

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

API 47 - 017 - 06820 County Doddridge District West Union
Quad West Union 7.5' Pad Name Middle Pad Field/Pool Name -----
Farm name Antero Resources Corporation Well Number Goldsmith Unit 1H
Operator (as registered with the OOG) Antero Resources Corporation
Address 1615 Wynkoop Street City Denver State CO Zip 80202

As Drilled location NAD 83/UTM Attach an as-drilled plat, profile view, and deviation survey
Top hole Northing 4352588.671m Easting 516690.762m
Landing Point of Curve Northing 4352668.97m Easting 516570.38m
Bottom Hole Northing 4355153.15m Easting 515491.76m

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

RECEIVED
Office of Oil and Gas
JAN 24 2019
WV Department of
Environmental Protection

Date permit issued 6/19/2017 Date drilling commenced 9/29/2017 Date drilling ceased 3/24/2018
Date completion activities began 7/16/2018 Date completion activities ceased 9/27/2018
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
dule... 2/27/19

API 47-017 - 06820 Farm name Antero Resources Corporation Well number Goldsmith Unit 1H

CASING STRINGS	Hole Size	Casing Size	Depth	New or Used	Grade wt/ft	Basket Depth(s)	Did cement circulate (Y/ N) * Provide details below*
Conductor	24"	20"	112'	New	94#, H-40	N/A	Y
Surface	17-1/2"	13-3/8"	548'	New	54#, J-55	N/A	Y
Coal							
Intermediate 1	12-1/4"	9-5/8"	2625'	New	36#, J-55	N/A	Y
Intermediate 2							
Intermediate 3							
Production	8-3/4"/8-1/2"	5-1/2"	15789'	New	23#, HCP-110	N/A	Y
Tubing		2-3/8"	6517'		4.7#, P-110		
Packer type and depth set		N/A					

Comment Details _____

CEMENT DATA	Class/Type of Cement	Number of Sacks	Slurry wt (ppg)	Yield (ft ³ /sks)	Volume (ft ³)	Cement Top (MD)	WOC (hrs)
Conductor	Class A	204 sx	15.6	1.18	241	0'	8 Hrs.
Surface	Class A	445 sx	15.6	1.21	538	0'	8 Hrs.
Coal							
Intermediate 1	Class A	870 sx	15.6	1.21	1053	0'	8 Hrs.
Intermediate 2							
Intermediate 3							
Production	Class H	659 sx (Lead) 1484 sx (Tail)	14(Lead), 15.2 (Tail)	1.45 (Lead), 1.83 (Tail)	3671	-500' into Intermediate Casing	8 Hrs.
Tubing							

Drillers TD (ft) 15789' MD, 6421' TVD (BHL), 6427' (Deepest Point Drilled) Loggers TD (ft) 15789' MD
 Deepest formation penetrated Marcellus Plug back to (ft) N/A
 Plug back procedure N/A

Kick off depth (ft) 5669'

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

RECEIVED
Office of Oil and Gas

WAS WELL COMPLETED AS SHOT HOLE Yes No DETAILS JAN 24 2019

WAS WELL COMPLETED OPEN HOLE? Yes No DETAILS WV Department of Environmental Protection

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

API 47-017-06820 Farm Name Antero Resources Corp Well Number Goldsmith Unit 1H

EXHIBIT 1

Stage No.	Perforation Date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formations
1	7/16/2018	15594.6	15687.9	60	Marcellus
2	7/17/2018	15395.478	15563.413	60	Marcellus
3	7/17/2018	15196.356	15364.291	60	Marcellus
4	7/18/2018	14997.234	15165.169	60	Marcellus
5	7/18/2018	14798.112	14966.047	60	Marcellus
6	7/19/2018	14598.99	14766.925	60	Marcellus
7	7/20/2018	14399.868	14567.803	60	Marcellus
8	7/20/2018	14200.746	14368.681	60	Marcellus
9	7/20/2018	14001.624	14169.559	60	Marcellus
10	7/21/2018	13802.502	13970.437	60	Marcellus
11	7/23/2018	13603.38	13771.315	60	Marcellus
12	7/23/2018	13404.258	13572.193	60	Marcellus
13	7/24/2018	13205.136	13373.071	60	Marcellus
14	7/24/2018	13006.014	13173.949	60	Marcellus
15	7/24/2018	12806.892	12974.827	60	Marcellus
16	7/25/2018	12607.77	12775.705	60	Marcellus
17	7/25/2018	12408.648	12576.583	60	Marcellus
18	7/25/2018	12209.526	12377.461	60	Marcellus
19	7/26/2018	12010.404	12178.339	60	Marcellus
20	7/26/2018	11811.282	11979.217	60	Marcellus
21	7/27/2018	11612.16	11780.095	60	Marcellus
22	7/27/2018	11413.038	11580.973	60	Marcellus
23	7/28/2018	11213.916	11381.851	60	Marcellus
24	7/28/2018	11014.794	11182.729	60	Marcellus
25	7/28/2018	10815.672	10983.607	60	Marcellus
26	7/29/2018	10616.55	10784.485	60	Marcellus
27	7/30/2018	10417.428	10585.363	60	Marcellus
28	7/30/2018	10218.306	10386.241	60	Marcellus
29	7/30/2018	10019.184	10187.119	60	Marcellus
30	7/31/2018	9820.062	9987.997	60	Marcellus
31	7/31/2018	9620.94	9788.875	60	Marcellus
32	8/2/2018	9421.818	9589.753	60	Marcellus
33	8/2/2018	9222.696	9390.631	60	Marcellus
34	8/2/2018	9023.574	9191.509	60	Marcellus
35	8/3/2018	8824.452	8992.387	60	Marcellus
36	8/3/2018	8625.33	8793.265	60	Marcellus
37	8/4/2018	8426.208	8594.143	60	Marcellus
38	8/4/2018	8227.086	8395.021	60	Marcellus
39	8/5/2018	8027.964	8195.899	60	Marcellus
40	8/5/2018	7828.842	7996.777	60	Marcellus
41	8/6/2018	7629.72	7797.655	60	Marcellus
42	8/6/2018	7430.598	7598.533	60	Marcellus
43	8/6/2018	7231.476	7399.411	60	Marcellus
44	8/7/2018	7032.354	7200.289	60	Marcellus
45	8/7/2018	6833.232	7001.167	60	Marcellus
46	8/7/2018	6634.11	6802.045	60	Marcellus

RECEIVED
Office of Oil and Gas
JAN 24 2019
WY Department of
Environmental Protection

API 47-017-06820 Farm Name Antero Resources Corp Well Number Goldsmith Unit 1H

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	7/16/2018	64.91	7810	6909	4080	246500	10403	N/A
2	7/17/2018	73.9	7501	5274	3535	415700	8515	N/A
3	7/17/2018	70.28	7381	6492	3367	417280	8617	N/A
4	7/18/2018	71	7804	5607	4826	405460	9083	N/A
5	7/18/2018	70.7	7681	5464	3770	410000	8370	N/A
6	7/19/2018	63.85	7372	5740	3710	406000	8657	N/A
7	7/20/2018	64.87	7802	5687	3637	415860	8513	N/A
8	7/20/2018	55.8	8090	5825	3971	409660	11035	N/A
9	7/20/2018	64.1	7343	6118	4921	412200	8198	N/A
10	7/21/2018	70	7327	5547	4961	405300	8082	N/A
11	7/23/2018	62.23	6970	5790	5149	404860	11108	N/A
12	7/23/2018	60.3	7839	5729	4160	406020	10537	N/A
13	7/24/2018	71.09	7175	5913	4035	404880	8178	N/A
14	7/24/2018	67.8	7250	6093	4224	409380	8398	N/A
15	7/24/2018	69.75	7023	4812	4977	407800	8308	N/A
16	7/25/2018	69.87	7271	5736	4054	414460	8151	N/A
17	7/25/2018	72.3	7314	5024	4010	409180	8463	N/A
18	7/25/2018	63.47	7400	5879	4673	397500	8173	N/A
19	7/26/2018	70.79	7425	5986	4353	404020	8540	N/A
20	7/26/2018	67.9	7354	5684	4620	397620	8009	N/A
21	7/27/2018	69.8	7537	5476	4871	412500	9435	N/A
22	7/27/2018	65.95	7503	5991	5072	409940	8241	N/A
23	7/28/2018	69.7	7337	4666	5256	413360	8286	N/A
24	7/28/2018	73	7224	5883	4888	407100	8240	N/A
25	7/28/2018	61.22	7068	5992	5413	404300	8280	N/A
26	7/29/2018	57	7317	5731	4886	405080	10446	N/A
27	7/30/2018	67.03	7011	6125	3510	405680	8206	N/A
28	7/30/2018	76.22	7290	5726	5155	404440	8114	N/A
29	7/30/2018	75.69	6984	6399	5214	405440	8143	N/A
30	7/31/2018	78.6	6911	5958	5099	402120	8096	N/A
31	7/31/2018	75.23	7348	5958	4798	403040	8158	N/A
32	8/2/2018	68.9	7092	5838	5082	406020	9663	N/A
33	8/2/2018	74.83	7307	5698	4004	410060	8309	N/A
34	8/2/2018	71.68	7172	5755	3732	396780	8058	N/A
35	8/3/2018	73.28	7659	5801	3816	398720	9826	N/A
36	8/3/2018	71.25	7471	5882	3970	396460	8100	N/A
37	8/4/2018	71.29	6981	5817	4701	403240	7845	N/A
38	8/4/2018	74.59	7358	5908	5010	405780	8193	N/A
39	8/5/2018	69.185	6955	558	4285	401740	10574	N/A
40	8/5/2018	76.55	7120	5670	3597	403880	8148	N/A
41	8/6/2018	68.09	7048	5482	3783	404660	8090	N/A
42	8/6/2018	72.91	7035	5957	3786	404760	8033	N/A
43	8/6/2018	65.08	7710	5990	3940	405380	9691	N/A
44	8/7/2018	72.14	6949	6122	3952	415120	9118	N/A
45	8/7/2018	74.48	6791	6654	3890	401820	7992	N/A
46	8/7/2018	71.96	6809	7075	3954	410500	8902	N/A
	AVG=	69	7,307	5,727	4,363	18,537,600	401,525	TOTAL

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	1,552	est. 1357	1,553
Big Lime	1,552	2,237	1,553	2,238
Fifty Foot Sandstone	2,237	2,469	2,238	2,470
Gordon	2,469	2,665	2,470	2,666
Fifth Sandstone	2,665	2,730	2,666	2,731
Bayard	2,730	3,515	2,731	3,518
Speechley	3,515	3,825	3,518	3,831
Balltown	3,825	4,314	3,831	4,324
Bradford	4,314	4,747	4,324	4,762
Benson	4,747	4,996	4,762	5,013
Alexander	4,996	5,971	5,013	6,001
Sycamore	5,971	6,151	6,001	6,217
Middlesex	6,151	6,280	6,217	6,410
Burkett	6,280	6,308	6,410	6,466
Tully	6,308	6,353	6,466	6,582
Marcellus	6,353	NA	6,582	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.

ANTERO RESOURCES CORPORATION

Location: Doddridge Co., WV
 Facility: Doddridge Middle Pad
 Well: Goldsmith Unit 1H
 Wellbore: Goldsmith Unit 1H PWB

Slot: Slot #05
 Well: Goldsmith Unit 1H PWB

Plot reference wellpath is Goldsmith Unit 1H PWB Rev-A-0
 True vertical depths are referenced to Frontier 32 (RKB)
 Measured depths are referenced to Frontier 32 (RKB)
 Frontier 32 (RKB) to Mean Sea Level: 875 feet
 Mean Sea Level to Ground level (At Slot: Slot #05): -843 feet
 Coordinates are in feet referenced to Slot

Location Information			
Facility Name	Grid East (US ft)	Grid North (US ft)	Longitude
Middle Pad	1665090.990	1427947.689	80°48'24.070"W
Slot	Local N (ft)	Grid East (US ft)	Grid North (US ft)
Slot #05	-14.08	1665128.727	1427940.351
Comment:	Goldsmith Unit 1H		
Frontier 32 (RKB) to Ground level (At Slot: Slot #05)	33ft		
Mean Sea Level to Ground level (At Slot: Slot #05)	-843ft		
Frontier 32 (RKB) to Mean Sea Level	875ft		

Well Data			
Slot	Well	Wellbore	Wellpath
Slot #05	Goldsmith Unit 1H	Goldsmith Unit 1H PWB	Goldsmith Unit 1H PWB Rev-A-0
Slot #05	Goldsmith Unit 1H	Goldsmith Unit 1H PWB	Goldsmith Unit 1H PWB Rev-A-0

Gyrodatta MS Gyro <17-1/2"> (100-503) : 0.28° Inc. 117.00ft MD, 117.00ft TVD, -0.05ft VS
 Gyrodatta MS Gyro <12-1/4"> (503)(593-774) : 0.72° Inc. 610.00ft MD, 609.99ft TVD, 0.47ft VS
 Directional ONE MWD <12-1/4"> (774)(834-2536) : 2.42° Inc. 851.00ft MD, 850.95ft TVD, -2.02ft VS

Well Profile Data						
Design Comment	MD (ft)	Inc (°)	Az (°)	TVD (ft)	Local N (ft)	Local E (ft)
Tile On	6321.00	46.220	332.770	6239.04	-160.16	-94.44
Proj to Bottom	6388.00	52.870	332.770	6282.48	-114.86	-117.75
POE	6581.41	69.760	329.700	6375.00	33.14	-199.41
Landing Pt.	6810.25	90.000	328.700	6415.00	226.63	-312.48
On Azimuth	7144.83	90.000	336.398	6415.00	524.71	-484.04
BHL	15720.05	90.000	336.398	6415.00	8382.60	-3897.40
						0.00
						9241.82

Directional ONE MWD <8-3/4"> (2536)(2651-6304) : 0.85° Inc. 2668.00ft MD, 2666.52ft TVD, -27.48ft VS

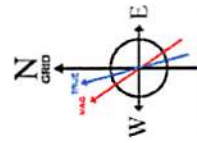
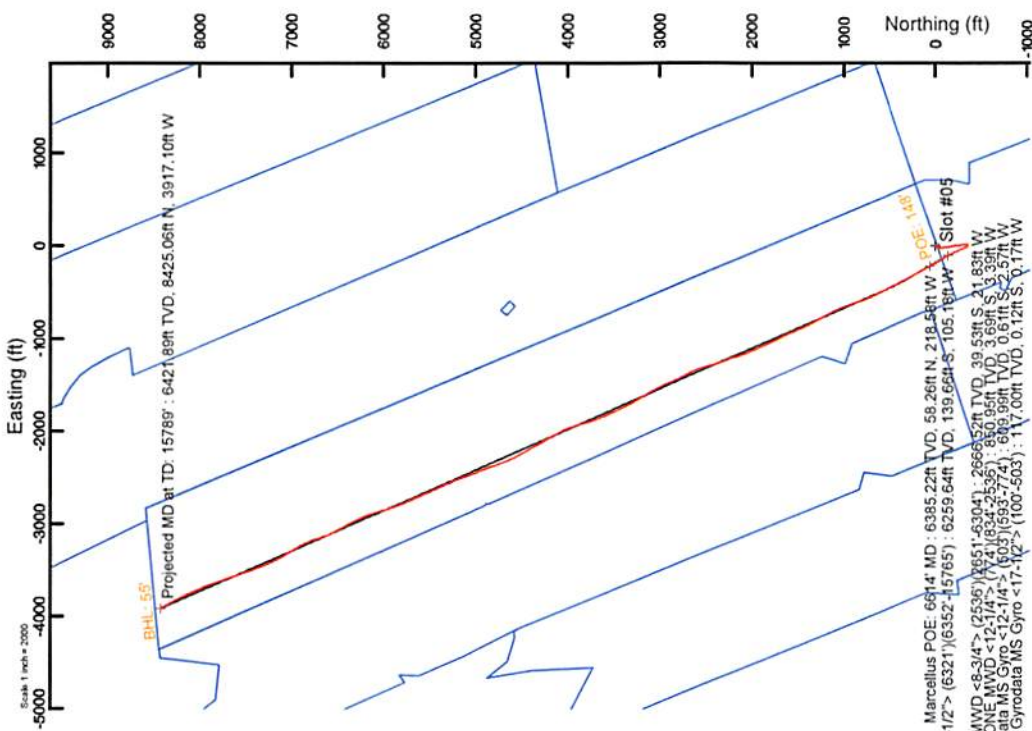
RECEIVED
 Office of Oil and Gas
 JAN 24 2019
 WV Department of
 Environmental Protection

API: 47-017-06820-0000
 BHI Job #: 9067098
 Rig: Frontier 32
 Duration: 03/19/2018-03/22/2018

BH AT Curve <8-1/2"> (6321)(6352-15765) : 50.44° Inc. 6352.00ft MD, 6259.64ft TVD, -85.87ft VS
 Marcellus POE: 6614° MD : 72.75° Inc. 6614.00ft MD, 6385.22ft TVD, 140.90ft VS

Projected MD at TD: 15789° Inc. 15789.00ft MD, 6421.89ft TVD, 9288.61ft VS

Azimuth 336.40° with reference 0.00 N, 0.00 E



User specified Dip: 66.55° Field: 52027 nT
 Magnetic North = 66.55° West of True North (at 15/Jan/2018)
 Grid North is 0.12° 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

Scale: 1 inch = 2000

Scale: 1 inch = 1000





Actual Wellpath Report

Goldsmith Unit 1H AWP Proj: 15789'
Page 1 of 11



REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #05
Area	Doddridge Co., WV	Well	Goldsmith Unit 1H
Field	Doddridge	Wellbore	Goldsmith Unit 1H 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	Delaset
Scale	0.999603	Report Generated	14/Sep/2018 at 11:35
Convergence at slot	0.12" East	Database/Source file	WA_MPL_EasternUS_Defn/Goldsmith_Unit_1H_AWP_Proj_15789_.xml

WELLPATH LOCATION						
	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	-14.08	37.75	1695128.73	14279403.61	39°19'20.870"N	80°48'23.540"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 #05)	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	336.40°

RECEIVED
 Office of Oil and Gas
 JAN 24 2019
 WV Department of
 Environmental Protection



Actual Wellpath Report

Goldsmith Unit 1H AWP Proj: 15789'
Page 2 of 11



REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #05
Area	Doddridge Co., WV	Well	Goldsmith Unit 1H
Field	Doddridge	Wellbore	Goldsmith Unit 1H AWB
Facility	Middle Pad		

WELLPATH DATA (197 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)	(°)	("/100ft)	("/100ft)	("/100ft)	
0.00†	0.000	233.810	0.00	0.00	0.00	0.00	1695128.73	14279403.61	39°19'20.870"N	80°48'23.540"W	0.00	0.000	0.00	0.00	0.00	
32.00	0.000	233.810	32.00	0.00	0.00	0.00	1695128.73	14279403.61	39°19'20.870"N	80°48'23.540"W	0.00	0.000	0.00	0.00	0.00	
117.00	0.280	233.810	117.00	-0.05	-0.12	-0.17	1695128.56	14279403.49	39°19'20.869"N	80°48'23.542"W	0.21	233.810	0.33	0.33	-148.46	Gyrodata MS Gyro <17-1/2"> (100'-503')
217.00	0.170	254.810	217.00	-0.08	-0.31	-0.51	1695128.22	14279403.30	39°19'20.867"N	80°48'23.546"W	0.59	238.954	0.14	-0.11	21.00	
317.00	0.290	220.740	317.00	-0.16	-0.54	-0.82	1695127.91	14279403.07	39°19'20.865"N	80°48'23.550"W	0.98	236.691	0.18	0.12	-34.07	
417.00	0.330	249.390	417.00	-0.26	-0.83	-1.25	1695127.48	14279402.78	39°19'20.862"N	80°48'23.556"W	1.50	236.453	0.16	0.04	28.65	
517.00	0.370	266.170	516.99	-0.14	-0.95	-1.84	1695126.89	14279402.66	39°19'20.861"N	80°48'23.563"W	2.07	242.667	0.11	0.04	16.78	
520.00	0.400	260.410	519.99	-0.13	-0.95	-1.86	1695126.87	14279402.66	39°19'20.861"N	80°48'23.564"W	2.09	242.860	1.63	1.00	-192.00	
610.00	0.720	315.330	609.99	0.47	-0.61	-2.57	1695126.16	14279403.01	39°19'20.864"N	80°48'23.573"W	2.64	256.753	0.65	0.36	61.02	Gyrodata MS Gyro <12-1/4"> (503')(593'-774')
699.00	0.330	205.390	698.99	0.83	-0.44	-3.07	1695125.68	14279403.17	39°19'20.866"N	80°48'23.579"W	3.10	261.872	1.00	-0.44	-123.53	
791.00	1.330	179.210	790.98	-0.33	-1.75	-3.17	1695125.56	14279401.87	39°19'20.853"N	80°48'23.580"W	3.62	241.171	1.13	1.09	-28.46	
851.00	2.420	190.540	850.95	-2.02	-3.69	-3.39	1695125.33	14279399.92	39°19'20.834"N	80°48'23.583"W	5.01	222.627	1.91	1.82	18.88	Directional ONE MWD <12-1/4"> (774')(834'-2536')
941.00	4.440	199.310	940.78	-6.14	-8.84	-4.89	1695123.84	14279394.77	39°19'20.783"N	80°48'23.603"W	10.11	208.958	2.31	2.24	9.74	
1029.00	4.750	198.810	1028.50	-11.33	-15.51	-7.19	1695121.54	14279388.11	39°19'20.717"N	80°48'23.632"W	17.10	204.890	0.36	0.35	-0.57	
1118.00	4.710	192.560	1117.19	-17.00	-22.56	-9.18	1695119.55	14279381.06	39°19'20.647"N	80°48'23.657"W	24.36	202.135	0.58	-0.04	-7.02	
1206.00	3.610	199.790	1204.96	-21.93	-28.70	-10.90	1695117.83	14279374.93	39°19'20.587"N	80°48'23.679"W	30.70	200.802	1.38	-1.25	8.22	
1294.00	2.760	212.390	1292.83	-25.13	-33.09	-12.97	1695115.76	14279370.53	39°19'20.543"N	80°48'23.706"W	35.54	201.409	1.25	-0.97	14.32	
1382.00	2.380	213.320	1380.74	-27.31	-36.41	-15.11	1695113.62	14279367.22	39°19'20.510"N	80°48'23.733"W	39.42	202.544	0.43	-0.43	1.06	
1470.00	2.090	202.740	1468.67	-29.42	-39.41	-16.74	1695112.00	14279364.21	39°19'20.481"N	80°48'23.754"W	42.82	203.008	0.57	-0.33	-12.02	
1558.00	1.010	166.890	1556.64	-31.29	-41.65	-17.18	1695111.55	14279361.98	39°19'20.459"N	80°48'23.760"W	45.05	202.417	1.59	-1.23	-40.74	
1647.00	0.980	151.240	1645.63	-32.82	-43.08	-16.64	1695112.10	14279360.55	39°19'20.445"N	80°48'23.753"W	46.18	201.116	0.31	-0.03	-17.58	
1735.00	0.460	194.730	1733.62	-33.84	-44.08	-16.37	1695112.37	14279359.55	39°19'20.435"N	80°48'23.749"W	47.02	200.367	0.82	-0.59	49.42	
1823.00	0.740	249.340	1821.61	-34.09	-44.62	-16.99	1695111.75	14279359.00	39°19'20.429"N	80°48'23.757"W	47.75	200.840	0.69	0.32	62.06	
1911.00	0.810	270.660	1909.61	-33.81	-44.82	-18.14	1695110.59	14279358.81	39°19'20.427"N	80°48'23.772"W	48.35	202.036	0.34	0.08	24.23	
2000.00	0.900	282.950	1998.60	-33.13	-44.65	-19.45	1695109.28	14279358.97	39°19'20.429"N	80°48'23.789"W	48.71	203.537	0.23	0.10	13.81	
2088.00	0.810	276.600	2086.59	-32.41	-44.43	-20.74	1695107.99	14279359.20	39°19'20.431"N	80°48'23.805"W	49.03	205.027	0.15	-0.10	-7.22	
2176.00	0.850	280.460	2174.58	-31.73	-44.24	-22.00	1695106.73	14279359.39	39°19'20.433"N	80°48'23.821"W	49.41	206.444	0.08	0.05	4.39	
2264.00	0.990	270.160	2262.57	-31.06	-44.12	-23.40	1695105.33	14279359.51	39°19'20.434"N	80°48'23.839"W	49.94	207.946	0.25	0.16	-11.70	
2352.00	0.430	352.940	2350.56	-30.43	-43.79	-24.20	1695104.53	14279359.84	39°19'20.438"N	80°48'23.849"W	50.03	208.933	1.17	-0.64	94.07	
2441.00	1.170	43.630	2439.55	-29.76	-42.80	-23.62	1695105.12	14279360.83	39°19'20.447"N	80°48'23.842"W	48.88	208.893	1.08	0.83	56.96	

RECEIVED
 Office of Oil and Gas
 JAN 24 2019
 WV Department of
 Environmental Protection



Actual Wellpath Report

Goldsmith Unit 1H AWP Proj: 15789'
Page 3 of 11



REFERENCE WELLPATH IDENTIFICATION		Slot	Slot #05
Operator	ANTERO RESOURCES CORPORATION	Well	Goldsmith Unit 1H
Area	Doddridge Co., WV	Wellbore	Goldsmith Unit 1H AWB
Field	Doddridge		
Facility	Middle Pad		

WELLPATH DATA (197 stations)																
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
2529.00	1.040	32.760	2527.54	-28.97	-41.48	-22.57	1695106.17	14279362.15	39°19'20.461"N	80°48'23.828"W	47.22	208.550	0.28	-0.15	-12.35	
2553.00	0.890	32.150	2551.53	-28.75	-41.14	-22.35	1695106.39	14279362.49	39°19'20.464"N	80°48'23.826"W	46.81	208.516	0.63	-0.63	-2.54	
2668.00	0.850	2.770	2666.52	-27.48	-39.53	-21.83	1695106.90	14279364.10	39°19'20.480"N	80°48'23.819"W	45.16	208.915	0.39	-0.03	-25.55	Directional ONE MWD <8-3/4"> (2536') (2651'-6304')
2757.00	0.750	349.650	2755.51	-26.32	-38.29	-21.91	1695106.83	14279365.33	39°19'20.492"N	80°48'23.820"W	44.12	209.771	0.23	-0.11	-14.74	
2845.00	0.750	344.110	2843.50	-25.19	-37.17	-22.17	1695106.57	14279366.45	39°19'20.503"N	80°48'23.823"W	43.28	210.808	0.08	0.00	-6.30	
2933.00	0.590	345.420	2931.50	-24.17	-36.18	-22.44	1695106.30	14279367.44	39°19'20.513"N	80°48'23.827"W	42.57	211.806	0.18	-0.18	1.49	
3022.00	0.640	348.410	3020.49	-23.23	-35.25	-22.65	1695106.08	14279368.37	39°19'20.522"N	80°48'23.829"W	41.90	212.727	0.07	0.06	3.36	
3110.00	1.120	192.500	3108.49	-23.45	-35.61	-22.94	1695105.80	14279368.02	39°19'20.519"N	80°48'23.833"W	42.36	212.789	1.96	0.55	-177.17	
3198.00	3.310	188.200	3196.42	-26.30	-38.96	-23.49	1695105.25	14279364.66	39°19'20.485"N	80°48'23.840"W	45.50	211.082	2.49	2.49	-4.89	
3286.00	5.470	181.990	3284.15	-32.24	-45.67	-24.00	1695104.74	14279357.96	39°19'20.419"N	80°48'23.847"W	51.59	207.717	2.51	2.45	-7.06	
3375.00	5.500	179.900	3372.75	-39.98	-54.18	-24.14	1695104.60	14279349.46	39°19'20.335"N	80°48'23.849"W	59.31	204.013	0.23	0.03	-2.35	
3462.00	6.980	173.820	3459.23	-48.85	-63.60	-23.56	1695105.18	14279340.03	39°19'20.242"N	80°48'23.842"W	67.82	200.326	1.86	1.70	-6.99	
3551.00	5.970	170.130	3547.66	-58.51	-73.54	-22.18	1695106.55	14279330.10	39°19'20.144"N	80°48'23.824"W	76.81	196.787	1.23	-1.13	-4.15	
3639.00	8.410	171.410	3634.95	-69.17	-84.41	-20.44	1695108.30	14279319.23	39°19'20.036"N	80°48'23.802"W	86.85	193.611	2.78	2.77	1.45	
3727.00	9.380	176.560	3721.91	-82.12	-97.93	-19.05	1695109.69	14279305.72	39°19'19.902"N	80°48'23.785"W	99.77	191.006	1.43	1.10	5.85	
3816.00	7.990	169.790	3809.88	-94.94	-111.26	-17.51	1695111.22	14279292.39	39°19'19.771"N	80°48'23.766"W	112.63	188.946	1.94	-1.56	-7.61	
3904.00	8.200	177.040	3897.01	-106.77	-123.55	-16.11	1695112.63	14279280.11	39°19'19.649"N	80°48'23.748"W	124.59	187.427	1.18	0.24	8.24	
3992.00	8.240	174.700	3984.11	-118.63	-136.09	-15.20	1695113.53	14279267.57	39°19'19.525"N	80°48'23.737"W	136.94	186.373	0.38	0.05	-2.66	
4080.00	7.050	170.670	4071.32	-129.85	-147.70	-13.74	1695114.99	14279255.97	39°19'19.410"N	80°48'23.719"W	148.34	185.315	1.48	-1.35	-4.58	
4168.00	5.890	166.010	4158.76	-139.53	-157.41	-11.77	1695116.96	14279246.26	39°19'19.314"N	80°48'23.694"W	157.85	184.278	1.45	-1.32	-5.30	
4257.00	7.830	172.380	4247.12	-149.87	-167.85	-9.87	1695118.87	14279235.82	39°19'19.211"N	80°48'23.670"W	168.14	183.364	2.34	2.18	7.16	
4345.00	7.180	167.020	4334.37	-161.03	-179.16	-7.84	1695120.89	14279224.53	39°19'19.099"N	80°48'23.645"W	179.33	182.504	1.08	-0.74	-6.09	
4433.00	8.840	167.820	4421.51	-173.07	-191.12	-5.17	1695123.56	14279212.56	39°19'18.981"N	80°48'23.611"W	191.19	181.551	1.89	1.89	0.91	
4521.00	7.900	165.040	4508.57	-185.67	-203.58	-2.19	1695126.54	14279200.11	39°19'18.858"N	80°48'23.573"W	203.59	180.615	1.16	-1.07	-3.16	
4610.00	8.310	171.940	4596.68	-197.92	-215.85	0.29	1695129.02	14279187.84	39°19'18.737"N	80°48'23.542"W	215.85	179.922	1.19	0.46	7.75	
4698.00	8.420	172.880	4683.75	-210.22	-228.54	1.98	1695130.71	14279175.16	39°19'18.611"N	80°48'23.521"W	228.55	179.502	0.20	0.12	1.07	
4786.00	7.730	168.980	4770.67	-222.18	-240.75	3.91	1695132.64	14279162.96	39°19'18.490"N	80°48'23.497"W	240.78	179.068	1.00	-0.78	-4.43	
4875.00	7.280	179.460	4859.12	-233.21	-252.26	5.11	1695133.84	14279151.45	39°19'18.377"N	80°48'23.482"W	252.31	178.839	1.62	-0.51	11.78	
4963.00	6.950	177.300	4946.44	-243.31	-263.15	5.42	1695134.14	14279140.56	39°19'18.269"N	80°48'23.478"W	263.21	178.821	0.48	-0.37	-2.45	
5051.00	7.200	173.000	5033.77	-253.57	-273.95	6.84	1695135.06	14279129.77	39°19'18.162"N	80°48'23.467"W	274.02	178.675	0.67	0.28	-4.89	

RECEIVED
Office of Oil and Gas
JAN 24 2019
WV Department of Environmental Protection



Actual Wellpath Report

Goldsmith Unit 1H AWP Proj: 15789'
Page 4 of 11



REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #05
Area	Doddridge Co., WV	Well	Goldsmith Unit 1H
Field	Doddridge	Wellbore	Goldsmith Unit 1H AWB
Facility	Middle Pad		

WELLPATH DATA (197 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
5140.00	5.320	174.320	5122.23	-262.84	-283.59	7.43	1695136.15	14279120.14	39°19'18.067"N	80°48'23.453"W	283.69	178.500	2.12	-2.11	1.48	
5228.00	5.290	172.270	5209.86	-270.63	-291.67	8.38	1695137.10	14279112.06	39°19'17.987"N	80°48'23.441"W	291.79	178.355	0.22	-0.03	-2.33	
5316.00	5.420	170.100	5297.47	-278.57	-299.78	9.64	1695138.36	14279103.95	39°19'17.907"N	80°48'23.426"W	299.94	178.159	0.27	0.15	-2.47	
5404.00	7.560	171.110	5384.90	-288.20	-309.60	11.25	1695139.97	14279094.14	39°19'17.810"N	80°48'23.405"W	309.80	177.920	2.44	2.43	1.15	
5493.00	9.230	168.880	5472.95	-300.84	-322.39	13.53	1695142.25	14279081.35	39°19'17.683"N	80°48'23.377"W	322.67	177.597	1.91	1.88	-2.51	
5537.00	10.110	167.500	5516.32	-308.07	-329.62	15.04	1695143.76	14279074.12	39°19'17.612"N	80°48'23.358"W	329.96	177.387	2.07	2.00	-3.14	
5581.00	8.350	169.520	5559.75	-314.97	-336.53	16.46	1695145.18	14279067.21	39°19'17.544"N	80°48'23.340"W	336.93	177.200	4.07	-4.00	4.59	
5625.00	5.740	181.480	5603.42	-320.08	-341.87	16.98	1695145.71	14279061.87	39°19'17.491"N	80°48'23.333"W	342.29	177.156	6.77	-5.93	27.18	
5669.00	5.340	204.570	5647.22	-323.44	-345.94	16.08	1695144.80	14279057.81	39°19'17.451"N	80°48'23.345"W	346.31	177.339	5.11	-0.91	52.48	
5713.00	5.940	235.220	5691.01	-325.25	-349.10	13.35	1695142.08	14279054.65	39°19'17.419"N	80°48'23.380"W	349.35	177.809	6.89	1.36	69.66	
5757.00	7.430	263.610	5734.72	-324.85	-350.71	8.66	1695137.38	14279053.04	39°19'17.403"N	80°48'23.439"W	350.82	178.586	8.13	3.39	64.52	
5801.00	8.830	281.210	5778.29	-322.08	-350.37	2.51	1695131.24	14279053.38	39°19'17.407"N	80°48'23.518"W	350.38	179.589	6.45	3.18	40.00	
5845.00	9.170	302.710	5821.76	-317.23	-347.82	-3.75	1695124.98	14279055.93	39°19'17.432"N	80°48'23.597"W	347.84	180.618	7.64	0.77	48.86	
5889.00	10.520	322.990	5865.12	-310.40	-342.72	-9.12	1695119.61	14279061.03	39°19'17.483"N	80°48'23.665"W	342.84	181.524	8.40	3.07	46.09	
5933.00	13.500	331.940	5908.16	-301.37	-334.97	-13.95	1695114.78	14279068.77	39°19'17.560"N	80°48'23.727"W	335.27	182.386	7.97	6.77	20.34	
5977.00	17.390	336.610	5950.56	-289.67	-324.40	-18.98	1695109.75	14279079.34	39°19'17.664"N	80°48'23.790"W	324.96	183.349	9.27	8.84	10.61	
6021.00	21.370	340.140	5992.06	-275.09	-310.82	-24.32	1695104.42	14279092.91	39°19'17.798"N	80°48'23.858"W	311.77	184.474	9.43	9.05	8.02	
6065.00	25.720	340.990	6032.39	-257.57	-294.25	-30.16	1695098.58	14279109.48	39°19'17.962"N	80°48'23.932"W	295.79	185.851	9.92	9.89	1.93	
6110.00	29.940	339.320	6072.18	-236.61	-274.50	-37.31	1695091.44	14279129.22	39°19'18.158"N	80°48'24.022"W	277.02	187.739	9.54	9.38	-3.71	
6154.00	32.510	335.200	6109.80	-213.81	-253.49	-46.14	1695082.60	14279150.22	39°19'18.366"N	80°48'24.134"W	257.66	190.317	7.59	5.84	-9.36	
6198.00	35.500	332.000	6146.28	-189.25	-231.47	-57.11	1695071.64	14279172.23	39°19'18.583"N	80°48'24.273"W	238.41	193.859	7.92	6.80	-7.27	
6242.00	39.270	331.830	6181.23	-162.62	-207.90	-69.68	1695059.07	14279195.79	39°19'18.817"N	80°48'24.432"W	219.27	198.529	8.57	8.57	-0.39	
6286.00	43.520	332.900	6214.23	-133.60	-182.13	-83.16	1695045.60	14279221.55	39°19'19.072"N	80°48'24.603"W	200.22	204.542	9.79	9.66	2.43	
6321.00	46.220	332.770	6239.04	-108.96	-160.16	-94.44	1695034.33	14279243.51	39°19'19.289"N	80°48'24.746"W	185.93	210.525	7.72	7.71	-0.37	
6352.00	50.440	331.930	6259.64	-85.87	-139.66	-105.18	1695023.58	14279264.01	39°19'19.492"N	80°48'24.882"W	174.84	216.985	13.76	13.61	-2.71	BH AT Curve <8-1/2"> (6321')(6352'-15765')
6399.00	54.480	330.560	6288.27	-48.76	-107.00	-123.12	1695005.66	14279296.65	39°19'19.815"N	80°48'25.110"W	163.12	229.007	8.90	8.60	-2.91	
6411.00	55.260	330.150	6295.18	-39.00	-98.47	-127.97	1695000.80	14279305.18	39°19'19.899"N	80°48'25.171"W	161.47	232.423	7.08	6.50	-3.42	
6442.00†	57.450	329.823	6312.35	-13.36	-76.13	-140.88	1694987.90	14279327.51	39°19'20.121"N	80°48'25.335"W	160.13	241.615	7.12	7.06	-1.06	Burkett: 6442' MD
6458.00	58.580	329.660	6320.83	0.12	-64.41	-147.72	1694981.07	14279339.23	39°19'20.237"N	80°48'25.421"W	161.15	246.443	7.12	7.07	-1.02	
6498.00†	62.147	329.915	6340.61	34.65	-34.36	-165.21	1694963.58	14279369.26	39°19'20.534"N	80°48'25.643"W	168.75	258.250	8.94	8.92	0.64	Tully: 6498' MD

RECEIVED
 Office of Oil and Gas
 JAN 24 2019
 WV Department of
 Environmental Protection



Actual Wellpath Report

Goldsmith Unit 1H AWP Proj: 15789'
Page 5 of 11



REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #05
Area	Doddridge Co., WV	Well	Goldsmith Unit 1H
Field	Doddridge	Wellbore	Goldsmith Unit 1H AWB
Facility	Middle Pad		

WELLPATH DATA (197 stations) † = interpolated/extrapolated station																
MD (ft)	Inclination (°)	Azimuth (°)	TVD (ft)	Vert Sect (ft)	North (ft)	East (ft)	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude	Closure Dist (ft)	Closure Dir (°)	DLS (ft/100ft)	Build Rate (ft/100ft)	Turn Rate (ft/100ft)	Comments
6507.00	62.950	329.970	6344.75	42.59	-27.45	-169.21	1694959.58	14279376.17	39°19'20.602"N	80°48'25.694"W	171.42	260.785	8.94	8.92	0.61	
6554.00	67.090	329.890	6364.60	84.91	9.41	-190.55	1694938.25	14279413.02	39°19'20.967"N	80°48'25.964"W	190.79	272.827	8.81	8.81	-0.17	
6588.00†	70.256	330.161	6376.96	116.38	36.84	-206.38	1694922.43	14279440.44	39°19'21.238"N	80°48'26.165"W	209.64	280.122	9.34	9.31	0.80	Hamilton: 6588' MD
6602.00	71.560	330.270	6381.54	129.54	48.32	-212.95	1694915.87	14279451.91	39°19'21.352"N	80°48'26.248"W	218.36	282.785	9.34	9.31	0.78	
6614.00†	72.754	330.634	6385.22	140.90	58.26	-218.58	1694910.23	14279461.85	39°19'21.450"N	80°48'26.320"W	226.21	284.925	10.36	9.95	3.03	Marcellus POE: 6614' MD
6649.00	76.240	331.670	6394.57	174.48	87.80	-234.85	1694893.97	14279491.37	39°19'21.743"N	80°48'26.526"W	250.72	290.498	10.36	9.96	2.96	
6697.00	79.790	332.570	6404.54	221.29	129.30	-256.80	1694872.03	14279532.85	39°19'22.153"N	80°48'26.804"W	287.51	296.725	7.62	7.40	1.87	
6744.00	81.470	331.850	6412.19	267.54	170.32	-278.42	1694850.42	14279573.86	39°19'22.559"N	80°48'27.078"W	326.38	301.456	3.88	3.57	-1.53	
6792.00	83.460	331.100	6418.48	314.94	212.12	-301.14	1694827.71	14279615.65	39°19'22.973"N	80°48'27.366"W	368.35	305.161	4.43	4.15	-1.56	
6839.00	89.510	330.580	6421.36	361.61	253.07	-323.99	1694804.87	14279656.58	39°19'23.378"N	80°48'27.656"W	411.11	307.994	12.92	12.87	-1.11	
6888.00	90.120	333.000	6421.52	410.45	296.25	-347.15	1694781.72	14279699.74	39°19'23.805"N	80°48'27.949"W	456.37	310.476	5.09	1.24	4.94	
6983.00	89.940	331.870	6421.47	505.22	380.46	-391.11	1694737.77	14279783.92	39°19'24.639"N	80°48'28.506"W	545.64	314.209	1.20	-0.19	-1.19	
7078.00	89.690	334.600	6421.78	600.07	465.28	-433.89	1694695.01	14279868.70	39°19'25.478"N	80°48'29.048"W	636.19	316.999	2.89	-0.26	2.87	
7173.00	89.970	335.050	6422.06	695.03	551.25	-474.30	1694654.62	14279954.64	39°19'26.328"N	80°48'29.560"W	727.21	319.291	0.56	0.29	0.47	
7268.00	90.000	331.950	6422.09	789.90	636.26	-516.68	1694612.25	14280039.62	39°19'27.169"N	80°48'30.097"W	819.63	320.921	3.26	0.03	-3.26	
7363.00	89.540	334.860	6422.47	884.76	721.20	-559.21	1694569.74	14280124.52	39°19'28.010"N	80°48'30.636"W	912.60	322.210	3.10	-0.48	3.06	
7459.00	90.430	341.130	6422.49	980.67	810.16	-595.16	1694533.81	14280213.45	39°19'28.890"N	80°48'31.091"W	1005.27	323.698	6.60	0.93	6.53	
7554.00	90.580	343.100	6421.66	1075.19	900.56	-624.33	1694504.64	14280303.81	39°19'29.784"N	80°48'31.460"W	1095.81	325.268	2.08	0.16	2.07	
7649.00	90.620	339.210	6420.66	1169.84	990.45	-655.01	1694473.98	14280393.66	39°19'30.673"N	80°48'31.848"W	1187.44	326.522	4.09	0.04	-4.09	
7744.00	90.740	335.130	6419.53	1264.80	1077.98	-691.86	1694437.14	14280481.16	39°19'31.539"N	80°48'32.315"W	1280.90	327.307	4.30	0.13	-4.29	
7840.00	90.180	332.830	6418.76	1360.71	1164.24	-733.97	1694395.05	14280567.39	39°19'32.392"N	80°48'32.848"W	1376.29	327.771	2.47	-0.58	-2.40	
7935.00	90.090	330.070	6418.54	1455.35	1247.68	-779.37	1694349.67	14280650.79	39°19'33.218"N	80°48'33.424"W	1471.09	328.009	2.91	-0.09	-2.91	
8030.00	89.450	332.160	6418.92	1549.93	1330.85	-825.25	1694303.80	14280733.93	39°19'34.041"N	80°48'34.005"W	1565.96	328.197	2.30	-0.67	2.20	
8125.00	89.260	333.840	6419.99	1644.76	1415.49	-868.38	1694260.69	14280818.54	39°19'34.878"N	80°48'34.552"W	1660.63	328.472	1.78	-0.20	1.77	
8219.00	90.490	337.310	6420.19	1738.73	1501.06	-907.24	1694221.85	14280904.08	39°19'35.725"N	80°48'35.044"W	1753.93	328.851	3.92	1.31	3.69	
8315.00	90.520	336.560	6419.35	1834.72	1589.39	-944.85	1694184.25	14280992.36	39°19'36.599"N	80°48'35.520"W	1849.02	329.270	0.78	0.03	-0.78	
8410.00	90.460	333.030	6418.54	1929.67	1675.32	-985.30	1694143.82	14281078.27	39°19'37.449"N	80°48'36.033"W	1943.59	329.539	3.72	-0.06	-3.72	
8505.00	90.120	334.750	6418.05	2024.57	1760.62	-1027.11	1694102.03	14281163.53	39°19'38.293"N	80°48'36.562"W	2038.32	329.742	1.85	-0.36	1.81	
8600.00	90.060	335.410	6417.91	2119.55	1846.78	-1067.13	1694062.02	14281249.65	39°19'39.145"N	80°48'37.069"W	2132.92	329.979	0.70	-0.06	0.69	
8695.00	89.850	335.550	6417.98	2214.53	1933.21	-1106.56	1694022.61	14281336.05	39°19'40.000"N	80°48'37.569"W	2227.51	330.213	0.27	-0.22	0.15	



Actual Wellpath Report

Goldsmith Unit 1H AWP Proj: 15789'
Page 6 of 11



REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #05
Area	Doddridge Co., WV	Well	Goldsmith Unit 1H
Field	Doddridge	Wellbore	Goldsmith Unit 1H AWP
Facility	Middle Pad		

WELLPATH DATA (197 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
8790.00	88.490	337.650	6419.36	2309.52	2020.38	-1144.28	1693984.90	14281423.19	39°19'40.863"N	80°48'38.046"W	2321.92	330.474	2.63	-1.43	2.21	
8885.00	90.150	341.200	6420.48	2404.36	2109.30	-1177.66	1693951.54	14281512.07	39°19'41.742"N	80°48'38.469"W	2415.79	330.825	4.12	1.75	3.74	
8980.00	90.550	341.390	6419.90	2499.01	2199.28	-1208.12	1693921.08	14281602.01	39°19'42.632"N	80°48'38.854"W	2509.26	331.219	0.47	0.42	0.20	
9075.00	90.250	338.730	6419.24	2593.80	2288.57	-1240.52	1693888.70	14281691.27	39°19'43.515"N	80°48'39.264"W	2603.16	331.540	2.82	-0.32	-2.80	
9170.00	89.660	340.370	6419.31	2688.66	2377.58	-1273.71	1693855.52	14281780.25	39°19'44.396"N	80°48'39.684"W	2697.27	331.821	1.83	-0.62	1.73	
9265.00	89.750	344.990	6419.80	2783.06	2468.25	-1301.98	1693827.26	14281870.88	39°19'45.293"N	80°48'40.041"W	2790.60	332.189	4.86	0.09	4.86	
9360.00	90.370	345.320	6419.70	2876.95	2560.08	-1326.32	1693802.93	14281962.67	39°19'46.201"N	80°48'40.349"W	2883.25	332.612	0.74	0.65	0.35	
9455.00	89.880	332.880	6419.50	2971.66	2648.65	-1360.15	1693769.12	14282051.21	39°19'47.077"N	80°48'40.777"W	2977.48	332.818	13.10	-0.52	-13.09	
9550.00	89.600	330.370	6419.93	3066.32	2732.23	-1405.29	1693724.00	14282134.75	39°19'47.904"N	80°48'41.349"W	3072.45	332.782	2.66	-0.29	-2.64	
9645.00	89.510	336.980	6420.67	3161.16	2817.33	-1447.40	1693681.91	14282219.82	39°19'48.746"N	80°48'41.883"W	3167.38	332.808	6.96	-0.09	6.96	
9739.00	90.220	338.480	6420.89	3255.13	2904.31	-1483.02	1693646.30	14282306.77	39°19'49.606"N	80°48'42.334"W	3261.04	332.950	1.77	0.76	1.60	
9833.00	89.780	332.630	6420.89	3349.08	2989.85	-1521.90	1693607.43	14282392.27	39°19'50.452"N	80°48'42.826"W	3354.91	333.023	6.24	-0.47	-6.22	
9927.00	89.780	331.170	6421.25	3442.79	3072.77	-1566.17	1693563.18	14282475.15	39°19'51.273"N	80°48'43.387"W	3448.88	332.992	1.55	0.00	-1.55	
10021.00	89.750	330.010	6421.63	3536.30	3154.65	-1612.33	1693517.04	14282557.01	39°19'52.083"N	80°48'43.973"W	3542.80	332.929	1.23	-0.03	-1.23	
10115.00	89.660	329.950	6422.12	3629.71	3236.04	-1659.36	1693470.03	14282638.36	39°19'52.888"N	80°48'44.569"W	3636.68	332.852	0.12	-0.10	-0.06	
10209.00	89.480	331.810	6422.82	3723.27	3318.15	-1705.10	1693424.31	14282720.44	39°19'53.701"N	80°48'45.149"W	3730.62	332.803	1.99	-0.19	1.98	
10303.00	89.750	335.340	6423.46	3817.14	3402.32	-1746.92	1693382.50	14282804.57	39°19'54.534"N	80°48'45.679"W	3824.59	332.822	3.77	0.29	3.76	
10396.00	89.630	336.190	6423.96	3910.13	3487.12	-1785.10	1693344.34	14282889.34	39°19'55.373"N	80°48'46.162"W	3917.47	332.892	0.92	-0.13	0.91	
10490.00	89.260	335.780	6424.87	4004.12	3572.98	-1823.35	1693306.10	14282975.16	39°19'56.222"N	80°48'46.647"W	4011.33	332.964	0.59	-0.39	-0.44	
10584.00	89.260	337.380	6426.08	4098.11	3659.22	-1860.71	1693268.76	14283061.38	39°19'57.075"N	80°48'47.120"W	4105.14	333.047	1.70	0.00	1.70	
10677.00	90.030	342.870	6426.66	4190.88	3746.65	-1892.31	1693237.17	14283148.77	39°19'57.940"N	80°48'47.520"W	4197.41	333.203	5.96	0.83	5.90	
10771.00	90.680	345.510	6426.08	4284.00	3837.08	-1917.92	1693211.57	14283239.16	39°19'58.834"N	80°48'47.844"W	4289.71	333.442	2.89	0.69	2.81	
10865.00	89.940	342.100	6425.57	4377.20	3927.34	-1944.13	1693185.37	14283329.38	39°19'59.727"N	80°48'48.175"W	4382.20	333.663	3.71	-0.79	-3.63	
10959.00	89.820	336.150	6425.77	4471.05	4015.13	-1977.61	1693151.90	14283417.14	39°20'00.595"N	80°48'48.599"W	4475.74	333.778	6.33	-0.13	-6.33	
11053.00	90.090	333.080	6425.84	4564.99	4100.04	-2017.91	1693111.62	14283502.02	39°20'01.435"N	80°48'49.109"W	4569.71	333.795	3.28	0.29	-3.27	
11147.00	90.090	330.670	6425.69	4658.69	4182.94	-2062.21	1693067.33	14283584.88	39°20'02.255"N	80°48'49.671"W	4663.66	333.756	2.56	0.00	-2.56	
11242.00	90.090	329.120	6425.54	4753.08	4265.12	-2109.86	1693019.70	14283667.03	39°20'03.069"N	80°48'50.275"W	4758.44	333.679	1.63	0.00	-1.63	
11336.00	90.030	331.610	6425.44	4846.55	4346.82	-2156.34	1692973.25	14283748.69	39°20'03.877"N	80°48'50.864"W	4852.28	333.615	2.65	-0.06	2.65	
11429.00	89.970	329.130	6425.44	4939.03	4427.65	-2202.32	1692927.29	14283829.49	39°20'04.677"N	80°48'51.447"W	4945.13	333.554	2.67	-0.06	-2.67	
11523.00	90.120	332.530	6425.37	5032.57	4509.71	-2248.13	1692881.50	14283911.53	39°20'05.489"N	80°48'52.028"W	5039.01	333.503	3.62	0.16	3.62	

RECEIVED
Office of Oil and Gas
JAN 24 2019
WV Department of
Environmental Protection



Actual Wellpath Report

Goldsmith Unit 1H AWP Proj: 15789'
Page 7 of 11



REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #05
Area	Doddridge Co., WV	Well	Goldsmith Unit 1H
Field	Doddridge	Wellbore	Goldsmith Unit 1H AWP
Facility	Middle Pad		

WELLPATH DATA (197 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
11617.00	89.880	336.020	6425.37	5126.49	4594.39	-2288.92	1692840.72	14283996.16	39°20'06.327"N	80°48'52.545"W	5132.98	333.518	3.72	-0.26	3.71	
11711.00	90.340	337.500	6425.19	5220.49	4680.76	-2326.01	1692803.65	14284082.50	39°20'07.181"N	80°48'53.015"W	5226.83	333.576	1.65	0.49	1.57	
11804.00	90.340	339.380	6424.64	5313.42	4767.24	-2360.18	1692769.49	14284168.95	39°20'08.037"N	80°48'53.448"W	5319.50	333.661	2.02	0.00	2.02	
11898.00	90.680	341.450	6423.80	5407.18	4855.80	-2391.69	1692737.99	14284257.47	39°20'08.912"N	80°48'53.846"W	5412.85	333.778	2.23	0.36	2.20	
11992.00	90.220	339.200	6423.06	5500.95	4944.30	-2423.33	1692706.36	14284345.94	39°20'09.788"N	80°48'54.247"W	5506.24	333.889	2.44	-0.49	-2.39	
12085.00	89.110	338.960	6423.61	5593.85	5031.17	-2456.54	1692673.17	14284432.77	39°20'10.647"N	80°48'54.667"W	5598.86	333.975	1.22	-1.19	-0.26	
12179.00	90.310	340.690	6424.08	5687.67	5119.39	-2488.96	1692640.76	14284520.96	39°20'11.520"N	80°48'55.077"W	5692.37	334.072	2.24	1.28	1.84	
12273.00	90.310	338.430	6423.57	5781.52	5207.47	-2521.78	1692607.95	14284609.00	39°20'12.391"N	80°48'55.493"W	5785.94	334.161	2.40	0.00	-2.40	
12366.00	90.310	336.580	6423.07	5874.50	5293.39	-2557.36	1692572.38	14284694.89	39°20'13.241"N	80°48'55.943"W	5878.78	334.214	1.99	0.00	-1.99	
12460.00	90.000	334.740	6422.82	5968.49	5379.03	-2596.10	1692533.66	14284780.49	39°20'14.088"N	80°48'56.434"W	5972.74	334.236	1.99	-0.33	-1.96	
12554.00	89.880	335.390	6422.91	6062.46	5464.26	-2635.73	1692494.05	14284865.70	39°20'14.931"N	80°48'56.936"W	6066.73	334.249	0.70	-0.13	0.69	
12648.00	90.550	337.360	6422.56	6156.45	5550.38	-2673.40	1692456.39	14284951.78	39°20'15.783"N	80°48'57.414"W	6160.66	334.282	2.21	0.71	2.10	
12741.00	90.400	336.450	6421.79	6249.45	5635.92	-2709.88	1692419.93	14285037.29	39°20'16.629"N	80°48'57.876"W	6253.56	334.321	0.99	-0.16	-0.98	
12835.00	90.120	334.160	6421.36	6343.42	5721.32	-2749.15	1692380.68	14285122.65	39°20'17.474"N	80°48'58.373"W	6347.54	334.335	2.45	-0.30	-2.44	
12928.00	89.940	337.830	6421.32	6436.40	5806.26	-2786.97	1692342.86	14285207.56	39°20'18.314"N	80°48'58.853"W	6440.49	334.359	3.95	-0.19	3.95	
13022.00	89.850	341.550	6421.49	6530.23	5894.40	-2819.60	1692310.26	14285295.66	39°20'19.186"N	80°48'59.265"W	6534.07	334.436	3.96	-0.10	3.96	
13115.00	90.180	344.520	6421.46	6622.60	5983.34	-2846.73	1692283.13	14285384.57	39°20'20.066"N	80°48'59.608"W	6626.03	334.556	3.21	0.35	3.19	
13209.00	90.520	343.230	6420.89	6715.80	6073.64	-2872.83	1692257.04	14285474.83	39°20'20.959"N	80°48'59.938"W	6718.80	334.686	1.42	0.36	-1.37	
13303.00	91.260	339.080	6419.43	6809.44	6162.57	-2903.19	1692226.70	14285563.73	39°20'21.838"N	80°49'00.322"W	6812.18	334.775	4.48	0.79	-4.41	
13396.00	90.620	336.620	6417.90	6902.39	6248.69	-2938.24	1692191.66	14285649.81	39°20'22.690"N	80°49'00.766"W	6905.03	334.816	2.73	-0.69	-2.65	
13490.00	89.720	332.050	6417.62	6996.30	6333.39	-2978.94	1692150.97	14285734.48	39°20'23.528"N	80°49'01.282"W	6999.00	334.810	4.96	-0.96	-4.86	
13584.00	89.570	331.120	6418.21	7089.97	6416.07	-3023.67	1692106.26	14285817.12	39°20'24.346"N	80°49'01.849"W	7092.85	334.767	1.00	-0.16	-0.99	
13677.00	89.510	332.080	6418.95	7182.64	6497.87	-3067.90	1692062.05	14285898.89	39°20'25.156"N	80°49'02.410"W	7185.70	334.726	1.03	-0.06	1.03	
13771.00	89.690	335.730	6419.61	7276.53	6582.27	-3109.24	1692020.72	14285983.26	39°20'25.991"N	80°49'02.934"W	7279.68	334.716	3.89	0.19	3.88	
13865.00	89.820	342.630	6420.01	7370.36	6670.08	-3142.63	1691987.35	14286071.03	39°20'26.859"N	80°49'03.357"W	7373.34	334.772	7.34	0.14	7.34	
13958.00	89.600	341.380	6420.48	7462.92	6758.53	-3171.36	1691958.63	14286159.44	39°20'27.734"N	80°49'03.720"W	7465.60	334.862	1.36	-0.24	-1.34	
14052.00	90.030	334.910	6420.79	7556.82	6845.72	-3206.34	1691923.67	14286246.61	39°20'28.596"N	80°49'04.163"W	7559.40	334.903	6.90	0.46	-6.88	
14146.00	89.750	329.930	6420.97	7650.56	6929.02	-3249.84	1691880.18	14286329.87	39°20'29.421"N	80°49'04.715"W	7653.28	334.873	5.31	-0.30	-5.30	
14240.00	89.880	327.440	6421.27	7743.71	7009.32	-3298.70	1691831.35	14286410.13	39°20'30.215"N	80°49'05.335"W	7746.74	334.798	2.65	0.14	-2.65	
14333.00	89.020	330.210	6422.16	7835.88	7088.87	-3346.83	1691783.23	14286489.66	39°20'31.002"N	80°49'05.945"W	7839.22	334.727	3.12	-0.92	2.98	

RECEIVED
 Office of Oil and Gas
 JAN 24 2019
 WV Department of
 Environmental Protection



Actual Wellpath Report

Goldsmith Unit 1H AWP Proj: 15789'
Page 8 of 11



REFERENCE WELLPATH IDENTIFICATION	
Operator	ANTERO RESOURCES CORPORATION
Area	Doddridge Co., WV
Field	Doddridge
Facility	Middle Pad
Slot	Slot #05
Well	Goldsmith Unit 1H
Wellbore	Goldsmith Unit 1H AWB

WELLPATH DATA (197 stations)																
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 F/100ft	Build Rate F/100ft	Turn Rate F/100ft	Comments
14427.00	89.540	333.340	6423.34	7929.55	7171.68	-3391.28	1691738.80	14286572.43	39°20'31.822"N	80°49'06.509"W	7933.08	334.692	3.38	0.55	3.33	
14520.00	89.970	336.080	6423.74	8022.50	7255.76	-3431.00	1691699.09	14286656.48	39°20'32.654"N	80°49'07.012"W	8026.07	334.692	2.98	0.46	2.95	
14614.00	89.780	338.380	6423.95	8116.49	7342.43	-3467.38	1691662.73	14286743.11	39°20'33.511"N	80°49'07.473"W	8119.97	334.721	2.46	-0.20	2.45	
14708.00	89.970	341.770	6424.15	8210.28	7430.79	-3499.41	1691630.71	14286831.43	39°20'34.385"N	80°49'07.878"W	8213.55	334.783	3.61	0.20	3.61	
14802.00	89.750	342.200	6424.38	8303.83	7520.18	-3528.48	1691601.65	14286920.79	39°20'35.269"N	80°49'08.246"W	8306.82	334.864	0.51	-0.23	0.46	
14895.00	90.050	340.860	6424.54	8396.46	7608.38	-3557.94	1691572.20	14287008.96	39°20'36.141"N	80°49'08.619"W	8399.19	334.938	1.48	0.33	-1.44	
14989.00	89.820	339.780	6424.64	8490.24	7696.89	-3589.60	1691540.56	14287097.43	39°20'37.017"N	80°49'09.020"W	8492.78	334.997	1.18	-0.26	-1.15	
15083.00	90.250	340.860	6424.58	8584.02	7785.40	-3621.25	1691508.92	14287185.91	39°20'37.892"N	80°49'09.420"W	8586.38	335.055	1.24	0.46	1.15	
15177.00	90.050	338.560	6424.32	8677.85	7873.56	-3653.85	1691476.34	14287274.03	39°20'38.764"N	80°49'09.833"W	8680.07	335.106	2.46	-0.20	-2.45	
15271.00	90.090	338.310	6424.20	8771.79	7960.98	-3688.40	1691441.80	14287361.42	39°20'39.629"N	80°49'10.270"W	8773.91	335.141	0.27	0.03	-0.27	
15365.00	90.340	337.870	6423.85	8865.75	8048.19	-3723.47	1691406.74	14287448.59	39°20'40.491"N	80°49'10.715"W	8867.79	335.173	0.54	0.27	-0.47	
15460.00	90.620	334.420	6423.05	8960.73	8135.06	-3761.89	1691368.34	14287535.43	39°20'41.351"N	80°49'11.201"W	8962.75	335.183	3.64	0.29	-3.63	
15555.00	90.340	332.470	6422.26	9055.60	8220.03	-3804.35	1691325.89	14287620.36	39°20'42.191"N	80°49'11.740"W	9057.70	335.165	2.07	-0.29	-2.05	
15651.00	90.000	331.370	6421.97	9151.30	8304.73	-3849.54	1691280.72	14287705.03	39°20'43.029"N	80°49'12.313"W	9153.55	335.131	1.20	-0.35	-1.15	
15745.00	90.150	330.580	6421.85	9244.88	8386.92	-3895.15	1691235.13	14287787.19	39°20'43.843"N	80°49'12.891"W	9247.30	335.088	0.86	0.16	-0.84	
15765.00	89.880	329.930	6421.84	9264.77	8404.29	-3905.07	1691225.21	14287804.55	39°20'44.015"N	80°49'13.017"W	9267.23	335.078	3.52	-1.35	-3.25	
15789.00	89.880	329.930	6421.89	9288.61	8425.06	-3917.10	1691213.19	14287825.31	39°20'44.220"N	80°49'13.170"W	9291.14	335.065	0.00	0.00	0.00	Projected MD at TD: 15789'



Actual Wellpath Report

Goldsmith Unit 1H AWP Proj: 15789'
Page 9 of 11



REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #05
Area	Doddridge Co., WV	Well	Goldsmith Unit 1H
Field	Doddridge	Wellbore	Goldsmith Unit 1H AWB
Facility	Middle Pad		

HOLE & CASING SECTIONS - Ref Wellbore: Goldsmith Unit 1H AWB Ref Wellpath: Goldsmith Unit 1H AWP Proj: 15789'									
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	32.00	112.00	80.00	32.00	112.00	0.00	0.00	-0.11	-0.15
17.5in Open Hole	112.00	548.00	436.00	112.00	547.99	-0.11	-0.15	-0.94	-2.06
13.375in Casing Surface	32.00	548.00	516.00	32.00	547.99	0.00	0.00	-0.94	-2.06
12.25in Open Hole	548.00	2625.00	2077.00	547.99	2623.53	-0.94	-2.06	-40.15	-21.92
9.625in Casing Intermediate	32.00	2625.00	2593.00	32.00	2623.53	0.00	0.00	-40.15	-21.92
8.75in Open Hole	2625.00	6388.00	3763.00	2623.53	6281.81	-40.15	-21.92	-114.76	-118.77
8.5in Open Hole	6388.00	15789.00	9401.00	6281.81	6421.89	-114.76	-118.77	8425.06	-3917.10
5.5in Casing Production	32.00	15789.00	15757.00	32.00	6421.89	0.00	0.00	8425.06	-3917.10

TARGETS								
Name	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
Goldsmith Unit 1H POE Rev-2	6375.00	33.14	-199.41	1694929.39	14279436.73	39°19'21.202"N	80°48'26.077"W	point
Goldsmith Unit 1H BHL Rev-2	6415.00	8382.60	-3897.40	1691232.88	14287782.87	39°20'43.800"N	80°49'12.920"W	point
Goldsmith Unit 1H LP Rev-1	6415.00	226.63	-312.48	1694816.37	14279630.15	39°19'23.117"N	80°48'27.510"W	point

RECEIVED
 Office of Oil and Gas
 JAN 24 2019
 WV Department of
 Environmental Protection



Actual Wellpath Report

Goldsmith Unit 1H AWP Proj: 15789'
Page 10 of 11



REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #05
Area	Doddridge Co., WV	Well	Goldsmith Unit 1H
Field	Doddridge	Wellbore	Goldsmith Unit 1H AWB
Facility	Middle Pad		

WELLPATH COMPOSITION - Ref Wellbore: Goldsmith Unit 1H AWB Ref Wellpath: Goldsmith Unit 1H AWP Proj: 15789'				
Start MD (ft)	End MD (ft)	Positional Uncertainty Model	Log Name/Comment	Wellbore
32.00	520.00	Gyrodata standard - Drop gyro or Multi-shot	01 Gyrodata MS Gyro <17-1/2"> (100'-503')	Goldsmith Unit 1H AWB
520.00	791.00	Gyrodata standard - Drop gyro or Multi-shot	02 Gyrodata MS Gyro <12-1/4"> (503')(593'-774')	Goldsmith Unit 1H AWB
791.00	2553.00	ISCVSA MWD, Rev. 4 (Standard)	03 Directional ONE MWD <12-1/4"> (774')(834'-2536')	Goldsmith Unit 1H AWB
2553.00	6321.00	ISCVSA MWD, Rev. 4 (Standard)	04 Directional ONE MWD <8-3/4"> (2536')(2651'-6304')	Goldsmith Unit 1H AWB
6321.00	15765.00	BHI AutoTrak Curve (Axial)	05 BH AT Curve <8-1/2">(6321')(6352'-15765')	Goldsmith Unit 1H AWB
15765.00	15789.00	Blind Drilling (std)	Projection to bit	Goldsmith Unit 1H AWB

RECEIVED
 Office of Oil and Gas
 JAN 24 2019
 WV Department of
 Environmental Protection



Actual Wellpath Report

Goldsmith Unit 1H AWP Proj: 15789'

Page 11 of 11



REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #05
Area	Doddridge Co., WV	Well	Goldsmith Unit 1H
Field	Doddridge	Wellbore	Goldsmith Unit 1H AWB
Facility	Middle Pad		

COMMENTS
<p>Wellpath general comments API: 47-017-06820-0000 BHI Job #: 9067098 Rig: Frontier 32 Duration: 03/19/2018-03/22/2018 Gyrodata MS Gyro <17-1/2"> (100'-503') Gyrodata MS Gyro <12-1/4"> (503')(593'-774') Directional ONE MWD <12-1/4"> (774')(834'-2536') Directional ONE MWD <8-3/4"> (2536')(2651'-6304') BH AT Curve <8-1/2"> (6321')(6352'-15765') Burkett: 6442' MD Tully: 6498' MD Hamilton: 6588' MD Marcellus POE: 6614' MD Projected MD at TD: 15789'</p>

RECEIVED
Office of Oil and Gas
JAN 24 2019
WV Department of
Environmental Protection

Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	7/16/2018
Job End Date:	8/8/2018
State:	West Virginia
County:	Doddridge
API Number:	47-017-06820-00-00
Operator Name:	Antero Resources Corporation
Well Name and Number:	Goldsmith 1H
Latitude:	39.32166000
Longitude:	-80.80487000
Datum:	NAD83
Federal Well:	NO
Indian Well:	NO
True Vertical Depth:	6,634
Total Base Water Volume (gal):	17,177,667
Total Base Non Water Volume:	0



RECEIVED
 Office of Oil and Gas
 JAN 24 2018
 W.V. Department of Environmental Protection

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	88.30261	Density = 8.340
Ingredients	Listed Above	Listed Above					
			Water	7732-18-5	100.00000	0.22306	

WG-36 GELLING AGENT	Halliburton	Gelling Agent					
				Listed Below			
SAND-COMMON WHITE-100 MESH, SSA-2, BULK (100003676)	Halliburton	Proppant					
				Listed Below			
SP BREAKER	Halliburton	Breaker					
				Listed Below			
EXCELERATE PS-2	Halliburton	Friction Reducer					
				Listed Below			
SAND-PREMIUM WHITE-30/50, BULK	Halliburton	Proppant					
				Listed Below			
SAND-PREMIUM WHITE-40/70, BULK	Halliburton	Proppant					
				Listed Below			
HYDROCHLORIC ACID	Halliburton	Solvent					
				Listed Below			
HAI-OS ACID INHIBITOR	Halliburton	Corrosion Inhibitor					

RECEIVED
 Office of Oil and Gas
 JAN 24 2019
 WV Department of
 Environmental Protection

				Listed Below			
MC B-8614	Halliburton	Biocide					
				Listed Below			
MC S-2510T	Halliburton	Scale Inhibitor					
				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	11.42512	
			Hydrochloric acid	7647-01-0	15.00000	0.02633	
			Guar gum	9000-30-0	100.00000	0.02036	
			Hydrotreated light petroleum distillate	64742-47-8	30.00000	0.01591	
			Acrylamide acrylate polymer	Proprietary	30.00000	0.01591	Denise Tuck, Halliburton, 3000 N. Sam Houston Pkwy E., Houston, TX 77032, 281-871-6226
			Inorganic salt	Proprietary	30.00000	0.01591	
			Ethylene Glycol	107-21-1	60.00000	0.00807	
			Glutaraldehyde	111-30-8	30.00000	0.00276	
			Neutralized Polyacrylic Emulsion	Proprietary	10.00000	0.00134	
			Sodium persulfate	7775-27-1	100.00000	0.00057	
			Quaternary ammonium compounds, benzyl-C12-16-alkyldimethyl chlorides	68424-85-1	5.00000	0.00046	
			Methanol	67-56-1	60.00000	0.00009	
			Ethanol	64-17-5	1.00000	0.00009	
			Fatty acids, tall oil	Proprietary	30.00000	0.00004	
			Ethoxylated alcohols	Proprietary	30.00000	0.00004	

WV Department of
Environmental Protection

JAN 24 2019

RECEIVED
Office of Oil and Gas

			Modified thiourea polymer	Proprietary	30.00000	0.00004	
			Olefins	Proprietary	5.00000	0.00002	
			Propargyl alcohol	107-19-7	10.00000	0.00001	
			Phosphoric acid	7664-38-2	0.10000	0.00001	
			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)

RECEIVED
Office of Oil and Gas
JAN 24 2019
WV Department of
Environmental Protection

8,276' to Bottom Hole

4,264' to Top Hole
BTM LATITUDE 39 - 22 - 30
TOP LATITUDE 39 - 20 - 00

LONGITUDE 80 - 47 - 30

3,898' to Top Hole

10,591' to Bottom Hole

**Antero Resources
Well No. Goldsmith Unit 1H
As-Drilled Plat**
Antero Resources Corporation

260/379 Goldsmith Unit 1H Bottom Hole
132.61 Ac.

345/294
75.11 Ac.

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.

Legend

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

TM/Par	Bk /Pg	Acres	Owner(s)
1	6/2	214 / 279	32.19
2	6/2.5	253 / 222	8.66
3	6/2.8	305 / 419	2.68
4	6/2.6	266 / 36	3.52
5	6/1.3	305 / 416	4.68
6	6/2.4	163 / 44	14.98
7	6/2.3	197 / 659	4.15
8	4/28	WB 28/314	357.75
9	3/15.1	235 / 236	0.56
10	3/18	228 / 723	6.84
11	3/18.2	232 / 135	6.00
12	3/23	WB 47/723	3.00
13	3/8.1	286 / 218	4.48
14	3/9	239 / 114	7.39
15	3/19.1	265 / 582	7.00
16	3/14	247 / 634	0.90

Wellhead Layout Detail Not to Scale

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.

Water Well

Scale: 1" = 2000'

Proposed Well No. Goldsmith Unit 1H

(4) Water Wells

(12) Water Wells

(3) Water Wells

5 Gas Wells

Possible water well @ foam cabin (indoor plumbing present, no well found)

Plugged - No Tag



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: 2019-30 WU-14
DRAWING NO: Goldsmith 1H As-Drilled Plat
SCALE: 1" = 1200'
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 25 2019
Operator's Well No. Goldsmith Unit 1H
API WELL NO
47 - 017 - 06820
STATE COUNTY PERMIT

WELL TYPE: OIL GAS LIQUID INJECTION WASTE DISPOSAL
(IF GAS) PRODUCTION: STORAGE DEEP SHALLOW
LOCATION: ELEVATION: As-Built Grade - 843' WATERSHED: Headwaters Middle Island Creek QUADRANGLE: West Union
DISTRICT: West Union WV Division of Natural Resources; COUNTY: Doddridge
SURFACE OWNER: William Randall Lynch & Dixie Craig; William Randall Lynch, et ux, Memorandum of Oil & Gas Lease; William Randall Lynch & Dixie Craig; ACREAGE: 32.19 32.15; 8.66; 78.75; 56.07;
ROYALTY OWNER: Clarence W. Mutscheiknaus, et ux; James Douglas White; Janice M. Ellifritt Cox; Dwight Robert Husk, et ux; Lewis Maxwell, et al; William Randall Lynch & Dixie Craig; ACREAGE: 168; 61.361; 105; 20.49; 82.21; 150;
PROPOSED WORK: DRILL CONVERT DRILL DEEPER FRACTURE OR STIMULATE PLUG OFF OLD FORMATION
 PERFORATE NEW FORMATION OTHER PHYSICAL CHANGE IN WELL (SPECIFY) As-Drilled
 PLUG AND ABANDON CLEAN OUT AND REPLUG TARGET FORMATION: Marcellus Shale ESTIMATED DEPTH: 15,789' MD 6,421' 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

8,276' to Bottom Hole

4,264' to Top Hole
BTM LATITUDE 39 - 22 - 30
TOP LATITUDE 39 - 20 - 00

LONGITUDE 80 - 47 - 30
3,898' to Top Hole
10,591' to Bottom Hole

Antero Resources
Well No. Goldsmith Unit 1H
As-Drilled Plat
Antero Resources Corporation

260/379
132.61 Ac.

Goldsmith Unit 1H Bottom Hole

18 345/294
17 75.11 Ac.

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.

Legend

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

(+) Denotes Location of Well on United States Topographic Maps

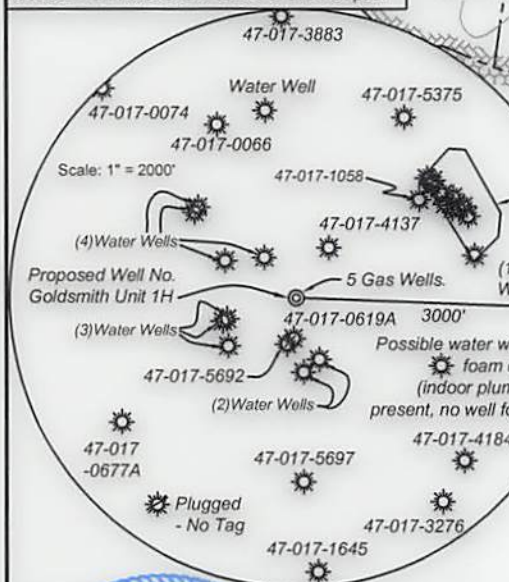
TM/Par	Bk / Pg	Acres	Owner(s)
1	6/2	214 / 279	32.19
2	6/2.5	253 / 222	8.66
3	6/2.8	305 / 419	2.68
4	6/2.6	266 / 36	3.52
5	6/1.3	305 / 416	4.68
6	6/2.4	163 / 44	14.98
7	6/2.3	197 / 659	4.15
8	4/28	WB 28/314	357.75
9	3/15.1	235 / 236	0.56
10	3/18	228 / 723	6.84
11	3/18.2	232 / 135	6.00
12	3/23	WB 47/723	3.00
13	3/8.1	286 / 218	4.48
14	3/9	239 / 114	7.39
15	3/19.1	265 / 582	7.00
16	3/14	247 / 634	0.90

Ralph P. McCutchan, II
238/321 30 Acres

Wellhead Layout
Detail Not to Scale



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.



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

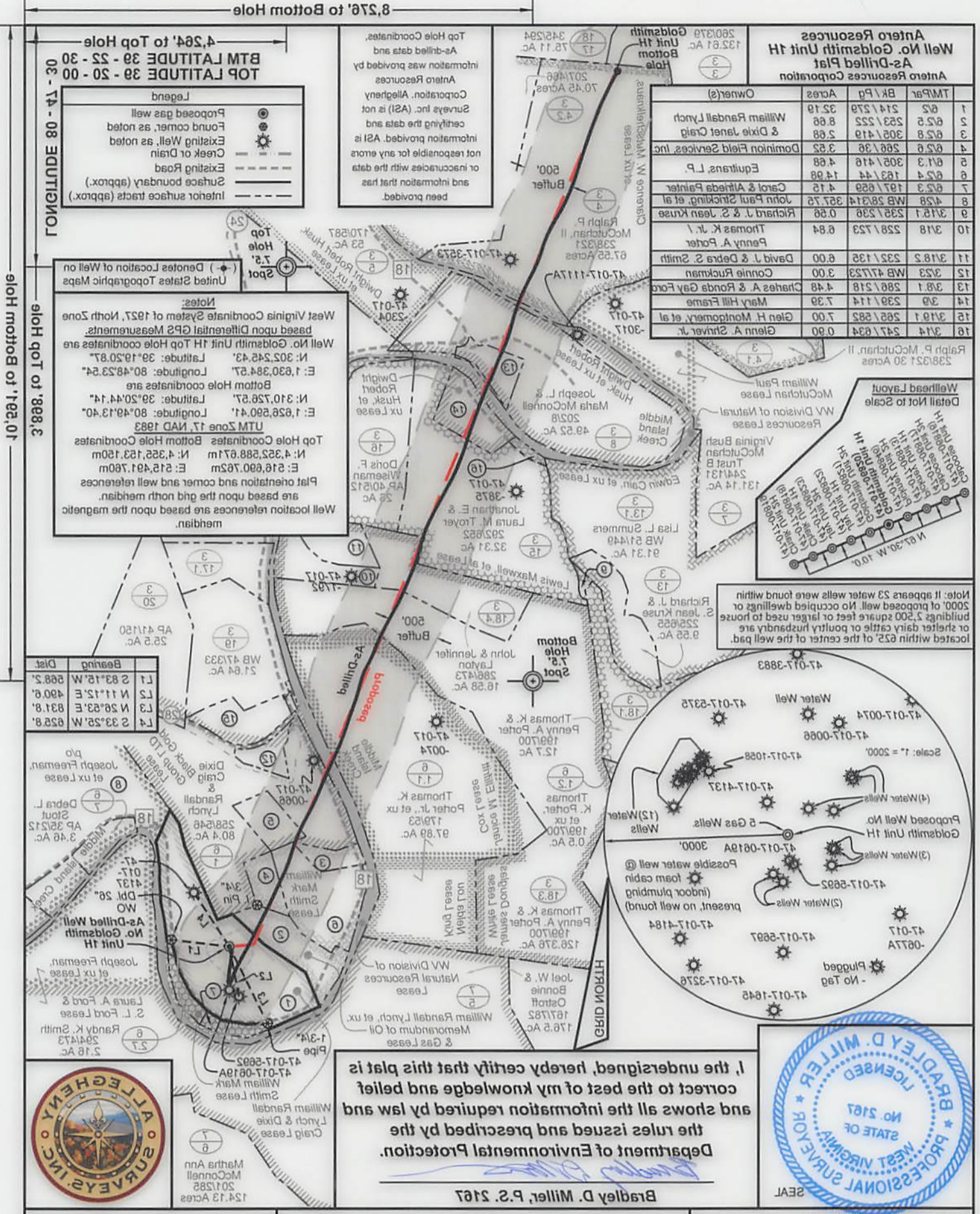
STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
OIL AND GAS DIVISION

FILE NO: 201-30-WU-14
DRAWING NO: Goldsmith 1H As-Drilled Plat
SCALE: 1" = 1200'
MINIMUM DEGREE OF ACCURACY: Submeter
PROVEN SOURCE OF ELEVATION: CORS, Marietta, OH

DATE: January 25 2019
Operator's Well No. Goldsmith Unit 1H
API WELL NO
47 - 017 - 06820
STATE COUNTY PERMIT

WELL TYPE: OIL GAS LIQUID INJECTION WASTE DISPOSAL
(IF GAS) PRODUCTION: STORAGE DEEP SHALLOW
LOCATION: ELEVATION: As-Built Grade - 843' WATERSHED: Headwaters Middle Island Creek QUADRANGLE: West Union
DISTRICT: West Union WV Division of Natural Resources; COUNTY: Doddridge
SURFACE OWNER: William Randall Lynch & Dixie Craig; William Randall Lynch, et ux, Memorandum of Oil & Gas Lease; Black Gold Group, LTD; William Mark Smith; William Randall Lynch & Dixie Craig; ACREAGE: 32.19 32.15; 8.66; 78.75; 20.49; 82.21; 150;
ROYALTY OWNER: Clarence W. Mutschelknaus, et ux; James Douglas White; Janice M. Ellifritt Cox LEASE NO: ACREAGE: 168; 61.361; 105
PROPOSED WORK: DRILL CONVERT DRILL DEEPER FRACTURE OR STIMULATE PLUG OFF OLD FORMATION
 PERFORATE NEW FORMATION OTHER PHYSICAL CHANGE IN WELL (SPECIFY) As-Drilled
 PLUG AND ABANDON CLEAN OUT AND REPLUG TARGET FORMATION: Marcellus Shale ESTIMATED DEPTH: 15,789' MD 6,421' 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



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

FILE NO: 201-30-WU-14
 DRAWING NO: Goldsmith 1H A-Drilled Plat
 SCALE: 1" = 1200'
 MINIMUM DEGREE OF ACCURACY: Submeter
 PROVEN SOURCE OF ELEVATION: COR2, Marietta, OH

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

LOCATION: ELEVATION: As-Built Grade - 843'
 DISTRICT: West Union
 SURFACE OWNER: William Randall Lynch & Dixie Janet Craig
 ROYALTY OWNER: Clarence W. Mutschelknaus, et ux; James Douglas White, Janice M. Ellifritz Cox
 PROPOSED WORK: DRILL CONVERT DRILL DEEPER FRACTURE OR STIMULATE PLUG OFF OLD FORMATION
 PERFORATE NEW FORMATION OTHER PHYSICAL CHANGE IN WELL (SPECIFY) A-Drilled
 PLUG AND ABANDON CLEAN OUT AND REPLUG TARGET FORMATION: Marcellus Shale ESTIMATED DEPTH: 12,789, MD
 DESIGNATED AGENT: Diana Stampler - CT Corporation System

ADDRESS: 1615 Wynkoop Street
 Denver, CO 80202

ADDRESS: 5400 D Big Tyler Road
 Charleston, WV 25313

DATE: January 25, 2019

APL WELL NO: 47 - 017 - 08820

STATE COUNTY PERMIT

OPERATOR'S Well No. Goldsmith Unit 1H

BRADLEY D. MILLER, P.S. 2167
 Department of Environmental Protection
 and shows all the information required by law and correct to the best of my knowledge and belief
 I, the undersigned, hereby certify that this plat is

BRADLEY D. MILLER
 LICENSED PROFESSIONAL SURVEYOR
 STATE OF WEST VIRGINIA
 No. 2187

Antero Resources Corporation
 1615 Wynkoop Street
 Denver, CO 80202

Allegheny Surveys Inc.
 124.13 Acres
 201285
 201285