



west virginia department of environmental protection

Office of Oil and Gas
601 57th Street, S.E.
Charleston, WV 25304
(304) 926-0450
fax: (304) 926-0452

Harold D. Ward, Cabinet Secretary
www.dep.wv.gov

Friday, October 6, 2023
PERMIT MODIFICATION APPROVAL
Horizontal 6A / New Drill

ANTERO RESOURCES CORPORATION
1615 WYNKOOP STREET

DENVER, CO 80202

Re: Permit Modification Approval for MAKAR UNIT 1H
47-103-03587-00-00

Lateral Extension

ANTERO RESOURCES CORPORATION

The Office of Oil and Gas has reviewed the attached permit modification for the above referenced permit. The attached modification has been approved and well work may begin. Please be reminded that the oil and gas inspector is to be notified twenty-four (24) hours before permitted well work is commenced.

If there are any questions, please feel free to contact me at (304) 926- 0450.

James A. Martin
Chief

Operator's Well Number: MAKAR UNIT 1H
Farm Name: ANTERO RESOURCES CORP
U.S. WELL NUMBER: 47-103-03587-00-00
Horizontal 6A New Drill
Date Modification Issued: 10-6-2023

Promoting a healthy environment.

10/06/2023

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS
WELL WORK PERMIT APPLICATION

1) Well Operator: Antero Resources Corporation 494507062 103 - Wetzell Green Pine Grove 7.5'
Operator ID County District Quadrangle

2) Operator's Well Number: Makar Unit 1H MOD Well Pad Name: Furbee Pad

3) Farm Name/Surface Owner: Antero Resources Corp. Public Road Access: CR 50

4) Elevation, current ground: As-built 1211' Elevation, proposed post-construction: _____

5) Well Type (a) Gas Oil _____ Underground Storage _____
Other _____
(b) If Gas Shallow Deep _____
Horizontal

6) Existing Pad: Yes or No Yes

7) Proposed Target Formation(s), Depth(s), Anticipated Thickness and Expected Pressure(s):
Marcellus Shale: 7500' TVD, Anticipated Thickness- 55 feet, Associated Pressure- 2850#

8) Proposed Total Vertical Depth: 7500' TVD

9) Formation at Total Vertical Depth: Marcellus

10) Proposed Total Measured Depth: 28700' MD

11) Proposed Horizontal Leg Length: 17514' *Open to modification at a later date

12) Approximate Fresh Water Strata Depths: 575'

13) Method to Determine Fresh Water Depths: 47103308970000 Offset well records. Depths have been adjusted according to surface elevations.

14) Approximate Saltwater Depths: 2284'

15) Approximate Coal Seam Depths: 973'

16) Approximate Depth to Possible Void (coal mine, karst, other): None Anticipated

17) Does Proposed well location contain coal seams directly overlying or adjacent to an active mine? Yes _____ No

(a) If Yes, provide Mine Info: Name: _____
Depth: _____
Seam: _____
Owner: _____

18)

CASING AND TUBING PROGRAM

TYPE	Size (in)	New or Used	Grade	Weight per ft. (lb/ft)	FOOTAGE: For Drilling (ft)	INTERVALS: Left in Well (ft)	CEMENT: Fill-up (Cu. Ft.)/CTS
Conductor	20"	New	J-55	91.59#	100'	100'	CTS, 96 Cu. Ft.
Fresh Water	13-3/8"	New	J-55	54.5#	625'	625'	CTS, 651 Cu. Ft.
Coal	9-5/8"	New	J-55	36#	3100'	3100'	CTS, 1262 Cu. Ft.
Intermediate							
Production	5-1/2"	New	P110-ICY	23#	28700'	28700'	CTS, 6304 Cu. Ft.
Tubing	2-3/8"	New	N-80	4.7#			
Liners							

TYPE	Size (in)	Wellbore Diameter (in)	Wall Thickness (in)	Burst Pressure (psi)	Anticipated Max. Internal Pressure (psi)	Cement Type	Cement Yield (cu. ft./k)
Conductor	20"	24"	0.375"	2250	50	Class A/L	~1.18
Fresh Water	13-3/8"	17-1/2"	0.38"	2730	1000	Class A/L	~1.18
Coal	9-5/8"	12-1/4"	0.352"	3520	1500	Class A/L	~1.18
Intermediate							
Production	5-1/2"	8-3/4" & 8-1/2"	0.415"	14,360	2500	Class G/H	~1.8
Tubing	2-3/8"	4.778"	0.19"	11,200			
Liners							

PACKERS

Kind:	N/A			
Sizes:	N/A			
Depths Set:	N/A			

19) Describe proposed well work, including the drilling and plugging back of any pilot hole:

Drill a new horizontal shallow well into the Marcellus Shale.

*Antero will be air drilling the fresh water string which makes it difficult to determine when fresh water is encountered. Therefore, we have built in a buffer for the casing setting depth which helps to ensure that all fresh water zones are covered.

20) Describe fracturing/stimulating methods in detail, including anticipated max pressure and max rate:

Antero plans to pump Slickwater into the Marcellus Shale formation in order to ready the well for production. The fluid will be comprised of approximately 99 percent water and sand, with less than 1 percent special-purpose additives as shown in the attached "List of Anticipated Additives Used for Fracturing or Stimulating Well."

Anticipated Max Pressure - 9300 lbs
Anticipated Max Rate - 80 bpm

21) Total Area to be disturbed, including roads, stockpile area, pits, etc., (acres): 33.19 acres

22) Area to be disturbed for well pad only, less access road (acres): 13.86 acres

23) Describe centralizer placement for each casing string:

Conductor: no centralizers

Surface Casing: one centralizer 10' above the float shoe, one on the insert float collar and one every 4th joint spaced up the hole to surface.

Intermediate Casing: one centralizer above float joint, one centralizer 5' above float collar and one every 4th collar to surface.

Production Casing: one centralizer at shoe joint and one every 3 joints to top of cement in intermediate casing.

24) Describe all cement additives associated with each cement type:

Conductor: no additives, Class A/L cement.

Surface: Class A/L cement with 2-3% calcium chloride and 1/4 lb of flake

Intermediate: Class A/L cement with 1/4 lb of flake, 5 gallons of clay treat

Production: Lead cement- 50/50 Class H/Poz + 1.5% salt + 1% C-45 + 0.5% C-16a + 0.2% C-12 + 0.45% C-20 + 0.05% C-51

Production: Tail cement- Class G/H + 45 PPS Calcium Carbonate + 1.0% FL-160 + 0.2% ACGB-47 + 0.05% ACSA-51 + 0.2% ACR-20

25) Proposed borehole conditioning procedures:

Conductor: blowhole clean with air, run casing, 10 bbls fresh water.

Surface: blowhole clean with air, trip to conductor shoe, trip to bottom, blowhole clean with air, trip out, run casing, circulate pipe capacity + 40 bbls fresh water followed by 25 bbls bentonite mud, 10 bbls fresh water spacer.

Intermediate: blowhole clean with air, trip to surface casing shoe, trip to bottom, blowhole clean with air, trip out, run casing, circulate 40 bbls brine water followed by 10 bbls fresh water and 25 bbls bentonite mud, pump 10 bbls fresh water.

Production: circulate with 14 lb/gal NaCl mud, trip to middle of lateral, circulate, pump high viscosity sweep, trip to base of curve, pump high viscosity sweep, trip to top of curve, trip to bottom, circulate, pump high viscosity sweep, trip out, run casing, circulate 10 bbls fresh water, pump 48 bbls barite pill, pump 10 bbls fresh water followed by 48 bbls mud flush and 10 bbls water.

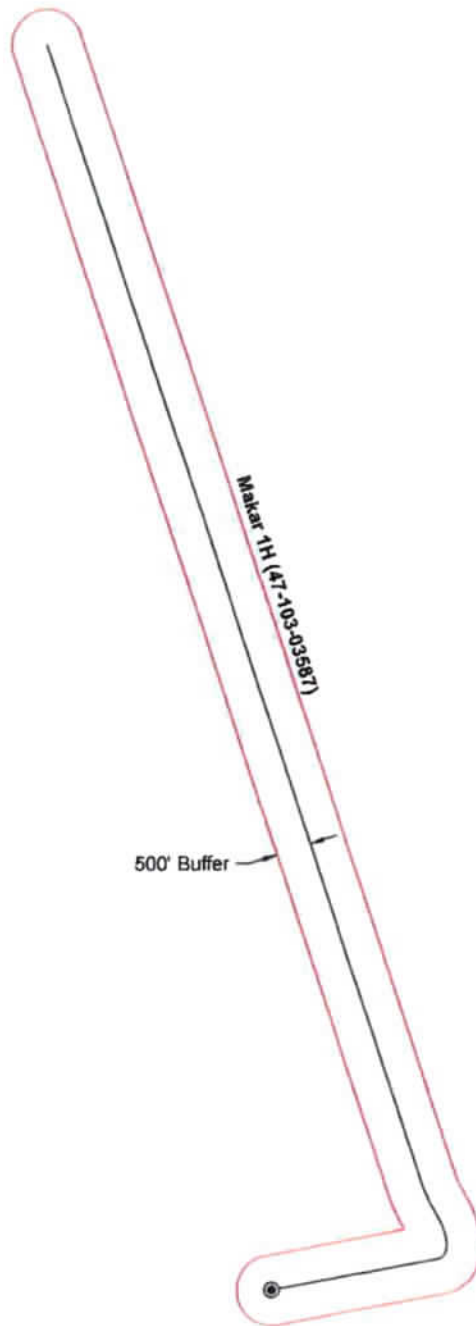
*Note: Attach additional sheets as needed.

LEGEND

- ⊙ Proposed gas well
- ⊛ Existing Well, as noted
- ⊛ Digitized Well, as noted



The orientation of this survey is Grid North, and its coordinate base is the West Virginia Coordinate System of 1927, North Zone



Bridgeport Office
 Phone: (304) 848-5035
 Fax: (304) 848-5037

172 Thompson Drive
 Bridgeport, WV 26330

PARTY CHIEF: C. Lynch	DRAWN BY: J. Smith
RESEARCH: J. Miller	PREPARED: August 24, 2023
SURVEYED: Dec. 2016	PROJECT NO: 53-34-G-23
FIELD CREW: C.L., K.M.	DRAWING NO: Makar 1H BHL MOD AOR

Sheet 1 of 1



Scale: 1 inch = 2500 feet

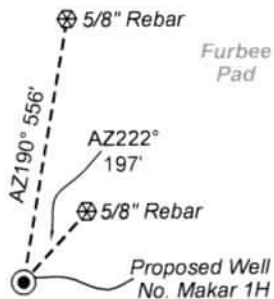
10/06/2023

**Antero Resources
Well No. Makar 1H**

Antero Resources Corporation



Well Location References (NTS)



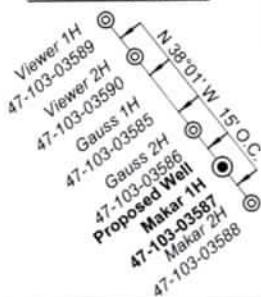
I, the undersigned, hereby certify that this plat is correct to the best of my knowledge and belief and shows all the information required by law and the rules issued and prescribed by the Department of Environmental Protection.

Bradley D. Miller

Bradley D. Miller, P.S. 2167

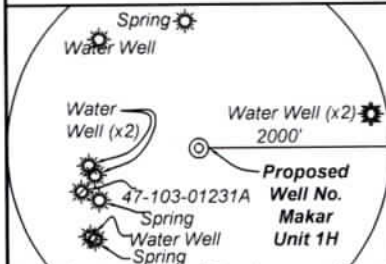


Wellhead Layout (NTS)



Legend

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



FILE NO: 53-34-G-23
DRAWING NO: Makar Unit 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: September 6 2023
OPERATOR'S WELL NO. Makar Unit 1H
API WELL NO
47 - 103 - 03587
STATE COUNTY PERMIT

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

LOCATION: ELEVATION: As-Built 1211' WATERSHED: Fishing Creek QUADRANGLE: Pine Grove
DISTRICT: Green COUNTY: Wayne
SURFACE OWNER: Antero Resources Corp. ACREAGE: 58.1
ROYALTY OWNER: James Allen Sell LEASE NO: ACREAGE: 58.1
PROPOSED WORK: DRILL CONVERT DRILL DEEPER FRACTURE OR STIMULATE PLUG OFF OLD FORMATION
 PERFORATE NEW FORMATION OTHER PHYSICAL CHANGE IN WELL (SPECIFY) BHL MOD 7,500' TVD
 PLUG AND ABANDON CLEAN OUT AND REPLUG TARGET FORMATION: Marcellus Shale ESTIMATED DEPTH: 28,700' MD

WELL OPERATOR: Antero Resources Corporation DESIGNATED AGENT: Kevin Ellis
ADDRESS: 1615 Wynkoop Street ADDRESS: 535 White Oaks Blvd.
Denver, CO 80202 Bridgeport, WV 26330

9,788' to Bottom Hole

6,381' to Top Hole

TOP HOLE LATITUDE 39 - 35 - 00
BTM HOLE LATITUDE 39 - 37 - 30

Notes
West Virginia Coordinate System of 1927, North Zone based upon Differential GPS Measurements
Well No. Makar Unit 1H Top Hole coordinates are
N 387,179.39' Latitude 39°33'23.42"
E 1,652,931.18' Longitude 80°43'51.47"
Bottom Hole coordinates are
N 404,833.00' Latitude 39°36'17.46"
E 1,649,760.94' Longitude 80°44'35.06"
UTM Zone 17, NAD 1983
Top Hole Coordinates Bottom Hole Coordinates
N: 4,378,579.038m N: 4,383,941.209
E: 523,128.136m E: 522,072.707m
Plat orientation and corner and well references are based upon the grid north meridian.
Well location references are based upon the magnetic meridian.

Notes
Well No. Makar Unit 1H UTM Zone 17, NAD 1927
Top Hole Coordinates
N: 14,364,672.54'
E: 1,716,247.96'
Point of Entry Coordinates
N: 14,365,751.42'
E: 1,718,603.82'
Bottom Hole Coordinates
N: 14,382,264.88'
E: 1,712,784.62'

Bearing	Dist.
L1 S 66°38' W	1,879.6'
L2 S 89°58' W	1,943.8'
L3 N 84°48' E	1,644.3'
L4 N 89°39' E	1,670.8'
L5 N 66°21' E	2,592.0'

LONGITUDE 80 - 42 - 30

9,772' to Top Hole

7,340' to Bottom Hole

SEP 21 2023

WV Department of Environmental Protection

Office of Oil and Gas

See Detail Page 2

Proposed Well No. Makar Unit 1H

Conc. Mons.

L5 POE

1/2" Rebar

1/2" Rebar

**Antero Resources
Well No. Makar 1H**

Antero Resources Corporation

Leases	
A	James Allen Sell
B	William R. Stalnaker
C	Tribune Resources Minerals, LLC
D	Marilyn Halley Seeley
E	Tribune Resources Minerals, LLC
F	Marcella K. Harrison
G	Linda Darlene Straight
H	CSX Transportation, Inc.
I	WVDNR
J	Jenkins Miller
K	Antero Minerals, LLC
L	Antero Minerals, LLC
M	Antero Minerals, LLC
N	Antero Minerals, LLC
O	Antero Minerals, LLC

Leases	
P	Lynn P. Newton
Q	Antero Minerals, LLC
R	Chesapeake Appalachia, LLC
S	Chesapeake Appalachia, LLC
T	DDE, Inc.
U	BRC Minerals, LP & BRC Appalachian Minerals, LLC
V	Shiben Estates, Inc.
W	Nancy B. Hatfield, et al
X	Cylde B. Snider
Y	Deborah Kay Clark
Z	Chesapeake Appalachia, LLC
AA	Elizabeth P. Ormer
AB	Donzel A. Hornbeck
AC	Elizabeth P. Ormer



RECEIVED
Office of Oil and Gas
SEP 21 2023
WV Department of
Environmental Protection

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Submeter
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**Antero Resources
Well No. Makar 1H**

Antero Resources Corporation

Page 3 of 3



ID	TM-Par	Owner	Bk/Pg	Acres
1	17-12	Antero Resources Corp.	483/888	58.10
2	17-1	Antero Resources Corp	483/888	15.35
3	17-60	Ross Bucher	411/765	79.00
4	13-71	Charles R. & Kay L. Blair	387/577	63.11
5	17-14	Bradford Highley	386/607	18.53
6	17-14.2	Michael & Tammy Lemasters	384/10	2.18
7	17-2	Clarence & Carol Lancaster	287/357	0.50
8	17-3	Bradford Highley	386/607	17.00
9	17-5	Coastal Forest Resources	444/105	90.00
10	17-4	James Straight	223/193	10.8
11	13-72	Straight Cemetery	---	0.45
12	17-3.1	Bradford D. Highley	386/607	1.00
13	13-71.1	Clarence L. & Carol J. Lancaster	387/266	19.19
14	13-78	Sebastian, Jr. & Marcella Harrison	281/94	25.37
15	13-73	James Straight, et al	WB67/427	14.60
16	13-74	Linda D. Straight	WB67/427	0.29
17	13-65.4	Raye Anne Lloyd	445/660	2.99
18	xx-xx	WV State Road Commission	162/497	0.90
19	13-65	Raye Anne Lloyd	445/660	18.01
20	30-59	James D. Glasscock II	377/180	1.09
21	30-23.1	Michael A. McDiffitt	447/102	2.06
22	30-55	James D. Glasscock II	377/180	0.81
23	30-58	James D. Glasscock II	377/180	0.47
24	30-54	James D. Glasscock II	377/180	0.41
25	30-57	Dwain R. & Dena L. Brown	286/736	0.91
26	30-23	Charles R. & Kay Blair	312/585	1.29
27	30-23.2	Charles R. & Kay L. Blair	305/372	1.00
28	30-56	Charles R. Blair	362/606	0.60
29	30-53	Lantz Cemetery	---	0.67
30	30-52	Clinton W. & Karen S. Harris	266/268	0.35
31	13-64	Loraine Highley	WB81/258	5.64
32	30-41	Clinton W. & Karen S. Harris	244/413	0.50
33	30-51	Wayne Morrison	366/58	1.00
34	30-40	Donald W. Harris	439/418	0.36
35	30-39	Donald W. Harris	439/418	0.66
36	30-38.1	Melissa Carter & Theresa Jones	423/283	0.50
37	30-38	William Stephen & Trudy J. Thomas	379/206	0.97
38	30-21	Robert Dennis Lawson	326/512	1.00
39	30-20	Esther R. Coen	433/68	1.00
40	30-37	Martin Carl & Sandra L. Bucher	342/568	0.52
41	30-33	James D. & Florence L. Eddy	354/320	0.85
42	30-31	Donna D. Williams	420/381	0.07
43	30-33.1	Donna D. Williams	420/381	0.09
44	30-33.2	Temple M. & Glenda D. Jackson	249/271	0.09
45	30-32	Temple M. & Glenda D. Jackson	249/271	0.42
46	30-50	Forrest L. & Anna Jane Tennant	228/278	0.22
47	30-49	Forrest L. & Anna Jane Tennant	218/4	0.45
48	30-29	Chad A. Pittman	397/351	1.01
49	30-28	Flora L. Trader, et al	WB74/931	0.91
50	30-30	Temple & Glenda D. Jackson	261/482	0.33
51	30-30.2	Donna D. Williams	420/381	0.03
52	30-30.1	Donna D. Williams	420/381	0.08
53	30-34	Richard W. & Connie J. Rine	294/308	0.24
54	30-35.1	Columbia Gas Transmission Corporation	263/164	0.05
55	30-36	Bayer Heritage Federal	442/478	0.26
56	30-35	Everett M. & Tresa A. Rine	354/510	0.20
57	30-19	Zachary C. Propst	431/280	1.0
58	30-17	Laura A. Hicks	439/363	0.15
59	30-18	Laura A. Hicks	439/363	0.37
60	30-16	Thomas R. & Paula C. Loy	393/683	0.77
61	30-27	Gary Hayes, et al	420/626	0.46
62	30-26	Richard W. & Connie J. Rine	294/308	0.20
63	30-25	Edward E. Martin Jr. & Violet Lorraine Martin	428/427	0.69
64	30-24	Edward E. Martin Jr. & Violet Lorraine Martin	428/427	0.23

ID	TM-Par	Owner	Bk/Pg	Acres
65	30-47	David L. Cunningham	WB42/436	0.75
66	30-46	David L. & Freda V. Cunningham	283/252	0.34
67	30-45	Gary B. & Pauline Hayes, et al	420/626	0.48
68	30-44	Gary B. & Pauline Hayes, et al	420/626	0.41
69	30-42	Reader Vol. Fire Dept. Inc.	261/307	0.34
70	30-43	Reader Vol. Fire Dept. Inc.	280/326	0.10
71	30-15	Reva E. Shanholtzer	WB44/164	0.73
72	30-14.1	Reva E. Shanholtzer	WB44/164	0.25
73	30-13	Kathy L. Wright	WB75/465	4.74
74	30-14	Kathy L. Wright	428/931	0.18
75	30-13.1	Joshua R. Wright	370/130	1.53
76	30-12	Kenneth R. & Charlene Ice	319/352	1.97
77	13-33	Ryan R. Bucher	426/768	1.79
78	13-33.11	Richard D. & Jacqueline M. Bucher	372/601	2.00
79	30-6.2	James C. & Corinna L. Tennant	373/178	1.18
80	30-6.2	James K. Tennant	417/208	0.38
81	30-6.1	Franklin D. & L. Marlene Tennant	417/205	0.44
82	30-11	Michael & Patricia A. Leek	AP98/638	0.05
83	30-10	Eric & Estella Hayes	409/390	1.25
84	30-9	Jerry D. & Joyce Martin	339/379	0.85
85	30-9.1	Jerry D. & Joyce Martin	339/379	0.57
86	30-5	Matthew C. Harris	442/183	0.61
87	30-5.2	Travis C. Ice & Mandy Barker	391/275	0.30
88	30-5.1	Travis C. Ice & Mandy Barker	391/275	0.25
89	30-5.3	Michael D. Lloyd	431/490	0.45
90	30-4.1	Michael D. Lloyd	431/490	0.43
91	30-4.5	Travis C. & Amanda J. Ice	395/346	0.32
92	30-4.4	Donna J. Titus	372/558	1.64
93	30-4.3	Donna J. Titus	372/558	0.17
94	30-4.2	Donna J. Titus	372/558	0.19
95	30-4	Marsha Derby	423/472	0.23
96	30-5.4	Marsha Derby	423/472	0.03
97	30-8	Robert J. Yeager	310/433	1.25
98	30-7	Jerry Lee & Karen Beryl Mason	365/533	1.25
99	30-3.2	Michael Miller, Sr.	361/143	0.33
100	30-3	Phyllis L. Willey	WB41/389	0.59
101	30-3.1	Phyllis L. Willey	WB41/389	0.83
102	30-2	Wallace E. & Daisy M. Kendall	289/476	1.75
103	13-24.2	Jerry Lee & Karen Beryl Mason	365/533	0.03
104	13-24.1	Jerry Lee & Karen Beryl Mason	235/9	3.10
105	30-1.5	Robert C. & Heidi M. Brown	428/14	1.75
106	13-32.3	Board of Education	282/414	12.39
107	13-32	Robert C. & Heidi M. Brown	428/14	0.45
108	13-32.2	Howard D. & Clara M. Bucher	367/144	34.02
109	13-31	Richard D. & Jacqueline Bucher	433/361	0.47
110	13-32.1	Wetzel County Board of Education	368/49	0.01
111	13-32.2	Richard D. & Jacqueline M. Bucher	367/530	0.20
112	13-32.2	Richard D. & Jacqueline Bucher	329/595	0.19
113	13-32.1	Richard D. & Jacqueline Bucher	332/167	0.27
114	13-30	Richard D. & Jacqueline Bucher	433/361	0.34
115	13-24.3	William R. & Denise Poling	311/70	0.97
116	13-29	Howard D. & Clara M. Bucher	367/144	0.17
117	13-24.7	Jerry L. & Karen B. Mason	367/79	0.91
118	13-24.6	Jerry L. & Karen B. Mason	367/74	0.35
119	13-24.5	Marilyn K. Daugherty	MS89/328	0.45
120	13-24.9	Nila E. Nice	431/653	0.37
121	13-24	Howard D. & Clara M. Bucher	367/144	34.02
122	13-25	Wayne & Brenda Balwanz	440/693	12.15
123	13-25.2	Diane K. Howell	416/682	10.20
124	13-14	Ronald S. Anderson	399/387	32.80
125	13-7	WSD Properties LLC	441/793	162.00
126	13-13	Linda M. Headley	385/209	85.50
127	8-41	Nancy Hatfield	267/370	60.00
128	8-28	Nancy B. Hatfield	474/481	449.48
129	8-23	Debra Kay Fuharty, et al	368/561	28.04
130	8-18	Carlton L. Hornbeck	320/3	0.24
131	3-37	Carlton J. Hornbeck	250/263	118.00
132	8-6	Carlton J. Hornbeck	250/263	3.30
133	8-5	Charles J. Jr. & Robin D. Stillwagoner	367/460	37.87
134	8-7	Carlton J. Horbeck	259/335	0.25
135	3-36	Donzel A. Hornbeck	459/560	35.00
136	3-35	Richard Hornbeck, et al	483/191	19.50
137	3-27	Ronald E. Wade	433/785	100.00

FILE NO: 53-34-G-23
 DRAWING NO: Makar Unit 1H Well Plat
 SCALE: 1" = 2000'
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 Submeter
 PROVEN SOURCE OF ELEVATION:
 WVDOT, Harrisville, WV

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

DATE: September 6 2023
 OPERATOR'S WELL NO. Makar Unit 1H
 API WELL NO
 47 - 103 - 03587
 STATE COUNTY PERMIT

WELL TYPE: OIL GAS LIQUID INJECTION WASTE DISPOSAL
 (IF GAS) PRODUCTION: STORAGE DEEP SHALLOW
 LOCATION: ELEVATION: As-Built 1211' WATERSHED: Fishing Creek QUADRANGLE: Pine Grove
 DISTRICT: Green COUNTY: Wayne
 SURFACE OWNER: Antero Resources Corp ACREAGE: 58.1
 ROYALTY OWNER: James Allen Sell LEASE NO: ACREAGE: 58.1
 PROPOSED WORK: DRILL CONVERT DRILL DEEPER FRACTURE OR STIMULATE PLUG OFF OLD FORMATION
 PERFORATE NEW FORMATION OTHER PHYSICAL CHANGE IN WELL (SPECIFY) BHL MOD 7,500' TVD
 PLUG AND ABANDON CLEAN OUT AND REPLUG TARGET FORMATION: Marcellus Shale ESTIMATED DEPTH: 28,700' MD

WELL OPERATOR: Antero Resources Corporation DESIGNATED AGENT: Kevin Ellis
 ADDRESS: 1615 Wynkoop Street ADDRESS: 535 White Oaks Blvd.
 Denver, CO 80202 Bridgeport, WV 26330

INFORMATION SUPPLIED UNDER WEST VIRGINIA CODE
Chapter 22, Article 6A, Section 5(a)(5)
IN LIEU OF FILING LEASE(S) AND OTHER CONTINUING CONTRACT(S)

Under the oath required to make the verification on page 1 of this Notice and Application, I depose and say that I am the person who signed the Notice and Application for the Applicant, and that –

- (1) the tract of land is the same tract described in this Application, partly or wholly depicted in the accompanying plat, and described in the Construction and Reclamation Plan;
- (2) the parties and recordation data (if recorded) for lease(s) or other continuing contract(s) by which the Applicant claims the right to extract, produce or market the oil or gas are as follows:

Grantor, lessor, etc.	Grantee, lessee, etc.	Royalty	Book/Page
<u>A: James Allen Sell Lease</u> James Allen Sell	Antero Resources Corporation	1/8+	258A/0467
<u>D: Marilyn Halley Seeley Lease</u> Marilyn Halley Seeley EQT Production Company	EQT Production Company Antero Resources Corporation	1/8 Assignment	148A/0831 230A/0801
<u>C: Tribune Resources Minerals, LLC Lease</u> Tribune Resources Minerals, LLC	Antero Resources Corporation	1/8+	218A/0791
<u>G: Linda Darlene Straight Lease</u> Linda Darlene Straight	Antero Resources Corporation	1/8+	179A/0867
<u>D: Marilyn Halley Seeley Lease</u> Marilyn Halley Seeley EQT Production Company	EQT Production Company Antero Resources Corporation	1/8 Assignment	148A/0831 230A/0801
<u>H: CSX Transportation, Inc. Lease</u> CSX Transportation, Inc.	Antero Resources Corporation	1/8+	275A/0895
<u>I: WVDNR Lease</u> WVDNR	Antero Resources Corporation	1/8+	323A/0541
<u>L: Antero Minerals, LLC Lease</u> Antero Minerals, LLC	Antero Resources Corporation	1/8+	250A/0851
<u>K: Antero Minerals, LLC Lease</u> Antero Minerals, LLC	Antero Resources Corporation	1/8+	250A/0847
<u>M: Antero Minerals, LLC Lease</u> Antero Minerals, LLC	Antero Resources Corporation	1/8+	250A/0847
<u>O: Antero Minerals, LLC Lease</u> Antero Minerals, LLC	Antero Resources Corporation	1/8+	250A/0851
<u>P: Lynn P. Newton Lease</u> Lynn P. Newton	Antero Resources Corporation	1/8+	339A/0431
<u>N: Antero Minerals, LLC Lease</u> Antero Minerals, LLC	Antero Resources Corporation	1/8+	250A/0847
<u>Q: Antero Minerals, LLC Lease</u> Antero Minerals, LLC	Antero Resources Corporation	1/8+	250A/0847
<u>R: Chesapeake Appalachia, LLC Lease</u> Chesapeake Appalachia, LLC SWN Production Company Antero Exchange Properties LLC	SWN Production Company Antero exchange Properties LLC Antero Resources Corporation	1/8 Assignment Merge	157A/0640 177A/0533 0013/0311
<u>T: DDE, Inc. Lease</u> DDE, Inc. Lease	Antero Resources Corporation	1/8+	301A/0641

10/06/2023

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Grantor, lessor, etc.	Grantee, lessee, etc.	Royalty	Book/Page
<u>U: BRC Minerals, LP & BRC Appalachian Minerals I, LLC Lease</u>			
BRC Minerals, LP & BRC Appalachian Minerals I, LLC	BRC Working Interest Company, LLC	1/8	102A/0505
BRC Working Interest Company, LLC	Chesapeake Appalachia, LLC	Assignment	103A/0470
Chesapeake Appalachia, LLC	SWN Production Company	Assignment	157A/0540
SWN Production Company	Antero Exchange Properties LLC	Assignment	177A/0533
Antero Exchange Properties LLC	Antero Resources Corporation	Merge	0013/0311
<u>V: Shiben Estates, Inc. Lease</u>			
Shiben Estates, Inc.	Antero Resources Corporation	1/8+	312A/0021
<u>Z: Chesapeake Appalachia, LLC Lease</u>			
Chesapeake Appalachia, LLC	SWN Production Company	1/8	157A/0640
SWN Production Company	Antero Exchange Properties LLC	Assignment	177A/0533
Antero Exchange Properties LLC	Antero Resources Corporation	Merge	0013/0311
<u>Y: Deborah Kay Clark Lease</u>			
Deborah Kay Clark	Antero Resources Corporation	1/8+	319A/0745
<u>X: Clyde B. Snider Lease</u>			
Clyde B. Snider	Antero Resources Corporation	1/8+	209A/0825
<u>AB: Donzel A. Hornbeck Lease</u>			
Donzel A. Hornbeck	Antero Resources Corporation	1/8+	221A/0742

*Partial Assignments to Antero Resources Corporation include 100% rights to extract, produce and market the oil and gas from the Marcellus and any other formations completed with this well.

*Co-tenancy utilization – At least 7 mineral owners in tract. At least 75% of the royalty owners have executed a lease on the tract. The interests of the remaining co-tenants were acquired pursuant to the Co-tenancy Modernization and Majority Protection Act

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Lease Name or Number	Grantor, Lessor, etc.	Grantee, Lessee, etc.	Royalty	Book/Page
AC: Elizabeth P. Orner Lease				
	Elizabeth P. Orner	Antero Resources Corporation	1/8+	181A/0086

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**Acknowledgement of Possible Permitting/Approval
In Addition to the Office of Oil and Gas**

The permit applicant for the proposed well work addressed in this application hereby acknowledges the possibility of the need for permits and/or approvals from local, state, or federal entities in addition to the DEP, Office of Oil and Gas, including but not limited to the following:

- WV Division of Water and Waste Management
- WV Division of Natural Resources WV Division of Highways
- U.S. Army Corps of Engineers
- U.S. Fish and Wildlife Service
- County Floodplain Coordinator

The applicant further acknowledges that any Office of Oil and Gas permit in no way overrides, replaces, or nullifies the need for other permits/approvals that may be necessary and further affirms that all needed permits/approvals should be acquired from the appropriate authority before the affected activity is initiated.

Well Operator: Antero Resources Corporation
 By: Tim Rady
 Its: Senior Vice President of Land