

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 28, 2024 PERMIT MODIFICATION APPROVAL Horizontal 6A / Replacement Borehole H6A

ANTERO RESOURCES CORPORATION 1615 WYNKOOP STREET

DENVER, CO 80202

Re:

Permit Modification Approval for Fripp Unit 1HA

47-017-06986-00-00

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.

A. Martin

Operator's Well Number: Fripp Unit 1HA

U.S. WELL NUMBER: 47-017-06986-00-00

Farm Name: Shawn A Glaspell

Horizontal 6A Replacement Borehole H6A

Date Modification Issued: 8/28/2024

Promoting a healthy environment.

4701706986

OPERATOR WELL NO. Fripp Unit 1HA MOD

Well Pad Name: Crimson Pad

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

1) Well Operato	or: Antero F	Resources	Corpora	494507062	017-Doddrig	McLellan	Center Point 7.5'
				Operator ID	County	District	Quadrangle
2) Operator's W	ell Number:	Fripp Unit	1HA MO	D Well Pad	Name: Crims	on Pad	
3) Farm Name/	Surface Own	er: Shawn	A. Glaspe	ell Public Road	d Access: Rigg	jins Run	
4) Elevation, cu	rrent ground	: 1249'	Ele	evation, proposed p	oost-construction	n: 1222'	
5) Well Type	(a) Gas 2	<	Oil	Unde	rground Storag	е	
	Other						
	(b)If Gas	Shallow		Deep			
		Horizontal	X				
6) Existing Pad							
	•			pated Thickness at ss- 55 feet, Associa			
				55- 55 leet, A550cla	ileu Flessule- 2	800#	
8) Proposed To			Marcellus				
9) Formation at							
10) Proposed T	otal Measure	d Depth:	28800' MI	D			
11) Proposed H	orizontal Leg	g Length:	17692.2'				
12) Approxima	te Fresh Wat	er Strata De	pths:	303', 953'			
13) Method to l	Determine Fr	esh Water I	Depths: 4	7-017-00483			
14) Approxima	te Saltwater	Depths: 21	23'				
15) Approxima	te Coal Seam	Depths: N	lone Iden	tified			
16) Approxima	te Depth to P	ossible Voi	d (coal mi	ne, karst, other):	None Anticipat	ed	
	17) Does Proposed well location contain coal seams directly overlying or adjacent to an active mine? Yes No _X						
(a) If Yes, pro	vide Mine Ir	nfo: Name	:				
		Depth					
		Seam					
		Owne					
			-				

Juny The

8-19-24

WW-6B (04/15)

OPERATOR WELL NO. Fripp Unit 1HA MOD
Well Pad Name: Crimson 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	H-40	94#	100	100	CTS, 89 Cu. Ft.
Fresh Water	13-3/8"	New	J-55	54.5#	1003	1003	CTS, 1045 Cu. Ft.
Coal	9-5/8"	New	J-55	36#	2500	2500	CTS, 1018 Cu. Ft.
Intermediate							
Production	5-1/2"	New	P-110	23#	28800	28800	6329 Cu. Ft
Tubing	2-3/8"	New	N-80	4.7#			
Liners							

ТҮРЕ	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"	0.438"	1530	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"	12,630	2500	Lead-H/POZ & Tail - H	H/POZ-1.44 & 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	

Juny Mc 8-19-24

WW-6B (10/14)

API NO. 47- 017 OPERATOR WELL NO. Fripp Unit 1HA MOD Well Pad Name: Crimson Pad

19) Describe proposed well work, including the dri	illing and plugging back of any pilot hole:	
Drill, perforate, fracture a new shallow well and	d complete Marcellus Shale.	

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): 36.89 acres

22) Area to be disturbed for well pad only, less access road (acres): 14.46 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 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.

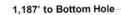
Juny 1/4 24 Page 3 of 3

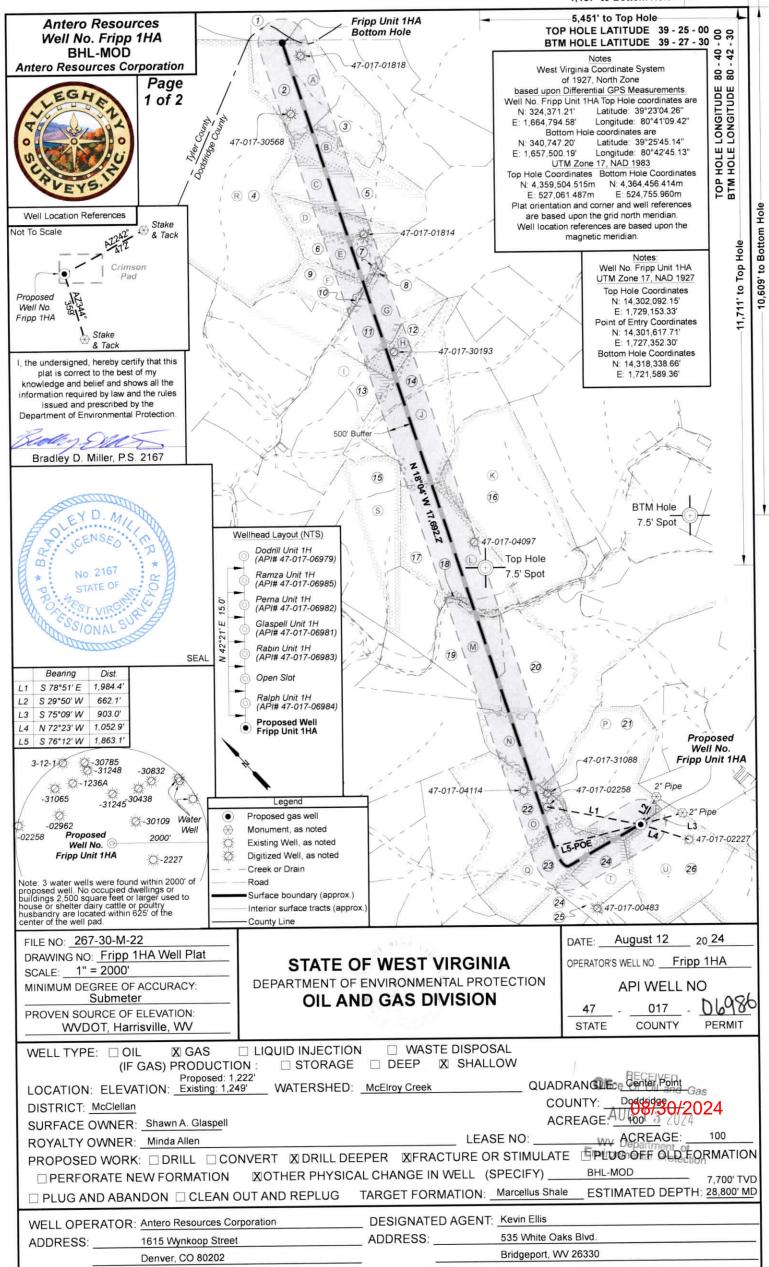
08/30/2024

4701706986 Proposed gas well • 4 Existing Well, as noted Digitized Well, as noted 47-017-01818 47-017-30568 **GRID NORTH** 47-017-01814 The orientation of this survey is Grid North, and its coordinate base is the West Virginia Coordinate System of 1927, North Zone 47-017-30193 47-017-04097 RECEIVED Gas Office Of Oil and Gas AUG 1 3 2024 500' Buffer WV Department of Environmental Protection 47-017-31088 47-017-02258 47-017-04114 Fripp 1HA **Bridgeport Office** 172 Thompson Drive Phone: (304) 848-5035 Bridgeport, WV 26330 Fax: (304) 848-5037 D. Rader DRAWN BY: 4000' PARTY CHIEF: C. Lynch 2000' August 7, 2024 PREPARED: RESEARCH: J. Miller 267-30-M-22 PROJECT NO: SURVEYED: Dec. 2016 Scale: 1 inch = 2000 feet Fripp 1HA BHL MOD AOR Sheet 1 of 1 DRAWING NO: FIELD CREW: C.L., K.M.

UWI (APINum)	Well Name	Well Number	Operator	Historical Operator	TD	Perforated Interval (shallowest, deepest)	Perforated Formation(s)	Producible Formation(s) not perf'd
47017022580000								
47017310880000		4	SOUTH PENN OIL	SOUTH PENN OIL	2,305		Big Injun	Weir, Fifth, Warren, Alexander
47017041140000		1	BIG SAND DRILLING	PENNZOIL PRODUCTS CO				
	ZED UNDERWOOD	3	COMMONWEALTH ENERGY USA INC	MUTSCHELKNAUS C W	1,940			Weir, Fifth, Warren, Alexander
47017301930000		880	CARNEGIE NATURAL GAS	CARNEGIE NATURAL GAS	2,904			Weir, Fifth, Warren, Alexander
	W MUTECHELKNAUS		TARGA DEVELOPMENT INC	STONESTREET LANDS	2,410		Big Injun, Squaw	Weir, Fifth, Warren, Alexander
47017305680000		1	RAAD SUPPLY CO	RAAD SUPPLY CO	2,340		Big Injun	Weir, Fifth, Warren, Alexander
	W MUTECHELKNAUS	3	TARGA DEVELOPMENT INC	STONESTREET LANDS	2,401		Big Injun, Squaw	Weir, Fifth, Warren, Alexander







Antero Resources Well No. Fripp 1HA BHL-MOD Antero Resources Corporation



Page 2 of 2

	Leases
Α	Robert L. Wolfe
В	Deborah Ann Cox
C	Jefferson Minerals, LLC
D	Ed Broome, Inc.
E	Grace Olive Rudder
F	Mary Ann Swiger
G	N.M. Laughery
Н	Jacqueline L. Wichman Trust
1	W.B. Allen, et ux
J	Jay Bee Production Company, et al
K	Antero Minerals, LLC
L	Donald R. Reynolds
M	Donald R. Reynolds
Ν	Donald R. Reynolds
0	W.S. & Nannie L. Stuart
P	Minda Allen
Q	Thomas H. Downs
R	O.W.O. Hardman, et al
S	Mary F. Mutschelknaus
Т	Robert O. Hopkins
U	Morris Mountaineer Oil & Gas, LLC

ID	TM-Par	Owner	Bk/Pg	Acres
1	12-28	Garnett M. Ferrebee	WB24/333	107.00
2	5-1	Robert L. Wolfe	231/560	58.00
3	5-9	Robert L. Wolfe	231/560	32.75
4	17-3	Coastal Forest Resources Co.	199/267	766.00
5	5-10	Kevin E. & Elizabeth A. Denny	287/49	88.89
6	5-11	Edward F. & Grace O. Rudder	244/30	53.76
7	5-11.2	Edward F. Rudder, et ux	172/531	0.37
8	11-35	Edward M. Rudder, et al	WB94/431	0.37
9	11-1	Jonathan G. Edwards	277/108	29.58
10	11-1.1	Bernice A. Swiger	273/502	0.91
11	5-11.1	Grace Olive Rudder	WB42/130	60.63
12	11-5.2	James B. & Hazel I. Lemasters	143/118	21.50
13	11-5.3	James B. & Hazel I. Lemasters	143/118	11.40
14	11-5	James B. & Hazel I. Lemasters	143/118	108.00
15	11-21	Mary K. & Paul Baker	92/51	63.98
16	11-14	Charles W. Yeager III	312/354	150.00
17	11-24	Barbara M. Swiger	WB59/593	90.83
18	11-33.1	Mary L. Glaspell, et al	WB33/513	0.60
19	11-33	Mary Lea Glaspell	WB33/513	50.00
20	11-34	Shawn A. Glaspell	271/230	254.51
21	17-3.3	Shawn A. Glaspell	283/601	100.00
22	17-9	John M. & Connie S. Underwood Irrevocable Trust	294/401	84.00
23	17-13	Shawn A. Glaspell	468/444	65.00
24	17-16	Faith L. Fry	238/167	36.84
25	17-18.1	Faith L. & Michael Fry	342/340	19.50
26	17-3 2	Shawn A. Glaspell	283/601	135.00

FILE NO.	201-00 W ZZ
DRAWING	NO: Fripp 1HA Well Plat
SCALE: _	1" = 2000'
MINIMUM	DEGREE OF ACCURACY: Submeter
PROVEN	SOURCE OF ELEVATION:
V	NDOT, Harrisville, WV

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

DATE: August 12 20 24 OPERATOR'S WELL NO. Fripp 1HA API WELL NO 47 - 017 - D6986

WVDOT, Harrisville, WV		STATE	COUNTY	PERMIT
(IF GAS) PRODUCTION				
Proposed: 1,2	49' WATERSHED: McElroy Creek QUA	DRANGLE:	Center Point	
DISTRICT: McClellan		COUNTY:	Dog 930/2	2024
SURFACE OWNER: Shawn A. Glaspell	Į.	CREAGE:	100	
ROYALTY OWNER: Minda Allen	LEASE NO:		ACREAGE: _	100
PROPOSED WORK: DRILL CO	NVERT X DRILL DEEPER XFRACTURE OR STIMULA	TE PLU	IG OFF OLD F	ORMATION
☐ PERFORATE NEW FORMATION	XOTHER PHYSICAL CHANGE IN WELL (SPECIFY)	BHL-N	MOD	7.700' TVD
	OUT AND REPLUG TARGET FORMATION: Marcellus St			
WELL OPERATOR: Antero Resources Cor	rporation DESIGNATED AGENT: Kevin Ellis			
ADDRESS: 1615 Wynkoop Street	ADDRESS: 535 White 0	Daks Blvd.		
Denver CO 80202	Bridgeport,	WV 26330		

WW-6A1 (5/13)

Operator's Well No. Fripp Unit 1HA MOD

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
A. Dahant I. Walfa I assa				
A: Robert L. Wolfe Lease				
	Robert L. Wolfe	Antero Resources Corporation	1/8+	505/389

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

Office Of Oil and Gas

AUG 1 3 2024

WV Department of Environmental Protection

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

Operator's Well Number

Fripp Unit 1HA MOD

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Grantor, lessor, etc.	Grantee, lessee, etc.	Royalty	Book/Page
P: Minda Allen Lease		_	
Minda Allen	W. B. Allen	1/8	7/357 7/359
W. B. Allen South Penn Oll Company	South Penn Oil Company Pennzoil Company	Assignment Name Change	WVSOS
Pennzoil Company	Pennzoil Products Company	Deed	203/621
Pennzoll Products Company	Pennzoil Exploration and Production Company	Deed	239/355
Pennzoil Exploration and Production Company	Pennz Energy Exploration and Production LLC	Deed	240/702
Pennz Energy Exploration and Production LLC	Devon Energy Production Company LP	Merger	244/399
Devon Energy Production Company LP	East Resources Inc	Assignment	247/337
East Resources Inc	East Resources Inc and HG Energy LLC	Assignment	253/31
East Resources Inc and HG Energy LLC American Energy Marcellus LLC	American Energy Marcellus LLC Ascent Resources – Marcellus LLC	Assignment Name Change	361/1 36/455
Ascent Resources – Marcellus LLC	Tribune Resources LLC, an Oklahoma LLC	Merger	431/260
Tribune Resources LLC, an Oklahoma LLC	Antero Resources Corporation	Assignment	530/325
T: Robert O. Hopkins Lease			
Robert O. Hopkins	Antero Resources Corporation	1/8+	527/357
Q: Thomas H. Downs Lease	Antero Resources Corporation	1/8+	515/362
Thomas H. Downs	Antero Resources Corporation	1/8+	313/302
O: W. S. & Nannie L. Stuart Lease	No. 50 S. Statement	***	
W. S. & Nannie L. Stuart	South Penn Oil Company	1/8 Assignment	11/180 53/162
South Penn Oil Company South Penn Natural Gas Company	South Penn Natural Gas Company South Penn Oil Company	Deed	133/296
South Penn Oil Company	Pennzoil Company	Name Change	wvsos
Pennzoil Company	Pennzoil Products Company	Deed	203/621
Pennzoil Products Company	Pennzoil Exploration and Production Company	Deed	239/355
Pennzoil Exploration and Production	Pennz Energy Exploration and Production LLC	Deed	240/702
Company Pennz Energy Exploration and Production LLC	Devon Energy Production Company LP	Mergerieceived	244/399
Devon Energy Production Company LP	East Resources Inc and HG Energy LLC	Assignment Oil and Gas	247/337
East Resources Inc and HG Energy LLC	Ascent Resources – Marcellus LLC	Assignment	367/147
Ascent Resources – Marcellus LLC	Tribune Resources, LLC	Merger 1 3 2024 Assignment	431/260
Tribune Resources, LLC	Antero Resources Corporation		530/325
N: Donald R. Reynolds Lease		WV Department of Environmental Protection	
Donald R. Reynolds	Antero Resources Corporation	1/84	337/468
M: Donald R. Reynolds Lease			501/249
Donald R. Reynolds Tribune Resources, LLC	Tribune Resources, LLC Antero Resources Corporation	Assignment	530/325
L: Donald R. Reynolds Lease		_	
Donald R. Reynolds	Antero Resources Corporation	1/8+	337/468

4701706986

Fripp Unit 1HA MOD

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Grantor, lessor, etc.	Grantee, lessee, etc.	Royalty	Book/Page
J: Jay Bee Production Company, et al Lease Jay Bee Production Company, et al	Antero Resources Corporation	1/8+	498/473
H: Jacqueline L. Wichman Trust Lease Jacqueline L. Wichman Trust	Antero Resources Corporation	1/8+	477/507
G: N. M. Laughery Lease N. M. Laughery I. M. McIntyre Carnegie Production Company Equitable Production Company EQT Production Company Antero Resources Appalachian Corporation	i. M. McIntyre Carnegie Natural Gas Company Carnegie Production Company Equitable Production Company EQT Production Company Antero Resources Appalachian Corporation Antero Resources Corporation	1/8 Assignment Merger Name Change Assignment Merger	24/350 186/61 WVSOS WVSOS 302/504 46/523
F: Mary Ann Swiger Lease Mary Ann Swiger Antero Resources Appalachian Corporation	Antero Resources Appalachian Corporation Antero Resources Corporation	1/8 Merger	282/597 46/523
E: Grace Olive Rudder Lease Grace Olive Rudder	Antero Resources Corporation	1/8+	521/156
D: Ed Broome, Inc. Lease Ed Broome, Inc	Antero Resources Corporation	1/8+	506/489
C: Jefferson Minerals, LLC Lease Jefferson Minerals, LLC	Antero Resources Corporation	1/8+	469/427
B: Deborah Ann Cox Lease Deborah Ann Cox	Antero Resources Corporation	1/8+ RECEIVED	517/131
		HECEIVED	

*Cotenancy Utilization - Antero is utilizing the Co-tenancy Modernization and Majority Protection Act to proceed with development of certain royalty owners' interests in this tract. AUG 13 2024

**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

*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.