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west virginia department of environmental protection

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

Harold D. Ward, Cabinet Secretary  
[www.dep.wv.gov](http://www.dep.wv.gov)

Monday, August 7, 2023  
PERMIT MODIFICATION APPROVAL  
Horizontal 6A / New Drill

ANTERO RESOURCES CORPORATION  
1615 WYNKOOP STREET  
  
DENVER, CO 80202

Re: Permit Modification Approval for MAUL UNIT 2H  
47-085-10487-00-00

**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.

A handwritten signature in blue ink, appearing to read 'James A. Martin', is written over a white rectangular area.

James A. Martin  
Chief

Operator's Well Number: MAUL UNIT 2H  
Farm Name: DANIEL R CHRISTIAN  
U.S. WELL NUMBER: 47-085-10487-00-00  
Horizontal 6A New Drill  
Date Modification Issued: 08/07/2023

Promoting a healthy environment.

08/11/2023

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

1) Well Operator: Antero Resources Corporation 494507062 085 - Ritchie Clay Pennsboro 7.5'  
Operator ID County District Quadrangle

2) Operator's Well Number: Maul Unit 2H MOD ✓ Well Pad Name: Jackson Pad

3) Farm Name/Surface Owner: Daniel R. Christian Public Road Access: Rose Hill

4) Elevation, current ground: 1035' - AS BUILT Elevation, proposed post-construction: \_\_\_\_\_

5) Well Type (a) Gas X Oil \_\_\_\_\_ Underground Storage \_\_\_\_\_  
Other \_\_\_\_\_

(b) If Gas Shallow X Deep \_\_\_\_\_  
Horizontal X \_\_\_\_\_

6) Existing Pad: Yes or No Yes

7) Proposed Target Formation(s), Depth(s), Anticipated Thickness and Expected Pressure(s):  
Marcellus Shale: 6800' TVD, Anticipated Thickness- 55 feet, Associated Pressure- 2850#

8) Proposed Total Vertical Depth: 6800' TVD ✓

9) Formation at Total Vertical Depth: Marcellus ✓

10) Proposed Total Measured Depth: 26800' MD ✓

11) Proposed Horizontal Leg Length: 16782' \*Open to modification at a later date ✓

12) Approximate Fresh Water Strata Depths: 101', 144', 192' ✓

13) Method to Determine Fresh Water Depths: 47085069010000, 47085092540000, 47085063840000 Offset well records. Depths have been adjusted according to surface elevations.

14) Approximate Saltwater Depths: 1703' ✓

15) Approximate Coal Seam Depths: None Anticipated ✓

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 X

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

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CK# 4021053  
\$ 7500

 07/27/2025 ✓

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#	3135'	3135' ✓	CTS, 1276 Cu. Ft.
Intermediate							
Production	5-1/2"	New	P-110CY	23#	26800'	26800' ✓	CTS, 5825 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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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): 31.59 acres

22) Area to be disturbed for well pad only, less access road (acres): 8.54 acres

23) Describe centralizer placement for each casing string:

[Empty box for centralizer placement description]

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

[Empty box for cement additives description]


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25) Proposed borehole conditioning procedures:

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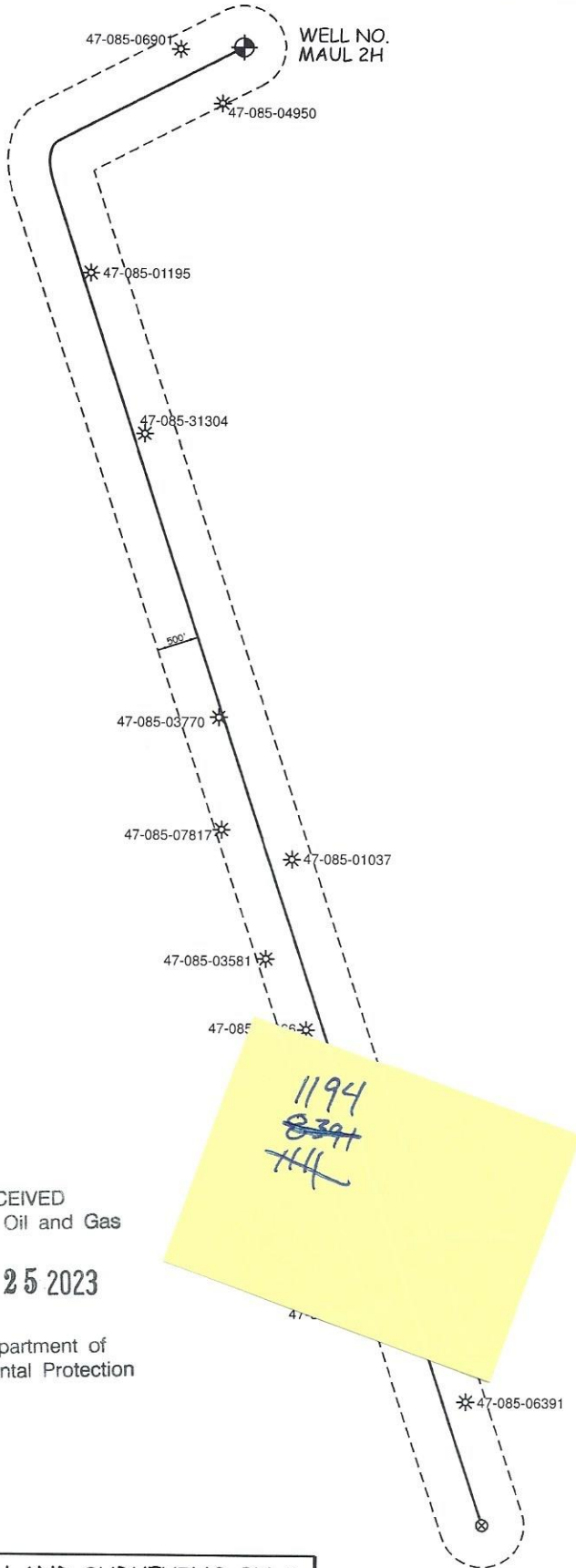
Conductor: blowhole clean with air, run casing, 10 bbls fresh water.  
Surface: blowhole clean with air, trip to conductor shoe, trip to bottom, blowhole clean with air, trip out, run casing, circulate pipe capacity + 40 bbls fresh water followed by 25 bbls bentonite mud, 10 bbls fresh water spacer.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



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WILLOW LAND SURVEYING, PLLC  
P.O. BOX 17, PENNSBORO, WV 26415  
(304) 659-1717

JOB #: 23-006WA

FILE: MAUL2HAOR.DWG

SCALE : 1-INCH = 2000-FEET



DATE: 06/22/23

DRAWN BY: D.R.R.

08/11/2023

UWI (API Num)	Well Name	Well Number	Operator	Historical Operator	TD	Perforated Interval (shallowest, deepest)	Perforated Formation(s)	Produced Formation(s) not perf'd
47085069010000	HAYHURST ELLA D	1	HARPER CROSBY HOLDING	RARE EARTH ENERGY	5,290		Lower Huron, Java	Weir, Benson, Alexander
4708503700000	HARRY SHAFFER	2	DEEM J F O & G LLC	MURVIN OIL CO	2,150	2026 - 2058	Big Injun	Weir, Benson, Alexander
47085078170000								
47085035810000	NATHAN DOLL	1	DEEM J F O & G LLC	BLAUSER WELL SERVICE	2,185	2029 - 2118	Big Injun	Weir, Benson, Alexander
47085073660000	WILSON MARY JANE ET AL	1	BONNETT'S PROD CO	FRENCH CREEK DEV	5,044	2970 - 5000	Salt Sands, Big Injun, Lower Huron, Java	Weir, Benson, Alexander
47085011510000	J & E H BARNARD	1	CARR CREEK OIL & GAS	CARR CREEK OIL & GAS	2,063		Squaw	Weir, Benson, Alexander
47085049500000	MCGINNIS SADA ET AL	2	CHASE PETROLEUM CO	CHASE PETROLEUM CO				
47085011950000	W H & CARRIE STEWART	1	MCCALL DRILLING	MCCALL DRILLING	2,007		Price	Weir, Benson, Alexander
47085313040000	RITECHIE CO AG FAIR ASS	1	SWADLEY LORIS J	SWADLEY LORIS J	1,897			
47085010370000	J P THOMAS ET AL	3	DEEM J F O & G LLC	PITTSBURGH&W VA GAS	2,047		Big Injun	Weir, Benson, Alexander
47085048020000	WEEKLEY DALE ET AL	2	BETA HELIX ENRGY LLC	CHASE PETROLEUM CO	5,376	3847 - 4456	Speechley, Riley	Weir, Benson, Alexander
47085063910000	TAYLOR R REX ET AL	1	RITECHIE PET CORP	TIARA INC	4,986	3122 - 4950	Warren, Lower Huron, Java, Angola	Weir, Benson, Alexander

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LATITUDE 39°17'30"

7,163'

LATITUDE 39°15'00"

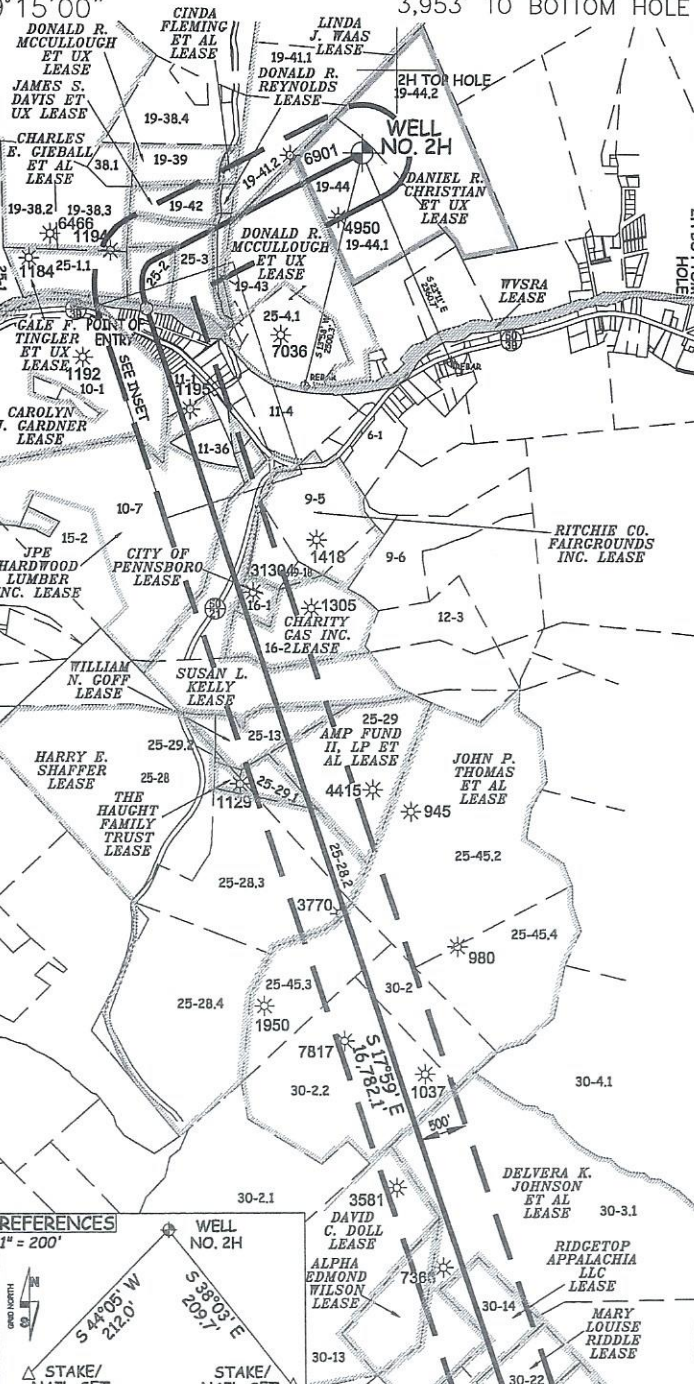
3,953' TO BOTTOM HOLE

LONGITUDE 80°57'30"

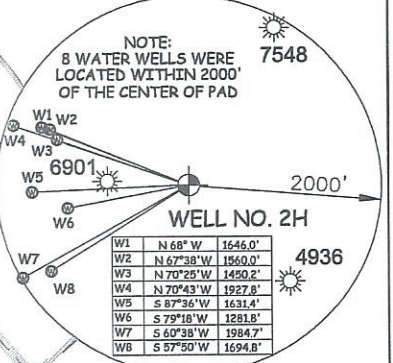
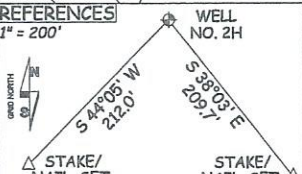
LONGITUDE 80°57'30"

Antero Resources Corporation Well No. Maul Unit 2H

Table listing leaseholders and their respective lease numbers, including names like Russell Lanham, Ritchie County Fairgrounds Inc., and various individuals.



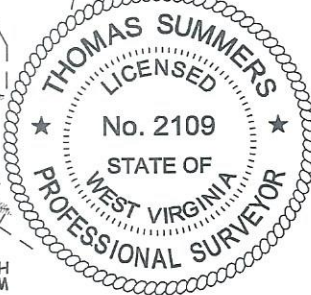
NOTES: WELL 2H TOP HOLE INFORMATION: N: 290,952ft E: 1,580,088ft... BOTTOM HOLE INFORMATION: N: 273,371ft E: 1,583,014ft... (NAD) 83 (UTM) ZONE 17 COORDS: WELL 2H TOP HOLE INFORMATION: N: 4,348,892m E: 501,425m... (NAD) 27 (UTM) ZONE 17 COORDS: WELL 2H TOP HOLE INFORMATION: N: 14,267,276ft E: 1,645,046ft...



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 PERSCRIBED BY THE DEPARTMENT OF ENVIRONMENTAL PROTECTION.



STATE OF WEST VIRGINIA, DIVISION OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS. WILLLOW LAND SURVEYING PLLC 220 MASONIC AVE. PENNSBORO WEST VIRGINIA 26415



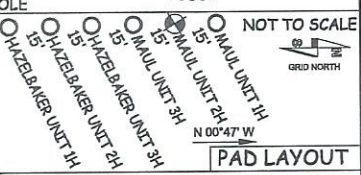
JOB # 23-006WA DRAWING # MAUL2HDR2 SCALE 1" = 2000' MINIMUM DEGREE OF ACCURACY SUBMETER PROVEN SOURCE OF ELEV. SUBMETER MAPPING GRADE GPS

LEGEND: Surface Owner Boundary Lines +/-, Adjoining Surface Tracts +/-, Found monument, as noted. THOMAS SUMMERS P.S. 2109

STATE OF WEST VIRGINIA DEPARTMENT OF ENERGY DIVISION OF OIL AND GAS

DATE 07/21/23 OPERATOR'S WELL # MAUL UNIT #2H

NOTE: NO OCCUPIED DWELLINGS OR BUILDINGS TWO THOUSAND FIVE HUNDRED (2,500) SQUARE FEET OR LARGER USED TO HOUSE OR SHELTER DAIRY CATTLE OR POULTRY HUSBANDRY ARE LOCATED WITHIN SIX HUNDRED TWENTY-FIVE (625) FEET OF THE CENTER OF THE WELL PAD.



WELL TYPE: OIL \_\_\_ GAS X LIQUID INJECTION \_\_\_ WASTE DISPOSAL \_\_\_ 47 \_\_\_ 085 \_\_\_ 10487 (IF "GAS") PRODUCTION X STORAGE \_\_\_ DEEP \_\_\_ SHALLOW X STATE COUNTY PERMIT

LOCATION: ELEVATION 1,035' AS BUILT WATERSHED NORTH FORK HUGHES RIVER QUADRANGLE PENNSBORO 7.5' (TOP HOLE) - PULLMAN 7.5' (BOTTOM HOLE) DISTRICT CLAY COUNTY RITCHIE

SURFACE OWNER DANIEL R. CHRISTIAN ACREAGE 17.36 ACRES +/- LEASE ACREAGE 7086.14 ACRES +/-

JOSEPH P. DAVIS ET UX; KAREN LEE GIEBALL; PINEY HOLDINGS INC.; WVSRA; KIMBERLY DULANEY; JANET S. THOMPSON; JOSEPH B. PRIDE ET UX; DONALD R. REYNOLDS; BRENDA K. EDMISTEN; CAROLYN J. GARDNER; DAVID J. & BONNIE M. MCCULLOUGH; JPE HARDWOOD LUMBER INC.; KIMBERLY N. DAVIS; SUSAN L. KELLY; CITY OF PENNSBORO; CHARITY GAS INC.; WILLIAM N. GOFF; AMP FUND II, LP ET AL; THE HAUGHT FAMILY TRUST; HARRY E. SHAFFER; JOHN P. THOMAS ET AL; DELVERA K. JOHNSON ET AL; RIDGETOP APPALACHIA LLC; MARY LOUISE RIDDLE; C. A. WILSON ET AL; MARJORIE E. DAVIS; MARK TAYLOR ET AL

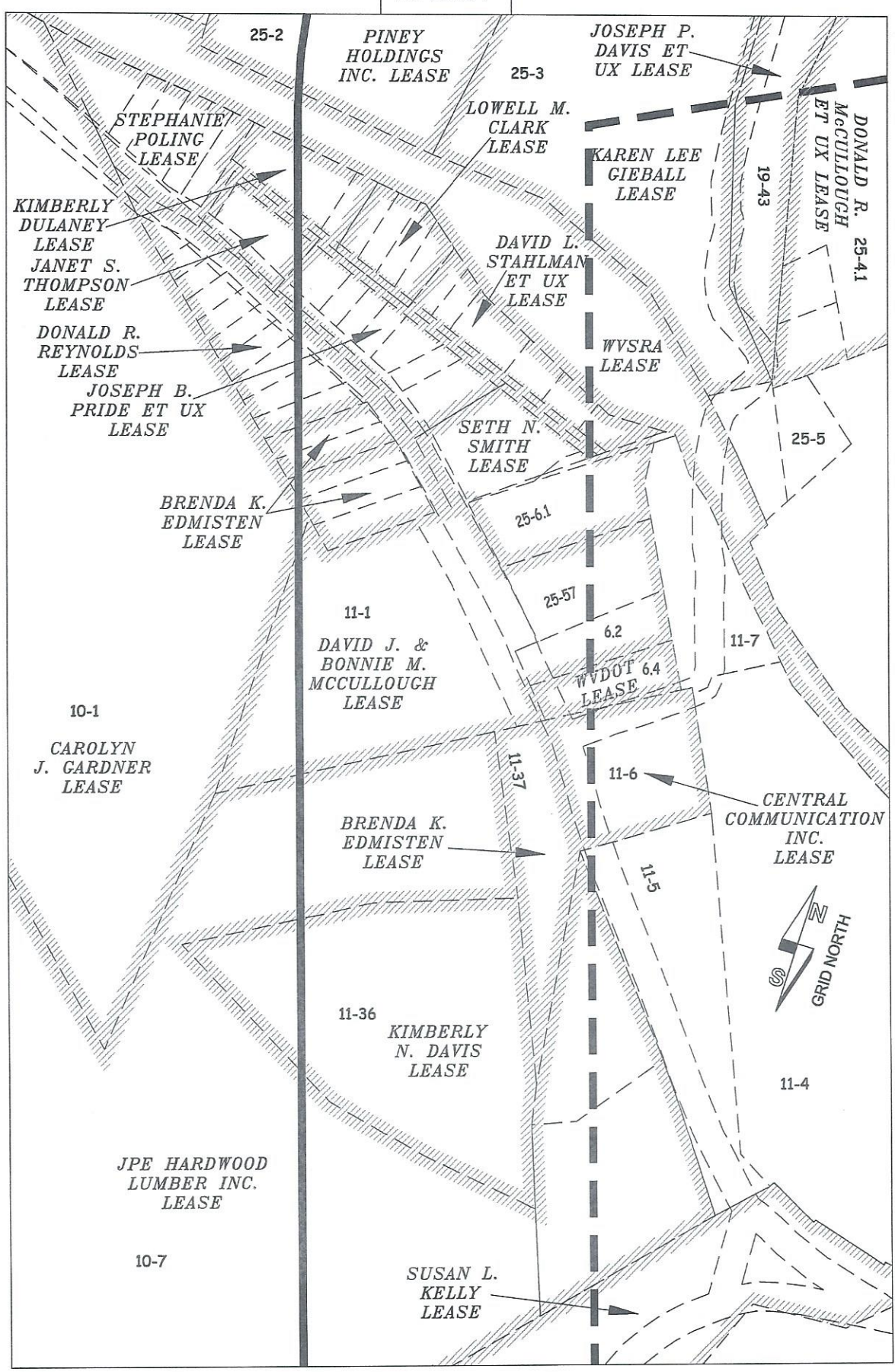
PROPOSED WORK: DRILL \_\_\_ CONVERT \_\_\_ DRILL DEEPER X REDRILL \_\_\_ FRACTURE OR STIMULATE X PLUG OFF OLD FORMATION \_\_\_ PERFORATE NEW FORMATION X OTHER PHYSICAL CHANGE IN WELL (SPECIFY) MOD-BHL PLUG & ABANDON CLEAN OUT & REPLUG

TARGET FORMATION MARCELLUS ESTIMATED DEPTH 6,800' TVD 26,800' MD

WELL OPERATOR ANTERO RESOURCES CORP. DESIGNATED AGENT KEVIN ELLIS

ADDRESS 1615 WYNKOOP ST. DENVER, CO 80202 ADDRESS 554 WHITE OAKS BLVD BRIDGEPORT, WV 26330

INSET



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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
<u>Daniel R. Christian Et Ux Lease</u> Daniel R. Christian Et Ux	Antero Resources Corporation	1/8+	0332/0443
<u>Donald R. McCullough Et Ux Lease</u> Donald McCullough Et Ux Antero Resources Appalachian Corporation	Antero Resources Appalachian Corporation Antero Resources Corporation	1/8+ Name Change	0261/0740 0015/0705
<u>Linda J. Waas Lease</u> Linda J. Waas Antero Resources Appalachian Corporation	Antero Resources Appalachian Corporation Antero Resources Corporation	1/8+ Name Change	0265/0792 0015/0705
<u>Joseph P. Davis Et Ux Lease</u> Joseph P. Davis Et Ux	Antero Resources Corporation	1/8+	0274/0651
<u>Karen Lee Gieball Lease</u> Karen Lee Gieball	Antero Resources Corporation	1/8+	0265/0025
<u>Piney Holdings Inc. Lease</u> Piney Holdings Inc.	Antero Resources Corporation	1/8+	0272/0757
<u>WVSRA Lease</u> WVSRA	Antero Resources Corporation	1/8+	0336/0335
<u>Kimberly Dulaney Lease</u> Kimberly Dulaney	Antero Resources Corporation	1/8+	0335/0984
<u>Janet S. Thompson Lease</u> Janet S. Thompson	Antero Resources Corporation	1/8+	0337/0366
<u>Joseph B. Pride Et Ux Lease</u> Joseph B. Pride Et Ux	Antero Resources Corporation	1/8+	0336/0325
<u>Donald R. Reynolds Lease</u> Donald R. Reynolds	Antero Resources Corporation	1/8+	0337/0468
<u>Brenda K. Edmisten Lease</u> Brenda K. Edmisten	Antero Resources Corporation	1/8+	0338/0845
<u>Brenda K. Edmisten Lease</u> Brenda K. Edmisten	Antero Resources Corporation	1/8+	0338/0845
<u>Carolyn J. Gardner Lease</u> Carolyn J. Gardner	Antero Resources Corporation	1/8+	0338/0533
<u>David J. &amp; Bonnie M. McCullough Lease</u> David J. & Bonnie M. McCullough	Antero Resources Corporation	1/8	0338/0582
<u>JPE Hardwood Lumber Inc. Lease</u> JPE Hardwood Lumber Inc.	Antero Resources Corporation	1/8+	0320/0244

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Grantor, lessor, etc.	Grantee, lessee, etc.	Royalty	Book/Page
<u>Kimberly N. Davis Lease</u> Kimberly N. Davis	Antero Resources Corporation	1/8+	0318/0945
<u>JPE Hardwood Lumber Inc. Lease</u> JPE Hardwood Lumber Inc.	Antero Resources Corporation	1/8+	0320/0244
<u>Susan L. Kelly Lease</u> Susan L. Kelly	Antero Resources Corporation	1/8	0333/0767
<u>City of Pennsboro Lease</u> City of Pennsboro	Antero Resources Corporation	1/8+	0282/1018
<u>Charity Gas Inc. Lease</u> Charity Gas Inc.	Antero Resources Corporation	1/8+	0311/0916
<u>Susan L. Kelly Lease</u> Susan L. Kelly	Antero Resources Corporation	1/8	0333/0767
<u>William N. Goff Lease</u> William N. Goff	Antero Resources Corporation	1/8+	339/212
<u>AMP Fund II, LP Et Al Lease</u> AMP Fund II, LP Et Al	Antero Resources Corporation	1/8+	0330/0882
<u>The Haight Family Trust Lease</u> The Haight Family Trust Whittle Corporation	Whittle Corporation Antero Resources Corporation	1/8+ Assignment	0312/0214 0335/0727
<u>Harry E. Shaffer Lease</u> Harry E. Shaffer	Antero Resources Corporation	1/8+	0317/0739
<u>John P. Thomas Et Al Lease</u> John P. Thomas Et Al Pittsburgh & WV Gas Company Equitable Gas Company Equitrans Inc. Equitrans LP Equitrans LP Equitable Production – Eastern States Inc. Equitable Production Company EQT Production Company	Pittsburgh & WV Gas Company Equitable Gas Company Equitrans Inc. Equitrans LP Equitable Production – Eastern States Inc. Equitable Production Company EQT Production Company Antero Resources Corporation	1/8 Assignment Assignment Merge Assignment Name Change Name Change Assignment	0067/0163 0126/0515 0201/0253 0269/0182 0234/0830 0006/0443 0006/0443 Agreement
<u>Delvera K. Johnson Et Al Lease</u> Delvera K. Johnson Et Al Samuel D. Gaston Mountain State Gathering System	Samuel D. Gaston Mountain State Gathering System David M. Bonnett, dba Bonnett's Production Company	1/8 Assignment Assignment	0173/0777 0177/0824 0284/0710
David M. Bonnett, dba Bonnett's Production Company	Antero Resources Corporation	Assignment	0332/0719

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Grantor, lessor, etc.	Grantee, lessee, etc.	Royalty	Book/Page
<u>Ridgetop Appalachia LLC Lease</u> Ridgetop Appalachia LLC	Antero Resources Corporation	1/8+	0334/0098
<u>Delvera K. Johnson Et Al Lease</u> Delvera K. Johnson Et Al Samuel D. Gaston Mountain State Gathering System	Samuel D. Gaston Mountain State Gathering System David M. Bonnett, dba Bonnett's Production Company	1/8 Assignment Assignment	0173/0777 0177/0824 0284/0710
David M. Bonnett, dba Bonnett's Production Company	Antero Resources Corporation	Assignment	0332/0719
<u>Ridgetop Appalachia LLC Lease</u> Ridgetop Appalachia LLC	Antero Resources Corporation	1/8+	0334/0098
<u>Mary Louise Riddle Lease</u> Mary Louise Riddle	Antero Resources Corporation	1/8+	0332/0541
<u>Ridgetop Appalachia LLC Lease</u> Ridgetop Appalachia LLC	Antero Resources Corporation	1/8+	0334/0098
<u>C.A. Wilson Et Al Lease</u> C.A. Wilson Et Al F.E. Pritchard Maud G. Pritchard Boyd Wright (aka C.B. Wright)	F.E. Pritchard Maud G. Pritchard Boyd Wright (aka C.B. Wright) David M. Harrison (aka David A. Harrison)	1/8 Devised Assignment Assignment	0075/0103 0006/0244 0089/0537 0090/0350
David M. Harrison (aka David A. Harrison)	Pittsburgh National Bank, executor of the Elizabeth K. Harrison estate, David M. Harrison, Jr., as surviving executor of the David M. Harrison estate	Assignment	0098/0264
Pittsburgh National Bank, executor of the Elizabeth K. Harrison estate, David M. Harrison, Jr., as surviving executor of the David M. Harrison estate	Willard H. McCloy	Assignment	0126/0260
Willard H. McCloy	Antero Resources Corporation	Partial Assignment	0284/0529
<u>Marjorie E. Davis Lease</u> Marjorie E. Davis	Antero Resources Corporation	1/8+	0317/0970

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JUL 25 2023  
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Mental Protection

\*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

08/11/2023

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Lease Name or Number	Grantor, Lessor, etc.	Grantee, Lessee, etc.	Royalty	Book/Page
<u>Mark Taylor Et Al Lease</u>	Mark Taylor Et al	J. F. Maxwell	1/8	0075/0509
	J.F. Maxwell	W.J. Waters	Assignment	0078/0054
	W.J. Waters	C.O. Travis	Assignment	0080/0056
	C.O. Travis	Boyd Wright	Assignment	0080/0058
	Boyd Wright	David A. Harrison	Assignment	0090/0350
	David A. Harrison	Helen F. Young	Assignment	0098/0264
	Helen F. Young	The Union National Bank of Pittsburgh	Assignment	0122/0029
	The Union National Bank of Pittsburgh	Ray Rex Taylor Et al	Assignment	0126/0260
	Ray Rex Taylor Et Al	Warren H. Haught	Assignment	0127/0402
	Warren H. Haught	Smithville United Methodist Church	Assignment	0154/0584
	Smithville United Methodist Church	Mid Oil, Inc.	Assignment	0190/0757
	Mid Oil, Inc.	Antero Resources Appalachian Corporation	Assignment	0262/0192
	Antero Resources Appalachian Corporation	Antero Resources Corporation	Assignment	0015/0705

\*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.

**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: Max Green  
 Its: Vice President of Land

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Execution Version



July 12, 2023

Cory C. Peck  
EQT Corporation  
EQT Plaza  
625 Liberty Avenue, Suite 1700  
Pittsburgh, PA 15222

Via Email: [cpeck@eqt.com](mailto:cpeck@eqt.com)

**RE: Acreage Trade Agreement – Drill Letter – Ritchie Co., Doddridge Co., WV**

Dear Mr. Peck:

1. Per our discussions, EQT Production Company, a Pennsylvania corporation ("**EQT Production**"), ET Blue Grass, LLC ("**ET Blue Grass**"), and together with EQT Production, "**EQT**", and Antero Resources Corporation ("**ARC**") (ARC and EQT may be referred to individually as a "**Party**" and collectively as the "**Parties**"), are currently negotiating a potential transaction for the exchange, assignment and/or granting of certain oil and gas leases in Doddridge and Ritchie Counties, West Virginia (the "**Potential Transaction**"), to facilitate each of their respective drilling and development needs.

2. The Parties anticipate that in the Potential Transaction, ARC would assign and/or grant to EQT certain oil and gas leases in exchange for EQT (i) assigning and/or granting to ARC certain oil and gas leases and (ii) leasing to ARC certain fee interest oil and gas properties. The specific properties and amounts of properties to be exchanged will be specified in a definitive written agreement (if any) containing terms and conditions mutually acceptable to the Parties in their respective sole and absolute discretion (a "**Definitive Agreement**").

3. The Parties anticipate that among the EQT oil and gas leases and fee interest oil and gas properties that may be included in the Potential Transaction are the oil and gas leases or portions thereof described on **Exhibit A** attached hereto, comprising approximately 258.67695 NRI Acres (the "**Drilling Leases**"). As used in this letter agreement, "**NRI Acres**" shall have the definition set forth on **Schedule 1**.

4. The Parties desire to accommodate ARC's drilling and development of certain ARC units during the pendency of discussions and negotiations on, and in advance of the execution of, a Definitive Agreement and the closing of the Potential Transaction. Therefore, EQT hereby grants to ARC and/or its designated affiliates the right to drill, complete, produce, and obtain all necessary permits and governmental approvals, in order to drill, complete and produce one (1) or more wellbore laterals ("**Wells**") through and in the Marcellus Formation of the lands covered by the Drilling Leases; **provided, however**, that EQT hereby expressly withholds to itself and its successors and assigns and does not grant to ARC (a) the right to complete in any formation covered by the Drilling Leases other than the Marcellus Formation (**provided** that Antero may drill through such formations) or (b) the right to access the surface of or to conduct surface operations on the lands covered by the Drilling Leases unless ARC enters into a separate agreement with

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the surface owner(s). As used in this letter agreement, "*Marcellus Formation*" shall have the definition set forth on Schedule I.

5. ARC hereby agrees to indemnify, defend and hold harmless EQT and its affiliates, equityholders, subsidiaries or related companies (the "*Indemnified Parties*") for, from and against any and all Claims (as defined below) sustained by the Indemnified Parties resulting from or in connection with ARC's and/or its designated affiliates' activities with respect to the Drilling Leases, including, without limitation, the drilling of the Wells and ARC's development and operation of the Drilling Leases, that arise on or after the date of this letter agreement. "*Claims*" shall mean any and all losses, suits, proceedings, actions, causes of action, in law or at equity, demands, penalties, fines, fees, charges, assessments, liabilities (including environmental liabilities), damages (including environmental and natural resources damages), claims, judgments, executions, costs and expenses of any kind (including, without limitation, attorney's fees, expert's fees, court costs and other out-of-pocket fees and disbursements), fines, taxes, and interest, whether existing or incurred or asserted in the future, in connection with (a) any such claim or the defense thereof, (b) amounts paid in settlement, orders, liens, or decrees, or (c) any injury or damage of any kind and nature to persons (including sickness, illness and death), mines, wells, or property claims or to the Drilling Lease, or natural resources, and with respect to any of the foregoing, whether sustained or brought by or against ARC or any third party. Notwithstanding any of the foregoing, ARC shall have no obligation to indemnify the Indemnified Parties for any Claim to the extent arising out of an Indemnified Party's gross negligence or willful misconduct. The indemnity obligation set forth in this section shall survive (a) any execution of a Definitive Agreement or assignment of the Drilling Leases or other mutually agreed transaction pursuant to which ARC acquired any of the Drilling Leases, or (b) any termination of all or any part of this letter agreement; **provided**, that if the parties hereto enter into a JOA pursuant to this letter agreement, then this paragraph shall terminate and be of no further force and effect (with the terms and conditions of the JOA to govern the respective liability of the parties thereunder).

6. In the event that the Parties execute a Definitive Agreement on or before August 4, 2023 (the "*Execution Deadline*"), subject to Section 7 below, the Drilling Leases, limited to the Marcellus Formation, shall be included in and assigned at the closing of the Potential Transaction in accordance with the terms and conditions set forth in the Definitive Agreement; **provided, however**, that even if a Definitive Agreement is executed, the Drilling Leases shall be conveyed on an "as is, where is" basis and without representations or warranties of any kind whatsoever other than those expressly set forth in the applicable Definitive Agreement, and EQT hereby expressly disclaims any and all other representations and warranties with respect to the Drilling Leases. Further, ARC may not assert any title defects associated with net acres or Net Revenue Interest under the terms of the Definitive Agreement for the Drilling Leases. The foregoing provisions shall survive the execution of a Definitive Agreement or assignment of the Drilling Leases. The Parties may extend the Execution Deadline by mutual written agreement in order to continue to pursue the Potential Transaction discussions while reasonably accommodating each Party's ongoing development needs.

7. Prior to spudding any initial Well, ARC shall send to EQT an AFE (as defined in the JOA) for the initial Wells that ARC desires to drill. In the event that the Parties do not execute a Definitive Agreement on or before the Execution Deadline or in the event that a Definitive Agreement is executed but the Potential Transaction does not close on or before the Execution Deadline, then the Parties shall promptly (and in any event within five (5) business days after the Execution Deadline) enter into a mutually agreeable Joint Operating Agreement (the "*JOA*") based upon and in the form of the 2015 AAPL Model Form Operating Agreement, with the contract area(s) in ARC's sole discretion, effective as of the spud date and non-consent percentages being 400% for drilling costs and 200% for equipment costs. Contemporaneously with the execution of the mutually agreeable JOA, EQT shall elect either (a) to participate in the drilling of any and all Wells governed by the JOA and subject to and in accordance with the terms of the JOA, shall be responsible for its proportionate share of costs from and after the date hereof through the date the JOA

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is executed by EQT (and thereafter governed by the terms of the JOA), which may be offset against EQT's proportionate share of production from such Wells, or (b) to be a non-consenting party under the JOA (which shall be a non-consent election with respect to any and all wells governed by the JOA, whether or not covered by the AFE for the initial Well(s)). If EQT makes the election pursuant to the foregoing clause (b), then, contemporaneously with the execution of the JOA(s), Antero and EQT shall enter into an imbalance agreement covering those Drilling Leases subject to the JOA, the form of which attached hereto as Exhibit B.

8. If any assignment of the acreage is made, such properties shall be assigned and/or granted, as the case may be, free and clear of (a) all gathering or midstream dedications or commitments, and (b) all other senior mortgages, liens and encumbrances for which pre-closing waivers, releases or subordinations are customarily sought in transactions similar to the Potential Transaction.

9. If any assignment of the acreage is made, the assigning or leasing Party shall make available to the other Party, electronically on a digital file-sharing service, electronic copies of its lease and payment files pertaining to such acreage (the "Records").

10. Nothing in this letter agreement shall require the Parties to consummate a Potential Transaction, it being understood that any such Potential Transaction is subject to negotiation of a Definitive Agreement and approval by the Parties' respective senior management and boards of directors, as applicable, each in their sole and absolute discretion; **provided, however**, that in the absence of a Definitive Agreement, the Parties' respective obligations under Sections 4 through 11 hereof shall be fully enforceable.

11. Except as otherwise provided herein, this letter agreement and the rights and obligations of the Parties hereunder shall terminate if and when the Parties execute and deliver a Definitive Agreement and close the Potential Transaction thereunder. This letter agreement shall be governed by Pennsylvania law excluding any choice-of-law rules which would refer the matter to the laws of another jurisdiction. This letter agreement may be executed in any number of counterparts, each of which shall be considered an original for all purposes, and all of which, when taken together, shall constitute one and the same instrument, provided that this letter agreement but shall not be binding on any Party until fully executed by all Parties.

[Signature page follows]

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If the above meets your approval, please execute in the space provided below and return one signed copy to my attention. Should you have any questions, please contact Jared Hurst at (720) 539-6854.

Sincerely,

**ANTERO RESOURCES CORPORATION**

Name: Aaron Merrick  
Title: Chief Administrative Officer

Acknowledged, accepted and agreed to on July 12, 2023.

**EQT PRODUCTION COMPANY**

DocuSigned by:

B89B4A94E0C646A...

Name: Corey C. Peck  
Title: Authorized Agent

JUL ME

**ET BLUE GRASS, LLC**

DocuSigned by:

B89B4A94E0C646A...

Name: Corey C. Peck  
Title: Authorized Agent

JUL ME

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*Signature Page to Drill Letter*

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Schedule 1

**Definitions**

**"Marcellus Formation"** means the stratigraphic equivalent of those depths and formations underlying such leases (or portions of leases) from 500' above the top of the Tully formation, as seen at 6943' MD in the log for the BIG57H1 well located in Wetzel County, West Virginia (API No. 4710302414) down to 200' below the top of the Onondaga formation, as seen in the log of such well at a depth of 7117' MD.

**"Net Revenue Interest"** means, with respect to the Marcellus Formation of each Drilling Lease, the interest in and to all hydrocarbons produced and sold from the Marcellus Formation of such Drilling Lease, after giving effect to all royalties, overriding royalties, production payments, carried interests, net profits interests, reversionary interests and other similar burdens upon, measured by or payable out of production therefrom.

**"Net Working Interest Acreage"** means, computed separately with respect to each Drilling Lease and with respect to the Marcellus Formation, (i) the number of gross mineral acres in the lands included in or encumbered by such Drilling Lease, multiplied by (ii) the percent interest of oil, gas and associated hydrocarbons in such Drilling Lease owned by the lessor upon its execution, multiplied by (iii) the assigning Party's Working Interest in the Drilling Lease as to the Marcellus Formation; **provided**, that if the Working Interest varies as to different areas within any tracts or parcels burdened by such Drilling Lease, a separate calculation shall be done for each area.

**"NRI Acres"** means, as computed separately with respect to each Drilling Lease, the (i) Net Working Interest Acreage, multiplied by (ii) the Party's Net Revenue Interest.

**"Working Interest"** means with respect to any Drilling Lease, the percentage of costs and expenses associated with the operating rights and the exclusive right to exploit hydrocarbons from the Drilling Lease required to be borne with respect thereto, but, for clarity, without regard to the effect of any royalties, overriding royalties, production payments, carried interests, net profits interests, reversionary interests and other similar burdens upon, measured by or payable out of production therefrom

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**EXHIBIT A**

**Drilling Leases**

Lease No.	Lease Name	County	Acres	Depth	Drill Date	Drill Type	Drill Status	Drill Depth	Drill Diameter	Drill Length	Drill Cost	Drill Operator	Drill Location	Drill Notes
1	John F. Thomas and Susan J. Thomas	Wayne	1.2000	1,200	0.0000	1,200	0.0000	1,200	1,200	1,200	1,200	1,200	1,200	None
2	John F. Thomas and Susan J. Thomas	Wayne	1.2000	1,200	0.0000	1,200	0.0000	1,200	1,200	1,200	1,200	1,200	1,200	None
3	John F. Thomas and Susan J. Thomas	Wayne	1.2000	1,200	0.0000	1,200	0.0000	1,200	1,200	1,200	1,200	1,200	1,200	None
4	John F. Thomas and Susan J. Thomas	Wayne	1.2000	1,200	0.0000	1,200	0.0000	1,200	1,200	1,200	1,200	1,200	1,200	None
5	John F. Thomas and Susan J. Thomas	Wayne	1.2000	1,200	0.0000	1,200	0.0000	1,200	1,200	1,200	1,200	1,200	1,200	None

END OF EXHIBIT A

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