

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, December 18, 2024
PERMIT MODIFICATION APPROVAL
Horizontal 6A / New Drill

ANTERO RESOURCES CORPORATION 1615 WYNKOOP STREET

DENVER, CO 80202

Re:

Permit Modification Approval for Acadia Unit 2H

47-095-02898-00-00

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: Acadia Unit 2H

Farm Name: Antero Resources Corporation

U.S. WELL NUMBER: 47-095-02898-00-00

Horizontal 6A New Drill

Date Modification Issued: 12/18/2024

Promoting a healthy environment.

API NO. 47-095	_ 02898	
OPERATOR W	ELL NO.	Acadia Unit 2H MOD
Well Pad Nar	ne: Shinn	Pad

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

	2				
) Well Operator: Antero R	tesources Corporat	494507062	095 - Tyler	Lincoln	Paden City
		Operator ID	County	District	Quadrangle
) Operator's Well Number:	Acadia Unit 2H MOI	D Well P	ad Name: Shin	n Pad	
) Farm Name/Surface Owne	Antero Resources Corpo	pration Public Re	oad Access: Ba	dger Run F	Road
) Elevation, current ground:	1043' Ele	vation, propose	ed post-construct	ion: 1036'	
) Well Type (a) Gas X Other	Oil	Un	nderground Stora	ge	
(b)If Gas	Shallow X	Deep			
1	Horizontal X				
) Existing Pad: Yes or No					
) Proposed Target FormationMarcellus Shale: 6700' TVI					
r) Proposed Total Vertical D	epth: 6700' TVD				
) Formation at Total Vertica					
0) Proposed Total Measured	d Depth: 23800' MI)			
1) Proposed Horizontal Leg	Length: 15217.7'				
2) Approximate Fresh Water	er Strata Depths:	328			
3) Method to Determine Fro	esh Water Depths: 4	7-095-02781			
4) Approximate Saltwater I	Depths: 1440				
5) Approximate Coal Seam	Depths: N/A				
6) Approximate Depth to P		ne, karst, other)	None Anticip	ated	
7) Does Proposed well loca lirectly overlying or adjacen	tion contain coal sean	ns		o X	
(a) If Yes, provide Mine In	fo: Name:				
	Depth:				
	Seam:				

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WV Department of Environmental Protection Page 1 of 3

12/20/2024

API NO. 47- 095 - 02898

OPERATOR WELL NO. Acadia Unit 2H MOD
Well Pad Name: Shinn 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	H-40	94#	100	100	CTS, 96 Cu. Ft.
Fresh Water	13-3/8"	New	J-55	54.5#	378	378	CTS, 394 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#	23800	23800	5069 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	<u>Cement</u> <u>Yield</u> (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 & Tall - 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	

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API NO. 47- 095 - 02898

OPERATOR WELL NO. Acadia Unit 2H MOD Well Pad Name: Shinn Pad

19) Describe proposed well work, including the drilling and plugging back of any pilot hole:

Drill, perforate, fracture a new shallow well and 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): 38.08 acres
- 22) Area to be disturbed for well pad only, less access road (acres): 16.29 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.

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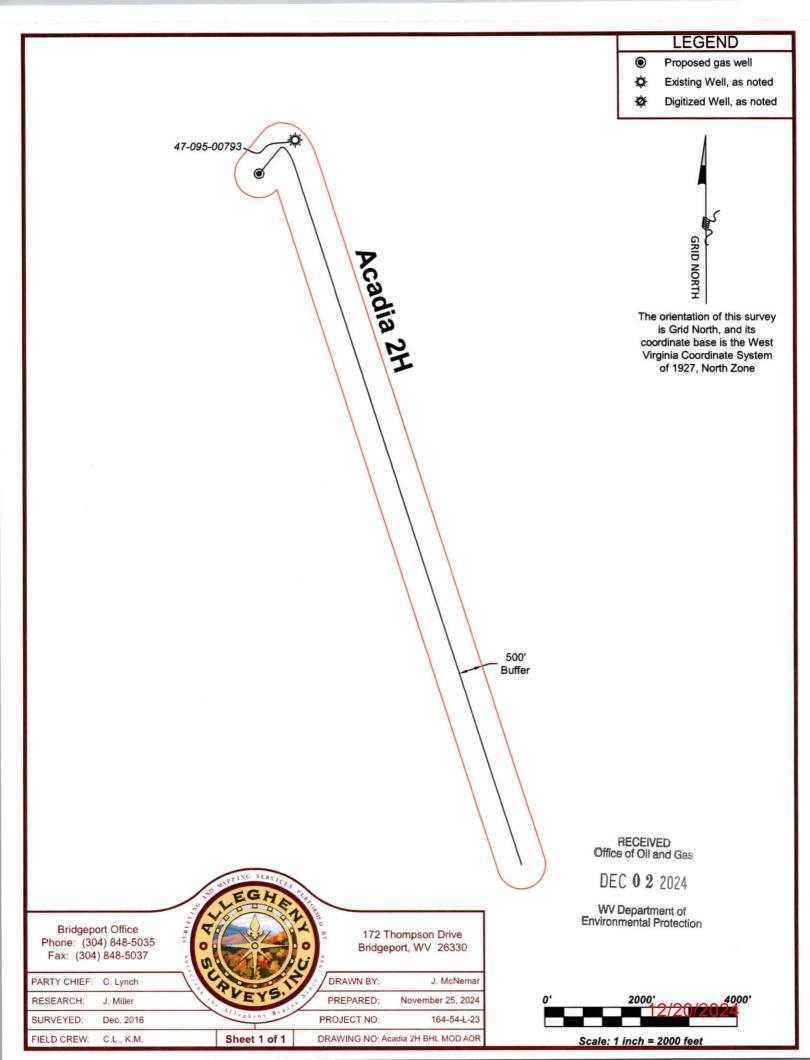
AΡΙ	NO.	47-095	- 02898	
				_

OPERATOR WELL NO. Acadia Unit 2H MOD

Well Pad Name: Shinn Pad

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

A. t	OOF Tales Lincoln Dedes Office
1) Well Operator: Antero Resources Corporat 494507062	095 - Tyler Lincoln Paden City
Operator ID	County District Quadrangle
2) Operator's Well Number: Acadia Unit 2H MOD Well Pa	d Name: Shinn Pad
3) Farm Name/Surface Owner: Antero Resources Corporation Public Rose	ad Access: Badger Run Road
4) Elevation, current ground: 1043' Elevation, proposed	post-construction: 1036'
5) Well Type (a) Gas X Oil Und	lerground Storage
Other	
(b)If Gas Shallow X Deep	
Horizontal X	
6) Existing Pad: Yes or No No	_
7) Proposed Target Formation(s), Depth(s), Anticipated Thickness	
Marcellus Shale: 6700' TVD, Anticipated Thickness- 55 feet, Associ	iated Pressure- 2800#
8) Proposed Total Vertical Depth: 6700' TVD	
9) Formation at Total Vertical Depth: Marcellus	
10) Proposed Total Measured Depth: 23800' MD	
11) Proposed Horizontal Leg Length: 15217.7'	
12) Approximate Fresh Water Strata Depths: 328	
13) Method to Determine Fresh Water Depths: 47-095-02781	
14) Approximate Saltwater Depths: 1440	
15) Approximate Coal Seam Depths: N/A	
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:	RECEIVED
CK#4636824 Depth:	Office of Oil and Gas
3 7500 Seam:	DEC 0 2 2024
Owner:	WV Department of Environmental Protection

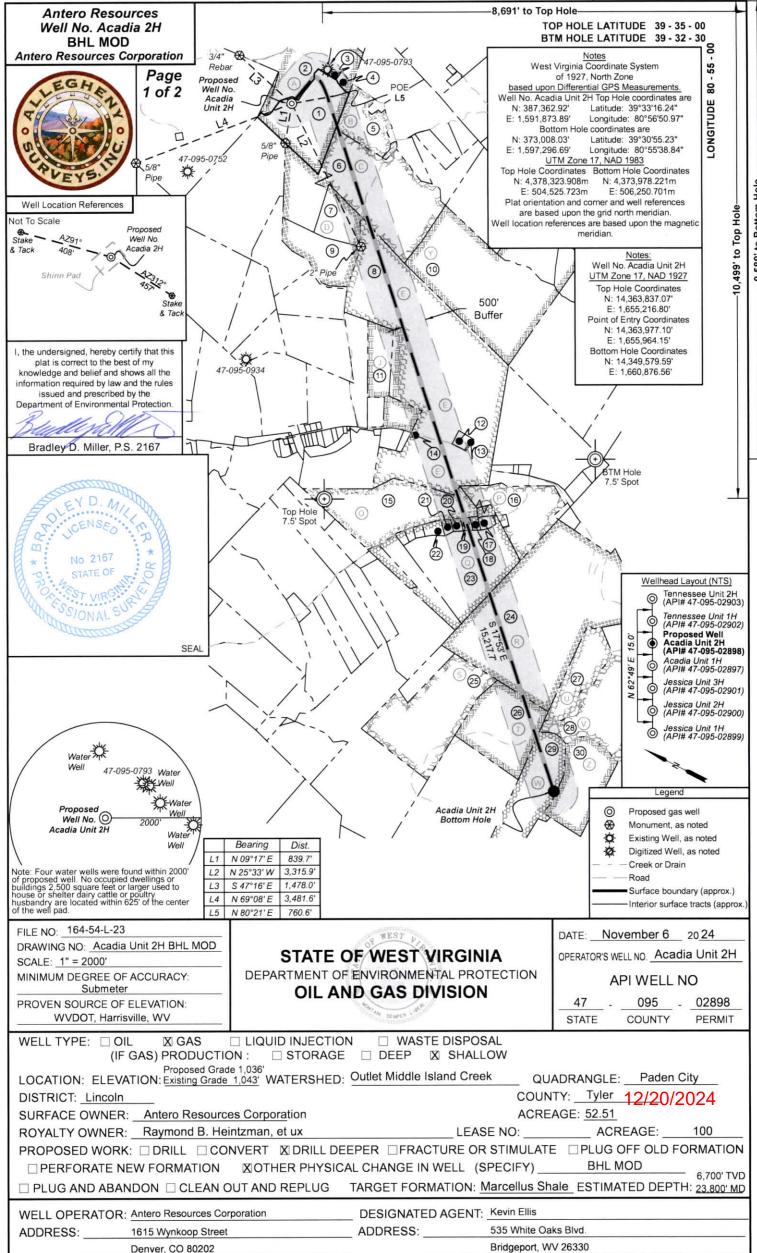


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lυ	WI (APINum)	Well Name	Well Number	Operator	Hist Oper	TD	Perforated Interval (shallowest, deepest)	Perforated Formation(s)	Producible Formation(s) not perf'd	
4709	5007930000	HEINTZMAN RAYMOND B	1	PIN OAK OPERATING LLC	CARTER JONES LUMBER	3,407	2641 - 3256	Fifth, Warren First	Alexander, Weir, Berea, Warren	

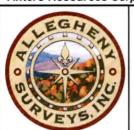
Office of Oil and Gas

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WV Department of Environmental Protection



Antero Resources Well No. Acadia 2H BHL MOD Antero Resources Corporation



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	Leases
Α	Raymond B. Heintzman, et ux
В	Bounty Minerals, LLC
С	Bounty Minerals, LLC
D	John L. Hess
Е	Lois M. & Billy J. Stern, JTWROS
J	Rose Ann Craig Lambert
0	James P. & Melissa B. Flesher, JTWROS
Р	Teresa Starcher Burgey
Q	BRC Appalachian Minerals I, LLC
R	Cathy Jane Meredith, acting Trustee for the Cathy Jane Meredith Trust
S	Carolina Mineral Partners, LLC
Т	James Andrew Winland
U	James W. Thomas, et ux
٧	Susan Townshend, Executor of the Last Will and Testament of Ruth B. Thomas
W	James Andrew Winland
Υ	Arlen Glen Wells, Jr.
Z	Mildred A. Reed

ID	TM-Par	Owner	Bk/Pg	Acres
1	8-21.2	Antero Resources Corporation	296/494	35.52
2	8-21	Antero Resources Corporation	296/490	52.51
3	8-21.3	Adam Nathaniel Wayne	236/556	0.79
4	8-21.4	Jodie E. Michael	373/544	1.78
5	8-22	David E. & Ila Grace Kyle	270/206	24.63
6	8-41	David E. & Ila Grace Kyle	272/189	118.10
7	8-40	Cleatus T. Still	AR46/356	16.94
8	12-71	Shaun M. & Carrie A. Meckley	393/423	266.33
9	8-59	Burl A. & Colleen Folger	199/135	24.00
10	8-61	G.R. Meckley Family Trust	OR50/28	106.51
11	12-20.2	Shawn M. & Carrie A. Meckley	601/789	30.21
12	12-72	Billy J. & Lois M. Stern	214/439	2.15
13	12-71.2	Billy J. & Lois M. Stern	393/434	0.22
14	12-20.1	Shaun M. & Carrie A. Meckley	393/423	1.38
15	12-71.1	James Perry & Melissa Flesher	316/137	63.45
16	13-9.3	James Perry & Melissa Flesher	284/78	16.03
17	12-54.7	Jeffrey L. & Nicola S. Stewart	458/662	1.91
18	12-54.10	Justin L. & Suzanne L. Nichols	591/22	1.06
19	12-54.11	Justin L. & Suzanne L. Nichols	591/22	1.27
20	12-54.8	Justin L. & Suzanne L. Nichols	531/592	1.22
21	12-54.9	Justin L. & Suzanne L. Nichols	531/592	1.37
22	12-54.3	Teresa Jean Starcher	316/146	2.62
23	12-54	David A. Starcher	591/22	60.95
24	13-15	Cathy J. Meredith Trust	634/684	200.86
25	12-70	Starkey Farm 95, LLC	387/530	76.01
26	13-20	Jim Winland	304/421	50.75
27	13-17	Rene Hickman, et al	WB45/145	24.00
28	9-32	Janet L. Cline	331/921	61.25
29	14-1	James A. & Carol Winland	WB31/209	47.48
30	14-2	Robert L. & Donald E. Reed	188/726	42.00

FILE NO: 164-54-L-23
DRAWING NO: Acadia Unit 2H BHL MOD
SCALE: 1" = 2000'
MINIMUM DEGREE OF ACCURACY: Submeter
PROVEN SOURCE OF ELEVATION: WVDOT, Harrisville, WV

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

WEST

DATE: November 6 2024

OPERATOR'S WELL NO. Acadia Unit 2H

API WELL NO

API WELL NO 47 - 095 - 02898

WVDOT, Harrisville, WV	W SEMPEH LINE	S	TATE COUNTY	PERMIT
(IF GAS) PRODUCTION	N: ☐ STORAGE ☐ DEEP 🛛	DISPOSAL SHALLOW		
Proposed Grad LOCATION: ELEVATION: Existing Grade	e 1,036' 1,043' WATERSHED: Outlet Middle Isla	nd Creek QUADR	ANGLE:Paden	
DISTRICT: Lincoln		COUNTY:	Tyler 12/20	/2024
SURFACE OWNER: Antero Resource	es Corporation	ACREAGE	: <u>52.51</u>	
ROYALTY OWNER: Raymond B. Hei	ntzman, et ux	_ LEASE NO:	ACREAGE:	100
PROPOSED WORK: DRILL CO				FORMATION
☐ PERFORATE NEW FORMATION	⊠OTHER PHYSICAL CHANGE IN W	ELL (SPECIFY)	BHL MOD	6.700' TVD
☐ PLUG AND ABANDON ☐ CLEAN C	OUT AND REPLUG TARGET FORMA	TION: Marcellus Shale	ESTIMATED DEP	
WELL OPERATOR: Antero Resources Cor	poration DESIGNATED	AGENT: Kevin Ellis		
ADDRESS: 1615 Wynkoop Street	ADDRESS:	535 White Oaks Blv	vd.	
Denver, CO 80202		Bridgeport, WV 263	330	

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, e	etc.	Royalty	Book/Page
A: Raymond B. Heintzman, et ux Lease				
Raymond B. Heintzman, et ux	McCombs Conrad & Barrett		1/8	207/136
McCombs Conrad & Barrett	Appalachian Exploration & Developm	ent. Inc	Assignment	207/487
Appalachian Exploration & Development, Inc	The Carter-Jones Lumber Company		Assignment	233/563
The Carter-Jones Lumber Company	Applied Mechanics Corporation		Assignment	258/132
Applied Mechanics Corporation	Triad Hunter, LLC		Assignment	385/566
Triad Hunter, LLC	Antero Resources Corporation		Assignment	496/776
B: Bounty Minerals, LLC Lease				
Bounty Minerals, LLC	Antero Resources Corporation		1/8+	301/448
C: Bounty Minerals, LLC Lease			1/0.	301/448
Bounty Minerals, LLC	Antero Resources Corporation		1/8+	301/446
E: Lois M. & Billy J. Stern, JTWROS Lease Lois M. & Billy J. Stern, JTWROS	Antero Resources Corporation		1/8+	324/268
J: Rose Ann Craig Lambert Lease				
Rose Ann Craig Lambert	Triad Hunter, LLC		1/8+	24/763
Triad Hunter, LLC	Blue Ridge Mountain Resources, Inc		Merger	104/354
Blue Ridge Mountain Resources, Inc	Eclipse Resources I, LP		Merger	104/357
Eclipse Resources I, LP	SWN Production, LLC		Name Change	wvsos
SWN Production, LLC	Antero Resources Corporation		Assignment	235/291
E; Lois M. & Billy J. Stern, JTWROS Lease Lois M. & Billy J. Stern, JTWROS	Antero Resources Corporation		1/8+	324/268
O: James P. & Melissa B. Flesher, JTWROS				
Lease James P. & Melissa B. Flesher, JTWROS	Antero Resources Corporation		1/8+	324/271
Q: BRC Appalachian Minerals I, LLC Lease			1/8+	369/300
BRC Appalachian Minerals I, LLC	BRC Working Interest Company, LLC		The same of the sa	369/784
BRC Working Interest Company, LLC	Chesapeake Appalachia, LLC		Assignment	378/764
Chesapeake Appalachia, LLC	Statoil USA Onshore Properties Inc		Assignment	470/668
Statoil USA Onshore Properties Inc	SWN Exchange Titleholder LLC		Assignment	9/404
SWN Exchange Titleholder LLC	SWN Production Company LLC		Merger	544/242
SWN Production Company LLC	Antero Exchange Properties		Assignment	525/315
Antero Exchange Properties	Antero Resources Corporation		Merger	525/515
R: Cathy Jane Meredith, acting Trustee for the Cathy Jane Meredith Trust Lease		RECEIVED		
Cathy Jane Meredith, acting Trustee for the	SEP Appalachia, LLC	Office of Oil and Gas	1/8+	324/233
Cathy Jane Meredith, acting Trustee for the Cathy Jane Meredith Trust	our apparation, the			
SEP Appalachia, LLC	Antero Resources Corporation	DEC 09 2024	Agreement	JOA

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)

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- (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

: James Andrew Winland Lease ames Andrew Winland

riad Hunter LLC

Blue Ridge Mountain Resources, Inc

clipse Resources I, LP

WN Production, LLC

riad Hunter LLC

Blue Ridge Mountain Resources, Inc

Eclipse Resources I, LP

WN Production, LLC

Antero Resources Corporation

Merge Merger ame Change ssignmen

04/354 04/357

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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.

^{*}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.

^{**}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

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)

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Lease Name or Number	Grantor, Lessor, etc.	Grantee, Lessee, etc.	Royalty	Book/Page
W: James Andrew Winland Lease				
	James Andrew Winland	Triad Hunter LLC	1/8+	630/26
	Triad Hunter LLC	Blue Ridge Mountain Resources, Inc.	Merger	104/354
	Blue Ridge Mountain Resources, Inc.	Eclipse Resources L LP	Merger	104/357
	Eclipse Resources I, LP	SWN Production, LLC	Name Change	WVSOS
	SWN Production, LLC	Antero Resources Corporation	Assignment	235/291

*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.

**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

The applicant further acknowledges that any Office of Oil and Gas permit in no way overrides, replaces, or mullifies 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

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