4252.92	1699576.37	14274915.15	80°47'27.056"W	39°18'36.392"N	80°47'27.056"W	9507.61	153.428	1.55	0.00	1.55	
16157.00	89.050	156.910	6590.94	-8590.27	4291.26	1699614.69	14274828.28	80°47'26.571"W	39°18'35.632"N	80°47'26.571"W	9602.48	153.456	1.51	-0.03	1.51	
16252.00	88.950	154.990	6592.60	-8677.01	4329.97	1699653.39	14274741.58	80°47'26.081"W	39°18'34.674"N	80°47'26.081"W	9697.38	153.480	2.02	-0.11	-2.02	
16348.00	88.980	152.030	6594.33	-8762.91	4372.77	1699696.18	14274655.71	80°47'25.539"W	39°18'33.824"N	80°47'25.539"W	9793.35	153.480	3.08	0.03	-3.08	
16442.00	88.950	153.450	6596.03	-8846.45	4416.82	1699739.21	14274572.20	80°47'24.994"W	39°18'32.997"N	80°47'24.994"W	9887.32	153.473	1.51	-0.03	1.51	
16536.00	88.920	158.450	6597.78	-8932.25	4454.11	1699777.48	14274486.44	80°47'24.509"W	39°18'32.148"N	80°47'24.509"W	9981.19	153.497	5.32	-0.03	5.32	
16630.00	89.080	155.830	6599.42	-9018.85	4490.52	1699813.98	14274399.88	80°47'24.047"W	39°18'31.292"N	80°47'24.047"W	10074.98	153.531	2.79	0.17	-2.79	
16724.00	89.110	157.300	6600.90	-9105.08	4528.00	1699851.34	14274313.68	80°47'23.574"W	39°18'30.439"N	80°47'23.574"W	10168.84	153.559	1.56	0.03	1.56	
16818.00	89.320	159.230	6602.19	-9192.38	4562.80	1699886.13	14274226.41	80°47'23.134"W	39°18'29.575"N	80°47'23.134"W	10262.51	153.602	2.07	0.22	2.05	
16912.00	88.630	160.400	6603.05	-9280.60	4595.23	1699918.55	14274138.22	80°47'22.724"W	39°18'28.702"N	80°47'22.724"W	10355.95	153.658	1.29	0.33	1.24	
17006.00	90.030	158.210	6603.33	-9367.93	4629.98	1699953.28	14274050.93	80°47'22.285"W	39°18'27.838"N	80°47'22.285"W	10449.63	153.700	4.48	0.43	-4.46	
17100.00	90.030	156.780	6603.28	-9454.13	4667.47	1699990.75	14273964.77	80°47'21.810"W	39°18'26.986"N	80°47'21.810"W	10543.52	153.725	0.61	0.00	0.61	
17194.00	89.880	158.950	6603.36	-9541.19	4702.88	1700026.15	14273877.74	80°47'21.362"W	39°18'26.124"N	80°47'21.362"W	10637.27	153.761	2.31	-0.16	2.31	
17288.00	90.030	158.690	6603.43	-9628.84	4736.84	1700060.10	14273790.12	80°47'20.933"W	39°18'25.257"N	80°47'20.933"W	10730.90	153.805	0.32	0.16	-0.28	
17382.00	90.150	160.240	6603.28	-9716.87	4769.82	1700093.06	14273702.13	80°47'20.516"W	39°18'24.386"N	80°47'20.516"W	10824.45	153.855	1.65	0.13	1.65	

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Michels Unit 1H AWP Proj: 19040



Operator	Area	Field	Facility
ANTERO RESOURCES CORPORATION	Doddridge Co., WV	Doddridge	Addie Pad
Slot	Well	Wellbore	
Slot #02	Michels Unit 1H	Michels Unit 1H AWB	

MD	Inclination	Azimuth	TVP	Vert Sect	North	East	Grid East	Grid North	Latitude	Longitude	Closure Dist	Closure Dir	DLS	Build Rate	Turn Rate	Comments
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(US ft)	(US ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)
17476.00	89.970	161.940	6603.19	10895.88	-9805.79	4800.28	1700123.51	14273613.24	39°18'23.50"N	80°47'20.13"W	10917.70	153.917	1.82	-0.19	1.81	
17570.00	90.090	159.630	6603.14	10989.72	-9894.55	4831.21	1700154.43	14273524.52	39°18'22.62"N	80°47'19.74"W	11011.03	153.975	2.46	0.13	-2.46	
17664.00	90.400	163.680	6602.73	11083.46	-9883.75	4860.79	1700184.00	14273434.35	39°18'21.74"N	80°47'19.36"W	11104.17	154.040	4.32	0.33	4.31	
17758.00	90.520	169.720	6601.98	11176.21	-10075.18	4882.41	1700205.61	14273343.96	39°18'20.84"N	80°47'19.09"W	11195.86	154.145	6.43	0.13	6.43	
17852.00	90.860	171.210	6600.85	11267.82	-10167.88	4897.98	1700221.17	14273251.30	39°18'19.92"N	80°47'18.89"W	11286.09	154.279	1.63	0.36	1.69	
17946.00	90.920	160.280	6599.38	11360.71	-10258.83	4921.08	1700244.27	14273160.38	39°18'19.02"N	80°47'18.60"W	11378.08	154.373	11.63	0.06	-11.63	
18040.00	90.800	154.640	6597.97	11454.66	-10345.61	4957.10	1700280.27	14273073.64	39°18'18.16"N	80°47'18.15"W	11471.90	154.399	6.00	-0.13	-6.00	
18134.00	90.830	149.280	6596.63	11548.17	-10428.54	5001.27	1700324.42	14272990.75	39°18'17.34"N	80°47'17.59"W	11565.77	154.379	5.70	0.03	-5.70	
18229.00	90.980	148.800	6595.13	11642.11	-10509.99	5050.13	1700373.27	14272909.33	39°18'16.54"N	80°47'16.97"W	11660.35	154.335	0.53	0.16	-0.51	
18323.00	90.860	153.200	6593.62	11735.47	-10592.17	5095.69	1700418.80	14272827.17	39°18'15.72"N	80°47'16.39"W	11754.15	154.309	4.68	-0.13	4.68	
18417.00	90.890	151.550	6592.19	11829.07	-10675.44	5139.27	1700462.36	14272743.94	39°18'14.90"N	80°47'15.84"W	11848.09	154.293	1.76	0.03	-1.76	
18511.00	90.890	149.190	6590.73	11922.32	-10757.14	5185.73	1700508.81	14272662.28	39°18'14.09"N	80°47'15.25"W	11941.85	154.263	2.51	0.00	-2.51	
18605.00	90.830	151.490	6589.31	12015.56	-10838.81	5232.24	1700555.30	14272580.64	39°18'13.28"N	80°47'14.66"W	12035.62	154.232	2.45	-0.06	2.45	
18699.00	90.770	155.120	6588.00	12109.28	-10922.76	5274.46	1700597.50	14272496.71	39°18'12.45"N	80°47'14.13"W	12129.58	154.225	3.86	-0.06	3.86	
18793.00	90.800	159.620	6586.71	12203.25	-11009.50	5310.61	1700633.64	14272410.02	39°18'11.59"N	80°47'13.67"W	12223.40	154.249	4.79	0.03	4.79	
18887.00	91.170	164.210	6585.10	12296.93	-11098.82	5339.78	1700662.80	14272320.73	39°18'10.71"N	80°47'13.30"W	12316.53	154.307	4.90	0.39	4.88	
18981.00	90.980	162.600	6583.33	12390.42	-11188.88	5366.62	1700689.63	14272230.70	39°18'09.82"N	80°47'12.96"W	12409.34	154.376	1.72	-0.20	-1.71	
19040.00	90.980	162.600	6582.32	12449.18	-11245.17	5384.26	1700707.26	14272174.43	39°18'09.26"N	80°47'12.74"W	12467.73	154.415	0.00	0.00	0.00	Projected MD at TD: 19040'

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Michels Unit 1H AWP Proj: 19040'

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REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #02
Area	Doddridge Co., WV	Well	Michels Unit 1H
Field	Doddridge	Wellbore	Michels Unit 1H AWB
Facility	Addie Pad		

HOLE & CASING SECTIONS - Ref Wellbore: Michels Unit 1H AWB Ref Wellpath: Michels Unit 1H AWP Proj: 19040'										
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	24.50	104.50	80.00	24.50	104.50	0.00	0.00	0.04	0.04	-0.05
17.5in Open Hole	104.50	498.50	394.00	104.50	498.50	0.04	-0.05	0.88	0.88	-1.45
13.375in Casing Surface	24.50	498.50	474.00	24.50	498.50	0.00	0.00	0.88	0.88	-1.45
12.25in Open Hole	498.50	2612.60	2114.10	498.50	2612.34	0.88	-1.45	0.17	0.17	-2.06
9.625in Casing Intermediate	24.50	2612.60	2588.10	24.50	2612.34	0.00	0.00	0.17	0.17	-2.06
8.75in Open Hole	2612.60	6528.50	3915.90	2612.34	6338.31	0.17	-2.06	252.61	252.61	616.25
8.5in Open Hole	6528.50	19040.00	12511.50	6338.31	6582.32	252.61	616.25	-11245.17	-11245.17	5384.26
5.5in Casing Production	24.50	19040.00	19015.50	24.50	6582.32	0.00	0.00	-11245.17	-11245.17	5384.26

TARGETS								
Name	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
Michels Unit 1H POE - Rev-2	6432.00	87.85	699.34	1696024.21	14283502.94	39°20'01.383"N	80°48'12.027"W	point
Michels Unit 1H BHL - Rev-2	6472.00	-11252.94	5401.99	1700724.98	14272166.67	39°18'09.190"N	80°47'12.520"W	point
Michels Unit 1H LP Rev-2	6472.00	-113.77	792.47	1696117.30	14283301.40	39°19'59.389"N	80°48'10.848"W	point

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REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #02
Area	Doddridge Co., WV	Well	Michels Unit 1H
Field	Doddridge	Wellbore	Michels Unit 1H AWB
Facility	Addie Pad		

WELLPATH COMPOSITION - Ref Wellbore: Michels Unit 1H AWB Ref Wellpath: Michels Unit 1H AWP Proj: 19040'				
Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
24.50	484.50	Gyrodatta standard - Drop gyro or Multi-shot	01 Gyrodatta MS Gyro <17-1/2">(100'-475')	Michels Unit 1H AWB
484.50	539.50	Gyrodatta standard - Drop gyro or Multi-shot	02 Gyrodatta MS Gyro <12-1/4">(475')(530')	Michels Unit 1H AWB
539.50	2529.50	ISCWSA MWD, Rev. 4 (Standard)	03 WFT EM <12-1/4">(530')(639'-2520')	Michels Unit 1H AWB
2529.50	6455.50	ISCWSA MWD, Rev. 4 (Standard)	04 WFT EM <8-3/4">(2520')(2660'-6446')	Michels Unit 1H AWB
6455.50	18981.00	BHI AutoTrak Curve (Short)	05 BHI AT Curve <8-1/2"> (6455.5')(6505'-18981')	Michels Unit 1H AWB
18981.00	19040.00	Blind Drilling (std)	Projection to bit	Michels Unit 1H AWB



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Michels Unit 1H AWP Proj: 19040'

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REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #02
Area	Doddridge Co., WV	Well	Michels Unit 1H
Field	Doddridge	Wellbore	Michels Unit 1H AWB
Facility	Addie Pad		

COMMENTS
<p>Wellpath general comments API: 47-017-06811-0000 BHI Job #: 8819583 Rig: Frontier 22 Duration: 10/17/2017-10/21/2017 Gyrodata MS Gyro <17-1/2"> (100'-475') Gyrodata MS Gyro <12-1/4"> (475')(530') WFT EM <12-1/4"> (539')(639'-2520') WFT EM <8-3/4"> (2520')(2660'-6446') BHI AT Curve <8-1/2"> (6455.5')(6505'-18981') Middlesex: 6376' MD Burkett: 6607' MD Tully: 6679' MD Hamilton: 6780' MD Marcellus POE: 6818' MD Projected MD at TD: 19040'</p>

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