



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, October 13, 2022
PERMIT MODIFICATION APPROVAL
Horizontal 6A / New Drill

ANTERO RESOURCES CORPORATION
1615 WYNKOOP STREET
DENVER, CO 80202

Re: Permit Modification Approval for PHEBE 2H
47-017-06938-00-00

Lateral Extension, 0' to 15146.7' Horizontal Leg Length, 0' to 25800' Measured Depth

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 blue ink, appearing to read 'James A. Martin', is positioned above the printed name and title.

James A. Martin
Chief

Operator's Well Number: PHEBE 2H
Farm Name: JEFFREY D & CRAIG A HILL ET AL
U.S. WELL NUMBER: 47-017-06938-00-00
Horizontal 6A New Drill
Date Modification Issued: 10/13/2022

Promoting a healthy environment.

10/14/2022

WW-6B
(04/15)

CHK#
4012948
\$50000
Sign-offs

API NO. 47-017 - 06938
OPERATOR WELL NO. Phebe Unit 2H MOD
Well Pad Name: Lemley Pad

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

1) Well Operator: Antero Resources Corporation 494507062 017-Doddridge Grant Smithburg 7.5'
Operator ID County District Quadrangle

2) Operator's Well Number: Phebe Unit 2H MOD Well Pad Name: Lemley Pad

3) Farm Name/Surface Owner: Phillip N. Hill, et al Public Road Access: Hollow Run Rd

4) Elevation, current ground: 1304' AS BUILT Elevation, proposed post-construction: _____

5) Well Type (a) Gas Oil _____ Underground Storage _____

Other _____

(b) If Gas Shallow Deep _____

Horizontal

SAW
10/7/2022

6) Existing Pad: Yes or No Yes

7) Proposed Target Formation(s), Depth(s), Anticipated Thickness and Expected Pressure(s):
Marcellus Shale: 7400' TVD, Anticipated Thickness- 55 feet, Associated Pressure- 2850#

8) Proposed Total Vertical Depth: 7400' TVD

9) Formation at Total Vertical Depth: Marcellus

10) Proposed Total Measured Depth: 25800' MD

11) Proposed Horizontal Leg Length: 15146.7'

12) Approximate Fresh Water Strata Depths: 225', 279', 790'

13) Method to Determine Fresh Water Depths: 47-017-04998, 47-017-04719. Depths have been adjusted according to surface elevations.

14) Approximate Saltwater Depths: 1460', 1673', 1700', 1710'

15) Approximate Coal Seam Depths: 980'

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

(a) If Yes, provide Mine Info: Name: _____
Depth: _____
Seam: _____
Owner: _____

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OCT 11 2022
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Environmental Protection

WW-6B
(04/15)

API NO. 47- 017 - 0693 8
 OPERATOR WELL NO. Phebe Unit 2H MOD
 Well Pad Name: Leml ePad

18)

CASING AND TUBING PROGRAM

<u>TYPE</u>	<u>Size (in)</u>	<u>New or Used</u>	<u>Grade</u>	<u>Weight per ft. (lb/ft)</u>	<u>FOOTAGE: For Drilling (ft)</u>	<u>INTERVALS: Left in Well (ft)</u>	<u>CEMENT: Fill-up (Cu. Ft.)/CTS</u>
Conductor	20"	New	X60	78.67#	100	100	CTS, 96 Cu. Ft.
Fresh Water	13-3/8"	New	J/K-55	54.5#	840'	840'	CTS, 433 Cu. Ft.
Coal	9-5/8"	New	J/K-55	36#	3200'	3200'	CTS, 1303 Cu. Ft.
Intermediate							
Production	5-1/2"	New	P-110HP	23#	25800'	25800'	5584 Cu. Ft
Tubing	2-3/8"	New	N-80	4.7#		7100'	
Liners							

*SOW
10/7/2022*

<u>TYPE</u>	<u>Size (in)</u>	<u>Wellbore Diameter (in)</u>	<u>Wall Thickness (in)</u>	<u>Burst Pressure (psi)</u>	<u>Anticipated Max. Internal Pressure (psi)</u>	<u>Cement Type</u>	<u>Cement Yield (cu. ft./k)</u>
Conductor	20"	24"	0.438"	1530	50	Class A	~1.18
Fresh Water	13-3/8"	17-1/2"	0.38"	2730	1000	Class A	~1.18
Coal	9-5/8"	12-1/4"	0.352"	3520	1500	Class A	~1.18
Intermediate							
Production	5-1/2"	8-3/4" & 8-1/2"	0.415"	12,630	2500	Lead-HPOZ & 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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19) Describe proposed well work, including the drilling and plugging back of any pilot hole:

Drill, perforate, fracture a new horizontal shallow well and complete Marcellus Shale.

*Antero will be air drilling the fresh water string which makes it difficult to determine when fresh water is encountered. Therefore, we have built in a buffer for the casing setting depth which helps to ensure that all fresh water zones are covered.

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): 27.26 acres

22) Area to be disturbed for well pad only, less access road (acres): 4.31 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 cement.
Surface: Class A cement with 2-3% calcium chloride and 1/4 lb of flake
Intermediate: Class A 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

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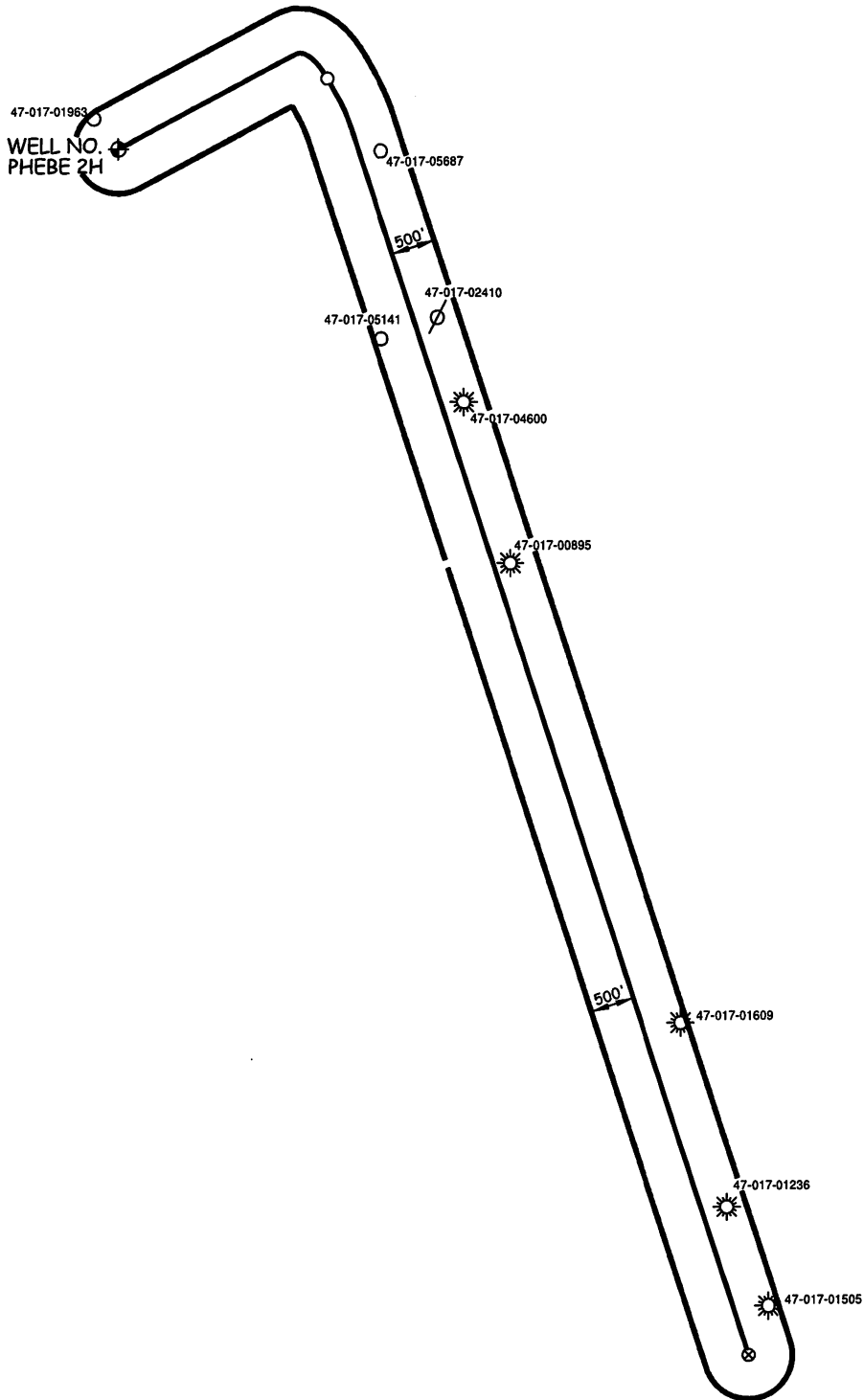
25) Proposed borehole conditioning procedures:

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.

WV Department of
Environmental Protection

*Note: Attach additional sheets as needed.

LEMLEY PAD ANTERO RESOURCES CORPORATION



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Office of Oil and Gas
OCT 03 2022
WV Department of
Environmental Protection

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

JOB #: 22-005WA

FILE: PHEBE2HAOR.DWG

DATE: 09/19/22

DRAWN BY: D.L.P.

SCALE : 1-INCH = 2000-FEET



10/14/2022

UWI (APINum)	Well Name	Well Number	Operator	Historical Operator	TD	Perforated Interval (shallowest, deepest)	Perforated Formation(s)	Producible Formation(s) not perf'd
47017019630000	W BOYCE	5124	DOMINION TRANSMISION	HOPE NATURAL GAS	2,294		Big Injun, Squaw	Alexander, Berea
47017056870000	POWELL	2	JAY-BEE OIL & GAS	JAY BEE PRODUCTION	5,335	4833 - 4835	Benson	Alexander, Berea
47017024100000	ADAMS HEIRS	1494	HAUGHT GLENN L	CONSOL GAS SUPPLY CRP				
47017051410000	LETT GERALD & AUDREY	8512	DOMINION EXPL&PROD	DOMINION EXPL&PROD				
47017046000000	MARTIN J M	1	ROSS & WHARTON GAS	ROSS MIKE INC	6,012	5429 - 5600	Alexander	Berea
47017008950000	J H MARTIN	1	ROSS & WHARTON GAS	SMITH CARL E INC	2,030		Maxton, Blue Monday, Big Injun	Alexander, Berea
47017016090000	FRUM C L HRS	A-420	CLEM ENERGY LLC	ALLEGHENY LAND&MNRL	2,198	2051 - 2101	Big Injun, Squaw	Alexander, Berea
47017012360000	JOHN P ORR	2	R & R OIL & GAS LLC	CAREY OIL	2,050		Big Injun	Alexander, Berea
47017015050000	DENNISON HEIRS	1	R & R OIL & GAS LLC	SCOTT JAMES F	2,144		Big Injun	Alexander, Berea

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OCT 03 2014
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LATITUDE 39°20'00"

3882'

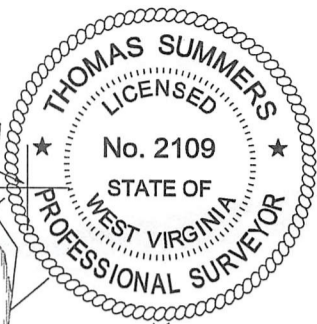
8,419' TO BOTTOM HOLE
LATITUDE 39°17'30"

Antero Resources Corporation
Well No. Phebe Unit 2H

NOTES:
WELL 2H TOP HOLE INFORMATION:
N: 303,141ft E: 1,666,088ft
LAT: 39°19'34.60" LON: 80°40'49.40"
BOTTOM HOLE INFORMATION:
N: 289,531ft E: 1,673,168ft
LAT: 39°17'21.00" LON: 80°39'17.08"
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.

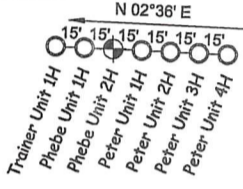
(NAD) 83 (UTM) ZONE 17 COORDS:
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N: 4,353,043m E: 527,563m
BOTTOM HOLE INFORMATION:
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WV NORTH ZONE
GRID NORTH

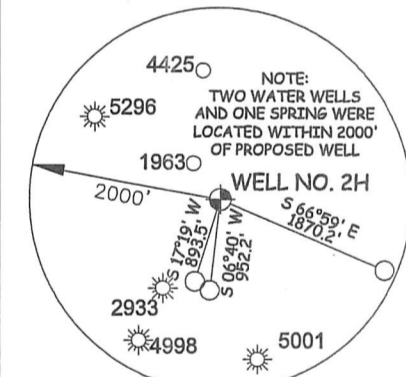
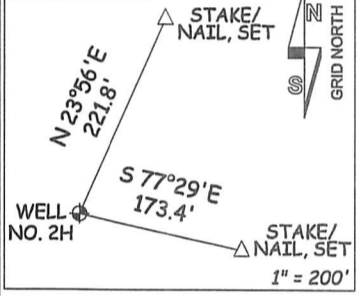


NOTE
NO OCCUPIED DWELLINGS OR BUILDINGS TWO THOUSAND FIVE HUNDRED (2,500) SQUARE FEET OR LARGER USED TO HOUSE OR SHELTER DAIRY CATTLE OR POULTRY HUSBANDRY ARE LOCATED WITHIN SIX HUNDRED TWENTY-FIVE (625) FEET OF THE CENTER OF THE WELL PAD.

PAD LAYOUT
NOT TO SCALE



REFERENCES



GRANT DISTRICT - DODDRIDGE COUNTY

9-34	HFP LLC
10-25	DENNIS POWELL
13-05	HFP LLC
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13-11.1	JEFFERY HILL
13-11.2	JEFFERY HILL
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13-20.2	SKYLITE COMMUNICATIONS
13-20.4	DANNY MARSHALL
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13-35	JEFFERY HILL
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(NAD) 27 (UTM) ZONE 17 COORDS:
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N: 14,280,893ft E: 1,730,800ft
POINT OF ENTRY INFORMATION:
N: 14,281,717ft E: 1,733,151ft
BOTTOM HOLE INFORMATION:
N: 14,267,409ft E: 1,738,103ft

MINERAL OWNERSHIP

B CREED JONES ET AL
C DELORIS NADINE DAVIS
D MARIETTE LEMLEY ET AL
E SIDNEY AUSTIN SMITH TRUST LLC
F DELORIS NADINE DAVIS
G CSM HOLDINGS LLC
H CHAD F. JOHNSON
I SIDNEY THOMPSON
J PAULA KAY REYNOLDS
K MIKE ROSS INC.
L Z.T. BALL ET AL
M KAREN R. BEHM
N ANTERO MINERALS LLC
O LARRY C. CALICOAT
P RANDALL E. SHEARER
Q RANDALL E. SHEARER
R EMAX GAS CO. ET AL
S F. G. ORR ET AL
T LINDA R. NEPPS

JOB # 17-030WA
DRAWING # PHEBE2HR1
SCALE 1" = 2000'

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.

LEGEND
--- Surface Owner Boundary Lines +/-
--- Interior Surface Tracts +/-
X Existing Fence
Found monument, as noted

MINIMUM DEGREE OF ACCURACY SUBMETER
PROVEN SOURCE OF ELEV. SUBMETER MAPPING GRADE GPS



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

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

THOMAS SUMMERS P.S. 2109
DATE 09/09/22

STATE OF WEST VIRGINIA DEPARTMENT OF ENERGY DIVISION OF OIL AND GAS
WELL TYPE: OIL GAS X LIQUID INJECTION WASTE DISPOSAL
(IF "GAS") PRODUCTION X STORAGE DEEP SHALLOW X
LOCATION: ELEVATION 1,304' AS BUILT WATERSHED MCELROY CREEK
QUADRANGLE SMITHBURG 7.5' DISTRICT GRANT COUNTY DODDRIDGE

OPERATOR'S WELL # PHEBE UNIT #2H
API WELL # 47 - 017 - 06938

SURFACE OWNER BRIAN D. LEMLEY & CHRISTY M. LEMASTER ET AL ACREAGE 59.08 ACRES +/-
OIL & GAS ROYALTY OWNER MARIETTE LEMLEY ET AL; SIDNEY AUSTIN SMITH TRUST LLC; DELORIS NADINE DAVIS; LEASE ACREAGE 66.87 AC±; 50 AC±; 148.4 AC±; GEM HOLDINGS LLC; SIDNEY THOMPSON; PAULA KAY REYNOLDS; MIKE ROSS INC.; Z.T. BALL ET AL; ANTERO MINERALS LLC; LARRY C. CALICOAT; 41.89 AC±; 98 AC±; 79.06 AC±; 137 AC±; 138 AC±; 6.29 AC±; 37.25 AC±; RANDALL E. SHEARER; EMAX GAS CO. ET AL; F. G. ORR ET AL; LINDA R. NEPPS; 147 AC±; 49.5 AC±; 172 AC±; 189.88 AC±

STATE COUNTY PERMIT
10/14/2022

PROPOSED WORK: DRILL CONVERT DRILL DEEPER X REDRILL FRACTURE OR STIMULATE X
PLUG OFF OLD FORMATION PERFORATE NEW FORMATION X OTHER PHYSICAL CHANGE IN WELL (SPECIFY) MOD - BHL
TARGET FORMATION MARCELLUS PLUG & ABANDON CLEAN OUT & REPLUG
WELL OPERATOR ANTERO RESOURCES CORP. ESTIMATED DEPTH 7,400' TVD 25,800' MD
ADDRESS 1615 WYNKOOP STREET DENVER, CO 80202 DESIGNATED AGENT DIANNA STAMPER-CT CORPORATION SYSTEM ADDRESS 5400 D BIG TYLER ROAD CHARLESTON, WV 25313

LATITUDE 39°20'00"

3882'

8,419' TO BOTTOM HOLE
LATITUDE 39°17'30"

LONGITUDE 80°37'30"

LONGITUDE 80°40'00"

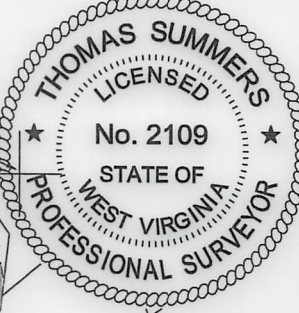
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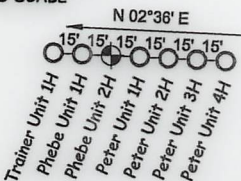
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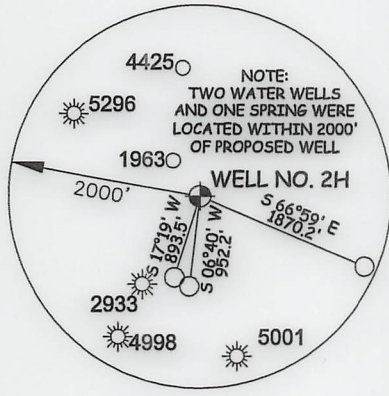
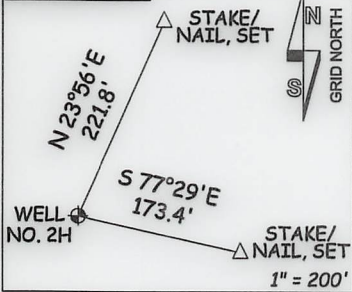
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NOTE:
TWO WATER WELLS AND ONE SPRING WERE LOCATED WITHIN 2000' OF PROPOSED WELL

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O	LARRY C. CALICOAT
P	RANDALL E. SHEARER
Q	RANDALL E. SHEARER
R	EMAX GAS CO. ET AL
S	F. G. ORR ET AL
T	LINDA R. NEPPS

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DRAWING # **PHEBE2HR1**
SCALE **1" = 2000'**
MINIMUM DEGREE OF ACCURACY **SUBMETER**
PROVEN SOURCE OF ELEV. **SUBMETER MAPPING GRADE GPS**

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STATE OF WEST VIRGINIA, DIVISION OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS
WILLOW LAND SURVEYING PLLC
220 MASONIC AVE. PENNSBORO WEST VIRGINIA 26415

LEGEND
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--- Interior Surface Tracts +/-
X Existing Fence
⊕ Found monument, as noted

THOMAS SUMMERS P.S. 2109
DATE **09/09/22**

STATE OF WEST VIRGINIA DEPARTMENT OF ENERGY DIVISION OF OIL AND GAS
WELL TYPE: OIL ___ GAS **X** LIQUID INJECTION ___ WASTE DISPOSAL ___
(IF "GAS") PRODUCTION **X** STORAGE ___ DEEP ___ SHALLOW **X**
LOCATION: ELEVATION **1,304' AS BUILT** WATERSHED **MCELROY CREEK**
QUADRANGLE **SMITHBURG 7.5'** DISTRICT **GRANT** COUNTY **DODDRIDGE**

OPERATOR'S WELL# **PHEBE UNIT #2H**
API WELL # **47 - 017 - 06938**
STATE COUNTY PERMIT
10/14/2022

SURFACE OWNER **BRIAN D. LEMLEY & CHRISTY M. LEMASTER ET AL** ACREAGE **59.08 ACRES +/-**
OIL & GAS ROYALTY OWNER **MARLETTE LEMLEY ET AL; SIDNEY AUSTIN SMITH TRUST LLC; DELORIS NADINE DAVIS; GEM HOLDINGS LLC; SIDNEY THOMPSON; PAULA KAY REYNOLDS; MIKE ROSS INC.; Z.T. BALL ET AL; ANTERO MINERALS LLC; LARRY C. CALICOAT; RANDALL E. SHEARER; EMAX GAS CO. ET AL; F. G. ORR ET AL; LINDA R. NEPPS** LEASE ACREAGE **66.87 AC±; 50 AC±; 148.4 AC±; 41.89 AC±; 98 AC±; 79.06 AC±; 137 AC±; 138 AC±; 6.29 AC±; 37.25AC±; 147AC±; 49.5 AC±; 172 AC±; 189.88 AC±**

PROPOSED WORK: DRILL ___ CONVERT ___ DRILL DEEPER **X** REDRILL ___ FRACTURE OR STIMULATE **X**
PLUG OFF OLD FORMATION ___ PERFORATE NEW FORMATION **X** OTHER PHYSICAL CHANGE IN WELL ___
(SPECIFY) **MOD - BHL** PLUG & ABANDON ___ CLEAN OUT & REPLUG ___
TARGET FORMATION **MARCELLUS** ESTIMATED DEPTH **7,400' TVD 25,800' MD**
WELL OPERATOR **ANTERO RESOURCES CORP.** DESIGNATED AGENT **DIANNA STAMPER-CT CORPORATION SYSTEM**
ADDRESS **1615 WYNKOOP STREET** ADDRESS **5400 D BIG TYLER ROAD**
FORM WW-6 **DENVER, CO 80202** **CHARLESTON, WV 25313**

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>D: Mariette Lemley, et al Lease</u>			
Mariette Lemley, et al	S&K Land Company	1/8	0114/0075
S&K Land Company	Mert Development, Inc.	Assignment	0115/0110
Mert Development, Inc.	Continental Reserves 1980-E	Assignment	0123/0022
Continental Reserves 1980-E	Appalachian Energy Development Corporation	Assignment	0150/0251
Appalachian Energy Development Corporation	Appalachian Energy Reserves, Inc	Affidavit of Identity	0019/0210
Appalachian Energy Reserves, Inc.	Jay Shearer	Assignment	0179/0146
Jay Shearer	Clowser Production Company	Assignment	0285/0420
Clowser Production Company	Antero Resources Appalachian Corporation	Assignment	0285/0417
Antero Resources Appalachian Corporation	Antero Resources Corporation	Name Change	0046/0523
<u>E: Sidney Austin Smith Trust, LLC Lease</u>			
Sidney Austin Smith Trust, LLC	Antero Resources Corporation	1/8+	0503/0358
<u>F: Deloris Nadine Davis Lease</u>			
Deloris Nadine Davis	Jay-Bee Production Company	1/8	0215/0229
Jay-Bee Production Company	Antero Resources Appalachian Corporation	Assignment	0301/0373
Antero Resources Appalachian Corporation	Antero Resources Corporation	Name Change	0046/0523
<u>G: GEM Holdings Inc., Lease</u>			
GEM Holdings Inc.	Antero Resources Corporation	1/8+	0463/0063
<u>I: Sidney Thompson Lease</u>			
Sidney Thompson	Antero Resources Corporation	1/8+	0445/0542
<u>K: Mike Ross Inc., Lease</u>			
Mike Ross Inc.	Antero Resources Corporation	1/8+	0500/0173
<u>J: Paula Kay Reynolds Lease</u>			
Paula Kay Reynolds	Antero Resources Corporation	1/8+	0501/0198
<u>K: Mike Ross Inc., Lease</u>			
Mike Ross Inc.	Antero Resources Corporation	1/8+	0500/0173
<u>L: Z.T. Ball, et al Lease</u>			
Z.T. Ball, et al	Hope Natural Gas Company	1/8	0023/0021
Hope Natural Gas Company	Consolidated Gas Supply Corporation	Merger	0143/0345
Consolidated Gas Supply Corporation	Consolidated Gas Transmission Corporation	Assignment	0135/0583
Consolidated Gas Transmission Corporation	CNG Development Company	Merger	0139/0041
CNG Development Company	CNG Producing Company	Merger	0168/0588
CNG Producing Company	Dominion Exploration & Production Company	Merger	0058/0366
Dominion Exploration & Production Company	Antero Resources Appalachian Corporation	Assignment	0230/0113
Antero Resources Appalachian Corporation	Antero Resources Corporation	Name Change	0046/0523
<u>N: Antero Minerals, LLC Lease</u>			
Antero Minerals, LLC	Antero Resources Corporation	1/8+	0494/0296
<u>O: Larry C. Callicoat Lease</u>			
Larry C. Callicoat	Antero Resources Corporation	1/8+	04210321
<u>P: Randall E. Shearer Lease</u>			
Randall E. Shearer	Antero Resources Corporation	1/8+	0500/0081

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Office of Oil and Gas
OCT 03 2022
WV Department of
Environmental Protection
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Grantor, lessor, etc.	Grantee, lessee, etc.	Royalty	Book/Page
<u>R: Emax Gas Co., et al Lease</u>			
Emax Gas Company, et al	Emax Oil Company	1/8	0374/0192
Emax Oil Company	Antero Resources Corporation	Assignment	0394/0182
<u>S: F.G. Orr, et al Lease</u>			
F.G. Orr, et al	J.W. Wilson and Company	1/8	0024/0049
J.W. Wilson and Company	The Wheeling Natural Gas Company	Assignment	0064/0196
The Wheeling Natural Gas Company	Manufacturers Light and Heat Company & Union Gasoline & Oil Corporation	Assignment	0129/0121
Manufacturers Light and Heat Company & Union Gasoline & Oil Corporation	J.R. Thomey	Assignment	0054/0462
J.R. Thomey	Cruz Marie Thomey, widow	Will Book	0046/0286
Cruz Marie Thomey, widow	Eddison E. Ritter & Jesse P. Scott	Assignment	0078/0204
Eddison E. Ritter & Jesse P. Scott	EMAX Oil Company	Assignment	0161/0001
EMAX Oil Company	Antero Resources Corporation	Assignment	0394/0182

*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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Lease Name or Number	Grantor, Lessor, etc.	Grantee, Lessee, etc.	Royalty	Book/Page
T: Linda R. Nepps Lease	Linda R. Nepps	Clarence W. Mutschelknaus	1/8+	0457/0448
	Clarence W. Mutschelknaus	Bluestone Energy Partners	Assignment	0250/0659
	Bluestone Energy Partners	BEP Merger Sub LP	Merger	0288/0001
	BEP Merger Sub LP	Antero Resources Bluestone LLC	Merger	0288/0001
	Antero Resources Bluestone LLC	Antero Resources Corporation	Merger	WV SOS

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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 - Land

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