

#### 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

## Monday, February 24, 2025 PERMIT MODIFICATION APPROVAL Horizontal 6A / New Drill

ANTERO RESOURCES CORPORATION 1615 WYNKOOP STREET

DENVER, CO 80202

Re:

Permit Modification Approval for Marma Unit 1H

47-103-03698-00-00

Extended Lateral Length

#### 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: Marma Unit 1H

Farm Name: Dallison Lumber Company

U.S. WELL NUMBER: 47-103-03698-00-00

Horizontal 6A New Drill

Date Modification Issued: 2/24/2025

Promoting a healthy environment.

API NO. 47-103	_ 03698	
<b>OPERATOR W</b>	ELL NO.	Marma Unit 1H MOD
Well Pad Nar	ne. Cedar	Pad

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

1) Well Operato	or: Antero	Resources	Corporat	494507062	103 - Wetz	Green	Pine Grove 7.5'	
				Operator ID	County	District	Quadrangle	
2) Operator's Well Number: Marma Unit 1H MOD Well Pad Name: Cedar Pad								
3) Farm Name/S	Surface Own	ner: Dallison	Lumber Cor	mpany Public Road	d Access: CR	52		
4) Elevation, cu	rrent ground	d: As-Built	- 1248' El	evation, proposed p	oost-construction	on:		
5) Well Type	(a) Gas Other	X	_ Oil	Unde	rground Storag	e		
	(b)If Gas	Shallow	X	Deep				
	(0)11 Gas	Horizontal	X	Bccp				
6) Existing Pad:	Yes or No		-					
50 - 50 - 10 - 10 - 10 - 10 - 10 - 10 -				ipated Thickness ar ss- 55 feet, Associa	-			
8) Proposed Tot	al Vertical	Depth: 720	0' TVD					
9) Formation at	Total Verti	cal Depth:	Marcellus					
10) Proposed To	otal Measur	ed Depth:	25700' M	D				
11) Proposed He	orizontal Le	eg Length:	16687'	*Open to modifica	ition at a later	date		
12) Approximat	te Fresh Wa	ter Strata De	pths:	612'				
13) Method to I	Determine F	resh Water I	Depths:	17103308970000 Offset well	records. Depths have	been adjusted a	ccording to surface elevations.	
14) Approximat	e Saltwater	Depths: 21	93'					
15) Approximat	te Coal Sear	n Depths: 1	010'					
16) Approximat	te Depth to	Possible Voi	d (coal mi	ne, karst, other):	None Anticipat	ed		
17) Does Propos directly overlyin					No	Х		
(a) If Yes, pro	vide Mine I	nfo: Name	:					
		Depth	:					
		Seam						
Office of Oil	VED Land Gas	Owne	r:					

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Environmental Protection

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Δ	PI	NO.	47-	103	-	03698

OPERATOR WELL NO. Marma Unit 1H MOD

Well Pad Name: Cedar Pad

#### 18)

## CASING AND TUBING PROGRAM

ТҮРЕ	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	94#	100'	100'	CTS, 96 Cu. Ft.
Fresh Water	13-3/8"	New	J-55	54.5#	662'	662'	CTS, 690 Cu. Ft.
Coal	9-5/8"	New	J-55	36#	3200'	3200'	CTS, 1303 Cu. Ft.
Intermediate							
Production	5-1/2"	New	P110-ICY	23#	25700'	25700'	CTS, 5548 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		



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API NO. 47- 103 - 03698

OPERATOR WELL NO. Marma Unit 1H MOD

Well Pad Name: Cedar Pad

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): 71.85 acres

22) Area to be disturbed for well pad only, less access road (acres): 18.45 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.

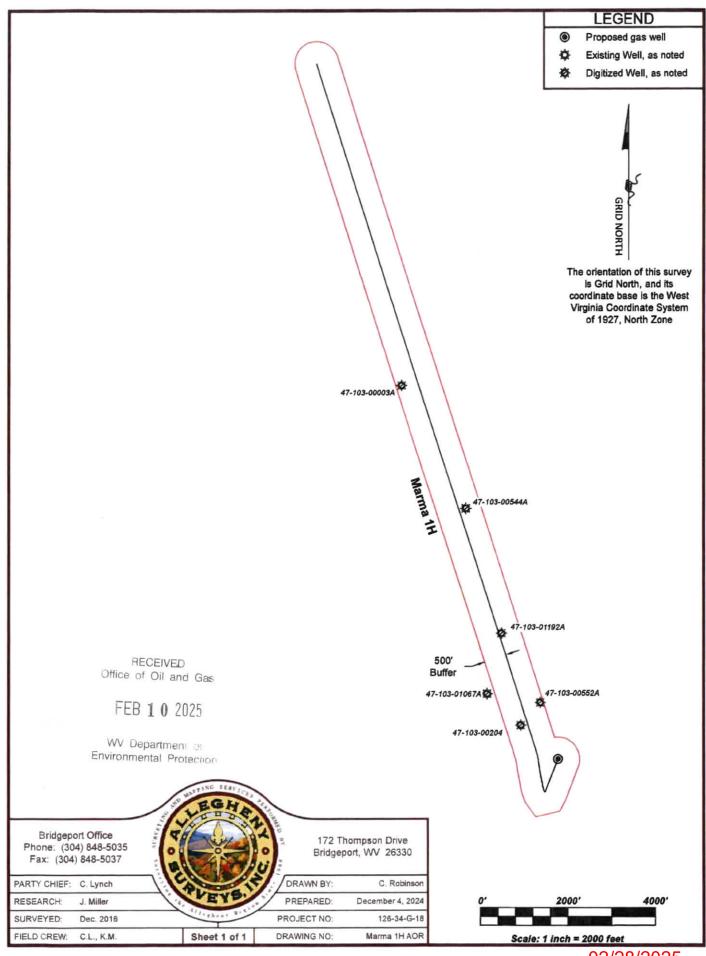
Surface: blowhole clean with air, trip to conductor shoe, trip to bottom, blowhole clean with air, trip out, run casing, circulate pipe capacity + 40 bbls fresh water followed by 25 bbls bentonite mud, 10 bbls fresh water spacer.

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.

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UWI (APINum)	Well Name	Well Number	Operator	Historical Operator	TD	Perforated Interval (shallowest, deepest)	Perforated Formation(s)	Producible Formation(s) not perf'd
47103005520000	FREEMAN BLAKE 2	4785	MANUFACT LIGHT &HEAT	MANUFACT LIGHT &HEAT	2,170			
47103000030000	S ASHCRAFT C SNODGRASS	1	UNKNOWN	UNKNOWN	3,248		Thirty Foot, 4th Salt Sand, Bayard	Weir, Benson, Alexander
47103010670000	PETERSON B W	93	PENNZOIL CO INC	PENNZOIL CO INC	3,177			
47103002040000	M LANTZ 3	3561	MANUFACT LIGHT &HEAT	MANUFACT LIGHT &HEAT	3,074		Gordon	Weir, Benson, Alexander
47103005440000								
47103011920000	ICE E E	4	DIVERSIFIED PRODUCTION LLC	WAYLIN OIL CO	2,889	2879 - 2889		

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Office of Oil and Gas

WW-6A1 (5/13)

## 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:

Lease Name or
Number Grantor, Lessor, etc. Grantee, Lessee, etc. Royalty Book/Page

G: Coastal Forest Resources Company Lease

Coastal Forest Resources Company Antero Resources Corporation 1/8 Pooled Tract

\*\*Pooling/Unititation - Antero has filed a horizontal well unititation application with the West Virginia Oil and Gas Conservation Commission that seeks to pool certain owners in this tract.

#### 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

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Office of Oil and Gas
Its: Senior Vice President of Land

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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.

<sup>\*</sup>Co-tenancy utilization - Antero is utilizing the Co-tenancy Modernization and Majority Protection Act to proceed with the development of certain royalty owners' interests in this tract.

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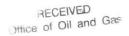
Grantor, lessor, etc	c. Grantee, lessee, etc.	Royalty	Book/Page
Z: Jenkins Miller Lease			
Jenkins Miller	Hope Natural Gas Company	1/8	0107/0056
Hope Natural Gas Company	Consolidated Gas Supply Corporation	Assignment	0233/0387
Consolidated Gas Supply Corporation	Consolidated Gas Transmission Corporation	Assignment	066A/0069
Consolidated Gas Transmission Corporatio		Assignment	076A/0232
Eastern States Oil & Gas Inc	Blazer Energy Corp	Merger	0012/0253
Blazer Energy Corp	Eastern States Oil & Gas Inc	Name Change	0012/0259
Eastern States Oil & Gas Inc	Equitable Production- Eastern States INC	Name Change	WVSOS
Equitable Production- Eastern States INC	Appalachian Natural Gas Trust	Assignment	079A/0244
Appalachian Natural Gas Trust	EQT Production Company	Merger	0096/0505
EQT Production Company	Antero Resources Corporation	Assignment	230A/0801
X: Antero Minerals, LLC Lease			
Antero Minerals, LLC	Antero Resources Corporation	1/8+	250A/0847
W: Antero Minerais, LLC Lease			
Antero Minerals, LLC	Antero Resources Corporation	1/8+	250A/0847
V: Chesapeake Appalachia, LLC Lease			
Chesapeake Appalachia, LLC	SWN Production Company, LLC	1/8	157A/0640
SWN Production Company, LLC	Antero Exchange Properties, LLC	Assignment	177A/0533
Antero Exchange Properties, LLC	Antero Resources Corporation	Merger	0013/0311
Value (A Committee Committ	scales entropied and of the property of the second section of the section o		**************************************
T: Acropolis, Inc. Lease			
Acropolis, Inc.	Antero Resources Corporation	1/8+	291A/0007
S: Esther Ruth Coen Lease			
Esther Ruth Coen	Antero Resources Corporation	1/8+	269A/0114
Q: Acropolis, Inc. Lease			
Acropolis, Inc.	Antero Resources Corporation	1/8+	289A/0495
P: Acropolis, Inc. Lease			
Acropolis, Inc.	Antero Resources Corporation	1/8+	289A/0495
O: Russell T. Powell Lease			
Russell T. Powell	Antero Resources Corporation	1/8+	331A/0172
TOTAL BEAUTIFUL STREET			
N: Chesapeake Appalachia, LLC Lease		532	
Chesapeake Appalachia, LLC	SWN Production Company, LLC	1/8	157A/0640
SWN Production Company, LLC	Antero Exchange Properties, LLC	Assignment	177A/0533
Antero Exchange Properties, LLC	Antero Resources Corporation	Merger	0013/0311
K: Chesapeake Appalachia, LLC Lease		4.5-	4
Chesapeake Appalachia, LLC	SWN Production Company, LLC	1/8	157A/0640
SWN Production Company, LLC	Antero Exchange Properties, LLC	Assignment	177A/0533
Antero Exchange Properties, LLC	Office of Oil and	Merger	0013/0311
	Onnote on was seen		
J: Shiben Estates, Inc. Lease	- 0.0025	4.10	
Shiben Estates, Inc.	FE Anter Resourges Corporation	1/8+	312A/0021

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Grantor, lessor, etc.	Grantee, lessee, etc.	Royalty	Book/Page
B: Belinda K. Harrison Lease			
Belinda K. Harrison	Antero Resources Corporation	1/8+	345A/0753
F: Jay. H. Renner Lease			
Jay H. Renner	Spartan Exploration Company	1/8	089A/0093
Spartan Exploration Company	Acadian Energy Resources, LLC	Assignment	103A/0193
Acadian Energy Resources, LLC	CB Energy, LLC	Assignment	108A/0491
CB Energy, LLC	B & R Construction, LLC	Assignment	108A/0521
B & R Construction, LLC	B & R Holdings, Inc	Assignment	118A/0694
B & R Holdings, Inc	Stone Energy Corporation, LLC	Assignment	179A/0848
Stone Energy Corporation, LLC	EQT Production Company	Assignment	183A/0305
EQT Production Company	Antero Resources Corporation	Assignment	385A/0323
B: Belinda K. Harrison Lease			
Belinda K. Harrison	Antero Resources Corporation	1/8+	345A/0753

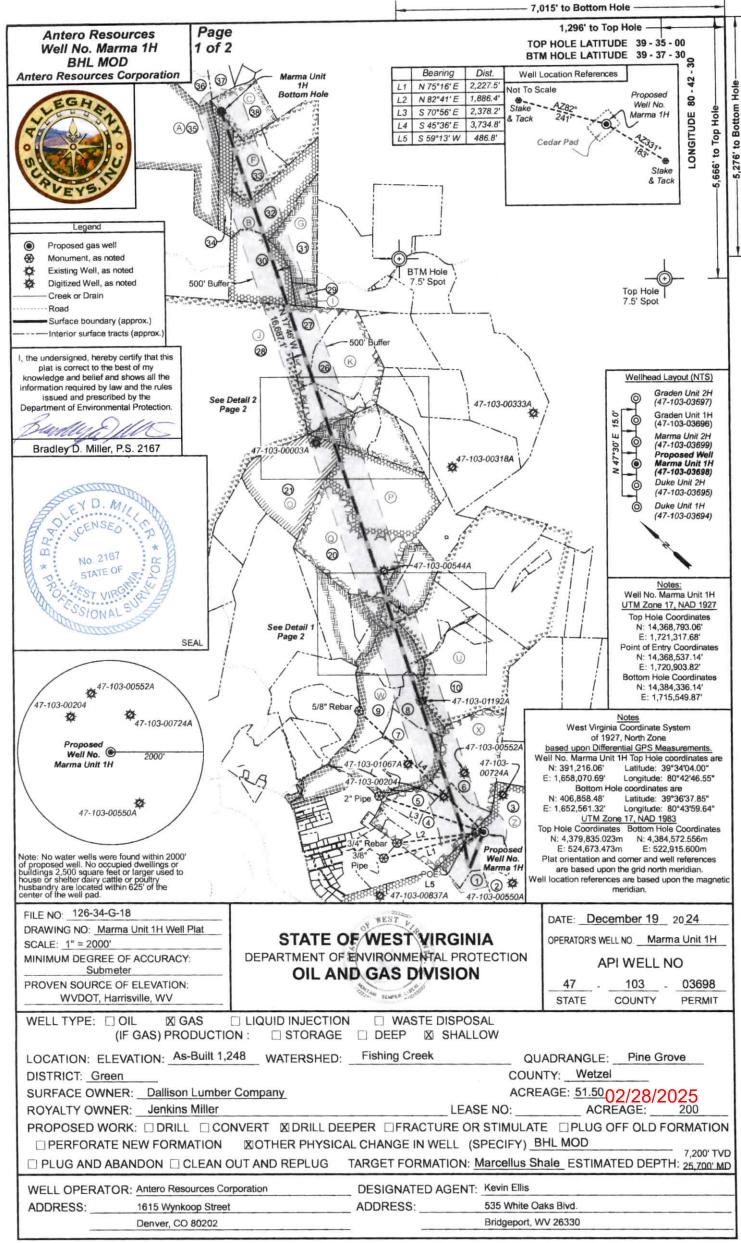


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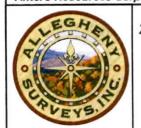
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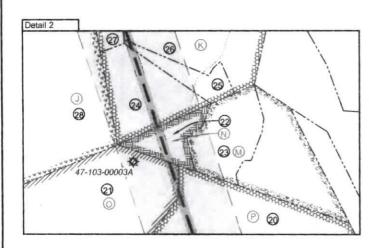


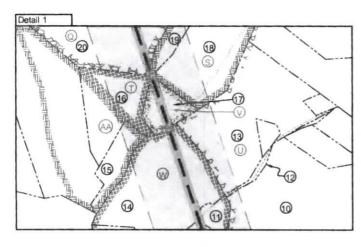
#### Antero Resources Well No. Marma 1H BHL MOD Antero Resources Corporation



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	Leases
Α	Sylvia Jean Highley
В	Belinda K. Harrison
C	Coastal Forest Resources Company
F	Jay. H. Renner
G	Venable Royalty, LTD, et al
1	Piney Holdings, Inc.
J	Shiben Estates, Inc
K	Chesapeake Appalachia, LLC
M	Acropolis, Inc.
Ν	Chesapeake Appalachia, LLC
0	Russell T. Powell
Р	Acropolis, Inc.
Q	Acropolis, Inc.
S	Esther Ruth Coen
Т	Acropolis, Inc.
U	Stephen H. Stocker
V	Chesapeake Appalachia, LLC
W	Antero Minerals, LLC
Х	Antero Minerals, LLC
Z	Jenkins Miller
AA	Antero Minerals, LLC





ID	TM-Par	Owner	Bk/Pg	Acres
1	13-83	Michelle L. Igleheart	493/370	58.00
2	14-34	Thelma Deaton	493/482	41.00
3	14-19	Dallson Lumber Company	357/267	51.50
4	13-40	Kenneth E. & Vicky A. VanDyne	357/204	42.33
5	13-34	Kenneth E. & Vicky A. VanDyne	357/204	14.50
6	13-26.7	John M. & Stanley D. Pittman	458/837	55.00
7	13-26	John M. & Stanley D. Pittman	458/837	30.52
8	13-15.2	Blue Racer Midstream, LLC	452/546	22.59
9	13-26.6	Stanley & Mary Jo Pittman	284/657	27.38
10	13-17	Laura Ann Slater	423/93	90.00
11	13-15.1	Blue Racer Midstream, LLC	452/546	2.41
12	13-16	Blue Racer Midstream, LLC	452/542	1.00
13	13-10	Blue Racer Midstream, LLC	452/542	25.99
14	13-15	Blue Racer Midstream, LLC	452/542	22.59
15	13-9.1	Karen Sue Bassett & Terry E. Roberts	339/469	4.63
16	13-9	Richard W. Roberts & Justin W. Roberts	394/528	11.7
17	9-60.2	Coen Holdings LLC	492/815	7.33
18	9-60	Coen Holdings LLC	492/815	14.58
19	9-60.1	Coen Holdings LLC	492/815	8.42
20	9-42	WSD Properties LLC	441/793	149.0
21	9-41	WSD Properties LLC	441/793	48.00
22	9-29	Richard David Hornbeck	334/514	7.50
23	9-30	Richard David Hornbeck	334/514	15.25
24	9-28	Richard David Hornbeck	334/514	18.75
25	9-30	Richard David Hornbeck	334/514	15.25
26	9-15	Keith A. Milhoan	407/375	45.25
27	9-14	Timothy S. Harrison	408/280	25.05
28	8-28	Teresa Ann Ice	494/650	449.4
29	9-4.1	Belinda Harrison	493/544	5.50
30	8-8	Belinda Harrison	493/544	38.75
31	4-43	Donzel A. & Rebecca L. Hopmbeck	346/373	35.3
32	3-38	Julie Marie Lemons	493/298	39.80
33	3-29	Linda Kaye Gordon	482/473	26.00
34	3-39	Timothy Scott Harrison	493/300	25.2
35	3-28	Richard D. Hornbeck	483/191	120.0
36	19-34	Christenson Family Trust	439/373	99.0
37	21-1	Olga Lucile Nolan et al	157/348	14.30
38	3-23	Timmothy Scott Harrison	470/754	

FILE NO: 126-34-G-18 DRAWING NO: Marma Unit 1H Well Plat SCALE: 1" = 2000' MINIMUM DEGREE OF ACCURACY: Submeter PROVEN SOURCE OF ELEVATION:

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

WEST P

DATE: December 19 2024 OPERATOR'S WELL NO. Marma Unit 1H

API WELL NO

103 - 03698

WVDOT, Harrisville, WV	SEMPER L'ST	W.	STATE	COUNTY	PERMIT			
WELL TYPE: ☐ OIL ☒ GAS (IF GAS) PRODUCTIO		DISPOSAL SHALLOW						
LOCATION: ELEVATION: As-Built 1,248 WATERSHED: Fishing Creek QUADRANGLE: Pine Grove DISTRICT: Green COUNTY: Wetzel								
SURFACE OWNER: Dallison Lumber Company ROYALTY OWNER: Jenkins Miller ACREAGE: 51.50 02/28/2025 LEASE NO: ACREAGE: 200								
	⊠OTHER PHYSICAL CHANGE IN	WELL (SPECIFY) B	HL MOD		7 200' TVD			
	□ PLUG AND ABANDON □ CLEAN OUT AND REPLUG TARGET FORMATION: Marcellus Shale ESTIMATED DEPTH: 25,700' MD							
WELL OPERATOR: Antero Resources Co		AGENT: Kevin Ellis 535 White Oa	aks Blvd					
ADDRESS: 1615 Wynkoop Street Denver, CO 80202	ADDRESS	Bridgeport, V						