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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)

Wednesday, April 1, 2020  
PERMIT MODIFICATION APPROVAL  
Horizontal 6A / New Drill

ANTERO RESOURCES CORPORATION  
1615 WYNKOOP STREET

DENVER, CO 80202

Re: Permit Modification Approval for KRAMER 2H  
47-095-02677-00-00

Modified to lengthen lateral to TMD of 24,500' with no additional wells within 500'

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

A blue ink signature of James A. Martin, written in a cursive style, is placed over the printed name and title.

Operator's Well Number: KRAMER 2H  
Farm Name: MICHAEL J. & MELINDA R. HOGUE  
U.S. WELL NUMBER: 47-095-02677-00-00  
Horizontal 6A New Drill  
Date Modification Issued: April 1, 2020

Promoting a healthy environment.

*WJ*

WW-6B  
(04/15)

API NO. 47-095 - 02677  
OPERATOR WELL NO. Kramer Unit 2H  
Well Pad Name: Hogue 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 095 - Tyler Ellsworth Middlebourne 7.5'  
Operator ID County District Quadrangle

2) Operator's Well Number: Kramer Unit 2H Well Pad Name: Hogue Pad

3) Farm Name/Surface Owner: Michael J. & Melinda R. Hogue Public Road Access: Klondike Acres Road

4) Elevation, current ground: 1033' Elevation, proposed post-construction: ~1014.5

5) Well Type (a) Gas  Oil  Underground Storage   
Other   
(b) If Gas Shallow  Deep   
Horizontal

*JCS*  
*3/15/2020*

6) Existing Pad: Yes or No No

7) Proposed Target Formation(s), Depth(s), Anticipated Thickness and Expected Pressure(s):  
Marcellus Shale: 6900' TVD, Anticipated Thickness- 55 feet, Associated Pressure- 2850#

8) Proposed Total Vertical Depth: 6900' TVD

9) Formation at Total Vertical Depth: Marcellus

10) Proposed Total Measured Depth: 24500' MD

11) Proposed Horizontal Leg Length: 12856'

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12) Approximate Fresh Water Strata Depths: 456'

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13) Method to Determine Fresh Water Depths: 47-095-00704

WV Department of  
Environmental Protection

14) Approximate Saltwater Depths: 1581'

15) Approximate Coal Seam Depths: 740'

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: \_\_\_\_\_

WW-6B  
(04/15)

API NO. 47- 095 - 02677  
 OPERATOR WELL NO. Kramer Unit 2H  
 Well Pad Name: Hogue Pad

18)

**CASING AND TUBING PROGRAM**

TYPE	Size (in)	New or Used	Grade	Weight per ft. (lb/ft)	FOOTAGE: For Drilling (ft)	INTERVALS: Left in Well (ft)	CEMENT: Fill-up (Cu. Ft.)/CTS
Conductor	16"	New	H-40	94#	80	80	CTS, 63 Cu. Ft.
Fresh Water	10 3/4"	New	J-55	40.5#	506 *see # 19	506 *see # 19	CTS, 368 Cu. Ft.
Coal	7 5/8"	New	K-55	26.4#	2500	2500	CTS, 698 Cu. Ft.
Intermediate							
Production	5"	New	P-110	18#	24500	24500	6329 Cu. Ft
Tubing	2-3/8"	New	N-80	4.7#			
Liners							

*JCB  
3/18/2020*

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"	20"	0.438"	2630	50	Class A	~1.2
Fresh Water	10 3/4"	13 1/2"	0.35"	2730	1000	Class A	~1.2
Coal	7 5/8"	9 7/8"	0.328"	4140	1500	Class A	~1.2
Intermediate							
Production	5"	6 3/4"	0.362"	15840	2500	Class H	~1.26
Tubing	2-3/8"	4.778"	0.19"	11,200			
Liners							

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**PACKERS**

WV Department of Environmental Protection

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

WW-6B  
(10/14)

API NO. 47- 095 - 02677

OPERATOR WELL NO. Kramer Unit 2H

Well Pad Name: Hogue Pad

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

*JCB*  
*3/16/2020*

21) Total Area to be disturbed, including roads, stockpile area, pits, etc., (acres): 28.10 acres

22) Area to be disturbed for well pad only, less access road (acres): 12.79 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.

\*Note: Attach additional sheets as needed.

KRAMER UNIT 2H (HOGUE PAD)- AREA OF REVIEW 35-8-5.11

PERMIT MODIFICATION API # 47-095-02677



Kramer Unit 2H

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Antero Resources Corporation

Kramer Unit 2H - AOR



REMARKS  
No Wells of Interest

October 30, 2019

*QCB*  
3/18/2020

**FORM WV-6A1  
EXHIBIT 1**

**FILED**  
JUN 10 2013

Natalie E. Tomant  
Secretary of State  
1900 Kanawha Blvd E  
Bldg 1, Suite 157-K  
Charleston, WV 25305



Penney Baker, Manager  
Corporations Division  
Tel: (304)558-3000  
Fax: (304)559-4181  
WebSite: www.wv.gov  
E-mail: business@wv.gov

**APPLICATION FOR  
AMENDED CERTIFICATE  
OF AUTHORITY**

Office Hours: Monday - Friday  
8:00 a.m. - 5:00 p.m. ET

**FILE ONE ORIGINAL**  
(Two if you want a filed  
stamp of copy returned to you)  
FEE: \$25.00

\*\*\* In accordance with the provisions of the West Virginia Code, the undersigned corporation hereby \*\*\*  
applies for an Amended Certificate of Authority and submits the following statement:

1. Name under which the corporation was authorized to transact business in WV: Antero Resources Appalachian Corporation
2. Date Certificate of Authority was issued in West Virginia: 6/28/2009
3. Corporate name has been changed to: Antero Resources Corporation  
(Attach one Certified Copy of Name Change as filed in home State of Incorporation.)
4. Name the corporation elects to use in WV: Antero Resources Corporation  
(due to home state name not being available)
5. Other amendments:  
(attach additional pages if necessary)

6. Name and phone number of contact person. (This is optional, however, if there is a problem with the filing, having a contact person and phone number may avoid having to return or reject the document.)

Allyn A. Schopp (304) 267-7310  
Contact Name Phone Number

7. Signature information (See below \*Important Local Notice Regarding Signatures):

Print Name of Signer: Allyn A. Schopp Title/Capacity: Authorized Person  
Signature: [Handwritten Signature] Date: June 30, 2013

*\*Important Local Notice Regarding Signatures: For West Virginia Code §12-2-12b. Penalty for signing false document. Any person who signs a document he or she knows is false in any material respect and knows that the document is to be delivered to the secretary of state for filing is guilty of a misdemeanor and, upon conviction thereof, shall be fined not more than one thousand dollars or confined in the county or regional jail not more than one year, or both.*

Form CV-4

Issued by the Office of the Secretary of State

Revised 4/11

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Environmental Protection

WW-6A1

Operator's Well Number Kramer Unit 2HRECEIVED  
Office of Oil and Gas

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)

MAR 24 2020

WV Department of  
Environmental Protection

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
<b><u>Michael J. &amp; Melinda R. Hogue Lease</u></b>			
Michael J. & Melinda R. Hogue	Statoil USA Onshore Properties Inc.	1/8	0449/0283
Statoil USA Onshore Properties Inc.	EQT Production Company	Assignment	0539/0239
EQT Production Company	Antero Resources Corporation	Assignment	0663/0001
<b><u>James F. Doan et ux Lease</u></b>			
James F. Doan et ux	Chesapeake Appalachia	1/8	0376/0345
Chesapeake Appalachia	SWN Production Company LLC	Assignment	0465/0463
SWN Production Company	Antero Exchange Properties	Assignment	0544/0242
Antero Exchange Properties	Antero Resources Corporation	Merger	0552/0315
<b><u>Ridgetop Capital LP Lease (TM 20 PCL 110)</u></b>			
Ridgetop Capital LP	Antero Resources Corporation	1/8+	0634/0345
<b><u>James F. Doan et ux Lease</u></b>			
James F. Doan et ux	Antero Resources Corporation	1/8+	0670/0770
<b><u>Ridgetop Capital LP Lease (TM 26 PCL 46)</u></b>			
Ridgetop Capital LP	Antero Resources Corporation	1/8+	0634/0345
<b><u>WV Division of Natural Resources Lease</u></b>			
WV Division of Natural Resources	Antero Resources Corporation	1/8+	0648/0563
<b><u>Nancy Ann Villers Lease</u></b>			
Nancy Ann Villers	Antero Resources Corporation	1/8+	0540/0455
<b><u>WV Department of Transportation Lease</u></b>			
WV Department of Transportation	Antero Resources Corporation	1/8	0015/0049
<b><u>Mary Alice Hickman Lease</u></b>			
Mary Alice Hickman	Antero Resources Corporation	1/8+	0538/0824
<b><u>Randy Murray et ux Lease</u></b>			
Randy Murray et ux	Antero Resources Corporation	1/8+	0643/0129
<b><u>Dylan Shane Murray et ux Lease</u></b>			
Dylan Shane Murray et ux	Antero Resources Corporation	1/8+	0643/0132
<b><u>Norman C. Twyman Lease</u></b>			
Norman C. Twyman	Antero Resources Corporation	1/8+	0606/0772
<b><u>Mary A. Hickman Lease (TM 20 PCL 56)</u></b>			
Mary A. Hickman	Antero Resources Corporation	1/8+	0436/0117

\*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)  
IN LIEU OF FILING LEASE(S) AND OTHER CONTINUING CONTRACT(S)

MAR 24 2020

WV Department of  
Environmental Protection

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Grantor, lessor, etc.	Grantee, lessee, etc.	Royalty	Book/Page
<u>Nancy J. Villers Lease</u> Nancy J. Villers	Antero Resources Corporation	1/8+	0540/0455
<u>Lance M. Hickman Lease</u> Lance M. Hickman	Antero Resources Corporation	1/8+	0408/0450
<u>Mary A. Hickman Lease (TM 20 PCL 61)</u> Mary A. Hickman	Antero Resources Corporation	1/8+	0436/0117
<u>William M. Baker et ux Lease</u> William M. Baker et ux	Antero Resources Corporation	1/8+	0456/0522
<u>Richard A. Fonner et ux Lease</u> Richard A. Fonner et ux	Antero Resources Corporation	1/8+	0452/0305
<u>Jerry R. Brown et ux Lease</u> Jerry R. Brown et ux	Antero Resources Corporation	1/8+	0665/0770
<u>Jessica L. Dotson Lease</u> Jessica L. Dotson	Antero Resources Corporation	1/8+	0417/0694
<u>MAP2012-OK Lease</u> MAP2012-OK	Antero Resources Corporation	1/8+	0591/0267
<u>Boyd M. Parr et ux Lease</u> Boyd M. Parr et ux Antero Resources Appalachian Corporation	Antero Resources Appalachian Corporation Antero Resources Corporation	1/8+ Name Change	0417/0702 Exhibit 1
<u>Town of Middlebourne Lease</u> Town of Middlebourne	Antero Resources Corporation	1/8+	0549/0738
<u>Scott Denomme Lease (TM 14 PCL 18)</u> Scott Denomme	Antero Resources Corporation	1/8+	0551/0601
<u>Scott Denomme Lease (TM 14 PCL 20)</u> Scott Denomme	Antero Resources Corporation	1/8+	0551/0601



WW-6A1  
(5/13)

Operator's Well No. Kramer Unit 2H

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Office of Oil and Gas

MAR 24 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)**

WV Department of  
Environmental Protection

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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
<u>Scott Denomme Lease</u>	Scott Denomme	Antero Resources Corporation	1/8+	0551/0601

\*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.

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

7,843' to Bottom Hole

6,639' to Top Hole

TOP HOLE LATITUDE 39 - 30 - 00  
BTM HOLE LATITUDE 39 - 32 - 30

LONGITUDE 80 - 52 - 30

10,223' to Top Hole

12,651' to Bottom Hole

Page 1 of 5

**Antero Resources**  
**Well No. Kramer Unit 2H**  
**BHL MOD**  
**Antero Resources Corporation**



Kramer Unit 2H Bottom Hole

See Detail 2 Page 2

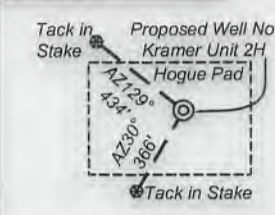
See Detail Page 4

**Notes:**  
West Virginia Coordinate System of 1927, North Zone based upon Differential GPS Measurements.  
Well No. Kramer Unit 2H Top Hole coordinates are  
N: 356,966.71' Latitude: 39°28'17.95"  
E: 1,605,368.46' Longitude: 80°53'52.66"  
Bottom Hole coordinates are  
N: 369,712.90' Latitude: 39°30'23.77"  
E: 1,604,397.61' Longitude: 80°54'07.58"  
**UTM Zone 17, NAD 1983**  
Top Hole Coordinates Bottom Hole Coordinates  
N: 4,369,132.274m N: 4,373,010.514m  
E: 508,791.333m E: 508,430.752m  
Plat orientation and corner and well references are based upon the grid north meridian.  
Well location references are based upon the magnetic meridian.

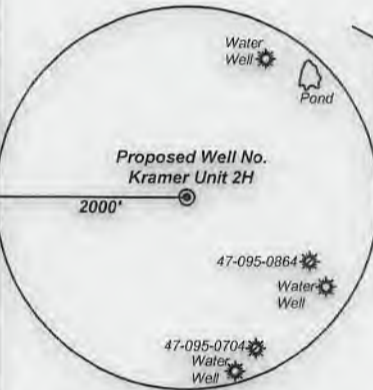
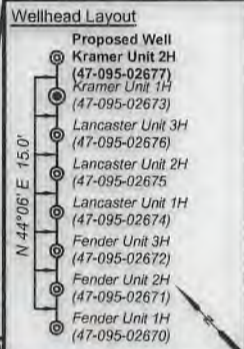
**Notes:**  
Well No. Kramer Unit 2H  
**UTM Zone 17, NAD 1927**  
Top Hole Coordinates  
N: 14,333,680.70'  
E: 1,669,212.13'  
Point of Entry Coordinates  
N: 14,334,263.12'  
E: 1,672,241.47'  
Bottom Hole Coordinates  
N: 14,346,404.55'  
E: 1,668,029.05'

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

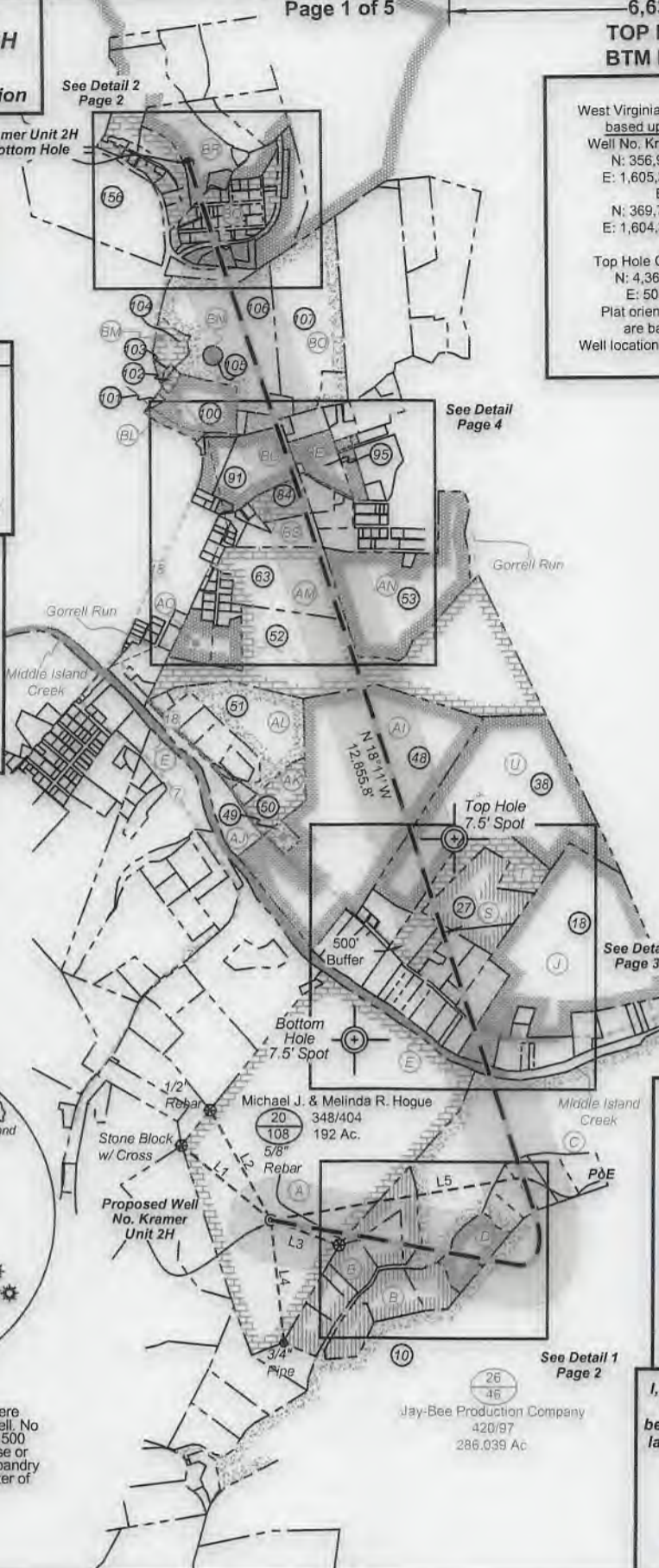
**Well Location References**



Bearing	Dist.
L1 S 50°25' E	1,405.2'
L2 S 29°02' E	1,516.0'
L3 N 70°20' W	881.6'
L4 N 06°11' W	1,483.0'
L5 N 80°04' E	3,085.9'



Note: 3 water wells and 1 pond 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.



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

FILE NO: 15-54-E-19  
DRAWING NO: Kramer Unit 2H Well Plat  
SCALE: 1" = 2000'  
MINIMUM DEGREE OF ACCURACY: Submeter  
PROVEN SOURCE OF ELEVATION: WVDOT, Harrisville, WV

**STATE OF WEST VIRGINIA**  
**DEPARTMENT OF ENVIRONMENTAL PROTECTION**  
**OIL AND GAS DIVISION**

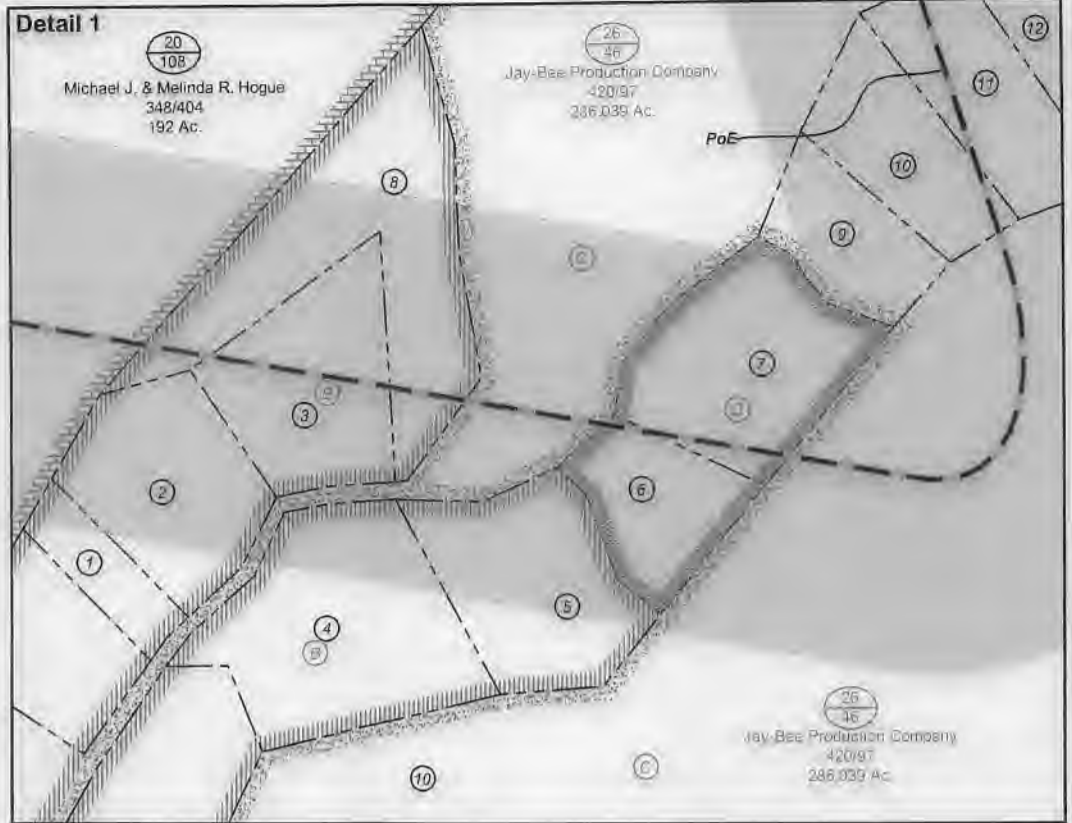
DATE: March 12 2019  
OPERATOR'S WELL NO. Kramer 2H  
API WELL NO  
47 - 095 - 02677  
STATE COUNTY PERMIT

WELL TYPE:  OIL  GAS  LIQUID INJECTION  WASTE DISPOSAL  
(IF GAS) PRODUCTION:  STORAGE  DEEP  SHALLOW  
Proposed 1,014.5'  
LOCATION: ELEVATION: Existing 1,033' WATERSHED: Outlet Middle Island Creek QUADRANGLE: Middlebourne 191.5; 81.33; 310.393; 9.178; 67.67; 6.95064; 1.58; 3.566; 0.99; 5.27; 5.94; 3.23; 19.35; 19.35; 70.9775; 100.45; 102.33; 8.62; 19.518; 93.225; 6.85; 2.750; 34.59654; 41.0; 28.54; 452.99125  
DISTRICT: Ellsworth WV Division of Natural Resources; Connie L. Hickman; Jessica L. Dotson; Boyd M. Parr, et ux; Town of Middlebourne; Scott Denomme, et ux (2); Nancy J. Villers; William M. Baker, et ux; Richard A. Fonner, et ux; Jerry R. Brown, et ux; Map2012-OK; Dylan Shane Murray, et ux; Lance M. Hickman; Mary A. Hickman (2); Mary Alice Hickman Estate; WV Dept. of Transportation, DOH; James S. Suter, et ux; Randy Murray, et ux; Norman C. Twyman;  
SURFACE OWNER: Michael J. & Melinda R. Hogue  
ROYALTY OWNER: Michael J. & Melinda R. Hogue; James F. Doan, et ux (2); Ridgetop Capital LP; Nancy Ann Villers.  
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: 24,500' MD 6,900' 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

**Antero Resources**  
**Well No. Kramer Unit 2H**  
**BHL MOD**  
**Antero Resources Corporation**

Page 2 of 5



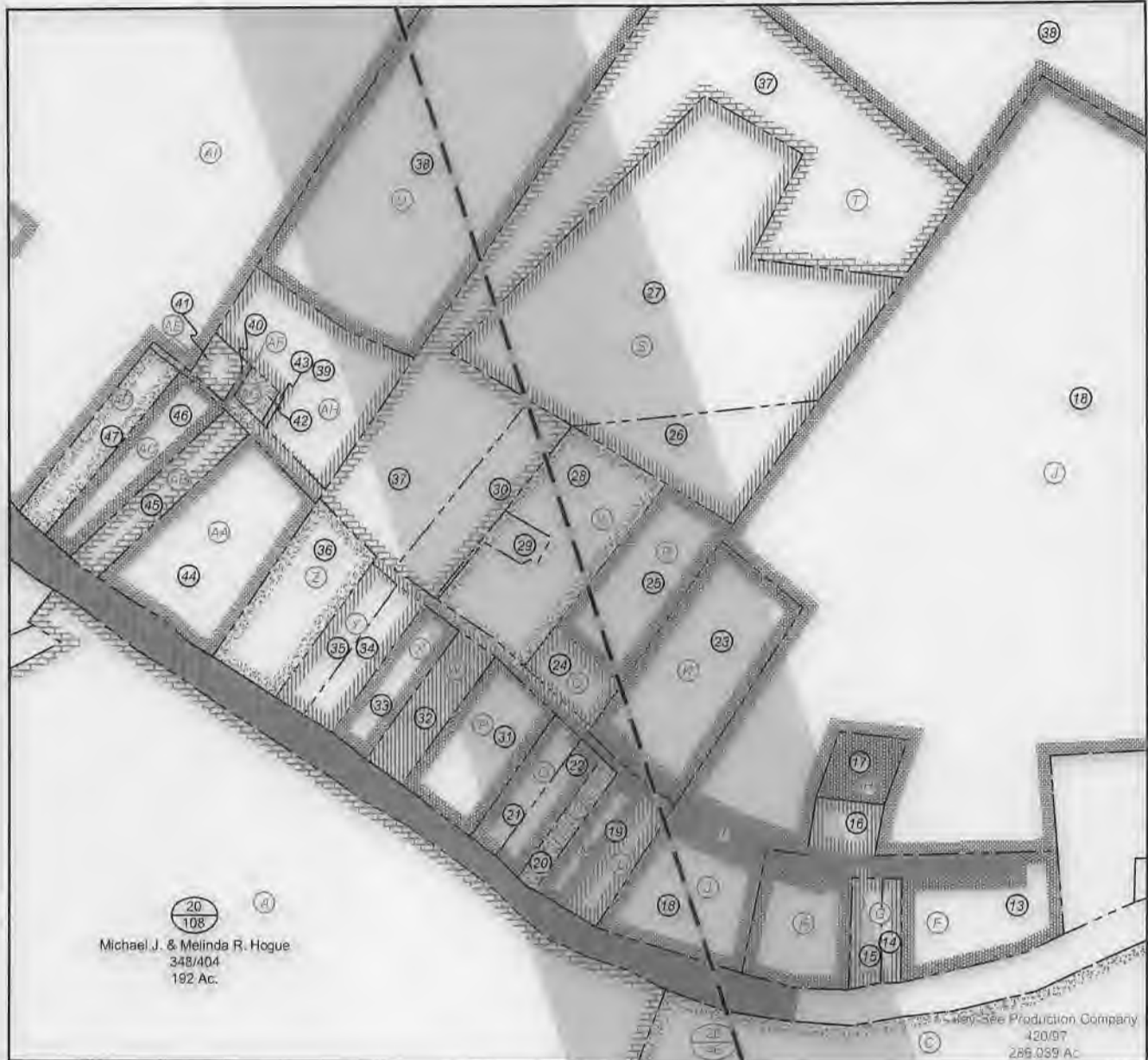
FILE NO: 15-54-E-19  
 DRAWING NO: Kramer Unit 2H Well Plat  
 SCALE: 1" = 2000'  
 MINIMUM DEGREE OF ACCURACY:  
 Submeter  
 PROVEN SOURCE OF ELEVATION:  
 WVDOT, Harrisville, WV

**STATE OF WEST VIRGINIA**  
 DEPARTMENT OF ENVIRONMENTAL PROTECTION  
**OIL AND GAS DIVISION**

DATE: March 12 2019  
 OPERATOR'S WELL NO. Kramer 2H  
 API WELL NO  
 47 - 095 - 02677  
 STATE COUNTY PERMIT

WELL TYPE:  OIL  GAS  LIQUID INJECTION  WASTE DISPOSAL  
 (IF GAS) PRODUCTION:  STORAGE  DEEP  SHALLOW  
 LOCATION: ELEVATION: Existing 1,033' Proposed 1,014.5' WATERSHED: Outlet Middle Island Creek QUADRANGLE: Middlebourne  
 DISTRICT: Ellsworth COUNTY: Tyler  
 SURFACE OWNER: Michael J. & Melinda R. Hogue ACREAGE: 192.0  
 ROYALTY OWNER: Michael J. & Melinda R. Hogue; James F. Doan, et ux (2); Ridgeloop Capital LP; Nancy Ann Villers; LEASE NO: \_\_\_\_\_ ACREAGE: \_\_\_\_\_  
 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: 6,900' TVD  
 24,500' 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



20  
108  
Michael J. & Melinda R. Hogue  
348/404  
192 Ac.

See Production Company  
420/07  
286 039 Ac.

FILE NO: 15-54-E-19  
 DRAWING NO: Kramer Unit 2H Well Plat  
 SCALE: 1" = 2000'  
 MINIMUM DEGREE OF ACCURACY:  
 Submeter  
 PROVEN SOURCE OF ELEVATION:  
 WVDOT, Harrisville, WV

**STATE OF WEST VIRGINIA**  
 DEPARTMENT OF ENVIRONMENTAL PROTECTION  
**OIL AND GAS DIVISION**

DATE: March 12 2019  
 OPERATOR'S WELL NO. Kramer 2H  
 API WELL NO  
 47 - 095 - 02677  
 STATE COUNTY PERMIT

WELL TYPE:  OIL  GAS  LIQUID INJECTION  WASTE DISPOSAL  
 (IF GAS) PRODUCTION:  STORAGE  DEEP  SHALLOW  
 Proposed 1,014.5'  
 LOCATION: ELEVATION: Existing 1,033' WATERSHED: Outlet Middle Island Creek QUADRANGLE: Middlebourne 191.5; 81.33; 310.393;  
 DISTRICT: Ellsworth WV Division of Natural Resources: Connie L. Hickman, Jessica L. Dotson; 9,178; 67.67; 6,950.64;  
 SURFACE OWNER: Michael J. & Melinda R. Hogue William M. Baker, et ux; Richard A. Fonner, et ux; Jerry R. Brown, et ux (2); Nancy J. Villers; 1.58; 3.556; 0.99; 5.27;  
 ROYALTY OWNER: Michael J. & Melinda R. Hogue; James F. Doan, et ux (2); Ridgetop Capital LP; Nancy Ann Villers. Dylan Shane Murray, et ux; Lance M. Hickman; Mary A. Hickman (2); Mary Alice Hickman Estate; WV Dept. of Transportation, DOH; James S. Suter, et ux; Randy Murray, et ux; Norman C. Twyman; 5.94; 3.23; 19.36; 19.36;  
 PROPOSED WORK:  DRILL  CONVERT  DRILL DEEPER  FRACTURE OR STIMULATE  PLUG OFF OLD FORMATION 70,977.5; 100.45; 102.33;  
 PERFORATE NEW FORMATION  OTHER PHYSICAL CHANGE IN WELL (SPECIFY) BHL MOD 8.62; 19,518; 93,225;  
 PLUG AND ABANDON  CLEAN OUT AND REPLUG TARGET FORMATION: Marcellus Shale ESTIMATED DEPTH: 24,500' MD 6.85; 2,750; 34,596.54;  
 LEASE NO: \_\_\_\_\_ ACREAGE: 192.0 41.0; 28.54; 452.99125

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



FILE NO: 15-54-E-19  
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 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: March 12 20 19  
 OPERATOR'S WELL NO. Kramer 2H  
 API WELL NO  
47 - 095 - 02677  
 STATE COUNTY PERMIT

WELL TYPE:  OIL  GAS  LIQUID INJECTION  WASTE DISPOSAL  
 (IF GAS) PRODUCTION:  STORAGE  DEEP  SHALLOW  
 Proposed 1,014.5'  
 LOCATION: ELEVATION: Existing 1,033' WATERSHED: Outlet Middle Island Creek QUADRANGLE: Middlebourne  
 DISTRICT: Ellsworth COUNTY: Tyler  
 SURFACE OWNER: Michael J. & Melinda R. Hogue ACRES: 192.0  
 ROYALTY OWNER: Michael J. & Malinda R. Hogue; James F. Doan, et ux (2); Ridgeloop Capital LP; Nancy Ann Villers; LEASE NO: \_\_\_\_\_ ACREAGE: \_\_\_\_\_  
 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: 24,500' 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

**Antero Resources**  
**Well No. Kramer Unit 2H**  
**BHL MOD**  
**Antero Resources Corporation**

**Leases**

A	Michael J. & Melinda R. Hogue
B	James F. Doan, et ux
C	Ridgetop Capital LP
D	James F. Doan, et ux
E	WV Division of Natural Resources
F	James S. Suter
G	James S. Suter
H	Jeff T. Hoover
I	WV Dept. of Transportation, DOH
J	Nancy Ann Villers
K	Mary Alice Hickman Estate
L	Nancy J. Villers
M	James S. Suter, et ux
N	Steven L. Conrad, et ux
O	Kendra K. Cottrell Wyke
P	Stephen D. Ashley, et ux
Q	Randy Murray, et ux
R	Dylan Shane Murray, et ux
S	Lance M. Hickman
T	Mary A. Hickman
U	Mary A. Hickman
V	Norman C. Twyman
W	Ricky W. Morris, et ux
X	Barbara K. Davis
Y	John T. Burr, et ux
Z	Perry L. Weekley, et ux
AA	Nina Naomi Wise
AB	Jerry Todd Williams
AC	Barbara J. Davis
AD	William M. Baker, et ux
AE	Rosalee J. Forrester
AF	Rosalee J. Forrester
AG	Rosalee J. Forrester
AH	Robert J. Kocher
AI	William M. Baker, et ux
AJ	Bradley Baker
AK	Clara Jane Glover
AL	Brian D. Carpenter, et ux
AM	Richard A. Fonner, et ux
AN	Connie L. Hickman
AO	Michael A. Lenz, et ux
AP	Jeffery D. McKinney
AQ	Homer L. Matthews
AR	Michael Hickman, et ux
AS	Marvin Gene Franklin
AT	Tommy L. Williams
AU	Jerry R. Brown, et ux
AV	Jerry R. Brown
AW	Jerry R. Brown
AY	Karen S. Hunt
AZ	Grace M. Stackpole
BA	Charles R. Wince, et ux
BB	Ryan L. Walton, et ux
BC	Bradley R. Crawford, et ux
BD	Gary M. Patterson, et ux
BE	Brian K. Doak, et ux
BF	Thomas Jack Carpenter
BG	Map2012-OK
BJ	Roger Carl Ferrell
BK	Rose E. White
BL	Middlebourne Cemetery Association
BM	REOP, LLC
BN	Town of Middlebourne
BO	Boyd M. Parr, et ux
BP	Town of Middlebourne
BQ	Scott Denomme
BR	Scott Denomme
BS	Jessica L. Dotson

ID	TM/Par	Owner	Bk/Pg	Acres
1	26-46.6	Camille Patera	296/247	1.702
2	26-46.9	Eugene B. Jr. & Carol A. Johnson	351/60	5.00
3	26-46.2	Robert E. Lee II & Chasity L. Pittman	408/122	5.14
4	26-46.7	Camille Patera	296/247	7.32
5	26-46.3	Timothy Kanz	440/24	5.40
6	26-46.12	Charles R. & Bertha A. Holliday	306/665	3.24
7	26-46.13	Charles R. & Bertha A. Holliday	306/665	5.94
8	26-46.14	Jay-Bee Production Company	420/97	8.69
9	26-46.22	Eugene B. Johnson, Sr., et ux	351/247	2.92
10	26-46.23	Eugene B. Johnson, Sr., et ux	351/247	3.60
11	26-46.17	Kelley C. & Kathleen J. Ririk Bamm	AR46/11	4.32
12	26-46.18	Kelley C. & Kathleen J. Ririk Bamm	AR46/11	4.11
13	20-65.1	James S. & Ghislaine S. Suter	273/557	1.58
14	21-63	James S. & Ghislaine S. Suter	229/658	0.44
15	20-82	James S. & Ghislaine S. Suter	211/449	0.70
16	20-62.1	James S. & Ghislaine S. Suter	287/509	0.83
17	20-66	Jeff T. Hoover	313/120	1.00
18	20-82	Nancy Villers & Sara Fay Eskew	WB44/598	67.67
19	20-65.1	James S & Ghislaine Suter	273/557	1.58
20	20-79	Tamara Wilcox & Steven L. Conrad	361/205	0.68
21	20-77	Joseph C. Snyder Jr.	397/838	1.27
22	20-78	Joseph C. Snyder Jr.	397/838	0.85
23	20-65	Kathy Sue Archer	336/138	6.85
24	20-64	Randy Murray & Julia A. Murray	WB37/376	9.99
25	20-64.1	Dylan Shane Murray	385/472	3.23
26	20-56.2	Lance M. & Tina R. Hickman	438/814	2.95
27	20-56.1	Lance M Hickman	393/65	16.405
28	20/63	Kimberly & George Eidel	353/298	4.79
29	20/63.1	Mary A. Hickman	WB37/376	0.48
30	20/61	Mark Duane Hickman, et al	WB54/1	2.22
31	20/76	Stephen D. & Brenda J. Ashley	211/429	2.74
32	20/75	Ricky J. & Sharon S. Morris	285/17	1.47
33	20/74	Barbara K. Davis	AR43/791	1.46
34	20/73	John T & Catherine L. Burr	378/27	1.11
35	20/72	John T & Catherine L. Burr	378/27	1.13
36	20/71	Perry L. & Jackie L. Weekley	370/145	4.00
37	20-56	Mary Alice Hickman	152/16	14.96
38	20-55	Mary Alice Hickman	AR36/288	71.34
39	20/59	Robert Kocher	358/343	4.19
40	20/59.1	Robert R. & Rosalee J. Forrester	335/826	0.05
41	20/58	Robert R. & Rosalee J. Forrester	321/129	0.46
42	20/60	Robert R. & Rosalee J. Forrester	321/129	0.38
43	20/60.1	Robert Kocher	358/343	0.05
44	20/70	Nina Wise	WB25/700	3.91
45	20/69	Jerry, Michelle, & Justin Williams	440/471	1.60
46	20/68	Barbara J. Davis	WB30/311	2.09
47	20-67	William M. & Janet S. Baker	175/391	2.10
48	20-54	William M. & Janet S. Baker	175/391	100.45
49	20/54.1	Bradley Baker	355/823	2.00
50	20/53	Clara Negle	344/51	8.00
51	20/51.6	Brian & Sarah Carpenter	342/467	24.92
52	20-33	Lance M. & Tina R. Hickman	396/561	77.84
53	20-10	Connie L. Hickman, et al	341/209	41.00
54	20/23	Michael & Chris Lenz	313/216	4.60
55	20/23.1	Michael & Chris Lenz	323/732	5.52
56	20/25	Marshal McKinney	208/650	0.92
57	20/33.2	Homer Matthews	284/375	0.28
58	20/32	Homer Lee Matthews	176/216	0.34
59	20/31	Larry & Barbara Lee	211/179	0.34
60	20/21	Nancy Mercer	WB32/425	0.34
61	20/27	Earl P. & Crucita Kendle	331/341	0.32
62	20/29.1	James Bembry	331/43	0.25
63	20/33.3	Richard Fonner	415/796	18.5
64	20/29	Maurine Hadley	167/69	0.34
65	20/30	Donald & Susan Smith	321/165	0.26
66	20/28	Victor & Lorraine Weekley	280/422	0.23
67	20/20	Melinda Sue George	351/620	0.14
68	4-38	Michael K. Smith, et ux	377/179	0.07
69	4-39	Diana Lynn Slider	250/397	0.79
70	20-19	Jerry R. Brown	222/177	0.18
71	4-41	Jerry R. Brown	WB26/707	0.42
72	4-42	Donald K. Baker, et ux	532/595	0.20
73	20-18	Donald K. Baker, et ux	532/595	0.11
74	20-5.1	Charles R. & Martha J. Wince	356/22	0.18
75	4-43	Charles R. & Martha J. Wince	353/226	0.44
76	20-5	Grace M. Stackpole	373/11	0.88
77	20-7	Jerry & Jacqueline Brown	340/217	0.62
78	20-33.1	Jerry & Jacqueline Brown	340/215	8.00

ID	TM/Par	Owner	Bk/Pg	Acres
79	20-9	Marvin Gene Franklin	WB57/258	2.77
80	20B-29	Connie Lee & Michael D. Hickman	251/264	0.41
81	14-67	Tommy L. & Carolyn Williams	169/472	3.00
82	14-67.1	Gary M. & Amber D. Patterson	538/721	0.35
83	14-66	Bradley R. & Frances K. Crawford	206/698	2.70
84	20-8	Jessica L. Dotson, et al	358/727	5.94
85	20-6	Ryan L. & Melinda J. Walton	388/217	0.68
86	2-38	Patsy Fletcher	WB35/614	0.66
87	2-37	Sadie T. Weekley Irrevocable Trust	373/542	0.26
88	2-33	Scott A. Holmes	424/366	0.12
89	2-32	Scott A. Holmes	326/679	0.34
90	2-34	Janice E. Licht	321/477	0.51
91	14-62	Patsy Fletcher	WB35/614	14.50
92	2-35	Patsy Fletcher	WB35/614	4.25
93	2-36	WV Dept. of Highways	—/—	0.30
94	14-63	Wells Cemetery	67/69	0.21
95	14-65	Brian Kim & Pamela J. Doak	309/491	7.11
96	14-64	Boyd M. & Patricia L. Parr	181/649	3.04
97	14-55	Boyd M. & Patricia L. Parr	214/725	0.70
98	14-54	Boyd & Patricia Parr	164/170	2.30
99	14-53	Rose E. White	284/317	0.69
100	14-52	Middlebourne Cemetery Association	144/234	12.36
101	2-47	Witschey's Market Inc.	290/93	0.42
102	14-50	Barry Harter	WB38/84	0.80
103	14-51.1	Barry Harter	WB38/84	0.27
104	14-51	Barry Harter	590/288	4.66
105	14-80	Town of Middlebourne	222/301	1.00
106	14-51	Boyd M. & Patricia L. Parr	222/349	47.29
107	14-56.1	Boyd M. & Patricia L. Parr	358/643	35.33
108	14-91	Town of Middlebourne	377/187	2.32
109	14A-29.4	David B. Shriver	463/753	1.00
110	14A-29.2	Ren Realty DBA David Shriver	337/105A	1.00
111	14A-29.3	David B. Shriver	456/435	1.75
112	14A-29	Victor A & Lorraine Weekley	299/300	13.00
113	14A-22	Julia A. Smith	98/92	0.25
114	14A-21.1	Unknown	—/—	0.60
115	14A-21	Jack L. & Donna Lea Boggs	233/636	0.29
116	14A-24	Diane Lynn Glover	368/430	0.72
117	14A-26	Robert Wells	336/686	0.28
118	14A-27	Long Reach Employees	328/140	0.43
119	14A-27.1	Federal Credit Union	328/140	0.11
120	14A-27.2	Sharon Stackpole & Tabatha Welch	349/660	0.03
121	14A-28	Sharon Stackpole & Tabatha Welch	349/660	0.337
122	14A-28.1	Conrad E. Costlow	330/825	0.28
123	14A-29	Victor A & Lorraine Weekley	299/300	13.00
124	14A-30	Conrad E. Costlow	330/923	0.57
125	14A-31	Brian & Lisa Wiley	318/360	0.29
126	14A-32	Brian & Lisa Wiley	306/297	0.22
127	14A-17	Robert P. Wells	339/688	0.72
128	14A-17.1	Robert P. Wells	347/733	0.29
129	14A-18	David L. & Misty J. Stoller	333/222	0.43
130	14A-19	Raymond E. & Eva June Brightwell	304/380	0.25
131	14A-20	Jack L. & Donna Lea Boggs	231/725	0.30
132	14A-19.1	Raymond E. & Eva June Brightwell	304/380	0.19
133	14A-19.2	Raymond E. & Eva June Brightwell	336/522	0.13
134	14A-15	Douglas Carson	379/507	0.14
135	14A-16.1	Douglas Carson	379/507	0.14
136	14A-16	Allen E. Jr & Rebecca A. Henderson	346/579	0.14
137	14A-16.2	Allen E. Jr & Rebecca A. Henderson	346/579	0.43
138	14A-33	Michael J. & Christine H. Farhatt	331/376	0.29
139	14A-34	Michael J. & Christine H. Farhatt	331/376	0.29
140	14A-40	Ray N. & Gladys R. Gorrill	WB32/338	0.57
141	14A-44	Rebecca Ann Henderson	351/836	0.31
142	14A-45	Rebecca Ann Henderson	351/836	0.71
143	14A-13	David R. & Corey Helen Wilcox	420/722	1.12
144	14A-12	Lloyd E. & Donna A. Shepreth	321/106	0.64
145	14A-11	Robert D. Wetzel	402/591	1.19
146	14A-43	Rebecca J. Ruble	308/293	1.11
147	14A-42	Dominic Yost	426/605	0.26
148	14A-41	Phillip R. & Dorothy M. Wilcox	286/807	0.28
149	14-22	Sherry Carroll	284/535	5.02
150	14-21	Arnold L. & Melba J. Templeton	346/507	14.95
151	14A-3	Sandra Sue Slider	317/325	6.00
152	14A-4	Sandra S Slider	267/10	0.26
153	14A-10	Richard Daniel & Judith Ann Bowen	349/296	0.19
154	14A-9	Richard Daniel & Judith Ann Bowen	371/429	1.46
155	14A-8	Glenn & Starlin Hissam	343/801	0.33
156	14-42	Anne L. Spencer	273/368	33.00

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 Submeter  
 PROVEN SOURCE OF ELEVATION:  
 WVDOT, Harrisville, WV



DATE: March 12 20 19  
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 API WELL NO  
 47 - 095 - 02677  
 STATE COUNTY PERMIT

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 PLUG AND ABANDON  CLEAN OUT AND REPLUG TARGET FORMATION: Marcellus Shale ESTIMATED DEPTH: 24,500' 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

## Adkins, Laura L

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**From:** Dani Devito <ddevito@shalepro.com>  
**Sent:** Monday, March 30, 2020 3:37 PM  
**To:** Adkins, Laura L  
**Subject:** [External] Kramer 2H

CAUTION: External email. Do not click links or open attachments unless you verify sender.

Laura,  
For the Kramer 2H (095-02677) there were no additional wells within the buffer and no changes to the collision avoidance needed.

Thanks!

Dani

Dani DeVito  
Director, Permitting & Marketing



304.709.7100 ext. 103  
304.288.7104

[www.shalepro.com](http://www.shalepro.com)