

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

API 47 - 095 - 02480 County Tyler District Meade & Ellsworth
 Quad Middlebourne 7.5' Pad Name Kirk Hadley Pad Field/Pool Name -----
 Farm name Kirk L. Hadley Well Number Houser 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 4368190m Easting 505838m
 Landing Point of Curve Northing 4368066.98m Easting 505306.86m
 Bottom Hole Northing 4372346m Easting 503854m

Elevation (ft) 912' 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 1/02/2018 Date drilling commenced 5/6/2018 Date drilling ceased 6/19/2018
 Date completion activities began 7/30/2018 Date completion activities ceased 9/24/2018
 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 1595' 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 47-095 - 02480 Farm name Kirk L. Hadley Well number Houser 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"	104.5'	New	94#, H-40	N/A	Y
Surface	17-1/2"	13-3/8"	433.1'	New	54.5#, J-55	N/A	Y
Coal							
Intermediate 1	12-1/4"	9-5/8"	2574.7'	New	36#, J-55	N/A	Y
Intermediate 2							
Intermediate 3							
Production	8-3/4"/8-1/2"	5-1/2"	21706.5'	New	23#, P-110	N/A	Y
Tubing		2-3/8"	6541'		4.7#, L-80		
Packer type and depth set		N/A					

Comment Details _____

CEMENT DATA	Class/Type of Cement	Number of Sacks	Slurry wt (ppg)	Yield (ft 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	415 sx	15.6	1.20	498	0'	8 Hrs.
Coal							
Intermediate 1	Class A	890 sx	15.6	1.18	1050	0'	8 Hrs.
Intermediate 2							
Intermediate 3							
Production	Class H	690 sx (Lead) 2320 sx (Tail)	14(Lead), 15.2 (Tail)	1.45 (Lead), 1.83 (Tail)	5246	~500' into Intermediate Casing	8 Hrs.
Tubing							

Drillers TD (ft) 21706' MD, 6150' TVD (BHL), 6168' (Deepest Point Drilled) Loggers TD (ft) 21706' MD

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

Plug back procedure N/A

Kick off depth (ft) 5992'

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

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PRODUCING FORMATION(S)	DEPTHS		
Marcellus	6099' (TOP)	TVD	6606' (TOP) MD

Please insert additional pages as applicable.

GAS TEST Build up Drawdown Open Flow OIL TEST Flow Pump

SHUT-IN PRESSURE Surface 3000 psi Bottom Hole --- psi DURATION OF TEST --- hrs

OPEN FLOW Gas 10433 mcfpd Oil 437 bpd NGL --- bpd Water 530 bpd GAS MEASURED BY Estimated Orifice Pilot

LITHOLOGY/ FORMATION	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 Allied Horizontal Wireline Services
Address 381 Colonial Manor Road City North Huntington State PA Zip 15642

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 2/6/2019

API 47-095-02480 Farm Name Kirk L. Hadley Well Number Houser Unit 1H					
EXHIBIT 1					
Stage No.	Perforation Date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formations
1	7/30/2018	21548.4	21603.5	16	Marcellus
2	7/30/2018	21347.088	21516.848	48	Marcellus
3	7/31/2018	21145.776	21315.536	48	Marcellus
4	7/31/2018	20944.464	21114.224	48	Marcellus
5	7/31/2018	20743.152	20912.912	48	Marcellus
6	7/31/2018	20541.84	20711.6	48	Marcellus
7	8/1/2018	20340.528	20510.288	48	Marcellus
8	8/1/2018	20139.216	20308.976	48	Marcellus
9	8/1/2018	19937.904	20107.664	48	Marcellus
10	8/1/2018	19736.592	19906.352	48	Marcellus
11	8/2/2018	19535.28	19705.04	48	Marcellus
12	8/2/2018	19333.968	19503.728	48	Marcellus
13	8/2/2018	19132.656	19302.416	48	Marcellus
14	8/3/2018	18931.344	19101.104	48	Marcellus
15	8/3/2018	18730.032	18899.792	48	Marcellus
16	8/3/2018	18528.72	18698.48	48	Marcellus
17	8/3/2018	18327.408	18497.168	48	Marcellus
18	8/3/2018	18126.096	18295.856	48	Marcellus
19	8/4/2018	17924.784	18094.544	48	Marcellus
20	8/4/2018	17723.472	17893.232	48	Marcellus
21	8/4/2018	17522.16	17691.92	48	Marcellus
22	8/4/2018	17320.848	17490.608	48	Marcellus
23	8/5/2018	17119.536	17289.296	48	Marcellus
24	8/5/2018	16918.224	17087.984	48	Marcellus
25	8/5/2018	16716.912	16886.672	48	Marcellus
26	8/6/2018	16515.6	16685.36	48	Marcellus
27	8/6/2018	16314.288	16484.048	48	Marcellus
28	8/6/2018	16112.976	16282.736	48	Marcellus
29	8/6/2018	15911.664	16081.424	48	Marcellus
30	8/7/2018	15710.352	15880.112	48	Marcellus
31	8/7/2018	15509.04	15678.8	48	Marcellus
32	8/7/2018	15307.728	15477.488	48	Marcellus
33	8/7/2018	15106.416	15276.176	48	Marcellus
34	8/7/2018	14905.104	15074.864	48	Marcellus
35	8/8/2018	14703.792	14873.552	48	Marcellus
36	8/8/2018	14502.48	14672.24	48	Marcellus
37	8/8/2018	14301.168	14470.928	48	Marcellus
38	8/9/2018	14099.856	14269.616	48	Marcellus
39	8/9/2018	13898.544	14068.304	48	Marcellus
40	8/9/2018	13697.232	13866.992	48	Marcellus
41	8/9/2018	13495.92	13665.68	48	Marcellus
42	8/9/2018	13294.608	13464.368	48	Marcellus
43	8/10/2018	13093.296	13263.056	48	Marcellus
44	8/10/2018	12891.984	13061.744	48	Marcellus
45	8/10/2018	12690.672	12860.432	48	Marcellus
46	8/10/2018	12489.36	12659.12	48	Marcellus
47	8/11/2018	12288.048	12457.808	48	Marcellus
48	8/11/2018	12086.736	12256.496	48	Marcellus
49	8/11/2018	11885.424	12055.184	48	Marcellus
50	8/11/2018	11684.112	11853.872	48	Marcellus
51	8/11/2018	11482.8	11652.56	48	Marcellus
52	8/11/2018	11281.488	11451.248	48	Marcellus
53	8/12/2018	11080.176	11249.936	48	Marcellus
54	8/12/2018	10878.864	11048.624	48	Marcellus
55	8/12/2018	10677.552	10847.312	48	Marcellus
56	8/12/2018	10476.24	10646	48	Marcellus
57	8/12/2018	10274.928	10444.688	48	Marcellus
58	8/14/2018	10073.616	10243.376	48	Marcellus
59	8/15/2018	9872.304	10042.064	48	Marcellus
60	8/15/2018	9670.992	9840.752	48	Marcellus
61	8/15/2018	9469.68	9639.44	48	Marcellus
62	8/15/2018	9268.368	9438.128	48	Marcellus
63	8/15/2018	9067.056	9236.816	48	Marcellus
64	8/16/2018	8865.744	9035.504	48	Marcellus
65	8/16/2018	8664.432	8834.192	48	Marcellus
66	8/16/2018	8463.12	8632.88	48	Marcellus
67	8/16/2018	8261.808	8431.568	48	Marcellus
68	8/16/2018	8060.496	8230.256	48	Marcellus
69	8/17/2018	7859.184	8028.944	48	Marcellus
70	8/17/2018	7657.872	7827.632	48	Marcellus
71	8/17/2018	7456.56	7626.32	48	Marcellus
72	8/17/2018	7255.248	7425.008	48	Marcellus
73	8/17/2018	7053.936	7223.696	48	Marcellus
74	8/17/2018	6852.624	7022.384	48	Marcellus
75	8/18/2018	6651.312	6821.072	48	Marcellus

API 47-095-02480 Farm Name Kirk L. Hadley Well Number Houser 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 (bbbls)	Amount of Nitrogen/ other (units)
1	7/30/2018	69.2	8046.668	0	4184	220420	6580	N/A
2	7/30/2018	69.0972	7948.221	4992	3476	507400	10970	N/A
3	7/31/2018	72.8718	8207.789	5445	3470	504820	9402	N/A
4	7/31/2018	70.3	8234.169	5679	3882	502840	9356	N/A
5	7/31/2018	75.1268	8435.293	5251	4042	505960	11678	N/A
6	7/31/2018	73.7918	8193.444	5469	4263	507420	9335	N/A
7	8/1/2018	74.3552	8331.303	6365	3781	504540	9327	N/A
8	8/1/2018	70.4	8070.533	5569	4539	503360	9285	N/A
9	8/1/2018	71.7455	7956.217	5200	4182	506620	9718	N/A
10	8/1/2018	72.0187	8092.924	5352	4067	504180	9286	N/A
11	8/2/2018	71.5371	7874.93	5677	3870	503400	9415	N/A
12	8/2/2018	69.6283	7768.428	5434	3858	503760	9705	N/A
13	8/2/2018	66.1	7712.828	5496	3862	504620	9253	N/A
14	8/3/2018	71.0783	7738.783	5708	3460	502500	10156	N/A
15	8/3/2018	69.7622	7631.753	5396	3594	502460	9233	N/A
16	8/3/2018	69.9891	7831.601	4662	3591	504040	9210	N/A
17	8/3/2018	70.1755	7578.134	5874	3588	503540	9211	N/A
18	8/3/2018	71.2262	7685.905	5972	3687	503760	9209	N/A
19	8/4/2018	70.7662	7715.953	5330	3892	503540	9139	N/A
20	8/4/2018	65.5	7667.995	5556	4220	501500	9096	N/A
21	8/4/2018	70.2824	7596.371	5905	3261	505040	9063	N/A
22	8/4/2018	71.5159	7193.681	4128	3345	503680	9072	N/A
23	8/5/2018	73.6572	7469.808	5680	3645	501820	9129	N/A
24	8/5/2018	72.6981	7289.956	5604	3436	503400	9041	N/A
25	8/5/2018	73.5	7358.077	5406	3658	502780	10346	N/A
26	8/6/2018	77.0382	7636.519	5141	3414	504120	9074	N/A
27	8/6/2018	74.6273	7302.923	5649	3387	502400	9262	N/A
28	8/6/2018	73.4	7179	4732	3534	504000	10884	N/A
29	8/6/2018	75.4594	7516.455	5863	3359	506640	9013	N/A
30	8/7/2018	78.4136	7296.197	5095	3271	504740	8962	N/A
31	8/7/2018	75.2669	7430.877	5450	3189	502080	9037	N/A
32	8/7/2018	75.1715	7302.868	5529	3476	506100	9029	N/A
33	8/7/2018	72.606	7493.456	5734	3193	511480	8965	N/A
34	8/7/2018	71.54	7574	5793	3540	503960	10796	N/A
35	8/8/2018	69.8689	7338.514	5881	3271	508040	8917	N/A
36	8/8/2018	73.9754	7630.676	6019	3375	501340	9019	N/A
37	8/8/2018	73.1413	7248.857	5341	3290	505740	8943	N/A
38	8/9/2018	70.9226	7154.15	6103	3348	502300	9268	N/A
39	8/9/2018	74.3834	7308.026	5946	3474	504160	9141	N/A
40	8/9/2018	72.8793	7408.235	3776	3751	506160	8934	N/A
41	8/9/2018	74.46667	7423	6169	3589	503880	10096	N/A
42	8/9/2018	76.0503	7537.686	3889	3523	503540	8918	N/A
43	8/10/2018	73.16	6910.2	5773	3880	505020	10275	N/A
44	8/10/2018	76.732	7105.609	4647	3364	505080	9176	N/A
45	8/10/2018	76.612	7107.139	3897	3391	505300	8976	N/A
46	8/10/2018	76.205	7255.114	6105	3427	503620	8828	N/A
47	8/11/2018	76.8082	7202.102	5896	3507	502100	8827	N/A
48	8/11/2018	76.1281	6897.282	4546	3453	506660	8806	N/A
49	8/11/2018	76.0424	6999.392	6502	3600	504200	8842	N/A
50	8/11/2018	76.3709	6943.127	6188	3422	503700	8698	N/A
51	8/11/2018	77.4843	7025.078	5303	3379	504100	8835	N/A
52	8/11/2018	76.9279	7152.964	3905	3550	501460	8828	N/A
53	8/12/2018	77.3107	7062.381	5760	3611	503180	8830	N/A
54	8/12/2018	77.0505	7018.826	5217	3483	504820	8800	N/A
55	8/12/2018	75.4728	6926.61	6527	3679	503900	9532	N/A
56	8/12/2018	78.3352	7367.19	5715	3693	503070	8809	N/A
57	8/12/2018	78.8287	7417.511	5446	3474	503220	8783	N/A
58	8/14/2018	76.5267	7013.111	5403	3547	500300	8896	N/A
59	8/15/2018	76.2635	6918.581	5879	3657	502200	9000	N/A
60	8/15/2018	78.8508	6787.729	5053	3402	499720	8815	N/A
61	8/15/2018	76.1845	6922.333	4228	3479	500280	8894	N/A
62	8/15/2018	77.0142	6800.365	4975	3693	508420	8764	N/A
63	8/15/2018	71.2802	6850.926	5317	3481	502080	8981	N/A
64	8/16/2018	74.7655	6912.366	6147	3646	501100	8693	N/A
65	8/16/2018	77.9314	7027.386	5582	4102	504810	9334	N/A
66	8/16/2018	77.1868	6939.78	5595	3745	501700	8602	N/A
67	8/16/2018	77.7667	6819.665	5288	3854	505100	8698	N/A
68	8/16/2018	80.0519	6805.235	5724	3591	500860	8654	N/A
69	8/17/2018	80.0494	6968.923	5713	4540	462800	8240	N/A
70	8/17/2018	80.3939	6439.599	5873	3549	525900	8985	N/A
71	8/17/2018	77.6031	6807.642	5978	3838	502040	8583	N/A
72	8/17/2018	77.3474	6492.919	5894	3767	500360	8629	N/A
73	8/17/2018	78.429	6309.937	5854	3534	501865	8619	N/A
74	8/17/2018	78.6384	6319.297	5794	3708	527455	9048	N/A
75	8/18/2018	73.0094	5265.03	5446	2914	502080	8532	N/A
	AVG=	74	7,309	5,392	3,624	37,506,580	686,285	TOTAL

API 47-095-02480 Farm Name Kirk L. Hadley Well Number Houser Unit 1H				
EXHIBIT 3				
LITHOLOGY/ FORMATION	TOP DEPTH (TVD)	BOTTOM DEPTH (TVD)	TOP DEPTH (MD)	BOTTOM DEPTH (MD)
	From Surface	From Surface	From Surface	From Surface
Sandy siltstone	0	415	0	415
Limey siltstone	est 415	655	est 415	655
Sandy siltstone	est 655	715	est 655	715
sandstone	est 715	755	est 715	755
siltstone	est 755	1,025	est 755	1,025
sandstone	est 1025	1,315	est 1025	1,315
Sandy siltstone tr. Coal	est 1315	1,415	est 1315	1,415
sandstone	est 1415	1,495	est 1415	1,495
siltstone	est 1495	1,555	est 1495	1,555
sandstone	est 1555	1,595	est 1555	1,595
coal	est 1595	1,598	est 1595	1,598
Sandstone	est 1598	1,635	est 1598	1,635
siltstone	est 1635	1,724	est 1635	1,757
Big Lime	1,724	1,828	1,757	1,868
Big Injun	1,828	2,126	1,868	2,185
Gantz Sand	2,126	2,252	2,185	2,318
Fifty Foot Sandstone	2,252	2,516	2,318	2,597
Gordon	2,516	2,773	2,597	2,866
Fifth Sandstone	2,773	2,821	2,866	2,916
Bayard	2,821	3,375	2,916	3,510
Warren	3,375	3,711	3,510	3,876
Speechley	3,711	4,339	3,876	4,546
Balltown	3,862	4,636	4,038	4,868
Bradford	4,339	4,636	4,546	4,868
Benson	4,636	5,004	4,868	5,264
Alexander	5,004	5,557	5,264	5,849
Rhinestreet	5,532	5,884	5,824	6,222
Sycamore	5,884	5,981	6,222	6,362
Middlesex	5,981	6,066	6,362	6,526
Burkett	6,066	6,088	6,526	6,577
Tully	6,088	6,099	6,577	6,606
Marcellus	6,099	N/A	6,606	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:	7/30/2018
Job End Date:	8/18/2018
State:	West Virginia
County:	Tyler
API Number:	47-095-02480-00-00
Operator Name:	Antero Resources Corporation
Well Name and Number:	Houser 1H
Latitude:	39.45673000
Longitude:	-80.93312500
Datum:	NAD83
Federal Well:	NO
Indian Well:	NO
True Vertical Depth:	6,167
Total Base Water Volume (gal):	30,386,144
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	86.93872	
Sand	U.S. Well Services, LLC	Proppant	Crystalline Silica, quartz	14808-60-7	100.00000	12.86774	
HCL Acid (12.6%-17.5%)	U.S. Well Services, LLC	Bulk Acid	Water	7732-18-5	87.40000	0.09993	
			Hydrogen Chloride	7647-01-0	17.50000	0.02323	
LGC-15	U.S. Well Services, LLC	Gelling Agents	Guar Gum	9000-30-0	50.00000	0.01445	
			Petroleum Distillates	64742-47-8	60.00000	0.01369	
			Suspending agent (solid)	14808-60-7	3.00000	0.00221	
			Surfactant	68439-51-0	3.00000	0.00087	
WFR-405	U.S. Well Services, LLC	Friction Reducer	2-Propanoic acid, polymer with propanamide	29003-06-9	30.00000	0.01693	
			Hydrated light distillate (petroleum)	64742-47-8	30.00000	0.01363	



Bioclear 2000	U.S. Well Services, LLC	Anti-Bacterial Agent	2,2-dibromo-3-nitropropionamide	10222-01-2	20.00000	0.00430	
			Deionized Water	7732-18-5	28.00000	0.00246	
Sl-1200s	U.S. Well Services, LLC	Scale Inhibitor	Proprietary Scale Inhibitor	Proprietary	10.00000	0.00125	
AP One	U.S. Well Services, LLC	Gel Breakers	Ammonium Persulfate	7727-54-0	100.00000	0.00051	
Al-303	U.S. Well Services, LLC	Acid Corrosion Inhibitors	Ethylene glycol	107-21-1	40.00000	0.00003	
			Cinnamaldehyde	104-55-2	20.00000	0.00001	
			Formic acid	84-18-6	20.00000	0.00001	
			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)

11,148' to Bottom Hole

4,627' to Top Hole

BOTTOM LATITUDE 39 - 32 - 30
TOP LATITUDE 39 - 30 - 00

LONGITUDE 80 - 55 - 00

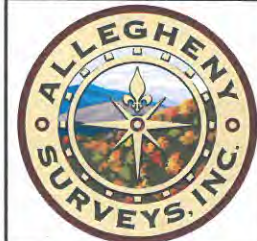
13,336' to Top Hole

14,763' to Bottom Hole

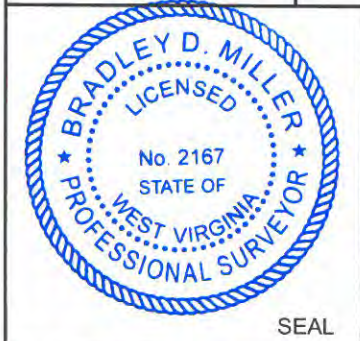
Antero Resources
Well No. Houser Unit 1H
As-Drilled Plat
Antero Resources Corporation

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

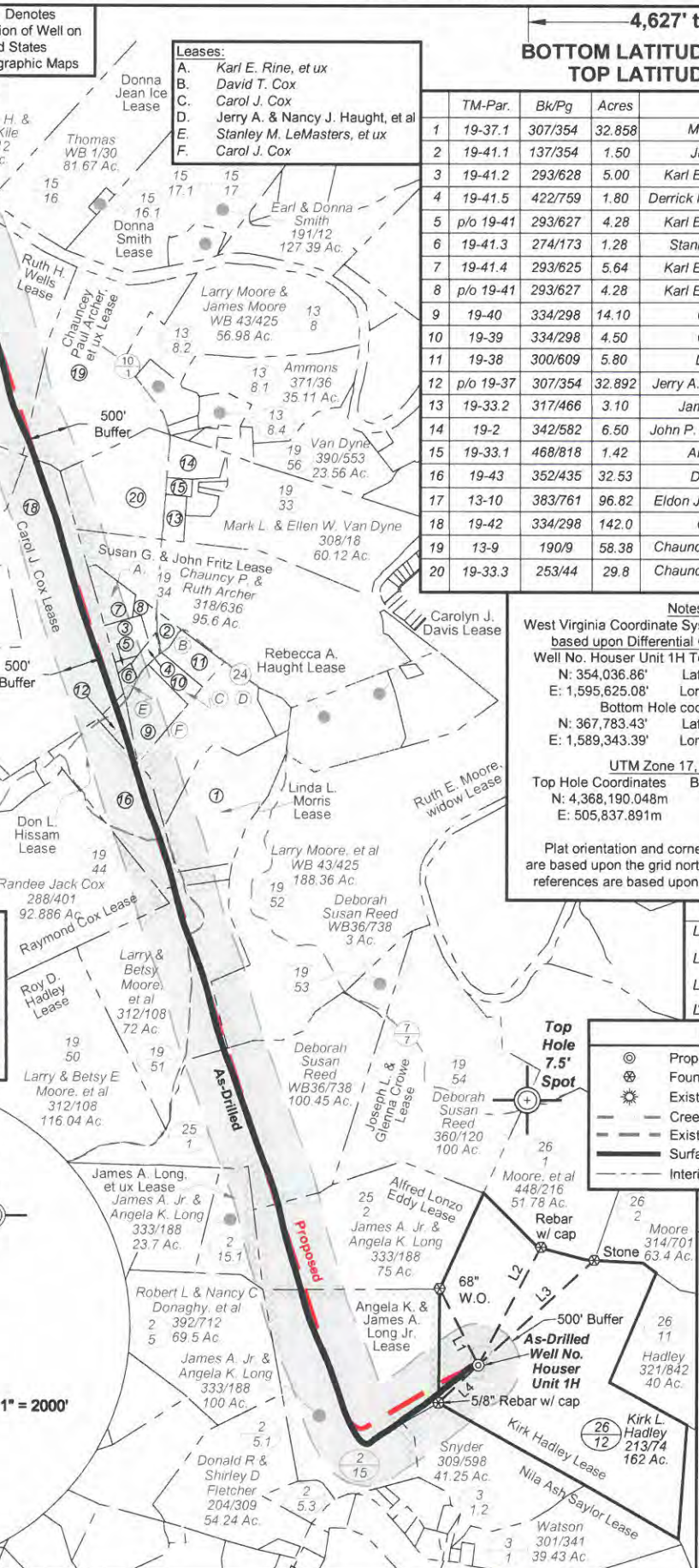
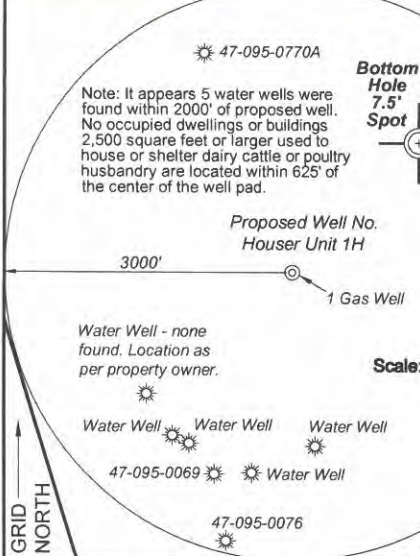
- Leases:**
- A. Karl E. Rine, et ux
 - B. David T. Cox
 - C. Carol J. Cox
 - D. Jerry A. & Nancy J. Haught, et al
 - E. Stanley M. LeMasters, et ux
 - F. Carol J. Cox



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.



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



	TM-Par.	Bk/Pg	Acres	Owner(s)
1	19-37.1	307/354	32.858	Michael Haught
2	19-41.1	137/354	1.50	June Kempner
3	19-41.2	293/628	5.00	Karl E. & Judith K. Rine
4	19-41.5	422/759	1.80	Derrick K. & Heather B. Rine
5	p/o 19-41	293/627	4.28	Karl E. & Judith K. Rine
6	19-41.3	274/173	1.28	Stanley M. LeMasters
7	19-41.4	293/625	5.64	Karl E. & Judith K. Rine
8	p/o 19-41	293/627	4.28	Karl E. & Judith K. Rine
9	19-40	334/298	14.10	Carol J. Cox
10	19-39	334/298	4.50	Carol J. Cox
11	19-38	300/609	5.80	David T. Cox
12	p/o 19-37	307/354	32.892	Jerry A. & Nancy J. Haught
13	19-33.2	317/466	3.10	James E. Barnhart
14	19-2	342/582	6.50	John P. & Bonnie B. Bucher
15	19-33.1	468/818	1.42	Amos L. Archer
16	19-43	352/435	32.53	Don L. Hissam
17	13-10	383/761	96.82	Eldon J. & Ruth A. Helman
18	19-42	334/298	142.0	Carol J. Cox
19	13-9	190/9	58.38	Chauncy P. & Ruth Archer
20	19-33.3	253/44	29.8	Chauncy P. & Ruth Archer

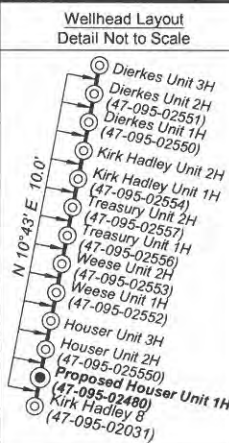
Notes:
West Virginia Coordinate System of 1927, North Zone based upon Differential GPS Measurements.
Well No. Houser Unit 1H Top Hole coordinates are
N: 354,036.86' Latitude: 39°27'47.48"
E: 1,595,625.08' Longitude: 80°55'56.30"
Bottom Hole coordinates are
N: 367,783.43' Latitude: 39°30'02.34"
E: 1,589,343.39' Longitude: 80°57'19.23"
UTM Zone 17, NAD 1983
Top Hole Coordinates N: 4,368,190.048m E: 505,837.891m
Bottom Hole Coordinates N: 4,372,345.993m E: 503,854.235m

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	S 26°59' E	1,045.3'
L2	S 27°55' W	1,624.4'
L3	S 47°48' W	1,904.6'
L4	N 46°32' E	666.6'

Legend

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



FILE NO: 218-54-E-16
DRAWING NO: Houser Unit 1H As-Drilled Well Plat
SCALE: 1" = 2000'
MINIMUM DEGREE OF ACCURACY: Submeter
PROVEN SOURCE OF ELEVATION: WV DOT, Harrisville, WV

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

DATE: December 27 2018
OPERATOR'S WELL NO. Houser Unit 1H
API WELL NO
47 - 095 - 02480
STATE COUNTY PERMIT

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

LOCATION: ELEVATION: As-Built 912' WATERSHED: Outlet Middle Island Creek QUADRANGLE: Middlebourne
DISTRICT: Meade & Ellsworth COUNTY: Tyler 97.5; 88.18;
SURFACE OWNER: Kirk L. Hadley Roy D. Hadley; James A. Jr. & Angela K. Long; 100; 32.53;
Chauncy Paul Archer, et ux; Ruth H. Wells; ACREAGE: 162 291.5; 202;
ROYALTY OWNER: Kirk Hadley; Alfred Lonzo Eddy; Don L. Hissam; Carol J. Cox (2); LEASE NO: ACREAGE: 142; 21; 75;

PROPOSED WORK: DRILL CONVERT DRILL DEEPER FRACTURE OR STIMULATE PLUG OFF OLD FORMATION
 PERFORATE NEW FORMATION OTHER PHYSICAL CHANGE IN WELL (SPECIFY) As-Drilled 6,150' TVD
 PLUG AND ABANDON CLEAN OUT AND REPLUG TARGET FORMATION: Marcellus Shale ESTIMATED DEPTH: 21,706' 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