

#### 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

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

ANTERO RESOURCES CORPORATION 1615 WYNKOOP STREET

DENVER, CO 80202

Re:

Permit Modification Approval for Angelo Unit 1H

47-103-03734-00-00

Lateral Extension/Forced Pooling

#### 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: Angelo Unit 1H

Farm Name: Dallison Lumber Company Inc.

U.S. WELL NUMBER: 47-103-03734-00-00

Horizontal 6A New Drill

Date Modification Issued: 08/06/2025

Promoting a healthy environment.

API NO. 47-103	03734		25
<b>OPERATOR WEL</b>	L NO.	Angelo Unit 1H MOD	1
Well Pad Name	• Galmis	sh Pad	•

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

1) Well Operator: Antero Re	esources Corporat	494507062	103 - Wetze	Green	Pine Grove 7.5'
		Operator ID	County	District	Quadrangle
2) Operator's Well Number: 4	Angelo Unit 1H MO	D Well Pad	Name: Galmi	sh Pad	W
3) Farm Name/Surface Owner	Dallison Lumber Compa	ny Inc. Public Road	d Access: McK	immie Rid	ge Road
4) Elevation, current ground:	As-Built 1160 Ele	evation, proposed p	ost-constructio	on:	
5) Well Type (a) Gas $X$	Oil	Unde	rground Storag	e	d
Other					
(b)If Gas S	hallow X	Deep			
H	orizontal X				
6) Existing Pad: Yes or No Y	es /				
7) Proposed Target Formation					
Marcellus Shale: 7600' TVD,	Anticipated Thicknes	ss- 55 feet, Associa	ted Pressure- 28	350#	
8) Proposed Total Vertical De	oth: 7600' TVD	/			
9) Formation at Total Vertical	Depth: Marcellus	1			
10) Proposed Total Measured	Depth: 29900' MD			7	
11) Proposed Horizontal Leg I	Length: 18889' *	Open to modifica	tion at a later	date /	
12) Approximate Fresh Water	Strata Depths:	45', 130'			
13) Method to Determine Fres	h Water Depths: 4	7103025550000 Offset well	records. Depths have t	peen adjusted ac	cording to surface elevations.
14) Approximate Saltwater De	pths: 1961'		7		
15) Approximate Coal Seam D	epths: N/A				
16) Approximate Depth to Pos	sible Void (coal mir	ne, karst, other): $\underline{\Lambda}$	Ione Anticipate	ed	
17) Does Proposed well location		is Yes	No	x	
		<u> </u>	100-21/2192	Oi	RECEIVED fice of Oil and Gas
(a) If Yes, provide Mine Info	1				UL 21 2025
	Depth:			W	15
	Seam:			Enviro	V Department of nmental Protection
	Owner:				3011011

API	MO	17	103		0373
ALI	INU.	4/-	100	-	0010

OPERATOR WELL NO. Angelo 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#	29900'	29900'	CTS, 6607 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							1.10
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	RECEIVED
Sizes:	N/A	Office of Oil and Ga
Depths Set:	N/A	WV Department of Environmental Protection

OPERATOR WELL NO. Angelo 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

- 21) Total Area to be disturbed, including roads, stockpile area, pits, etc., (acres): 64.40 acres
- 22) Area to be disturbed for well pad only, less access road (acres): 17.53 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

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### 25) Proposed borehole conditioning procedures:

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

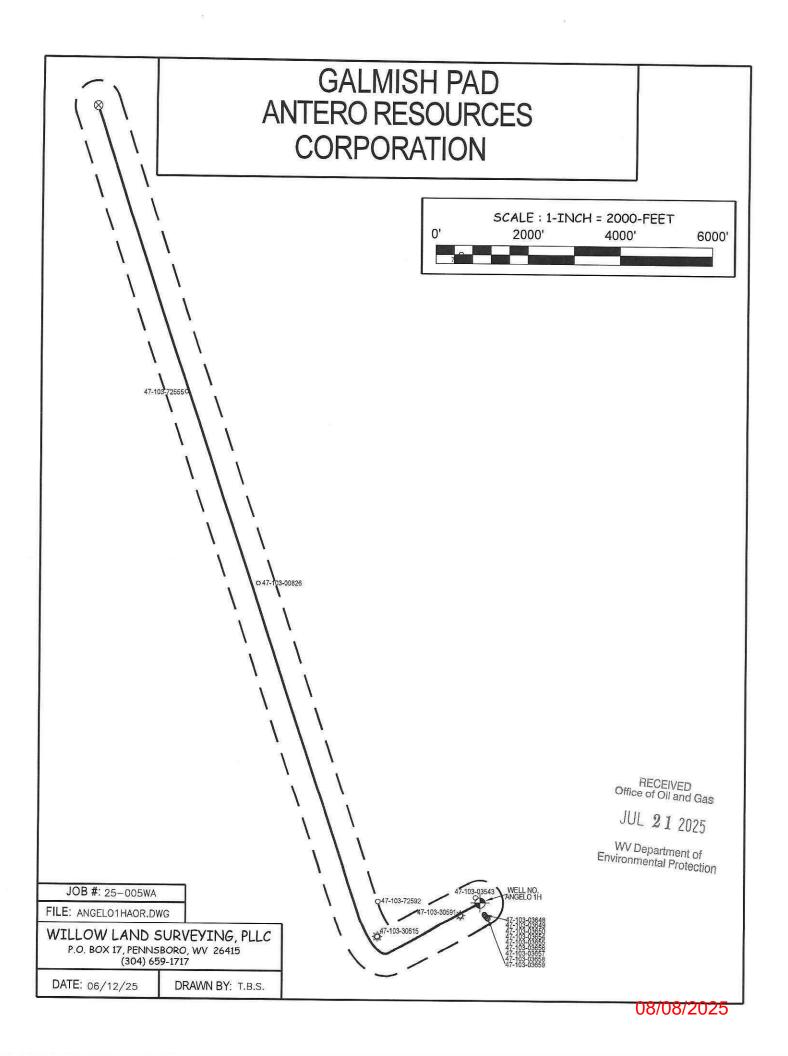
Surface: blowhole clean with air, trip to conductor shoe, trip to bottom, blowhole clean with air, trip out, run casing, circulate pipe capacity + 40 bbls fresh water followed by 25 bbls bentonite mud, 10 bbls fresh water spacer.

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.



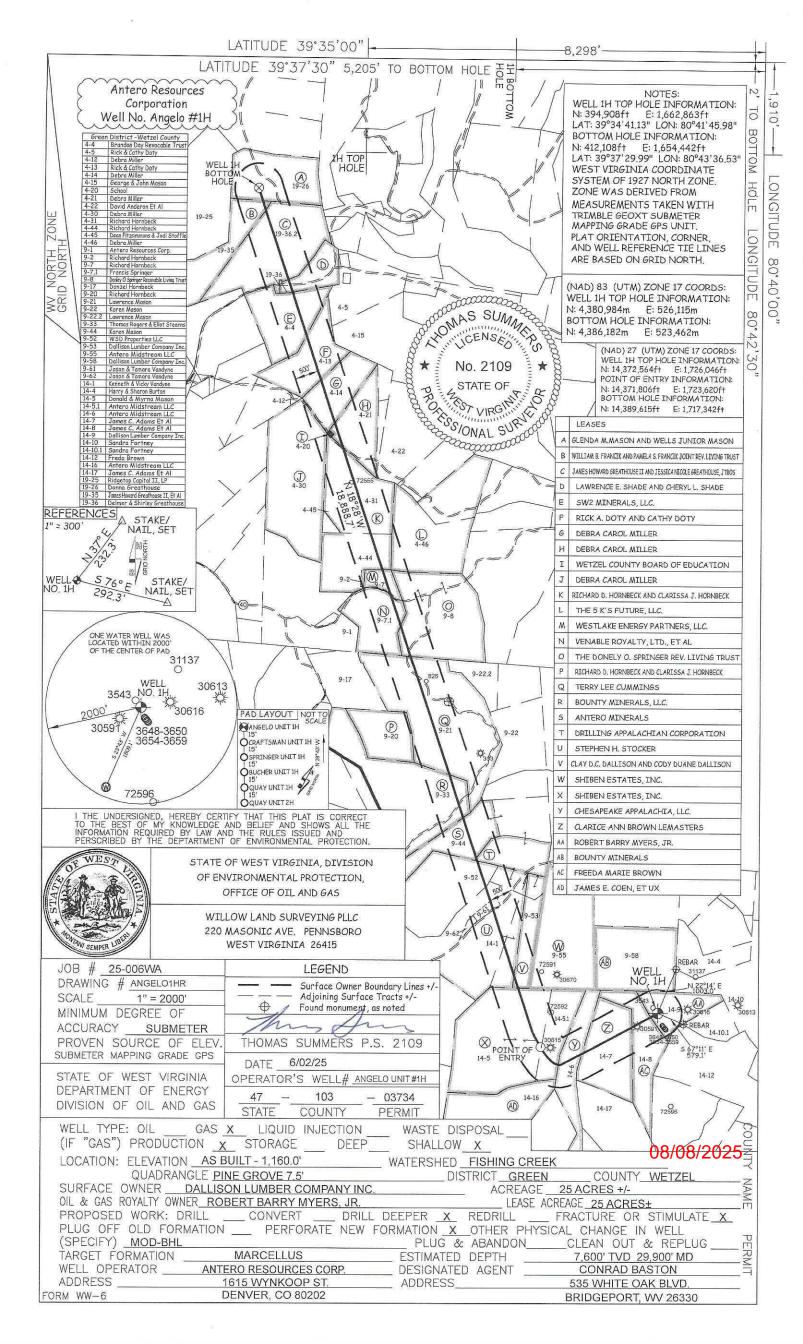


UWI (APINum)	Well Name	Well Number	Operator	Historical Operator	TD	Perforated Interval (shallowest, deepest)	Perforated Formation(s)	Producible Formation(s) not perfo
47103036480000	Pine Unit	1H	ANTERO RESOURCES CORP		22,384	7463 - 22294	Marcellus	Troubline Formation(3) not pen t
47103036490000	Pine Unit	2H	ANTERO RESOURCES CORP		21,913	7376 - 21834	Marcellus	
47103036500000	Walshin 1H	1H	ANTERO RESOURCES CORP		23,312	7701 - 23223	Marcellus	
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		The state of the s	Weir, Benson, Alexander
47103036570000	Cobb Unit	1H	ANTERO RESOURCES CORP		26,908	8049 - 26819	Marcellus	Well, Bellsoll, Alexander
47103036580000	Shenango Unit	1H	ANTERO RESOURCES CORP		25,182	7939 - 25102	Marcellus	
47103036590000	Teocalli Unit	1H	ANTERO RESOURCES CORP		25,393	7647 - 25313	Marcellus	
47103035430000	Galmish	5V	ANTERO RESOURCES CORP		NUMBER OF STREET		The series	
47103305910000	CEGRIM 1	5235	UNKNOWN	UNKNOWN	2,896		Big Injun, Gordon	Weir, Benson, Alexander
47103306150000	JOHN C MCELDOWNEY 1	1678	PITTSBURGH&W VA GAS	PITTSBURGH&W VA GAS	2,837		Gordon	Weir, Benson, Alexander
47103725920000	B E HEADLEE	1687	PHILADELPHIA OIL	PHILADELPHIA OIL	RAE EN THE			Well, Bellsoll, Alexander
47103008260000	JOHN LONG	1107	EQT PRODUCTION CO	CARNEGIE NATURAL GAS	2,985			
47103725550000	THOMAS HASKINS	1	UNKNOWN	UNKNOWN	1			

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## 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
AA: Robert Barry Myers, Jr. Lease			
Robert Barry Myers, Jr.	Antero Resources Corporation	1/8+	300A/0634
AC: Freeda Marie Brown Lease			
Freeda Marie Brown	Antero Resources Corporation	1/8+	308A/0508
Z: Clarice Ann Brown LeMasters Lease			
Clarice Ann Brown LeMasters	Antero Resources Corporation	1/8+	308A/0488
Y: 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
X: Shiben Estates, Inc. Lease			
Shiben Estates, Inc.	<b>EQT Production Company</b>	1/8	288A/0530
EQT Production Company	Antero Resources Corporation	Assignment	385A/0323
V: Clay D.C. Dallison and Cody Duane Dallison			
Lease Clay D.C. Dallison and Cody Duane Dallison	Antero Resources Corporation	1/0.	
* St.	Antero Resources corporation	1/8+	309A/0429
U: Stephen H. Stocker Lease	NAME OF THE PARTY		
Stephen H. Stocker	Antero Resources Corporation	1/8+	376A/0864
T: Drilling Appalachian Corporation Lease			
Drilling Appalachian Corporation	Antero Resources Corporation	1/8+	291A/0005
S: Antero Minerals Lease			
Antero Minerals	Antero Resources Corporation	1/8+	250A/0859
<u>R: Bounty Minerals, LLC Lease</u>			
Bounty Minerals, LLC	Antero Resources Corporation	1/8+	296A/0326
Q: Terry Lee Cummings Lease		RECEIVED Office of Oil and	Gas
Terry Lee Cummings	Antero Resources Corporation	1/8+	328A/0283
O: The Donely O. Springer Rev. Living Trust		JUL 21 20	25
Lease		WV Department	of
The Donely O. Springer Rev. Living Trust	Antero Resources Corporation	1/8+ Environmental Prote	ection 302A/0286
N: Venable Royalty, LTD., Et Al Lease			
Venable Royalty, LTD., Et Al	Antero Resources Corporation	1/8+	300A/0875
M: Westlake Energy Partners, LLC. Lease			
Westlake Energy Partners, LLC	Antero Resources Corporation	1/8+	304A/0439
K: Richard D. Hornbeck and Clarissa J. Hornbeck			
Lease	N 10 Marie 12 0		
Richard D. Hornbeck and Clarissa J. Hornbeck	Antero Resources Corporation	1/8+	08/2 <b>025</b> /0298
		00/0	

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	Grantor, lessor, etc.	Grantee, lessee, etc.	Royalty	Book/Page
1	H: Debra Carol Miller Lease Debra Carol Miller TH Exploration	TH Exploration Antero Resources Corporation	1/8+ Assignment	195A/0327 <b>254A/0933</b>
1	G: Debra Carol Miller Lease Debra Carol Miller TH Exploration	TH Exploration Antero Resources Corporation	1/8+ Assignment	195A/0327 <b>254A/093</b> 3
-	F: Rick A. Doty and Cathy Doty Lease Rick A. Doty and Cathy Doty	Antero Resources Corporation	1/8+	286A/0797
/	E: SW2 Minerals, LLC Lease SW2 Minerals, LLC EQT Production Company	EQT Production Company Antero Resources Corporation	1/8+ Assignment	279A/0410 <b>385A/0323</b>
/	D: Lawrence E. Shade and Cheryl L. Shade Lease Lawrence E. Shade and Cheryl L. Shade	Antero Resources Corporation	1/8+	336A/0866
1	C: James Howard Greathouse II and Jessica Nicole Greathouse, JTROS Lease James Howard Greathouse II and Jessica Nicole Greathouse, JTROS	Antero Resources Corporation	1/8+	347A/0137
1	B: William B. Francik and Pamela S. Francik Joint Rev. Living Trust Lease William B. Francik and Pamela S. Francik Joint	*		
	Rev. Living Trust	Antero Resources Corporation	1/8+	281A/0622

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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.

\*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.

\*\*Pooling/Unitization – Antero has filed a horizontal well unitization application with the West Virginia Oil and Gas Conservation Commission that seeks to pool certain owners 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 <b>Assignment</b>	092A/0770 100A/0185 183A/0305 <b>385A/0323</b>

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\*\*Pooling/Unitization - Antero has filed a horizontal well unitization 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

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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 (700)	
Its:	Senior Vice President of Land	

Page 3 of 3



July 18, 2025

West Virginia Department of Environmental Protection Office of Oil and Gas Attn: Mr. Taylor Brewer 601 57<sup>th</sup> Street Charleston, WV 25304 Antero Resources 1615 Wynkoop Street Denver, CO 80202 Office 303.357.7310 Fax 303.357.7315

Mr. Brewer:

Antero Resources Corporation (Antero) would like to submit the following permit modification for approved well on the existing Galmish Pad: Angelo Unit 1H (47-103-03734) Expedited.

Attached you will find the following:

- > AOR
- Revised Form WW-6B
- Revised Form WW-6A1
- Revised Mylar Plat

CK # 4042726 \$ 7500 7/17/2025

If you have any questions please feel free to contact me at (303) 357-6959.

Thank you in advance for your consideration.

Sincerely,

Stefan Gaspar Permitting Agent

Antero Resources Corporation

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Enclosures