



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

Thursday, December 18, 2025
PERMIT MODIFICATION APPROVAL
Horizontal 6A / New Drill

ANTERO RESOURCES CORPORATION
1615 WYNKOOP STREET

DENVER, CO 80202

Re: Permit Modification Approval for TWAIN UNIT 3H
47-103-03794-00-00

Extended Lateral

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 handwritten signature in black ink, appearing to read "Jason Harmon".

H. Jason Harmon
Acting Chief

Operator's Well Number: TWAIN UNIT 3H
Farm Name: WILLIAM WADE FLETCHER
U.S. WELL NUMBER: 47-103-03794-00-00
Horizontal 6A New Drill
Date Modification Issued: 12-18-2025

Promoting a healthy environment.

12/19/2025

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

- 1) Well Operator: Antero Resources Corporation 494507062 103 - Wetzel Green Pine Grove 7.5'
Operator ID County District Quadrangle
- 2) Operator's Well Number: Twain Unit 3H MOD Well Pad Name: Harbour Pad
- 3) Farm Name/Surface Owner: William Wade Fletcher Public Road Access: Ashland Ridge Road
- 4) Elevation, current ground: 1420' Elevation, proposed post-construction: 1410'
- 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: 7800' TVD, Anticipated Thickness- 55 feet, Associated Pressure- 2800#
- 8) Proposed Total Vertical Depth: 7800' TVD
- 9) Formation at Total Vertical Depth: Marcellus
- 10) Proposed Total Measured Depth: 21,500' MD
- 11) Proposed Horizontal Leg Length: 10,144'
- 12) Approximate Fresh Water Strata Depths: 368'
- 13) Method to Determine Fresh Water Depths: From 47103027260000
- 14) Approximate Saltwater Depths: 1638'
- 15) Approximate Coal Seam Depths: N/A
- 16) Approximate Depth to Possible Void (coal mine, karst, other): N/A
- 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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18)

CASING AND TUBING PROGRAM

TYPE	<u>Size</u> <u>(in)</u>	<u>New</u> <u>or</u> <u>Used</u>	<u>Grade</u>	<u>Weight per ft.</u> <u>(lb/ft)</u>	<u>FOOTAGE: For</u> <u>Drilling (ft)</u>	<u>INTERVALS:</u> <u>Left in Well</u> <u>(ft)</u>	<u>CEMENT:</u> <u>Fill-up</u> <u>(Cu. Ft.)/CTS</u>
Conductor	20"	New	H-40	94#	100'	100'	CTS, 96 Cu. Ft.
Fresh Water	13-3/8"	New	J-55	54.5#	418'	418'	CTS, 436 Cu. Ft.
Coal	9-5/8"	New	J-55	36#	3200'	3200'	CTS, 1303 Cu. Ft.
Intermediate							
Production	5-1/2"	New	P-110	23#	21,500'	21,500'	4490 Cu. Ft
Tubing	2-3/8"	New	N-80	4.7#			
Liners							

TYPE	<u>Size (in)</u>	<u>Wellbore</u> <u>Diameter (in)</u>	<u>Wall</u> <u>Thickness</u> <u>(in)</u>	<u>Burst Pressure</u> <u>(psi)</u>	<u>Anticipated</u> <u>Max. Internal</u> <u>Pressure (psi)</u>	<u>Cement</u> <u>Type</u>	<u>Cement</u> <u>Yield</u> <u>(cu. ft./k)</u>
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							

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

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.

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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): 28.34 acres

22) Area to be disturbed for well pad only, less access road (acres): 13.21 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.

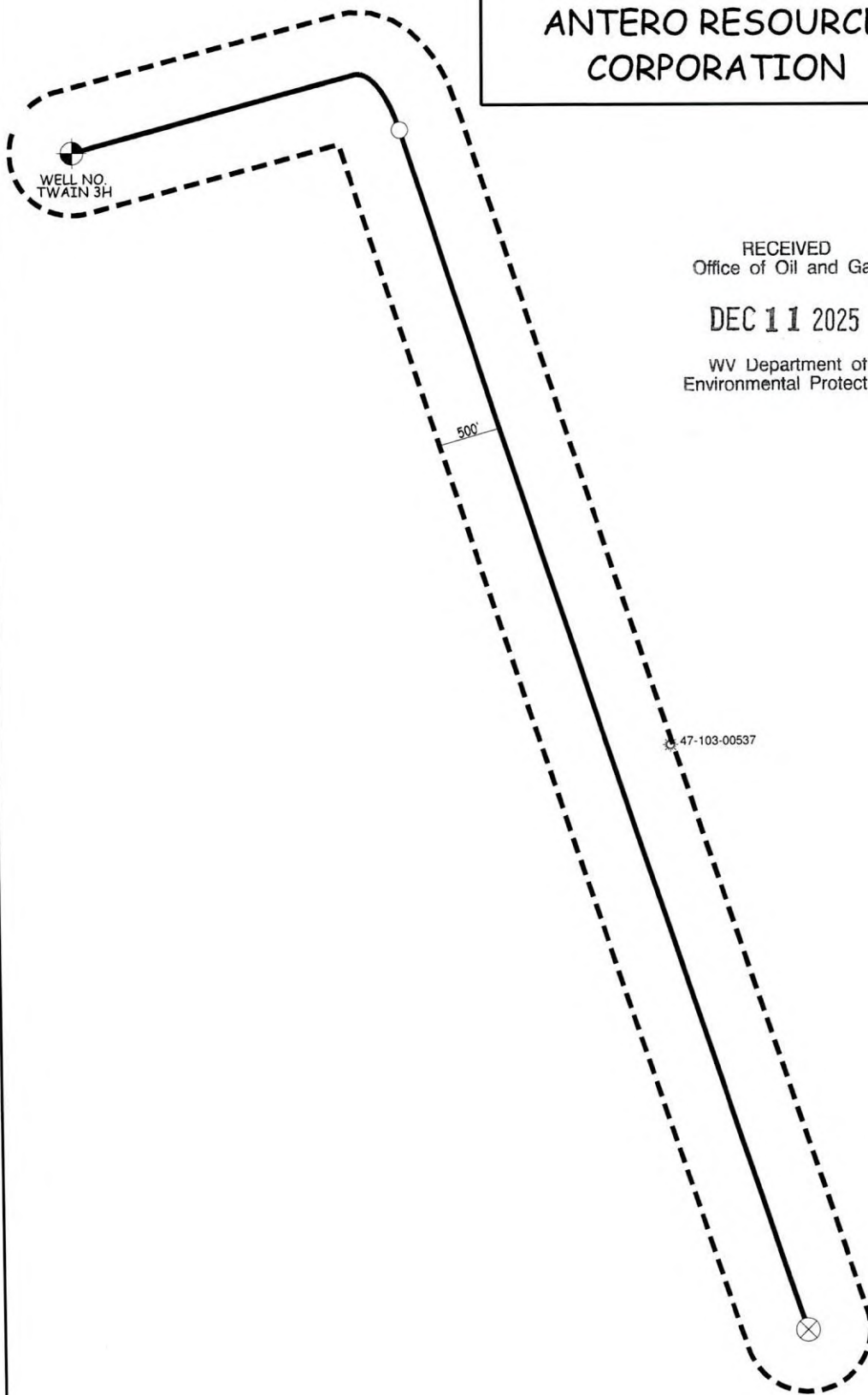
Surface: blowhole clean with air, trip to conductor shoe, trip to bottom, blowhole clean with air, trip out, run casing, circulate pipe capacity + 40 bbls fresh water followed by 25 bbls bentonite mud, 10 bbls fresh water spacer.

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.

HARBOUR PAD
ANTERO RESOURCES
CORPORATION



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WILLOW LAND SURVEYING, PLLC
P.O. BOX 17, PENNSBORO, WV 26415
(304) 659-1717

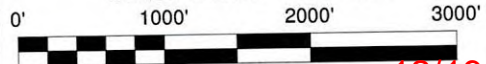
JOB #: 25-018WA

FILE: TWAIN3HAOR.DWG

DATE: 12/4/25

DRAWN BY: D.L.P.

SCALE : 1-INCH = 1000-FEET



12/19/2025

UWI (APINum)	Well Name	Well Number	Operator	Historical Operator	TD	Perforated Interval (shallowest, deepest)	Perforated Formation(s)	Produced Formation(s) not perf'd
4710300537	J C MCELDOWNEY HRS	A205	ALAMCO INC	ALAMCO INC	3,219		Gordon	Weir, Benson, Alexander

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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>AA: William W. Fletcher, Sr. Lease</u> William W. Fletcher, Sr.	Antero Resources Corporation	1/8+	294A/0681
<u>A2: Stone Hill Minerals Holdings, LLC Lease</u> Stone Minerals Holdings, LLC	Antero Resources Corporation	1/8+	259A/0769
<u>A7: Stone Hill Minerals Holdings, LLC Lease</u> Stone Minerals Holdings, LLC	Antero Resources Corporation	1/8+	259A/0769
<u>A1: Stone Hill Minerals Holdings, LLC Lease</u> Stone Minerals Holdings, LLC	Antero Resources Corporation	1/8+	259A/0769
<u>C: Raymond J. Heilman Lease</u> Raymond J. Heilman	Antero Resources Corporation	1/8+	283A/0073
<u>D: Martha Clark Revocable Trust Lease</u> Martha Clark Revocable Trust	Antero Resources Corporation	1/8+	307A/0574
<u>A3: Stone Hill Minerals Holdings, LLC Lease</u> Stone Hill Minerals Holdings, LLC	Antero Resources Corporation	1/8+	259A/0769
<u>I: Raymond J. Heilman Lease</u> Raymond J. Heilman	Antero Resources Corporation	1/8+	283A/0073
<u>K1: Nancy Lee Rexrode Lease</u> Nancy Lee Rexrode	Antero Resources Corporation	1/8+	293A/0932
<u>O: Chesapeake Appalachia, LLC Lease</u> Chesapeake Appalachia, LLC SWN Production Company Antero Exchange Properties, Inc.	SWN Production Company Antero Exchange Properties, Inc. Antero Resources Corporation	Assignment Assignment Name Change	157A/0540 177A/0533 0013/0311
<u>V: Wilda N. and Robert L. Yeager Lease</u> Wilda N. and Robert L. Yeager	Antero Resources Corporation	1/8+	437A/0174
<u>W: J. Wells Eakin Lease</u> J. Wells Eakin Mountain Link Associates, Inc. Rockford Energy, LLC Montani Energy, LLC	Mountain Link Associates, Inc. Rockford Energy, LLC Montani Energy, LLC Antero Resources Corporation	1/8 Assignment Assignment Assignment	108A/0869 122A/0882 0394/0435 427A/0250
<u>X: Edward B. and Sharon F. Kirk Lease</u> Edward B. and Sharon F. Kirk Mountain Link Associates, Inc. Whittle Corporation Montani Energy LLC Antero Resources Appalachian Corporation	Mountain Link Associates, Inc. Whittle Corporation Montani Energy LLC Antero Resources Appalachian Corporation Antero Resources Corporation	1/8 Assignment Assignment Assignment Name Change	088A/0356 091A/0280 130A/0001 130A/0658 0121/0008

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**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
<u>Y: Black Gold Group, LTD Lease</u>				
	Black Gold Group, LTD	Antero Resources Corporation	1/8+	306A/0481

*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.

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*Co-tenancy utilization – Antero is utilizing the Co-tenancy Modernization and Majority Protection Act to proceed with the 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 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

LATITUDE 39°37'30"

9,301'

LATITUDE 39°37'30"

3,401' TO BOTTOM HOLE

Antero Resources
Corporation
Well No. Twain #3H

A1	STONE HILL MINERALS HOLDINGS, LLC.
A2	STONE HILL MINERALS HOLDINGS, LLC.
A3	STONE HILL MINERALS HOLDINGS, LLC.
A4	STONE HILL MINERALS HOLDINGS, LLC.
A6	STONE HILL MINERALS HOLDINGS, LLC.
A7	STONE HILL MINERALS HOLDINGS, LLC.
B	SIBURT PROPERTIES, LLC
C	RAYMOND J. HEILMAN
D	MARTHA CLARK REVOCABLE TRUST
E1	STONE HILL MINERALS HOLDINGS, LLC.
I	RAYMOND J. HEILMAN
K1	NANCY LEE REXRODE
L	NANCY LEE REXRODE
O	CHESAPEAKE APPALACHIA, LLC.
P	KKS MINERALS, LLC.
Q	CAROL SUE HAUGHT
S	GLOBAL MINERAL HOLDINGS, LLC
U	KEVIN YEAGER
V	WILDA N. AND ROBERT L. YEAGER
W	J. WELLS EAKIN
X	EDWARD B. AND SHARON F. KIRK
Y	BLACK GOLD GROUP, LTD.
Z	ACROPOLIS, INC.
AA	WILLIAM V. FLETCHER, SR.
AB	WILLIAM V. FLETCHER, SR.
AC	STONE HILL MINERALS HOLDINGS, LLC.
AD	STONE HILL MINERALS HOLDINGS, LLC.
AE	STONE HILL MINERALS HOLDINGS, LLC.
AF	BLACK GOLD GROUP LIMITED

NOTES:

WELL 3H TOP HOLE INFORMATION:
N: 406,241ft E: 1,662,007ft
LAT: 39°36'33.02" LON: 80°41'58.85"
BOTTOM HOLE INFORMATION:
N: 396,775ft E: 1,667,785ft
LAT: 39°35'00.22" LON: 80°40'43.44"
WEST VIRGINIA COORDINATE
SYSTEM OF 1927 NORTH ZONE.
ZONE WAS DERIVED FROM
MEASUREMENTS TAKEN WITH
TRIMBLE GEOXT SUBMETER
MAPPING GRADE GPS UNIT.
PLAT ORIENTATION, CORNER,
AND WELL REFERENCE TIE LINES
ARE BASED ON GRID NORTH.

(NAD) 83 (UTM) ZONE 17 COORDS:
WELL 3H TOP HOLE INFORMATION:
N: 4,384,433m E: 525,796m
BOTTOM HOLE INFORMATION:
N: 4,381,578m E: 527,604m

(NAD) 27 (UTM) ZONE 17 COORDS:
WELL 3H TOP HOLE INFORMATION:
N: 14,383,877ft E: 1,725,001ft
POINT OF ENTRY INFORMATION:
N: 14,384,096ft E: 1,727,622ft
BOTTOM HOLE INFORMATION:
N: 14,374,512ft E: 1,730,935ft

WV NORTH ZONE
GRID NORTH

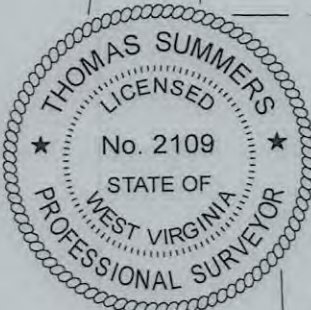
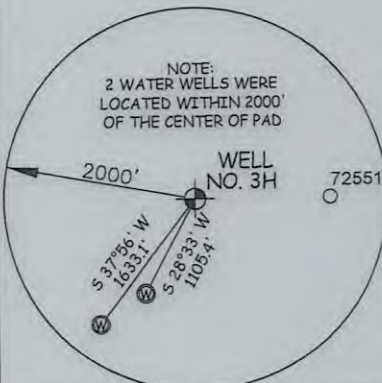
5,766'

LONGITUDE 80°40'00"

LONGITUDE 80°40'00"

COUNTY NAME

PERMIT



I THE UNDERSIGNED, HEREBY CERTIFY THAT THIS PLAT IS CORRECT
TO THE BEST OF MY KNOWLEDGE AND BELIEF AND SHOWS ALL THE
INFORMATION REQUIRED BY LAW AND THE RULES ISSUED AND
PERSCRIBED BY THE DEPARTMENT OF ENVIRONMENTAL PROTECTION.



STATE OF WEST VIRGINIA, DIVISION
OF ENVIRONMENTAL PROTECTION,
OFFICE OF OIL AND GAS

WILLOW LAND SURVEYING PLLC
220 MASONIC AVE. PENNSBORO
WEST VIRGINIA 26415

GREEN DISTRICT	9-10	WILMA MORRIS	9-50	RONALD HALL
4-26 RICHARD KERNAN	9-11	DAVID MORRIS	9-59	RONALD HALL
4-27 WILLIAM FLETCHER	9-11.1	WILMA MORRIS	9-64	NATHAN JOHNSON
4-28 TERRY LONG	9-12	ROBERT MORRIS CEMETERY	10-4	NANCY REXROAD
4-37 HARRISON CEMETERY	9-12.1	TAMMY DAUGHERTY	10-5.1	DALLISON LUMBER INC.
4-38 WILLIAM FLETCHER	9-12.2	NANCY REXROAD	10-6	NANCY REXROAD
4-39 WILLIAM FLETCHER	9-13	WILMA MORRIS	10-10	WILDA YEAGER
4-40 WILLIAM FLETCHER	9-24	NATHAN JOHNSON	10-12	KEVIN YEAGER
4-41 RAYMOND HEILMAN	9-25	WILMA MORRIS	10-13	WILDA YEAGER
4-42 RAYMOND HEILMAN	9-26	NANCY REXROAD	10-14	CLIFFORD BRIGGS
4-49 WILLIAM FLETCHER	9-27	TRIXIE ROBINSON	10-18	RONALD HALL
4-50 WILLIAM FLETCHER	9-37	ROBERT YEAGER	10-20	CLIFFORD BRIGGS
4-51 WILMA MORRIS	9-38	COASTAL FOREST RESOURCES CO.	10-21	RONALD HALL
4-52 RAYMOND HEILMAN	9-39	ROBERT YEAGER	14-4	HARRY PALMER
4-54 RAYMOND HEILMAN	9-40	RONALD HALL	14-10	SANDRA FORTNEY
5-57 DAVID MORRIS	9-40.1	RONALD HALL		GRANT DISTRICT
9-4 RAYMOND HEILMAN	9-40.2	GARY HEADLEY	6-8	FREEDA BROWN

JOB # 25-016WA

DRAWING # TWAIN3HR

SCALE 1" = 2000'

MINIMUM DEGREE OF

ACCURACY SUBMETER

PROVEN SOURCE OF ELEV.

SUBMETER MAPPING GRADE GPS

STATE OF WEST VIRGINIA

DEPARTMENT OF ENERGY

DIVISION OF OIL AND GAS

LEGEND

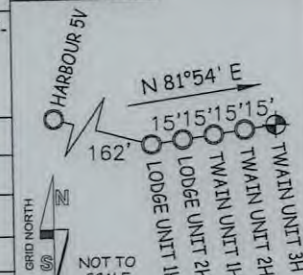
- — — Surface Owner Boundary Lines +/-
- - - Adjoining Surface Tracts +/-
- ⊕ Found monument, as noted

Thomas Summers
THOMAS SUMMERS P.S. 2109

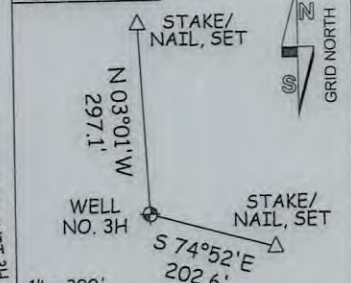
DATE 11/07/2025

OPERATOR'S WELL# TWAIN #3H

PAD LAYOUT



REFERENCES



WELL TYPE: OIL ☐ GAS ☒ LIQUID INJECTION ☐ WASTE DISPOSAL ☐
(IF "GAS") PRODUCTION ☒ STORAGE ☐ DEEP ☐ SHALLOW ☒
LOCATION: ELEVATION 1,410' PROPOSED WATERSHED FISHING CREEK
QUADRANGLE PINE GROVE 7.5' DISTRICT GREEN COUNTY WETZEL
SURFACE OWNER WILLIAM WADE FLETCHER ACREAGE 49.8 ACRES +/-
OIL & GAS ROYALTY OWNER WILLIAM W. FLETCHER, SR. LEASE ACREAGE 49.8 ACRES +/-
PROPOSED WORK: DRILL ☐ CONVERT ☐ DRILL DEEPER ☒ REDRILL ☐ FRACTURE OR STIMULATE ☒
PLUG OFF OLD FORMATION ☐ PERFORATE NEW FORMATION ☒ OTHER PHYSICAL CHANGE IN WELL
(SPECIFY) MOD-BHL PLUG & ABANDON CLEAN OUT & REPLUG
TARGET FORMATION MARCELLUS ESTIMATED DEPTH 7,800' TVD 21,500' MD
WELL OPERATOR ANTERO RESOURCES CORP. DESIGNATED AGENT CONRAD BASTON
ADDRESS 1615 WYNKOOP ST. ADDRESS 535 WHITE OAKS BLVD
DENVER, CO 80202 BRIDGEPORT, WV 26330

December 9, 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 well on the existing Harbour Pad: Lodge Unit 1H (47-103-03790), Lodge Unit 2H (47-103-03791), Twain Unit 1H (47-103-03792), Twain Unit 2H (47-103-03793), Twain Unit 3H (47-103-03794). Expedited.

Attached you will find the following:

- AOR
- Revised Form WW-6B
- Revised Form WW-6A1
- Revised Mylar Plat

If you have any questions please feel free to contact me at (303) 357-6959.

Thank you in advance for your consideration.

Sincerely,



Stefan Gaspar
Permitting Agent
Antero Resources Corporation

Enclosures

Lodge Unit 1H	CK# 4047626	AMT \$ 7,500
Lodge Unit 2H	CK# 4047627	AMT \$ 7,500
Twain Unit 1H	CK# 404629	AMT \$ 7,500
Twain Unit 2H	CK# 404630	AMT \$ 7,500
Twain Unit 3H	CK# 4047631	AMT \$ 7,500

12/19/2025