

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

Monday, August 12, 2024 PERMIT MODIFICATION APPROVAL Horizontal 6A / New Drill

ANTERO RESOURCES CORPORATION 1615 WYNKOOP STREET

DENVER, CO 80202

Re:

Permit Modification Approval for ELEXA UNIT 1H

47-095-02887-00-00

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-

James A. Martin

Chief

Operator's Well Number: ELEXA UNIT 1H

Farm Name: NEIL R STEBBINS

U.S. WELL NUMBER: 47-095-02887-00-00

Horizontal 6A New Drill

Date Modification Issued: 08/12/2024

Promoting a healthy environment.

API NO. 47- 095	_ 02887		
OPERATOR W	ELL NO.	Elexa Unit 1H MOD	-
Well Pad Nam	ne: Starke	ey Pad	

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

					/
) Well Operator: Antero Reso	urces Corporal	494507062	095-Tyler	Lincoln	Paden City 7.5'
,		Operator ID	County	District	Quadrangle
) Operator's Well Number: Elex	κα Unit 1H MOD	Well F	ad Name: Sta	rkey Pad	v 12
) Farm Name/Surface Owner: N	leil R. Stebbins	Public R	oad Access: H	amilton Driv	е
) Elevation, current ground: 1	107' Ele	evation, propose	ed post-constru	ction: 1091'	
Other (a) Gas X	Oil	Ur	nderground Sto	rage	
(b)If Gas Shall	low X	Deep			_
Hori	zontal X				
6) Existing Pad: Yes or No Yes					
7) Proposed Target Formation(s). Marcellus Shale: 6800' TVD, Ar					
3) Proposed Total Vertical Depth	: 6800' TVD	/	- Department		
) Formation at Total Vertical De		S /			
0) Proposed Total Measured De	epth: 20200' M	D /			N
1) Proposed Horizontal Leg Ler	ngth: 12368.9'	1			
(2) Approximate Fresh Water St	rata Depths:	464'			
13) Method to Determine Fresh		47-095-00275	/		
(4) Approximate Saltwater Dept					
(5) Approximate Coal Seam Dep		ntified			
16) Approximate Depth to Possil): None Antic	ipated	
17) Does Proposed well location directly overlying or adjacent to	contain coal sea			No X	3
(a) If Yes, provide Mine Info:	Name:				RECEIVED
NV # 11229UZ	Depth:	30-00-011100-00-000 (300-00-00-00-00-00-00-00-00-00-00-00-00-			of Oil and Gas
CK # 4033943 # 2500°	Seam:				AUG 7 2024
P 1500°	Owner:				
				Envir	AV Department or orimental Protection



OPERATOR WELL NO. Elexa Unit 1H MOD

Well Pad Name: Starkey 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, 89 Cu. Ft.
Fresh Water	13-3/8"	New	J-55	54.5#	514	514	CTS, 536 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#	20200	20200	4162 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	Lead-H/POZ & Tail - H	H/POZ-1.44 & H-1.8
Tubing	2-3/8"	4.778"	0.19"	11,200			
Liners							#F

PACKERS

Kind:	N/A	
Sizes:	N/A	
Depths Set:	N/A	

API	NO.	47-	095	-	02887

OPERATOR WELL NO. Elexa Unit 1H MOD

Well Pad Name: Starkey Pad

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

Drill, perforate, fracture a new vertical 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): 35.27 acres

22) Area to be disturbed for well pad only, less access road (acres): 14.87 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.

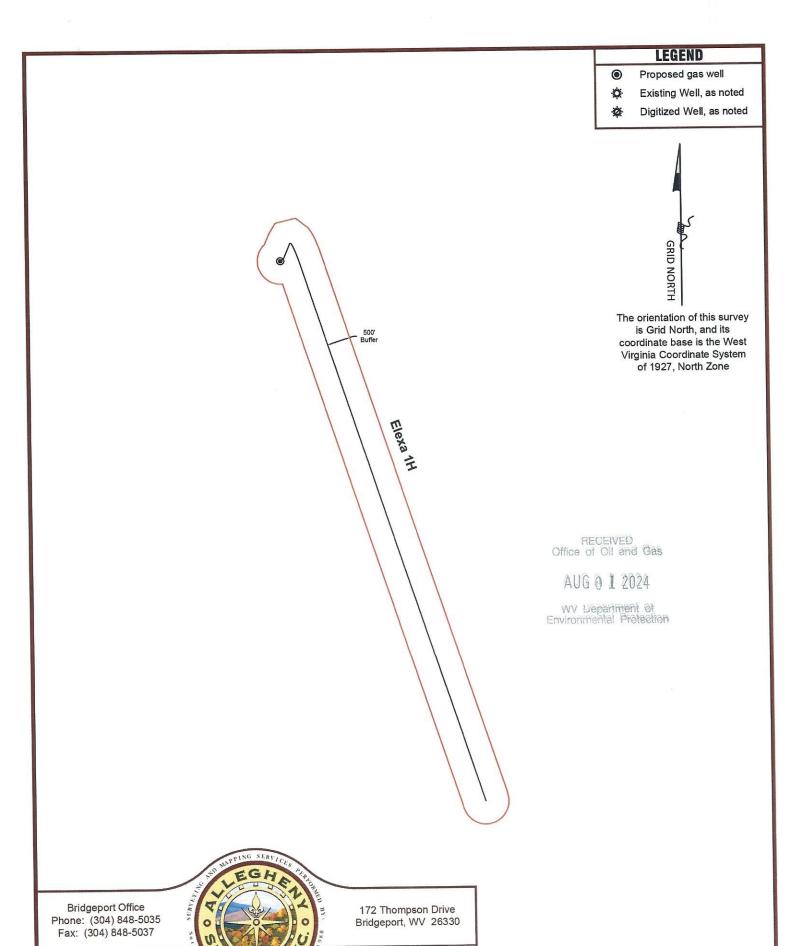
RECEIVED
Office of Oil and Gas

*Note: Attach additional sheets as needed.

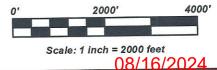
AUG 7 2024

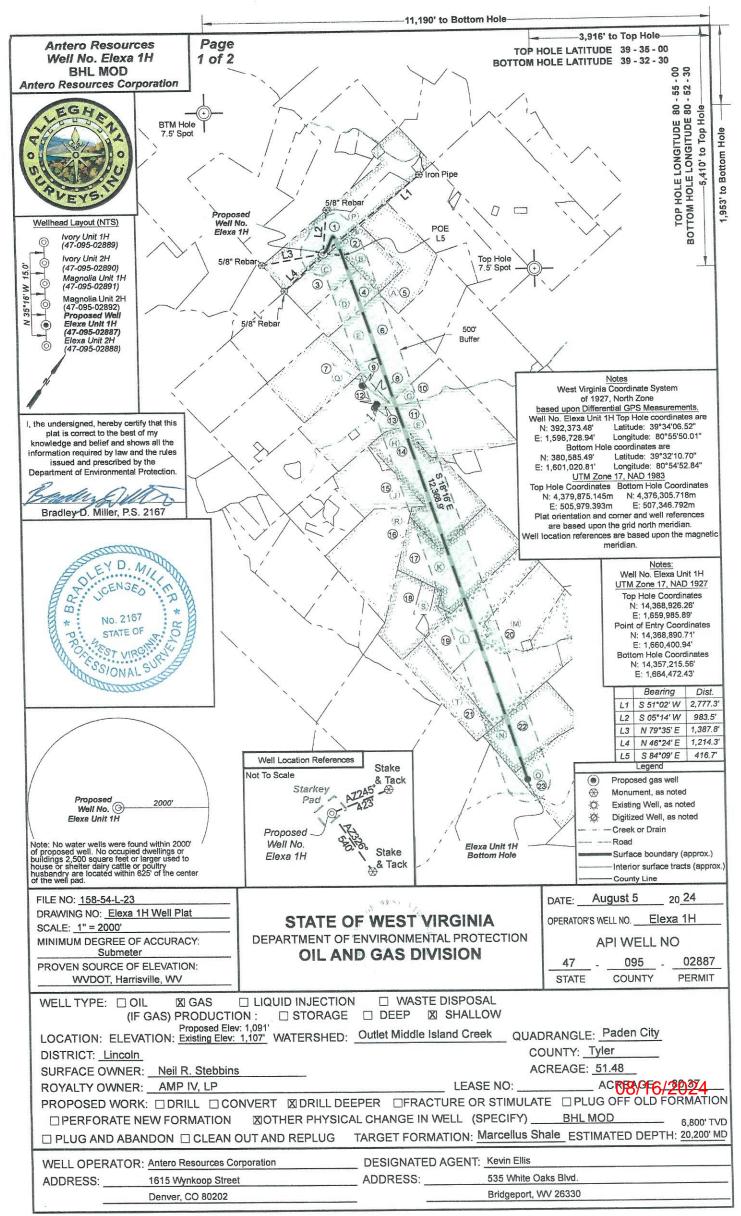
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WV Department of Environmental Protection 08/16/2024 りんり



DRAWN BY: J. McNemar PARTY CHIEF: C. Lynch May 29, 2024 PREPARED: J. Miller RESEARCH: 160-54-L-23 PROJECT NO: SURVEYED: Dec. 2016 Elexa 1H AOR Sheet 1 of 1 DRAWING NO: FIELD CREW: C.L., K.M.







Antero Resources Well No. Elexa 1H BHL MOD Antero Resources Corporation

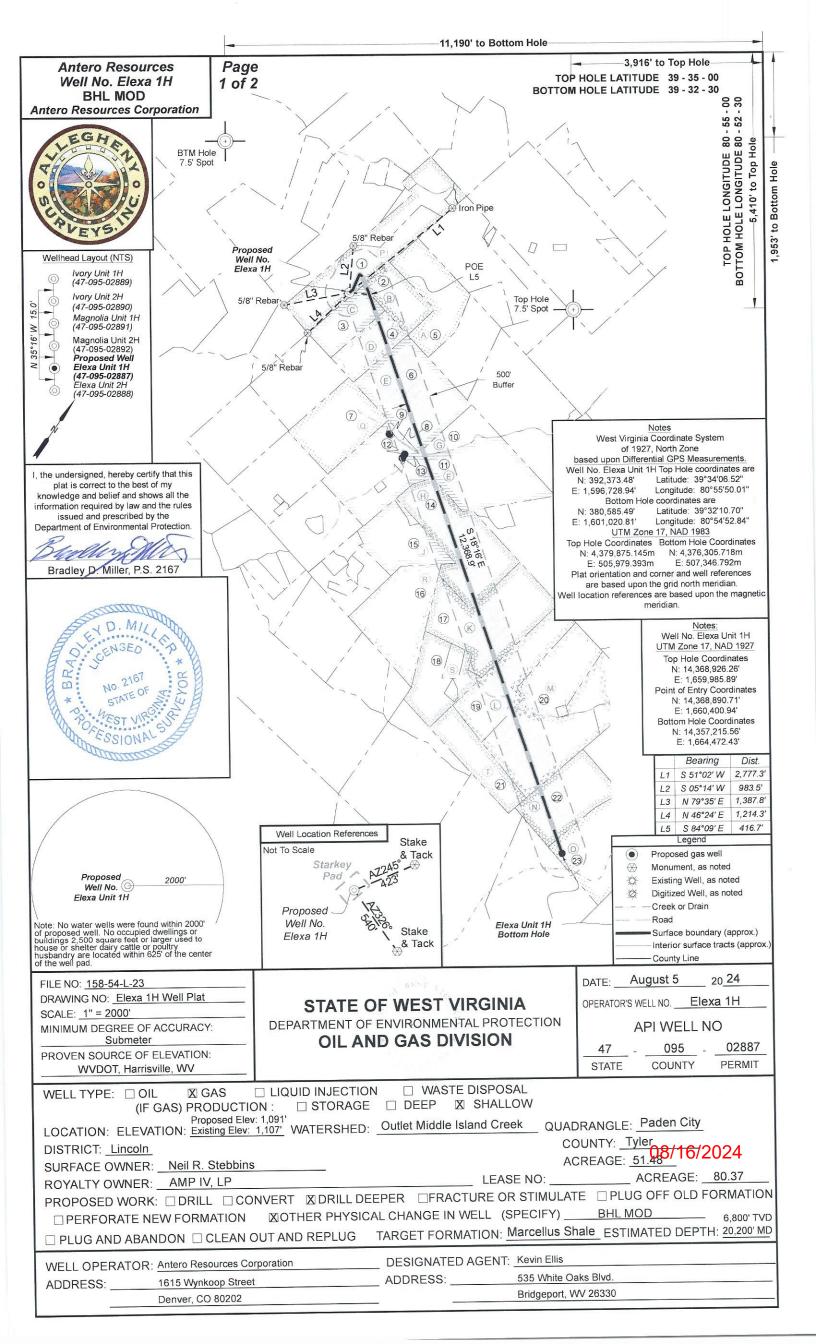


Page 2 of 2

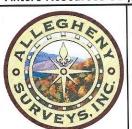
	Leases
A	Robert F. & Rita K. Scardina
В	Robert F. & Rita K. Scardina
D	Robert F. & Rita K. Scardina
C	Robert F. & Rita K. Scardina
E	Earl K. Grimes, et ux
G	BRC Appalachian Minerals I, LLC
Н	Breck Minerals, LP
J	Bounty Minerals, LLC
K	Ethan A. & Marsh L. Riffle, JTWROS
L	Blanche B. Bailey & Shelby R. Bailey
M	Charles R. Jobes
N	Melodee A. Matheny
0	Heritage Resources-Marcellus, LLC
P	AMP IV, LP
Q	Date Palm Resources, LLC
R	Robert L. Bolner
S	Bounty Minerals, LLC
T	MMA Mineral Group, LLC

ID	TM-Par	Owner	Bk/Pg	Acres
1	5-9.4	Neil R. Stebbins	366/436	51.48
2	5-12	Robert F. & Rita K. Scardina	320/646	25.00
3	5-11	Robert F. & Rita K. Scardina	320/646	25.00
4	5-10	Robert F. & Rita K. Scardina	320/646	25.00
5	5-13	Robert F. & Rita K. Scardina	320/646	46.00
6	9-3	D.E. Grimes & Sons Farm, LLC	209/496	67.00
7	9-1	Dickie L. Morgan	605/478	50.00
8	9-2	D.E. Grimes & Sons Farm, LLC	209/496	1.59
9	9-16.3	Timothy Grimes & Pamela Robinson	OR204/32	0.55
10	9-4	Brandon Scott Grimes	637/841	20.00
11	9-16	D.E. Grimes & Sons Farm, LLC	209/496	118.22
12	9-16.4	Darrell Kurt Grimes & Amy J. Grimes	617/383	0.24
13	9-16.1	Darrell K. & Amy J. Grimes	OR87/558	0.25
14	9-15.1	Larry M. & Betty L. Jochum; Mark Lee Jochum	573/794	75.00
15	9-43	Larry M. & Betty L. Jochum; Mark Lee Jochum	573/794	36.55
16	9-23	Robert L. Bolner	347/235	61.00
17	9-24	Ethan A. & Marsha L. Riffle	299/26	82.00
18	9-25	Vonlie Cooper	289/103	31.48
19	9-27	Robert Livio Bolner	226/593	59.00
20	9-28	Constance Heintzman	WB43/505	104.50
21	13-2	Idona Cooper Estate	109/234	30.00
22	13-3	Mark E. Heintzman	221/635	51.96
23	13-8	D.H. Lancaster, Jr.	351/288	52.84

FILE NO: 158-54-L-23 DRAWING NO: Elexa 1H Well Plat 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	DATE:August 5
(IF GAS) PRODUCTION Proposed Elevation: Existing Elevation: Elevation: Existing Elevation: Existing Elevation: Existing Elevation: Existing Elevation: Existing Elevation: Elevation: Existing Elevation: Existence Elevation: Elevation: Existence Elevation: Existence Elevation: Elevation: Existence Elevation: El	7: 1,091' 1,107' WATERSHED: Outlet Middle Island Creek QUAI	BHL MOD 6,800' TVD
WELL OPERATOR: Antero Resources Co ADDRESS: 1615 Wynkoop Stree Denver, CO 80202	t DESIGNATED AGENT: Kevin Ellis ADDRESS: 535 White O Bridgeport, V	and the second s



Antero Resources Well No. Elexa 1H BHL MOD Antero Resources Corporation



Page 2 of 2

	Leases
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Н	Breck Minerals, LP
J	Bounty Minerals, LLC
K	Ethan A. & Marsh L. Riffle, JTWROS
L	Blanche B. Bailey & Shelby R. Bailey
M	Charles R. Jobes
Ν	Melodee A. Matheny
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FILE NO: <u>158-54-L-23</u>
DRAWING NO: Elexa 1H Well Plat
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

DATE:	Au	gust 5	2	20_24
OPERATOR'S WELL NOElexa 1H			a 1H	
API WELL NO				
47		095	_	02887
STATE		COUNTY	,	PERMIT

	STATE COUNTY PERMIT		
ON: □ STORAGE □ DEEP ☒ SHALLOW 1.1,091' 1.107' WATERSHED: Outlet Middle Island Creek QUA	DRANGLE: Paden City		
C	OUNTY:Tyler CREAGE: _51.08/16/2024		
LEASE NO:	ACREAGE: 80.37		
□ PERFORATE NEW FORMATION □ CLEAN OUT AND REPLUG TARGET FORMATION: Marcellus Shale ESTIMATED DEPTH: 20,200' MD			
priporation DESIGNATED AGENT: Kevin Ellis t ADDRESS: 535 White Or	Daks Blvd.		
	ON: STORAGE DEEP SHALLOW V: 1,091' 1,107' WATERSHED: Outlet Middle Island Creek QUA SE LEASE NO: LEASE NO: STIMULA SOTHER PHYSICAL CHANGE IN WELL (SPECIFY) OUT AND REPLUG TARGET FORMATION: Marcellus STIMULA SOTOTOTION DESIGNATED AGENT: Kevin Ellis		

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
P: AMP IV, LP Lease AMP IV, LP	Antero Resources Corporation	1/8+	231/747
/B: Robert F. & Rita K. Scardina Lease Robert F. & Rita K. Scardina	Antero Resources Corporation	1/8+	235/654
C: Robert F. & Rita K. Scardina Lease Robert F. & Rita K. Scardina	Antero Resources Corporation	1/8+ Office RECEIVED AUG OF THE	235/654
/ <u>D: Robert F. & Rita K. Scardina Lease</u> Robert F. & Rita K. Scardina	Antero Resources Corporation		
E: Earl K. Grimes, et ux Lease Earl K. Grimes, et ux John Richmond Gas Corporation of WV John Richmond Jack Holden, Driller-Operator Nancy J. Holden Triad Hunter, LLC	John Richmond Gas Corporation of WV John Richmond Jack Holden, Driller-Operator Nancy J. Holden Triad Hunter, LLC Antero Resources Corporation	1/8 Assignment	210/269 211/149 212/270 212/315 390/758 402/569 496/776
G: 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	369/300 369/784 378/764 470/668 9/404 544/242 525/315
E: Earl K. Grimes, et ux Lease Earl K. Grimes, et ux John Richmond Gas Corporation of WV John Richmond Jack Holden, Driller-Operator Nancy J. Holden Triad Hunter, LLC	John Richmond Gas Corporation of WV John Richmond Jack Holden, Driller-Operator Nancy J. Holden Triad Hunter, LLC Antero Resources Corporation	1/8 Assignment Assignment Assignment Assignment Assignment Assignment	210/269 211/149 212/270 212/315 390/758 402/569 496/776
H: Breck Minerals, LP Lease Breck Minerals, LP	Antero Resources Corporation	1/8+	306/62
K: Ethan A. & Marsh L. Riffle, JTWROS Lease Ethan A. & Marsh L. Riffle, JTWROS	Antero Resources Corporation	1/8+	236/369

Elexa Unit 1H MOD

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Grantor, lessor, etc.	Grantee, lessee, etc.	Royalty	Book/Page
L: Blanche B. Bailey & Shelby R. Bailey Lease Blanche B. Bailey and Shelby R. Bailey Triad Hunter, LLC Blue Ridge Mountain Resources, Inc Eclipse Resources I, LP SWN Production Company	Triad Hunter, LLC Blue Ridge Mountain Resources, Inc Eclipse Resources I, LP SWN Production Company Antero Resources Corporation	1/8 Assignment Assignment Name Change Assignment	380/210 104/354 104/357 WVSOS 235/291
N: Melodee A. Matheny Lease Melodee A. Matheny	Antero Resources Corporation	1/8+	557/713

*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



^{*}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.

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
O: Heritage Resources Marcellus, l	LLC Lease		14	
	Heritage Resources - Marcelli	us, LLC Antero Resources Corporation	1/8+	640/592

RECEIVED Office of Oil and Gas

AUG 0 1 2024

WV Department of Environmental Protection

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 Rady	Can Verden		
Its:	Senior Vice P	resident of Land		

Page 3 of 3



July 31st, 2024

West Virginia Department of Environmental Protection Office of Oil and Gas

Attn: Mr. Taylor Brewer

601 57th Street

Charleston, WV 25304

Office of Oil and Gas

Antero Resources 1615 Wynkoop Street Denver, CO 80202 Office 303.357.7310 Fax 303.357.7315

CK# 4033943 ck\$ 2,500.00

Mr. Brewer:

WV Lepartment of Environmental Protecti Antero Resources Corporation (Antero) would like to submit the following permit modifications for approved wells on the Starkey Pad. We are requesting to extend the horizontal lateral length which will change the bottom hole location of the Elexa Unit 1H, Elexa Unit 2H, Magnolia Unit 1H, & Magnolia Unit 2H wells.

Attached you will find the following documents:

- > REVISED Form WW-6B, which shows the revised MD and Production Casing/Cement program
- > REVISED Form WW-6A1, which shows the leases we will be drilling into
- > REVISED Mylar Plat, which shows the new bottom hole location

If you have any questions please feel free to contact me at (303) 357-7373.

Thank you in advance for your consideration.

Sincerely,

Carly Marvel Permitting Agent

Antero Resources Corporation

Enclosures