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west virginia department of environmental protection

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Office of Oil and Gas  
601 57<sup>th</sup> Street, S.E.  
Charleston, WV 25304  
(304) 926-0450  
fax: (304) 926-0452

Austin Caperton, Cabinet Secretary  
[www.dep.wv.gov](http://www.dep.wv.gov)

Friday, January 8, 2021  
PERMIT MODIFICATION APPROVAL  
Horizontal 6A / New Drill

ANTERO RESOURCES CORPORATION  
1615 WYNKOOP STREET

DENVER, CO 80202

Re: Permit Modification Approval for CHEAT 1H  
47-095-02719-00-00

**Extending Lateral Length, Total Measured Depth 12400' to 23000'. Updated Leases.**

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: CHEAT 1H  
Farm Name: PATRICIA ANN HENTZMAN  
U.S. WELL NUMBER: 47-095-02719-00-00  
Horizontal 6A New Drill  
Date Modification Issued: 01/08/2021

Promoting a healthy environment.

WW-6B  
(04/15)

API NO. 47-095 - 02719  
OPERATOR WELL NO. Cheat Unit 1H  
Well Pad Name: Elk Fork Pad

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

1) Well Operator: Antero Resources Corporation

<u>494507062</u>	<u>095 - Tyler</u>	<u>Ellsworth</u>	<u>Porters Falls 7.5'</u>
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Operator ID County District Quadrangle

2) Operator's Well Number: Cheat Unit 1H Well Pad Name: Elk Fork Pad

3) Farm Name/Surface Owner: Patricia Ann Heintzman Public Road Access: Elk Fork Road

4) Elevation, current ground: 1126' Elevation, proposed post-construction: \_\_\_\_\_

5) Well Type (a) Gas  Oil \_\_\_\_\_ Underground Storage \_\_\_\_\_

Other \_\_\_\_\_  
(b) If Gas Shallow  Deep \_\_\_\_\_  
Horizontal

6) Existing Pad: Yes or No Yes

7) Proposed Target Formation(s), Depth(s), Anticipated Thickness and Expected Pressure(s):  
Marcellus Shale: 7000' TVD, Anticipated Thickness- 55 feet, Associated Pressure- 2850#

8) Proposed Total Vertical Depth: 7000' TVD

9) Formation at Total Vertical Depth: Marcellus

10) Proposed Total Measured Depth: 23000'

11) Proposed Horizontal Leg Length: 15402'

12) Approximate Fresh Water Strata Depths: 125'

13) Method to Determine Fresh Water Depths: 47-095-00269

14) Approximate Saltwater Depths: 1703'

15) Approximate Coal Seam Depths: 58'

16) Approximate Depth to Possible Void (coal mine, karst, other): None Anticipated

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17) Does Proposed well location contain coal seams directly overlying or adjacent to an active mine? Yes \_\_\_\_\_ No

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WV Department of  
Environmental Protection

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

WW-6B  
(04/15)

API NO. 47- 095 - 02719  
 OPERATOR WELL NO. Cheat Unit 1H  
 Well Pad Name: Elk Fork Pad

18) **CASING AND TUBING PROGRAM**

<b>TYPE</b>	<b>Size (in)</b>	<b>New or Used</b>	<b>Grade</b>	<b>Weight per ft. (lb/ft)</b>	<b>FOOTAGE: For Drilling (ft)</b>	<b>INTERVALS: Left in Well (ft)</b>	<b>CEMENT: Fill-up (Cu. Ft.)/CTS</b>
Conductor	20"	New	H-40	94#	90'	90'	CTS, 86 Cu. Ft.
Fresh Water	13-3/8"	New	J-55	54.5#	300'	300'	CTS, 417 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#	23000'	23000'	5917 Cu. Ft
Tubing	2-3/8"	New	N-80	4.7#			
Liners							

<b>TYPE</b>	<b>Size (in)</b>	<b>Wellbore Diameter (in)</b>	<b>Wall Thickness (in)</b>	<b>Burst Pressure (psi)</b>	<b>Anticipated Max. Internal Pressure (psi)</b>	<b>Cement Type</b>	<b>Cement Yield (cu. ft./k)</b>
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-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				RECEIVED Office of Oil and Gas DEC 29 2020 WV Department of Environmental Protection
Sizes:	N/A				
Depths Set:	N/A				

WW-6B  
(10/14)

API NO. 47- 095 - 02719

OPERATOR WELL NO. Cheat Unit 1H

Well Pad Name: Elk Fork Pad

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

Drill a new vertical shallow well into the 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): 43.65 acres

22) Area to be disturbed for well pad only, less access road (acres): 8.91 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

25) Proposed borehole conditioning procedures:

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\*Note: Attach additional sheets as needed.



PERMIT MODIFICATION API # 47-095-02719

Cheat Unit 1H

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Antero Resources Corporation

Cheat Unit 1H - AOR



REMARKS  
No Wells of Interest

November 9, 2020

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>Patricia Ann Heintzman Lease</u> Patricia Ann Heintzman	Antero Resources Corporation	1/8+	0594/0309
<u>Dennis R. Heintzman et ux Lease</u> Dennis R. Heintzman et ux Stone Energy Corporation Antero Resources Appalachian Corporation	Stone Energy Corporation Antero Resources Appalachian Corporation Antero Resources Corporation	1/8+ Assignment Name Change	0397/0726 0447/0767 Exhibit 1
<u>Norma Smith Lease</u> Norma Smith	Antero Resources Corporation	1/8+	0467/0551
<u>BRC Appalachian Minerals I LLC Lease (TM 6 PCL 34)</u> BRC Appalachian Minerals I LLC Statoil USA Onshore Properties EQT Production Company	Statoil USA Onshore Properties EQT Production Company Antero Resources Corporation	Assignment Assignment Assignment	0378/0764 0539/0239 0663/0001
<u>Harold Skinner Lease</u> Harold Skinner	Antero Resources Corporation	1/8+	0576/0102
<u>James D. VanCamp et al Lease (TM 3 PCL 32)</u> James D. VanCamp et al Antero Resources Appalachian Corporation	Antero Resources Appalachian Corporation Antero Resources Corporation	1/8+ Name Change	0404/0380 0557/0430
<u>BRC Appalachian Minerals I LLC Lease (TM 6 PCL 35)</u> BRC Appalachian Minerals I LLC Statoil USA Onshore Properties EQT Production Company	Statoil USA Onshore Properties EQT Production Company Antero Resources Corporation	Assignment Assignment Assignment	0378/0764 0539/0239 0663/0001
<u>James D. VanCamp et al Lease (TM 6 PCL 3)</u> James D. VanCamp et al Antero Resources Appalachian Corporation	Antero Resources Appalachian Corporation Antero Resources Corporation	1/8+ Name Change	0404/0380 0557/0430
<u>Lowmax R. Kunkel Lease</u> Lowmax R. Kunkel EQT Production Company	EQT Production Company Antero Resources Corporation	1/8+ Assignment	0605/0008 0663/0001
<u>James D. VanCamp et al Lease (TM 6 PCL 3)</u> James D. VanCamp et al Antero Resources Appalachian Corporation	Antero Resources Appalachian Corporation Antero Resources Corporation	1/8+ Name Change	0404/0380 0557/0430

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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.

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 Chapter 22, Article 6A, Section 5(a)(5)  
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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:

Grantor, lessor, etc.	Grantee, lessee, etc.	Royalty	Book/Page
<b>James D. VanCamp et al Lease (TM 3 PCL 48)</b>			
James D. VanCamp et al	Antero Resources Appalachian Corporation	1/8+	0404/0380
Antero Resources Appalachian Corporation	Antero Resources Corporation	Name Change	0557/0430
<b>Sherry Lynn Chefren Lease</b>			
Sherry Lynn Chefren	Antero Resources Corporation	1/8+	0429/0527

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 DEC 29 2020  
 WV Department of  
 Environmental Protection

WW-6A1  
(5/13)

Operator's Well No. Cheat Unit 1H

**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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- (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
<b><u>BRC Appalachian Minerals I LLC Lease</u></b>				
	BRC Appalachian Minerals I LLC	Chesapeake Appalachia LLC	Assignment	0369/0784
	Chesapeake Appalachia LLC	Statoil USA Onshore Properties	Assignment	0378/0764
	Statoil USA Onshore Properties	EQT Production Company	Assignment	0539/0239
	EQT Production Company	Antero Resources Corporation	Assignment	0663/0001

\*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.

**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

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Environmental Protection

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: VP of Land

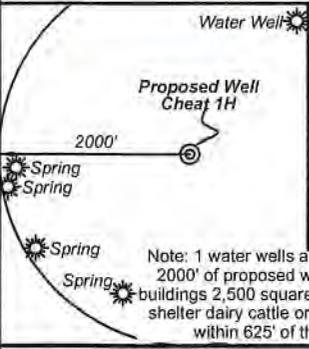
\*Co-tenancy utilization – At least 7 mineral owners in tract. At least 75% of the royalty owners have executed a lease on the tract. The interests of the remaining co-tenants were acquired pursuant to the Co-tenancy Modernization and Majority Protection Act

**Antero Resources**  
**Well No. Cheat 1H**  
**BHL MOD**  
 Antero Resources Corporation



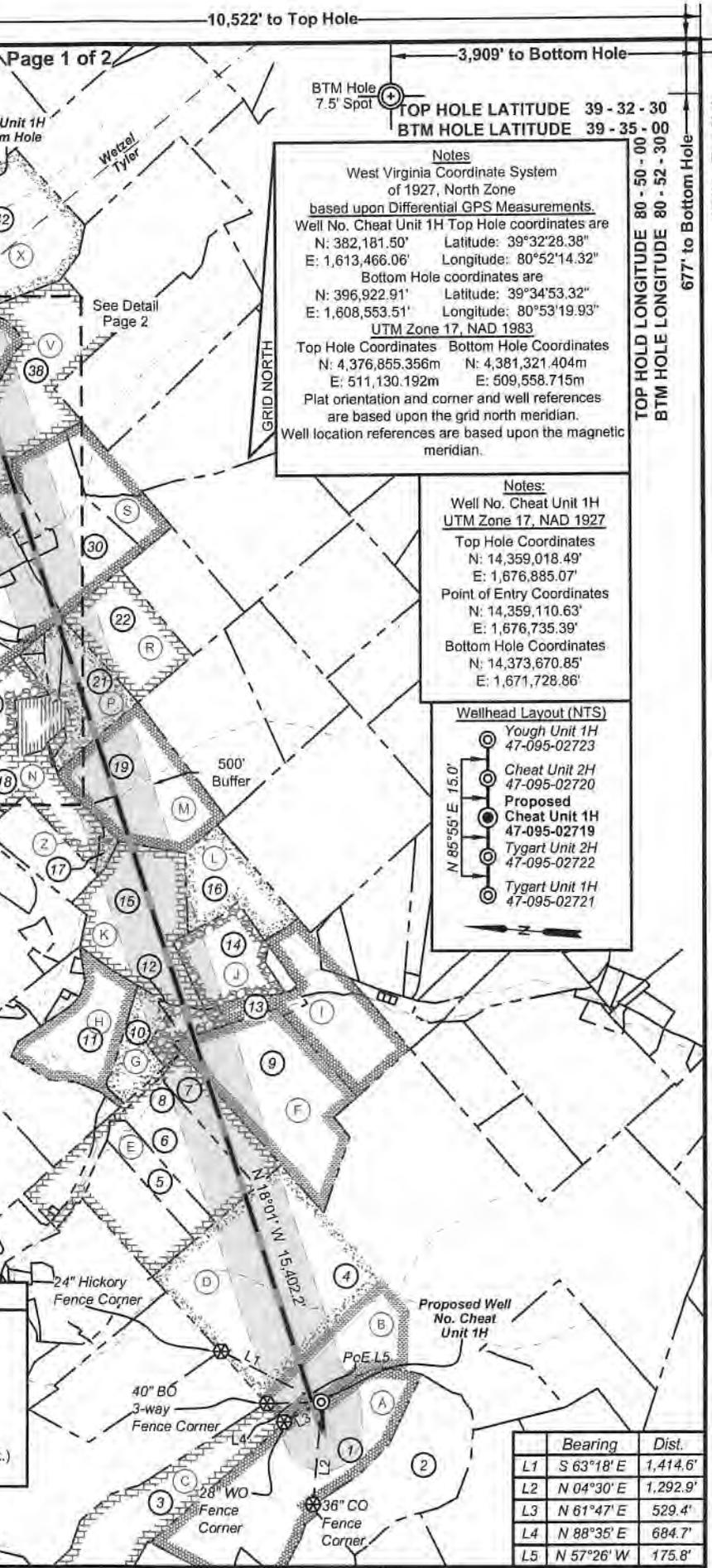
I, the undersigned, hereby certify that this plat is correct to the best of my knowledge and belief and shows all the information required by law and the rules issued and prescribed by the Department of Environmental Protection.

*Bradley D. Miller*  
 Bradley D. Miller, P.S. 2167



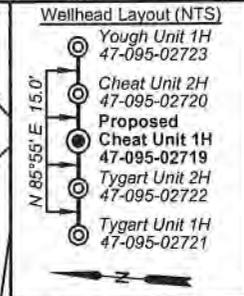
**Legend**

- Proposed gas well
- Monument, as noted
- Existing Well, as noted
- Creek or Drain
- Road
- Surface boundary (approx.)
- Interior surface tracts (approx.)
- County Line



**Notes**  
 West Virginia Coordinate System of 1927, North Zone based upon Differential GPS Measurements.  
 Well No. Cheat Unit 1H Top Hole coordinates are  
 N: 382,181.50' Latitude: 39°32'28.38"  
 E: 1,613,466.06' Longitude: 80°52'14.32"  
 Bottom Hole coordinates are  
 N: 396,922.91' Latitude: 39°34'53.32"  
 E: 1,608,553.51' Longitude: 80°53'19.93"  
 UTM Zone 17, NAD 1983  
 Top Hole Coordinates: N: 4,376,855.356m E: 511,130.192m  
 Bottom Hole Coordinates: N: 4,381,321.404m E: 509,558.715m  
 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. Cheat Unit 1H UTM Zone 17, NAD 1927  
 Top Hole Coordinates: N: 14,359,018.49' E: 1,676,885.07'  
 Point of Entry Coordinates: N: 14,359,110.63' E: 1,676,735.39'  
 Bottom Hole Coordinates: N: 14,373,670.85' E: 1,671,728.86'



	Bearing	Dist.
L1	S 63°18' E	1,414.6'
L2	N 04°30' E	1,292.9'
L3	N 61°47' E	529.4'
L4	N 88°35' E	684.7'
L5	N 57°26' W	175.8'

FILE NO: 44-54-E-19  
 DRAWING NO: Cheat Unit 1H BHL MOD  
 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: December 17, 2020  
 OPERATOR'S WELL NO. Cheat 1H  
 API WELL NO. 47-095-02719  
 STATE COUNTY PERMIT

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

LOCATION: ELEVATION: As-Built 1,126' WATERSHED: Outlet Middle Island Creek QUADRANGLE: Top Hole:Porter Falls  
 DISTRICT: Ellsworth/Magnolia COUNTY: Top Hole:Tyler 76.25; 33.8125; Bottom Hole:Wetzel 58.6; 93.6985; 98.2;  
 SURFACE OWNER: Patricia Ann Heintzman Harold Skinner; Sherry Lynn Chefran; Lowmax R. Kunkel; 28.33; 42.55; 47.5;  
 ROYALTY OWNER: Patricia Ann Heintzman; Norma Smith; Dennis R. Heintzman, et ux; Brenda L. Martin; BRC Appalachian Minerals I, LLC (3); James D. VanCamp, et al (3); 365.2064; 62.18; 100;  
 PROPOSED WORK:  DRILL  CONVERT  DRILL DEEPER  FRACTURE OR STIMULATE  PLUG OFF OLD FORMATION  
 PERFORATE NEW FORMATION  OTHER PHYSICAL CHANGE IN WELL (SPECIFY) BHL MOD LEASE NO: ACREAGE: 7.26 59.75; 109.875; 151.08;  
 PLUG AND ABANDON  CLEAN OUT AND REPLUG TARGET FORMATION: Marcellus Shale ESTIMATED DEPTH: 23,000' MD 7,000' TVD

WELL OPERATOR: Antero Resources Corporation DESIGNATED AGENT: Dianna Stamper - CT Corporation System  
 ADDRESS: 1615 Wynkoop Street ADDRESS: 5400 D Big Tyler Road  
 Denver, CO 80202 Charleston, WV 25313



Leases			
A	Patricia Ann Heintzman	N	James D. VanCamp, et al
B	Norma Smith	O	James D. VanCamp, et al
C	Patricia Ann Heintzman	P	BRC Appalachian Minerals I, LLC
D	Dennis R. Heintzman, et ux	Q	Sybil Mae Gorby
E	BRC Appalachian Minerals I, LLC	R	Penny G. Bond
F	Harold Skinner	S	James D. VanCamp, et al
G	James D. VanCamp, et al	T	BRC Appalachian Minerals I, LLC
H	Kerry Lemasters, et ux	U	James D. VanCamp, et ux
I	Antero Minerals, LLC	V	Lowmax R. Kunkel
J	Brenda L. Martin	W	Sherry Lynn Chefred
K	James D. VanCamp, et al	X	BRC Appalachian Minerals, I LLC
L	Judy P. Meyers	Y	David B. Shriver
M	James D. VanCamp, et al	Z	James D. VanCamp, et al



ID	TM/Par	Owner	Bk/Pg	Acres
1	10-2	Patricia Ann Heintzman	W13/384	73.26
2	10-3	Kevin S. & Melinda S. Goff	597/808	53.75
3	10-1	Patricia Ann Heintzman	150/15	48.50
4	6-36	Dennis & Clista Heintzman	297/640	417.60
5	6-35.1	Stephen & Andriea Knowlton	289/20	13.32
6	6-35.2	Stephen & Andriea Knowlton	224/77	29.02
7	6-35.4	Stephen & Andriea Knowlton	340/412	17.46
8	6-35.3	Stephen & Andriea Knowlton	224/77	3.00
9	6-24	Harold Skinner	204/595	62.18
10	6-16.2	Stephen J. & Andriea Knowlton	211/375	13.30
11	6-16	Kerry & Barbara Lemasters	215/548	33.76
12	6-16.3	Michael L. Roberts	407/45	14.81
13	6-25.1	Kevin Lee Fletcher	328/723	5.76
14	6-16.4	Michael L. Roberts	407/45	27.74
15	6-15	James D. VanCamp, et al	W38/144	47.50
16	6-16.5	James M. & Sherry Starkey	344/785	24.44
17	6-15.1	James D. VanCamp, et ux	174/451	2.28
18	6-3	James D. Vancamp, et al	W38/144	23.87
19	6-4	James D. Vancamp, et al	W38/144	46.76
20	6-2	Joel A. Prosser	387/736	6.64
21	3-4.3	Joel A Prosser	387/736	23.62
22	6-5	Gary A. & Penny K. Midcap	301/265	75.55
23	3-4.3.2	Larry & Kimberly Henthorn	642/513	2.05
24	3-4.3.1	Janet Johnson	W29/203	0.90
25	3-4.4.1	Tylor D. Hostuttler	592/109	0.98
26	3-4.4.2	Gary A & Penny K Midcap	272/632	0.88
27	3-4.4	Jamie Leigh Parks	337/764	9.86
28	3-4.4.5	W.J. & Melissa Buchanan	326/348	1.72
29	2-11	Rosalie B. Henry	W35/616	61.54
30	3-4.0	Rosalie Henry	170/006	46.21
31	3-4.0.1	Ernest D & Karen Sure Helmick	185/431	2.21
32	2-8.4	Jonathan & Mary Belle Pittman	186/170	21.14
33	3-4.7	Donna & Matthew Cecil	462/582	8.61
34	3-4.5	Clay R. Hupp	302/460	3.14
35	3-46.1	Pamela R. Nelson-Lansford	328/699	2.96
36	3-4.6	Vada R Hart	40/469	1.54
37	3-4.7.1	Jack L. Throck-Morton	462/582	1.33
38	3-12	Lomax R. Kunkel	297/692	57.51
39	3-12.1	Josephine Kunkel	286/75	1.90
40	3-4.8	Linda Hoover	356/233	45.00
41	2-1.1	Donald E. Virden, Jr.	421/281	68.20
42	16-65	Kenneth W. & Norma A. Headley	355/347	58.60
43	2-1	Donald E. Virden, Jr.	421/281	30.84
44	16-56	Verda Hart	W69/785	10.50
45	6-1	Sybil Gorby	175/265	17.26

FILE NO: 44-54-E-19  
 DRAWING NO: Cheat Unit 1H BHL MOD  
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 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: December 17 2020  
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 API WELL NO  
 47 - 095 - 02719  
 STATE COUNTY PERMIT

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 (IF GAS) PRODUCTION:  STORAGE  DEEP  SHALLOW

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 BRC Appalachian Minerals I, LLC (3); James D. VanCamp, et al (3); 58.6; 93.6985; 98.2;  
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 365.2064; 62.18; 100;  
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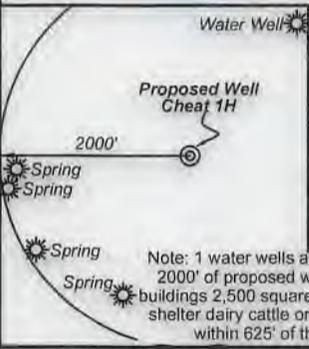
WELL OPERATOR: Antero Resources Corporation DESIGNATED AGENT: Dianna Stamper - CT Corporation System  
 ADDRESS: 1615 Wynkoop Street ADDRESS: 5400 D Big Tyler Road  
 Denver, CO 80202 Charleston, WV 25313

**Antero Resources  
Well No. Cheat 1H  
BHL MOD**  
Antero Resources Corporation



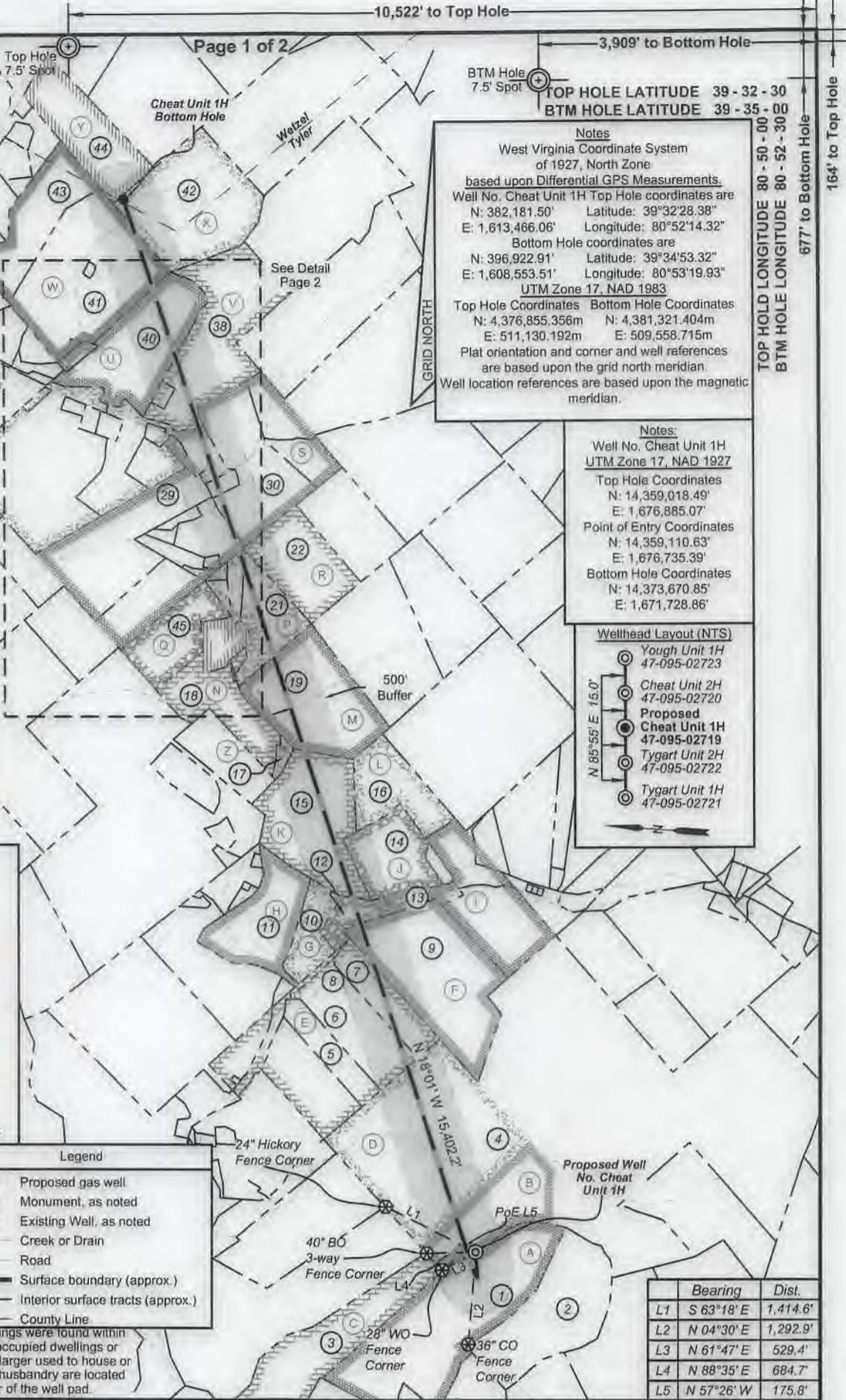
I, the undersigned, hereby certify that this plat is correct to the best of my knowledge and belief and shows all the information required by law and the rules issued and prescribed by the Department of Environmental Protection.

*Bradley D. Miller*  
Bradley D. Miller, P.S. 2167



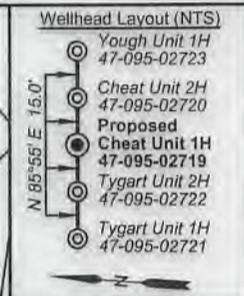
- Legend**
- ⊙ Proposed gas well
  - ⊗ Monument, as noted
  - ⊛ Existing Well, as noted
  - Creek or Drain
  - Road
  - Surface boundary (approx.)
  - Interior surface tracts (approx.)
  - County Line

Note: 1 water wells and 4 springs 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.



**Notes**  
West Virginia Coordinate System of 1927, North Zone  
based upon Differential GPS Measurements.  
Well No. Cheat Unit 1H Top Hole coordinates are  
N: 382,181.50' Latitude: 39°32'28.38"  
E: 1,613,466.06' Longitude: 80°52'14.32"  
Bottom Hole coordinates are  
N: 396,922.91' Latitude: 39°34'53.32"  
E: 1,608,553.51' Longitude: 80°53'19.93"  
UTM Zone 17, NAD 1983  
Top Hole Coordinates Bottom Hole Coordinates  
N: 4,376,855.356m N: 4,381,321.404m  
E: 511,130.192m E: 509,558.715m  
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. Cheat Unit 1H  
UTM Zone 17, NAD 1927  
Top Hole Coordinates  
N: 14,359,018.49'  
E: 1,676,885.07'  
Point of Entry Coordinates  
N: 14,359,110.63'  
E: 1,676,735.39'  
Bottom Hole Coordinates  
N: 14,373,670.85'  
E: 1,671,728.86'



Bearing	Dist.
L1 S 63°18' E	1,414.6'
L2 N 04°30' E	1,292.9'
L3 N 61°47' E	529.4'
L4 N 88°35' E	684.7'
L5 N 57°26' W	175.8'

FILE NO: 44-54-E-19  
DRAWING NO: Cheat Unit 1H BHL MOD  
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: December 17 20 20  
OPERATOR'S WELL NO. Cheat 1H  
API WELL NO  
47 - 095 - 02719  
STATE COUNTY PERMIT

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

LOCATION: ELEVATION: As-Built 1,126' WATERSHED: Outlet Middle Island Creek QUADRANGLE: Top Hole:Porter Falls  
DISTRICT: Ellsworth/Magnolia COUNTY: BTM Hole:Wetzel  
SURFACE OWNER: Patricia Ann Heintzman ACREAGE: 73.26  
ROYALTY OWNER: Patricia Ann Heintzman; Norma Smith; Dennis R. Heintzman, et ux; Brenda L. Martin; LEASE NO: ACREAGE: 59.75; 109.975; 161.08;  
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: 23,000' MD

WELL OPERATOR: Antero Resources Corporation DESIGNATED AGENT: Dianna Stamper - CT Corporation System  
ADDRESS: 1615 Wynkoop Street ADDRESS: 5400 D Big Tyler Road  
Denver, CO 80202 Charleston, WV 25313



Leases			
A	Patricia Ann Heintzman	N	James D. VanCamp, et al
B	Norma Smith	O	James D. VanCamp, et al
C	Patricia Ann Heintzman	P	BRC Appalachian Minerals I, LLC
D	Dennis R. Heintzman, et ux	Q	Sybil Mae Gorby
E	BRC Appalachian Minerals I, LLC	R	Penny G. Bond
F	Harold Skinner	S	James D. VanCamp, et al
G	James D. VanCamp, et al	T	BRC Appalachian Minerals I, LLC
H	Kerry Lemasters, et ux	U	James D. VanCamp, et ux
I	Antero Minerals, LLC	V	Lowmax R. Kunkel
J	Brenda L. Martin	W	Sherry Lynn Cheffren
K	James D. VanCamp, et al	X	BRC Appalachian Minerals, I LLC
L	Judy P. Meyers	Y	David B. Shriver
M	James D. VanCamp, et al	Z	James D. VanCamp, et al



ID	TM/Par	Owner	Bk/Pg	Acres
1	10-2	Patricia Ann Heintzman	W13/384	73.26
2	10-3	Kevin S. & Melinda S. Goff	597/808	53.75
3	10-1	Patricia Ann Heintzman	150/15	48.50
4	6-36	Dennis & Clista Heintzman	297/640	417.60
5	6-35.1	Stephen & Andria Knowlton	289/20	13.32
6	6-35.2	Stephen & Andria Knowlton	224/77	29.02
7	6-35.4	Stephen & Andria Knowlton	340/412	17.46
8	6-35.3	Stephen & Andria Knowlton	224/77	3.00
9	6-24	Harold Skinner	204/595	62.18
10	6-16.2	Stephen J. & Andria Knowlton	211/375	13.30
11	6-16	Kerry & Barbara Lemasters	215/548	33.76
12	6-16.3	Michael L. Roberts	407/45	14.81
13	6-25.1	Kevin Lee Fletcher	328/723	5.76
14	6-16.4	Michael L. Roberts	407/45	27.74
15	6-15	James D. VanCamp, et al	W38/144	47.50
16	6-16.5	James M. & Sherry Starkey	344/785	24.44
17	6-15.1	James D. VanCamp, et ux	174/451	2.28
18	6-3	James D. Vancamp, et al	W38/144	23.87
19	6-4	James D. Vancamp, et al	W38/144	46.76
20	6-2	Joel A. Prosser	387/736	6.64
21	3-43	Joel A Prosser	387/736	23.62
22	6-5	Gary A. & Penny K. Midcap	301/265	75.55
23	3-43.2	Larry & Kimberly Henthorn	642/513	2.05
24	3-43.1	Janei Johnson	W29/203	0.90
25	3-44.1	Tylor D. Hostuttler	592/109	0.98
26	3-44.2	Gary A & Penny K Midcap	272/632	0.88
27	3-44	Jamie Leigh Parks	337/764	9.86
28	3-44.5	W.J. & Melissa Buchanan	326/348	1.72
29	2-11	Rosalie B. Henry	W35/616	61.54
30	3-40	Rosalie Henry	170/006	46.21
31	3-40.1	Ernest D & Karen Sure Helmick	185/431	2.21
32	2-8.4	Jonathan & Mary Belle Pittman	186/170	21.14
33	3-47	Donna & Matthew Cecil	462/582	8.61
34	3-45	Clay R. Hupp	302/460	3.14
35	3-46.1	Pamela R. Nelson-Lansford	328/699	2.96
36	3-46	Vada R Hart	40/469	1.54
37	3-47.1	Jack L. Throck-Morton	462/582	1.33
38	3-12	Lomax R. Kunkel	297/692	57.51
39	3-12.1	Josephine Kunkel	286/75	1.90
40	3-48	Linda Hoover	356/233	45.00
41	2-1.1	Donald E. Virden, Jr.	421/281	68.20
42	16-65	Kenneth W. & Norma A. Headley	355/347	58.60
43	2-1	Donald E. Virden, Jr.	421/281	30.84
44	16-56	Verda Hart	W69/785	10.50
45	6-1	Sybil Gorby	175/265	17.26

FILE NO: 44-54-E-19  
 DRAWING NO: Cheat Unit 1H BHL MOD  
 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: December 17 2020  
 OPERATOR'S WELL NO. Cheat 1H  
 API WELL NO  
 47 - 095 - 02719  
 STATE COUNTY PERMIT

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

LOCATION: ELEVATION: As-Built 1,126' WATERSHED: Outlet Middle Island Creek QUADRANGLE: Top Hole:Porter Falls  
 DISTRICT: Ellsworth/Magnolia COUNTY: Bottom Hole:Paden City

SURFACE OWNER: Patricia Ann Heintzman James D. Van Camp, et ux; Harold Skinner; Sherry Lynn Cheffren; Lowmax R. Kunkel; ACREAGE: 73.26  
 BRC Appalachian Minerals I, LLC (3); James D. VanCamp, et al (3);

ROYALTY OWNER: Patricia Ann Heintzman; Norma Smith; Dennis R. Heintzman, et ux; Brenda L. Martin; LEASE NO: ACREAGE: 76.25; 33.8125;  
 58.6; 93.6985; 98.2;  
 28.33; 42.55; 47.5;  
 365.2064; 62.18; 100;  
 59.75; 109.875; 151.08;

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: 7,000' TVD  
 23,000' MD

WELL OPERATOR: Antero Resources Corporation DESIGNATED AGENT: Dianna Stamper - CT Corporation System  
 ADDRESS: 1615 Wynkoop Street ADDRESS: 5400 D Big Tyler Road  
 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>Patricia Ann Heintzman Lease</u> Patricia Ann Heintzman	Antero Resources Corporation	1/8+	0594/0309
<u>Dennis R. Heintzman et ux Lease</u> Dennis R. Heintzman et ux Stone Energy Corporation Antero Resources Appalachian Corporation	Stone Energy Corporation Antero Resources Appalachian Corporation Antero Resources Corporation	1/8+ Assignment Name Change	0397/0726 0447/0767 Exhibit 1
<u>Norma Smith Lease</u> Norma Smith	Antero Resources Corporation	1/8+	0467/0551
<u>BRC Appalachian Minerals I LLC Lease (TM 6 PCL 34)</u> BRC Appalachian Minerals I LLC Statoil USA Onshore Properties EQT Production Company	Statoil USA Onshore Properties EQT Production Company Antero Resources Corporation	Assignment Assignment Assignment	0378/0764 0539/0239 0663/0001
<u>Harold Skinner Lease</u> Harold Skinner	Antero Resources Corporation	1/8+	0576/0102
<u>James D. VanCamp et al Lease (TM 3 PCL 32)</u> James D. VanCamp et al Antero Resources Appalachian Corporation	Antero Resources Appalachian Corporation Antero Resources Corporation	1/8+ Name Change	0404/0380 0557/0430
<u>BRC Appalachian Minerals I LLC Lease (TM 6 PCL 35)</u> BRC Appalachian Minerals I LLC Statoil USA Onshore Properties EQT Production Company	Statoil USA Onshore Properties EQT Production Company Antero Resources Corporation	Assignment Assignment Assignment	0378/0764 0539/0239 0663/0001
<u>James D. VanCamp et al Lease (TM 6 PCL 3)</u> James D. VanCamp et al Antero Resources Appalachian Corporation	Antero Resources Appalachian Corporation Antero Resources Corporation	1/8+ Name Change	0404/0380 0557/0430
<u>Lowmax R. Kunkel Lease</u> Lowmax R. Kunkel EQT Production Company	EQT Production Company Antero Resources Corporation	1/8+ Assignment	0605/0008 0663/0001
<u>James D. VanCamp et al Lease (TM 6 PCL 3)</u> James D. VanCamp et al Antero Resources Appalachian Corporation	Antero Resources Appalachian Corporation Antero Resources Corporation	1/8+ Name Change	0404/0380 0557/0430

RECEIVED  
Office of Oil and Gas  
DEC 29 2020  
0404/0380  
0557/0430  
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.

INFORMATION SUPPLIED UNDER WEST VIRGINIA CODE  
 Chapter 22, Article 6A, Section 5(a)(5)  
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Grantor, lessor, etc.	Grantee, lessee, etc.	Royalty	Book/Page
<b><u>James D. VanCamp et al Lease (TM 3 PCL 48)</u></b>			
James D. VanCamp et al	Antero Resources Appalachian Corporation	1/8+	0404/0380
Antero Resources Appalachian Corporation	Antero Resources Corporation	Name Change	0557/0430
<b><u>Sherry Lynn Chefren Lease</u></b>			
Sherry Lynn Chefren	Antero Resources Corporation	1/8+	0429/0527

RECEIVED  
 Office of Oil and Gas  
 DEC 29 2020  
 WV Department of  
 Environmental Protection

WW-6A1  
(5/13)

Operator's Well No. Cheat Unit 1H

**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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- (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
<b>BRC Appalachian Minerals I LLC Lease</b>				
	BRC Appalachian Minerals I LLC	Chesapeake Appalachia LLC	Assignment	0369/0784
	Chesapeake Appalachia LLC	Statoil USA Onshore Properties	Assignment	0378/0764
	Statoil USA Onshore Properties	EQT Production Company	Assignment	0539/0239
	EQT Production Company	Antero Resources Corporation	Assignment	0663/0001

\*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.

**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.

RECEIVED  
Office of Oil and Gas  
DEC 29 2009  
WV Department of Environmental Protection

\*Co-tenancy utilization – At least 7 mineral owners in tract. At least 75% of the royalty owners have executed a lease on the tract. The interests of the remaining co-tenants were acquired pursuant to the Co-tenancy Modernization and Majority Protection Act

Well Operator: Antero Resources Corporation  
By: Tim Rady  
Its: VP of Land