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west virginia department of environmental protection

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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

July 08, 2015

ANTERO RESOURCES CORPORATION  
1615 WYNKOOP STREET  
DENVER, CO 80202

Re: Permit Modification Approval for API Number 8510173, Well #: PRITCHARD UNIT 3H

**Move top hole**

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  
Office of Oil and Gas

Promoting a healthy environment.

07/10/2015



June 1, 2015

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. Melanie Hankins:

Antero Resources Corporation (Antero) would like to submit the following permit modifications for two wells on the Ireland North Pad. We are requesting to slightly change the surface hole locations of the Pritchard Unit 2H (API# 47-085-10172) and Pritchard Unit 3H (API# 47-085-10173). In addition, we are requesting to extend the horizontal lateral length of the Pritchard Unit 2H only, which will change the bottom hole location.

Attached you will find the following documents for each well modification:

- REVISED Mylar Plat, which shows the new surface and bottom hole location (Pritchard Unit 2H)
- REVISED Form WW-6B, which shows the revised MD and Production Casing/Cement program (Pritchard Unit 2H)
- REVISED Mylar Plat, which shows the new surface hole location (Pritchard Unit 3H)
- REVISED Form WW-6A, 6AC and 6A5
- Certified Mail Receipts to Surface and Water Source Owners
- REVISED Form WW-6A1, which shows the new leases we will be drilling into

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

Thank you in advance for your consideration.

Sincerely,

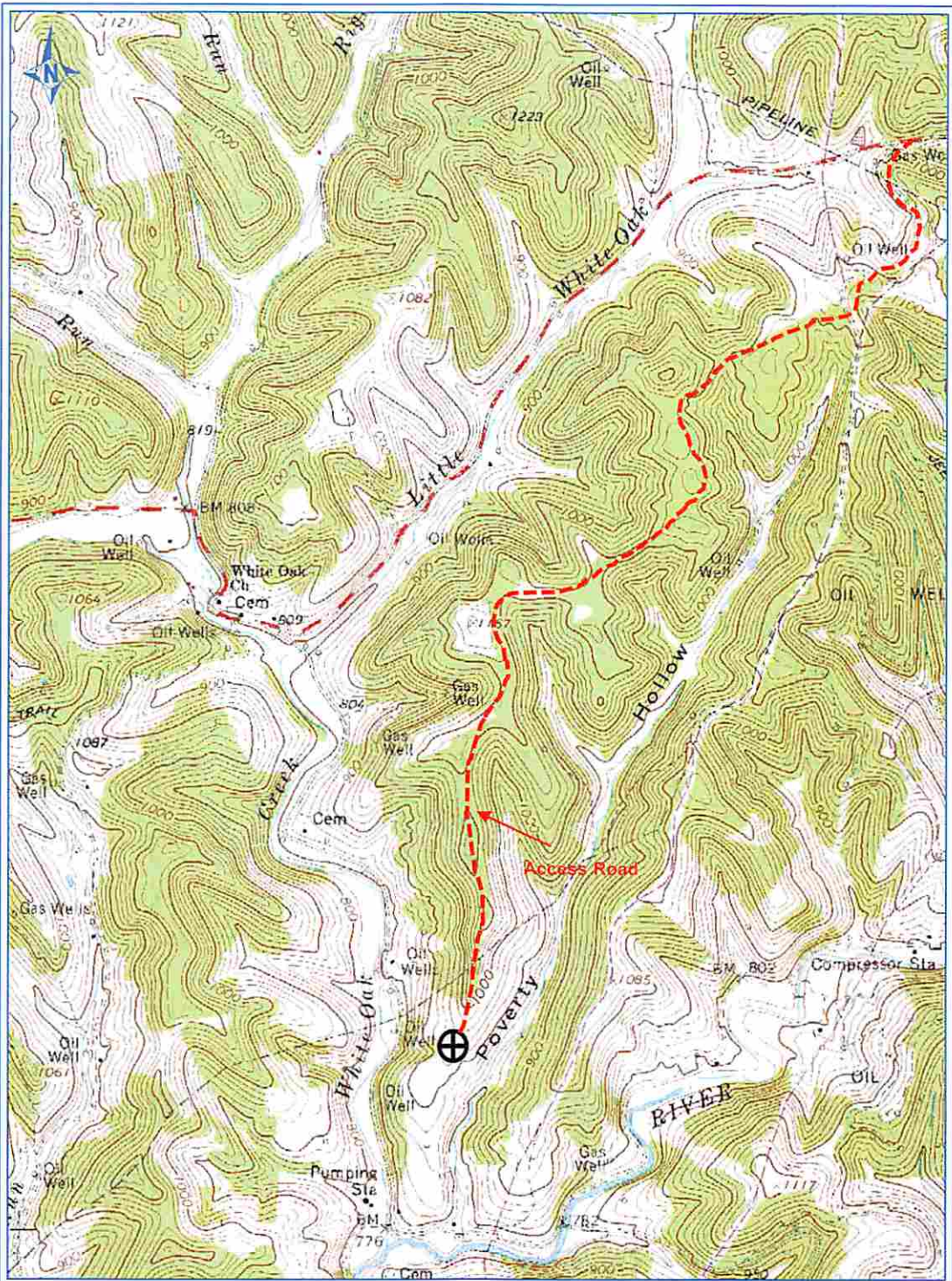
Ashlie Steele  
Permitting Supervisor  
Antero Resources Corporation

Received  
Office of Oil & Gas  
JUN 03 2015

Enclosures

07/10/2015





PETRA 5/2/2013 5:04:30 PM

**Antero Resources Corp**

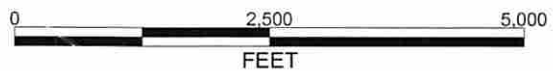
APPALACHIAN BASIN

Pritchard Unit 3H  
Ritchie County

Received  
Office of [unclear]  
JUN 03 2015

REMARKS  
QUADRANGLE: PULLMAN 7.5'  
WATERSHED: SOUTH FORK HUGHES RIVER  
DISTRICT: UNION

By: ECM



07/10/2015



LATITUDE 39°12'30"

6,926'

10,534' TO BOTTOM HOLE

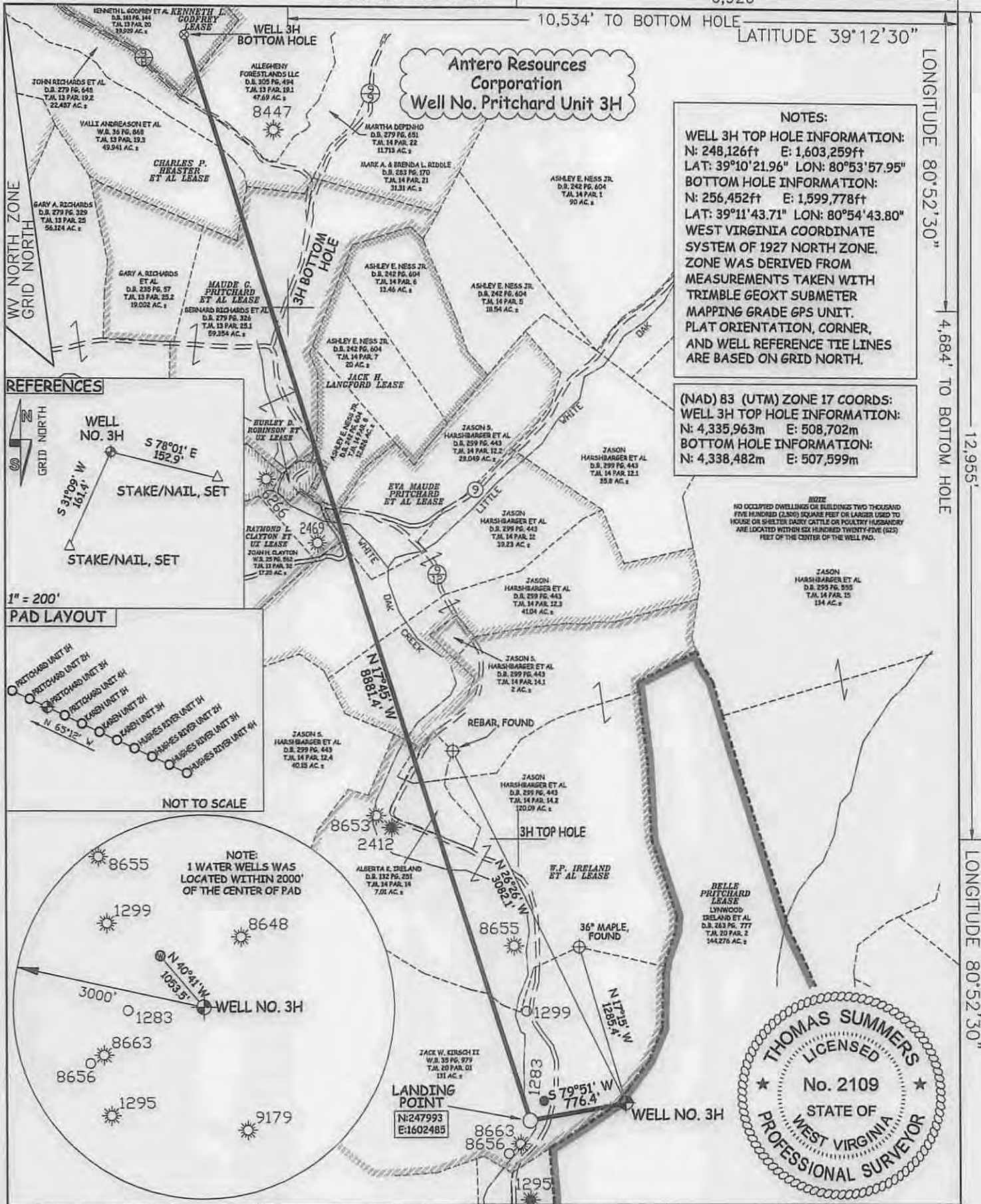
LATITUDE 39°12'30"

LONGITUDE 80°52'30"

4,684' TO BOTTOM HOLE

12,955'

LONGITUDE 80°52'30"



**NOTES:**

**WELL 3H TOP HOLE INFORMATION:**  
 N: 248,126ft E: 1,603,259ft  
 LAT: 39°10'21.96" LON: 80°53'57.95"

**BOTTOM HOLE INFORMATION:**  
 N: 256,452ft E: 1,599,778ft  
 LAT: 39°11'43.71" LON: 80°54'43.80"

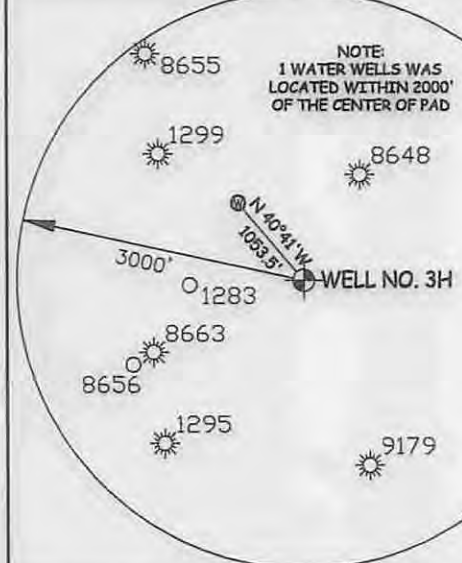
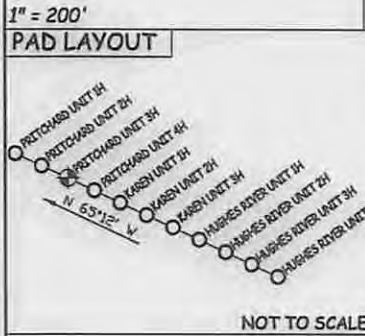
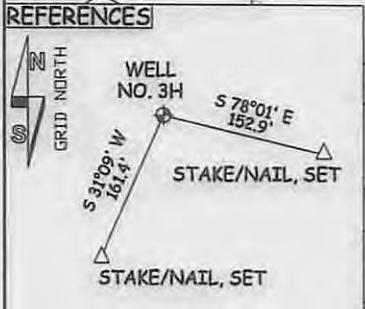
**WEST VIRGINIA COORDINATE SYSTEM OF 1927 NORTH ZONE. ZONE WAS DERIVED FROM MEASUREMENTS TAKEN WITH TRIMBLE GEOXT SUBMETER MAPPING GRADE GPS UNIT. PLAT ORIENTATION, CORNER, AND WELL REFERENCE TIE LINES ARE BASED ON GRID NORTH.**

**(NAD) 83 (UTM) ZONE 17 COORDS:**

**WELL 3H TOP HOLE INFORMATION:**  
 N: 4,335,963m E: 508,702m

**BOTTOM HOLE INFORMATION:**  
 N: 4,338,482m E: 507,599m

**NOTE**  
 NO OCCUPIED DWELLINGS OR BUILDINGS TWO THOUSAND FIVE HUNDRED (2500) SQUARE FEET OR LARGER USED TO HOUSE OR SHEPHERD DAIRY CATTLE OR POULTRY (HENS/CHICKENS) ARE LOCATED WITHIN SIX HUNDRED TWENTY-FIVE (625) FEET OF THE CENTER OF THE WELL PAD.



JOB # 12-123WA  
 DRAWING # PRITCHARD3H  
 SCALE 1" = 1000'  
 MINIMUM DEGREE OF ACCURACY SUBMETER  
 PROVEN SOURCE OF ELEV. SUBMETER MAPPING GRADE GPS

I THE UNDERSIGNED, HEREBY CERTIFY THAT THIS PLAT IS CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF AND SHOWS ALL THE INFORMATION REQUIRED BY LAW AND THE RULES ISSUED AND PERSCRIBED BY THE DEPARTMENT OF ENVIRONMENTAL PROTECTION.



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

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

**LEGEND**

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

THOMAS SUMMERS P.S. 2109  
 DATE 04/13/15  
 OPERATOR'S WELL# PRITCHARD UNIT #3H  
 API WELL # 10173  
 47 - 085 - 10173  
 STATE COUNTY PERMIT

STATE OF WEST VIRGINIA DEPARTMENT OF ENERGY DIVISION OF OIL AND GAS  
 WELL TYPE: OIL GAS X LIQUID INJECTION WASTE DISPOSAL  
 (IF "GAS") PRODUCTION X STORAGE DEEP SHALLOW X  
 LOCATION: ELEVATION ORIGINAL - 957' PAD - 947' WATERSHED SOUTH FORK HUGHES RIVER  
 QUADRANGLE PULLMAN 7.5' DISTRICT UNION COUNTY RITCHIE

SURFACE OWNER LYNWOOD IRELAND ET AL ACREAGE 144.276 ACRES +/-  
 OIL & GAS ROYALTY OWNER BELLE PRITCHARD; W.P. IRELAND ET AL; EVA MAUDE PRITCHARD ET AL; LEASE ACREAGE 415 ACRES+; 222 ACRES+; 108 ACRES+;  
 JACK H. LANGFORD; HURLEY D. ROBINSON ET UX; MAUDE G. PRITCHARD ET AL; CHARLES P. HEASTER ET AL; KENNETH L. GODFREY 46.5 ACRES+; 17 ACRES+; 137 ACRES+; 234.5 ACRES+; 177 ACRES+  
 PROPOSED WORK: DRILL X CONVERT DRILL DEEPER REDRILL FRACTURE OR STIMULATE X  
 PLUG OFF OLD FORMATION PERFORATE NEW FORMATION X OTHER PHYSICAL CHANGE IN WELL  
 (SPECIFY) PERMIT MODIFICATION - SHL PLUG & ABANDON CLEAN OUT & REPLUG  
 TARGET FORMATION MARCELLUS ESTIMATED DEPTH 6,500' TVD 15,800' MD

WELL OPERATOR ANTERO RESOURCES CORP. DESIGNATED AGENT DIANNA STAMPER  
 ADDRESS 1615 WYNKOOP STREET ADDRESS 5400 D BIG TYLER ROAD  
 DENVER, CO 80202 CHARLESTON, WV 25313

07/10/2015



**STATE OF WEST VIRGINIA  
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS  
NOTICE CERTIFICATION**

Date of Notice Certification: 06/02/2015

API No. 47- 085 - 10173  
Operator's Well No. Pritchard Unit 2H  
Well Pad Name: Ireland North

**Notice has been given:**

Pursuant to the provisions in West Virginia Code § 22-6A, the Operator has provided the required parties with the Notice Forms listed below for the tract of land as follows:

State: <u>West Virginia</u>	UTM NAD 83 Easting: <u>508702m</u>
County: <u>Ritchie</u>	UTM NAD 83 Northing: <u>4335963m</u>
District: <u>Union</u>	Public Road Access: <u>CR 9</u>
Quadrangle: <u>Pullman 7.5'</u>	Generally used farm name: <u>Ireland, Lynwood, et al</u>
Watershed: <u>South Fork Hughes River</u>	

Pursuant to West Virginia Code § 22-6A-7(b), every permit application filed under this section shall be on a form as may be prescribed by the secretary, shall be verified and shall contain the following information: (14) A certification from the operator that (i) it has provided the owners of the surface described in subdivisions (1), (2) and (4), subsection (b), section ten of this article, the information required by subsections (b) and (c), section sixteen of this article; (ii) that the requirement was deemed satisfied as a result of giving the surface owner notice of entry to survey pursuant to subsection (a), section ten of this article six-a; or (iii) the notice requirements of subsection (b), section sixteen of this article were waived in writing by the surface owner; and Pursuant to West Virginia Code § 22-6A-11(b), the applicant shall tender proof of and certify to the secretary that the notice requirements of section ten of this article have been completed by the applicant.

<p>Pursuant to West Virginia Code § 22-6A, the Operator has attached proof to this Notice Certification that the Operator has properly served the required parties with the following:</p> <p>*PLEASE CHECK ALL THAT APPLY</p> <p><input type="checkbox"/> 1. NOTICE OF SEISMIC ACTIVITY or <input checked="" type="checkbox"/> NOTICE NOT REQUIRED BECAUSE NO SEISMIC ACTIVITY WAS CONDUCTED</p> <p><input checked="" type="checkbox"/> 2. NOTICE OF ENTRY FOR PLAT SURVEY or <input type="checkbox"/> NO PLAT SURVEY WAS CONDUCTED</p> <p><input type="checkbox"/> 3. NOTICE OF INTENT TO DRILL or <input checked="" type="checkbox"/> NOTICE NOT REQUIRED BECAUSE NOTICE OF ENTRY FOR PLAT SURVEY WAS CONDUCTED or</p> <p style="padding-left: 40px;"><input type="checkbox"/> WRITTEN WAIVER BY SURFACE OWNER (PLEASE ATTACH)</p> <p><input checked="" type="checkbox"/> 4. NOTICE OF PLANNED OPERATION</p> <p><input checked="" type="checkbox"/> 5. PUBLIC NOTICE</p> <p><input checked="" type="checkbox"/> 6. NOTICE OF APPLICATION</p>	<p><b>OOG OFFICE USE ONLY</b></p> <p><input type="checkbox"/> RECEIVED/ NOT REQUIRED</p> <p><input type="checkbox"/> RECEIVED</p> <p><input type="checkbox"/> RECEIVED/ NOT REQUIRED</p> <p><input type="checkbox"/> RECEIVED</p> <p><input type="checkbox"/> RECEIVED</p> <p><input type="checkbox"/> RECEIVED</p>
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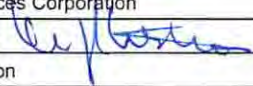
*Received  
Office of Oil & Gas  
JUN 03 2015*

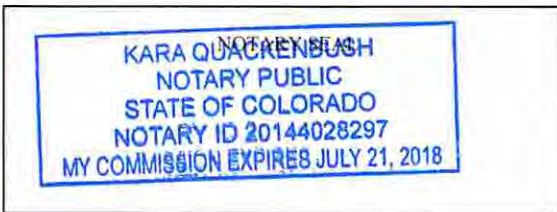
**Required Attachments:**

The Operator shall attach to this Notice Certification Form all Notice Forms and Certifications of Notice that have been provided to the required parties and/or any associated written waivers. For the Public Notice, the operator shall attach a copy of the Class II Legal Advertisement with publication date verification or the associated Affidavit of Publication. The attached Notice Forms and Certifications of Notice shall serve as proof that the required parties have been noticed as required under West Virginia Code § 22-6A. Pursuant to West Virginia Code § 22-6A-11(b), the Certification of Notice to the person may be made by affidavit of personal service, the return receipt card or other postal receipt for certified mailing.

**Certification of Notice is hereby given:**

THEREFORE, I Kevin Kilstrom, have read and understand the notice requirements within West Virginia Code § 22-6A. I certify that as required under West Virginia Code § 22-6A, I have served the attached copies of the Notice Forms, identified above, to the required parties through personal service, by registered mail or by any method of delivery that requires a receipt or signature confirmation. I certify under penalty of law that I have personally examined and am familiar with the information submitted in this Notice Certification and all attachments, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

Well Operator:	<u>Antero Resources Corporation</u>	Address:	<u>1615 Wynkoop Street</u>
By:	<u>Kevin Kilstrom</u> 		<u>Denver, CO 80202</u>
Its:	<u>VP of Production</u>	Facsimile:	<u>303-357-7315</u>
Telephone:	<u>303-357-7310</u>	Email:	<u>asteele@anteroresources.com</u>



Subscribed and sworn before me this 2 day of June 2015.  
Kara Quackenbush Notary Public  
 My Commission Expires July 21, 2018

**Oil and Gas Privacy Notice:**

The Office of Oil and Gas processes your personal information, such as name, address and telephone number, as part of our regulatory duties. Your personal information may be disclosed to other State agencies or third parties in the normal course of business or as needed to comply with statutory or regulatory requirements, including Freedom of Information Act requests. Our office will appropriately secure your personal information. If you have any questions about our use or your personal information, please contact DEP's Chief Privacy Officer at [deprivacyofficer@wv.gov](mailto:deprivacyofficer@wv.gov).

Received  
Office of Oil & Gas  
JUN 03 2015



STATE OF WEST VIRGINIA  
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS  
NOTICE OF APPLICATION

Notice Time Requirement: notice shall be provided no later than the filing date of permit application.

Date of Notice: 6/2/2015 Date Permit Application Filed: 6/2/2015

Notice of:

- PERMIT FOR ANY WELL WORK
- CERTIFICATE OF APPROVAL FOR THE CONSTRUCTION OF AN IMPOUNDMENT OR PIT

Delivery method pursuant to West Virginia Code § 22-6A-10(b)

- PERSONAL SERVICE
- REGISTERED MAIL
- METHOD OF DELIVERY THAT REQUIRES A RECEIPT OR SIGNATURE CONFIRMATION

Pursuant to W. Va. Code § 22-6A-10(b) no later than the filing date of the application, the applicant for a permit for any well work or for a certificate of approval for the construction of an impoundment or pit as required by this article shall deliver, by personal service or by registered mail or by any method of delivery that requires a receipt or signature confirmation, copies of the application, the erosion and sediment control plan required by section seven of this article, and the well plat to each of the following persons: (1) The owners of record of the surface of the tract on which the well is or is proposed to be located; (2) The owners of record of the surface tract or tracts overlying the oil and gas leasehold being developed by the proposed well work, if the surface tract is to be used for roads or other land disturbance as described in the erosion and sediment control plan submitted pursuant to subsection (c), section seven of this article; (3) The coal owner, operator or lessee, in the event the tract of land on which the well proposed to be drilled is located [sic] is known to be underlain by one or more coal seams; (4) The owners of record of the surface tract or tracts overlying the oil and gas leasehold being developed by the proposed well work, if the surface tract is to be used for the placement, construction, enlargement, alteration, repair, removal or abandonment of any impoundment or pit as described in section nine of this article; (5) Any surface owner or water purveyor who is known to the applicant to have a water well, spring or water supply source located within one thousand five hundred feet of the center of the well pad which is used to provide water for consumption by humans or domestic animals; and (6) The operator of any natural gas storage field within which the proposed well work activity is to take place. (c)(1) If more than three tenants in common or other co-owners of interests described in subsection (b) of this section hold interests in the lands, the applicant may serve the documents required upon the person described in the records of the sheriff required to be maintained pursuant to section eight, article one, chapter eleven-a of this code. (2) Notwithstanding any provision of this article to the contrary, notice to a lien holder is not notice to a landowner, unless the lien holder is the landowner. W. Va. Code R. § 35-8-5.7.a requires, in part, that the operator shall also provide the Well Site Safety Plan ("WSSP") to the surface owner and any water purveyor or surface owner subject to notice and water testing as provided in section 15 of this rule.

Application Notice  WSSP Notice  E&S Plan Notice  Well Plat Notice is hereby provided to:

SURFACE OWNER(s)

Name: Lynwood K. & Karen L. Ireland  
Address: 342 Ireland Rd.  
Pullman, WV 26421

Name: Jack W. Kirsch II  
Address: 958 Holbrook Rd.  
Pullman, WV 26421

SURFACE OWNER(s) (Road and/or Other Disturbance)

\*PLEASE NOTE THE ADDITIONAL SURFACE TRACTS WITH DISTURBANCE SHOWN ON PAD DESIGN ARE **NOT** OVERLYING THE OIL & GAS LEASEHOLD BEING DEVELOPED BY THE PROPOSED WELL; THEREFORE, ARE NOT REQUIRED TO BE NOTIFIED PER WV CODE 22-6A-10. ANTERO HAS SECURED SIGNED SUAS WITH THE RELATED PARTIES

SURFACE OWNER(s) (Impoundments or Pits)  
Name:  
Address:

COAL OWNER OR LESSEE

Name: NO DECLARATIONS ON RECORD WITH COUNTY  
Address:

COAL OPERATOR

Name: NO DECLARATIONS ON RECORD WITH COUNTY  
Address:

WATER PURVEYOR(s)/OWNER(s) OF WATER WELL, SPRING OR OTHER WATER SUPPLY SOURCE

Name: Jack W. Kirsch II  
Address: 958 Holbrook Rd.  
Pullman, WV 26421

OPERATOR OF ANY NATURAL GAS STORAGE FIELD

Name:  
Address:

Received  
Office of Oil & Gas  
JUN 03 2015

\*Please attach additional forms if necessary



**Notice is hereby given:**

Pursuant to West Virginia Code § 22-6A-10(b), notice is hereby given that the undersigned well operator has applied for a permit for well work or for a certificate of approval for the construction of an impoundment or pit.

**This Notice Shall Include:**

Pursuant to W. Va. Code § 22-6A-10(b), this notice shall include: (1) copies of the application; (2) the erosion and sediment control plan required by section seven of this article; and (3) the well plat.

Pursuant to W. Va. Code § 22-6A-10(f), this notice shall include: (1) a statement of the time limits for filing written comments; (2) who may file written comments; (3) the name and address of the secretary for the purpose of filing the comments and obtaining additional information; and (4) a statement that the persons may request, at the time of submitting written comments, notice of the permit decision and a list of persons qualified to test water.

Pursuant to W. Va. Code R. § 35-8-5.7.a, the operator shall provide the Well Site Safety Plan to the surface owner and any water purveyor or surface owner subject to notice and water testing as provided in section 15 of this rule.

Pursuant to W. Va. Code R. § 35-8-15.2.c, this notice shall: (1) contain a statement of the surface owner's and water purveyor's right to request sampling and analysis; (2) advise the surface owner and water purveyor of the rebuttable presumption for contamination or deprivation of a fresh water source or supply; advise the surface owner and water purveyor that refusal to allow the operator to conduct a pre-drilling water well test constitutes a method to rebut the presumption of liability; (3) advise the surface owner and water purveyor of his or her independent right to sample and analyze any water supply at his or her own expense; advise the surface owner and water purveyor whether or not the operator will utilize an independent laboratory to analyze any sample; and (4) advise the surface owner and or water purveyor that he or she can obtain from the Chief a list of water testing laboratories in the subject area capable of and qualified to test water supplies in accordance with standard acceptable methods.

Additional information related to horizontal drilling may be obtained from the Secretary, at the WV Department of Environmental Protection headquarters, located at 601 57<sup>th</sup> Street, SE, Charleston, WV 25304 (304-926-0450) or by visiting [www.dep.wv.gov/oil-and-gas/pages/default.aspx](http://www.dep.wv.gov/oil-and-gas/pages/default.aspx).

**Well Location Restrictions**

Pursuant to W. Va. Code § 22-6A-12, Wells may not be drilled within two hundred fifty feet measured horizontally from any existing water well or developed spring used for human or domestic animal consumption. The center of well pads may not be located within six hundred twenty-five feet of an occupied dwelling structure, or a building two thousand five hundred square feet or larger used to house or shelter dairy cattle or poultry husbandry. This limitation is applicable to those wells, developed springs, dwellings or agricultural buildings that existed on the date a notice to the surface owner of planned entry for surveying or staking as provided in section ten of this article or a notice of intent to drill a horizontal well as provided in subsection (b), section sixteen of this article was provided, whichever occurs first, and to any dwelling under construction prior to that date. This limitation may be waived by written consent of the surface owner transmitted to the department and recorded in the real property records maintained by the clerk of the county commission for the county in which such property is located. Furthermore, the well operator may be granted a variance by the secretary from these distance restrictions upon submission of a plan which identifies the sufficient measures, facilities or practices to be employed during well site construction, drilling and operations. The variance, if granted, shall include terms and conditions the department requires to ensure the safety and protection of affected persons and property. The terms and conditions may include insurance, bonding and indemnification, as well as technical requirements. (b) No well pad may be prepared or well drilled within one hundred feet measured horizontally from any perennial stream, natural or artificial lake, pond or reservoir, or a wetland, or within three hundred feet of a naturally reproducing trout stream. No well pad may be located within one thousand feet of a surface or ground water intake of a public water supply. The distance from the public water supply as identified by the department shall be measured as follows: (1) For a surface water intake on a lake or reservoir, the distance shall be measured from the boundary of the lake or reservoir. (2) For a surface water intake on a flowing stream, the distance shall be measured from a semicircular radius extending upstream of the surface water intake. (3) For a groundwater source, the distance shall be measured from the wellhead or spring. The department may, in its discretion, waive these distance restrictions upon submission of a plan identifying sufficient measures, facilities or practices to be employed during well site construction, drilling and operations to protect the waters of the state. A waiver, if granted, shall impose any permit conditions as the secretary considers necessary. (c) Notwithstanding the foregoing provisions of this section, nothing contained in this section prevents an operator from conducting the activities permitted or authorized by a Clean Water Act Section 404 permit or other approval from the United States Army Corps of Engineers within any waters of the state or within the restricted areas referenced in this section. (d) The well location restrictions set forth in this section shall not apply to any well on a multiple well pad if at least one of the wells was permitted prior to the effective date of this article. (e) The secretary shall, by December 31, 2012, report to the Legislature on the noise, light, dust and volatile organic compounds generated by the drilling of horizontal wells as they relate to the well location restrictions regarding occupied dwelling structures pursuant to this section. Upon a finding, if any, by the secretary that the well location restrictions regarding occupied dwelling structures are inadequate or otherwise require alteration to address the items



examined in the study required by this subsection, the secretary shall have the authority to propose for promulgation legislative rules establishing guidelines and procedures regarding reasonable levels of noise, light, dust and volatile organic compounds relating to drilling horizontal wells, including reasonable means of mitigating such factors, if necessary.

**Water Well Testing:**

Pursuant to West Virginia Code § 22-6A-10(d), notification shall be made, with respect to surface landowners identified in subsection (b) or water purveyors identified in subdivision (5), subsection (b) of this section, of the opportunity for testing their water well. The operator shall provide an analysis to such surface landowner or water purveyor at their request.

**Water Testing Laboratories:**

Pursuant to West Virginia Code § 22-6A-10(i), persons entitled to notice pursuant to subsection (b) of this section may contact the department to ascertain the names and locations of water testing laboratories in the subject area capable and qualified to test water supplies in accordance with standard accepted methods. In compiling that list of names the department shall consult with the state Bureau for Public Health and local health departments. A surface owner and water purveyor has an independent right to sample and analyze any water supply at his or her own expense. The laboratory utilized by the operator shall be approved by the agency as being certified and capable of performing sample analyses in accordance with this section.

**Rebuttable Presumption for Contamination or Deprivation of a Fresh Water Source or Supply:**

W. Va. Code § 22-6A-18 requires that (b) unless rebutted by one of the defenses established in subsection (c) of this section, in any action for contamination or deprivation of a fresh water source or supply within one thousand five hundred feet of the center of the well pad for horizontal well, there is a rebuttable presumption that the drilling and the oil or gas well or either was the proximate cause of the contamination or deprivation of the fresh water source or supply. (c) In order to rebut the presumption of liability established in subsection (b) of this section, the operator must prove by a preponderance of the evidence one of the following defenses: (1) The pollution existed prior to the drilling or alteration activity as determined by a predrilling or prealteration water well test. (2) The landowner or water purveyor refused to allow the operator access to the property to conduct a predrilling or prealteration water well test. (3) The water supply is not within one thousand five hundred feet of the well. (4) The pollution occurred more than six months after completion of drilling or alteration activities. (5) The pollution occurred as the result of some cause other than the drilling or alteration activity. (d) Any operator electing to preserve its defenses under subdivision (1), subsection (c) of this section shall retain the services of an independent certified laboratory to conduct the predrilling or prealteration water well test. A copy of the results of the test shall be submitted to the department and the surface owner or water purveyor in a manner prescribed by the secretary. (e) Any operator shall replace the water supply of an owner of interest in real property who obtains all or part of that owner's supply of water for domestic, agricultural, industrial or other legitimate use from an underground or surface source with a comparable water supply where the secretary determines that the water supply has been affected by contamination, diminution or interruption proximately caused by the oil or gas operation, unless waived in writing by that owner. (f) The secretary may order the operator conducting the oil or gas operation to: (1) Provide an emergency drinking water supply within twenty-four hours; (2) Provide temporary water supply within seventy-two hours; (3) Within thirty days begin activities to establish a permanent water supply or submit a proposal to the secretary outlining the measures and timetables to be used in establishing a permanent supply. The total time in providing a permanent water supply may not exceed two years. If the operator demonstrates that providing a permanent replacement water supply cannot be completed within two years, the secretary may extend the time frame on case-by-case basis; and (4) Pay all reasonable costs incurred by the real property owner in securing a water supply. (g) A person as described in subsection (b) of this section aggrieved under the provisions of subsections (b), (e) or (f) of this section may seek relief in court... (i) Notwithstanding the denial of the operator of responsibility for the damage to the real property owner's water supply or the status of any appeal on determination of liability for the damage to the real property owner's water supply, the operator may not discontinue providing the required water service until authorized to do so by the secretary or a court of competent jurisdiction.

**Written Comment:**

Pursuant to West Virginia Code § 22-6A-11(a), all persons described in subsection (b), section ten of this article may file written comments with the secretary as to the location or construction of the applicant's proposed well work within thirty days after the application is filed with the secretary. All persons described in West Virginia Code § 22-6A-10(b) may file written comments as to the location or construction of the applicant's proposed well work to the Secretary at:

Chief, Office of Oil and Gas  
Department of Environmental Protection  
601 57<sup>th</sup> St. SE  
Charleston, WV 25304  
(304) 926-0450

Received  
Office of Oil & Gas  
JUN 03 2015

Such persons may request, at the time of submitting written comments, notice of the permit decision and a list of persons qualified to test water. **NOTE: YOU ARE NOT REQUIRED TO FILE ANY COMMENT.**



**Time Limits and Methods for Filing Comments.**

The law requires these materials to be served on or before the date the operator files its Application. You have **THIRTY (30) DAYS** after the filing date to file your comments. Comments must be filed in person or received in the mail by the Chief's office by the time stated above. You may call the Chief's office to be sure of the date. Check with your postmaster to ensure adequate delivery time or to arrange special expedited handling. If you have been contacted by the well operator and you have signed a "voluntary statement of no objection" to the planned work described in these materials, then the permit may be issued at any time.

Pursuant to West Virginia Code § 22-6A-11(c)(2), Any objections of the affected coal operators and coal seam owners and lessees shall be addressed through the processes and procedures that exist under sections fifteen, seventeen and forty, article six of this chapter, as applicable and as incorporated into this article by section five of this article. The written comments filed by the parties entitled to notice under subdivisions (1), (2), (4), (5) and (6), subsection (b), section ten of this article shall be considered by the secretary in the permit issuance process, but the parties are not entitled to participate in the processes and proceedings that exist under sections fifteen, seventeen or forty, article six of this chapter, as applicable and as incorporated into this article by section five of this article.

**Comment Requirements**

Your comments must be in writing and include your name, address and telephone number, the well operator's name and well number and the approximate location of the proposed well site including district and county from the application. You may add other documents, such as sketches, maps or photographs to support your comments.

Disclaimer: All comments received will be placed on our web site <http://www.dep.wv.gov/oil-and-gas/Horizontal-Permits/Pages/default.aspx> and the applicant will automatically be forwarded an email notice that such comments have been submitted. The applicant will be expected to provide a response to comments submitted by any surface owner, water purveyor or natural gas storage operator noticed within the application.

**Permit Denial or Condition**

The Chief has the power to deny or condition a well work permit. Pursuant to West Virginia Code § 22-6A-8(d), the permit may not be issued or be conditioned, including conditions with respect to the location of the well and access roads prior to issuance if the director determines that:

- (1) The proposed well work will constitute a hazard to the safety of persons;
- (2) The plan for soil erosion and sediment control is not adequate or effective;
- (3) Damage would occur to publicly owned lands or resources; or
- (4) The proposed well work fails to protect fresh water sources or supplies.

A permit may also be denied under West Virginia Code § 22-6A-7(k), the secretary shall deny the issuance of a permit if the secretary determines that the applicant has committed a substantial violation of a previously issued permit for a horizontal well, including the applicable erosion and sediment control plan associated with the previously issued permit, or a substantial violation of one or more of the rules promulgated under this article, and in each instance has failed to abate or seek review of the violation within the time prescribed by the secretary pursuant to the provisions of subdivisions (1) and (2), subsection (a), section five of this article and the rules promulgated hereunder, which time may not be unreasonable.

Pursuant to West Virginia Code § 22-6A-10(g), any person entitled to submit written comments to the secretary pursuant to subsection (a), section eleven of this article, shall also be entitled to receive from the secretary a copy of the permit as issued or a copy of the order modifying or denying the permit if the person requests receipt of them as a part of the written comments submitted concerning the permit application. Such persons may request, at the time of submitting written comments, notice of the permit decision and a list of persons qualified to test water.

Received  
Office of Oil & Gas  
JUN 03 2015



WW-6A  
(8-13)

**API# 47-085-10173 PERMIT MODIFICATION**

API NO. 47- 085 - 10173  
OPERATOR WELL NO. Pritchard Unit 3H  
Well Pad Name: Ireland North

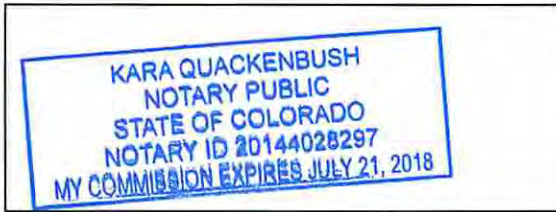
**Notice is hereby given by:**

Well Operator: Antero Resources Corporation  
Telephone: (303) 357-7310 [Signature]  
Email: asteele@anteroresources.com

Address: 1615 Wynkoop Street  
Denver, CO 80202  
Facsimile: 303-357-7315

**Oil and Gas Privacy Notice:**

The Office of Oil and Gas processes your personal information, such as name, address and telephone number, as part of our regulatory duties. Your personal information may be disclosed to other State agencies or third parties in the normal course of business or as needed to comply with statutory or regulatory requirements, including Freedom of Information Act requests. Our office will appropriately secure your personal information. If you have any questions about our use or your personal information, please contact DEP's Chief Privacy Officer at [depprivacyofficer@wv.gov](mailto:depprivacyofficer@wv.gov).



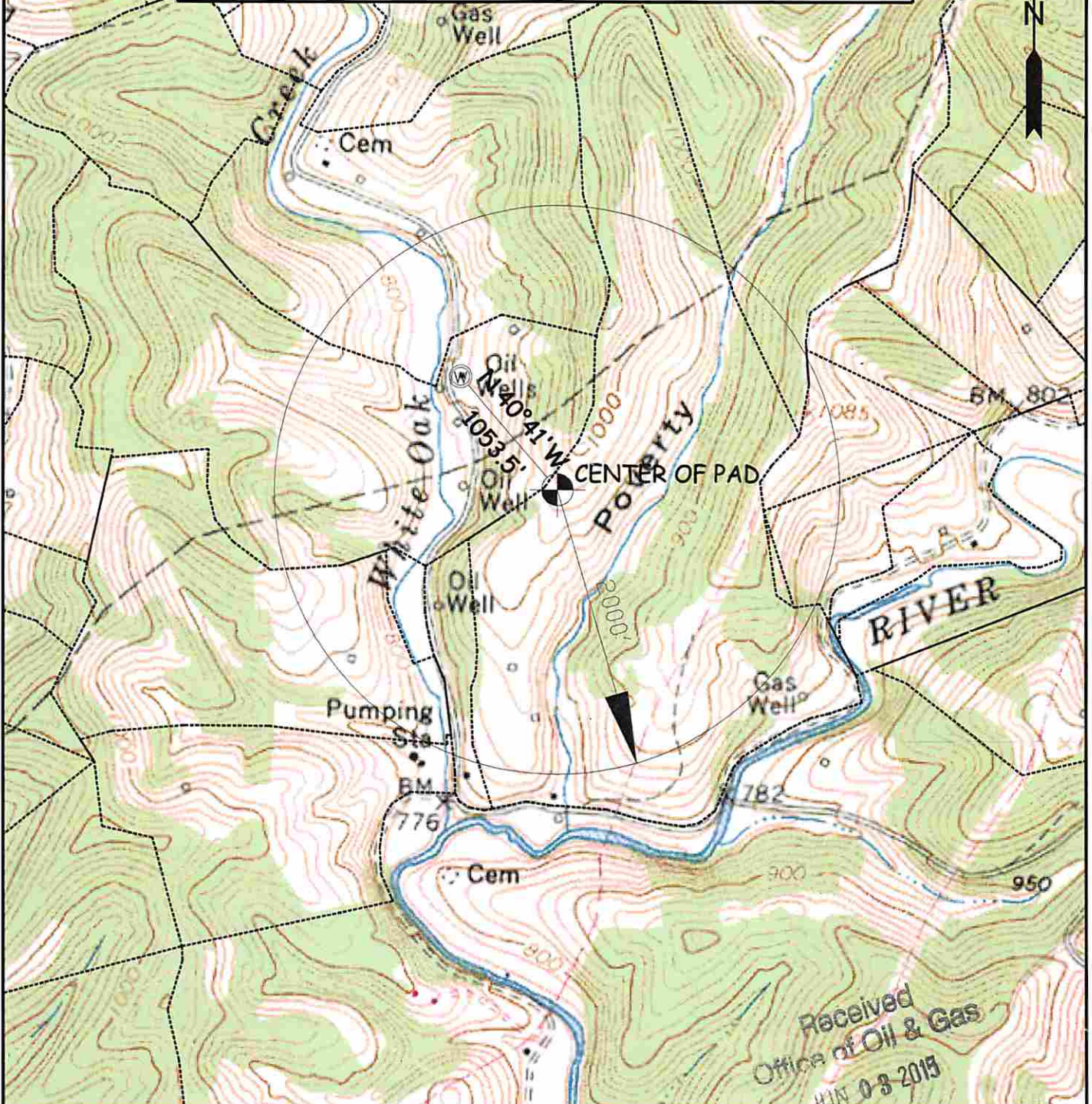
Subscribed and sworn before me this 2 day of June 2015  
[Signature] Notary Public  
My Commission Expires July 21, 2018

Received  
Office of Oil & Gas  
JUN 03 2015

07/10/2015



# IRELAND NORTH PAD ANTERO RESOURCES CORPORATION



Received  
Office of Oil & Gas  
JUN 03 2015

<b>WELL SURFACE OWNER</b>	<b>ADDRESS</b>	<b>WELL LATITUDE</b>	<b>WELL LONGITUDE</b>
W1 JACK W. KIRSCH II	958 HOLBROOK RD, PULLMAN WV, 26421	39°10'29.68"	80°54'06.65"
<b>WILLOW LAND SURVEYING, PLLC</b> P.O. BOX 17, PENNSBORO, WV 26415 (304) 659-1717		<b>SCALE : 1-INCH = 1000-FEET</b>	
<b>DATE:</b> 09/22/14		0' 1000' 2000' 3000'	
<b>DRAWN BY:</b> D.R.R.			
<b>FILE:</b> IRELANDNORTH PAD WATERMAP			

07/10/2015



**PERMIT MODIFICATION - SHL  
CERTIFIED MAIL RECEIPT  
PRITCHARD UNIT 3H (IRELAND NORTH PAD)  
WW-6A NOTICE OF APPLICATION  
TO SURFACE OWNER**

**Instructions**

1. Each Click-N-Ship® label is unique. Labels are to be used as printed and used only once. **DO NOT PHOTO COPY OR ALTER LABEL.**
2. Place your label so it does not wrap around the edge of the package.
3. Adhere your label to the package. A self-adhesive label is recommended. If tape or glue is used, **DO NOT TAPE OVER BARCODE.** Be sure all edges are secure.
4. To mail your package with PC Postage®, you may schedule a Package Pickup online, hand to your letter carrier, take to a Post Office™, or drop in a USPS collection box.
5. Mail your package on the "Ship Date" you selected when creating this label.

**Click-N-Ship® Label Record**

Signature Confirmation™ :	
<b>9410 8036 9930 0068 3589 09</b>	
Trans. #: 337593512	Priority Mail® Postage: <b>\$5.05</b>
Print Date: 06/01/2015	Signature Confirmation <b>\$2.45</b>
Ship Date: 06/02/2015	(Electronic Rate)
Expected	Total <b>\$7.50</b>
Delivery Date: 06/05/2015	
From: KARA QUACKENBUSH ANTERO RESOURCES 1615 WYNKOOP ST DENVER CO 80202-1106	
To: LYNWOOD K. & KAREN L. IRELAND 342 IRELAND RD PULLMAN WV 26421-8051	
<small>* Commercial Base Pricing Priority Mail rates apply. There is no fee for USPS Tracking™ service on Priority Mail service with use of this electronic rate shipping label. Refunds for unused postage paid labels can be requested online 30 days from the print date.</small>	

Received  
 Office of Surface Mining  
 JUN 03 2015



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**PERMIT MODIFICATION - SHL**  
**CERTIFIED MAIL RECEIPT**  
**PRITCHARD UNIT 3H (IRELAND NORTH PAD)**  
**WW-6A NOTICE OF APPLICATION**  
**TO SURFACE OWNER**

**Instructions**

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5. Mail your package on the "Ship Date" you selected when creating this label.

**Click-N-Ship® Label Record**

Signature Confirmation™ :	
9410 8036 9930 0068 3589 16	
Trans. #:	337593512
Print Date:	06/01/2015
Ship Date:	06/02/2015
Expected Delivery Date:	06/05/2015
Priority Mail® Postage:	\$5.05
Signature Confirmation (Electronic Rate)	\$2.45
<b>Total</b>	<b>\$7.50</b>
<b>From:</b>	KARA QUACKENBUSH ANTERO RESOURCES 1615 WYNKOOP ST DENVER CO 80202-1106
<b>To:</b>	JACK W. KIRSCH, II 958 HOLBROOK RD PULLMAN WV 26421-8056
* Commercial Base Pricing Priority Mail rates apply. There is no fee for USPS Tracking™ service on Priority Mail services with use of this electronic shipping label. Refunds for unused postage paid labels can be requested online 30 days from the print date.	

Received  
 Office of Civil Rights  
 JUN 03 2015



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07/10/2015



**PERMIT MODIFICATION - SHL  
CERTIFIED MAIL RECEIPT  
PRITCHARD UNIT 3H (IRELAND NORTH PAD)  
WW-6A NOTICE OF APPLICATION  
TO WATER SOURCE OWNER**

**Instructions**

1. Each Click-N-Ship® label is unique. Labels are to be used as printed and used only once. **DO NOT PHOTO COPY OR ALTER LABEL.**
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3. Adhere your label to the package. A self-adhesive label is recommended. If tape or glue is used, **DO NOT TAPE OVER BARCODE.** Be sure all edges are secure.
4. To mail your package with PC Postage®, you may schedule a Package Pickup online, hand to your letter carrier, take to a Post Office™, or drop in a USPS collection box.
5. Mail your package on the "Ship Date" you selected when creating this label.

**Click-N-Ship® Label Record**

<b>Signature Confirmation™ :</b>	
<b>9410 8036 9930 0068 3589 16</b>	
Trans. #: 337593512	Priority Mail® Postage: <b>\$5.05</b>
Print Date: 06/01/2015	Signature Confirmation: <b>\$2.45</b>
Ship Date: 06/02/2015	(Electronic Rate)
Expected Delivery Date: 06/05/2015	<b>Total</b> <u><b>\$7.50</b></u>
<b>From:</b> KARA QUACKENBUSH ANTERO RESOURCES 1615 WYNKOOP ST DENVER CO 80202-1106	
<b>To:</b> JACK W. KIRSCH, II 958 HOLBROOK RD PULLMAN WV 26421-8056	
* Commercial Base Pricing Priority Mail rates apply. There is no fee for USPS Tracking™ service on Priority Mail service with use of this electronic rate shipping label. Refunds for unused postage paid labels can be requested online 30 days from the print date.	

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Office of Oil & Gas  
JUN 03 2015



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07/10/2015



**STATE**  
**DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS**  
**NOTICE OF PLANNED OPERATION**

**Notice Time Requirement:** notice shall be provided no later than the **filing date of permit application.**

**Date of Notice:** 06/02/2015      **Date Permit Application Filed:** 06/02/2015

**Delivery method pursuant to West Virginia Code § 22-6A-16(c)**

- CERTIFIED MAIL                                       HAND  
RETURN RECEIPT REQUESTED                                      DELIVERY

Pursuant to W. Va. Code § 22-6A-16(c), no later than the date for filing the permit application, an operator shall, by certified mail return receipt requested or hand delivery, give the surface owner whose land will be used for the drilling of a horizontal well notice of the planned operation. The notice required by this subsection shall include: (1) A copy of this code section; (2) The information required to be provided by subsection (b), section ten of this article to a surface owner whose land will be used in conjunction with the drilling of a horizontal well; and (3) A proposed surface use and compensation agreement containing an offer of compensation for damages to the surface affected by oil and gas operations to the extent the damages are compensable under article six-b of this chapter. (d) The notices required by this section shall be given to the surface owner at the address listed in the records of the sheriff at the time of notice.

**Notice is hereby provided to the SURFACE OWNER(s)**  
(at the address listed in the records of the sheriff at the time of notice):

Name: Lynwood K. and Karen L. Ireland  
Address: 342 Ireland Rd.  
Pullman, WV 26421

Name: Jack W. Kirsch II  
Address: 958 Holbrook Rd.  
Pullman, WV 26421

**Notice is hereby given:**

Pursuant to West Virginia Code § 22-6A-16(c), notice is hereby given that the undersigned well operator has developed a planned operation on the surface owner's land for the purpose of drilling a horizontal well on the tract of land as follows:

State:	<u>West Virginia</u>	UTM NAD 83 Easting:	<u>508702m</u>
County:	<u>Ritchie</u>	UTM NAD 83 Northing:	<u>4335963m</u>
District:	<u>Union</u>	Public Road Access:	<u>CR 9</u>
Quadrangle:	<u>Pullman 7.5'</u>	Generally used farm name:	<u>Ireland, Lynwood, et al</u>
Watershed:	<u>South Fork Hughes River</u>		

**This Notice Shall Include:**

Pursuant to West Virginia Code § 22-6A-16(c), this notice shall include: (1) A copy of this code section; (2) The information required to be provided by **W. Va. Code § 22-6A-10(b)** to a surface owner whose land will be used in conjunction with the drilling of a horizontal well; and (3) A proposed surface use and compensation agreement containing an offer of compensation for damages to the surface affected by oil and gas operations to the extent the damages are compensable under article six-b of this chapter. Additional information related to horizontal drilling may be obtained from the Secretary, at the WV Department of Environmental Protection headquarters, located at 601 57<sup>th</sup> Street, SE, Charleston, WV 25304 (304-926-0450) or by visiting [www.dep.wv.gov/oil-and-gas/pages/default.aspx](http://www.dep.wv.gov/oil-and-gas/pages/default.aspx).

Well Operator: Antero Resources Corporation  
Telephone: (303) 357-7310  
Email: asteel@anteroresources.com

Address: 1615 Wynkoop Street  
Denver, CO 80202  
Facsimile: 303-357-7315

**Oil and Gas Privacy Notice:**

The Office of Oil and Gas processes your personal information, such as name, address and telephone number, as part of our regulatory duties. Your personal information may be disclosed to other State agencies or third parties in the normal course of business or as needed to comply with statutory or regulatory requirements, including Freedom of Information Act requests. Our office will appropriately secure your personal information. If you have any questions about our use or your personal information, please contact DEP's Chief Privacy Officer at [depprivacyofficer@wv.gov](mailto:depprivacyofficer@wv.gov).

Received  
Office of Oil & Gas  
JUN 03 2015



**PERMIT MODIFICATION - SHL  
CERTIFIED MAIL RECEIPT  
PRITCHARD UNIT 3H (IRELAND NORTH PAD)  
WW-6A5 NOTICE OF PLANNED OPERATION  
TO SURFACE OWNER**

### Instructions

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5. Mail your package on the "Ship Date" you selected when creating this label.

### Click-N-Ship® Label Record

**Signature Confirmation™ :  
9410 8036 9930 0068 3589 09**

Trans. #:	337593512	Priority Mail® Postage:	\$5.05
Print Date:	06/01/2015	Signature Confirmation	\$2.45
Ship Date:	06/02/2015	(Electronic Rate)	
Expected		Total	<u>\$7.50</u>
Delivery Date:	06/05/2015		

**From:** KARA QUACKENBUSH  
ANTERO RESOURCES  
1615 WYNKOOP ST  
DENVER CO 80202-1106

**To:** LYNWOOD K. & KAREN L. IRELAND  
342 IRELAND RD  
PULLMAN WV 26421-8051

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**PERMIT MODIFICATION - SHL**  
**CERTIFIED MAIL RECEIPT**  
**PRITCHARD UNIT 3H (IRELAND NORTH PAD)**  
**WW-6A5 NOTICE OF PLANNED OPERATION**  
**TO SURFACE OWNER**

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**Click-N-Ship® Label Record**

<b>Signature Confirmation™ :</b>	
<b>9410 8036 9930 0068 3589 16</b>	
Trans. #: 337593512	Priority Mail® Postage: <b>\$5.05</b>
Print Date: 06/01/2015	Signature Confirmation: <b>\$2.45</b>
Ship Date: 06/02/2015	(Electronic Rate)
Expected Delivery Date: 06/05/2015	<b>Total</b> <u><b>\$7.60</b></u>
<b>From:</b> KARA QUACKENBUSH ANTERO RESOURCES 1616 WYNKOOP ST DENVER CO 80202-1106	
<b>To:</b> JACK W. KIRSCH, II 958 HOLBROOK RD PULLMAN WV 26421-8056	
<p>* Commercial Base Pricing Priority Mail rates apply. There is no fee for USPS Tracking™ service on Priority Mail service with use of this electronic rate shipping label. Refunds for unused postage paid labels can be requested online 30 days from the print date.</p>	



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