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 INCLINE UNIT 1H
47-095-02927-00-00

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:	INCLINE UNIT 1H
Farm Name:	JIMMY E. & EARL P. PATTERSON & LINDA LOU
U.S. WELL NUMBER:	47-095-02927-00-00
Horizontal 6A	New Drill
Date Modification Issued:	6/27/2025

Promoting a healthy environment.

07/04/2025

WW-6B
(04/15)

API NO. 47- 095 - 02927
OPERATOR WELL NO. Incline Unit 1H MOD
Well Pad Name: Mary Patterson Pad

#404089
5/13/25
$7,500.00

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

1) Well Operator:	Antero Resources Corporat	494507062	095 - Tyler	Union	Middlebourne
		Operator ID	County	District	Quadrangle

2) Operator's Well Number: Incline Unit 1H 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: 17800' MD

11) Proposed Horizontal Leg Length: 9294.3'

12) Approximate Fresh Water Strata Depths: 85', 185', 235'

13) Method to Determine Fresh Water Depths: 47-095-00081

14) Approximate Saltwater Depths: 718

15) Approximate Coal Seam Depths: None

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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07/04/2025
Stephen Mccoy Digitally signed by Stephen Mccoy Date: 2025.06.09 10:05:47 -04'00'

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#	17800	17800	3558 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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07/04/2025
Stephen Mccoy
Digitally signed by Stephen Mccoy
Date: 2025.06.09 10:05:38 -04'00'

WW-6B
(10/14)

API NO. 47- 095 - 02927
OPERATOR WELL NO. Incline Unit 1H 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): 17.05 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.

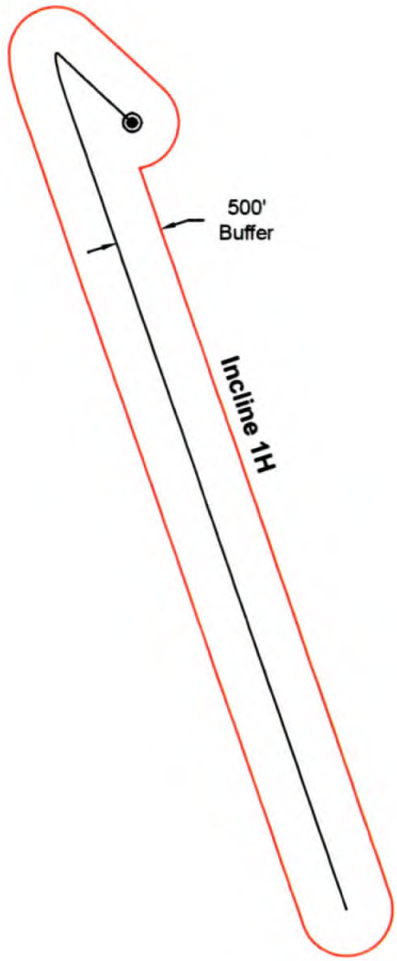
07/04/2025

Stephen Mccoy Digitally signed by Stephen Mccoy Date: 2025.06.09 10:05:28 -04'00'

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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0' 2000' 4000'

Scale: 1 inch = 2000 feet

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:	170-54-U-23
FIELD CREW:	C.L., K.M.	DRAWING NO:	Incline 1H AOR

Sheet 1 of 1

07/04/2025

WW-6A1

Operator's Well Number Incline Unit 1H MOD

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: Linda Lou Dennis Lease Linda Lou Dennis	Antero Resources Corporation	1/8+	234/5
Z: WV Dept. of Commerce Division of Natural Resources Lease WV Dept. of Commerce Division of Natural Resources Lease	Antero Resources Corporation	1/8+	339/518
B: Ted A. & Darlene K. Koerber Lease Ted A. & Darlene K. Koerber	Antero Resources Corporation	1/8+	234/13
C: George Alan Starkey, et ux Lease George Alan Starkey, et ux SEP Exploration, LLC	SEP Exploration, LLC Antero Resources Corporation	1/8+ Agreement	281/509 347/568
G: Antero Minerals, LLC Lease Antero Minerals, LLC	Antero Resources Corporation	1/8+	307/426
I: Tyler Rod & Gun Club, Inc Lease Tyler Rod & Gun Club, Inc	Antero Resources Corporation	1/8+	306/664
L: FG, LLC Lease FG, LLC	Antero Resources Corporation	1/8	Pooled Tract
M: Five Star Resources Lease Five Star Resources	Antero Resources Corporation	1/8	Pooled Tract
K: Kevin R. Roberts Lease Kevin R. Roberts	Antero Resources Corporation	1/8+	559/199
O: Catherine E. Eddy Lease Catherine E. Eddy	Antero Resources Corporation	1/8+	297/178

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WV Department of Environmental Protection

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

07/04/2025

WW-6A1
(5/13)

Operator's Well No. Incline Unit 1H MOD

INFORMATION SUPPLIED UNDER WEST VIRGINIA CODE
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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:

Lease Name or Number	Grantor, Lessor, etc.	Grantee, Lessee, etc.	Royalty	Book/Page
R: BC Farms Investments, LLC Lease				
	BC Farms Investments, LLC	Antero Resources Corporation	1/8+	297/592

*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 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

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JUN 10 2025
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Environmental Protection

07/04/2025

Antero Resources
Well No. Incline 1H
BHL-MOD
Antero Resources Corporation

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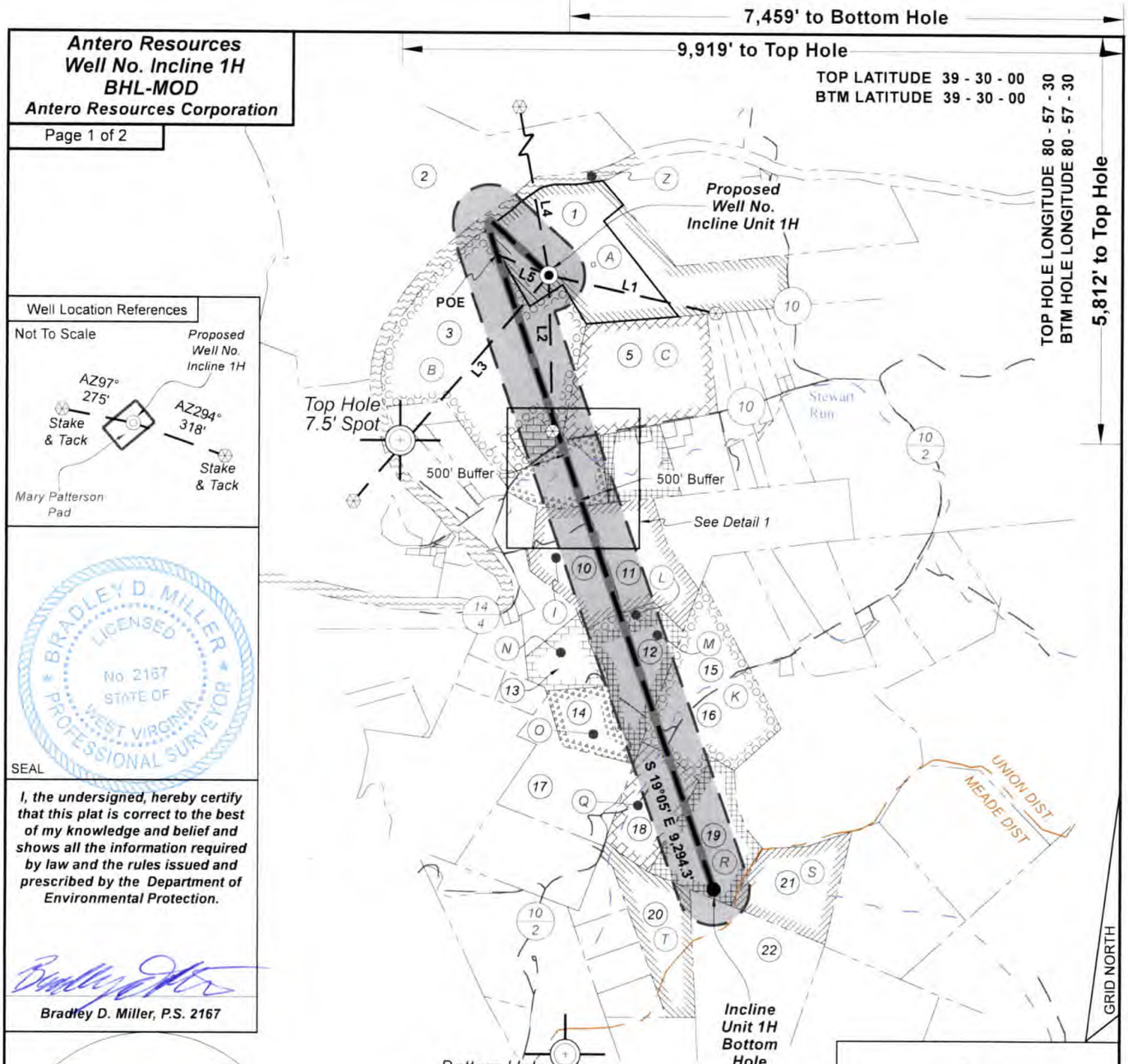


Well Location References

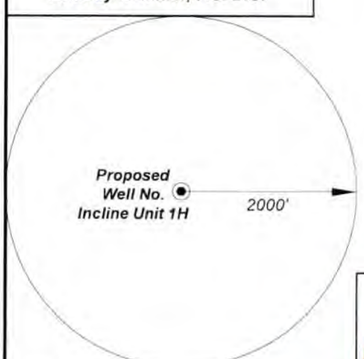
Not To Scale

SEAL

BRADLEY D. MILLER LICENSED No. 2167 STATE OF WEST VIRGINIA PROFESSIONAL SURVEYOR

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 prescribed by the Department of Environmental Protection.

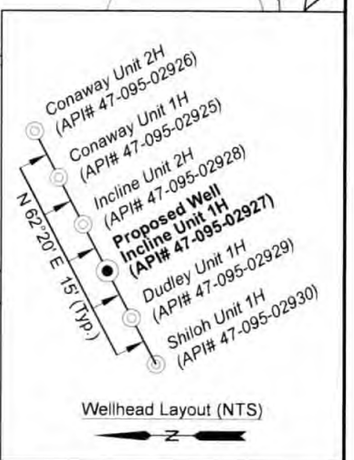
Bradley D. Miller, P.S. 2167



Note: No water wells were found within 2000' of proposed well. No occupied dwellings or buildings 2,500 square feet or larger used to house or shelter dairy cattle or poultry husbandry are located within 625' of the center of the well pad.

ALLEGHENY SURVEYS, INC.

Tag	Bearing	Dist.	Monument
L1	N 77°27' W	2,378.4'	Capped Iron Rebar
L2	N 01°38' W	2,159.6'	1/2" Rebar
L3	N 40°37' E	4,141.3'	1" Pipe
L4	S 10°12' E	3,356.4'	Iron Pin
L5	N 68°38' W	770.0'	Point of Entry



FILE NO: 170-54-U-23
DRAWING NO: Incline Unit 1H
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: April 16, 2025
OPERATOR'S WELL NO. Incline Unit 1H

API WELL NO
47 - 095 - 02927
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 COUNTY: Tyler 07/04/2025
SURFACE OWNER: Jimmy E. & Earl P. Patterson & Linda Lou Dennis ACREAGE: 68.22
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 6,300' TVD
☐ PLUG AND ABANDON ☐ CLEAN OUT AND REPLUG TARGET FORMATION: Marcellus Shale ESTIMATED DEPTH: 17,800' MD

WELL OPERATOR: Antero Resources Corporation DESIGNATED AGENT: Conrad Baston
ADDRESS: 1615 Wynkoop Street ADDRESS: 535 White Oaks Blvd.
Denver, CO 80202 Bridgeport, WV 26330

Antero Resources
Well No. Incline 1H
BHL-MOD
Antero Resources Corporation

Page 2 of 2

Legend

- Proposed gas well
- Well Reference, as noted
- Monument, as noted
- Existing Well, as noted
- Creek or Drain
- Existing Road
- Surface boundary (approx.)
- State / County line

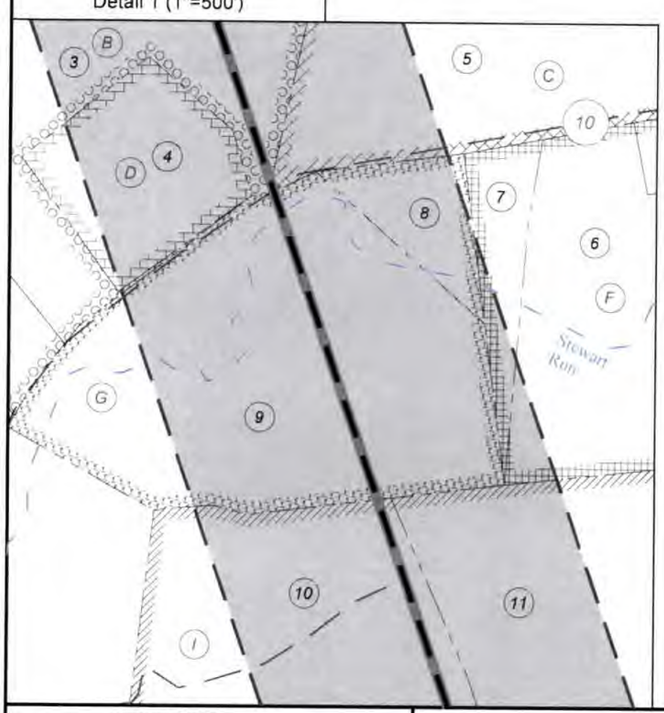
Notes

West Virginia Coordinate System of 1927, North Zone based upon Differential GPS Measurements.
Well No. Incline Unit 1H Top Hole coordinates are
N: 361,912.55' Latitude: 39°29'02.55"
E: 1,578,483.22' Longitude: 80°59'36.51"
Bottom Hole coordinates are
N: 353,409.73' Latitude: 39°27'38.91"
E: 1,580,805.45' Longitude: 80°59'05.11"
UTM Zone 17, NAD 1983
Top Hole Coordinates Bottom Hole Coordinates
N: 4,370,502.072m N: 4,367,923.488m
E: 500,575.518m E: 501,326.249m
Plat orientation and corner and well references are based upon the grid north meridian.
Well location references are based upon the magnetic meridian.

Notes:
Well No. Incline Unit 1H
UTM Zone 17, NAD 1927
Top Hole Coordinates
N: 14,338,175.48'
E: 1,642,257.33'
Point of Entry Coordinates
N: 14,338,443.84'
E: 1,641,535.85'
Bottom Hole Coordinates
N: 14,329,715.53'
E: 1,644,720.35'

ID	Lease
A	Linda Lou Dennis
B	Ted A. & Darlene K. Koerber
C	George Alan Starkey, et ux
D	Kathy Sue Herron
F	Anthony D. Furbee
G	Antero Minerals, LLC
I	Tyler Rod & Gun Club, Inc.
K	Kevin R. Roberts
L	FG, LLC
M	Five Star Resources
N	David O. Morris
O	Linda L. & Richard Melvin
Q	Catherine E. Eddy
R	BC Farms Investments, LLC
S	Jane Doan Schwab
T	Catherine E. Eddy
Z	WV Dept. of Commerce, Division of Natural Resources

Detail 1 (1"=500')



Tyler County

No.	TM / Par	Owner	Bk / Pg	Ac.
1	9 / 8	Jimmy E. Patterson, et al	OR49 / 645	68.22
2	9 / 3	Gregory L. & Shirley F. Michael	357 / 131	293.00
3	9 / 7.2	Ted A. & Darlene K. Koerber	301 / 157	112.09
4	9 / 7	Kathy S. Herron	351 / 545	5.47
5	9 / 14	George A. & Yvonne Starkey	184 / 21	65.51
6	9 / 41	Harold D. Furbee Estate	OR80 / 332	7.97
7	9 / 40.1	Patricia D. & Kenneth O. Thomas, Jr.	OR18 / 401	2.37
8	9 / 40	Gary & Joyce Hagerty	243 / 261	2.35
9	9 / 40.2	Richard Danser	626 / 19	20.00
10	9 / 45	Tyler Rod & Gun Club	167 / 143	33.77
11	9 / 46	Tyler Rod & Gun Club	159 / 229	33.83
12	13 / 22	James E. & J. Thomas Keeder	399 / 343	35.00
13	13 / 21	Melissa G. Mullenix, et al	355 / 679	17.15
14	13 / 23	Linda & Conner Melvin, et al	W50 / 108	18.04
15	13 / 24.1	James E. & Marsha Delancey	344 / 145	30.69
16	13 / 24.2	Marilyn & Mark Spiker, et al	569 / 276	31.13
17	13 / 28	James A. Watson	338 / 132	41.90
18	13 / 24	Larry Moore	593 / 324	28.56
19	13 / 27	George A. & Catherine E. Eddy	169 / 756	39.15
20	1 / 7.1	George A. & Catherine E. Eddy	OR16 / 756	34.36
21	1 / 8	James P. Fleshers	576 / 260	37.82
22	1 / 2	Howard O. & Dawn C. Fleshers	334 / 281	91.00

FILE NO: 170-54-U-23
DRAWING NO: Incline Unit 1H
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: April 16 2025
OPERATOR'S WELL NO. Incline Unit 1H

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47 - 095 - 02927
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
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☐ PERFORATE NEW FORMATION ☒ OTHER PHYSICAL CHANGE IN WELL (SPECIFY) BHL-MOD 6,300' TVD
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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