

APPROVED

NAME: John A. [Signature]

DATE: 10/18/17

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

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Office of Oil and Gas

SEP 18 2017

WV Department of
Environmental Protection

API 47-017-06319 County Doddridge District Greenbrier
Quad Smithburg, New Milton & Big Isaac 7.5' Pad Name Susie Jane Pad Field/Pool Name -----
Farm name John S. Jr. & Jacquelin S. Trent Well Number Chumley 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 4345017.141m Easting 531746.625m
Landing Point of Curve Northing 4344916.097m Easting 531904.669m
Bottom Hole Northing 4343318.495m Easting 532425.463m

Elevation (ft) 1251' GL Type of Well New Existing Type of Report Interim Final
Permit Type Deviated Horizontal Horizontal 6A Vertical Depth Type Deep Shallow
Type of Operation Convert Deepen Drill Plug Back Redrilling Rework Stimulate
Well Type Brine Disposal CBM Gas Oil Secondary Recovery Solution Mining Storage Other _____
Type of Completion Single Multiple Fluids Produced Brine Gas NGL Oil Other _____
Drilled with Cable Rotary

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

Date permit issued 09/23/2013 Date drilling commenced 07/03/2014 Date drilling ceased 11/20/2014
Date completion activities began 12/27/2014 Date completion activities ceased 02/06/2017
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 97', 184', 187' Open mine(s) (Y/N) depths No
Salt water depth(s) ft 1370', 1460', 2281' Void(s) encountered (Y/N) depths No
Coal depth(s) ft 957' Cavern(s) encountered (Y/N) depths No
Is coal being mined in area (Y/N) No

Reviewed by: _____

01/05/2018

API 47-017 - 06319 Farm name John S. Jr. & Jacquelin S. Trent Well number Chumley 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"	90'	New	94#, H-40	N/A	Y
Surface	17-1/2"	13-3/8"	404'	New	48#, H-40	N/A	Y
Coal							
Intermediate 1	12-1/4"	9-5/8"	2561'	New	36#, J-55	N/A	Y
Intermediate 2							
Intermediate 3							
Production	8-3/4"/8-1/2"	5-1/2"	13313'	New	20#, P-110	N/A	Y
Tubing		2-3/8"	7488'		1#, N-80		
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	94 sx	15.6	1.18	111	0'	8 Hrs.
Surface	Class A	471 sx	15.6	1.20	565	0'	8 Hrs.
Coal							
Intermediate 1	Class A	1000 sx	15.6	1.18	1180	0'	8 Hrs.
Intermediate 2							
Intermediate 3							
Production	Class H	1120 sx (Lead) 960 sx (Tail)	14.5 (Lead), 15.2 (Tail)	1.3 (Lead), 1.86 (Tail)	3242	-500' into Intermediate Casing	8 Hrs.
Tubing							

Drillers TD (ft) 13313' MD, 7324' TVD (BHL) & 7361' TVD (Deepest Point Drilled) Loggers TD (ft) 13266' MD
 Deepest formation penetrated Marcellus Plug back to (ft) N/A
 Plug back procedure N/A

Kick off depth (ft) 6736'

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

** This is a subsequent well. Antero only runs wireline logs on one well on a multi-well pad (Kelley Unit 2H API #47-017-06282). Please reference the wireline logs submitted with Form WR-35 for Kelley Unit 2H. A Cement Bond Log has been included with this submittal.

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API 47- 017 - 06319 Farm name John S. Jr. & Jacquelin S. Trent Well number Chumley Unit 1H

PERFORATION RECORD

Stage No.	Perforation date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formation(s)
*PLEASE SEE ATTACHED EXHIBIT 1					

Please insert additional pages as applicable.

STIMULATION INFORMATION PER STAGE

Complete a separate record for each stimulation stage.

Stage No.	Stimulations Date	Ave Pump Rate (BPM)	Ave Treatment Pressure (PSI)	Max Breakdown Pressure (PSI)	ISIP (PSI)	Amount of Proppant (lbs)	Amount of Water (bbls)	Amount of Nitrogen/other (units)
*PLEASE SEE ATTACHED EXHIBIT 2								

Please insert additional pages as applicable.

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API 47- 017 - 06319 Farm name John S. Jr. & Jacquelin S. Trent Well number Chumley Unit 1H

<u>PRODUCING FORMATION(S)</u>	<u>DEPTHS</u>		
Marcellus	7306' (TOP)	TVD	7565' (TOP) MD
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

Please insert additional pages as applicable.

GAS TEST Build up Drawdown Open Flow OIL TEST Flow Pump

SHUT-IN PRESSURE Surface 3950 psi Bottom Hole --- psi DURATION OF TEST --- hrs

OPEN FLOW Gas 10628 mcfpd Oil 0 bpd NGL --- bpd Water 1 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 ₂ S, ETC)
	DEPTH IN FT NAME TVD	DEPTH IN FT TVD	DEPTH IN FT MD	DEPTH IN FT MD	

***PLEASE SEE ATTACHED EXHIBIT 3**

Please insert additional pages as applicable.

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

Logging Company STRC
Address 1560 Good Hope Pike City Clarksburg State WV Zip 26301

Cementing Company Nabors Completion & Production Services, Co.
Address 1650 Hackers Creek City Jane Lew State WV Zip 26378

Stimulating Company Halliburton
Address 121 Champion Way Suite 200 City Canonsburg State PA Zip 15317

Please insert additional pages as applicable.

Completed by Samantha Klaas Telephone 303-357-6759
Signature *Samantha Klaas* Title Permitting Agent Date 09/15/2017

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

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EXHIBIT 1

Stage No.	Perforation Date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formations
1	12/27/2014	13055	13220	60	Marcellus
2	12/4/2016	12853	13023	60	Marcellus
3	12/4/2016	12651	12821	60	Marcellus
4	12/5/2016	12450	12620	60	Marcellus
5	12/5/2016	12248	12418	60	Marcellus
6	12/6/2016	12047	12217	60	Marcellus
7	12/6/2016	11845	12015	60	Marcellus
8	12/7/2016	11643	11813	60	Marcellus
9	12/8/2016	11442	11612	60	Marcellus
10	12/8/2016	11240	11410	60	Marcellus
11	12/9/2016	11039	11209	60	Marcellus
12	12/9/2016	10837	11007	60	Marcellus
13	12/10/2016	10635	10805	60	Marcellus
14	12/10/2016	10434	10604	60	Marcellus
15	12/11/2016	10232	10402	60	Marcellus
16	12/11/2016	10031	10201	60	Marcellus
17	12/12/2016	9829	9999	60	Marcellus
18	12/12/2016	9628	9798	60	Marcellus
19	12/13/2016	9426	9596	60	Marcellus
20	12/13/2016	9224	9394	60	Marcellus
21	12/13/2016	9023	9193	60	Marcellus
22	12/15/2016	8821	8991	60	Marcellus
23	12/15/2016	8620	8790	60	Marcellus
24	12/17/2016	8418	8588	60	Marcellus
25	12/17/2016	8216	8386	60	Marcellus
26	12/18/2016	8015	8185	60	Marcellus
27	12/19/2016	7813	7983	60	Marcellus
28	12/20/2016	7612	7782	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	12/3/2016	76.3	7552	6030	4547	518854	12106	N/A
2	12/4/2016	77.6	7500	5528	5432	505636	11155	N/A
3	12/4/2016	73.8	7453	5043	4189	516748	11000	N/A
4	12/5/2016	78.5	7553	5943	5026	513681	12182	N/A
5	12/5/2016	77.9	7306	5771	5013	515184	10775	N/A
6	12/6/2016	79.4	7429	5666	4662	514839	10963	N/A
7	12/6/2016	76.9	7272	5763	4765	514589	10781	N/A
8	12/7/2016	78.0	7347	5782	4658	514380	10810	N/A
9	12/8/2016	75.2	7384	5843	5595	499195	10600	N/A
10	12/8/2016	74.8	7830	5875	5026	513538	12192	N/A
11	12/9/2016	77.8	7365	5598	4884	514749	10902	N/A
12	12/9/2016	78.6	7160	5701	4948	510752	10819	N/A
13	12/10/2016	76.7	7168	5612	3862	513831	10857	N/A
14	12/10/2016	78.0	7244	5457	4982	514056	11505	N/A
15	12/11/2016	77.6	7003	5759	4276	516008	10868	N/A
16	12/11/2016	78.7	7158	5018	4406	509470	12641	N/A
17	12/12/2016	78.5	6994	5690	4595	514216	10677	N/A
18	12/12/2016	78.6	7101	5574	4866	513834	10733	N/A
19	12/13/2016	75.9	6830	6148	4509	515133	10724	N/A
20	12/13/2016	78.8	6900	5924	4591	514113	10745	N/A
21	12/13/2016	78.1	6961	5564	4965	514408	10634	N/A
22	12/15/2016	79.2	6879	5323	4795	514489	10735	N/A
23	12/15/2016	80.2	6737	5331	5127	514504	10824	N/A
24	12/17/2016	79.2	6818	5181	5142	515710	11002	N/A
25	12/17/2016	79.0	6998	5544	5104	515566	11655	N/A
26	12/18/2016	78.5	6753	5513	4933	515657	10574	N/A
27	12/19/2016	77.5	6937	5290	5184	512648	10571	N/A
28	12/20/2016	81.3	6808	5954	4807	513114	10691	N/A
AVG=		77.9	7159	5,622	4,817	14,378,902	309,721	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
Fresh Water	97'	N/A	97'	N/A
Fresh Water	184'	N/A	184'	N/A
Fresh Water	187'	N/A	187'	N/A
Silt	0	147	0	147
Sandy siltstone	est. 147	237	est. 147	237
Sandstone	est. 237	267	est. 237	267
Silty Sandstone	est. 267	337	est. 267	337
Shale	est. 337	417	est. 337	417
Sandstone	est. 417	487	est. 417	487
Silty Sandstone	est. 487	867	est. 487	867
Sandy Shale	est. 867	957	est. 867	957
Sandstone (Trace Coal)	est. 957	1287	est. 957	1287
Sandstone	est. 1287	1437	est. 1287	1437
Limey Shale	est. 1437	1677	est. 1437	1677
Silty Sandstone	est. 1677	2037	est. 1677	2037
Sandy Siltstone	est. 2037	2247	est. 2037	2247
Limey Shale	est. 2247	2296	est. 2247	2309
Big Lime	2296	2693	2309	2694
Gantz Sand	2693	2900	2694	2901
Fifty Foot Sandstone	2900	3078	2901	3079
Gordon	3078	3434	3079	3435
Fifth Sandstone	3434	3501	3435	3502
Bayard	3501	4020	3502	4021
Speechley	4020	4217	4021	4218
Baltown	4217	4886	4218	4887
Bradford	4886	5292	4887	5293
Benson	5292	5550	5293	5551
Alexander	5550	5797	5551	5798
Elk	5797	6320	5798	6321
Rhinestreet	6320	6854	6321	6863
Sycamore	6854	7013	6863	7056
Middlesex	7013	7157	7056	7256
Burkett	7157	7188	7256	7305
Tully	7188	7306	7305	7565
Marcellus	7306	NA	7565	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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Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	12/3/2016
Job End Date:	12/20/2016
State:	West Virginia
County:	Doddridge
API Number:	47-017-06319-00-00
Operator Name:	Antero Resources Corporation
Well Name and Number:	Chumley 1H
Latitude:	39.25381389
Longitude:	-80.63223611
Datum:	NAD27
Federal Well:	NO
Indian Well:	NO
True Vertical Depth:	7,361
Total Base Water Volume (gal):	13,243,158
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	88.24903	Density = 8.340
Ingredients	Listed Above	Listed Above					
			Water	7732-18-5	100.00000	0.24686	

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FR-76	Halliburton	Friction Reducer					
				Listed Below			
WG-36 GELLING AGENT	Halliburton	Gelling Agent					
				Listed Below			
SAND-PREMIUM WHITE-40/70, BULK	Halliburton	Proppant					
				Listed Below			
MURIATIC ACID	Halliburton	Solvent					
				Listed Below			
SP BREAKER	Halliburton	Breaker					
				Listed Below			
SAND-COMMON WHITE-100 MESH, SSA-2, BULK (100003676)	Halliburton	Proppant					
				Listed Below			
MC B-8614	Halliburton	Biocide					
				Listed Below			
MC S-2510T	Halliburton	Scale Inhibitor					
				Listed Below			

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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	11.46576
			Hydrochloric acid	7647-01-0	15.00000	0.02958
			Inorganic salt	Proprietary	30.00000	0.01702
			Acrylamide acrylate copolymer	Proprietary	30.00000	0.01702
			Hydrotreated light petroleum distillate	64742-47-8	30.00000	0.01702
			Guar gum	9000-30-0	100.00000	0.00839
			Ethylene Glycol	107-21-1	60.00000	0.00825
			Glutaraldehyde	111-30-8	30.00000	0.00265
			Neutralized Polyacrylic Emulsion	Proprietary	10.00000	0.00138
			Quaternary ammonium compounds, benzyl-C12-16-alkyldimethyl chlorides	68424-85-1	5.00000	0.00044
			Sodium persulfate	7775-27-1	100.00000	0.00026
			Ethanol	64-17-5	1.00000	0.00009
			Methanol	67-56-1	0.14000	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)

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FILE NO: 114-30-G-13
 DRAWING NO: Chumley 1H Well Plat As-Drilled
 SCALE: 1" = 1000'
 MINIMUM DEGREE OF ACCURACY: Submeter
 PROVEN SOURCE OF ELEVATION: WPDOT, Bridgeport, WV

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

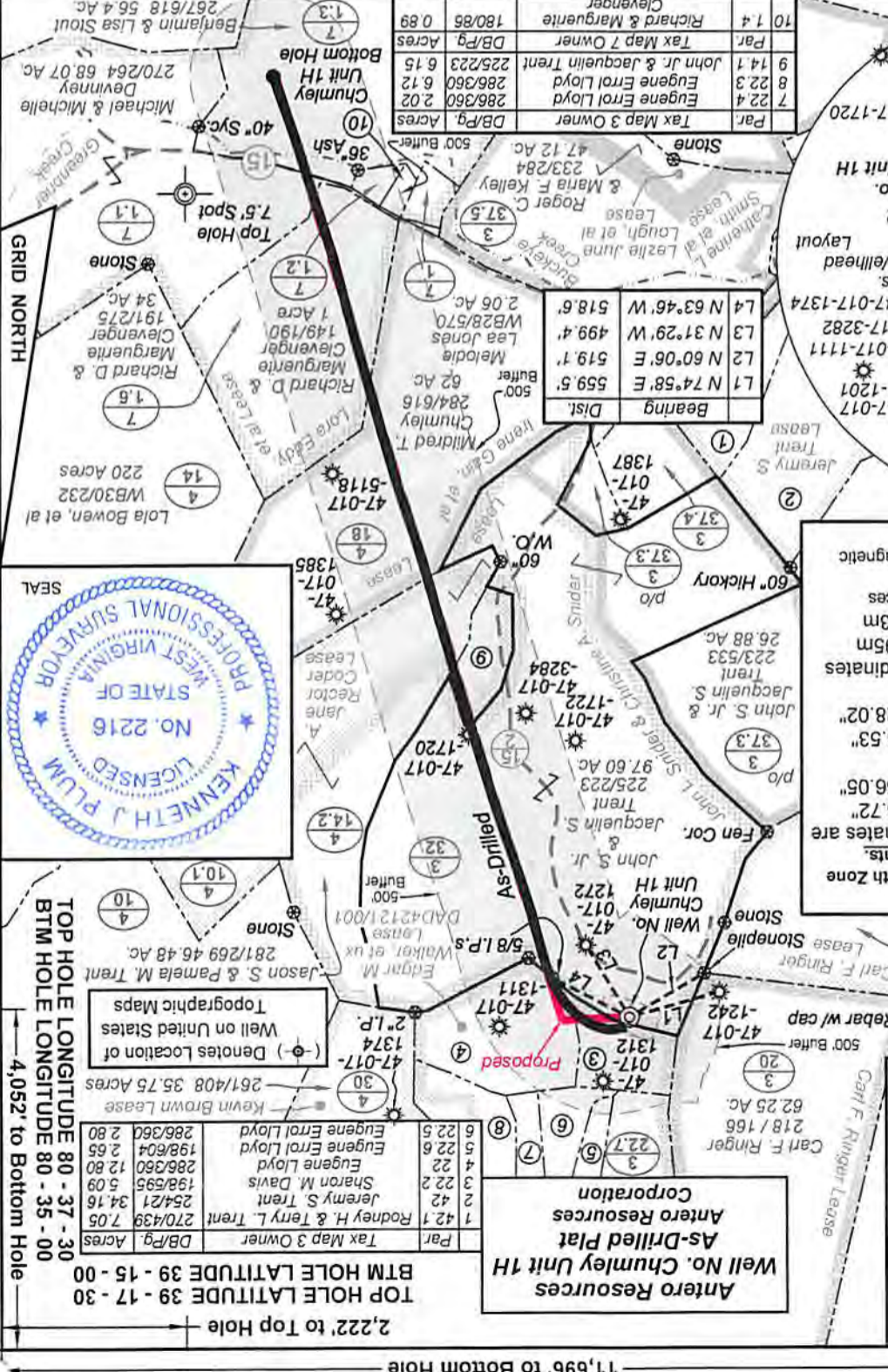
DATE: July 13, 2017
 OPERATORS WELL NO. Chumley Unit 1H
 API WELL NO.
 STATE: 47
 COUNTY: 017
 PERMIT: 06319



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.
Kenneth J. Plum, P.S. 2216

Note: It appears 4 water wells and 1 spring were found within 2000' 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.
 Scale: 1" = 2000'

West Virginia Coordinate System of 1927, North Zone based upon Differential GPS Measurements.
 Well No. Chumley Unit 1H Top Hole coordinates are N: 276,574.15' Longitude: 80°37'56.05" E: 1,679,376.19'
 Bottom Hole coordinates are N: 270,962.81' Longitude: 80°37'28.02" E: 1,681,510.85'
 UTM Zone 17, NAD 1983
 Top Hole Coordinates Bottom Hole Coordinates
 N: 4,345,017.141m N: 4,343,318.495m
 E: 531,746.625m E: 532,425.463m
 Plat orientation and corner and well references are based upon the grid north meridian.
 Well location references are based upon the magnetic meridian.



11,696' to Bottom Hole
 2,222' to Top Hole
 TOP HOLE LATITUDE 39 - 47 - 30
 BTM HOLE LATITUDE 39 - 15 - 00
 TOP HOLE LONGITUDE 80 - 37 - 30
 BTM HOLE LONGITUDE 80 - 35 - 00
 4,052' to Bottom Hole
 13,761' to Top Hole

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

WELL OPERATOR: Antero Resources Corporation
 ADDRESS: 1615 Wynkoop Street, Denver, CO 80202
 DESIGNATED AGENT: Dianna Stamper - CT Corporation System
 ADDRESS: 5400 D Big Tyler Road, Charleston, WV 25313
 SURFACE OWNER: John S. Jr. & Jacquelin S. Trent, A. Jane Rector Coder, Irene Gain, et al; Lora Eddy, et al
 LEASE NO: DAD4212/001
 ACREAGE: 97.60
 82; 33.58
 ROYALTY OWNER: John L. Snider & Christine A. Snider, Edgar M. Walker, et ux
 LEASE NO: DAD4212/001
 ACREAGE: 98.9; 65; 166.25
 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 REFLUG TARGET FORMATION: Marcellus Shale

DISTRICT: Greenbrier
 COUNTY: Doddridge
 LOCATION: ELEVATION: Original Grade - 1269'
 Existing Grade - 1251'
 WATERSHED: Headwaters Middle Island Creek
 QUADRANGLE: New Milton & Big Isaac
 Smithburg

DESIGNED BY: Antero Resources Corporation
 DATE: July 13, 2017

AS-DRILLED PLAT
 Antero Resources Corporation
 Well No. Chumley Unit 1H
 DB/Pg. Acres
 1 42.1 Rodney H. & Terry L. Trent 270/439 7.05
 2 42.2 Jeremy S. Trent 198/421 34.16
 3 22.2 Sharon M. Davis 198/421 34.16
 4 22.2 Eugene Lloyd 286/360 12.80
 5 22.6 Eugene Errol Lloyd 198/604 2.65
 6 22.5 Eugene Errol Lloyd 286/360 2.80
 7 22.5 Eugene Errol Lloyd 286/360 2.80
 8 22.5 Eugene Errol Lloyd 286/360 2.80
 9 14.1 John Jr. & Jacquelin Trent 225/223 6.15
 10 1.4 Richard & Marguerite Cleveland 180/85 0.89

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

Top Hole coordinates verified by survey grade GPS. 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.

WELL SOURCE OF ELEVATION: WPDOT, Bridgeport, WV
 MINIMUM DEGREE OF ACCURACY: Submeter
 SCALE: 1" = 1000'

STATE: 47
 COUNTY: 017
 PERMIT: 06319

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 API WELL NO.

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 Existing Road
 Surface boundary (approx.)
 Interior surface tracts (approx.)

Top Hole coordinates verified by survey grade GPS. 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.

WELL SOURCE OF ELEVATION: WPDOT, Bridgeport, WV
 MINIMUM DEGREE OF ACCURACY: Submeter
 SCALE: 1" = 1000'

STATE: 47
 COUNTY: 017
 PERMIT: 06319

DATE: July 13, 2017
 OPERATORS WELL NO. Chumley Unit 1H
 API WELL NO.

DESIGNED BY: Antero Resources Corporation
 DATE: July 13, 2017

AS-DRILLED PLAT
 Antero Resources Corporation
 Well No. Chumley Unit 1H
 DB/Pg. Acres
 1 42.1 Rodney H. & Terry L. Trent 270/439 7.05
 2 42.2 Jeremy S. Trent 198/421 34.16
 3 22.2 Sharon M. Davis 198/421 34.16
 4 22.2 Eugene Lloyd 286/360 12.80
 5 22.6 Eugene Errol Lloyd 198/604 2.65
 6 22.5 Eugene Errol Lloyd 286/360 2.80
 7 22.5 Eugene Errol Lloyd 286/360 2.80
 8 22.5 Eugene Errol Lloyd 286/360 2.80
 9 14.1 John Jr. & Jacquelin Trent 225/223 6.15
 10 1.4 Richard & Marguerite Cleveland 180/85 0.89

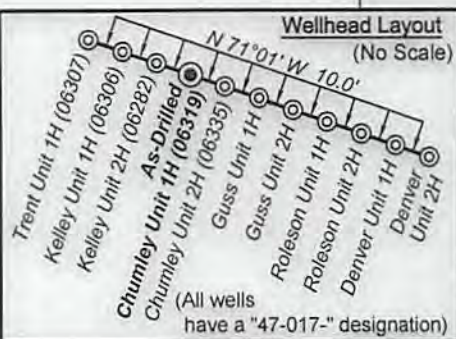
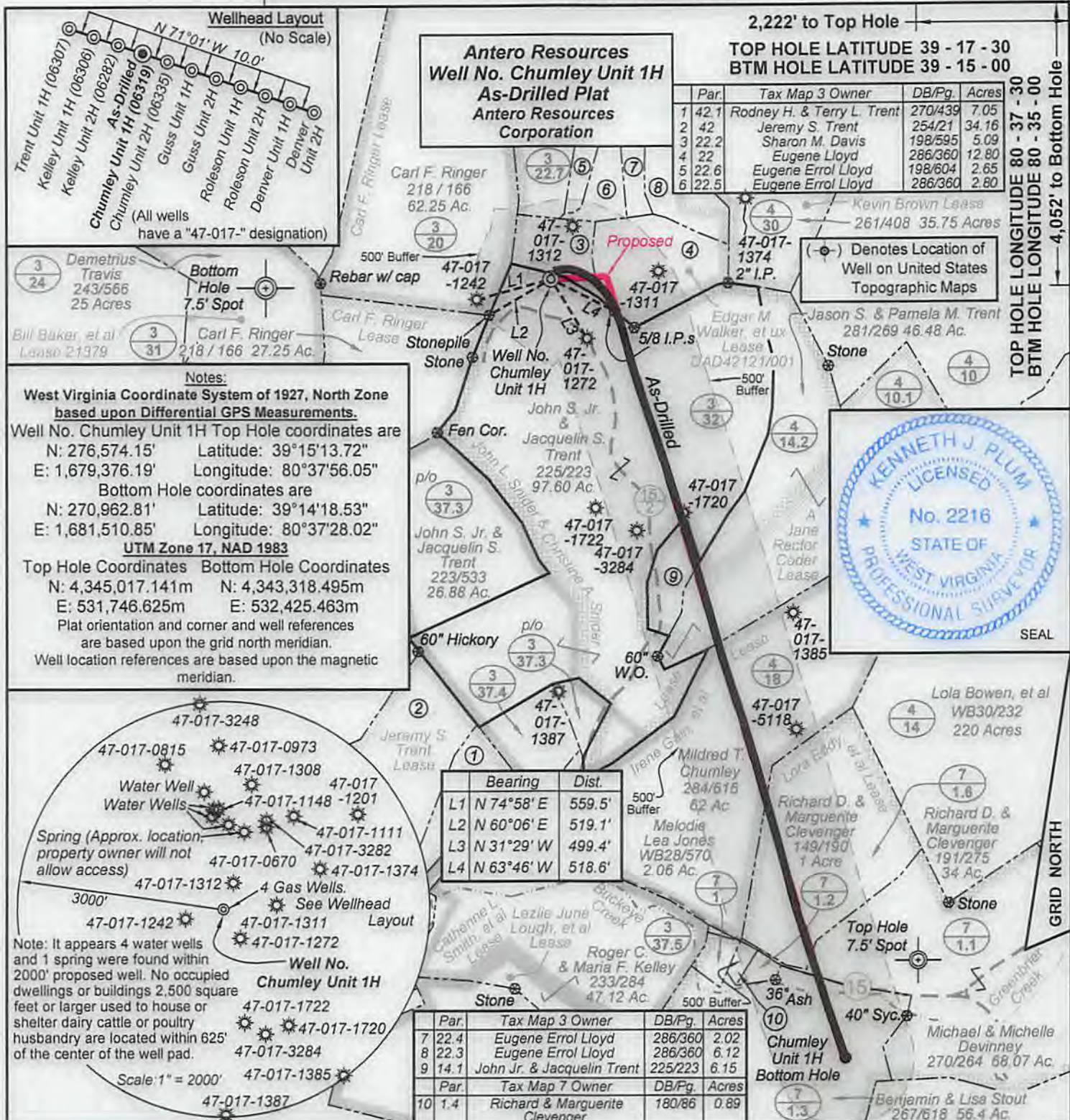
11,696' to Bottom Hole

2,222' to Top Hole

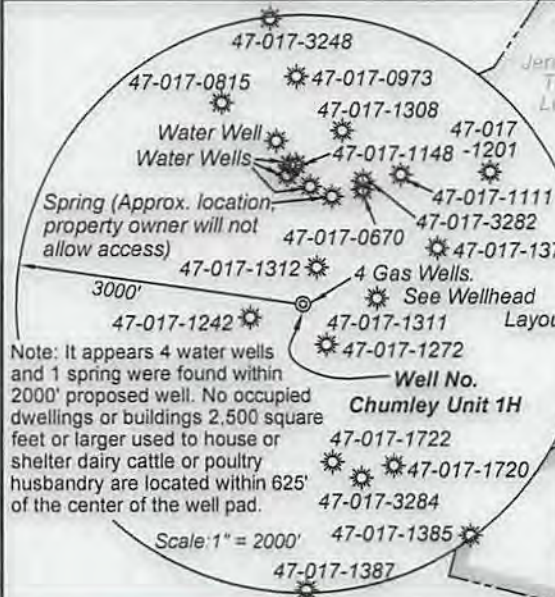
TOP HOLE LATITUDE 39 - 17 - 30
BTM HOLE LATITUDE 39 - 15 - 00

TOP HOLE LONGITUDE 80 - 37 - 30
BTM HOLE LONGITUDE 80 - 35 - 00

13,761' to Top Hole



Notes:
 West Virginia Coordinate System of 1927, North Zone based upon Differential GPS Measurements.
 Well No. Chumley Unit 1H Top Hole coordinates are
 N: 276,574.15' Latitude: 39°15'13.72"
 E: 1,679,376.19' Longitude: 80°37'56.05"
 Bottom Hole coordinates are
 N: 270,962.81' Latitude: 39°14'18.53"
 E: 1,681,510.85' Longitude: 80°37'28.02"
 UTM Zone 17, NAD 1983
 Top Hole Coordinates Bottom Hole Coordinates
 N: 4,345,017.141m N: 4,343,318.495m
 E: 531,746.625m E: 532,425.463m
 Plat orientation and corner and well references are based upon the grid north meridian.
 Well location references are based upon the magnetic meridian.



	Bearing	Dist.
L1	N 74°58' E	559.5'
L2	N 60°06' E	519.1'
L3	N 31°29' W	499.4'
L4	N 63°46' W	518.6'

Par.	Tax Map 3 Owner	DB/Pg.	Acres
7	22.4 Eugene Errol Lloyd	286/360	2.02
8	22.3 Eugene Errol Lloyd	286/360	6.12
9	14.1 John Jr. & Jacquelin Trent	225/223	6.15

Par.	Tax Map 7 Owner	DB/Pg.	Acres
10	1.4 Richard & Marguerite Clevenger	180/86	0.89



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.
 Kenneth J. Plum, P.S. 2216

Legend

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

Top Hole coordinates verified by survey grade GPS. 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.

FILE NO: 114-30-G-13
 DRAWING NO: Chumley 1H Well Plat, As-Drilled
 SCALE: 1" = 1000'
 MINIMUM DEGREE OF ACCURACY: Submeter
 PROVEN SOURCE OF ELEVATION: WVDOT, Bridgeport, WV

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

DATE: July 13 2017
 OPERATOR'S WELL NO. Chumley Unit 1H
 API WELL NO
 47 - 017 - 06319
 STATE COUNTY PERMIT

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

LOCATION: ELEVATION: Existing Grade - 1251' Original Grade - 1269' WATERSHED: Headwaters Middle Island Creek QUADRANGLE: New Milton & Big Isaac
 DISTRICT: Greenbrier COUNTY: Doddridge

SURFACE OWNER: John S. Jr. & Jacquelin S. Trent A. Jane Rector Coder Irena Gain, et al; Lora Eddy, et al ACREAGE: 97.60 82; 33.58
 ROYALTY OWNER: John L. Snider & Christine A. Snider; Edgar M. Walker, et ux LEASE NO: DAD42121/001 ACREAGE: 98.9; 65; 166.25

PROPOSED WORK: DRILL CONVERT DRILL DEEPER FRACTURE OR STIMULATE PLUG OFF OLD FORMATION
 PERFORATE NEW FORMATION OTHER PHYSICAL CHANGE IN WELL (SPECIFY) As-Drilled 7,324' TVD
 PLUG AND ABANDON CLEAN OUT AND REPLUG TARGET FORMATION: Marcellus Shale DEPTH: 13,313' MD

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

01/05/2018