



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

Friday, June 27, 2025
PERMIT MODIFICATION APPROVAL
Horizontal 6A / New Drill

ANTERO RESOURCES CORPORATION
1615 WYNKOOP STREET

DENVER, CO 80202

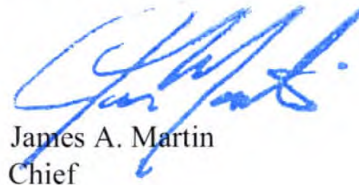
Re: Permit Modification Approval for CONAWAY UNIT 2H
47-095-02926-00-00

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 blue ink signature of James A. Martin, written in a cursive style.

James A. Martin
Chief

Operator's Well Number: CONAWAY UNIT 2H
Farm Name: JIMMY E. & EARL P. PATTERSON & LINDA LOU
U.S. WELL NUMBER: 47-095-02926-00-00
Horizontal 6A New Drill
Date Modification Issued: 6/27/2025

Promoting a healthy environment.

07/04/2025

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

- 1) Well Operator: Antero Resources Corporation 494507062 095 - Tyler Union Middlebourne
Operator ID County District Quadrangle
- 2) Operator's Well Number: Conaway Unit 2H MOD Well Pad Name: Mary Patterson Pad
- 3) Farm Name/Surface Owner: Jimmy E. & Earl P. Patterson & Linda Lou Dennis Public Road Access: Dansers Lane
- 4) Elevation, current ground: 694.76' Elevation, proposed post-construction: 694.70'
- 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: 6300' TVD, Anticipated Thickness- 55 feet, Associated Pressure- 2800#
- 8) Proposed Total Vertical Depth: 6300' TVD
- 9) Formation at Total Vertical Depth: Marcellus
- 10) Proposed Total Measured Depth: 21300' MD
- 11) Proposed Horizontal Leg Length: 11440.5'
- 12) Approximate Fresh Water Strata Depths: 235
- 13) Method to Determine Fresh Water Depths: 47-095-00081
- 14) Approximate Saltwater Depths: 718
- 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: _____
Depth: _____
Seam: _____
Owner: _____

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JUN 10 2025

WV Department of
Environmental Protection

Page 1 of 3
Digitally signed by Stephen Mccoy
Date: 2025.06.09 09:20:33 -04'00'

WW-6B
(04/15)

API NO. 47- 095 - 02926
OPERATOR WELL NO. Conaway Unit 2H MOD
Well Pad Name: Mary Patterson 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, 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#	2500	2500	CTS, 1018 Cu. Ft.
Intermediate							
Production	5-1/2"	New	P-110	23#	21300	21300	4439 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							

PACKERS

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

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Page 2 of 3
07/04/2025
Stephen McCoy
Date: 2025.06.09 09:20:43 -04'00'

WW-6B
(10/14)

API NO. 47- 095 - 02926
OPERATOR WELL NO. Conaway Unit 2H MOD
Well Pad Name: Mary Patterson 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.

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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): 32.49 acres

22) Area to be disturbed for well pad only, less access road (acres): 13.09 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.

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>B: Linda Lou Dennis Lease</u> Linda Lou Dennis	Antero Resources Corporation	1/8+	234/5
<u>A: J & N Management Enterprises, LLC Lease</u> J&N Management Enterprises, LLC	Antero Resources Corporation	1/8+	223/540
<u>B: Linda Lou Dennis Lease</u> Linda Lou Dennis	Antero Resources Corporation	1/8+	234/5
<u>G: Norma J. Thompson Lease</u> Norma J. Thompson	Antero Resources Corporation	1/8+	619/381
<u>F: Lora G. Thomas Lease</u> Lora G. Thomas	Antero Resources Corporation	1/8+	328/93
<u>K: Antero Minerals, LLC Lease</u> Antero Minerals, LLC	Antero Resources Corporation	1/8+	307/422
<u>N: Ronald L. Adams Trust Lease</u> Ronald L. Adams Trust	Antero Resources Corporation	1/8+	594/411
<u>Q: Shirley L. Chapman Lease</u> Shirley L. Chapman	Antero Resources Corporation	1/8+	91/671
<u>P: Jodie L. Yost Lease</u> Jodie L. Yost	Antero Resources Corporation	1/8+	88/388
<u>U: Paul E. Snider Lease</u> Paul E. Snider	Antero Resources Corporation	1/8+	554/643
<u>V: Paula D. Garvey Lease</u> Paula D. Garvey	Antero Resources Corporation	1/8+	587/772
<u>X: BRC Appalachian Minerals I, LLC Lease</u> BRC Appalachian Minerals I, LLC BRC Working Interest Company LLC Chesapeake Appalachia, LLC Statoil USA Onshore Properties Inc EQT Production Company	BRC Working Interest Company LLC Chesapeake Appalachia, LLC Statoil USA Onshore Properties Inc EQT Production Company Antero Resources Corporation	1/8 Assignment Assignment Assignment Assignment	369/300 369/784 378/764 539/239 663/1

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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.

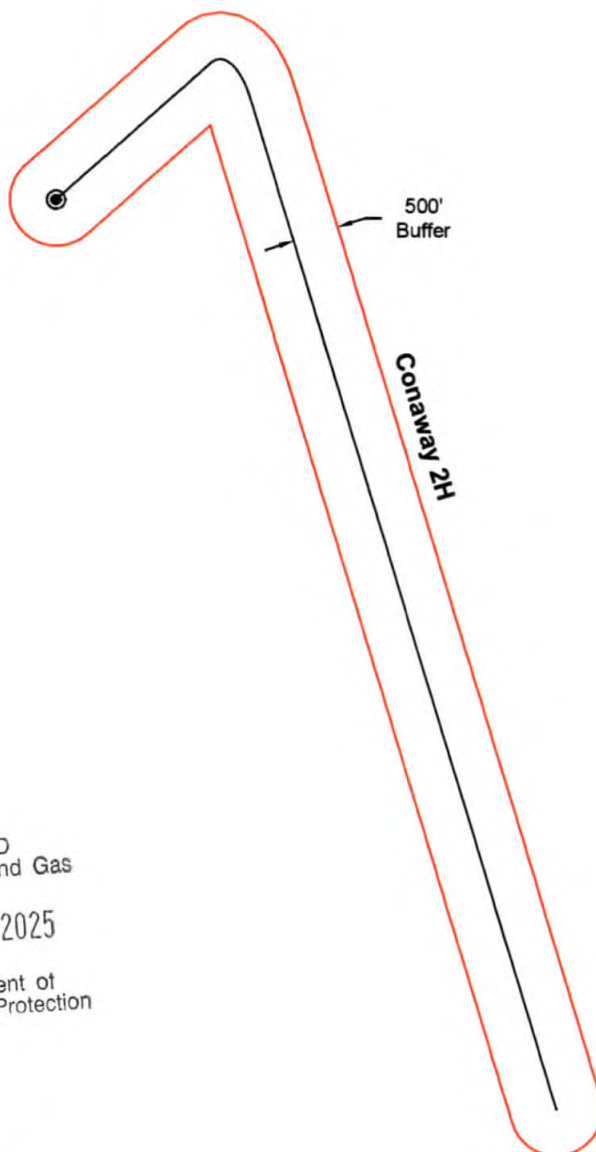
07/04/2025

LEGEND

- Proposed gas well
- Existing Well, as noted
- Digitized Well, as noted



The orientation of this survey is Grid North, and its coordinate base is the West Virginia Coordinate System of 1927, North Zone



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Scale: 1 inch = 2000 feet

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Bridgeport Office
Phone: (304) 848-5035
Fax: (304) 848-5037

172 Thompson Drive
Bridgeport, WV 26330

PARTY CHIEF: C. Lynch

DRAWN BY: J. McNemar

RESEARCH: J. Miller

PREPARED: June 9, 2025

SURVEYED: Dec. 2016

PROJECT NO: 169-54-U-23

FIELD CREW: C.L., K.M.

Sheet 1 of 1

DRAWING NO: Conaway 2H AOR

07/04/2025

**INFORMATION SUPPLIED UNDER WEST VIRGINIA CODE
Chapter 22, Article 6A, Section 5(a)(5)
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Lease Name or Number	Grantor, Lessor, etc.	Grantee, Lessee, etc.	Royalty	Book/Page
<u>Y: Kenneth M. Lantz Lease</u>	Kenneth M. Lantz	Antero Resources Corporation	1/8+	645/479

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**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
Its: Senior Vice President of Land

INFORMATION SUPPLIED UNDER WEST VIRGINIA CODE
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Grantor, lessor, etc.	Grantee, lessee, etc.	Royalty	Book/Page
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***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.

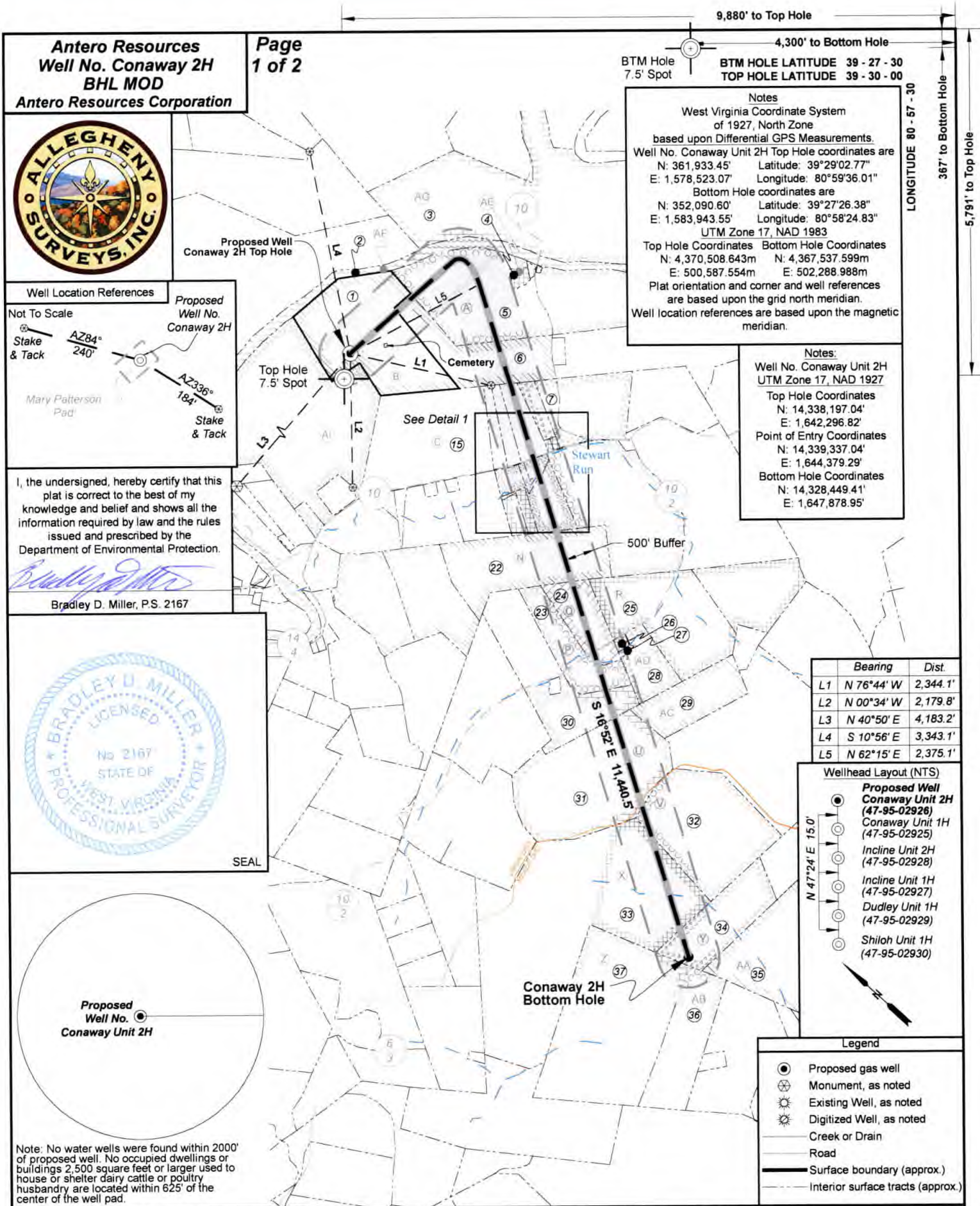
****Pooling/Unitization** – Antero has filed a horizontal well unitization application with the West Virginia Oil and Gas Conservation Commission that seeks to pool certain owners in this tract

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07/04/2025



FILE NO: 169-54-U-23

DRAWING NO: Conaway Unit 2H 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: May 5 2025

OPERATOR'S WELL NO. Conaway Unit 2H

API WELL NO

47 - 95 - 02926
STATE COUNTY PERMIT

WELL TYPE: ☐ OIL ☒ GAS ☐ LIQUID INJECTION ☐ WASTE DISPOSAL
(IF GAS) PRODUCTION: ☐ STORAGE ☐ DEEP ☒ SHALLOW

LOCATION: ELEVATION: Proposed 694.70 WATERSHED: Outlet Middle Island Creek QUADRANGLE: Middlebourne

DISTRICT: Union

SURFACE OWNER: Jimmy E. & Earl P. Patterson & Linda Lou Dennis

ROYALTY OWNER: Linda Lou Dennis LEASE NO: ACREAGE: 98.225

PROPOSED WORK: ☐ DRILL ☐ CONVERT ☒ DRILL DEEPER ☐ FRACTURE OR STIMULATE ☐ PLUG OFF OLD FORMATION
☐ PERFORATE NEW FORMATION ☒ OTHER PHYSICAL CHANGE IN WELL (SPECIFY) BHL MOD

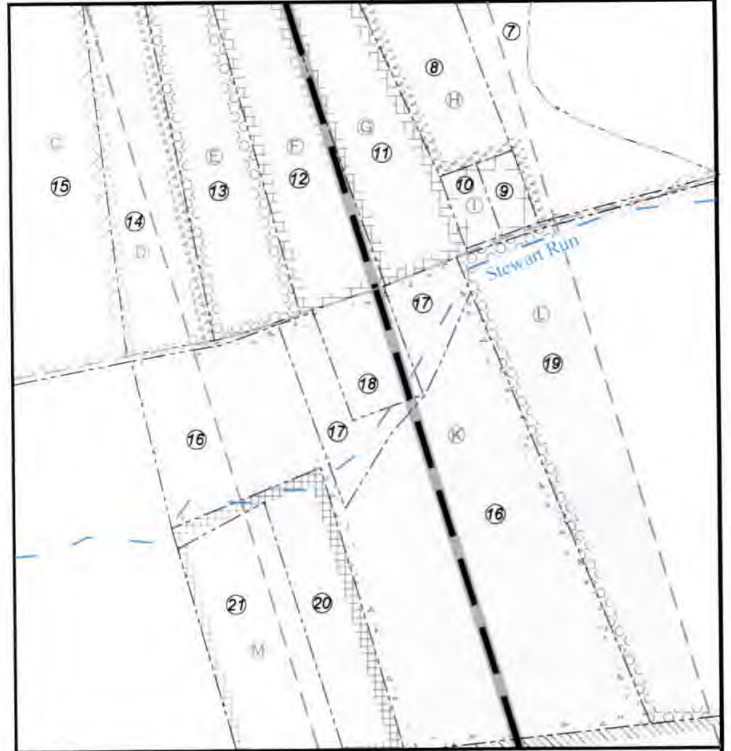
☐ PLUG AND ABANDON ☐ CLEAN OUT AND REPLUG TARGET FORMATION: Marcellus Shale ESTIMATED DEPTH: 21,300' MD

WELL OPERATOR: Antero Resources Corporation

DESIGNATED AGENT: Conrad Baston

ADDRESS: 1615 Wynkoop Street
Denver, CO 80202

ADDRESS: 535 White Oaks Blvd.
Bridgeport, WV 26330



ID	Lessor
A	J & N Management Enterprises, LLC
B	Linda Lou Dennis
C	George A. & Yvonne Starkey
D	Donald Marvin Thomas
E	Joseph B. & Melanie Thomas
F	Lora G. Thomas
G	Norma J. Thompson
H	Roma Hart
I	Sandra Lou Meges
K	Antero Minerals, LLC
L	Michael D. & Carol Wise
M	Myra L. Butcher
N	Ronald L. Adams Trust
P	Jodie L. Yost
Q	Shirley L. Chapman
R	Donald M. Thomas, et ux
U	Paul E. Snider
V	Paula D. Garvey
X	BRC Appalachian Minerals I, LLC
Y	Kenneth M. Lantz
Z	Mary F. Mutschelknaus
AA	Joshua Botkins
AB	George E. Post, et ux
AC	Donald M. Thomas et ux
AD	Andrew E. Harris, et ux
AE	Mary Faye Grove
AF	WV Dept. of Commerce, Division of Natural Resources
AG	Steven D. Zechman & Linda M. Jensen
AI	Ted A. Darlene K. Koerber

No.	TM / Par	Owner	Bk / Pg	Ac.
1	9 / 8	Jimmy E. Patterson, et al	OR49 / 645	68.22
2		Middle Island Creek		
3	9 / 4	Steven D. Zechman & Linda M. Jensen	348 / 422	250.00
4	9 / 9.2	Samuel P. & Katina S. Smith	508 / 210	2.01
5	9 / 9	Patrick L. & Tammy M. Smith	370 / 11	58.50
6	9 / 12	Jimmy E. Patterson, et al	OR79 / 695	30.00
7	9 / 15	Roma L. Hart	277 / 668	5.40
8	9 / 15.3	Roma L. Thomas Hart	WB40 / 475	4.50
9	9 / 15.1	James L. & Sandra Menges	201 / 143	0.46
10	9 / 15.2	James L. & Sandra Menges	221 / 486	0.46
11	9 / 15.4	Roma L. Hart	OR33 / 240	5.53
12	9 / 15.6	Lori K. Thomas	WB37 / 000	5.61
13	9 / 15.7	Joseph B. Thomas	277 / 264	5.65
14	9 / 15.5	Donald M. & Montana Thomas	277 / 656	5.56
15	9 / 14	George A. & Yvonne Starkey	184 / 21	65.51
16	9 / 43	George A. & Yvonne Starkey	350 / 455	15.70
17	9 / 43.4	Kelly Anderson	306 / 450	2.28
18	9 / 43.3	Kelly Anderson	284 / 160	1.34
19	10 / 7	Michael D. & Carol Wise	349 / 420	71.70
20	9 / 43.2	Robert V. & Myra L. Butcher	227 / 187	2.95
21	9 / 43.1	Robert V. & Myra L. Butcher	219 / 305	3.92
22	9 / 47	Coastal Lumber Company	301 / 131	67.24
23	13 / 25.3	Jody Clegg Yost	354 / 552	23.75
24	9 / 51	Troy M. & Alexandra D. Watson	OR11 / 385	21.5
25	10 / 8	Don M. & Montana Thomas	136 / 131	56.36
26	14 / 5.1	Stephen A. & Kimberly D. Starkey	336 / 889	1.00
27	14 / 5.2	Stephen A. & Kimberly D. Starkey	382 / 395	0.55
28	14 / 5	Stephen A. & Kimberly D. Starkey	382 / 395	16.07
29	14 / 1	Donald Marvin & Montana Thomas	215 / 271	27.25
30	13 / 25	Paul E. Snider	338 / 205	26.01
31	13 / 26	Paul E. Snider	189 / 412	83.62
32	2 / 8	Jeffery D. Gorell	415 / 82	68.66
33	2 / 7	Fred Davis	341 / 608	58.41
34	2 / 9	Fred Davis	341 / 608	35.56
35	2 / 10	Joshua D. Botkins	399 / 327	96.00
36	2 / 48	G.E. & A.J. Post	379 / 621	43.25
37	1 / 3	Julie Ann Taylor	OR7 / 737	110.00

FILE NO: 169-54-U-23

DRAWING NO: Conaway Unit 2H 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: May 5 2025

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API WELL NO

47 - 95 - 02926
STATE COUNTY PERMIT

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(IF GAS) PRODUCTION: ☐ STORAGE ☐ DEEP ☒ SHALLOW

LOCATION: ELEVATION: Proposed 694.70 WATERSHED: Outlet Middle Island Creek QUADRANGLE: Middlebourne

DISTRICT: Union

COUNTY: Tyler 07/04/2025

SURFACE OWNER: Jimmy E. & Earl P. Patterson & Linda Lou Dennis

ACREAGE: 68.22

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☐ PERFORATE NEW FORMATION ☒ OTHER PHYSICAL CHANGE IN WELL (SPECIFY) BHL MOD

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WELL OPERATOR: Antero Resources Corporation

DESIGNATED AGENT: Conrad Baston

ADDRESS: 1615 Wynkoop Street

ADDRESS: 535 White Oaks Blvd.

Denver, CO 80202

Bridgeport, WV 26330



June 9th, 2025

West Virginia Department of Environmental Protection
Office of Oil and Gas
Attn: Mr. Taylor Brewer
601 57th Street
Charleston, WV 25304

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

Mr. Brewer:

Antero Resources Corporation (Antero) would like to submit the following permit modifications for approved wells on the Mary Patterson Pad. We are requesting to extend the horizontal lateral length which will change the bottom hole location of the Conaway Unit ~~1H & 2H~~, Incline 1H & 2H and Dudley Unit 1H 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 Wren
Permitting Agent
Antero Resources Corporation

4041719
6/5/25
\$ 7,500.00

Enclosures

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WV Department of
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