

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 1H

47-095-02897-00-00

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 1H

Farm Name: Antero Resources Corporation

U.S. WELL NUMBER: 47-095-02897-00-00

Horizontal 6A New Drill

Date Modification Issued: 12/18/2024

Promoting a healthy environment.

API NO. 47-095	- 02897	
OPERATOR W	ELL NO.	Acadia Unit 1H MOD
Well Pad Nam	ne: Shinn	Pad

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

		A Company of the Comp			
) Well Operator: Antero Re	sources Corpora	494507062	095 - Tyler	Lincoln	Paden City
		Operator ID	County	District	Quadrangle
) Operator's Well Number: A	cadia Unit 1H MC	DD Well Pa	d Name: Shin	n Pad	
) Farm Name/Surface Owner:	Antero Resources Corp	Public Ro	ad Access: Ba	dger Run F	Road
) Elevation, current ground:	1043' El	evation, proposed	post-construct	ion: 1036'	
) Well Type (a) Gas X Other	Oil	Und	lerground Stora		
	nallow X	Deep	*		
	orizontal X				
Existing Pad: Yes or No No					
) Proposed Target Formation(
Marcellus Shale: 6700' TVD,		ess- 55 leet, Assoc	lated Pressure-	2000#	
) Proposed Total Vertical Dep	oth: 6700' TVD				
) Formation at Total Vertical	Depth: Marcellus	3			
0) Proposed Total Measured	Depth: 22600' M	ID			
1) Proposed Horizontal Leg I	ength: 14396.9'				
2) Approximate Fresh Water	Strata Depths:	328			
3) Method to Determine Fresh	h Water Depths:	47-095-02781			
4) Approximate Saltwater De	pths: 1440				
5) Approximate Coal Seam D	Pepths: N/A				
6) Approximate Depth to Pos	sible Void (coal m	ine, karst, other):	None Anticipa	ated	
 Does Proposed well location lirectly overlying or adjacent to 		ms Yes	N	x	
(a) If Yes, provide Mine Info	: Name:				
	Depth:				
	Seam:				
	Owner:				
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API NO. 47- 095 - 02897

OPERATOR WELL NO. Acadia Unit 1H 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#	22600	22600	4767 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"	0.438"	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	Leed-HPOZ & 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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12/20/2024

API NO. 47- 095 - 02897

OPERATOR WELL NO. Acadia Unit 1H 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.

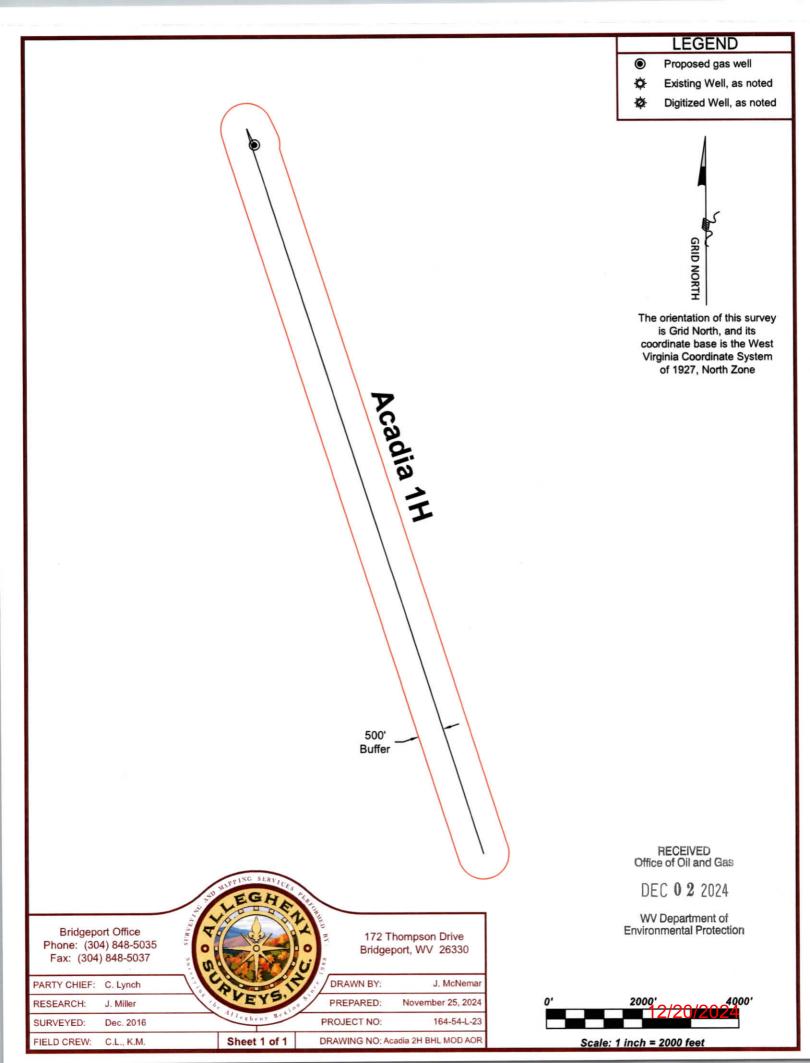
Office of Oil and Gas

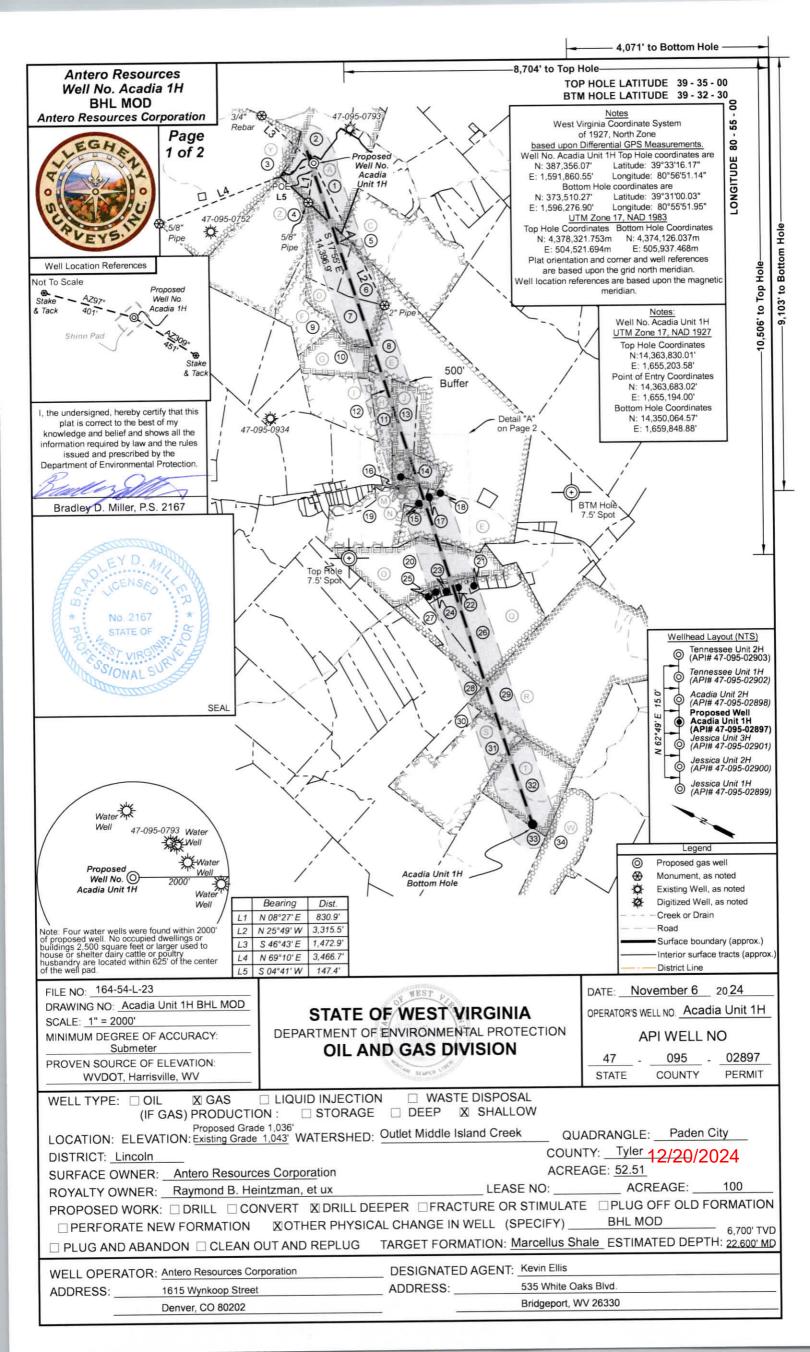
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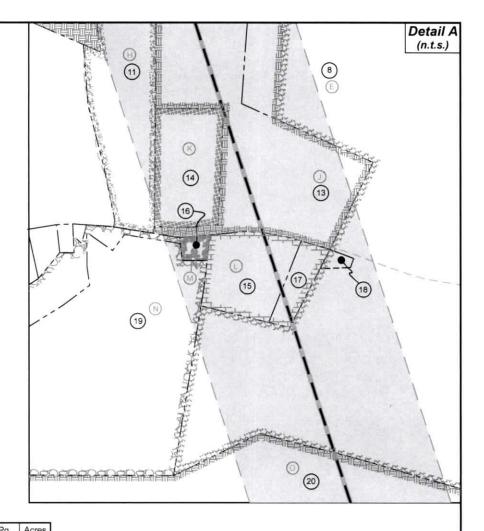




Antero Resources Well No. Acadia 1H **BHL MOD** Antero Resources Corporation



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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	8-19	Olive Branch Animal Rescue	333/804	173.48
4	8-39	Virginia A. Nalley	190/482	70.65
5	8-41	David E. & Ila Grace Kyle	272/189	118.10
6	8-40	Cleatus T. Still	AR46/356	16.94
7	8-59	Burl A. & Colleen Folger	199/135	24.00
8	12-71	Shaun M. & Carrie A. Meckley	393/423	266.33
9	8-39.1	Gary G. Jr. & Debbie Ann Phillips	404/299	33.13
10	8-58	Jerry R. Brightwell & Gwendolyn C. Davies	343/841	20.16
11	12-19	Joseph C. & Nancy E. Starkey	217/203	17.00
12	8-57	Douglas Ray Carson, Jr.	595/111	33.84
13	12-20.2	Shawn M. & Carrie A. Meckley	601/789	30.21
14	12-20.4	Joseph C. & Nancy E. Starkey	579/666	4.85
15	12-20	Gary G. Sr. & Mary E. Phillips	308/508	3.82
16	12-42	Ray T. & Amy S. Fluharty	227/16	0.42
17	12-20.3	Kathleen Cooley	618/455	1.38
18	12-20.1	Shaun M. & Carrie A. Meckley	393/423	1.38
19	12-41	Shaun M. & Carrie A. Meckley	633/569	43.28
20	12-71.1	James Perry & Melissa Flesher	316/137	63.45
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	12-54.4	Charles Matthew & Christina R. Duke	564/350	1.11
24	12-54.5	Charles R. Duke	349/511	1.01
25	12-54.6	Thomas & Nova Lee Fonner	243/392	1.12
26	12-54	David A. Starcher	591/22	60.95
27	12-54.2	Jane Ann Magruder	322/333	15.84
28	12-68	Denver R. II & Deborah L. Starcher	475/380	51.41
29	13-15	Cathy J. Meredith Trust	634/684	200.86
30	12-69	Denver R. II & Deborah L. Starcher	475/380	10.00
31	12-70	Starkey Farm 95, LLC	387/530	76.01
32	13-20	Jim Winland	304/421	50.75
33	13-1	James L. & Martha Jo Stewart	330/931	194.04
34	14-1	James A. & Carol Winland	WB31/209	47.48

Denver, CO 80202

	Leases
Α	Raymond B. Heintzman, et ux
С	Bounty Minerals, LLC
D	John L. Hess
Е	Lois M. & Billy J. Stern, JTWROS
F	Virginia A. Nalley
G	Jerry R. Brightwell, et ux
Н	Julia Ann Ford
1	Bounty Minerals, LLC
J	Rose Ann Craig Lambert
K	Joseph Clair Starkey, et ux
L	Gary W. Phillips, et ux
М	Kenny W. Harter
N	Roy L. Craig
0	James P. & Melissa B. Flesher, JTWROS
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
W	James Andrew Winland
Υ	BRC Appalachian Minerals I, LLC
Z	Nevin Porter, et al

FILE NO: 164-54-L-23 DRAWING NO: Acadia Unit 1H 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 1H API WELL NO

- 095 - 02897 COUNTY PERMIT 47

Bridgeport, WV 26330

		A CONTRACTOR OF THE PROPERTY O		SIAIL	COUNTY	FERIVIT
WELL TYPE: □ OIL X GAS	LIQUID INJECTION	N	SAL			
(IF GAS) PRODUCTIO		☐ DEEP 🏻 SHAL	LOW			
Proposed Grade LOCATION: ELEVATION: Existing Grade	e 1,036' 1,043' WATERSHED:	Outlet Middle Island Cre			: Paden (
DISTRICT: Lincoln			COUNT	TY:Tyler	12/20/2	2024
SURFACE OWNER: Antero Resource	s Corporation			AGE: <u>52.51</u>		
ROYALTY OWNER: Raymond B. Heir	ntzman, et ux	LEA	SE NO:	ACF	REAGE:	100
PROPOSED WORK: ☐ DRILL ☐ CON	NVERT X DRILL DE	EPER FRACTURE O	R STIMULATE	□PLUG	OFF OLD FO	ORMATION
☐ PERFORATE NEW FORMATION	XOTHER PHYSICA	AL CHANGE IN WELL (SPECIFY)	BHL M	DD	- 0.700LTVD
☐ PLUG AND ABANDON ☐ CLEAN O	UT AND REPLUG	TARGET FORMATION:	Marcellus Sha	ale_ESTIMA	ATED DEPT	6,700' TVD H: <u>22,600' M</u> D
WELL OPERATOR: Antero Resources Corp.	poration	_ DESIGNATED AGENT	: Kevin Ellis		_	
ADDRESS:1615 Wynkoop Street		ADDRESS:	535 White Oak	s Blvd.		

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
A: Raymond B. Heintzman, et ux Lease			
Raymond B. Heintzman, et ux	McCombs Conrad & Barrett	1/8	207/136
McCombs Conrad & Barrett	Appalachian Exploration & Development, 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
D: John L. Hess Lease	Antoro Posauros Corporation	1/8+	201/554
John L. Hess	Antero Resources Corporation	1/0+	291/554
G: Jerry R. Brightwell, et ux Lease Jerry R. Brightwell, et ux	Antero Resources Corporation	1/8+	261/85
	Antero Resources corporation	-70	201/03
E: Lois M. & Billy J. Stern, JTWROS Lease Lois M. & Billy J. Stern, JTWROS	Antero Resources Corporation	1/8+	324/268
H: Julia Ann Ford Lease		_	
Julia Ann Ford	Antero Resources Corporation	1/8+	302/77
J: Rose Ann Craig Lambert Lease		1/0.	
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
K: Joseph Clair Starkey, et ux Lease	7:-111-1-115	1/0	
Joseph Clair Starkey, et ux	Triad Hunter, LLC	1/8+	672/130
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
J: Rose Ann Craig Lambert Lease	Triad Hunter II C	1/0:	
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 SWN Production, LLC	Merger	104/357
Eclipse Resources I, LP	Antero Resources Corporation	Name Change Assignment	WVSOS
SWN Production, LLC	Antero Resources Corporation	Assignment	235/291
L: Gary W. Phillips, et ux Lease Gary W. Phillips, et ux	Antero Resources Corporation	1/8+	200/00
	RECEIVE		299/68
E: Lois M. & Billy J. Stern, JTWROS Lease	Office of Oil 8	and Gas	
Lois M. & Billy J. Stern, JTWROS	Antero Resources Corporation	1/8+	324/268
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Grantor, lessor, etc.	Grantee, lessee, etc.	Royalty	Book/Page
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 BRC Appalachian Minerals I, LLC BRC Working Interest Company LLC Chesapeake Appalachia, LLC Statoil USA Onshore Properties Inc SWN Exchange Titleholder LLC SWN Production Company LLC Antero Exchange Properties	BRC Working Interest Company LLC Chesapeake Appalachia, LLC Statoil USA Onshore Properties Inc SWN Exchange Titleholder LLC SWN Production Company LLC Antero Exchange Properties Antero Resources Corporation	1/8+ Assignment Assignment Assignment Merger Assignment Merger	369/648 369/784 378/764 470/668 9/404 544/242 525/315
R: Cathy Jane Meredith, acting Trustee for the Cathy Jane Meredith Trust Lease Cathy Jane Meredith, acting Trustee for the Cathy Jane Meredith Trust SEP Appalachia, LLC	SEP Appalachia, LLC Antero Resources Corporation	1/8+ Agreement	324/233 JOA
S: Carolina Mineral Partners, LLC Lease Carolina Mineral Partners, LLC	Antero Resources Corporation	1/8+	305/292

^{*}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

Office of Oil and Gas

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WV Department of Environmental Protection

Operator's Well No.	Acadia Unit 1H MOD

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

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: Tim Radv Its: Senior Vice President of Land RECEIVED Office of the and the Page 1 of 1

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