

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

API 47 - 017 - 06823 County Doddridge District West Union  
Quad West Union 7.5' Pad Name Middle Pad Field/Pool Name -----  
Farm name Antero Resources Corporation Well Number Jay Unit 2H  
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 4352585.341m Easting 516699.204m  
Landing Point of Curve Northing 4352828.36m Easting 517157.99m  
Bottom Hole Northing 4355772.406m Easting 515883.072m

Elevation (ft) 843' 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

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Date permit issued 6/19/2017 Date drilling commenced 9/29/2017 Date drilling ceased 2/25/2018  
Date completion activities began 6/5/2018 Date completion activities ceased 9/15/2018  
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 None Identified Open mine(s) (Y/N) depths No  
Salt water depth(s) ft None Identified Void(s) encountered (Y/N) depths No  
Coal depth(s) ft None Identified Cavern(s) encountered (Y/N) depths No  
Is coal being mined in area (Y/N) No

Reviewed by: \_\_\_\_\_

Reviewed  
*Jul 5 2m 2/27/19*

API 47-017 - 06823 Farm name Antero Resources Corporation Well number Jay Unit 2H

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	24"	20"	95'	New	94#, H-40	N/A	Y
Surface	17-1/2"	13-3/8"	531'	New	54#, J-55	N/A	Y
Coal							
Intermediate 1	12-1/4"	9-5/8"	2651'	New	36#, J-55	N/A	Y
Intermediate 2							
Intermediate 3							
Production	8-3/4"/8-1/2"	5-1/2"	17713'	New	23#, HCP-110	N/A	Y
Tubing		2-3/8"	6861'		4.7#, L-80		
Packer type and depth set		N/A					

Comment Details \_\_\_\_\_

CEMENT DATA	Class/Type of Cement	Number of Sacks	Slurry wt (ppg)	Yield (ft <sup>3</sup> /sks)	Volume (ft <sup>3</sup> )	Cement Top (MD)	WOC (hrs)
Conductor	Class A	204 sx	15.6	1.18	241	0'	8 Hrs.
Surface	Class A	480 sx	15.6	1.21	581	0'	8 Hrs.
Coal							
Intermediate 1	Class A	885 sx	15.6	1.22	1080	0'	8 Hrs.
Intermediate 2							
Intermediate 3							
Production	Class H	665 sx (Lead) 1725 sx (Tail)	13.5 (Lead), 15.2 (Tail)	1.53 (Lead), 1.83 (Tail)	4174	-500' into Intermediate Casing	8 Hrs.
Tubing							

Drillers TD (ft) 17713' MD, 6424' TVD (BHL), 6453' (Deepest Point Drilled) Loggers TD (ft) 17713' MD

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

Plug back procedure N/A

Kick off depth (ft) 6153'

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



API 47- 017 - 06823 Farm name Antero Resources Corporation Well number Jay Unit 2H

PRODUCING FORMATION(S)	DEPTHS		
Marcellus	6378' (TOP)	TVD	6910' (TOP) MD

Please insert additional pages as applicable.

GAS TEST  Build up  Drawdown  Open Flow OIL TEST  Flow  Pump

SHUT-IN PRESSURE Surface 3600 psi Bottom Hole --- psi DURATION OF TEST --- hrs

OPEN FLOW Gas 13225.09 mcfpd Oil 114.31 bpd NGL --- bpd Water 639.22 bpd GAS MEASURED BY  Estimated  Orifice  Pilot

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

**\*PLEASE SEE ATTACHED EXHIBIT 3**


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Please insert additional pages as applicable.

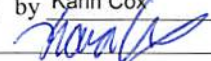
Drilling Contractor Frontier Drilling LLC  
Address 562 Spring Run Road City Pennsboro State WV Zip 26415

Logging Company Nine Energy Service  
Address 125 Museum Rd City Washington State PA Zip 15301

Cementing Company C&J Energy Services  
Address 1650 Hackers Creek City Lane Jew State WV Zip 26378

Stimulating Company Haliburton  
Address 121 Champion Way City Canonsburg State PA Zip 15317

Please insert additional pages as applicable.

Completed by Karin Cox Telephone 303-357-6820  
Signature  Title Permitting Agent Date 1/23/2019

API 47-017-06823 Farm Name Antero Resources Corp Well Number Jay Unit 2H

**EXHIBIT 1**

Stage No.	Perforation Date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formations
1	6/5/2018	17509.5	17608.8	60	Marcellus
2	6/6/2018	17310.492	17478.332	60	Marcellus
3	6/6/2018	17111.484	17279.324	60	Marcellus
4	6/6/2018	16912.476	17080.316	60	Marcellus
5	6/7/2018	16713.468	16881.308	60	Marcellus
6	6/7/2018	16514.46	16682.3	60	Marcellus
7	6/28/2018	16315.452	16483.292	60	Marcellus
8	6/29/2018	16116.444	16284.284	60	Marcellus
9	6/29/2018	15917.436	16085.276	60	Marcellus
10	6/29/2018	15718.428	15886.268	60	Marcellus
11	6/30/2018	15519.42	15687.26	60	Marcellus
12	6/30/2018	15320.412	15488.252	60	Marcellus
13	6/30/2018	15121.404	15289.244	60	Marcellus
14	7/1/2018	14922.396	15090.236	60	Marcellus
15	7/1/2018	14723.388	14891.228	60	Marcellus
16	7/2/2018	14524.38	14692.22	60	Marcellus
17	7/2/2018	14325.372	14493.212	60	Marcellus
18	7/2/2018	14126.364	14294.204	60	Marcellus
19	7/3/2018	13927.356	14095.196	60	Marcellus
20	7/3/2018	13728.348	13896.188	60	Marcellus
21	7/3/2018	13529.34	13697.18	60	Marcellus
22	7/4/2018	13330.332	13498.172	60	Marcellus
23	7/4/2018	13131.324	13299.164	60	Marcellus
24	7/4/2018	12932.316	13100.156	60	Marcellus
25	7/5/2018	12733.308	12901.148	60	Marcellus
26	7/5/2018	12534.3	12702.14	60	Marcellus
27	7/5/2018	12335.292	12503.132	60	Marcellus
28	7/5/2018	12136.284	12304.124	60	Marcellus
29	7/6/2018	11937.276	12105.116	60	Marcellus
30	7/6/2018	11738.268	11906.108	60	Marcellus
31	7/6/2018	11539.26	11707.1	60	Marcellus
32	7/7/2018	11340.252	11508.092	60	Marcellus
33	7/7/2018	11141.244	11309.084	60	Marcellus
34	7/7/2018	10942.236	11110.076	60	Marcellus
35	7/8/2018	10743.228	10911.068	60	Marcellus
36	7/9/2018	10544.22	10712.06	60	Marcellus
37	7/9/2018	10345.212	10513.052	60	Marcellus
38	7/9/2018	10146.204	10314.044	60	Marcellus
39	7/10/2018	9947.196	10115.036	60	Marcellus
40	7/10/2018	9748.188	9916.028	60	Marcellus
41	7/10/2018	9549.18	9717.02	60	Marcellus
42	7/11/2018	9350.172	9518.012	60	Marcellus
43	7/11/2018	9151.164	9319.004	60	Marcellus
44	7/11/2018	8952.156	9119.996	60	Marcellus
45	7/11/2018	8753.148	8920.988	60	Marcellus
46	7/12/2018	8554.14	8721.98	60	Marcellus
47	7/12/2018	8355.132	8522.972	60	Marcellus
48	7/13/2018	8156.124	8323.964	60	Marcellus
49	7/13/2018	7957.116	8124.956	60	Marcellus
50	7/13/2018	7758.108	7925.948	60	Marcellus
51	7/13/2018	7559.1	7726.94	60	Marcellus
52	7/14/2018	7360.092	7527.932	60	Marcellus
53	7/14/2018	7161.084	7328.924	60	Marcellus
54	7/14/2018	6962.076	7129.916	60	Marcellus

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**EXHIBIT 2**

Stage No.	Stimulations Date	Avg Pump Rate	Avg Treatment Pressure (PSI)	Max Breakdown Pressure (PSI)	ISIP (PSI)	Amount of Proppant (lbs)	Amount of Water (bbls)	Amount of Nitrogen/ other (units)
1	6/5/2018	69.3	7568	5397	3373	261020	8695	N/A
2	6/6/2018	71.07	7674	5706	5115	404320	8107	N/A
3	6/6/2018	73.8	8051	4819	3466	402760	8110	N/A
4	6/6/2018	77.59	8015	6034	4236	398760	8059	N/A
5	6/7/2018	75.1	8027	5425	4041	396800	7968	N/A
6	6/7/2018	74.03	7943	5787	4082	394060	8295	N/A
7	6/28/2018	66.41	7667	5731	5109	404060	8920	N/A
8	6/29/2018	76.73	7824	5091	4339	399640	8813	N/A
9	6/29/2018	78.03	8085	6003	4979	394320	9074	N/A
10	6/29/2018	72.13	7525	5760	3870	397100	11404	N/A
11	6/30/2018	78.07	7505	5566	4696	404140	8470	N/A
12	6/30/2018	72.48	7145	4862	4948	399680	8318	N/A
13	6/30/2018	67.72	6803	5445	5039	400520	8389	N/A
14	7/1/2018	76.04	7113	5307	5159	400160	8378	N/A
15	7/1/2018	73.77	7291	3850	4865	401480	8617	N/A
16	7/2/2018	72.9	7527	6086	4100	400060	8437	N/A
17	7/2/2018	72	7516	4938	5179	401080	8564	N/A
18	7/2/2018	70.54	7201	6629	4756	400620	8485	N/A
19	7/3/2018	74	7424	4838	4919	397420	8456	N/A
20	7/3/2018	71.3	7360	5309	4440	413280	8346	N/A
21	7/3/2018	72.4	7569	6225	4969	398320	8540	N/A
22	7/4/2018	75	7371	5997	5147	399140	8250	N/A
23	7/4/2018	71.51	7205	5619	4853	398600	8241	N/A
24	7/4/2018	73.4	7456	5711	5277	403300	9978	N/A
25	7/5/2018	76	7588	4804	5011	403670	8311	N/A
26	7/5/2018	75.58	7168	5545	4375	404320	8252	N/A
27	7/5/2018	72.54	7079	5773	4264	407900	8244	N/A
28	7/5/2018	76.7	7438	5285	4688	402860	7884	N/A
29	7/6/2018	77.55	7292	5616	5023	398880	8138	N/A
30	7/6/2018	75.21	7130	4918	4882	395180	8119	N/A
31	7/6/2018	75.6	7174	5547	4278	399980	8215	N/A
32	7/7/2018	77.3	7234	4428	5112	401540	8225	N/A
33	7/7/2018	76.89	7168	5803	4728	395460	8209	N/A
34	7/7/2018	71.78	7266	5801	4244	404440	9870	N/A
35	7/8/2018	78	7383	5826	4763	396800	8174	N/A
36	7/9/2018	77.47	7229	5707	4605	405660	8282	N/A
37	7/9/2018	70.1	6937	6024	4300	404280	8230	N/A
38	7/9/2018	73.96	7474	6033	4241	394480	8111	N/A
39	7/10/2018	70.8	7227	4269	4905	394800	7927	N/A
40	7/10/2018	75.01	7346	6089	4440	406330	8298	N/A
41	7/10/2018	73.95	7048	6018	3931	401280	7964	N/A
42	7/11/2018	74.53	7183	5707	5098	399740	7874	N/A
43	7/11/2018	76.8	7029	6051	3955	396520	8027	N/A
44	7/11/2018	74.88	7323	6498	4843	401920	8078	N/A
45	7/11/2018	76.72	7513	6338	5167	406080	8303	N/A
46	7/12/2018	70.91	6998	5803	5100	408960	9509	N/A
47	7/12/2018	74.3	6973	5871	5176	403000	8084	N/A
48	7/13/2018	72.11	7484	6147	4690	410220	10383	N/A
49	7/13/2018	73.59	7147	6061	4211	407920	7908	N/A
50	7/13/2018	74.8	6991	5768	4155	405980	8050	N/A
51	7/13/2018	66.19	7429	6486	4549	408360	10583	N/A
52	7/14/2018	77.94	6492	6423	4085	411480	8082	N/A
53	7/14/2018	78.46	6700	6199	4546	411000	8062	N/A
54	7/14/2018	78.44	6695	5802	3922	413620	8041	N/A
	AVG=	74	7,333	5,644	4,597	21,573,300	458,351	TOTAL

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**EXHIBIT 3**

LITHOLOGY/ FORMATION	TOP DEPTH (TVD)	BOTTOM DEPTH (TVD)	TOP DEPTH (MD)	BOTTOM DEPTH (MD)
	From Surface	From Surface	From Surface	From Surface
Sandstone	0	177	0	177
Sandstone tr coal	est. 177	217	est. 177	217
Sandy shale	est. 217	232	est. 217	232
Calcareous Shale	est. 232	319	est. 232	319
Sandstone	est. 319	373	est. 319	373
Calcareous Shale	est. 373	1,065	est. 373	1,065
Silty Sandstone	est. 1065	1,137	est. 1065	1,137
Silty shale	est. 1137	1,287	est. 1137	1,287
Sandy Shale	est. 1287	1,357	est. 1287	1,357
Shale	est. 1357	1,563	est. 1357	1,579
Big Lime	1,563	2,212	1,579	2,254
Fifty Foot Sandstone	2,212	2,465	2,254	2,515
Gordon	2,465	2,667	2,515	2,723
Fifth Sandstone	2,667	2,731	2,723	2,790
Bayard	2,731	3,514	2,790	3,630
Speechley	3,514	3,836	3,630	3,976
Balltown	3,836	4,326	3,976	4,503
Bradford	4,326	4,756	4,503	4,968
Benson	4,756	5,008	4,968	5,243
Alexander	5,008	5,997	5,243	6,324
Sycamore	5,997	6,180	6,324	6,550
Middlesex	6,180	6,307	6,550	6,753
Burkett	6,307	6,335	6,753	6,808
Tully	6,335	6,378	6,808	6,910
Marcellus	6,378	NA	6,910	NA

\*Please note Antero determines formation tops based on mud logs that are only run on one well on a multi-well pad. The measured depth (MD) data on subsequent wells may be slightly different due to the well's unique departure.

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# ANTERO RESOURCES CORPORATION

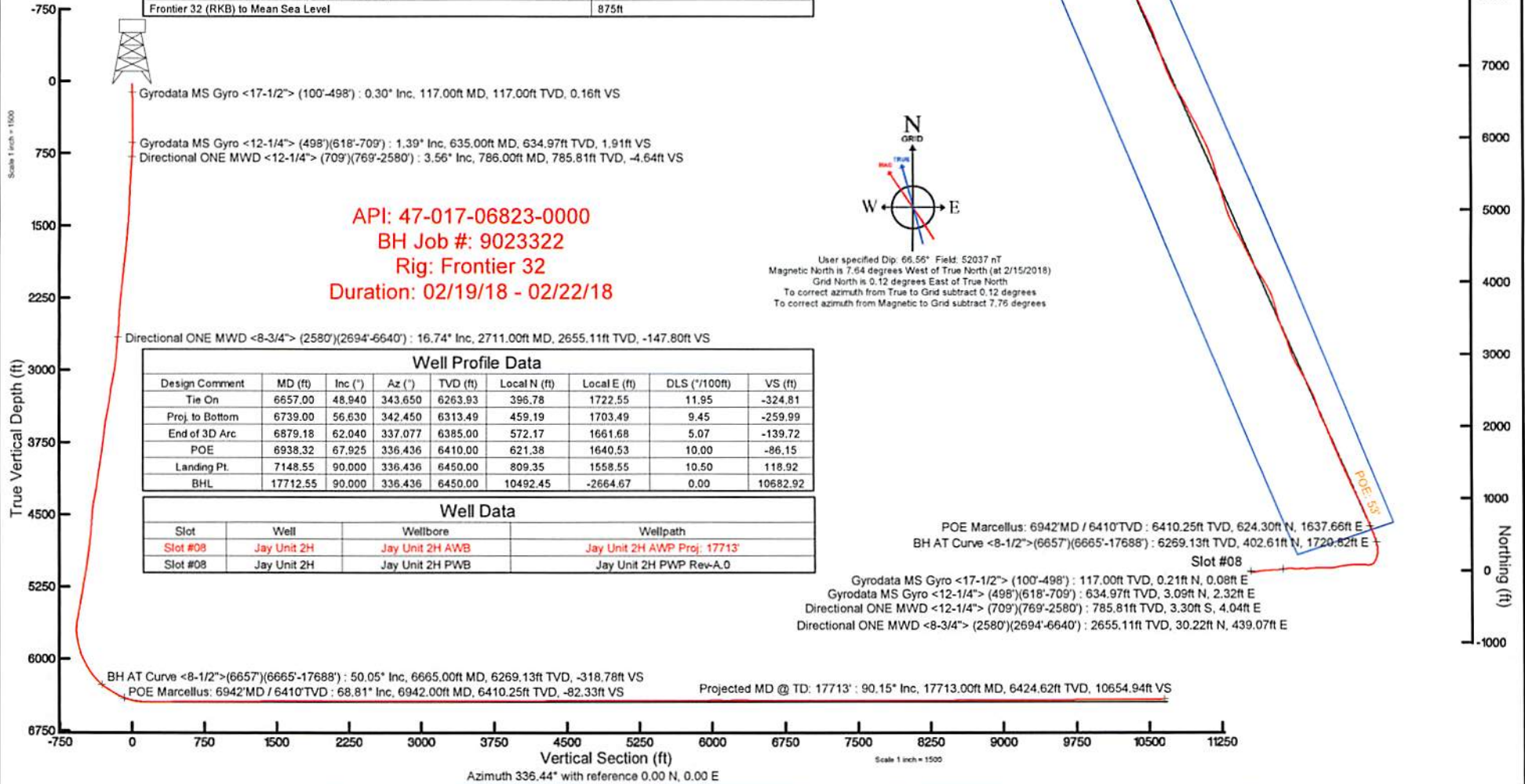
Location: Doddridge Co., WV  
 Field: Doddridge  
 Facility: Middle Pad

Slot: Slot #08  
 Well: Jay Unit 2H  
 Wellbore: Jay Unit 2H PWB



Plot reference wellpath is Jay Unit 2H PWP Rev-A.0	Grid System: NAD27 / UTM Zone 17 North, US feet
True vertical depths are referenced to Frontier 32 (RKB)	North Reference: Grid north
Measured depths are referenced to Frontier 32 (RKB)	Scale: True distance
Frontier 32 (RKB) to Mean Sea Level: 875 feet	Depths are in feet
Mean Sea Level to Ground level (At Slot: Slot #08): -843 feet	Created by: mccreid on 2018-05-14
Coordinates are in feet referenced to Slot	Database: WA_MPL_EASTERNUS_Defn

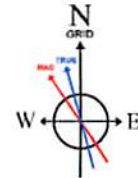
Location Information				
Facility Name	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude
Middle Pad	1695090.990	14279417.689	39°19'21.010"N	80°48'24.020"W
Slot	Local N (ft)	Local E (ft)	Grid East (US ft)	Grid North (US ft)
Slot #08	-25.15	65.28	1695156.246	14279392.544
			39°19'20.760"N	80°48'23.190"W
Comment	Jay Unit 2H			
Frontier 32 (RKB) to Ground level (At Slot: Slot #08)	32ft			
Mean Sea Level to Ground level (At Slot: Slot #08)	-843ft			
Frontier 32 (RKB) to Mean Sea Level	875ft			



API: 47-017-06823-0000  
 BH Job #: 9023322  
 Rig: Frontier 32  
 Duration: 02/19/18 - 02/22/18

Well Profile Data								
Design Comment	MD (ft)	Inc (°)	Az (°)	TVD (ft)	Local N (ft)	Local E (ft)	DLS (°/100ft)	VS (ft)
Tie On	6657.00	48.940	343.650	6263.93	396.78	1722.55	11.95	-324.81
Proj. to Bottom	6739.00	56.630	342.450	6313.49	459.19	1703.49	9.45	-259.99
End of 3D Arc	6879.18	62.040	337.077	6385.00	572.17	1661.68	5.07	-139.72
POE	6938.32	67.925	336.436	6410.00	621.38	1640.53	10.00	-86.15
Landing Pt.	7148.55	90.000	336.436	6450.00	809.35	1558.55	10.50	118.92
BHL	17712.55	90.000	336.436	6450.00	10492.45	-2664.67	0.00	10682.92

Well Data			
Slot	Well	Wellbore	Wellpath
Slot #08	Jay Unit 2H	Jay Unit 2H AWB	Jay Unit 2H AWP Proj: 17713'
Slot #08	Jay Unit 2H	Jay Unit 2H PWB	Jay Unit 2H PWP Rev-A.0



User specified Dip: 66.56° Field: 52037 nT  
 Magnetic North is 7.04 degrees West of True North (at 2/15/2018)  
 Grid North is 0.12 degrees East of True North  
 To correct azimuth from True to Grid subtract 0.12 degrees  
 To correct azimuth from Magnetic to Grid subtract 7.76 degrees

POE Marcellus: 6942' MD / 6410' TVD : 6410.25ft TVD, 624.30ft N, 1637.66ft E  
 BH AT Curve <8-1/2'>(6657')(6665'-17688') : 6269.13ft TVD, 402.61ft N, 1720.62ft E  
 Slot #08  
 Gyrodata MS Gyro <17-1/2'> (100'-498') : 117.00ft TVD, 0.21ft N, 0.08ft E  
 Gyrodata MS Gyro <12-1/4'> (498')(618'-709') : 634.97ft TVD, 3.09ft N, 2.32ft E  
 Directional ONE MWD <12-1/4'> (709')(769'-2580') : 785.81ft TVD, 3.30ft S, 4.04ft E  
 Directional ONE MWD <8-3/4'> (2580')(2694'-6640') : 2655.11ft TVD, 30.22ft N, 439.07ft E

BH AT Curve <8-1/2'>(6657')(6665'-17688') : 50.05° Inc, 6665.00ft MD, 6269.13ft TVD, -318.78ft VS  
 POE Marcellus: 6942' MD / 6410' TVD : 68.81° Inc, 6942.00ft MD, 6410.25ft TVD, -82.33ft VS  
 Projected MD @ TD: 17713' : 90.15° Inc, 17713.00ft MD, 6424.62ft TVD, 10654.94ft VS

Vertical Section (ft) Azimuth 336.44° with reference 0.00 N, 0.00 E





## Actual Wellpath Report

Jay Unit 2H AWP Proj: 17713'

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REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #08
Area	Doddridge Co., WV	Well	Jay Unit 2H
Field	Doddridge	Wellbore	Jay Unit 2H AWB
Facility	Middle Pad		

REPORT SETUP INFORMATION			
Projection System	NAD27 / UTM Zone 17 North, US feet	Software System	WellArchitect® 5.1
North Reference	Grid	User	Mccrrib
Scale	0.999603	Report Generated	5/14/2018 at 2:45:26 PM
Convergence at slot	0.12° East	Database/Source file	WA_MPL_EASTERNUS_Defn/Jay_Unit_2H_AWP_Proj_17713_.xml

WELLPATH LOCATION						
	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	-25.15	65.28	1695156.25	14279392.54	39°19'20.760"N	80°48'23.190"W
Facility Reference Pt			1695090.99	14279417.69	39°19'21.010"N	80°48'24.020"W
Field Reference Pt			0.00	0.00	0°00'00.000"	85°29'19.301"W

WELLPATH DATUM			
Calculation method	Minimum curvature	Frontier 32 (RKB) to Facility Vertical Datum	875.00ft
Horizontal Reference Pt	Slot	Frontier 32 (RKB) to Mean Sea Level	875.00ft
Vertical Reference Pt	Frontier 32 (RKB)	Frontier 32 (RKB) to Ground Level at Slot (Slot #08)	32.00ft
MD Reference Pt	Frontier 32 (RKB)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	336.44°

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# Actual Wellpath Report

Jay Unit 2H AWP Proj: 17713'  
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REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #08
Area	Doddridge Co., WV	Well	Jay Unit 2H
Field	Doddridge	Wellbore	Jay Unit 2H AWB
Facility	Middle Pad		

WELLPATH DATA (215 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	22.160	0.00	0.00	0.00	0.00	1695156.25	14279392.54	39°19'20.760"N	80°48'23.190"W	0.00	0.000	0.00	0.00	0.00	
32.00	0.00	22.160	32.00	0.00	0.00	0.00	1695156.25	14279392.54	39°19'20.760"N	80°48'23.190"W	0.00	0.000	0.00	0.00	0.00	
117.00	0.30	22.160	117.00	0.16	0.21	0.08	1695156.33	14279392.75	39°19'20.762"N	80°48'23.189"W	0.22	22.160	0.35	0.35	26.07	Gyrodata MS Gyro <17-1/2"> (100'-498')
217.00	0.46	14.290	217.00	0.66	0.84	0.28	1695156.53	14279393.38	39°19'20.768"N	80°48'23.186"W	0.88	18.594	0.17	0.16	-7.87	
317.00	0.74	357.960	316.99	1.57	1.87	0.36	1695156.60	14279394.42	39°19'20.778"N	80°48'23.185"W	1.91	10.823	0.33	0.28	-16.33	
417.00	0.52	26.280	416.99	2.47	2.92	0.54	1695156.78	14279395.47	39°19'20.789"N	80°48'23.183"W	2.97	10.383	0.37	-0.22	28.32	
515.00	0.77	41.830	514.98	3.03	3.81	1.17	1695157.42	14279396.36	39°19'20.798"N	80°48'23.175"W	3.99	17.082	0.31	0.26	15.87	
635.00	1.39	155.080	634.97	1.91	3.09	2.32	1695158.57	14279395.64	39°19'20.791"N	80°48'23.160"W	3.87	36.896	1.53	0.52	94.38	Gyrodata MS Gyro <12-1/4"> (498')(618'-709')
726.00	2.79	167.210	725.90	-1.37	-0.07	3.28	1695159.52	14279392.48	39°19'20.759"N	80°48'23.148"W	3.28	91.164	1.60	1.54	13.33	
786.00	3.56	166.380	785.81	-4.64	-3.30	4.04	1695160.29	14279389.24	39°19'20.727"N	80°48'23.139"W	5.22	129.250	1.29	1.28	-1.38	Directional ONE MWD <12-1/4"> (709')(769'-2580')
848.00	4.10	144.300	847.68	-8.70	-6.97	5.79	1695162.03	14279385.58	39°19'20.691"N	80°48'23.117"W	9.06	140.306	2.51	0.87	-35.61	
936.00	5.48	116.220	935.38	-14.99	-11.38	11.39	1695167.64	14279381.16	39°19'20.647"N	80°48'23.045"W	16.11	134.976	3.05	1.57	-31.91	
1024.00	7.45	95.370	1022.83	-20.96	-13.78	20.85	1695177.08	14279378.77	39°19'20.623"N	80°48'22.925"W	24.99	123.458	3.45	2.24	-23.69	
1112.00	9.50	83.730	1109.87	-25.88	-13.52	33.75	1695189.98	14279379.03	39°19'20.626"N	80°48'22.761"W	36.35	111.827	3.03	2.33	-13.23	
1200.00	11.15	77.810	1196.44	-29.71	-10.93	49.28	1695205.51	14279381.62	39°19'20.651"N	80°48'22.563"W	50.48	102.500	2.23	1.88	-6.73	
1288.00	13.02	79.040	1282.49	-33.55	-7.24	67.33	1695223.55	14279385.30	39°19'20.687"N	80°48'22.333"W	67.72	96.141	2.14	2.13	1.40	
1376.00	15.09	78.200	1367.85	-38.05	-3.02	88.28	1695244.49	14279389.53	39°19'20.728"N	80°48'22.067"W	88.33	91.957	2.36	2.35	-0.95	
1464.00	15.31	82.620	1452.77	-43.62	0.82	111.02	1695267.22	14279393.36	39°19'20.766"N	80°48'21.777"W	111.02	89.578	1.34	0.25	5.02	
1552.00	15.66	82.570	1537.58	-50.16	3.85	134.31	1695290.51	14279396.39	39°19'20.795"N	80°48'21.481"W	134.37	88.360	0.40	0.40	-0.06	
1640.00	15.39	81.610	1622.37	-56.52	7.09	157.64	1695313.83	14279399.63	39°19'20.827"N	80°48'21.184"W	157.80	87.426	0.42	-0.31	-1.09	
1729.00	15.58	84.460	1708.14	-63.30	9.96	181.22	1695337.40	14279402.50	39°19'20.855"N	80°48'20.884"W	181.50	86.853	0.88	0.21	3.20	
1817.00	16.39	84.880	1792.74	-70.89	12.21	205.35	1695361.52	14279404.75	39°19'20.876"N	80°48'20.577"W	205.72	86.597	0.93	0.92	0.48	
1905.00	16.97	85.230	1877.03	-78.95	14.39	230.52	1695386.67	14279406.93	39°19'20.897"N	80°48'20.256"W	230.97	86.428	0.67	0.66	0.40	
1993.00	16.13	87.270	1961.39	-87.43	16.04	255.53	1695411.67	14279408.58	39°19'20.913"N	80°48'19.938"W	256.03	86.408	1.16	-0.95	2.32	
2081.00	15.99	86.340	2045.95	-95.91	17.39	279.83	1695435.97	14279409.93	39°19'20.926"N	80°48'19.629"W	280.37	86.443	0.33	-0.16	-1.06	
2170.00	16.15	88.940	2131.48	-104.82	18.41	304.44	1695460.57	14279410.94	39°19'20.935"N	80°48'19.316"W	305.00	86.540	0.83	0.18	2.92	
2258.00	16.14	91.630	2216.01	-114.71	18.28	328.90	1695485.02	14279410.82	39°19'20.934"N	80°48'19.004"W	329.41	86.818	0.85	-0.01	3.06	
2346.00	14.95	84.610	2300.79	-123.45	19.00	352.43	1695508.54	14279411.54	39°19'20.940"N	80°48'18.705"W	352.95	86.914	2.53	-1.35	-7.98	
2434.00	14.19	80.910	2385.96	-129.69	21.77	374.39	1695530.48	14279414.31	39°19'20.967"N	80°48'18.426"W	375.02	86.672	1.37	-0.86	-4.20	
2523.00	12.63	82.940	2472.54	-135.18	24.69	394.82	1695550.91	14279417.23	39°19'20.996"N	80°48'18.166"W	395.59	86.421	1.83	-1.75	2.28	

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REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #08
Area	Doddridge Co., WV	Well	Jay Unit 2H
Field	Doddridge	Wellbore	Jay Unit 2H AWB
Facility	Middle Pad		

WELLPATH DATA (215 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
2597.00	12.340	81.730	2544.79	-139.56	26.82	410.67	1695566.75	14279419.36	39°19'21.016"N	80°48'17.964"W	411.55	86.263	0.53	-0.39	-1.64	
2711.00	16.740	84.250	2655.11	-147.80	30.22	439.07	1695595.15	14279422.76	39°19'21.049"N	80°48'17.602"W	440.11	86.062	3.90	3.86	2.21	Directional ONE MWD <8-3/4"> (2580')(2694'-6640')
2799.00	16.980	82.100	2739.33	-155.14	33.26	464.41	1695620.47	14279425.79	39°19'21.079"N	80°48'17.280"W	465.60	85.904	0.76	0.27	-2.44	
2888.00	19.110	82.440	2823.94	-162.67	36.96	491.73	1695647.78	14279429.49	39°19'21.115"N	80°48'16.932"W	493.12	85.701	2.40	2.39	0.38	
2976.00	20.030	85.390	2906.86	-171.53	40.07	521.03	1695677.07	14279432.60	39°19'21.145"N	80°48'16.559"W	522.57	85.602	1.53	1.05	3.35	
3064.00	19.030	92.780	2989.81	-182.79	40.58	550.39	1695706.42	14279433.11	39°19'21.149"N	80°48'16.186"W	551.88	85.783	3.03	-1.14	8.40	
3153.00	20.520	96.420	3073.56	-197.03	38.14	580.39	1695736.40	14279430.67	39°19'21.125"N	80°48'15.804"W	581.64	86.241	2.17	1.67	4.09	
3241.00	22.830	93.300	3155.34	-212.45	35.43	612.76	1695768.76	14279427.96	39°19'21.097"N	80°48'15.392"W	613.78	86.691	2.93	2.62	-3.55	
3329.00	22.150	87.360	3236.66	-226.09	35.21	646.38	1695802.37	14279427.74	39°19'21.094"N	80°48'14.964"W	647.34	86.882	2.69	-0.77	-6.75	
3418.00	22.220	84.840	3319.07	-237.39	37.50	679.90	1695835.88	14279430.03	39°19'21.116"N	80°48'14.538"W	680.94	86.843	1.07	0.08	-2.83	
3506.00	23.600	92.990	3400.15	-250.52	38.07	714.08	1695870.04	14279430.60	39°19'21.121"N	80°48'14.103"W	715.09	86.948	3.93	1.57	9.26	
3594.00	23.040	91.770	3480.96	-265.76	36.62	748.88	1695904.83	14279429.15	39°19'21.106"N	80°48'13.660"W	749.78	87.200	0.84	-0.64	-1.39	
3682.00	22.050	86.760	3562.24	-278.87	37.02	782.59	1695938.52	14279429.55	39°19'21.109"N	80°48'13.231"W	783.46	87.291	2.45	-1.12	-5.69	
3771.00	20.790	81.970	3645.10	-288.90	40.18	814.91	1695970.83	14279432.70	39°19'21.140"N	80°48'12.820"W	815.90	87.178	2.42	-1.42	-5.38	
3859.00	21.580	88.220	3727.16	-299.09	42.86	846.56	1696002.46	14279435.39	39°19'21.166"N	80°48'12.417"W	847.64	87.102	2.72	0.90	7.10	
3947.00	21.130	85.570	3809.12	-310.29	44.59	878.55	1696034.44	14279437.12	39°19'21.182"N	80°48'12.010"W	879.68	87.095	1.21	-0.51	-3.01	
4035.00	20.560	91.050	3891.37	-321.93	45.53	909.81	1696065.70	14279438.06	39°19'21.191"N	80°48'11.612"W	910.95	87.135	2.31	-0.65	6.23	
4124.00	20.430	90.010	3974.73	-334.64	45.24	940.97	1696096.84	14279437.77	39°19'21.187"N	80°48'11.215"W	942.06	87.247	0.43	-0.15	-1.17	
4212.00	22.070	90.460	4056.75	-347.52	45.11	972.86	1696128.72	14279437.63	39°19'21.185"N	80°48'10.810"W	973.91	87.345	1.87	1.86	0.51	
4300.00	21.160	87.450	4138.56	-359.94	45.68	1005.27	1696161.11	14279438.21	39°19'21.190"N	80°48'10.397"W	1006.30	87.398	1.63	-1.03	-3.42	
4388.00	22.320	91.650	4220.31	-372.75	45.91	1037.84	1696193.67	14279438.43	39°19'21.192"N	80°48'09.983"W	1038.85	87.467	2.20	1.32	4.77	
4477.00	23.350	93.240	4302.33	-387.91	44.42	1072.34	1696228.16	14279436.95	39°19'21.176"N	80°48'09.544"W	1073.26	87.628	1.35	1.16	1.79	
4565.00	22.620	85.850	4383.36	-401.40	44.66	1106.64	1696262.45	14279437.19	39°19'21.178"N	80°48'09.107"W	1107.54	87.689	3.38	-0.83	-8.40	
4653.00	22.410	81.130	4464.66	-411.27	48.47	1140.10	1696295.89	14279441.00	39°19'21.215"N	80°48'08.682"W	1141.13	87.565	2.07	-0.24	-5.36	
4741.00	20.910	77.660	4546.45	-418.58	54.42	1172.01	1696327.79	14279446.94	39°19'21.273"N	80°48'08.275"W	1173.28	87.342	2.24	-1.70	-3.94	
4830.00	22.310	78.340	4629.19	-425.16	61.22	1204.07	1696359.84	14279453.74	39°19'21.339"N	80°48'07.867"W	1205.63	87.089	1.60	1.57	0.76	
4918.00	22.620	78.690	4710.51	-432.19	67.92	1237.03	1696392.78	14279460.44	39°19'21.405"N	80°48'07.448"W	1238.89	86.857	0.38	0.35	0.40	
5006.00	24.430	81.720	4791.20	-440.58	73.86	1271.63	1696427.37	14279466.37	39°19'21.463"N	80°48'07.007"W	1273.78	86.676	2.47	2.06	3.44	
5094.00	24.190	83.950	4871.40	-450.80	78.38	1307.57	1696463.30	14279470.89	39°19'21.507"N	80°48'06.550"W	1309.92	86.570	1.08	-0.27	2.53	
5183.00	22.830	84.470	4953.01	-461.63	81.97	1342.89	1696498.60	14279474.48	39°19'21.541"N	80°48'06.100"W	1345.39	86.507	1.55	-1.53	0.58	

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# Actual Wellpath Report

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REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #08
Area	Doddridge Co., WV	Well	Jay Unit 2H
Field	Doddridge	Wellbore	Jay Unit 2H AWB
Facility	Middle Pad		

WELLPATH DATA (215 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
5271.00	23.130	84.560	5034.02	-472.29	85.25	1377.09	1696532.79	14279477.76	39°19'21.573"N	80°48'05.665"W	1379.73	86.458	0.34	0.34	0.10	
5359.00	24.230	92.010	5114.63	-485.47	86.26	1412.35	1696568.04	14279478.77	39°19'21.582"N	80°48'05.216"W	1414.98	86.505	3.62	1.25	8.47	
5447.00	23.620	89.940	5195.07	-500.29	85.64	1448.03	1696603.70	14279478.15	39°19'21.575"N	80°48'04.762"W	1450.56	86.615	1.18	-0.69	-2.35	
5536.00	22.500	86.640	5276.96	-513.28	86.66	1482.86	1696638.52	14279479.17	39°19'21.585"N	80°48'04.319"W	1485.39	86.655	1.92	-1.26	-3.71	
5624.00	22.740	92.580	5358.20	-526.59	86.88	1516.67	1696672.31	14279479.39	39°19'21.586"N	80°48'03.889"W	1519.15	86.722	2.61	0.27	6.75	
5712.00	21.550	91.140	5439.71	-540.84	85.79	1549.82	1696705.45	14279478.30	39°19'21.575"N	80°48'03.467"W	1552.19	86.832	1.49	-1.35	-1.64	
5801.00	23.420	93.400	5521.94	-555.69	84.42	1583.82	1696739.44	14279476.93	39°19'21.560"N	80°48'03.034"W	1586.07	86.949	2.31	2.10	2.54	
5845.00	23.190	94.010	5562.35	-563.66	83.29	1601.19	1696756.80	14279475.80	39°19'21.549"N	80°48'02.813"W	1603.36	87.022	0.76	-0.52	1.39	
5889.00	22.780	89.590	5602.86	-571.02	82.75	1618.35	1696773.95	14279475.26	39°19'21.543"N	80°48'02.595"W	1620.47	87.073	4.03	-0.93	-10.05	
5933.00	22.480	80.960	5643.49	-576.48	84.13	1635.18	1696790.78	14279476.64	39°19'21.556"N	80°48'02.381"W	1637.35	87.055	7.57	-0.68	-19.61	
5977.00	22.830	70.930	5684.11	-579.26	88.24	1651.56	1696807.15	14279480.75	39°19'21.597"N	80°48'02.172"W	1653.92	86.942	8.81	0.80	-22.80	
6021.00	23.770	60.090	5724.54	-578.95	95.46	1667.33	1696822.91	14279487.96	39°19'21.668"N	80°48'01.972"W	1670.06	86.723	9.96	2.14	-24.64	
6065.00	24.120	49.200	5764.77	-575.30	105.76	1681.82	1696837.40	14279498.26	39°19'21.769"N	80°48'01.787"W	1685.15	86.402	10.06	0.80	-24.75	
6109.00	23.300	39.610	5805.07	-568.70	118.34	1694.18	1696849.75	14279510.84	39°19'21.893"N	80°48'01.629"W	1698.31	86.004	8.95	-1.86	-21.80	
6153.00	21.170	30.180	5845.81	-560.07	131.92	1703.73	1696859.30	14279524.41	39°19'22.027"N	80°48'01.507"W	1708.83	85.572	9.43	-4.84	-21.43	
6198.00	21.390	26.030	5887.74	-549.95	146.32	1711.42	1696866.98	14279538.80	39°19'22.169"N	80°48'01.409"W	1717.66	85.113	3.38	0.49	-9.22	
6242.00	24.390	21.660	5928.28	-538.34	161.98	1718.29	1696873.85	14279554.46	39°19'22.324"N	80°48'01.321"W	1725.91	84.615	7.83	6.82	-9.93	
6286.00	27.850	16.610	5967.78	-524.08	180.28	1724.59	1696880.15	14279572.75	39°19'22.505"N	80°48'01.241"W	1733.98	84.032	9.34	7.86	-11.48	
6330.00	30.660	12.770	6006.17	-507.19	201.07	1730.01	1696885.56	14279593.54	39°19'22.710"N	80°48'01.171"W	1741.65	83.370	7.68	6.39	-8.73	
6374.00	31.220	11.570	6043.91	-488.82	223.19	1734.77	1696890.33	14279615.64	39°19'22.929"N	80°48'01.110"W	1749.07	82.669	1.89	1.27	-2.73	
6418.00	32.350	8.370	6081.31	-469.50	246.01	1738.77	1696894.33	14279638.45	39°19'23.154"N	80°48'01.058"W	1756.09	81.947	4.61	2.57	-7.27	
6462.00	34.750	2.570	6117.99	-448.25	270.19	1741.05	1696896.60	14279662.63	39°19'23.393"N	80°48'01.029"W	1761.89	81.179	9.10	5.45	-13.18	
6507.00	37.940	358.200	6154.24	-423.87	296.84	1741.19	1696896.74	14279689.27	39°19'23.656"N	80°48'01.026"W	1766.31	80.325	9.13	7.09	-9.71	
6551.00	40.660	353.170	6188.29	-397.57	324.60	1739.06	1696894.61	14279717.02	39°19'23.931"N	80°48'01.052"W	1769.10	79.427	9.52	6.18	-11.43	
6595.00	43.750	347.540	6220.89	-368.90	353.71	1734.07	1696889.63	14279746.11	39°19'24.219"N	80°48'01.115"W	1769.78	78.471	11.09	7.02	-12.80	
6639.00	46.790	343.750	6251.86	-338.05	383.97	1726.30	1696881.86	14279776.36	39°19'24.518"N	80°48'01.213"W	1768.48	77.460	9.23	6.91	-8.61	
6657.00	48.940	343.650	6263.93	-324.81	396.78	1722.55	1696878.11	14279789.17	39°19'24.645"N	80°48'01.260"W	1767.66	77.028	11.95	11.94	-0.56	
6665.00	50.050	343.330	6269.13	-318.78	402.61	1720.82	1696876.38	14279795.00	39°19'24.702"N	80°48'01.282"W	1767.29	76.832	14.20	13.88	-4.00	BH AT Curve <8-1/2">(6657')(6665'-17688')
6709.00	52.930	341.970	6296.52	-284.55	435.47	1710.55	1696866.11	14279827.84	39°19'25.027"N	80°48'01.412"W	1765.11	75.717	6.98	6.55	-3.09	
6740.00	55.640	342.400	6314.62	-259.51	459.43	1702.85	1696858.42	14279851.79	39°19'25.264"N	80°48'01.509"W	1763.74	74.901	8.81	8.74	1.39	



# Actual Wellpath Report

Jay Unit 2H AWP Proj: 17713

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Operator	Area	Field	Facility
ANTERO RESOURCES CORPORATION	Doddridge Co., WV	Doddridge	Middle Pad
		Well	Wellbore
		Jay Unit 2H	Jay Unit 2H AWP
		Slot	Slot #08

## REFERENCE WELLPATH IDENTIFICATION

MD (ft)	Inclination (°)	Azimuth (°)	TVD (ft)	Vert Sect (ft)	North (ft)	East (ft)	Grid East (ft)	Grid North (ft)	Latitude	Longitude	Closure Dist (ft)	Closure Dir (°)	DLS (ft/100ft)	Build Rate (ft/100ft)	Turn Rate (ft/100ft)	Comments
6785.00†	58.078	341.154	6339.22	-222.00	495.22	1691.06	1696846.64	14279887.56	39°19'25.618"N	80°48'01.658"W	1762.08	73.678	5.89	5.42	-2.77	Burket: 6785MD / 6339TVD
6790.00	58.350	341.020	6341.85	-217.76	499.24	1689.69	1696845.26	14279891.58	39°19'25.658"N	80°48'01.676"W	1761.90	73.540	5.89	5.43	-2.69	
6837.00	61.040	337.940	6365.57	-177.25	537.22	1675.45	1696831.03	14279929.55	39°19'26.034"N	80°48'01.856"W	1759.47	72.222	8.05	5.72	-6.55	
6840.00†	61.247	337.822	6367.02	-174.62	539.66	1674.46	1696830.04	14279931.99	39°19'26.058"N	80°48'01.868"W	1759.28	72.137	7.72	6.91	-3.92	Tully: 6840MD / 6367TVD
6885.00	64.370	336.110	6387.58	-134.61	576.48	1658.80	1696814.38	14279968.80	39°19'26.422"N	80°48'02.067"W	1756.11	70.836	6.94	7.72	-3.81	
6915.00†	66.661	336.142	6400.01	-107.31	601.45	1647.75	1696803.34	14279993.75	39°19'26.669"N	80°48'02.207"W	1754.08	69.947	7.64	6.94	0.11	Hamilton: 6915MD / 6400TVD
6932.00	67.960	336.160	6406.57	-91.62	615.79	1641.41	1696797.00	14280008.09	39°19'26.811"N	80°48'02.287"W	1753.12	69.436	7.64	7.64	0.10	
6942.00†	68.811	336.301	6410.25	-82.33	624.30	1637.66	1696793.25	14280016.60	39°19'26.895"N	80°48'02.334"W	1752.62	69.132	8.61	8.51	1.41	POE Marcellus: 6942MD / 6410TVD
6979.00	71.960	336.810	6422.67	-47.48	656.27	1623.79	1696779.39	14280048.56	39°19'27.212"N	80°48'02.510"W	1751.40	67.993	8.61	8.51	1.38	
7026.00	75.450	338.260	6435.86	-2.38	697.96	1606.56	1696762.17	14280090.22	39°19'27.624"N	80°48'02.728"W	1751.63	66.518	7.99	7.43	3.09	
7074.00	79.890	338.360	6446.11	44.47	741.52	1589.24	1696744.85	14280133.77	39°19'28.055"N	80°48'02.947"W	1753.72	64.987	9.25	9.25	0.21	
7121.00	86.620	338.510	6451.62	91.09	784.90	1572.09	1696727.71	14280177.13	39°19'28.484"N	80°48'03.164"W	1757.14	63.468	14.32	14.32	0.32	
7170.00	90.550	338.050	6452.83	140.04	830.40	1553.97	1696709.60	14280222.61	39°19'28.934"N	80°48'03.393"W	1761.93	61.881	8.08	8.02	-0.94	
7259.00	90.770	333.040	6450.46	329.94	1003.15	1475.05	1696630.71	14280395.30	39°19'30.643"N	80°48'04.933"W	1783.84	55.781	2.43	0.00	-2.43	
7360.00	90.770	333.040	6450.46	329.94	1003.15	1475.05	1696630.71	14280395.30	39°19'30.643"N	80°48'04.933"W	1783.84	55.781	2.43	0.00	-2.43	
7455.00	90.180	334.920	6449.67	424.81	1088.19	1432.71	1696588.38	14280480.30	39°19'31.485"N	80°48'04.929"W	1799.11	49.872	1.20	-0.62	1.03	
7551.00	90.830	334.560	6448.83	520.74	1174.68	1391.06	1696546.76	14280566.76	39°19'32.340"N	80°48'05.457"W	1820.69	49.821	0.88	0.68	0.56	
7646.00	90.310	337.090	6447.88	615.72	1261.34	1352.16	1696507.87	14280653.38	39°19'33.198"N	80°48'05.949"W	1849.14	46.990	2.72	-0.55	2.66	
7740.00	90.220	336.390	6447.45	709.72	1347.70	1315.04	1696470.77	14280739.70	39°19'34.052"N	80°48'06.419"W	1882.98	44.297	0.70	-0.10	-0.74	
7834.00	90.490	336.880	6446.87	803.72	1433.98	1277.77	1696433.50	14280825.96	39°19'34.906"N	80°48'06.891"W	1920.68	41.703	0.60	0.29	0.52	
7928.00	90.120	336.770	6446.37	897.71	1520.40	1240.77	1696396.52	14280912.34	39°19'35.761"N	80°48'07.360"W	1962.43	39.217	0.41	-0.39	-0.12	
8024.00	90.550	336.940	6445.80	993.71	1608.67	1203.04	1696358.81	14281000.57	39°19'36.634"N	80°48'07.837"W	2008.76	36.791	0.48	0.45	0.18	
8213.00	89.750	336.460	6445.65	1182.70	1782.24	1128.25	1696284.05	14281174.08	39°19'38.351"N	80°48'08.784"W	2109.35	32.336	0.31	-0.20	-0.23	
8309.00	90.680	339.100	6445.29	1278.67	1871.10	1091.95	1696247.77	14281262.90	39°19'39.230"N	80°48'09.244"W	2166.42	30.267	2.92	0.97	2.75	
8403.00	90.340	338.720	6444.46	1372.58	1958.80	1058.13	1696213.96	14281350.57	39°19'40.097"N	80°48'09.627"W	2226.33	28.378	0.54	-0.36	-0.40	
8498.00	90.280	332.150	6443.94	1467.51	2045.16	1018.66	1696174.50	14281436.89	39°19'40.952"N	80°48'10.171"W	2284.80	26.477	6.92	-0.06	-6.92	
8593.00	89.940	335.390	6443.76	1562.39	2130.36	976.68	1696132.53	14281522.06	39°19'41.795"N	80°48'10.703"W	2343.57	24.629	3.43	-0.36	3.41	
8688.00	90.060	340.990	6443.76	1657.31	2218.53	941.40	1696097.27	14281610.19	39°19'42.667"N	80°48'11.150"W	2410.00	22.993	5.90	0.13	5.89	
8782.00	90.120	342.270	6443.61	1750.92	2307.73	911.77	1696067.66	14281699.36	39°19'43.549"N	80°48'11.524"W	2481.32	21.559	1.36	0.06	1.36	

† = interpolated/extrapolated station

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# Actual Wellpath Report

Jay Unit 2H AWP Proj: 17713'

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REFERENCE WELLPATH IDENTIFICATION				
Operator	ANTERO RESOURCES CORPORATION		Slot	Slot #08
Area	Doddridge Co., WV		Well	Jay Unit 2H
Field	Doddridge		Wellbore	Jay Unit 2H AWP
Facility	Middle Pad			

WELLPATH DATA (215 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
8877.00	90.120	337.470	6443.41	1845.72	2396.91	879.09	1696034.98	14281788.49	39°19'44.431"N	80°48'11.938"W	2553.03	20.141	5.05	0.00	-5.05	
8972.00	89.850	335.240	6443.44	1940.72	2483.92	840.99	1695996.90	14281875.48	39°19'45.292"N	80°48'12.420"W	2622.43	18.705	2.36	-0.28	-2.35	
9067.00	90.030	333.240	6443.54	2035.64	2569.48	799.70	1695955.63	14281961.00	39°19'46.139"N	80°48'12.943"W	2691.05	17.288	2.11	0.19	-2.11	
9165.00	90.150	331.420	6443.38	2133.39	2656.27	754.20	1695910.14	14282047.75	39°19'46.998"N	80°48'13.520"W	2761.26	15.851	1.86	0.12	-1.86	
9260.00	89.970	330.530	6443.28	2227.95	2739.34	708.10	1695864.07	14282130.79	39°19'47.820"N	80°48'14.104"W	2829.38	14.493	0.96	-0.19	-0.94	
9356.00	89.660	330.110	6443.59	2323.41	2822.74	660.57	1695816.55	14282214.16	39°19'48.645"N	80°48'14.707"W	2899.00	13.171	0.54	-0.32	-0.44	
9450.00	89.690	332.580	6444.13	2417.03	2905.22	615.50	1695771.50	14282296.61	39°19'49.461"N	80°48'15.278"W	2969.70	11.962	2.63	0.03	2.63	
9545.00	90.030	340.120	6444.36	2511.96	2992.18	577.42	1695733.43	14282383.53	39°19'50.321"N	80°48'15.760"W	3047.38	10.922	7.94	0.36	7.94	
9640.00	90.680	342.060	6443.77	2606.64	3082.04	546.63	1695702.66	14282473.36	39°19'51.210"N	80°48'16.150"W	3130.14	10.057	2.15	0.68	2.04	
9735.00	89.850	341.440	6443.33	2701.23	3172.26	516.88	1695672.92	14282563.54	39°19'52.103"N	80°48'16.526"W	3214.10	9.254	1.09	-0.87	-0.65	
9830.00	89.850	337.740	6443.58	2796.07	3261.28	483.76	1695639.81	14282652.53	39°19'52.983"N	80°48'16.945"W	3296.97	8.437	3.89	0.00	-3.89	
9925.00	90.060	334.690	6443.65	2891.06	3348.20	445.45	1695601.52	14282739.41	39°19'53.843"N	80°48'17.430"W	3377.71	7.578	3.22	0.22	-3.21	
10021.00	90.370	340.840	6443.29	2986.98	3437.02	409.14	1695565.22	14282828.20	39°19'54.722"N	80°48'17.890"W	3461.29	6.788	6.41	0.32	6.41	
10116.00	90.150	346.180	6442.86	3081.23	3528.08	382.18	1695538.28	14282919.22	39°19'55.622"N	80°48'18.230"W	3548.72	6.183	5.63	-0.23	5.62	
10210.00	90.490	345.890	6442.34	3173.91	3619.30	359.50	1695515.60	14283010.40	39°19'56.524"N	80°48'18.516"W	3637.11	5.672	0.48	0.36	-0.31	
10305.00	90.520	343.560	6441.50	3267.91	3710.93	334.47	1695490.59	14283102.00	39°19'57.430"N	80°48'18.832"W	3725.98	5.150	2.45	0.03	-2.45	
10400.00	90.090	340.370	6440.99	3362.45	3801.25	305.07	1695461.19	14283192.28	39°19'58.324"N	80°48'19.204"W	3813.48	4.588	3.39	-0.45	-3.36	
10495.00	89.970	333.280	6440.94	3457.39	3888.53	267.70	1695423.84	14283279.53	39°19'59.187"N	80°48'19.677"W	3897.74	3.938	7.46	-0.13	-7.46	
10590.00	89.750	331.320	6441.18	3552.14	3972.64	223.55	1695379.70	14283363.60	39°20'00.019"N	80°48'20.237"W	3978.92	3.221	2.08	-0.23	-2.06	
10686.00	89.850	325.760	6441.51	3647.19	4054.50	173.46	1695329.64	14283445.42	39°20'00.829"N	80°48'20.872"W	4058.21	2.450	5.79	0.10	-5.79	
10780.00	90.650	328.650	6441.10	3739.96	4133.50	122.55	1695278.75	14283524.40	39°20'01.611"N	80°48'21.518"W	4135.32	1.698	3.19	0.85	3.07	
10875.00	90.030	329.410	6440.54	3834.16	4214.96	73.67	1695229.89	14283605.82	39°20'02.418"N	80°48'22.138"W	4215.60	1.001	1.03	-0.65	0.80	
10971.00	90.000	331.720	6440.51	3929.65	4298.56	26.50	1695182.73	14283689.39	39°20'03.245"N	80°48'22.736"W	4298.64	0.353	2.41	-0.03	2.41	
11066.00	90.250	334.720	6440.31	4024.49	4383.36	-16.30	1695139.95	14283774.16	39°20'04.084"N	80°48'23.278"W	4383.39	359.787	3.17	0.26	3.16	
11161.00	90.120	334.580	6440.00	4119.44	4469.21	-56.98	1695099.29	14283859.98	39°20'04.933"N	80°48'23.793"W	4469.58	359.270	0.20	-0.14	-0.15	
11256.00	90.120	332.210	6439.80	4214.30	4554.15	-99.52	1695056.77	14283944.88	39°20'05.774"N	80°48'24.332"W	4555.23	358.748	2.49	0.00	-2.49	
11351.00	90.030	331.210	6439.68	4308.98	4637.80	-144.54	1695011.76	14284028.50	39°20'06.601"N	80°48'24.903"W	4640.05	358.215	1.06	-0.09	-1.05	
11445.00	90.060	330.270	6439.60	4402.51	4719.81	-190.49	1694965.84	14284110.47	39°20'07.413"N	80°48'25.486"W	4723.65	357.689	1.00	0.03	-1.00	
11540.00	90.310	335.770	6439.29	4497.30	4804.43	-233.57	1694922.77	14284195.06	39°20'08.250"N	80°48'26.032"W	4810.11	357.217	5.80	0.26	5.79	
11635.00	90.400	334.010	6438.71	4592.26	4890.45	-273.88	1694882.48	14284281.04	39°20'09.101"N	80°48'26.542"W	4898.11	356.795	1.86	0.09	-1.86	



# Actual Wellpath Report

Jay Unit 2H AWP Proj: 17713'  
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REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #08
Area	Doddridge Co., WV	Well	Jay Unit 2H
Field	Doddridge	Wellbore	Jay Unit 2H AWB
Facility	Middle Pad		

WELLPATH DATA (215 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
11730.00	90.250	340.600	6438.17	4687.20	4978.04	-310.51	1694845.86	14284368.60	39°20'09.968"N	80°48'27.006"W	4987.72	356.431	6.94	-0.16	6.94	
11825.00	89.970	342.610	6437.98	4781.81	5068.19	-340.49	1694815.89	14284458.71	39°20'10.859"N	80°48'27.385"W	5079.61	356.157	2.14	-0.29	2.12	
11919.00	89.850	345.120	6438.13	4875.01	5158.48	-366.61	1694789.78	14284548.96	39°20'11.752"N	80°48'27.715"W	5171.49	355.935	2.67	-0.13	2.67	
12014.00	89.820	344.070	6438.40	4969.05	5250.06	-391.85	1694764.56	14284640.51	39°20'12.658"N	80°48'28.034"W	5264.66	355.732	1.11	-0.03	-1.11	
12110.00	89.690	344.370	6438.82	5064.17	5342.44	-417.95	1694738.46	14284732.86	39°20'13.572"N	80°48'28.364"W	5358.77	355.527	0.34	-0.14	0.31	
12204.00	89.820	343.830	6439.22	5157.33	5432.84	-443.70	1694712.72	14284823.22	39°20'14.466"N	80°48'28.689"W	5450.93	355.331	0.59	0.14	-0.57	
12299.00	90.250	344.470	6439.16	5251.47	5524.23	-469.65	1694686.78	14284914.57	39°20'15.369"N	80°48'29.017"W	5544.16	355.141	0.81	0.45	0.67	
12394.00	91.320	344.350	6437.86	5345.54	5615.73	-495.18	1694661.27	14285006.03	39°20'16.274"N	80°48'29.339"W	5637.52	354.961	1.13	1.13	-0.13	
12489.00	90.680	339.840	6436.20	5440.04	5706.09	-524.37	1694632.08	14285096.36	39°20'17.168"N	80°48'29.708"W	5730.13	354.749	4.79	-0.67	-4.75	
12584.00	89.480	340.870	6436.07	5534.81	5795.56	-556.31	1694600.16	14285185.79	39°20'18.053"N	80°48'30.112"W	5822.19	354.517	1.66	-1.26	1.08	
12679.00	89.720	339.160	6436.73	5629.62	5884.83	-588.78	1694567.70	14285275.03	39°20'18.936"N	80°48'30.523"W	5914.21	354.287	1.82	0.25	-1.80	
12774.00	89.690	334.430	6437.22	5724.59	5972.12	-626.20	1694530.30	14285362.28	39°20'19.799"N	80°48'30.997"W	6004.86	354.014	4.98	-0.03	-4.98	
12870.00	89.910	331.370	6437.55	5820.40	6057.57	-669.93	1694486.59	14285447.70	39°20'20.645"N	80°48'31.551"W	6094.50	353.689	3.20	0.23	-3.19	
12965.00	92.000	337.160	6435.97	5915.27	6143.09	-711.15	1694445.38	14285533.19	39°20'21.491"N	80°48'32.074"W	6184.12	353.397	6.48	2.20	6.09	
13060.00	89.970	331.680	6434.34	6010.15	6228.73	-752.15	1694404.40	14285618.79	39°20'22.338"N	80°48'32.593"W	6273.98	353.115	6.15	-2.14	-5.77	
13154.00	89.570	329.950	6434.71	6103.70	6310.79	-797.98	1694358.58	14285700.82	39°20'23.150"N	80°48'33.174"W	6361.04	352.793	1.89	-0.43	-1.84	
13249.00	90.650	335.030	6434.53	6198.44	6395.02	-841.85	1694314.73	14285785.02	39°20'23.984"N	80°48'33.730"W	6450.19	352.501	5.47	1.14	5.35	
13344.00	89.780	332.210	6434.17	6293.31	6480.12	-884.05	1694272.55	14285870.08	39°20'24.826"N	80°48'34.265"W	6540.14	352.231	3.11	-0.92	-2.97	
13440.00	89.480	328.370	6434.79	6388.74	6563.48	-931.62	1694225.00	14285953.41	39°20'25.651"N	80°48'34.869"W	6629.27	351.921	4.01	-0.31	-4.00	
13535.00	89.660	326.530	6435.51	6482.57	6643.55	-982.73	1694173.91	14286033.45	39°20'26.443"N	80°48'35.517"W	6715.84	351.586	1.95	0.19	-1.94	
13630.00	89.600	329.950	6436.12	6576.58	6724.31	-1032.73	1694123.93	14286114.18	39°20'27.242"N	80°48'36.151"W	6803.16	351.269	3.60	-0.06	3.60	
13724.00	89.880	334.860	6436.55	6670.32	6807.59	-1076.26	1694080.42	14286197.43	39°20'28.056"N	80°48'36.703"W	6892.15	351.016	5.23	0.30	5.22	
13819.00	89.480	337.220	6437.08	6765.31	6894.40	-1114.83	1694041.86	14286284.20	39°20'28.925"N	80°48'37.192"W	6983.95	350.815	2.52	-0.42	2.48	
13914.00	89.780	337.720	6437.69	6860.29	6982.15	-1151.23	1694005.47	14286371.91	39°20'29.793"N	80°48'37.652"W	7076.42	350.637	0.61	0.32	0.53	
14009.00	89.690	340.610	6438.13	6955.17	7070.93	-1185.02	1693971.70	14286460.65	39°20'30.671"N	80°48'38.080"W	7169.54	350.486	3.04	-0.08	3.04	
14104.00	90.310	341.750	6438.13	7049.84	7160.84	-1215.66	1693941.07	14286550.53	39°20'31.561"N	80°48'38.468"W	7263.30	350.365	1.37	0.65	1.20	
14199.00	90.280	342.630	6437.64	7144.36	7251.29	-1244.72	1693912.02	14286640.94	39°20'32.455"N	80°48'38.835"W	7357.34	350.260	0.93	-0.03	0.93	
14294.00	89.820	341.090	6437.56	7238.93	7341.56	-1274.30	1693882.46	14286731.18	39°20'33.348"N	80°48'39.209"W	7451.34	350.153	1.69	-0.48	-1.62	
14389.00	90.490	339.670	6437.30	7333.71	7431.05	-1306.19	1693850.57	14286820.63	39°20'34.233"N	80°48'39.613"W	7544.97	350.031	1.65	0.71	-1.49	
14484.00	90.250	337.060	6436.69	7428.64	7519.34	-1341.22	1693815.56	14286908.89	39°20'35.106"N	80°48'40.056"W	7638.02	349.887	2.76	-0.25	-2.75	

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# Actual Wellpath Report

Jay Unit 2H AWP Proj: 17713'

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REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION		Slot #08
Area	Doddridge Co., WV		Well Jay Unit 2H
Field	Doddridge		Wellbore Jay Unit 2H AWB
Facility	Middle Pad		

WELLPATH DATA (215 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
14579.00	90.370	332.780	6436.17	7523.59	7605.37	-1381.47	1693775.32	14286994.88	39°20'35.957"N	80°48'40.566"W	7729.82	349.705	4.51	0.13	-4.51	
14674.00	89.910	333.480	6435.94	7618.43	7690.11	-1424.41	1693732.40	14287079.59	39°20'36.796"N	80°48'41.111"W	7820.91	349.506	0.88	-0.48	0.74	
14768.00	88.980	335.290	6436.85	7712.36	7774.86	-1465.05	1693691.78	14287164.31	39°20'37.634"N	80°48'41.626"W	7911.69	349.329	2.16	-0.99	1.93	
14864.00	90.340	335.490	6437.42	7808.34	7862.14	-1505.02	1693651.82	14287251.55	39°20'38.498"N	80°48'42.132"W	8004.89	349.163	1.43	1.42	0.21	
14960.00	90.770	332.910	6436.49	7904.25	7948.56	-1546.80	1693610.06	14287337.93	39°20'39.353"N	80°48'42.662"W	8097.66	348.988	2.72	0.45	-2.69	
15055.00	89.820	335.150	6436.00	7999.16	8033.96	-1588.40	1693568.48	14287423.30	39°20'40.198"N	80°48'43.189"W	8189.47	348.816	2.56	-1.00	2.36	
15150.00	90.150	333.850	6436.03	8094.10	8119.70	-1629.29	1693527.60	14287509.01	39°20'41.046"N	80°48'43.707"W	8281.55	348.654	1.41	0.35	-1.37	
15245.00	89.850	333.770	6436.03	8189.00	8204.95	-1671.22	1693485.69	14287594.22	39°20'41.889"N	80°48'44.238"W	8373.42	348.487	0.33	-0.32	-0.08	
15340.00	90.430	334.780	6435.80	8283.93	8290.53	-1712.46	1693444.47	14287679.77	39°20'42.736"N	80°48'44.761"W	8465.54	348.329	1.23	0.61	1.06	
15435.00	90.150	335.930	6435.31	8378.91	8376.87	-1752.07	1693404.88	14287766.08	39°20'43.590"N	80°48'45.263"W	8558.14	348.187	1.25	-0.29	1.21	
15530.00	90.370	336.130	6434.88	8473.91	8463.68	-1790.66	1693366.30	14287852.85	39°20'44.449"N	80°48'45.752"W	8651.03	348.054	0.31	0.23	0.21	
15625.00	90.000	338.810	6434.58	8568.88	8551.42	-1827.06	1693329.91	14287940.56	39°20'45.317"N	80°48'46.213"W	8744.42	347.940	2.85	-0.39	2.82	
15721.00	90.000	336.740	6434.58	8664.85	8640.28	-1863.37	1693293.62	14288029.38	39°20'46.196"N	80°48'46.673"W	8838.93	347.830	2.16	0.00	-2.16	
15815.00	89.970	334.170	6434.60	8758.83	8725.78	-1902.41	1693254.59	14288114.85	39°20'47.042"N	80°48'47.168"W	8930.76	347.701	2.73	-0.03	-2.73	
15910.00	89.940	334.080	6434.68	8853.75	8811.26	-1943.87	1693213.15	14288200.29	39°20'47.888"N	80°48'47.693"W	9023.13	347.559	0.10	-0.03	-0.09	
16005.00	90.370	335.260	6434.42	8948.70	8897.12	-1984.52	1693172.52	14288286.12	39°20'48.737"N	80°48'48.208"W	9115.76	347.426	1.32	0.45	1.24	
16100.00	90.340	337.360	6433.83	9043.70	8984.11	-2022.68	1693134.37	14288373.07	39°20'49.598"N	80°48'48.692"W	9208.99	347.312	2.21	-0.03	2.21	
16194.00	90.090	336.100	6433.48	9137.69	9070.46	-2059.82	1693097.25	14288459.39	39°20'50.452"N	80°48'49.162"W	9301.40	347.206	1.37	-0.27	-1.34	
16290.00	90.370	338.670	6433.09	9233.67	9159.07	-2096.73	1693060.35	14288547.96	39°20'51.328"N	80°48'49.630"W	9396.00	347.106	2.69	0.29	2.68	
16385.00	90.280	344.000	6432.55	9328.29	9249.04	-2127.12	1693029.97	14288637.90	39°20'52.218"N	80°48'50.014"W	9490.49	347.048	5.61	-0.09	5.61	
16480.00	90.520	342.670	6431.89	9422.60	9340.05	-2154.36	1693002.74	14288728.87	39°20'53.118"N	80°48'50.358"W	9585.29	347.011	1.42	0.25	-1.40	
16575.00	90.340	333.440	6431.18	9517.45	9428.08	-2189.83	1692967.29	14288816.85	39°20'53.989"N	80°48'50.808"W	9679.04	346.924	9.72	-0.19	-9.72	
16671.00	90.310	336.790	6430.63	9613.41	9515.14	-2230.22	1692926.92	14288903.89	39°20'54.850"N	80°48'51.319"W	9773.01	346.809	3.49	-0.03	3.49	
16766.00	90.620	336.820	6429.86	9708.41	9602.46	-2267.63	1692889.52	14288991.17	39°20'55.714"N	80°48'51.793"W	9866.58	346.713	0.33	0.33	0.03	
16861.00	90.490	335.730	6428.94	9803.40	9689.42	-2305.85	1692851.31	14289078.10	39°20'56.574"N	80°48'52.278"W	9960.01	346.614	1.16	-0.14	-1.15	
16956.00	90.280	334.090	6428.30	9898.36	9775.45	-2346.14	1692811.04	14289164.10	39°20'57.425"N	80°48'52.788"W	10053.05	346.504	1.74	-0.22	-1.73	
17051.00	90.250	335.990	6427.86	9993.33	9861.58	-2386.22	1692770.97	14289250.19	39°20'58.278"N	80°48'53.296"W	10146.17	346.397	2.00	-0.03	2.00	
17147.00	90.400	334.700	6427.32	10089.31	9948.82	-2426.27	1692730.95	14289337.40	39°20'59.141"N	80°48'53.804"W	10240.40	346.295	1.35	0.16	-1.34	
17242.00	90.150	334.260	6426.86	10184.25	10034.55	-2467.20	1692690.03	14289423.10	39°20'59.989"N	80°48'54.322"W	10333.40	346.187	0.53	-0.26	-0.46	
17337.00	90.180	333.990	6426.59	10279.17	10120.03	-2508.65	1692648.59	14289508.54	39°21'00.834"N	80°48'54.848"W	10426.33	346.078	0.29	0.03	-0.28	

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# Actual Wellpath Report

Jay Unit 2H AWP Proj: 17713'

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## REFERENCE WELLPATH IDENTIFICATION

Operator	ANTERO RESOURCES CORPORATION	Slot #08
Area	Doddridge Co., WV	Jay Unit 2H
Field	Doddridge	Jay Unit 2H AWB
Facility	Middle Pad	

## WELLPATH DATA (215 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 [1/100ft]	Build Rate [1/100ft]	Turn Rate [1/100ft]	Comments
17432.00	90.090	337.190	6426.36	10374.15	10206.52	-2547.91	1692609.35	14289595.00	39°21'01.690"N	80°48'55.345"W	10519.74	345.983	3.37	-0.09	3.37	
17527.00	90.310	340.190	6426.03	10469.07	10295.02	-2582.43	1692574.85	14289683.46	39°21'02.565"N	80°48'55.782"W	10613.97	345.918	3.17	0.23	3.16	
17623.00	90.710	336.550	6425.18	10564.99	10384.24	-2617.81	1692539.48	14289772.64	39°21'03.448"N	80°48'56.231"W	10709.12	345.851	3.81	0.42	-3.79	
17688.00	90.150	333.790	6424.69	10629.97	10443.22	-2645.10	1692512.20	14289831.60	39°21'04.031"N	80°48'56.576"W	10773.00	345.787	4.33	-0.86	-4.25	
17713.00	90.150	333.790	6424.62	10654.94	10465.65	-2656.14	1692501.16	14289854.02	39°21'04.253"N	80°48'56.716"W	10797.45	345.759	0.00	0.00	0.00	Projected MD @ TD: 17713'

## HOLE & CASING SECTIONS - Ref Wellbore: Jay Unit 2H AWB Ref Wellpath: Jay Unit 2H AWP Proj: 17713'

String/Diameter	Start MD [ft]	End MD [ft]	Interval [ft]	Start TVD [ft]	End TVD [ft]	Start N/S [ft]	End N/S [ft]	Start E/W [ft]	End E/W [ft]
20in Conductor	32.00	112.00	80.00	32.00	112.00	0.00	0.18	0.00	0.07
17.5in Open Hole	112.00	547.80	435.80	112.00	547.78	0.18	0.00	0.07	0.00
13.375in Casing Surface	32.00	547.80	515.80	32.00	547.78	0.00	0.00	0.00	0.00
12.25in Open Hole	547.80	2667.90	2120.10	547.78	2613.66	4.00	28.96	1.47	28.96
9.625in Casing Intermediate	32.00	2667.90	2635.90	32.00	2613.66	0.00	0.00	0.00	0.00
8.75in Open Hole	2667.90	6739.00	4071.10	2613.66	6314.05	28.96	458.65	427.33	1703.10
8.5in Open Hole	6739.00	17713.00	10974.00	6314.05	6424.62	458.65	10465.65	1703.10	-2656.14
5.5in Casing Production	32.00	17713.00	17681.00	32.00	6424.62	0.00	10465.65	0.00	-2656.14

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# Actual Wellpath Report

Jay Unit 2H AWP Proj: 17713'  
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REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #08
Area	Doddridge Co., WV	Well	Jay Unit 2H
Field	Doddridge	Wellbore	Jay Unit 2H AWB
Facility	Middle Pad		

TARGETS								
Name	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
Jay Unit 2H POE Rev-2	6410.00	621.38	1640.53	1696796.12	14280013.68	39°19'26.866"N	80°48'02.298"W	point
Jay Unit 2H BHL Rev-2	6450.00	10492.45	-2664.67	1692492.63	14289880.81	39°21'04.518"N	80°48'56.824"W	point
Jay Unit 2H LP Rev-1	6450.00	809.35	1558.55	1696714.18	14280201.57	39°19'28.726"N	80°48'03.336"W	point

WELLPATH COMPOSITION - Ref Wellbore: Jay Unit 2H AWB Ref Wellpath: Jay Unit 2H AWP Proj: 17713'				
Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
32.00	515.00	Gyrodata standard - Drop gyro or Multi-shot	01 Gyrodata MS Gyro <17-1/2"> (100'-498')	Jay Unit 2H AWB
515.00	726.00	Gyrodata standard - Drop gyro or Multi-shot	02 Gyrodata MS Gyro <12-1/4"> (498')(618'-709')	Jay Unit 2H AWB
726.00	2597.00	ISCWSA MWD, Rev. 4 (Standard)	03 Directional ONE MWD <12-1/4"> (709')(769'-2580')	Jay Unit 2H AWB
2597.00	6657.00	ISCWSA MWD, Rev. 4 (Standard)	04 Directional ONE MWD <8-3/4"> (2580')(2694'-6640')	Jay Unit 2H AWB
6657.00	17688.00	BHI AutoTrak Curve (Short)	05 BH AT Curve <8-1/2">(6657')(6665'-17688')	Jay Unit 2H AWB
17688.00	17713.00	Blind Drilling (std)	Projection to bit	Jay Unit 2H AWB

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# Actual Wellpath Report

Jay Unit 2H AWP Proj: 17713'  
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REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #08
Area	Doddridge Co., WV	Well	Jay Unit 2H
Field	Doddridge	Wellbore	Jay Unit 2H AWB
Facility	Middle Pad		

COMMENTS
<p><b>Wellpath general comments</b>                      API: 47-017-06823-0000                      BH Job #: 9023322                      Rig: Frontier 32                      Duration: 02/19/18 - 02/22/18                      Gyrodata MS Gyro &lt;17-1/2"&gt; (100'-498')                      Gyrodata MS Gyro &lt;12-1/4"&gt; (498')(618'-709')                      Directional ONE MWD &lt;12-1/4"&gt; (709')(769'-2580')                      Directional ONE MWD &lt;8-3/4"&gt; (2580')(2694'-6640')                      BH AT Curve &lt;8-1/2"&gt;(6657')(6665'-17688')                      Burket: 6785'MD / 6339'TVD                      Tully: 6840'MD / 6367'TVD                      Hamilton: 6915'MD / 6400'TVD                      POE Marcellus: 6942'MD / 6410'TVD                      Projected MD @ TD: 17713'</p>

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## Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	6/5/2018
Job End Date:	7/15/2018
State:	West Virginia
County:	Doddridge
API Number:	47-017-06823-00-00
Operator Name:	Antero Resources Corporation
Well Name and Number:	Jay 2H
Latitude:	39.32244444
Longitude:	-80.80644444
Datum:	NAD83
Federal Well:	NO
Indian Well:	NO
True Vertical Depth:	6,452
Total Base Water Volume (gal):	19,860,208
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
Fresh Water	Operator	Base Fluid	Water	7732-18-5	100.00000	88.26614	Density = 8.330
Ingredients	Listed Above	Listed Above	Water	7732-18-5	100.00000	0.16937	

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SAND-PREMIUM WHITE-40/70, BULK	Halliburton	Proppant					
				Listed Below			
HYDROCHLORIC ACID	Halliburton	Solvent					
				Listed Below			
MC B-8614	Halliburton	Biocide					
				Listed Below			
WG-36 GELLING AGENT	Halliburton	Gelling Agent					
				Listed Below			
SCALECHEK LP-70	Halliburton	Scale Inhibitor					
				Listed Below			
SAND-COMMON WHITE-100 MESH, SSA-2, BULK (100003676)	Halliburton	Proppant					
				Listed Below			
SP BREAKER	Halliburton	Breaker					
				Listed Below			
SAND-PREMIUM WHITE 30/50, BULK	Halliburton	Proppant					

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				Listed Below			
HAI-OS ACID INHIBITOR	Halliburton	Corrosion Inhibitor					
				Listed Below			
EXCELERATE PS-2	Halliburton	Friction Reducer					
				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	11.50829	
			Guar gum	9000-30-0	100.00000	0.02539	
			Hydrochloric acid	7647-01-0	15.00000	0.01785	
			Inorganic salt	Proprietary	30.00000	0.01710	
			Hydrotreated light petroleum distillate	64742-47-8	30.00000	0.01710	
			Acrylamide acrylate polymer	Proprietary	30.00000	0.01710	Denise Tuck, Halliburton, 3000 N. Sam Houston Pkwy E., Houston, TX 77032, 281-871-6226
			Ethylene glycol	107-21-1	60.00000	0.00844	
			Glutaraldehyde	111-30-8	30.00000	0.00279	
			Telmer	Proprietary	10.00000	0.00141	
			Sodium persulfate	7775-27-1	100.00000	0.00057	
			Quaternary ammonium compounds, benzyl-C12-16-alkyldimethyl chlorides	68424-85-1	5.00000	0.00047	
			Methanol	67-56-1	60.00000	0.00014	
			Sodium polyacrylate	9003-04-7	1.00000	0.00014	
			Ethanol	64-17-5	1.00000	0.00009	
			Ethoxylated alcohols	Proprietary	30.00000	0.00007	
			Modified thiourea polymer	Proprietary	30.00000	0.00007	

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			Fatty acids, tall oil	Proprietary	30.00000	0.00007	
			Olefins	Proprietary	5.00000	0.00003	
			Propargyl alcohol	107-19-7	10.00000	0.00002	
			Phosphoric acid	7664-38-2	0.10000	0.00001	
			Acrylic acid	79-10-7	0.01000	0.00000	
			Sodium sulfate	7757-82-6	0.10000	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)

6,958' to Bottom Hole

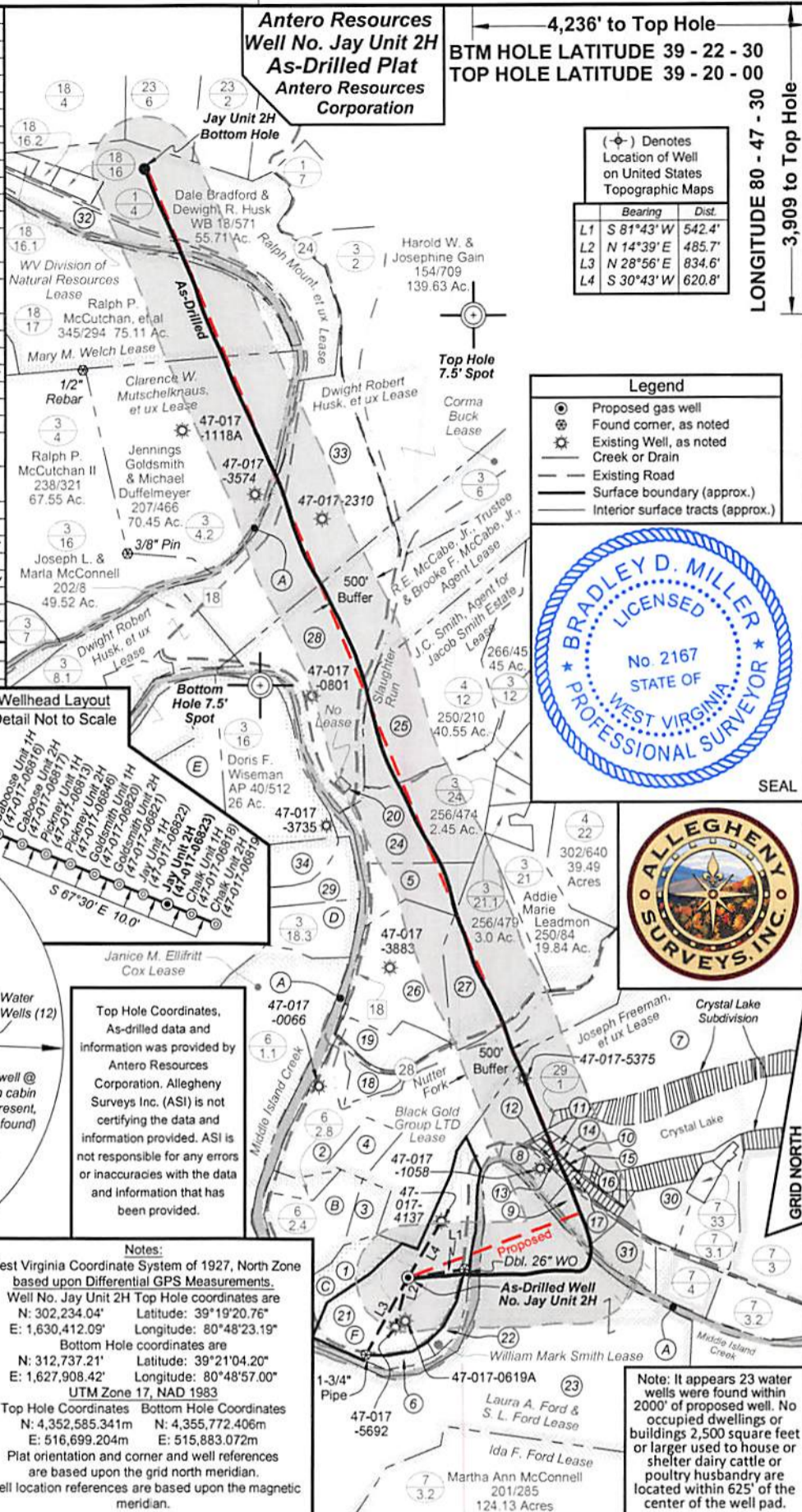
4,236' to Top Hole

BTM HOLE LATITUDE 39 - 22 - 30  
TOP HOLE LATITUDE 39 - 20 - 00

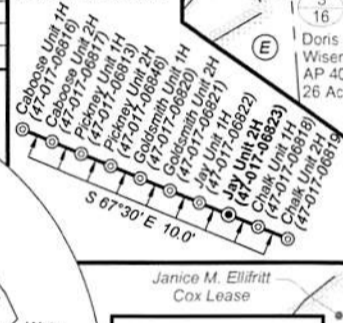
LONGITUDE 80 - 47 - 30  
3,909' to Top Hole  
8,580' to Bottom Hole

TM/Par	Bk /Pg	Acres	Owner(s)
1	6/2.5	253/222	8.66 William R. Lynch/Dixie J. Craig
2	6/1	258/546	80.4 Randall Lynch & Dixie Craig
3	6/2.6	266/36	3.52 Dominion Field Services, Inc.
4	6/1.3	305/416	4.68 Equitrans, L.P.
5	3/17.1	358/652	9.90 Antero Resources Corporation
6	6/2.3	197/659	6.00 Carol & Alfreda Painter
7	4/28	WB 28/314	357.75 John Paul Strickling, et al
8	6/7	AP 35/212	3.46 Debra L. Stout
9	7/4.2	293/340	4.19 Joseph D. & Brittany McConnell
10	29/46	-/-	Lot 231 Crystal Lake Club
11	29/46.2	302/278	p/o Lot 231 Ronald O. & Barbara C. Moran
12	29/90	249/639	Lot 204 Shaun L. & Mary K. Cass
13	29/91	256/408	Lot 205 Janet M. Esposito & Scarlett C. Dennison
14	29/92	260/127	Lot 206 James L. & Patricia Reed
15	29/93	162/328	Lot 207 Douglas L. & Joyce M. Hall
16	29/94	219/583	Lot 208 Connie Ruckman
17	29/95	219/583	Lot 209 Glen H. Montgomery, et al
18	3/23	WB 47/723	3.00 James W. & Lynda S. Beatty
19	3/19.1	265/582	7.00 William R. Lynch & Dixie J. Craig
20	3/10.1	259/312	0.25 Randy K. Smith
21	6/2	214/279	32.19 Joel W. & Bonnie Ostroff
22	6/2.7	294/473	2.16 Antero Resources Corporation
23	7/5	167/782	176.5 Ronald Perry Gains, Perry Blackburn, Ryan Webb
24	3/17	349/553	25.9 Skylar Ora & Clifford Warren Montgomery, et al
25	3/11	283/682	43.0 Robert Goddard, et al
26	3/19	WB 47/333	21.64 James W. & Lynda Beatty, et al
27	3/20	AP 41/150	25.5 Thomas K. Jr. & Penny A. Porter
28	3/10	259/310	75.0 Mason Memorial Park
29	3/18	228/723	6.84 Robert P. Holden & Sherri Bailey
30	7/1	96/487	6.54 Steven R. Chippis, et al
31	7/4.1	301/466	6.49 Dale Bradford / Dewight R. Husk
32	1/4.1	261/268	11.17 David J. & Debra S. Smith
33	3/5	170/587	53.0
34	3/18.2	232/135	6.00

Lessors
A WV Division of Natural Resources Lease
B William Mark Smith Lease
C William Randall Lynch, et ux, Memorandum of Oil & Gas Lease
D James Douglas White Lease
E Lewis Maxwell, et al Lease
F William Randall Lynch & Dixie Craig Lease

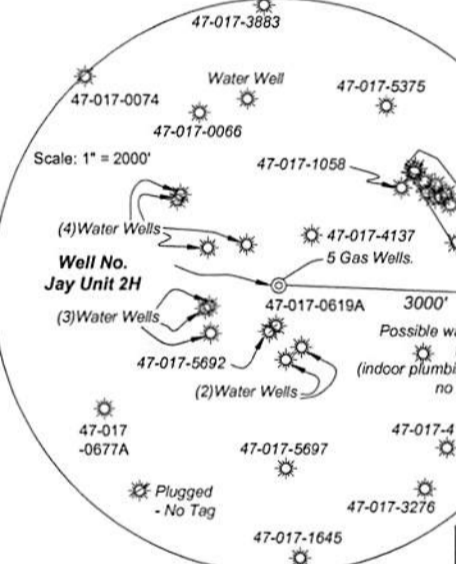


Wellhead Layout Detail Not to Scale



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.

Notes:  
West Virginia Coordinate System of 1927, North Zone based upon Differential GPS Measurements.  
Well No. Jay Unit 2H Top Hole coordinates are  
N: 302,234.04' Latitude: 39°19'20.76"  
E: 1,630,412.09' Longitude: 80°48'23.19"  
Bottom Hole coordinates are  
N: 312,737.21' Latitude: 39°21'04.20"  
E: 1,627,908.42' Longitude: 80°48'57.00"  
UTM Zone 17, NAD 1983  
Top Hole Coordinates Bottom Hole Coordinates  
N: 4,352,585.341m N: 4,355,772.406m  
E: 516,699.204m E: 515,883.072m  
Plat orientation and corner and well references are based upon the grid north meridian.  
Well location references are based upon the magnetic meridian.



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

FILE NO: 36-30-WU-15  
DRAWING NO: Jay 2H As-Drilled Well Plat  
SCALE: 1" = 1500'  
MINIMUM DEGREE OF ACCURACY: Submeter  
PROVEN SOURCE OF ELEVATION: CORS, Marietta, OH

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

DATE: January 16 2019  
Operator's Well No. Jay Unit 2H  
API WELL NO  
47 - 017 - 06823  
STATE COUNTY PERMIT

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

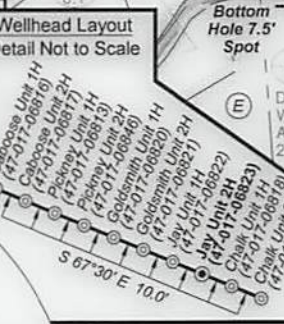
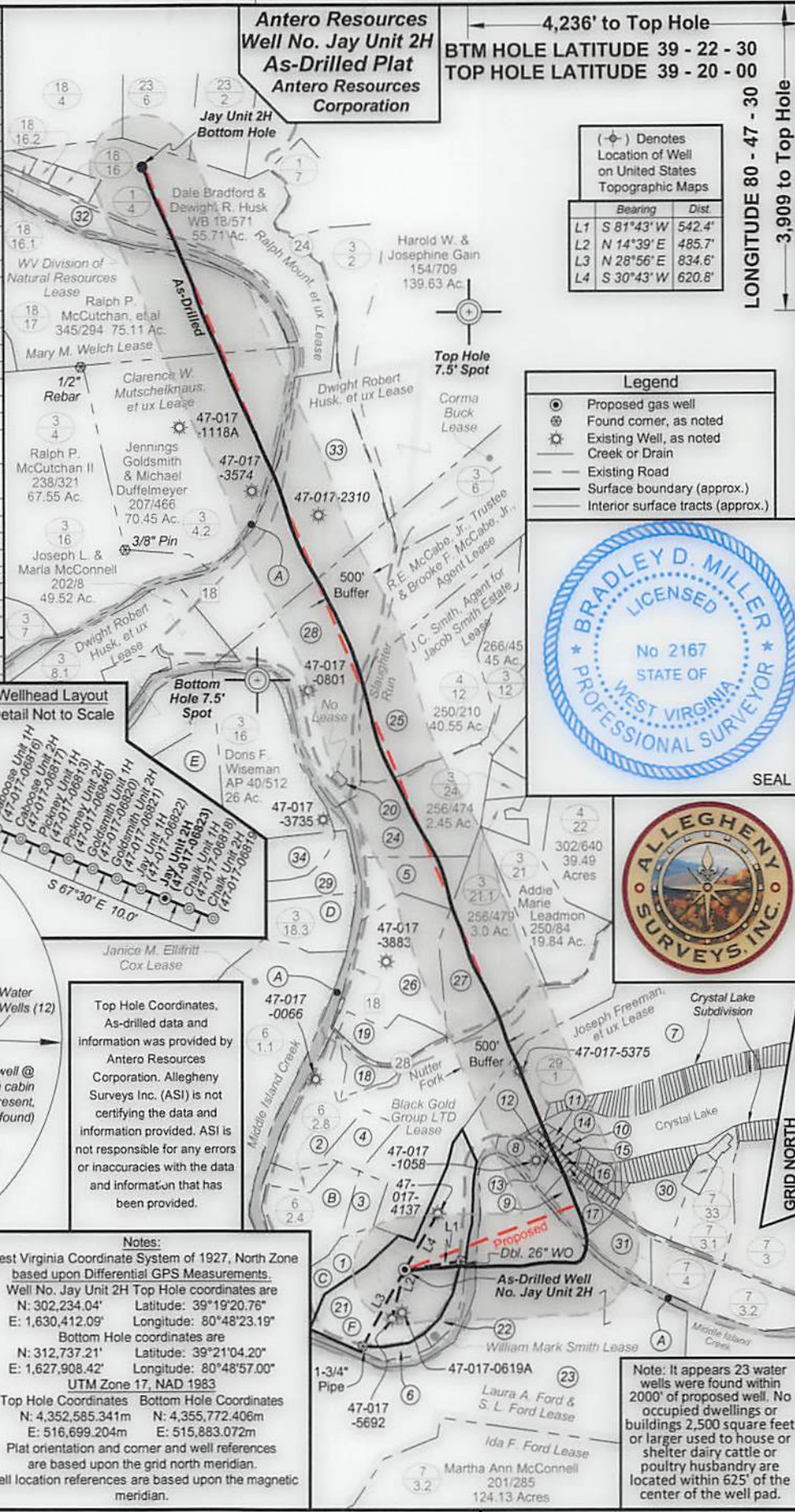
LOCATION: ELEVATION: As-Drilled Grade - 843' WATERSHED: Headwaters Middle Island Creek QUADRANGLE: West Union 5.15; 68;  
DISTRICT: West Union William (2) WV Div. of Natural Resources; Ralph Mount, et ux; COUNTY: Doddridge 32.15; 53;  
SURFACE OWNER: Randall Lynch & Dixie Craig Joseph Freeman, et ux; William Randall Lynch & Dixie Craig; Dwight Robert Husk, et ux; William Mark Smith; Mary W. Welch; ACREAGE: 32.19 82.21; 290;  
ROYALTY OWNER: R.E. McCabe Jr., Trustee & Brooke F. McCabe Jr. Agent; Black Gold Group, LTD; LEASE NO: ACREAGE: 75; 56.07;  
PROPOSED WORK:  DRILL  CONVERT  DRILL DEEPER  FRACTURE OR STIMULATE  PLUG OFF OLD FORMATION 20.49; 600;  
 PERFORATE NEW FORMATION  OTHER PHYSICAL CHANGE IN WELL (SPECIFY) As-Drilled  
 PLUG AND ABANDON  CLEAN OUT AND REPLUG TARGET FORMATION: Marcellus Shale ESTIMATED DEPTH: 17,713' MD 6,424' TVD

WELL OPERATOR: Antero Resources Corporation DESIGNATED AGENT: Dianna Stamper - CT Corporation System  
ADDRESS: 1615 Wynkoop Street ADDRESS: 5400 D Big Tyler Road  
Denver, CO 80202 Charleston, WV 25313



TM/Par	Bk / Pg	Acres	Owner(s)
1	6/2.5	253/222	8.66 William R. Lynch/Dixie J. Craig
2	6/1	258/546	80.4 Randall Lynch & Dixie Craig
3	6/2.6	266/36	3.52 Dominion Field Services, Inc.
4	6/1.3	305/416	4.68 Equitrans, L.P.
5	3/17.1	358/652	9.90 Antero Resources Corporation
6	6/2.3	197/659	6.00 Carol & Alfreda Painter
7	4/28	WB 28/314	357.75 John Paul Strickling, et al
8	6/7	AP 35/212	3.46 Debra L. Stout
9	7/4.2	293/340	4.19 Joseph D. & Brittany McConnell
10	29/46	- / -	Lot 231 Crystal Lake Club
11	29/46.2	302/278	p/o Lot 231 Ronald O. & Barbara C. Moran
12	29/90	249/639	Lot 204 Shaun L. & Mary K. Cass
13	29/91	256/408	Lot 205 Janet M. Esposito & Scarlett C. Dennison
14	29/92	260/127	Lot 206 James L. & Patricia Reed
15	29/93	162/328	Lot 207 Douglas L. & Joyce M. Hall
16	29/94	219/583	Lot 208 Connie Ruckman
17	29/95	219/583	Lot 209 Glen H. Montgomery, et al
18	3/23	WB 47/723	3.00 James W. & Lynda S. Beatty
19	3/19.1	265/582	7.00 William R. Lynch & Dixie J. Craig
20	3/10.1	259/312	0.25 Randy K. Smith
21	6/2	214/279	32.19 Joel W. & Bonnie Ostroff
22	6/2.7	294/473	2.16 Antero Resources Corporation
23	7/5	167/782	176.5 Ronald Perry Gains, Perry Blackburn, Ryan Webb
24	3/17	349/553	25.9 Skylar Ora & Clifford Warren Montgomery, et al
25	3/11	283/682	43.0 Robert Goddard, et al
26	3/19	WB 47/333	21.64 James W. & Lynda Beatty, et al
27	3/20	AP 41/150	25.5 Thomas K. Jr. & Penny A. Porter
28	3/10	259/310	75.0 Mason Memorial Park
29	3/18	228/723	6.84 Robert P. Holden & Sherri Bailey
30	7/1	96/487	6.54 Steven R. Chippis, et al
31	7/4.1	301/466	5.49 Dale Bradford / Dewight R. Husk
32	1/4.1	261/268	11.17 David J. & Debra S. Smith
33	3/5	170/587	53.0
34	3/18.2	232/135	6.00

Lessors  
 A WV Division of Natural Resources Lease  
 B William Mark Smith Lease  
 C William Randall Lynch, et ux, Memorandum of Oil & Gas Lease  
 D James Douglas White Lease  
 E Lewis Maxwell, et al Lease  
 F William Randall Lynch & Dixie Craig Lease



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.

**Notes:**  
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 Well No. Jay Unit 2H Top Hole coordinates are  
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 E: 1,630,412.09' Longitude: 80°48'23.19"  
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 N: 312,737.21' Latitude: 39°21'04.20"  
 E: 1,627,908.42' Longitude: 80°48'57.00"  
 UTM Zone 17, NAD 1983  
 Top Hole Coordinates Bottom Hole Coordinates  
 N: 4,352,585.341m N: 4,355,772.406m  
 E: 516,699.204m E: 515,883.072m  
 Plat orientation and corner and well references are based upon the grid north meridian.  
 Well location references are based upon the magnetic meridian.

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**

FILE NO: 36-30-WU-15  
 DRAWING NO: Jay 2H As-Drilled Well Plat  
 SCALE: 1" = 1500'  
 MINIMUM DEGREE OF ACCURACY: Submeter  
 PROVEN SOURCE OF ELEVATION: CORS, Marietta, OH

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

DATE: January 16 2019  
 Operator's Well No. Jay Unit 2H  
 API WELL NO  
 47 - 017 - 06823  
 STATE COUNTY PERMIT

WELL TYPE:  OIL  GAS  LIQUID INJECTION  WASTE DISPOSAL  
 (IF GAS) PRODUCTION:  STORAGE  DEEP  SHALLOW  
 LOCATION: ELEVATION: As-Drilled Grade - 843' WATERSHED: Headwaters Middle Island Creek QUADRANGLE: West Union  
 DISTRICT: West Union (2) WV Div. of Natural Resources; Ralph Mount, et ux; COUNTY: Doddridge 5.15; 68;  
 SURFACE OWNER: William Randall Lynch & Dixie Craig Joseph Freeman, et ux; William Randall Lynch & Dixie Craig; 32.15; 53;  
 ROYALTY OWNER: R.E. McCabe Jr., Trustee & Brooke F. McCabe Jr. Agent; Black Gold Group, LTD; Dwight Robert Husk, et ux; William Mark Smith; Mary W. Welch; J. C. Smith, Agent for Jacob Smith Estate; Clarence W. Mustchelknaus, et ux; ACREAGE: 32.19 82.21; 290;  
 PROPOSED WORK:  DRILL  CONVERT  DRILL DEEPER  FRACTURE OR STIMULATE  PLUG OFF OLD FORMATION  
 PERFORATE NEW FORMATION  OTHER PHYSICAL CHANGE IN WELL (SPECIFY) As-Drilled ACREAGE: 75; 56.07;  
 PLUG AND ABANDON  CLEAN OUT AND REPLUG TARGET FORMATION: Marcellus Shale ESTIMATED DEPTH: 17,713' MD ACREAGE: 20.49; 600;

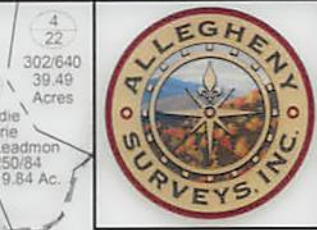
WELL OPERATOR: Antero Resources Corporation DESIGNATED AGENT: Dianna Stamper - CT Corporation System  
 ADDRESS: 1615 Wynkoop Street ADDRESS: 5400 D Big Tyler Road  
 Denver, CO 80202 Charleston, WV 25313

**Legend**

- Proposed gas well
- Found corner, as noted
- Existing Well, as noted
- Creek or Drain
- Existing Road
- Surface boundary (approx.)
- Interior surface tracts (approx.)

**BRADLEY D. MILLER**  
 LICENSED  
 No 2167  
 STATE OF WEST VIRGINIA  
 PROFESSIONAL SURVEYOR

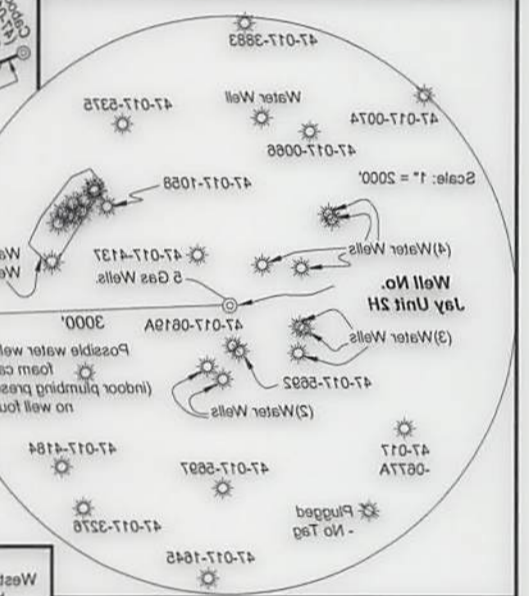
SEAL



Note: It appears 23 water wells 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.

Tract No.	Acres	BR Pg	Owner(s)
1	8.68	253222	William R Lynch/Dixie J Craig
2	80.4	258248	Randall Lynch & Dixie Craig
3	3.52	258248	Dominion Field Services, Inc
4	4.88	305418	Euphrates, LP
5	9.90	358825	Antero Resources Corporation
6	8.00	197889	Carol & Alvinia Painter
7	357.78	WB 28314	John Paul Sticking, et al
8	3.48	AP 38212	Debra L. Stolt
9	293.90	293340	Joseph D. & Brittany McConnell
10	-	Lot 231	Crystal Lake Club
11	302.578	302578	Ronald O. & Barbara C. Moran
12	249.89	24989	Sharon L. & Mary K. Cass
13	258.08	25808	Janet M. Esposito & Donald S. Esposito
14	200.127	200127	Schaefer, C. Dennis
15	182.328	182328	James L. & Patricia Reed
16	218.893	218893	Douglas L. & Joyce M. Hall
17	209.82	20982	Connie Rickman
18	3.00	WB 47232	Connie Rickman
19	7.00	258882	Glen H. Montgomery, et al
20	0.25	259312	James W. & Lynda S. Beatty
21	32.19	214229	William R. Lynch & Dixie J. Craig
22	2.18	254473	Randy K. Smith
23	178.2	18782	Joel W. & Bonnie Estoff
24	25.9	349253	Antero Resources Corporation
25	43.0	283882	Blackburn, Ryan Webb
26	21.84	WB 47333	Skyler Ora & Clifford Warren Montgomery, et al
27	28.5	AP 41180	Robert Goddard, et al
28	75.0	259310	James W. & Lynda Beatty, et al
29	8.84	258223	Thomas K. Jr. & Penny A. Porter
30	8.54	98487	Mason Memorial Park
31	5.49	301488	Robert F. Holden & Shari Bailey
32	11.17	251258	Steven R. Cripps, et al
33	83.0	170887	Dale Bradford & Dwight R. Husk
34	232.35	23235	David J. & Debra S. Smith

Tract No.	Acres	BR Pg	Owner(s)
A	-	-	WV Division of Natural Resources Lease
B	-	-	William Mark Smith Lease
C	-	-	William Randall Lynch, et ux Memorandum of Oil & Gas Lease
D	-	-	James Douglas Wolfe Lease
E	-	-	Lewis Maxwell, et al Lease
F	-	-	William Randall Lynch & Dixie Craig Lease



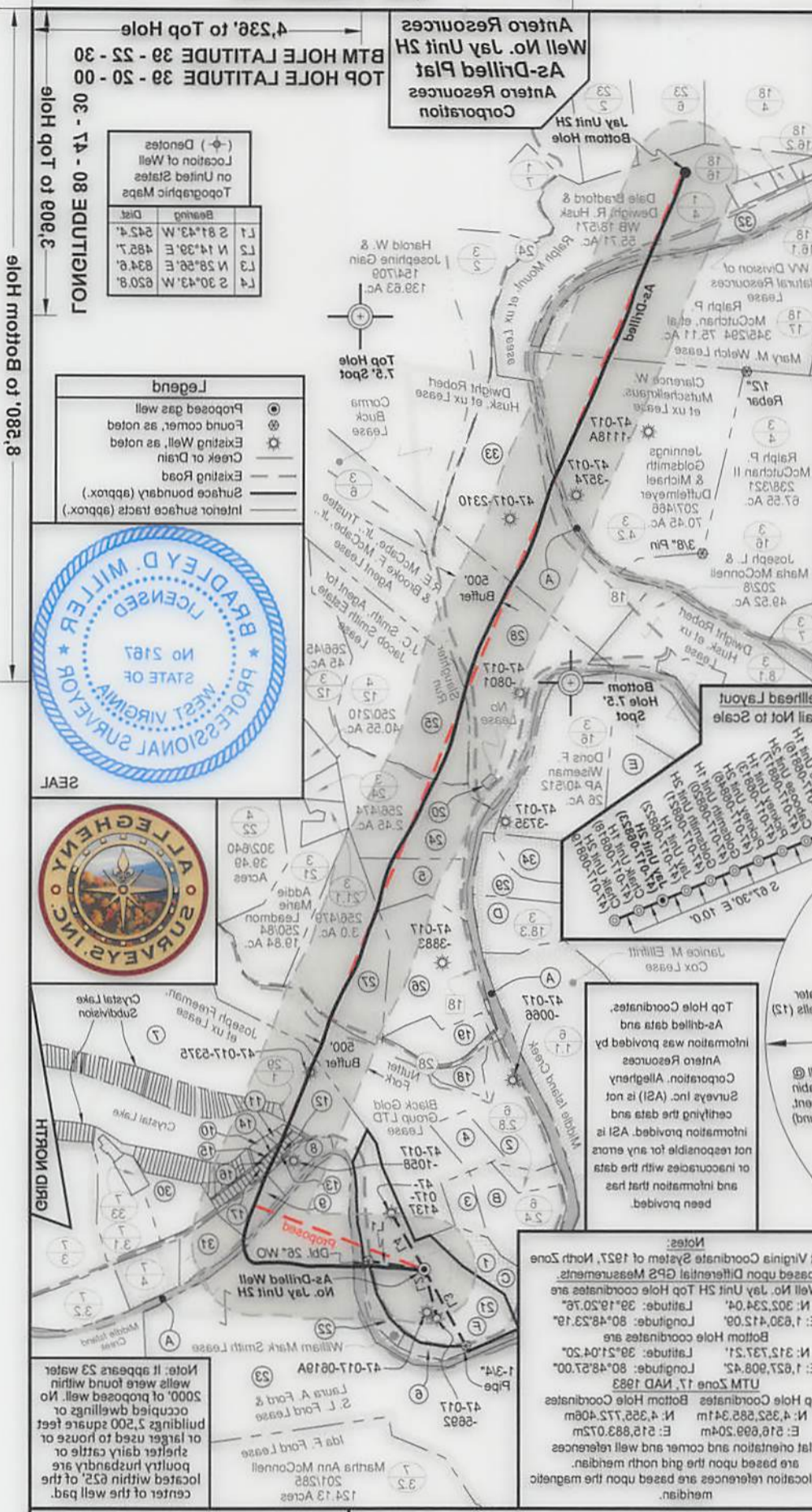
I, the undersigned, hereby certify that this plat is correct to the best of my knowledge and belief and shows all the information required by law and the rules issued and prescribed by the Department of Environmental Protection.

Bradley D. Miller, P. S. 2187

FILE NO: 38-30-WU-15  
 DRAWING NO: Jay 2H A-Drilled Well Plat  
 SCALE: 1" = 1500'  
 MINIMUM DEGREE OF ACCURACY: 20m  
 PROVEN SOURCE OF ELEVATION: CORN, Marietta, OH

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

LOCATION: ELEVATION: A-Drilled Grade - 843' WATERSHED: Headwaters Middle Island Creek QUADRANGLE: West Union  
 DISTRICT: West Union SURFACE OWNER: William Randall Lynch & Dixie Craig  
 ROYALTY OWNER: R.E. McCabe Jr., Tunstee & Brooke F. McCabe Jr. Agent; Black Gold Group, LTD. LEASE NO: 201258 ACREAGE: 35.19 ACREAGE: 35.19 COUNTY: Doddridge COUNTY: Doddridge  
 PROPOSED WORK:  PERFORM NEW FORMATION  OTHER PHYSICAL CHANGE IN WELL (SPECIFY) A-Drilled  PLUG AND ABANDON  CLEAN OUT AND REPLUG  TARGET FORMATION: Marcellus Shale ESTIMATED DEPTH: 1773 MD  
 DESIGNATED AGENT: Diana Stampler - CT Corporation System ADDRESS: 1815 Wykoop Street Denver, CO 80202  
 WELL OPERATOR: Antero Resources Corporation ADDRESS: 5400 D Big Tyler Road Chesteron, WV 25313



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

DATE: January 16 2019  
 OPERATOR'S Well No. Jay Unit 2H  
 API WELL NO. 47 - 017 - 08823  
 STATE COUNTY PERMIT

WELL LOCATION: 1815 Wykoop Street Denver, CO 80202  
 ADDRESS: 5400 D Big Tyler Road Chesteron, WV 25313  
 DESIGNATED AGENT: Diana Stampler - CT Corporation System  
 WELL OPERATOR: Antero Resources Corporation  
 ADDRESS: 1815 Wykoop Street Denver, CO 80202  
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 WELL TYPE:  OIL  GAS  LIQUID INJECTION  WASTE DISPOSAL  
 (IF GAS) PRODUCTION:  STORAGE  DEEP  SHALLOW

4,236' to Top Hole  
 BTM HOLE LATITUDE 39 - 25 - 30  
 TOP HOLE LATITUDE 39 - 20 - 00  
 6,958' to Bottom Hole

Antero Resources  
 A-Drilled Well No. Jay Unit 2H  
 Antero Resources Corporation

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