

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

API 47-095-02636 County Tyler District Ellsworth  
Quad Paden City 7.5' Pad Name Gamehenge Pad Field/Pool Name ----  
Farm name Barbara Kay Turner Well Number Harpua 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 4373353.606m Easting 509791.842m  
Landing Point of Curve Northing 4373365.07m Easting 509369.56m  
Bottom Hole Northing 4377822.304m Easting 507837.625m

Elevation (ft) 1061' 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 8/20/2019 Date drilling commenced 11/15/2019 Date drilling ceased 1/26/2020  
Date completion activities began 6/8/2020 Date completion activities ceased 7/29/2020  
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

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Freshwater depth(s) ft 363' Open mine(s) (Y/N) depths No  
Salt water depth(s) ft 1093' Void(s) encountered (Y/N) depths No  
Coal depth(s) ft 550' Cavern(s) encountered (Y/N) depths No  
Is coal being mined in area (Y/N) No

**APPROVED**

Reviewed by:  
[Signature]  
06/02/2023  
4/17/13

API 47-095 - 02636 Farm name Barbara Kay Turner Well number Harpua 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"	80'	New	94#, H-40	N/A	Y
Surface	17-1/2"	13-3/8"	444'	New	54#, J-55	N/A	Y
Coal							
Intermediate 1	12-1/4"	9-5/8"	2571'	New	36#, J-55	N/A	Y
Intermediate 2							
Intermediate 3							
Production	8-3/4"/8-1/2"	5-1/2"	22562'	New	23#, P-110	N/A	Y
Tubing		2-3/8"	6846'		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 <sup>3</sup> /sks)	Volume (ft <sup>3</sup> )	Cement Top (MD)	WOC (hrs)
Conductor	Class A	204 sx	15.6	1.18	43	0'	8 Hrs.
Surface	Class A	389 sx	15.6	1.19	85	0'	8 Hrs.
Coal							
Intermediate 1	Class A	981 sx	15.6	1.20	185	0'	8 Hrs.
Intermediate 2							
Intermediate 3							
Production	Class H	798 sx (Lead) 3597 sx (Tail)	13.5 (Lead), 15.2 (Tail)	1.53 (Lead), 1.26 (Tail)	818	-500' into Intermediate Casing	8 Hrs.
Tubing							

Drillers TD (ft) 22611' MD, 6344' TVD (BHL), 6469' (Deepest Point Drilled) Loggers TD (ft) 22611' MD  
 Deepest formation penetrated Marcellus Plug back to (ft) N/A  
 Plug back procedure N/A

Kick off depth (ft) 5879'

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 \_\_\_\_\_

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WAS WELL COMPLETED OPEN HOLE?  Yes  No DETAILS \_\_\_\_\_

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

06/02/2023 *JM*

API 47- 095 - 02636 Farm name Barbara Kay Turner Well number Harpua Unit 1H

PERFORATION RECORD

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


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)
<b>*PLEASE SEE ATTACHED EXHIBIT 2</b>								


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Please insert additional pages as applicable.

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API 47-095-02636 Farm Name Barbara Kay Turner Well Number Hargua Unit 1H					
EXHIBIT 1					
Stage No.	Perforation Date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formations
1	6/8/2020	22494.5	22451.1	60	Marcellus
2	6/8/2020	22412.29199	22246.2519	60	Marcellus
3	6/9/2020	22210.64394	22044.6039	60	Marcellus
4	6/9/2020	22008.99589	21842.9558	60	Marcellus
5	6/9/2020	21807.34784	21641.3078	60	Marcellus
6	6/9/2020	21555.30779	21439.6597	60	Marcellus
7	6/10/2020	21404.05173	21238.0117	60	Marcellus
8	6/10/2020	21202.40368	21036.3636	60	Marcellus
9	6/11/2020	21000.75563	20834.7156	60	Marcellus
10	6/11/2020	20799.10758	20633.0675	60	Marcellus
11	6/11/2020	20597.45952	20431.4195	60	Marcellus
12	6/11/2020	20395.81147	20229.7714	60	Marcellus
13	6/11/2020	20194.16342	20028.1234	60	Marcellus
14	6/12/2020	19992.51537	19826.4753	60	Marcellus
15	6/12/2020	19790.86732	19624.8273	60	Marcellus
16	6/12/2020	19589.21926	19423.1792	60	Marcellus
17	6/12/2020	19387.57121	19221.5312	60	Marcellus
18	6/12/2020	19185.92316	19019.8831	60	Marcellus
19	6/13/2020	18984.27511	18818.2351	60	Marcellus
20	6/13/2020	18782.62706	18616.587	60	Marcellus
21	6/13/2020	18580.979	18414.939	60	Marcellus
22	6/13/2020	18379.33095	18213.2909	60	Marcellus
23	6/13/2020	18177.6829	18011.6429	60	Marcellus
24	6/14/2020	17976.03485	17809.9948	60	Marcellus
25	6/14/2020	17774.3868	17608.3468	60	Marcellus
26	6/14/2020	17572.73874	17406.6987	60	Marcellus
27	6/14/2020	17371.09069	17205.0506	60	Marcellus
28	6/15/2020	17169.44264	17003.4026	60	Marcellus
29	6/15/2020	16967.79459	16801.7545	60	Marcellus
30	6/16/2020	16766.14654	16600.1065	60	Marcellus
31	6/16/2020	16564.49848	16398.4584	60	Marcellus
32	6/16/2020	16362.85043	16196.8104	60	Marcellus
33	6/16/2020	16161.20238	15995.1623	60	Marcellus
34	6/16/2020	15959.55433	15793.5143	60	Marcellus
35	6/17/2020	15757.90628	15591.8662	60	Marcellus
36	6/17/2020	15556.25823	15390.2182	60	Marcellus
37	6/17/2020	15354.61017	15188.5701	60	Marcellus
38	6/17/2020	15152.96212	14986.9221	60	Marcellus
39	6/17/2020	14951.31407	14785.274	60	Marcellus
40	6/18/2020	14749.66602	14583.626	60	Marcellus
41	6/18/2020	14548.01797	14381.9779	60	Marcellus
42	6/18/2020	14346.36991	14180.3299	60	Marcellus
43	6/18/2020	14144.72186	13978.6818	60	Marcellus
44	6/18/2020	13943.07381	13777.0338	60	Marcellus
45	6/19/2020	13741.42576	13575.3857	60	Marcellus
46	6/19/2020	13539.77771	13373.7377	60	Marcellus
47	6/19/2020	13338.12965	13172.0896	60	Marcellus
48	6/19/2020	13136.4816	12970.4416	60	Marcellus
49	6/19/2020	12934.83355	12768.7935	60	Marcellus
50	6/20/2020	12733.1855	12567.1455	60	Marcellus
51	6/20/2020	12531.53745	12365.4974	60	Marcellus
52	6/20/2020	12329.88939	12163.8494	60	Marcellus
53	6/20/2020	12128.24134	11962.2013	60	Marcellus
54	6/20/2020	11926.59329	11760.5532	60	Marcellus
55	6/21/2020	11724.94524	11558.9052	60	Marcellus
56	6/21/2020	11523.29719	11357.2571	60	Marcellus
57	6/21/2020	11321.64913	11155.6091	60	Marcellus
58	6/21/2020	11120.00108	10953.961	60	Marcellus
59	6/21/2020	10918.35303	10752.313	60	Marcellus
60	6/22/2020	10716.70498	10550.6649	60	Marcellus
61	6/22/2020	10515.05693	10349.0169	60	Marcellus
62	6/22/2020	10313.40887	10147.3688	60	Marcellus
63	6/22/2020	10111.76082	9945.72078	60	Marcellus
64	6/22/2020	9910.112771	9744.07273	60	Marcellus
65	6/23/2020	9708.464719	9542.42468	60	Marcellus
66	6/23/2020	9506.816667	9340.77662	60	Marcellus
67	6/23/2020	9305.168615	9139.12857	60	Marcellus
68	6/24/2020	9103.520563	8937.48052	60	Marcellus
69	6/24/2020	8901.872511	8735.83247	60	Marcellus
70	6/24/2020	8700.224459	8534.18442	60	Marcellus
71	6/24/2020	8498.576407	8332.53636	60	Marcellus
72	6/25/2020	8296.928355	8130.88831	60	Marcellus
73	6/25/2020	8095.280303	7929.24026	60	Marcellus
74	6/26/2020	7893.632251	7727.59221	60	Marcellus
75	6/26/2020	7691.984199	7525.94416	60	Marcellus
76	6/26/2020	7490.336147	7324.2961	60	Marcellus
77	6/26/2020	7288.688095	7122.64805	60	Marcellus
78	6/27/2020	7087.040043	6921	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 (cuBts)
1	6/8/2020	82.57	10300	6083	3836	185230	5321.571	N/A
2	6/8/2020	88.81	10372	6083	4134	265980	7385.405	N/A
3	6/9/2020	94.75	9979	4712	4059	268390	7366.095	N/A
4	6/9/2020	92.67	9975	4191	3681	268120	7367.571	N/A
5	6/9/2020	92.26	9571	4103	4094	263740	7226.929	N/A
6	6/9/2020	94.47	9685	4413	3989	266840	7401	N/A
7	6/10/2020	94.1	9978	4868	3836	270140	7387	N/A
8	6/10/2020	93.32	10105	5365	3836	269210	7342.476	N/A
9	6/11/2020	92.34	9433	5194	4383	264420	9404.548	N/A
10	6/11/2020	94.69	9993	5186	3565	265180	7371.738	N/A
11	6/11/2020	95.17	9728	7343	3869	264980	7402.429	N/A
12	6/11/2020	92.65	9789	5324	4066	264160	7382.857	N/A
13	6/11/2020	94.73	9620	4971	4016	264720	7363.024	N/A
14	6/12/2020	93.82	9687	4963	3629	258430	7065.119	N/A
15	6/12/2020	95.44	9444	5026	3787	265620	7302.024	N/A
16	6/12/2020	96.002	9872	4966	3790	262670	7400.619	N/A
17	6/12/2020	93.9	9362	5026	3812	263850	7303.238	N/A
18	6/12/2020	94.57	9641	4925	4085	264380	7269.095	N/A
19	6/13/2020	95.35	9096	4715	4127	266670	7205.048	N/A
20	6/13/2020	95.18	9964	5023	3696	263050	7192.548	N/A
21	6/13/2020	94.96	9320	4994	3785	265190	7230.238	N/A
22	6/13/2020	95.08	9827	5142	3863	265150	7093.595	N/A
23	6/13/2020	93.72	9297	5469	3986	263980	7143.619	N/A
24	6/14/2020	94.46	9661	5177	3911	263880	7281	N/A
25	6/14/2020	95.26	9387	5353	3983	264830	7532.643	N/A
26	6/14/2020	89.71	9064	5511	4104	266950	10063.31	N/A
27	6/14/2020	95.01	9096	5055	3982	265070	7201.929	N/A
28	6/15/2020	95.4	9389	5061	4245	264370	7190.714	N/A
29	6/15/2020	93.79	8630	5333	4266	264790	10746.88	N/A
30	6/16/2020	95.26	9006	5147	4127	265130	7120.69	N/A
31	6/16/2020	94.3	8789	5422	3919	264080	7123.095	N/A
32	6/16/2020	95.23	8824	5256	4175	263500	7120.19	N/A
33	6/16/2020	94.58	9037	4930	3932	266690	7094.214	N/A
34	6/16/2020	95.51	9030	5056	3931	267150	7063.833	N/A
35	6/17/2020	95.67	8533	5122	4415	266400	7094.143	N/A
36	6/17/2020	94.53	8753	4674	3755	264860	7001.857	N/A
37	6/17/2020	94.6	8461	4959	4100	265570	7039.952	N/A
38	6/17/2020	94.87	8883	5025	3644	266120	6978.119	N/A
39	6/17/2020	95.36	8402	5159	4038	264230	6999.095	N/A
40	6/18/2020	94.94	8695	4770	3611	264400	6995.381	N/A
41	6/18/2020	92.34	8318	4628	4146	264570	6839.667	N/A
42	6/18/2020	93.2	9064	5079	4050	264620	7022.31	N/A
43	6/18/2020	95.83	8876	5206	3840	264680	6969.119	N/A
44	6/18/2020	94.85	8976	4836	3896	264400	6946.786	N/A
45	6/19/2020	95.39	8724	4804	3689	264720	6911.214	N/A
46	6/19/2020	96.65	8706	4899	4238	264290	7024.214	N/A
47	6/19/2020	97.4	8732	4782	4045	264700	7003.833	N/A
48	6/19/2020	97.44	8556	4532	3837	266720	6983.738	N/A
49	6/19/2020	94.47	8270	4875	3872	267120	7018.048	N/A
50	6/20/2020	95.02	8312	5046	3932	266800	6896.952	N/A
51	6/20/2020	97.6	8453	4765	4035	264850	6816.024	N/A
52	6/20/2020	94.38	8590	5084	3773	266750	6888.143	N/A
53	6/20/2020	96.15	8118	7836	3962	265510	7159.071	N/A
54	6/20/2020	94.52	8074	5092	3864	266000	6900.667	N/A
55	6/21/2020	95.26	7861	4786	4173	265530	6882.357	N/A
56	6/21/2020	97.61	8103	4999	4048	265960	6834.857	N/A
57	6/21/2020	91.17	8094	4878	3682	266220	6787.667	N/A
58	6/21/2020	95.97	8028	4712	3630	267770	6815.714	N/A
59	6/21/2020	94.92	8505	5129	3535	266640	6868.024	N/A
60	6/22/2020	95.82	8280	5061	3685	265880	6910.119	N/A
61	6/22/2020	95.91	8364	4722	3921	264480	6766.048	N/A
62	6/22/2020	95.94	8093	5226	3938	265180	6797.833	N/A
63	6/22/2020	96.74	8055	5151	3975	264630	6690.333	N/A
64	6/22/2020	96.64	8173	4750	3920	264430	6748.595	N/A
65	6/23/2020	96.86	8058	5211	3747	262020	6780.881	N/A
66	6/23/2020	96	7991	4906	3944	264010	6919.238	N/A
67	6/23/2020	96.6	7898	4916	3633	264300	6964.738	N/A
68	6/24/2020	93.55	7293	5012	4339	263590	9546.5	N/A
69	6/24/2020	96.57	7733	6087	3710	264350	6816.786	N/A
70	6/24/2020	97.63	7803	5647	3764	264870	6729.262	N/A
71	6/24/2020	95.85	7613	5258	3744	266310	6843.405	N/A
72	6/25/2020	96.91	8150	5882	3665	265320	6759.952	N/A
73	6/25/2020	97.02	7601	5296	3824	264680	6810.19	N/A
74	6/26/2020	97.09	7465	5415	4318	265060	6811.167	N/A
75	6/26/2020	98.25	7486	5645	3979	265870	6828.476	N/A
76	6/26/2020	97.72	7392	5336	4074	265340	6737.786	N/A
77	6/26/2020	98.24	7312	5504	3988	264000	6536	N/A
78	6/27/2020	94.46	6969	5608	4082	264180	6483.81	N/A
	AVG=	93.9	9,366	5,115	3,956	10,792,690	302,415	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
Silty Sandstone	75	175	75	175
Siltstone	175	275	175	275
Shaly Siltstone	275	335	275	335
Silty Shale	335	555	335	555
Silty Sandstone	555	575	555	575
Shale	575	955	575	955
Shaly Sandstone	955	1,035	955	1,035
Sandstone	1,035	1,215	1,035	1,215
Sandy Shale	1,215	1,255	1,215	1,255
Shaly Siltstone	1,255	1,315	1,255	1,315
Sandstone	1,315	1,435	1,315	1,435
Shaly Sandstone	1,435	1,515	1,435	1,515
Sandy Shale	1,515	1,533	1,515	N/A
Big Lime	1,548	2,117	1,554	2,162
Fifty Foot Sandstone	2,117	2,349	2,147	2,403
Gordon	2,349	2,653	2,388	2,719
Fifth Sandstone	2,653	2,748	2,704	2,817
Bayard	2,748	3,584	2,802	3,690
Speechley	3,584	3,724	3,675	3,835
Balltown	3,724	4,222	3,820	4,352
Bradford	4,222	4,530	4,337	4,674
Benson	4,530	4,903	4,659	5,062
Alexander	4,903	5,911	5,047	6,200
Sycamore	5,783	5,881	6,037	6,170
Middlesex	5,881	5,971	6,185	6,355
Burkett	5,971	5,992	6,370	6,414
Tully	5,992	6,010	6,429	6,481
Marcellus	6,010	NA	6,481	NA

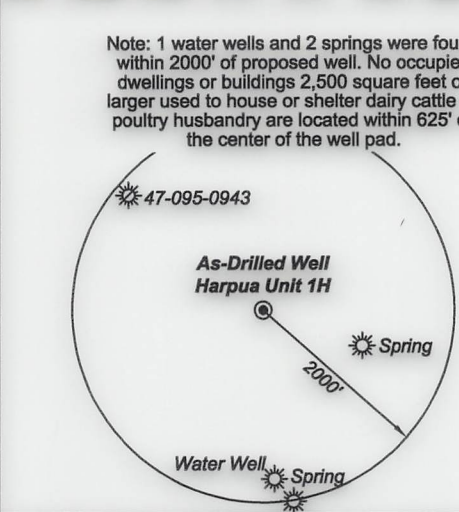
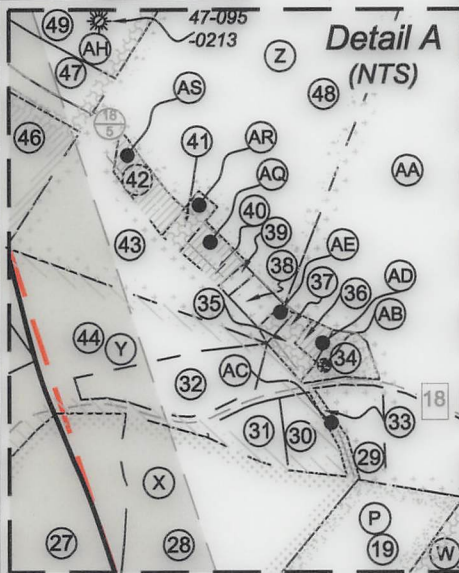
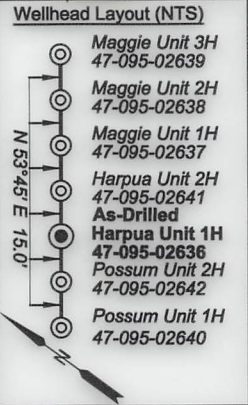
\*Please note Antero determines formation tops based on mud logs that are only run on one well on a multi-well pad. The measured depth (MD) data on subsequent wells may be slightly different due to the well's unique departure.

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



FILE NO: 34-54-E-16  
 DRAWING NO: Harpua 1H Well Plat  
 SCALE: 1" = 2000'  
 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: March 29 20 23  
 OPERATOR'S WELL NO. Harpua Unit 1H  
 API WELL NO  
 47 - 095 - 02636  
 STATE COUNTY PERMIT

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

LOCATION: ELEVATION: As-Drilled 1,061' WATERSHED: Outlet Middle Island Creek QUADRANGLE: Paden City 33.25; 113.725;  
 DISTRICT: Ellsworth/Lincoln COUNTY: Boone 33.25; 113.725; 33.868;  
 SURFACE OWNER: Barbara Kay Turner Pamela Oakley Whiting; Nancy Templeton; Michael D. Reynolds; 217.30; 20; 93.63;  
 ROYALTY OWNER: Linda L. Newbrough; Naomi V. Beagle; Stanley M. & Irene E. Koterba; Sarah A. Midcap (2) LEASE NO: ACREAGE: 26.18 46.43; 109.48; 19.75;  
 PROPOSED WORK:  DRILL  CONVERT  DRILL DEEPER  FRACTURE OR STIMULATE  PLUG OFF OLD FORMATION  
 PERFORATE NEW FORMATION  OTHER PHYSICAL CHANGE IN WELL (SPECIFY) As-Drilled 74.47; 285.00625;  
 PLUG AND ABANDON  CLEAN OUT AND REPLUG TARGET FORMATION: Marcellus Shale ESTIMATED DEPTH: 22,611' MD 62.84375; 64.18

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

9,758' to Bottom Hole

3,358' to Top Hole

TOP HOLE LATITUDE 39 - 32 - 30  
 BTM HOLE LATITUDE 39 - 35 - 00

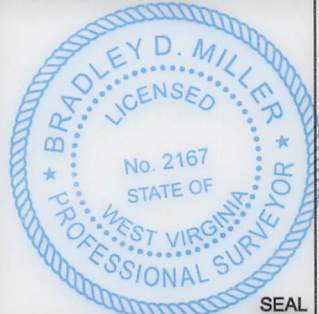
LONGITUDE 80 - 52 - 30

11,600' to Top Hole

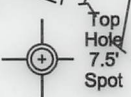
12,004' to Bottom Hole

	Bearing	Dist.
L1	S 62°25' E	2,065.8'
L2	S 28°12' E	1,075.1'
L3	N 03°20' W	1,445.4'
L4	N 58°05' E	2,758.8'

Notes:  
 West Virginia Coordinate System of 1927, North Zone based upon Differential GPS Measurements.  
 Well No. Harpua Unit 1H Top Hole coordinates are N: 370,764.06' Latitude: 39°30'34.85" E: 1,608,882.79' Longitude: 80°53'10.57"  
 Bottom Hole coordinates are N: 385,535.18' Latitude: 39°32'59.88" E: 1,602,714.42' Longitude: 80°54'32.22"  
 UTM Zone 17, NAD 1983  
 Top Hole Coordinates Bottom Hole Coordinates  
 N: 4,373,353.606m N: 4,377,822.304m  
 E: 509,791.842m E: 507,837.625m  
 Plat orientation and corner and well references are based upon the grid north meridian.  
 Well location references are based upon the magnetic meridian.



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



**Legend**

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

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.



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



ID	TM/Par	Owner	Bk/Pg	Acres
1	15-19	David Mendenhall, et al	282/723	45.00
2	15-18	Barbara Kay Turner	398/670	26.18
3	14-26	Brenda K. Turner	398/670	26.34
4	14-27	Ridgetop Capital LP	372/299	64.96
5	14-24	Ridgetop Capital LP	372/299	124.76
6	14-25	Stanley M. Koterba, et al	331/32	126.05
7	14-25.2	Andrew B. & Angela M. Negie	489/577	3.00
8	14-25.1	Roy F. Gorrell	447/180	2.00
9	14-11	Larry R. Henthorn	270/363	21.50
10	9-61	Larry R. Henthorn	212/606	10.00
11	14-10	Sara A. Midcap	342/568	40.00
12	9-39	Board of Education of Tyler County	290/88	65.00
13	9-59	James F. & Phyllis Henthorn	190/311	46.13
14	9-40	Sara A. Midcap	168/3	16.83
15	9-31	Sara A. Midcap	168/3	74.00
16	9-25	Michael & Sherri Tuttle	319/341	24.52
17	9-24	Bob S. & Sue M. Adams	204/599	7.15
18	9-26	Mariyn Ankrom	WB 47/269	18.94
19	9-15	Heartwood Forestland Fund II LP	326/547	225.64
20	9-23	Raymond Chapman, et al	WB 45/271	22.31
21	9-15.1	Timothy & Marilyn S. Skinner	226/477	0.71
22	9-22	Shawn A. & Cathy A. Potts	291/219	0.98
23	9-15.2	Par Mar Realty Co.	534/407	3.091
24	9-15.3	Fred Midcap	351/7	44.00
25	9-16	Sara A. Midcap	181/278	96.78
26	9-14	Leroy Kent Morris	480/311	93.63
27	9-1	Linda L. Stemple	369/9	24.24
28	9-2	William & Margaret A. Garrett	284/41	22.19
29	9-5.1	John W. Starkey	255/571	2.55
30	9-3.1	Roger J. II & Stacey L. Morgan	340/764	2.34
31	9-3	Bridgette A. Morgan	341/289	2.16
32	9-44.1	Rodney L. & Brenda K. Morgan	297/137	5.30
33	9-64	Carol Morgan, et al	262/459	0.97
34	9-41	Roger J. Morgan II	327/31	1.40
35	9-41.1	Nancy M. Morgan	269/629	0.99
36	9-41.2	Rodney L. & Brenda K. Morgan	342/121	0.52
37	9-39	Nancy A. Morgan	157/512	0.42
38	9-37	William Bassett	WB 30/15	0.92
39	9-37.1	Dottie Marie Perine	WB 30/15	0.41
40	9-38	Charles O. Rice	157/293	1.31
41	9-33.1	Ronald L. & Dottie M. Perine	312/328	0.86
42	9-33.2	Leonard G. Cooper	328/885	3.27
43	9-33.3	David D. & Whitney C. Cooper	438/62	12.13
44	9-44	Diane Weaver Clark	WB 39/544	40.68
45	9-36	Diane Weaver Clark	WB 39/544	59.00
46	9-35	Mark E. Heintzman	246/532	19.75
47	9-32.1	Sandra M. Bassett	346/487	3.36
48	9-33	Jefferson Minerals, LLC	438/66	69.17
49	9-32	Tracy P. Carr	346/487	32.17
50	9-32.1	Sandra M. Bassett	WB 40/353	1.08
51	9-31.2	Ralph & Sylvia Harter	347/178	4.57
52	9-31.3	Ralph & Sylvia Harter	347/180	1.05
53	9-30	Ervin L. & Betty M. Bassett	309/391	19.57
54	9-31	Russell L. & Mary E. Myers	347/263	31.45
55	9-31.1	Russell L. & Mary E. Myers	340/654	38.04
56	9-21	Thomas K. Brotherton	23/310	64.00
57	9-19	Russell L. & Mary E. Myers	337/26	93.17
58	9-60	James F. & Phyllis Henthorn	190/311	36.47
59	9-57	Kenneth & Donna Blake	323/91	0.37
60	9-56	Jason Lee Henthorn	546/431	0.92
61	9-40.1	Board of Education of Tyler County	290/88	9.17
62	9-55	Michael E. & Lois Henthorn	319/327	1.02
63	9-56.1	Michael E. & Lois Henthorn	297/623	1.04
64	9-58	Beatrice Lee Henthorn	WB 31/242	0.37
65	9-54	Beatrice Lee Henthorn	WB 31/242	0.89
66	9-58.1	Robert D. & Jessica J. Masters	342/737	0.76
67	9-53	R&S Lumber Co.	318/200	5.49
68	9-52	Mark A. & Lisa D. Richmond	328/344	1.59
69	9-51	Robert L. & Toni R. Vancamp	444/541	0.68
70	9-48.1	Kirk Family Trust	511/167	0.70

ID	TM/Par	Owner	Bk/Pg	Acres
71	9-48.2	Kirk Family Trust	511/167	0.33
72	9-49	Claudia Jean Gray	WB 29/220	15.15
73	9-48.5	Kathleen Fluharty	291/212	0.93
74	9-48.4	Francis D. & Barbara A. Slider	290/347	3.64
75	9-47	Brian & Tricia Brinkmeier	328/887	1.01
76	9-50	Lloyd & Linda Waggoner	299/497	1.06
77	9-53.1	Jessie A. Thompson	346/698	1.67
78	9-45	Stanley Modesitt	332/70	0.35
79	9-46	Michael J. & Heather D. Mongold	510/509	0.86
80	9-41	Daniel J. & Sha M. Yoho	306/514	2.93
81	9-42	Michael D. & Martha K. Pierpoint	215/276	1.06
82	9-48.7	Kathleen Fluharty Baxter	332/216	0.55
83	9-43	Catherine L. Bennett	217/376	0.72
84	9-48.3	Larry R. Henthorn	290/166	0.32
85	9-48	Michael D. & Martha K. Pierpoint	332/514	2.82



	Lessor
A	Linda L. Newbrough
B	Jack Russell Folger, et ux
C	Naomi V. Beagle
D	Scott Denomme, et ux
E	Stanley M. & Irene E. Koterba
F	Sarah Valentour Nass
G	Kim M. & Larry M. Henthorn
H	Sarah A. Midcap
I	James F. Sr. & Phyllis M. Henthorn
J	James F. Sr. & Phyllis M. Henthorn
K	Larry R. Henthorn
L	Sarah A. Midcap
M	Michael P. & Sherri J. Tuttle
N	Roger Ankrom
O	Bobby S. & Sue Marie Adams
P	David E. Bowyer
Q	James W. Chapman
R	Waco Oil & Gas Inc.
S	Marylin S. Parkinson
T	Nancy J. Squires
U	Sandra L. Baumgardner
V	Charles M. Ferrell
W	H3, LLC

	Lessor
X	Kathryn L. Watkins
Y	Diane W. Kestle
Z	Jefferson Minerals, LLC
AA	Pamela Oakley-Whiting
AB	Roger Morgan, et ux
AC	Cheryl Cumberledge
AD	Rodney Morgan, et ux
AE	Nancy Morgan
AF	Jean Cline
AG	Mark E. Heintzman
AH	Nancy Templeton
AI	Michael D. Reynolds
AJ	Timothy L. Vancamp
AK	Bounty Minerals, LLC
AL	Robert D. & Jessica J. Masters
AM	Beatrice Lee Henthorn
AN	Michael E. & Lois J. Henthorn
AO	Jason L. & Patty J. Henthorn
AP	Kenneth F. & Donna Blake
AQ	Sherry Sue Dietrich
AR	Ronald L. Perine, et ux
AS	Sherry Sue Dietrich

FILE NO: 34-54-E-16  
 DRAWING NO: Harpua 1H Well Plat  
 SCALE: 1" = 2000'  
 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: March 29 20 23  
 OPERATOR'S WELL NO. Harpua Unit 1H  
 API WELL NO  
 47 - 095 - 02636  
 STATE COUNTY PERMIT

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

LOCATION: ELEVATION: As-Drilled 1,061' WATERSHED: Outlet Middle Island Creek QUADRANGLE: Paden City 33.25; 113.725;  
 DISTRICT: Ellsworth/Lincoln Pamela Oakley Whiting; Nancy Templeton; Michael D. Reynolds; COUNTY: Wayne 152.89425; 74.169;  
 SURFACE OWNER: Barbara Kay Turner Sandra L. Baumgardner; Kathryn L. Watkins; Diane W. Kestle; Mark E. Heintzman; ACREAGE: 26.18 217.30; 20; 93.63;  
 ROYALTY OWNER: Linda L. Newbrough; Naomi V. Beagle; Stanley M. & Irene E. Koterba; Sarah A. Midcap (2) LEASE NO: ACREAGE: 62.84375; 64.18  
 PROPOSED WORK:  DRILL  CONVERT  DRILL DEEPER  FRACTURE OR STIMULATE  PLUG OFF OLD FORMATION  
 PERFORATE NEW FORMATION  OTHER PHYSICAL CHANGE IN WELL (SPECIFY) As-Drilled 6,344' TVD  
 PLUG AND ABANDON  CLEAN OUT AND REPLUG TARGET FORMATION: Marcellus Shale ESTIMATED DEPTH: 22,611' 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



9,758' to Bottom Hole

3,358' to Top Hole

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

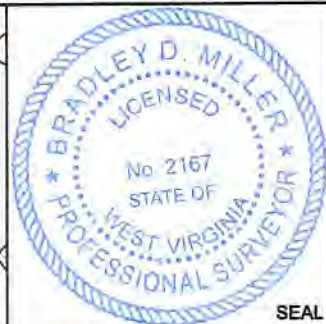


Wellhead Layout (NTS)

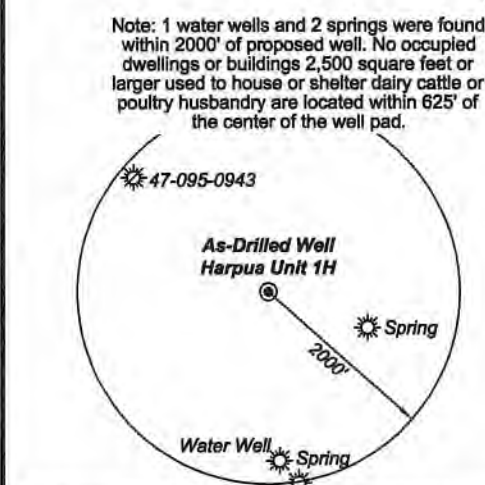
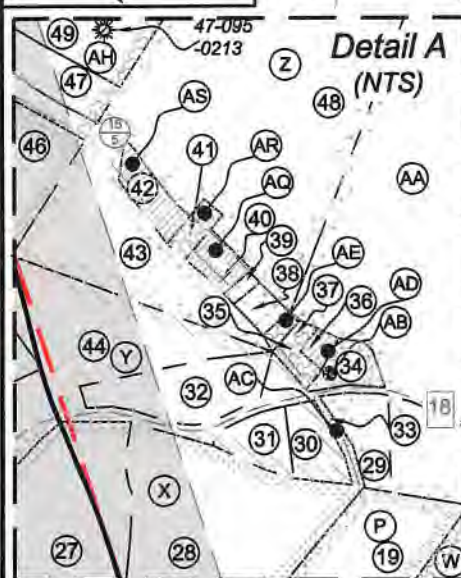
Maggie Unit 3H	47-095-02639
Maggie Unit 2H	47-095-02638
Maggie Unit 1H	47-095-02637
Harpua Unit 2H	47-095-02641
As-Drilled Harpua Unit 1H	47-095-02636
Possum Unit 2H	47-095-02642
Possum Unit 1H	47-095-02640

Bearing	Dist.
L1 S 62°25' E	2,065.8'
L2 S 28°12' E	1,075.1'
L3 N 03°20' W	1,445.4'
L4 N 58°05' E	2,758.8'

Notes:  
West Virginia Coordinate System of 1927, North Zone based upon Differential GPS Measurements.  
Well No. Harpua Unit 1H Top Hole coordinates are  
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E: 1,608,882.79' Longitude: 80°53'10.57"  
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UTM Zone 17, NAD 1983  
Top Hole Coordinates Bottom Hole Coordinates  
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E: 509,791.842m E: 507,837.625m  
Plat orientation and corner and well references are based upon the grid north meridian.  
Well location references are based upon the magnetic meridian.



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



FILE NO: 34-54-E-16  
DRAWING NO: Harpua 1H Well Plat  
SCALE: 1" = 2000'  
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: March 29 20 23  
OPERATOR'S WELL NO. Harpua Unit 1H  
API WELL NO  
47 - 095 - 02636  
STATE COUNTY PERMIT

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

LOCATION: ELEVATION: As-Drilled 1,061' WATERSHED: Outlet Middle Island Creek QUADRANGLE: Paden City 33.25; 113.725;  
DISTRICT: Ellsworth/Lincoln COUNTY: Wayne 06/02/2023  
SURFACE OWNER: Barbara Kay Turner Pamela Oakley Whiting; Nancy Tampleton; Michael D. Reynolds;  
ROYALTY OWNER: Linda L. Newbrough; Naomi V. Beagle; Stanley M. & Irene E. Kotarba; Sarah A. Midcop (2) LEASE NO: ACREAGE: 26.18 48.43; 109.48; 19.75;  
PROPOSED WORK:  DRILL  CONVERT  DRILL DEEPER  FRACTURE OR STIMULATE  PLUG OFF OLD FORMATION  
 PERFORATE NEW FORMATION  OTHER PHYSICAL CHANGE IN WELL (SPECIFY) As-Drilled  
 PLUG AND ABANDON  CLEAN OUT AND REPLUG TARGET FORMATION: Marcellus Shale ESTIMATED DEPTH: 22,611' MD 6,344' TVD

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ADDRESS: 1615 Wynkoop Street ADDRESS: 5400 D Big Tyler Road  
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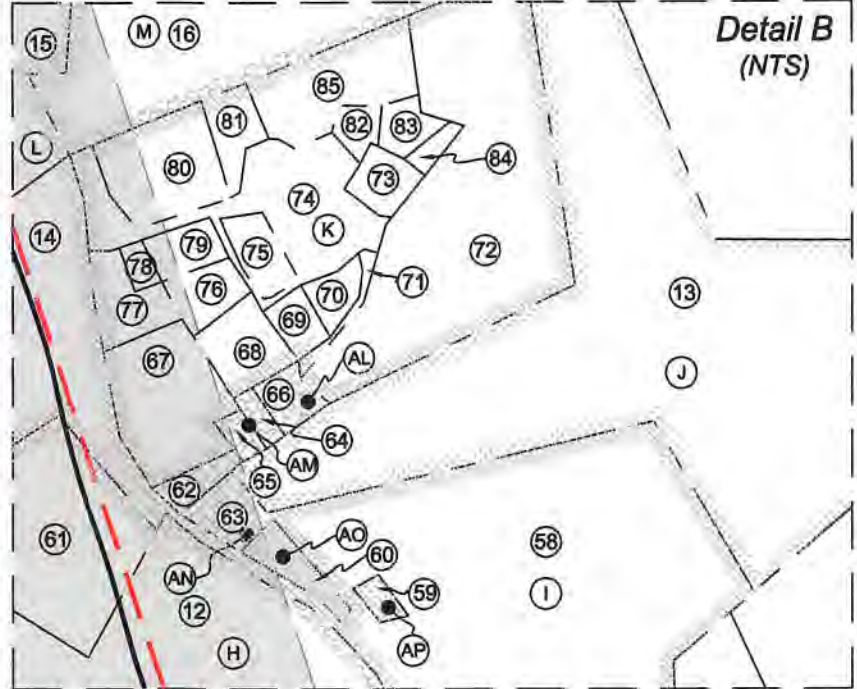
LONGITUDE 80 - 52 - 30  
11,600' to Top Hole  
12,004' to Bottom Hole





ID	TM/Par	Owner	Bk/Pg	Acres
71	9-48.2	Kirk Family Trust	511/167	0.33
72	9-49	Claudia Jean Gray	WB 29/220	15.15
73	9-48.5	Kathleen Fluharty	291/212	0.93
74	9-48.4	Francis D. & Barbara A. Slider	290/347	3.64
75	9-47	Brian & Tricia Brinkmeier	328/887	1.01
76	9-50	Lloyd & Linda Waggoner	299/497	1.06
77	9-53.1	Jessie A. Thompson	346/698	1.67
78	9-45	Stanley Modesitt	332/70	0.35
79	9-46	Michael J. & Heather D. Mongold	510/509	0.86
80	9-41	Daniel J. & Sha M. Yoho	306/514	2.93
81	9-42	Michael D. & Martha K. Pierpoint	215/276	1.06
82	9-48.7	Kathleen Fluharty Baxter	332/216	0.55
83	9-43	Catherine L. Bennett	217/376	0.72
84	9-48.3	Larry R. Henthom	290/166	0.32
85	9-48	Michael D. & Martha K. Pierpoint	332/514	2.82

ID	TM/Par	Owner	Bk/Pg	Acres
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3	14-26	Brenda K. Turner	398/670	26.34
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13	9-59	James F. & Phyllis Henthom	190/311	46.13
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15	9-31	Sara A. Midcap	168/3	74.00
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17	9-24	Bob S. & Sue M. Adams	204/599	7.15
18	9-26	Mariyn Ankrom	WB 47/269	18.94
19	9-15	Heartwood Forestland Fund II LP	326/547	225.64
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22	9-22	Shawn A. & Cathy A. Potts	291/219	0.98
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24	9-15.3	Fred Midcap	351/7	44.00
25	9-16	Sara A. Midcap	181/278	96.78
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31	9-3	Bridgette A. Morgan	341/288	2.16
32	9-44.1	Rodney L. & Brenda K. Morgan	297/137	5.30
33	9-64	Carol Morgan, et al	262/459	0.97
34	9-41	Roger J. Morgan II	327/31	1.40
35	9-41.1	Nancy M. Morgan	269/629	0.99
36	9-41.2	Rodney L. & Brenda K. Morgan	342/121	0.52
37	9-39	Nancy A. Morgan	157/512	0.42
38	9-37	William Bassett	WB 30/15	0.92
39	9-37.1	Dottie Marie Perine	WB 30/15	0.41
40	9-38	Charles O. Rice	157/293	1.31
41	9-33.1	Ronald L. & Dottie M. Perine	312/328	0.86
42	9-33.2	Leonard G. Cooper	328/885	3.27
43	9-33.3	David D. & Whitney C. Cooper	438/62	12.13
44	9-44	Diane Weaver Clark	WB 39/544	40.68
45	9-36	Diane Weaver Clark	WB 39/544	58.00
46	9-35	Mark E. Heintzman	246/532	19.75
47	9-32.1	Sandra M. Bassett	346/487	3.36
48	9-33	Jefferson Minerals, LLC	438/66	69.17
49	9-32	Tracy P. Carr	346/487	32.17
50	9-32.1	Sandra M. Bassett	WB 40/353	1.08
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52	9-31.3	Ralph & Sylvia Harter	347/180	1.05
53	9-30	Ervin L. & Betty M. Bassett	309/391	19.57
54	9-31	Russell L. & Mary E. Myers	347/263	31.45
55	9-31.1	Russell L. & Mary E. Myers	340/654	38.04
56	9-21	Thomas K. Brotherton	23/310	64.00
57	9-19	Russell L. & Mary E. Myers	337/26	93.17
58	9-60	James F. & Phyllis Henthom	190/311	36.47
59	9-57	Kenneth & Donna Blake	323/91	0.37
60	9-56	Jason Lee Henthom	546/431	0.92
61	9-40.1	Board of Education of Tyler County	290/88	9.17
62	9-55	Michael E. & Lois Henthom	319/327	1.02
63	9-56.1	Michael E. & Lois Henthom	297/623	1.04
64	9-58	Beatrice Lee Henthom	WB 31/242	0.37
65	9-54	Beatrice Lee Henthom	WB 31/242	0.89
66	9-58.1	Robert D. & Jessica J. Masters	342/737	0.76
67	9-53	R&S Lumber Co.	318/200	5.49
68	9-52	Mark A. & Lisa D. Richmond	328/344	1.59
69	9-51	Robert L. & Toni R. Vancamp	444/541	0.68
70	9-48.1	Kirk Family Trust	511/167	0.70



Detail B  
(NTS)

Lessor	
A	Linda L. Newbrough
B	Jack Russell Folger, et ux
C	Naomi V. Beagle
D	Scott Denomme, et ux
E	Stanley M. & Irene E. Koterba
F	Sarah Valentour Nass
G	Kim M. & Larry M. Henthom
H	Sarah A. Midcap
I	James F. Sr. & Phyllis M. Henthom
J	James F. Sr. & Phyllis M. Henthom
K	Larry R. Henthom
L	Sarah A. Midcap
M	Michael P. & Sherri J. Tuttle
N	Roger Ankrom
O	Bobby S. & Sue Marie Adams
P	David E. Bowyer
Q	James W. Chapman
R	Waco Oil & Gas Inc.
S	Marylin S. Parkinson
T	Nancy J. Squires
U	Sandra L. Baumgardner
V	Charles M. Ferrell
W	H3, LLC

Lessor	
X	Kathryn L. Watkins
Y	Diane W. Kestle
Z	Jefferson Minerals, LLC
AA	Pamela Oakley-Whiting
AB	Roger Morgan, et ux
AC	Cheryl Cumberlandge
AD	Rodney Morgan, et ux
AE	Nancy Morgan
AF	Jean Cline
AG	Mark E. Heintzman
AH	Nancy Templeton
AI	Michael D. Reynolds
AJ	Timothy L. Vancamp
AK	Bounty Minerals, LLC
AL	Robert D. & Jessica J. Masters
AM	Beatrice Lee Henthom
AN	Michael E. & Lois J. Henthom
AO	Jason L. & Patty J. Henthom
AP	Kenneth F. & Donna Blake
AQ	Sherry Sue Dietrich
AR	Ronald L. Perine, et ux
AS	Sherry Sue Dietrich

FILE NO: 34-54-E-16  
 DRAWING NO: Harpua 1H Well Plat  
 SCALE: 1" = 2000'  
 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: March 29 20 23  
 OPERATOR'S WELL NO. Harpua Unit 1H  
 API WELL NO  
 47 - 095 - 02636  
 STATE COUNTY PERMIT

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

LOCATION: ELEVATION: As-Drilled 1,061' WATERSHED: Outlet Middle Island Creek QUADRANGLE: Paden City 33.25; 113.725;  
 DISTRICT: Ellsworth/Lincoln COUNTY: Wayne 06/02/1023  
 SURFACE OWNER: Barbara Kay Turner Pamela Oakley Whiting; Nancy Templeton; Michael D. Reynolds; 452.89/254.169;  
 ROYALTY OWNER: Linda L. Newbrough; Naomi V. Beagle; Stanley M. & Irene E. Koterba; Sarah A. Midcap (2) LEASE NO: 217.30; 20; 93.63;  
 PROPOSED WORK:  DRILL  CONVERT  DRILL DEEPER  FRACTURE OR STIMULATE  PLUG OFF OLD FORMATION  
 PERFORATE NEW FORMATION  OTHER PHYSICAL CHANGE IN WELL (SPECIFY) As-Drilled ACREAGE: 26.18 46.43; 109.48; 19.75;  
 PLUG AND ABANDON  CLEAN OUT AND REPLUG TARGET FORMATION: Marcellus Shale ESTIMATED DEPTH: 22,611' MD 74.47; 285.00625;  
 ACRES: 62.84375; 64.18

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



## Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	6/8/2020
Job End Date:	6/27/2020
State:	West Virginia
County:	Tyler
API Number:	47-095-02636-00-00
Operator Name:	Antero Resources Corporation
Well Name and Number:	Harpua Unit 1H
Latitude:	39.50968000
Longitude:	-80.88628000
Datum:	NAD83
Federal Well:	NO
Indian Well:	NO
True Vertical Depth:	6,468
Total Base Water Volume (gal):	24,629,910
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
Produced Water	Halliburton	Base Fluid					
Ingredients			Water	7732-18-5	100.00000	86.72565	Density = 8.50
	Listed Above	Listed Above					
			Water	7732-18-5	100.00000	0.16273	

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*CS*

HYDROCHLORIC ACID, 22 BAUME	Halliburton	Solvent					
				Listed Below			
WG-36 GELLING AGENT	Halliburton	Gelling Agent					
				Listed Below			
SAND-COMMON WHITE 40/70	Halliburton	Proppant					
				Listed Below			
OPTIFLO-II DELAYED RELEASE BREAKER	Halliburton	Breaker					
				Listed Below			
Excelerate LX-15	Halliburton	Friction Reducer					
				Listed Below			
Legend LD-2555	MultiChem	Additive					
				Listed Below			
Legend LD-2990	MultiChem	Friction Reducer					
				Listed Below			
MG B-8614	Halliburton	Biocide					
				Listed Below			

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Sand-Common White-100 Mesh, SSA-2	Halliburton	Proppant					
				Listed Below			
HAI-501	Halliburton	Acid Corrosion 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	13.09013	
			Hydrochloric acid	7647-01-0	30.00000	0.03758	
			Complex Amine Compound	Proprietary	60.00000	0.01745	
			Hydrotreated light petroleum distillate	64742-47-8	30.00000	0.01323	
			Complex Amine Compound	Proprietary	60.00000	0.00901	
			Guar gum	9000-30-0	100.00000	0.00351	
			Glutaraldehyde	111-30-8	30.00000	0.00243	
			Sorbitan, mono-9-octadecenoate, (Z)	1338-43-8	5.00000	0.00221	
			Surfactant	Proprietary	5.00000	0.00145	
			Polyethoxylated fatty amine salt	61791-26-2	30.00000	0.00087	
			Surfactant	Proprietary	5.00000	0.00075	
			Quaternary ammonium compounds, benzyl-C12-16-alkyldimethyl chlorides	68424-85-1	5.00000	0.00040	
			Methanol	67-56-1	100.00000	0.00032	
			Ethoxylated alcohols	Proprietary	5.00000	0.00030	
			Alkoxylated polyhydric alcohol	Proprietary	1.00000	0.00029	
			Organic chloride compound	Proprietary	1.00000	0.00029	
			Alkoxylated polyhydric alcohol	Proprietary	1.00000	0.00015	

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			Ethoxylated alcohols	Proprietary	1.00000	0.00015	
			Organic chloride compound	Proprietary	1.00000	0.00015	
			Ammonium persulfate	7727-54-0	100.00000	0.00011	
			Ethanol	64-17-5	1.00000	0.00008	
			Mixture of dimer and trimer fatty acids of indefinite composition derived from tall oil	61790-12-3	30.00000	0.00007	
			Modified thiourea polymer	Proprietary	30.00000	0.00007	
			Oxylated phenolic resin	Proprietary	30.00000	0.00003	
			Acrylamide	79-06-1	0.10000	0.00002	
			Organic salt #1	Proprietary	0.10000	0.00002	
			Hexadecene	629-73-2	5.00000	0.00001	
			Propargyl alcohol	107-19-7	5.00000	0.00001	
			Phosphoric acid	7664-38-2	0.10000	0.00001	
			Sodium hydroxide	1310-73-2	0.01000	0.00000	
			Formaldehyde	50-00-0	0.01000	0.00000	
			Organic salt #2	Proprietary	0.01000	0.00000	
			Sodium glycolate	2836-32-0	0.01000	0.00000	
			Nitrated acetate salt	Proprietary	0.01000	0.00000	
			Organic salt #1	Proprietary	0.01000	0.00000	
			Organic salt #2	Proprietary	0.01000	0.00000	
			Sodium glycollate	2836-32-0	0.01000	0.00000	
			Organic salt #3	Proprietary	0.01000	0.00000	
			Nitrated acetate salt	Proprietary	0.01000	0.00000	
			C.I. pigment Orange 5	3468-63-1	1.00000	0.00000	
			Ethylene oxide	75-21-8	0.01000	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)

Environmental Protection  
 Division  
 Office of Air and  
 Radiation  
 U.S. Environmental  
 Protection Agency  
 Washington, DC 20460  
 EPA-335  
 Form 304 (Rev. 12-2006)