

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, August 25, 2025 PERMIT MODIFICATION APPROVAL Horizontal 6A / New Drill

ANTERO RESOURCES CORPORATION 1615 WYNKOOP STREET

DENVER, CO 80202

Re: Permit

Permit Modification Approval for Craftsman Unit 1H

47-103-03736-00-00

Extended Lateral

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: Craftsman Unit 1H

Farm Name: Dallison Lumber Company Inc.

U.S. WELL NUMBER: 47-103-03736-00-00

Horizontal 6A New Drill

Date Modification Issued: 8/25/2025

Promoting a healthy environment.

API NO. 47- <u>103</u>	_ 03736
OPERATOR W	VELL NO. Craftsman Unit 1H MOD
Well Pad Na	me: Galmish Pad

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

1) Well Operate	or: Antero Res	ources Corpora	494507062	103 - Wetze	Green	Pine Grove 7.5'
			Operator ID	County	District	Quadrangle
2) Operator's W	Vell Number: Cr	aftsman Unit 1H	MOD Well Pac	l Name: Galmi	sh Pad	
3) Farm Name/	Surface Owner:	Dallison Lumber Comp	any Inc. Public Roa	d Access: McK	immie Ric	dge Road
4) Elevation, cu	irrent ground:	As-Built 1160' E	levation, proposed	post-construction	on:	
5) Well Type	(a) Gas X	Oil	Unde	erground Storag	e	
	Other			<u> </u>		
	(b)If Gas Sha	llow X	Deep			
	Hor	rizontal X				
_	: Yes or No Yes	·				
			cipated Thickness a ess- 55 feet, Associa			
8) Proposed To	tal Vertical Depti	h: 7600' TVD	-		_	
9) Formation at	Total Vertical D	epth: Marcellus	3			
10) Proposed To	otal Measured De	epth: 29300' M	ID			
11) Proposed H	orizontal Leg Le	ngth: 19179'	*Open to modifica	ation at a later	date	
12) Approximat	te Fresh Water St	trata Depths:	45', 130'	<u> </u>		
13) Method to I	Determine Fresh	Water Depths:	47103025550000 Offset well	records. Depths have t	been adjusted a	according to surface elevations.
14) Approximat	te Saltwater Dept	ths: 1961'				
15) Approximat	te Coal Seam De	pths: N/A				
16) Approximat	te Depth to Possi	ble Void (coal m	ine, karst, other): _	None Anticipat	ed	
	sed well location ng or adjacent to	contain coal sear an active mine?	ms Yes	No	X	
(a) If Yes, pro	vide Mine Info:	Name:				
		Depth:				
		Seam:				·
RE Office	CEIVED of Oil & Gas	Owner:				
AUG	07 2025					

WV Department of Environmental Protection

۱٩	NO.	47-	103	_	03736

OPERATOR WELL NO. Craftsman Unit 1H MOD

Well Pad Name: Galmish Pad

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	94#	100'	100'	CTS, 96 Cu. Ft.
Fresh Water	13-3/8"	New	J-55	54.5#	300'	300'	CTS, 313 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#	29300'	29300'	CTS, 6455 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	<u>Cement</u> <u>Yield</u> (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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WV Department of Environmental Protection

API NO. 47- 103 - 03736

OPERATOR WELL NO. Craftsman Unit 1H MOD

Well Pad Name: Galmish 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

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21) Total Area to be disturbed, including roads, stockpile area, pits, etc., (acres): 64.40 acres

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22) Area to be disturbed for well pad only, less access road (acres): 17.53 acres

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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.

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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 Department of nants Prenction

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.

UWI (APINum)	Well Name	Well Number	Operator	Historical Operator	TD	Perforated Interval (shallowest, deepest)	Perforated Formation(s)	Producible Formation(s) not perf'd
47103036480000	Pine Unit	1H	ANTERO RESOURCES CORP		22,384	7463 - 22294	Marcellus	
47103036490000	Pine Unit	2H	ANTERO RESOURCES CORP		21,913	7376 - 21834	Marcellus	
47103036500000	Walshin 1H	1H	ANTERO RESOURCES CORP		23,312	7701 - 23223	Marcellus	HOUSE BURNING TO SERVE THE TRANSPORT
47103036540000	Harlan Unit	1H	ANTERO RESOURCES CORP		22,565	7384 - 22485	Marcellus	
47103036550000	Harlan Unit	2H	ANTERO RESOURCES CORP		25,170	7571 - 25081	Marcellus	
47103036560000	L S LEEZER 1	8177	WEST VIRGINIA LAND	WEST VIRGINIA LAND	1,460			Weir, Benson, Alexander
47103036570000	Cobb Unit	1H	ANTERO RESOURCES CORP		26,908	8049 - 26819	Marcellus	
47103036580000	Shenango Unit	1H	ANTERO RESOURCES CORP		25,182	7939 - 25102	Marcellus	
47103036590000	Teocalli Unit	1H	ANTERO RESOURCES CORP	THE COUNTY OF STREET	25,393	7647 - 25313	Marcellus	
47103035430000	Galmish	5V	ANTERO RESOURCES CORP	THE REPORT OF A PARTY OF				District Control of the Control of t
47103305910000	CEGRIM 1	5235	UNKNOWN	UNKNOWN	2,896		Big Injun, Gordon	Weir, Benson, Alexander
47103755920000					-United St			AND A STATE OF THE
47103725910000	SARAH M ROBINSON	1688	UNKNOWN	UNKNOWN				
47103306700000	B F HEADLEY	1	UNKNOWN	UNKNOWN	3,071		Big Injun, Gordon	Weir, Benson, Alexander
47103003330000	JOHN LONG 2-E	1626	CARNEGIE NATURAL GAS	CARNEGIE NATURAL GAS	1,912	1855 - 1855	Big Injun, Gordon Stray	Weir, Benson, Alexander

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08/29/2025

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, et	. Royalty	Book/Page
AH: Robert Barry Myers, Jr. Lease Robert Barry Myers, Jr.	Antero Resources Corporation	1/8+	300A/0634
<u>Al: Freeda Marie Brown Lease</u> Freeda Marie Brown	Antero Resources Corporation	1/8+	308A/0508
AF: Clarice Ann Brown LeMasters Lease Clarice Ann Brown LeMasters	Antero Resources Corporation	1/8+	308A/0488
AE: Chesapeake Appalachia, LLC Lease Chesapeake Appalachia, LLC SWN Production Company, LLC Antero Exchange Properties, LLC	SWN Production Company, LLC Antero Exchange Properties, LLC Antero Resources Corporation	1/8 Assignment Merge r	157A/0640 177A/0533 0013/0311
AD: Shiben Estates, Inc. Lease Shiben Estates, Inc. EQT Production Company	EQT Production Company Antero Resources Corporation	1/8 Assignment	277A/0551 385A/0323
Z: Shiben Estates, Inc. Lease Shiben Estates, Inc. EQT Production Company	EQT Production Company Antero Resources Corporation	1/8 Assignment	277A/0551 385A/0323
AA: Clay D.C. Dallison and Cody Duane Dallison Lease Clay D.C. Dallison and Cody Duane Dallison	Antero Resources Corporation	1/8+	30 9 A/0429
AB: Cooper Cain Lease Cooper Cain	Antero Resources Corporation	RECEIVED Office of Oil & Gas 1/8+	364A/0572
AC: Stephen H. Stocker Lease Stephen H. Stocker	Antero Resources Corporation	AUG 07 2025 WV Department of	376A/0864
Y: Drilling Appalachian Corporation Drilling Appalachian Corporation	Antero Resources Corporation	Environmental Protection 1/8+	291A/0005
X: Mary B. Mason Lease Mary B. Mason	Antero Resources Corporation	1/8+	298A/0493
<u>V: Karen B. Mason Lease</u> Karen B. Mason	Antero Resources Corporation	1/8+	277A/0007
<u>U: Terry Lee Cummings Lease</u> Terry Lee Cummings	Antero Resources Corporation	1/8+	328A/0283
<u>T: Bounty Minerals, LLC Lease</u> Bounty Minerals, LLC	Antero Resources Corporation	1/8+	296A/0329
S: The Donely O. Springer Rev. Living Trust Lease The Donely O. Springer Rev. Living Trust	Antero Resources Corporation	1/8+	302A/0286

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Grantor, lessor, etc.	Grantee, lessee,	etc. Royalty	Book/Page
R: The 5 K's Future, LLC Lease The 5 K's Future, LLC	Antero Resources Corporation	1/8+	327A/0141
P: Master Mineral Holdings II, LP Lease Master Mineral Holdings II, LP SEP Appalachia, LLC	SEP Appalachia, LLC Antero Resources Corporation	1/8+ Agreement	385A/0229 418A/0169
M: Redstone Resources, LLC Lease Redstone Resources, LLC	Antero Resources Corporation	1/8+	219A/0455
N: John M. Howell, By AIF Billy G. Howell, Sr. Lease John M. Howell, By AIF Billy G. Howell, Sr.	Antero Resources Corporation	1/8+	290A/0186
L: Debra Carol Miller Lease Debra Carol Miller TH Exploration	TH Exploration Antero Resources Corporation	1/8+ Assignment	195A/0327 254A/0933
K: Debra Carol Miller Lease Debra Carol Miller TH Exploration	TH Exploration Antero Resources Corporation	1/8+ Assignment	195A/0327 254A/0933
J: Lea Marie Vigil, JTWROS With Sheri Margaret Fortune Lease Lea Marie Vigil, JTWROS With Sheri Margaret			
Fortune	Antero Resources Corporation	1/8+	317A/0663
G: BRC Appalachian Minerals I, LLC Lease BRC Appalachian Minerals I, LLC BRC Working Interest Company Chesapeake Appalachia LLC SWN Production Company Antero Exchange Properties LLC	BRC Working Interest Company Chesapeake Appalachia LLC SWN Production Company Antero Exchange Properties LLC Antero Resources Corporation	Assignment Assignment Assignment Assignment Assignment Merge	102A/0505 103A/0470 157A/0540 177A/0533 0013/0311
E: Lawrence E. Shade and Cheryl L. Shade Lease Lawrence E. Shade and Cheryl L. Shade	Antero Resources Corporation	AUG 0 7 2025	336A/0866
C: James Howard Greathouse II and Jessica Nicole Greathouse, JTROS Lease James Howard Greathouse II and Jessica Nicole		WV Department of Environmental Profection	
Greathouse, JTROS	Antero Resources Corporation	1/8+	347A/0137

^{*}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 – Antero is utilizing the Co-tenancy Modernization and Majority Protection Act to proceed with development of certain royalty owners' interests in this tract.

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Lease Name or Number	Grantor, Lessor, etc.	Grantee, Lessee, etc.	Royalty	Book/Page
A: Glenda M. Mason and Wells Junior Mason Lease				
	Glenda M. Mason and Wells Junior Mason Central Michigan Exploration, LLC Stone Energy Corporation EQT Production Company	Central Michigan Exploration, LLC Stone Energy Corporation EQT Production Company Antero Resources Corporation	1/8 Assignment Assignment Assignment	092A/0770 100A/0185 183A/0305 385A/0323

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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.

**Peoling // Initization - Antero has filed a horizontal well unitization andication 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 Corpora		
Office of Oil & Gale	D By:	Tim Rady Led		
Office of 2025	Its:	Senior Vice President of Lan		
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W Department of Environmental Profestion				

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