

#### west virginia department of environmental protection

Office of Oil and Gas 601 57th Street SE Charleston, WV 25304 (304) 926-0450 (304) 926-0452 fax Earl Ray Tomblin, Governor Randy C. Huffman, Cabinet Secretary www.dep.wv.gov

#### PERMIT MODIFICATION APPROVAL

June 13, 2016

ANTERO RESOURCES CORPORATION 1615 WYNKOOP STREET DENVER, CO 80202

Re: Permit Modification Approval for API Number 9502324, Well #: GOODFELLOW UNIT 1H

Lateral Extension

#### Oil and Gas Operator:

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.

Please call James Martin at 304-926-0499, extension 1654 if you have any questions.

Sincerely,

Gene Smith

Assistant Chief of Permitting

Laura L. alkins

Office of Oil and Gas

Promoting a healthy environment.

WW-6B (04/15) API NO. 47- 095 - 02324 MOD

OPERATOR WELL NO. Goodfellow Unit 1H

Well Pad Name: Weigle East Pad

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

| 1) Well Operator: Antero Reso                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | ources Corporat     | 494507062           | 095 - Tyler       | Ellsworth Shirley 7.5' |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|---------------------|-------------------|------------------------|
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                     | Operator ID         | County            | District Quadrangle    |
| 2) Operator's Well Number: Go                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | odfellow Unit 1H    | Well Pad            | Name: Weigl       | e East Pad             |
| 3) Farm Name/Surface Owner:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Edwin C. Weigle     | Public Road         | d Access: CR      | 18/14                  |
| 4) Elevation, current ground:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 812' Ele            | evation, proposed j | post-construction | on: 812'               |
| 5) Well Type (a) Gas X Other                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Oil                 | Unde                | rground Storag    | ge                     |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | llow X<br>izontal X | Deep                |                   |                        |
| 6) Existing Pad: Yes or No Yes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                     |                     |                   |                        |
| 7) Proposed Target Formation(s)<br>Marcellus Shale: 6500' TVD, Ar                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                     | 7 (C. 1)            |                   |                        |
| 8) Proposed Total Vertical Depth                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | n: 6500' TVD        |                     |                   |                        |
| 9) Formation at Total Vertical D                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | epth: Marcellus     | Shale               |                   |                        |
| 10) Proposed Total Measured De                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | epth: 15,900' M     | D                   |                   |                        |
| 11) Proposed Horizontal Leg Lei                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | ngth: 8950'         |                     |                   |                        |
| 12) Approximate Fresh Water St                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | rata Depths:        | 9', 194', 366'      |                   |                        |
| 13) Method to Determine Fresh                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Water Depths: S     | cardina Unit 1H     | (API# 47-095-     | 02169) on same pad.    |
| 14) Approximate Saltwater Dept                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | hs: 1931', 1136'    | 1                   |                   |                        |
| 15) Approximate Coal Seam Dep                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | oths: 1380', 146    | 1'                  |                   |                        |
| 16) Approximate Depth to Possi                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | ble Void (coal min  | ne, karst, other):  | None Anticipat    | ted                    |
| 17) Does Proposed well location directly overlying or adjacent to                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                     | ns<br>Yes           | No                |                        |
| (a) If Yes, provide Mine Info:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Name:               |                     |                   | Received               |
| N. A. Co. of Co. | Depth:              |                     |                   | Office of Oil & Gaz    |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Seam:               |                     |                   | MAY 2 3 2016           |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Owner:              |                     |                   |                        |

WW-6B (04/15) API NO. 47- 095 - 02324 100

OPERATOR WELL NO. Goodfellow Unit 1H
Well Pad Name: Weigle East Pad

18)

#### CASING AND TUBING PROGRAM

| TYPE         | Size<br>(in) | New<br>or<br>Used | Grade         | Weight per ft.<br>(lb/ft) | FOOTAGE: For<br>Drilling (ft) | INTERVALS:<br>Left in Well<br>(ft) | CEMENT:<br>Fill-up<br>(Cu. Ft.)/CTS |
|--------------|--------------|-------------------|---------------|---------------------------|-------------------------------|------------------------------------|-------------------------------------|
| Conductor    | 20"          | New               | H-40          | 94#                       | 60'                           | 60'                                | CTS, 164 Cu. Ft.                    |
| Fresh Water  | 13-3/8"      | New               | J-55/H-40     | 54.5#/48#                 | 440'                          | 440'*see #19                       | CTS, 611 Cu. Ft.                    |
| Coal         | 9-5/8"       | New               | J-55          | 36#                       | 2400'                         | 2400'                              | CTS, 977 Cu. Ft.                    |
| Intermediate |              |                   | ( ; ; ; ; ; ; |                           |                               |                                    |                                     |
| Production   | 5-1/2"       | New               | P-110         | 20#                       | 15,900'                       | 15,900'                            | 3995 Cu. Ft                         |
| Tubing       | 2-3/8"       | New               | N-80          | 4.7#                      |                               | 7100'                              |                                     |
| Liners       |              |                   |               |                           |                               |                                    |                                     |

| TYPE         | Size (in) | Wellbore<br>Diameter (in) | Wall<br>Thickness<br>(in) | Burst Pressure<br>(psi) | Anticipated Max. Internal Pressure (psi) | Cement<br>Type        | Cement<br>Yield<br>(cu. ft./k) |
|--------------|-----------|---------------------------|---------------------------|-------------------------|------------------------------------------|-----------------------|--------------------------------|
| Conductor    | 30"       | 24"                       | 0.438"                    | 1530                    | 50                                       | Class A               | 1.18                           |
| Fresh Water  | 13-3/8"   | 17-1/2"                   | 0.38"/0.33"               | 2730/1730               | 1000                                     | Class A               | 1.18                           |
| Coal         | 9-5/8"    | 12-1/4"                   | 0.352"                    | 3520                    | 1500                                     | Class A               | 1.18                           |
| Intermediate | 71 - 11   |                           |                           |                         |                                          |                       |                                |
| Production   | 5-1/2"    | 8-3/4" & 8-1/2"           | 0.361"                    | 12,630                  | 2500                                     | Lead-H/POZ & Tell - H | H/POZ-1.44 & H-1.8             |
| Tubing       | 2-3/8"    | 4.778"                    | 0.19"                     | 11,200                  |                                          |                       |                                |
| Liners       |           |                           |                           |                         |                                          |                       |                                |

### **PACKERS**

| Kind:       | N/A | Office of Oil & Oil |
|-------------|-----|---------------------|
| Sizes:      | N/A | MAY 2 3 2015        |
| Depths Set: | N/A |                     |

WW-6B (10/14)

API NO. 47-095 - 02324 MW /7

OPERATOR WELL NO. Goodfellow Unit 1H

Well Pad Name: Weigle East 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 freshwater 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): 22.17 acres
- 22) Area to be disturbed for well pad only, less access road (acres): 3.22 acres (\*expanded LOD)

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: Tail cement- Class H + 45 PPS Calcium Carbonate + 1.0% FL-160 + 0.2% ACGB-47 + 0.05% ACSA-51 + 0.2% ACR-Office of Oil & G

Received

MAY 2 3 2016

#### 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.

<sup>\*</sup>Note: Attach additional sheets as needed.

### 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 –

- 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                                             |
|----------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|-------------------------------------------------------|
|                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                 |                                                       |
| Kathy Ann Seago Lease J                            | and the less than the transfer and the                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                 | Up 17 AUG 500                                         |
| Kathy Ann Seago, as a beneficiary of the Estate of | Antero Resources Appalachian Corporation                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 1/8+                                                                                                            | 0402/0448                                             |
| Edwin C. Weigle, deceased                          | And Annual Control of the Control of | 10 Aug 20 Aug | 2.044.5                                               |
| Antero Resources Appalachian Corporation           | Antero Resources Corporation                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Name Change                                                                                                     | Exhibit 1                                             |
|                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                 |                                                       |
| Richard L. Seago, et ux Lease                      | into the second of the second of                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 4.10                                                                                                            | 2 404 (000                                            |
| Richard L. Seago                                   | Antero Resources Appalachian Corporation                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 1/8+                                                                                                            | 0403/0733                                             |
| Antero Resources Appalachian Corporation           | Antero Resources Corporation                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Name Change                                                                                                     | Exhibit 1                                             |
| 1                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                 |                                                       |
| Robert L. Dean Lease                               | Annual Control of the | 1000                                                                                                            | And the Assessment                                    |
| Robert Dean                                        | Antero Resources Appalachian Corporation                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 1/8+                                                                                                            | 0410/0659                                             |
| Antero Resources Appalachian Corporation           | Antero Resources Corporation                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Name Change                                                                                                     | Exhibit 1                                             |
| James E. Gregg, et ux Lease                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                 |                                                       |
| James E. Gregg, et ux tease                        | Antero Resources Appalachian Corporation                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 1/8+                                                                                                            | 0408/0460                                             |
| Antero Resources Appalachian Corporation           | Antero Resources Corporation                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Name Change                                                                                                     |                                                       |
| Antero Resources Apparachian Corporation           | Antero Resources Corporation                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Name Change                                                                                                     | Exhibit 1                                             |
| WVDNR Lease (Middle Island Creek)                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                 |                                                       |
| West Virginia Division of Natural Resources        | Antero Resources Corporation                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 1/8+                                                                                                            | 0483/0269                                             |
|                                                    | : 11 20 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 4-7                                                                                                             |                                                       |
| Tyler County Fair Association Lease                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                 |                                                       |
| Tyler County Fair Association, Inc.                | Antero Resources Appalachian Corporation                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 1/8+                                                                                                            | 0424/0521                                             |
| Antero Resources Appalachian Corporation           | Antero Resources Corporation                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Name Change                                                                                                     | Exhibit 1                                             |
|                                                    | A THE CONTRACTOR STATE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                 |                                                       |
| John Gregory Thompson Smith Lease                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                 |                                                       |
| John Gregory Thompson Smith                        | Antero Resources Corporation                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 1/8+                                                                                                            | 0455/0074                                             |
| David and Nina Miller Lease                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                 |                                                       |
|                                                    | Autora Bassaras Construction                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | * /0 .                                                                                                          | 0470/0378                                             |
| David Miller, et ux                                | Antero Resources Corporation                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 1/8+                                                                                                            |                                                       |
| Eugene R. Smith Lease                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Do                                                                                                              | ceived                                                |
| Eugene R. Smith                                    | Antero Resources Corporation                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 1/8+ HB                                                                                                         | 0449/0828                                             |
| J                                                  | Charle to an an an annin                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | office (                                                                                                        | 26 (31) T. C. C. C.                                   |
| Kathy A. Keating Lease                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Office                                                                                                          | ceived<br>of Cil & 6449/8828<br>2 3 2016<br>6438/6438 |
| Kathy A. Keating                                   | Antero Resources Corporation                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 1/8+                                                                                                            | 0 3 (1) 0438/0438                                     |

<sup>\*</sup>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.

WW-6A1 (5/13)

| Operator's Well No. | Goodfellow 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)

Under the oath required to make the verification on page 1 of this Notice and Application, I depose and say that I am the person who signed the Notice and Application for the Applicant, and that -

- (1) the tract of land is the same tract described in this Application, partly or wholly depicted in the accompanying plat, and described in the Construction and Reclamation Plan;
- (2) the parties and recordation data (if recorded) for lease(s) or other continuing contract(s) by which the Applicant claims the right to extract, produce or market the oil or gas are as follows:

| Lease Name or Number          | Grantor, Lessor, etc.                                                         | Grantee, Lessee, etc.        | Royalty | Book/Page |
|-------------------------------|-------------------------------------------------------------------------------|------------------------------|---------|-----------|
| Benjamin F. Hill, et ux Lease |                                                                               |                              |         |           |
| Benja                         | min F. Hill                                                                   | Antero Resources Corporation | 1/8+    | 0424/0549 |
|                               | sources Corporation include 100% rig<br>the Marcellus and any other formation |                              |         |           |

#### 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

Received Office of Oil & Gas

MAY 2 3 2016

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 Resource  | s Corpo | ration |
|----------------|------------------|---------|--------|
| By:            | Kevin Kilstrom   | lin     | Witto  |
| Its:           | Senior VP of Pro | duction |        |

Page 1 of

# **EXHIBIT**



Natalle E. Tennant. Secretary of State 1900 Kanawha Bivd B Bldg 1, Suite 157-K Charleston, WV 25305

FILE ONE ORIGINAL (Two if you want a Med stamped copy returned to you)



Penney Barker, Manager IN THE OFFICE OF Corporations Division SECRETARY OF STATE Pax: (304)558-8381
Website: www.wysos.com

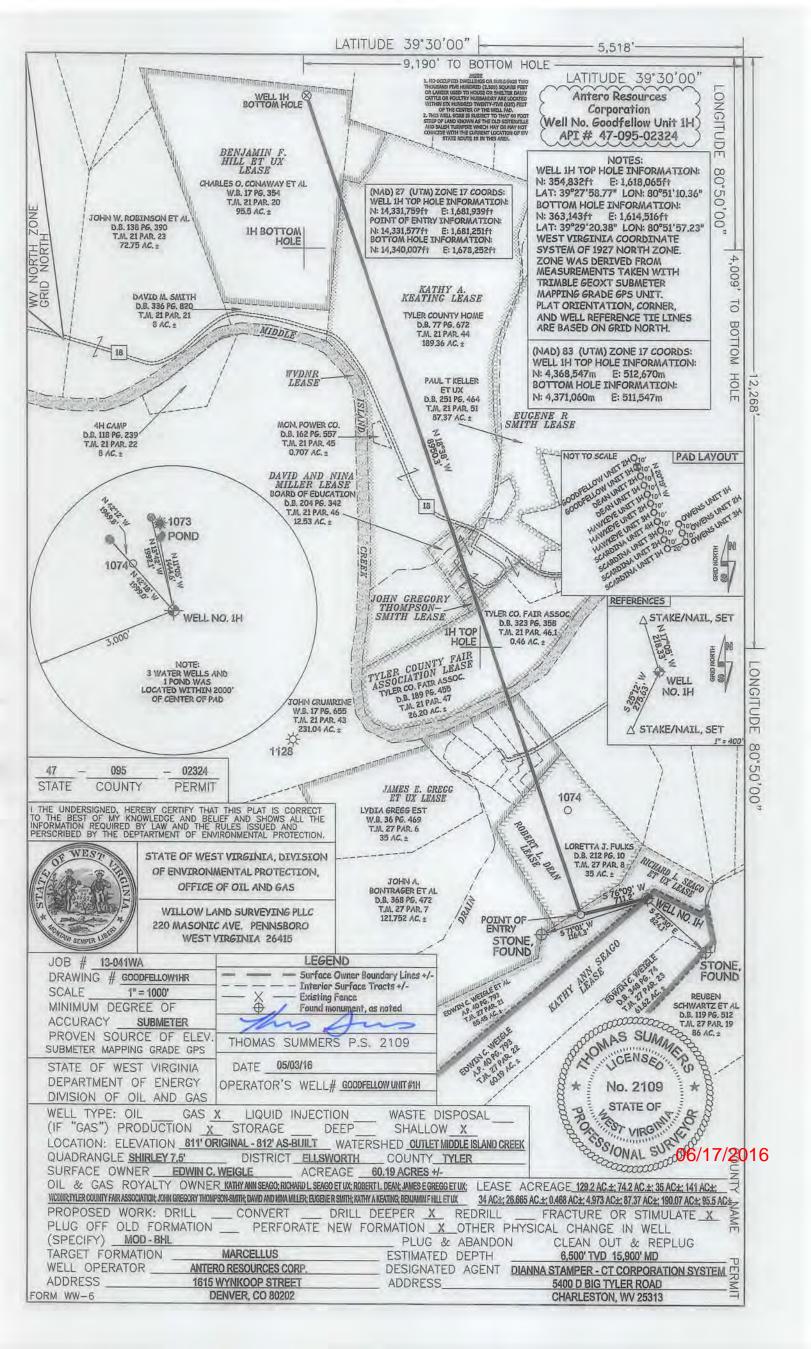
B-mall; business@wvsos.com

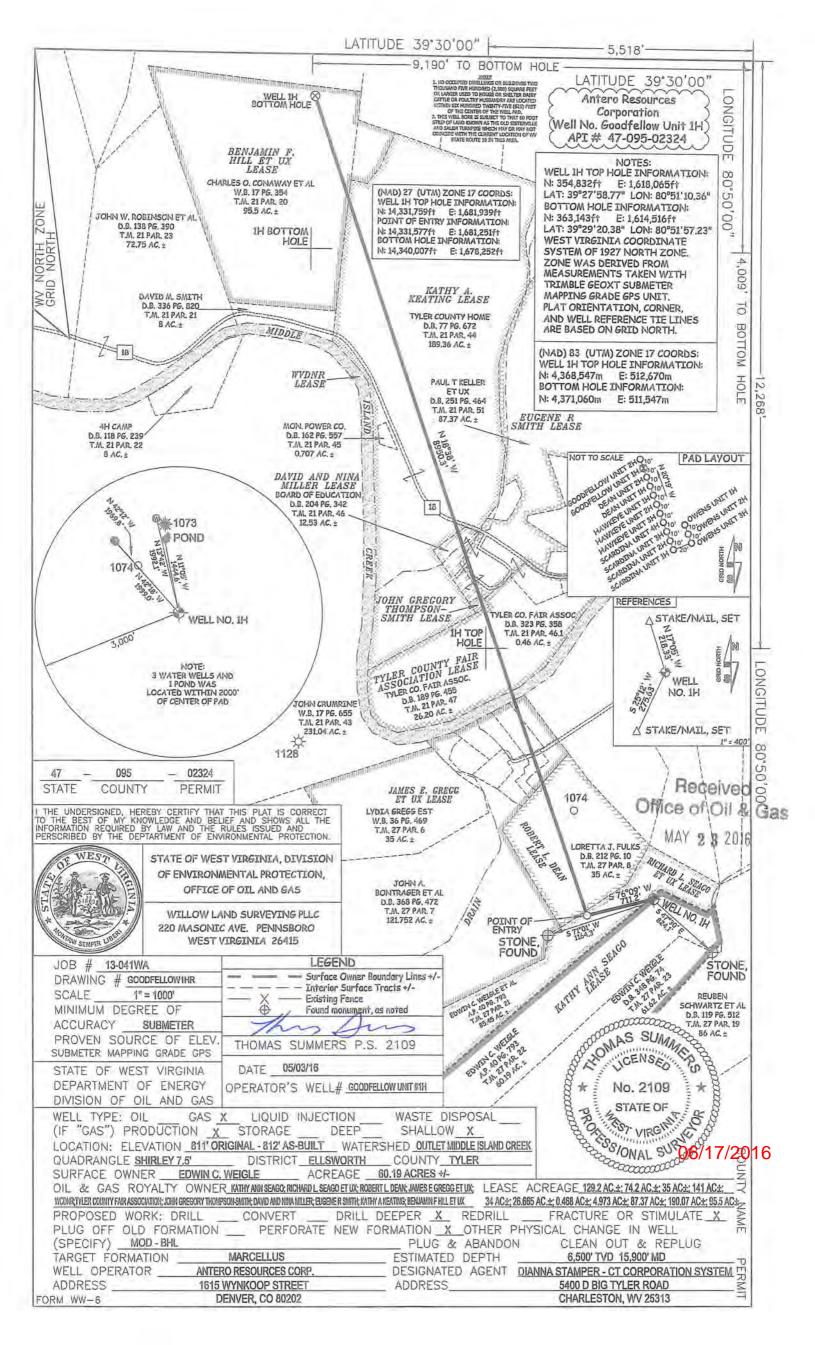
APPLICATION FOR AMENDED CERTIFICATE OF AUTHORITY

Office Hours: Monday - Friday 8:30 a.m. - 5:00 p.m. BT

| heat In accordance with<br>applies for an                          | the providons of the West Vir<br>Amended Cortificate of Author                                                                                              | ginia Code, the unders                                    | igned corporation h                              | ereby ****   | 4          |     |
|--------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------|--------------------------------------------------|--------------|------------|-----|
|                                                                    |                                                                                                                                                             |                                                           |                                                  |              |            |     |
| <ol> <li>Name under which to<br/>authorized to transact</li> </ol> | ne corporation was<br>t business in WV:                                                                                                                     | Antero Resources App                                      | elachian Corporati                               | on           |            |     |
| <ol><li>Date Certificate of A<br/>issued in West Virgin</li></ol>  |                                                                                                                                                             | 8/26/2008                                                 | ,                                                |              |            |     |
|                                                                    | been changed to: d Conv of Name Change the of Incorporation.)                                                                                               | Antero Resources Co                                       | rporation                                        |              |            |     |
|                                                                    | n elects to use in WV:                                                                                                                                      | Antero Resources Cor                                      | poration                                         |              | 40         | -   |
| 5. Other amendments:<br>(attach additional pag                     | es if necessary)                                                                                                                                            |                                                           |                                                  | -            |            |     |
|                                                                    | 9 14                                                                                                                                                        | ******                                                    | 4 °                                              |              |            | 24  |
| 4                                                                  |                                                                                                                                                             |                                                           | 3 4 4 2                                          | 10.18        |            | 7   |
| Name and phone nu<br>the filing, listing a co<br>document.)        | mber of contact person. (T<br>ntact person and phone numb                                                                                                   | his is optional, however<br>er may avoid having t         | er, if there is a prot<br>to return or reject th | plem with    |            |     |
| Alvyn A. Schopp                                                    | - V                                                                                                                                                         | (303) 36                                                  | 7-7310                                           | De           | ceived     |     |
| Contact Name                                                       | -                                                                                                                                                           | Phon                                                      | e Number                                         | Office       | of Oil &   | Gia |
| . Signature information                                            | n (See below *Important Le                                                                                                                                  | gal Notice Regarding                                      | Signature):                                      | - MAY        | 2 3 201    | 6   |
| Print Name of Signer                                               | Alayn A. Schopp                                                                                                                                             | Title/Cap                                                 | acity: Authorized F                              | erson        | 1.01       |     |
| Signature:                                                         | 42 Hackspp                                                                                                                                                  | Dates                                                     | June 10, 2013                                    | *            |            |     |
| ay person who signs a docum<br>the secretary of state for film     | nding Signature: For West Virginia<br>on the or she knows is false in any m<br>g is guilty of a misdemeanor and, up<br>the county or regional jall not more | naterial respect and knows<br>you conviction thereof, who | that the document is to                          | be delivered |            |     |
| ящ CF-4                                                            | Livered for the Affice of                                                                                                                                   | Tthe Secrement of Sinto                                   |                                                  | Ravised 4/15 | The second |     |

W1612 - 0426/2011 Wakes Kluner Online







May 19, 2016

Antero Resources 1615 Wynkoop Street Denver, CO 80202 Office 303.357,7310 Fax 303.357,7315

West Virginia Department of Environmental Protection Office of Oil and Gas Attn: Ms. Melanie Hankins 601 57<sup>th</sup> Street Charleston, WV 25304

Ms. Hankins:

Antero Resources Corporation (Antero) would like to submit the following permit modifications for two approved wells on the Weigle East Pad. We are requesting to extend the horizontal lateral lengths which will change the bottom hole locations of the Goodfellow Unit 1H (API# 47-095-02324) and Goodfellow Unit 2H (API# 47-095-02325).

Attached you will find the following documents:

- REVISED Form WW-6B, which shows the revised lateral lengths, Measured Depths and Production Casing/Cement programs
- > REVISED Form WW-6A1, which shows the new leases we will be drilling into
- REVISED Mylar Plats, which shows the new bottom hole locations

If you have any questions please feel free to contact me at (303) 357-7323.

Thank you in advance for your consideration.

Atelle

Sincerely,

Ashlie Steele

Permitting Supervisor

Antero Resources Corporation

Enclosures

Received
Office of Oil & Gas
MAY 2 3 2016