

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

API 47-017-06840 County Doddridge District West Union
 Quad West Union 7.5' Pad Name Strickling Pad Field/Pool Name ----
 Farm name John Paul Strickling, et al Well Number Tanus 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 4353671.855m Easting 518652.018m
 Landing Point of Curve Northing 4353700.80m Easting 518400.20m
 Bottom Hole Northing 4356429.725m Easting 517309.140m

Elevation (ft) 1065' 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 7/13/2017 Date drilling commenced 9/5/2017 Date drilling ceased 5/7/2018
 Date completion activities began 8/6/2018 Date completion activities ceased 10/10/2018
 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:

WR-35
Rev. 8/23/13

API 47-017 - 06840 Farm name John Paul Strickling, et al Well number Taunus 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"	95'	New	94#, H-40	N/A	Y
Surface	17-1/2"	13-3/8"	361'	New	54.5#, J-55	N/A	Y
Coal							
Intermediate 1	12-1/4"	9-5/8"	2554'	New	36#, J-55	N/A	Y
Intermediate 2							
Intermediate 3							
Production	8-3/4"/8-1/2"	5-1/2"	16997'	New	23#, P-110	N/A	Y
Tubing		2-3/8"	6925'		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	284 sx	15.6	1.18	335	0'	8 Hrs.
Surface	Class A	318 sx	15.6	1.2	382	0'	8 Hrs.
Coal							
Intermediate 1	Class A	900 sx	15.6	1.18	1062	0'	8 Hrs.
Intermediate 2							
Intermediate 3							
Production	Class H	776 sx (Lead) 1604 sx (Tail)	14(Lead), 15.2 (Tail)	1.45 (Lead), 1.83 (Tail)	4061	-500' into Intermediate Casing	8 Hrs.
Tubing							

Drillers TD (ft) 16997' MD, 6687' TVD (BHL), 6726' (Deepest Point Drilled) Loggers TD (ft) 16997' MD

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

Plug back procedure N/A

Kick off depth (ft) 6065'

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

WR-35
Rev. 8/23/13

API 47- 017 - 06840 Farm name John Paul Strickling, et al Well number Taunus Unit 1H

PRODUCING FORMATION(S)	DEPTHS	
Marcellus	6665' (TOP) TVD	6989' (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 11249 mcfpd Oil 156 bpd NGL --- bpd Water 553 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.

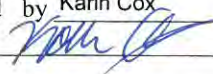
Drilling Contractor Frontier Drilling LLC
Address 207 Carlton Drive City Eighty Four State PA Zip 15330

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 US Well Services
Address 533 Industrial Park Road City Lane Jew State WV Zip 26378

Please insert additional pages as applicable.

Completed by Karin Cox Telephone 303-357-6820
Signature  Title Permitting Agent Date 2/1/2019

API 47-017-06840 Farm Name John Paul Strickling, et al Well Number Taurus Unit 1H					
EXHIBIT 1					
Stage No.	Perforation Date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formations
1	8/6/2018	16839.1	16894	48	Marcellus
2	8/7/2018	16639	16807.75	48	Marcellus
3	8/7/2018	16438.9	16607.65	48	Marcellus
4	8/8/2018	16238.8	16407.55	48	Marcellus
5	8/8/2018	16038.7	16207.45	48	Marcellus
6	8/8/2018	15838.6	16007.35	48	Marcellus
7	8/9/2018	15638.5	15807.25	48	Marcellus
8	8/9/2018	15438.4	15607.15	48	Marcellus
9	8/10/2018	15238.3	15407.05	48	Marcellus
10	8/10/2018	15038.2	15206.95	48	Marcellus
11	8/11/2018	14838.1	15006.85	48	Marcellus
12	8/11/2018	14638	14806.75	48	Marcellus
13	8/12/2018	14437.9	14606.65	48	Marcellus
14	8/12/2018	14237.8	14406.55	48	Marcellus
15	8/12/2018	14037.7	14206.45	48	Marcellus
16	8/13/2018	13837.6	14006.35	48	Marcellus
17	8/13/2018	13637.5	13806.25	48	Marcellus
18	8/14/2018	13437.4	13606.15	48	Marcellus
19	8/14/2018	13237.3	13406.05	48	Marcellus
20	8/15/2018	13037.2	13205.95	48	Marcellus
21	8/16/2018	12837.1	13005.85	48	Marcellus
22	8/16/2018	12637	12805.75	48	Marcellus
23	8/16/2018	12436.9	12605.65	48	Marcellus
24	8/17/2018	12236.8	12405.55	48	Marcellus
25	8/17/2018	12036.7	12205.45	48	Marcellus
26	8/18/2018	11836.6	12005.35	48	Marcellus
27	8/18/2018	11636.5	11805.25	48	Marcellus
28	8/19/2018	11436.4	11605.15	48	Marcellus
29	8/19/2018	11236.3	11405.05	48	Marcellus
30	8/20/2018	11036.2	11204.95	48	Marcellus
31	8/20/2018	10836.1	11004.85	48	Marcellus
32	8/21/2018	10636	10804.75	48	Marcellus
33	8/21/2018	10435.9	10604.65	48	Marcellus
34	8/21/2018	10235.8	10404.55	48	Marcellus
35	8/22/2018	10035.7	10204.45	48	Marcellus
36	8/22/2018	9835.6	10004.35	48	Marcellus
37	8/23/2018	9635.5	9804.25	48	Marcellus
38	8/23/2018	9435.4	9604.15	48	Marcellus
39	8/23/2018	9235.3	9404.05	48	Marcellus
40	8/24/2018	9035.2	9203.95	48	Marcellus
41	8/24/2018	8835.1	9003.85	48	Marcellus
42	8/25/2018	8635	8803.75	48	Marcellus
43	8/25/2018	8434.9	8603.65	48	Marcellus
44	8/25/2018	8234.8	8403.55	48	Marcellus
45	8/26/2018	8034.7	8203.45	48	Marcellus
46	8/26/2018	7834.6	8003.35	48	Marcellus
47	8/27/2018	7634.5	7803.25	48	Marcellus
48	8/27/2018	7434.4	7603.15	48	Marcellus
49	8/27/2018	7234.3	7403.05	48	Marcellus
50	8/28/2018	7034.2	7202.95	48	Marcellus

API 47-017-06840 Farm Name John Paul Strickling, et al Well Number Taurus 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	8/6/2018	72.3825	7907.702	5828	4321	266300	7760	N/A
2	8/7/2018	72.7	7945.4	5711	5022	404640	8051	N/A
3	8/7/2018	78.7938	8158.047	5970	4868	402000	8426	N/A
4	8/8/2018	75.6336	8040.259	6090	3834	401500	7884	N/A
5	8/8/2018	76.3743	7887.86	5709	4310	404600	7829	N/A
6	8/8/2018	75.3559	8092.377	5875	3923	401400	7899	N/A
7	8/9/2018	75.9202	8102.238	5765	3928	400600	7834	N/A
8	8/9/2018	80.3553	8082.882	5887	3896	403600	8108	N/A
9	8/10/2018	77.5686	8259.901	6297	4300	401100	7843	N/A
10	8/10/2018	80.0036	8402.552	5981	5504	405900	7829	N/A
11	8/11/2018	79.4	8302.6	5897	4164	402440	7772	N/A
12	8/11/2018	79.1915	8040.756	6004	4283	406000	7791	N/A
13	8/12/2018	79.9644	7900.715	5550	4133	406200	7860	N/A
14	8/12/2018	78.6	7964.8	5837	4544	403030	7785	N/A
15	8/12/2018	78.1374	8030.306	5958	4881	399700	7749	N/A
16	8/13/2018	78.6	8103.8	5742	4541	402980	7751	N/A
17	8/13/2018	79.2005	7914.558	5675	5129	402050	7784	N/A
18	8/14/2018	78.4	7981.8	5842	5216	404030	7690	N/A
19	8/14/2018	76.6547	7778.299	5875	4793	400050	7808	N/A
20	8/15/2018	79.7	7803.6	5644	4149	404220	7693	N/A
21	8/16/2018	78.7829	7895.578	5933	4858	402150	7709	N/A
22	8/16/2018	77.5	8018.3	5990	4463	402480	7733	N/A
23	8/16/2018	75.8	7853	5874	3901	402300	8745	N/A
24	8/17/2018	78.2	7846.5	6057	4282	403180	7673	N/A
25	8/17/2018	79.3207	8071.64	5756	4136	401910	7725	N/A
26	8/18/2018	79.2534	7856.818	5786	4025	401410	7642	N/A
27	8/18/2018	77.2111	7873.643	5910	4412	402640	7678	N/A
28	8/19/2018	79.4	7730.3	5857	4031	403160	7577	N/A
29	8/19/2018	79.041	7694.7	5827	4412	385030	7623	N/A
30	8/20/2018	77.5596	7635.941	5876	4008	401300	7756	N/A
31	8/20/2018	78.0159	7449.969	5808	4683	402000	8183	N/A
32	8/21/2018	78.9258	7548.642	5209	4248	400550	7702	N/A
33	8/21/2018	78.2185	7786.74	6782	3994	401400	7599	N/A
34	8/21/2018	76.6585	7441.805	6490	4046	402010	9005	N/A
35	8/22/2018	79.376	7512.7	6182	3865	400200	7589	N/A
36	8/22/2018	78.972	7296.246	5880	3856	400630	7724	N/A
37	8/23/2018	75.2307	7684.863	5854	3886	400700	7720	N/A
38	8/23/2018	78.3096	7847.956	6097	3971	402700	7633	N/A
39	8/23/2018	79.2928	7822.13	6656	3964	402050	7610	N/A
40	8/24/2018	78.77	7617.791	6645	4013	401200	7537	N/A
41	8/24/2018	79.5632	7681.682	5824	3925	401500	7529	N/A
42	8/25/2018	78.2682	7489.941	6367	3982	401100	7641	N/A
43	8/25/2018	79.047	7424.002	6048	3981	419600	8038	N/A
44	8/25/2018	77.3775	7664.299	6158	4021	400650	7594	N/A
45	8/26/2018	76.8277	7700.587	5627	4045	403800	7575	N/A
46	8/26/2018	78.2756	7089.229	6353	3961	400100	8720	N/A
47	8/27/2018	79.4953	7012.845	5981	4189	400470	7548	N/A
48	8/27/2018	80.0767	7096.808	6205	4306	404100	7508	N/A
49	8/27/2018	79.5053	7047.267	6364	5003	405980	7479	N/A
50	8/28/2018	79.9404	6747.095	6461	3970	400790	7522	N/A
	AVG=	78	7,763	5,980	4,284	19,979,430	390,463	TOTAL

API 47-017-06840 Farm Name John Paul Strickling, et al Well Number Taunus Unit 1H				
EXHIBIT 3				
LITHOLOGY/ FORMATION	TOP DEPTH (TVD) From Surface	BOTTOM DEPTH (TVD) From Surface	TOP DEPTH (MD) From Surface	BOTTOM DEPTH (MD) From Surface
Sandstone	0	187	0	187
Sandstone tr coal	est 187	267	est 187	267
Sandy shale	est 267	807	est 267	807
Calcareous Shale	est 807	1,187	est 807	1,187
Shale tr coal	est 1187	1,207	est 1187	1,207
Sandy Shale	est 1207	1,527	est 1207	1,527
Sandstone	est 1527	1,567	est 1527	1,567
Silty shale	est 1567	1,667	est 1567	1,667
Sandstone	est 1667	1,787	est 1667	1,787
Sandy shale	est 1787	1,950	est 1787	1,950
Big Lime	1,950	2,514	1,950	2,514
Fifty Foot Sandstone	2,514	2,726	2,514	2,727
Gordon	2,726	2,930	2,727	2,931
Fifth Sandstone	2,930	2,993	2,931	2,994
Bayard	2,993	3,807	2,994	3,830
Speechley	3,807	4,095	3,830	4,126
Balltown	4,095	4,582	4,126	4,627
Bradford	4,582	5,018	4,627	5,075
Benson	5,018	5,283	5,075	5,347
Alexander	5,283	6,279	5,347	6,380
Sycamore	6,279	6,453	6,380	6,596
Middlesex	6,453	6,589	6,596	6,823
Burkett	6,589	6,618	6,823	6,880
Tully	6,618	6,665	6,880	6,989
Marcellus	6,665	N/A	6,989	N/A

*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.

Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	8/6/2018
Job End Date:	8/28/2018
State:	West Virginia
County:	Doddridge
API Number:	47-017-06840-00-00
Operator Name:	Antero Resources Corporation
Well Name and Number:	Taurus 1H
Latitude:	39.33218300
Longitude:	-80.78375600
Datum:	NAD83
Federal Well:	NO
Indian Well:	NO
True Vertical Depth:	6,727
Total Base Water Volume (gal):	16,963,608
Total Base Non Water Volume:	0



Hydraulic Fracturing Fluid Composition:

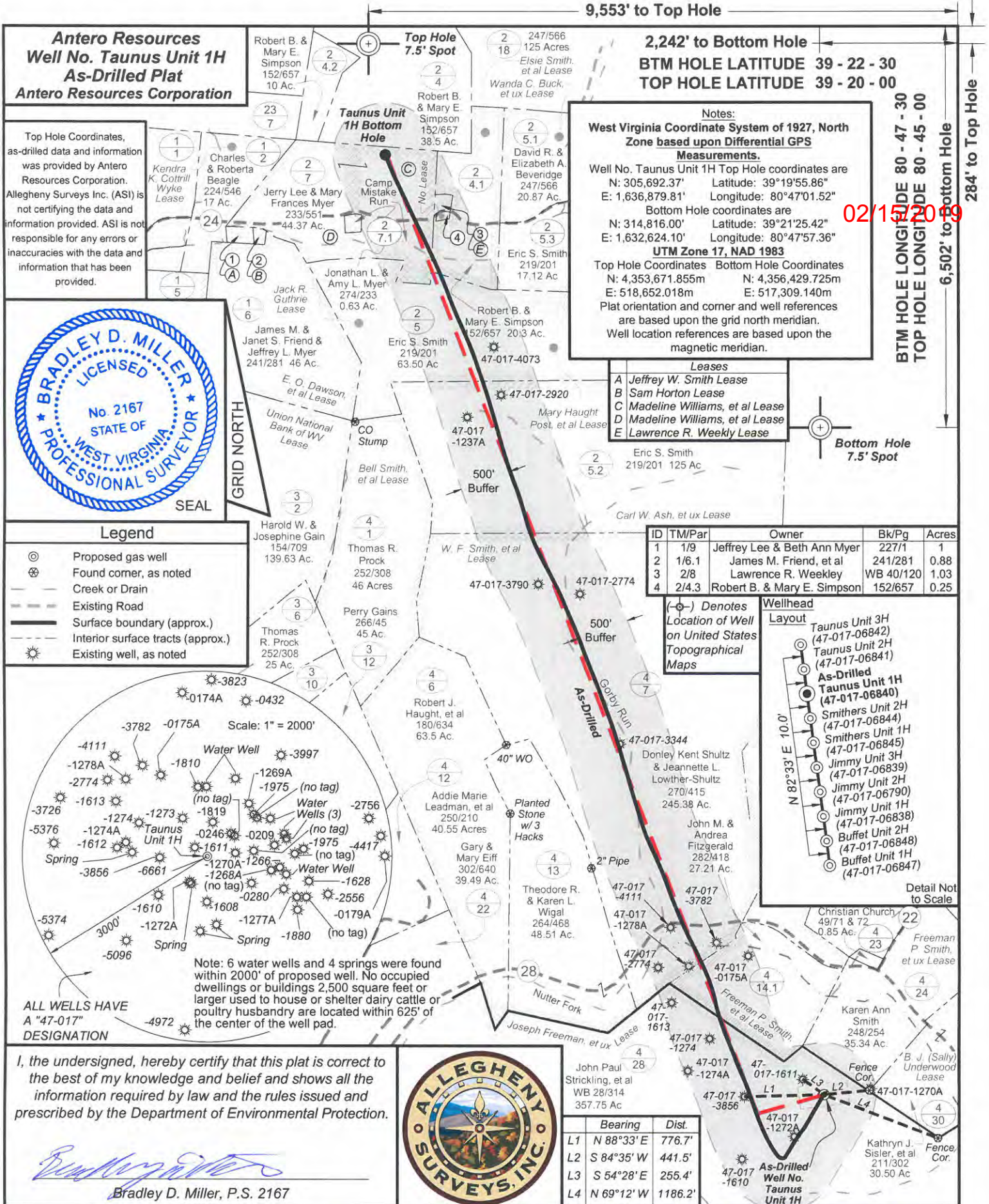
Trade Name	Supplier	Purpose	Ingredients	Chemical Abstract Service Number (CAS #)	Maximum Ingredient Concentration in Additive (% by mass)**	Maximum Ingredient Concentration in HF Fluid (% by mass)**	Comments
Water	Antero Resources	Carrier/Base Fluid	Water	7732-18-5	100.00000	87.44543	
Sand	J.S. Well Services, LLC	Proppant					
HCL Acid (12.6%-17.5%)	J.S. Well Services, LLC	Bulk Acid	Crystalline Silica, quartz	14808-60-7	100.00000	12.34912	
WFRA-405	J.S. Well Services, LLC	Friction Reducer	Water	7732-18-5	87.40000	0.12828	
			Hydrogen Chloride	7647-01-0	17.50000	0.02982	
			2-Propenoic acid, polymer with propenamide	29003-06-9	30.00000	0.01521	
			Hydrated light distillate (petroleum)	64742-47-8	30.00000	0.01224	
LGC-15	J.S. Well Services, LLC	Gelling Agents					
			Guar Gum	9000-30-0	50.00000	0.00551	
			Petroleum Distillates	64742-47-8	60.00000	0.00522	
			Suspending agent (solid)	14808-60-7	3.00000	0.00084	
			Surfactant	68439-51-0	3.00000	0.00033	

Product	Supplier	Chemical Name	Product Code	Concentration	MSDS
Bioclear 2000	U.S. Well Services, LLC	2,2-dibromo-3-nitripropionamide	10222-01-2	20.00000	0.00413
		Deionized Water	7732-18-5	28.00000	0.00236
SI-1200s	U.S. Well Services, LLC	Scale Inhibitor	Proprietary	10.00000	0.00130
AP One	U.S. Well Services, LLC	Gel Breakers	7727-54-0	100.00000	0.00013
AI-303	U.S. Well Services, LLC	Acid Corrosion Inhibitors			
		Ethylene glycol	107-21-1	40.00000	0.00004
		Cinnamaldehyde	104-55-2	20.00000	0.00002
		Formic acid	64-18-6	20.00000	0.00002
		Butyl cellosolve	111-76-2	20.00000	0.00001
		Polyether	60828-78-6	10.00000	0.00001
		Acetophenone, thiourea, formaldehyde polymer	68527-49-1	5.00000	0.00000

Ingredients shown above are subject to 29 CFR 1910.1200(i) and appear on Material Safety Data Sheets (MSDS). Ingredients shown below are Non-MSDS.

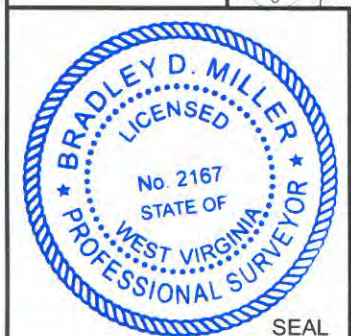
* Total Water Volume sources may include fresh water, produced water, and/or recycled water
 ** Information is based on the maximum potential for concentration and thus the total may be over 100%

Note: For Field Development Products (products that begin with FDP), MSDS level only information has been provided. Ingredient information for chemicals subject to 29 CFR 1910.1200(i) and Appendix D are obtained from suppliers Material Safety Data Sheets (MSDS)



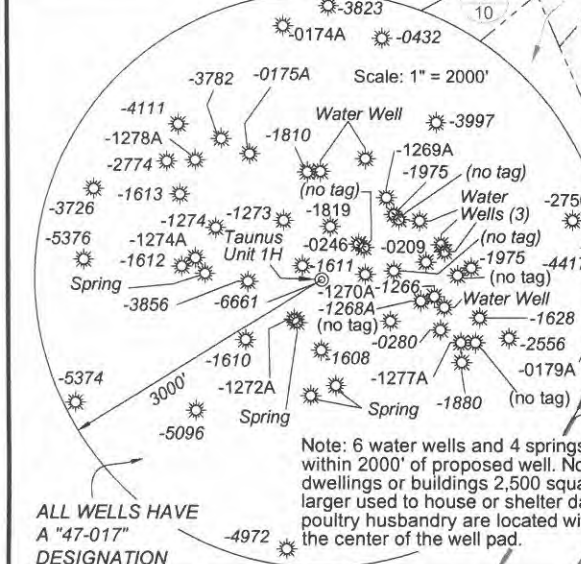
Antero Resources
Well No. Taurus Unit 1H
As-Drilled Plat
Antero Resources Corporation

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.



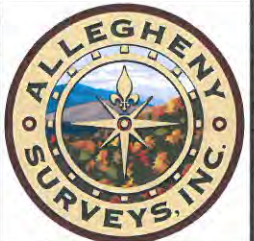
Legend

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



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



ID	TMPar	Owner	Bk/Pg	Acres
1	1/9	Jeffrey Lee & Beth Ann Myer	227/1	1
2	1/6.1	James M. Friend, et al	241/281	0.88
3	2/8	Lawrence R. Weekley	WB 40/120	1.03
4	2/4.3	Robert B. & Mary E. Simpson	152/657	0.25

9,553' to Top Hole
2,242' to Bottom Hole
BTM HOLE LATITUDE 39 - 22 - 30
TOP HOLE LATITUDE 39 - 20 - 00
BTM HOLE LONGITUDE 80 - 47 - 30
TOP HOLE LONGITUDE 80 - 45 - 00
284' to Top Hole
6,502' to Bottom Hole

Notes:
West Virginia Coordinate System of 1927, North Zone based upon Differential GPS Measurements.
 Well No. Taurus Unit 1H Top Hole coordinates are
 N: 305,692.37' Latitude: 39°19'55.86"
 E: 1,636,879.81' Longitude: 80°47'01.52"
 Bottom Hole coordinates are
 N: 314,816.00' Latitude: 39°21'25.42"
 E: 1,632,624.10' Longitude: 80°47'57.36"
UTM Zone 17, NAD 1983
 Top Hole Coordinates Bottom Hole Coordinates
 N: 4,353,671.855m N: 4,356,429.725m
 E: 518,652.018m E: 517,309.140m
 Plat orientation and corner and well references are based upon the grid north meridian.
 Well location references are based upon the magnetic meridian.

Leases

A	Jeffrey W. Smith Lease
B	Sam Horton Lease
C	Madeline Williams, et al Lease
D	Madeline Williams, et al Lease
E	Lawrence R. Weekly Lease

Wellhead Layout

FILE NO: 43-30-WU-14
 DRAWING NO: Taurus 1H As-Drilled Plat
 SCALE: 1" = 1200'
 MINIMUM DEGREE OF ACCURACY: Submeter
 PROVEN SOURCE OF ELEVATION: WVDOT, Harrisville, WV

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

DATE: December 27 2018
 OPERATOR'S WELL NO. Taurus Unit 1H
API WELL NO
 47 - 017 - 06840
 STATE COUNTY PERMIT

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

LOCATION: ELEVATION: As-Built - 1065' WATERSHED: Headwaters Middle Island Creek QUADRANGLE: West Union
 DISTRICT: West Union COUNTY: Doddridge

SURFACE OWNER: John Paul Strickling, et al Mary Haught Post, et al; Elsie Smith, et al; Freeman P. Smith, et al; Madeline Williams, et al ACREAGE: 357.75 23
 ROYALTY OWNER: Joseph Freeman, et ux; W. F. Smith, et al; Carl W. Ash, et ux LEASE NO: ACREAGE: 125; 368; 63.75; 600 20.3; 64

PROPOSED WORK: DRILL CONVERT DRILL DEEPER FRACTURE OR STIMULATE PLUG OFF OLD FORMATION
 PERFORATE NEW FORMATION OTHER PHYSICAL CHANGE IN WELL (SPECIFY) As-Drilled
 PLUG AND ABANDON CLEAN OUT AND REPLUG TARGET FORMATION: Marcellus Shale ESTIMATED DEPTH: 6,687' TVD 16,997' 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