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

May 06, 2016

WELL WORK PERMIT

Horizontal 6A Well

This permit, API Well Number: 47-9502349, issued to ANTERO RESOURCES CORPORATION, is evidence of permission granted to perform the specified well work at the location described on the attached pages and located on the attached plat, subject to the provisions of Chapter 22 of the West Virginia Code of 1931, as amended, and all rules and regulations promulgated thereunder, and to all conditions and provisions outlined in the pages attached hereto. Notification shall be given by the operator to the Oil and Gas Inspector at least 24 hours prior to the construction of roads, locations, and/or pits for any permitted work. In addition, the well operator shall notify the same inspector 24 hours before any actual well work is commenced and prior to running and cementing casing. Spills or emergency discharges must be promptly reported by the operator to 1-800-642-3074 and to the Oil and Gas inspector.

Please be advised that form WR-35, Well Operators Report of Well Work is to be submitted to this office within 90 days completion of permitted well work, as should form WR-34 Discharge Monitoring Report within 30 days of discharge of pits, if applicable. Failure to abide by all statutory and regulatory provisions governing all duties and operations hereunder may result in suspension or revocation of this permit and, in addition, may result in civil and/or criminal penalties being imposed upon the operators.

In addition to the applicable requirements of this permit, and the statutes and rules governing oil and gas activity in WV, this permit may contain specific conditions which must be followed. Permit conditions are attached to this cover letter.

Per 35CSR-4-5.2.g this permit will expire in two (2) years from the issue date unless permitted well work is commenced. If there are any questions, please feel free to contact me at (304) 926-0499 ext. 1654.

James Martin
Chief

Operator's Well No: EDWARDS UNIT 3H
Farm Name: RITCHIE PETROLEUM INC.
API Well Number: 47-9502349
Permit Type: Horizontal 6A Well
Date Issued: 05/06/2016

API Number: _____

PERMIT CONDITIONS 4709502349

West Virginia Code § 22-6A-8(d) allows the Office of Oil and Gas to place specific conditions upon this permit. Permit conditions have the same effect as law. Failure to adhere to the specified permit conditions may result in enforcement action.

CONDITIONS

1. Operator shall take additional measures with this permitted activity to avoid communication with offset wells. Such additional measures are described in the attached addendum. This addendum is part of the terms of the well work permit, and includes a description of depth and completed formations of offset wells. Also included is a description of monitoring activities that will take place during fracturing operations of the permitted well work.

1. This proposed activity may require permit coverage from the United States Army Corps of Engineers (USACOE). Through this permit, you are hereby being advised to consult with USACOE regarding this proposed activity.

2. If the operator encounters an unanticipated void, or an anticipated void at an unanticipated depth, the operator shall notify the inspector within 24 hours. Modifications to the casing program may be necessary to comply with W. Va. Code § 22-6A-5a (12), which requires drilling to a minimum depth of thirty feet below the bottom of the void, and installing a minimum of twenty (20) feet of casing. Under no circumstance should the operator drill more than one hundred (100) feet below the bottom of the void or install less than twenty (20) feet of casing below the bottom of the void.

3. When compacting fills, each lift before compaction shall not be more than 12 inches in height, and the moisture content of the fill material shall be within limits as determined by the Standard Proctor Density test of the actual soils used in specific engineered fill, ASTM D698, Standard Test Method for Laboratory Compaction Characteristics of Soil Using Standard Effort, to achieve 95 % compaction of the optimum density. Each lift shall be tested for compaction, with a minimum of two tests per lift per acre of fill. All test results shall be maintained on site and available for review.

4. Operator shall install signage per § 22-6A-8g (6) (B) at all source water locations included in their approved water management plan within 24 hours of water management plan activation.

5. Oil and gas water supply wells will be registered with the Office of Oil and Gas and all such wells will be constructed and plugged in accordance with the standards of the Bureau for Public Health set forth in its Legislative rule entitled *Water Well Regulations,* 64 C.S.R. 19. Operator is to contact the Bureau of Public Health regarding permit requirements. In lieu of plugging, the operator may transfer the well to the surface owner upon agreement of the parties. All drinking water wells within fifteen hundred feet of the water supply well shall be flow tested by the operator upon request of the drinking well owner prior to operating the water supply well.

API Number: _____

PERMIT CONDITIONS 4709502349

6. Pursuant to the requirements pertaining to the sampling of domestic water supply wells/springs the operator shall, no later than thirty (30) days after receipt of analytical data provide a written copy to the Chief and any of the users who may have requested such analyses.

7. If any explosion or other accident causing loss of life or serious personal injury occurs in or about a well or well work on a well, the well operator or its contractor shall give notice, stating the particulars of the explosion or accident, to the oil and gas inspector and the Chief, within 24 hours of said accident.

8. During the casing and cementing process, in the event cement does not return to the surface, the oil and gas inspector shall be notified within 24 hours.

9. Operator shall provide the Office of Oil & Gas notification of the date that drilling commenced on this well. Such notice shall be provided by sending an email to DEPOOGNotify@wv.gov within 30 days of commencement of drilling.

Antero Resources
1615 Wynkoop Street
Denver, CO 80202
Office 303.357.7310
Fax 303.357.7315

March 2, 2016

West Virginia Department of Environmental Protection
Office of Oil and Gas
Attn: Ms. Laura Adkins
601 57th Street
Charleston, WV 25304

Ms. Laura Adkins:

Antero Resources Corporation (Antero) would like to submit the following applications for new well work permits to explore for Marcellus Shale potential. Our **Mountain** project is located in Tyler County, WV. On the **existing Terry Snider Pad** consists **two new horizontal** shallow wells (Edwards Unit 2H & 3H) that we are requesting approval to drill.

Attached you will find the following:

- Permit Application packages
- CD with copy of permit applications

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

Ashlie Steele
Permitting Supervisor
Antero Resources Corporation

Enclosures

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Addendum for Antero pads in Ritchie County, WV

Edwards Unit 3H * Terry Snider Pad
Edwards Unit 2H* Terry Snider Pad
Markle Unit 2H* Terry Snider Pad
*Requested by WVDEP due to SHL of well located in Pennsboro Quad

The following outlines the process to be undertaken by Antero Resources prior to and during completion process of wells in Ritchie County & Pennsboro Quad (Per WVDEP).

▪Investigate all wells within 1320' of new wells - for all identified Marcellus vertical wells and any existing well(s) with an interval that is less than 1500 feet from the deepest formation drilled (including, but not specific to the Alexander formation) to the top of Marcellus:

- Contact operator of all wells
- Confirm well status, producing horizon, well completion/stimulation information
- Discuss plans to stimulate the horizontal Marcellus wells and the plans for monitoring potential impact on shallow wells
- Make sure all vertical wells (with an interval that is less than 1500 feet from the deepest formation drilled to the top of Marcellus) have adequate wellhead equipment, Including pressure gauges
- Provide shallow well operator with frac dates and develop plan for monitoring during stimulation
- If well waters out during frac, shut it in until after stimulation, and install adequate well control equipment prior to swabbing in the impacted shallow well

▪Control fracturing parameters during job to limit fracture height growth

- Limit rate and limit pressures for each segment of fracturing stages

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WW-6AW
(1-12)

API NO. 47- 095 -
OPERATOR WELL NO. Edwards Unit 3H
Well Pad Name: Existing Terry Snider Pad

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

VOLUNTARY STATEMENT OF NO OBJECTION

Instructions to Persons Named on Page WW-6A
The well operator named on page WW-6A is applying for a permit from the State of West Virginia to conduct oil or gas well work. Well work permits are valid for twenty-four (24) months. Please contact the listed well operator and the Office of Oil and Gas if you do not own any interest in the listed surface tract.

Comment and Waiver Provisions
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.

Pursuant to West Virginia Code § 22-6A-8(b) No permit may be issued less than thirty days after the filing date of the application for any well work except plugging or replugging; and no permit for plugging or replugging may be issued less than five days after the filing date of the application except a permit for plugging or replugging a dry hole: *Provided,* That if the applicant certifies that all persons entitled to notice of the application under the provisions of subsection (b), section ten of this article have been served in person or by certified mail, return receipt requested, with a copy of the well work application, including the erosion and sediment control plan, if required, and the well plat, and further files written statements of no objection by all such persons, the secretary may issue the well work permit at any time.

VOLUNTARY STATEMENT OF NO OBJECTION

I, _____, hereby state that I have read the Instructions to Persons Named on Page WW-6A and the associated provisions listed above, and that I have received copies of a Notice of Application, an Application for a Well Work Permit on Form WW-6A and attachments consisting of pages one (1) through _____, including the erosion and sediment control plan, if required, and the well plat, all for proposed well work on the tract of land as follows:

State:	West Virginia	UTM NAD 83 Easting:	503095m
County:	Tyler	Northing:	4357638m
District:	Meade	Public Road Access:	CR 20
Quadrangle:	Pennsboro 7.5'	Generally used farm name:	Ritchie Petroleum, Inc.
Watershed:	Outlet Middle Island Creek		

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I further state that I have no objection to the planned work described in these materials, and I have no objection to a permit being issued on those materials.

*Please check the box that applies	FOR EXECUTION BY A NATURAL PERSON
☐ SURFACE OWNER	Signature: _____
☐ SURFACE OWNER (Road and/or Other Disturbance)	Print Name: _____
☐ SURFACE OWNER (Impoundments/Pits)	Date: _____
☐ COAL OWNER OR LESSEE	FOR EXECUTION BY A CORPORATION, ETC.
☐ COAL OPERATOR	Company: _____
☐ WATER PURVEYOR	By: _____
☐ OPERATOR OF ANY NATURAL GAS STORAGE FIELD	Its: _____
	Signature: _____
	Date: _____

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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 how we use your personal information, please contact DEP's Chief Privacy Officer at depprivacyofficer@wv.gov.

3/4

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WW-6B
(04/15)

API NO. 47- 095 -
OPERATOR WELL NO. Edwards Unit 3H
Well Pad Name: Existing Terry Snider Pad

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

1) Well Operator:	Antero Resources Corp.	494488557	095 - Tyler	Meade	Pennsboro 7.5'
		Operator ID	County	District	Quadrangle

2) Operator's Well Number: Edwards Unit 3H Well Pad Name: Existing Terry Snider Pad

3) Farm Name/Surface Owner: Ritchie Petroleum, Inc. Public Road Access: CR 20

4) Elevation, current ground: 1147' Elevation, proposed post-construction: 1147'

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

DMH
3-17-16

6) Existing Pad: Yes or No Yes

7) Proposed Target Formation(s), Depth(s), Anticipated Thickness and Expected Pressure(s):
Marcellus Shale: 6700' TVD, Anticipated Thickness 75 feet, Associated Pressure 2800#

8) Proposed Total Vertical Depth: 6700'

9) Formation at Total Vertical Depth: Marcellus Shale

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10) Proposed Total Measured Depth: 16,900'

11) Proposed Horizontal Leg Length: 9149'

12) Approximate Fresh Water Strata Depths: 124', 376'

13) Method to Determine Fresh Water Depths: Offset well records. Depths have been adjusted according to surface elevations.

14) Approximate Saltwater Depths: 1968'

15) Approximate Coal Seam Depths: None identified

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

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

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

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WW-6B
(04/15)

API NO. 47- 095 -
OPERATOR WELL NO. Edwards Unit 3H
Well Pad Name: Existing Terry Snider Pad

18) **CASING AND TUBING PROGRAM**

TYPE	Size (in)	New or Used	Grade	Weight per ft. (lb/ft)	FOOTAGE: For Drilling (ft)	INTERVALS: Left in Well (ft)	CEMENT: Fill-up (Cu. Ft.)/CTS
Conductor	20"	New	H-40	94#	40'	40'	CTS, 38 Cu. Ft.
Fresh Water	13-3/8"	New	J-55/H-40	54.5#/48#	430' *see #19	430'	CTS, 597 Cu. Ft.
Coal	9-5/8"	New	J-55	36#	2500'	2500'	CTS 1018 Cu. Ft.
Intermediate							
Production	5-1/2"	New	P-110	20#	16900'	16900'	4240 Cu. Ft.
Tubing	2-3/8"	New	N-80	4.7#		7100'	
Liners							

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DMH
3-17-16

TYPE	Size (in)	Wellbore Diameter (in)	Wall Thickness (in)	Burst Pressure (psi)	Anticipated Max. Internal Pressure (psi)	Cement Type	Cement Yield (cu. ft./k)
Conductor	20"	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							
Production	5-1/2"	8-3/4" & 8-1/2"	0.361"	12630	2500	Lead-H/POZ & Tail - H	H/POZ-1.44 & H-1.8
Tubing	2-3/8"	4.778"	0.19"	11200			
Liners							

PACKERS

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

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WW-6B
(10/14)

API NO. 47- 095 -
OPERATOR WELL NO. Edwards Unit 3H
Well Pad Name: Existing Terry Snider Pad

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

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

*Antero will be air drilling the fresh water string which makes it difficult to determine when 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."

Max Pressure - 9300 lbs
Max Rate - 80 bpm

DMH
3-17-16

21) Total Area to be disturbed, including roads, stockpile area, pits, etc., (acres): 38.07 acres with modification

22) Area to be disturbed for well pad only, less access road (acres): 6.64 existing acres

23) Describe centralizer placement for each casing string:

Conductor: no centralizers
Surface Casing: one centralizer 10' above the float shoe, one on the insert float collar and one every 4th joint spaced up the hole to surface.
Intermediate Casing: one centralizer above float joint, one centralizer 5' above float collar and one every 4th collar to surface.
Production Casing: one centralizer at shoe joint and one every 3 joints to top of cement in intermediate casing.

24) Describe all cement additives associated with each cement type:

Conductor: no additives, Class A cement.
Surface: Class A cement with 2-3% calcium chloride and 1/4 lb of flake.
Intermediate: Class A Cement with 1/4 lb of flake, 5 gallons of clay treat.
Production: Lead cement - 50/50 Class H/Poz + 1/5% salt + 1% C-45 + 0.5% C-16a + 0.2% C-12 + 0.45% C-20 + 0.5% C51.
Production: Tail cement - Class H + 45 PPS Calcium Carbonate + 1.0% FL-160 + 0.2% ACGB-47 +0.05% ACSA-51 + 0.2% ACR-20

25) Proposed borehole conditioning procedures:

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.

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*Note: Attach additional sheets as needed.

WW-9
(2/15)

API Number 47 - 095 - _____
Operator's Well No. Edwards Unit 3H

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
OFFICE OF OIL AND GAS

4709502374

FLUIDS/ CUTTINGS DISPOSAL & RECLAMATION PLAN

Operator Name Antero Resources Corporation OP Code 494488557

Watershed (HUC 10) Outlet Middle Island Creek Quadrangle Pennsboro 7.5'

Do you anticipate using more than 5,000 bbls of water to complete the proposed well work? Yes ☑ No ☐

Will a pit be used? Yes ☐ No ☑

If so, please describe anticipated pit waste: No pit will be used at this site (Drilling and Flowback Fluids will be stored in tanks. Cuttings will be tanked and hauled off site.)

Will a synthetic liner be used in the pit? Yes ☐ No ☑ If so, what ml.? N/A

DMH
3-17-16

Proposed Disposal Method For Treated Pit Wastes:

_____ Land Application
_____ Underground Injection (UIC Permit Number _____)
■ Reuse (at API Number Future permitted well locations when applicable. API# will be provided on Form WR-34)
■ Off Site Disposal (Supply form WW-9 for disposal location) (Meadowfill Landfill Permit #SWF-1032-98)
_____ Other (Explain _____

Will closed loop system be used? If so, describe: Yes

Drilling medium anticipated for this well (vertical and horizontal)? Air, freshwater, oil based, etc. Surface - Air/Freshwater, Intermediate - Dust/Stiff Foam, Production - Water Based Mud

-If oil based, what type? Synthetic, petroleum, etc. N/A

Additives to be used in drilling medium? Please See Attachment

Drill cuttings disposal method? Leave in pit, landfill, removed offsite, etc. Stored in tanks, removed offsite and taken to landfill.

-If left in pit and plan to solidify what medium will be used? (cement, lime, sawdust) N/A

-Landfill or offsite name/permit number? Meadowfill Landfill (Permit #SWF-1032-98)

Permittee shall provide written notice to the Office of Oil and Gas of any load of drill cuttings or associated waste rejected at any West Virginia solid waste facility. The notice shall be provided within 24 hours of rejection and the permittee shall also disclose where it was properly disposed.

I certify that I understand and agree to the terms and conditions of the GENERAL WATER POLLUTION PERMIT issued on August 1, 2005, by the Office of Oil and Gas of the West Virginia Department of Environmental Protection. I understand that the provisions of the permit are enforceable by law. Violations of any term or condition of the general permit and/or other applicable law or regulation can lead to enforcement action.

I certify under penalty of law that I have personally examined and am familiar with the information submitted on this application form and all attachments thereto 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 or imprisonment.

Company Official Signature _____

Company Official (Typed Name) Cole Kilstrom

Company Official Title Environmental & Regulatory Manager

NATALIE KOMP
NOTARY PUBLIC
STATE OF COLORADO
NOTARY ID # 20144028176
MY COMMISSION EXPIRES JULY 18, 2018

Subscribed and sworn before me this 24th day of February, 20 16

_____ Notary Public

My commission expires July 18, 2018

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Form WW-9

Operator's Well No. Edwards Unit 3H

Antero Resources Corporation

Proposed Revegetation Treatment: Acres Disturbed 38.07 acres with modification Prevegetation pH _____

Lime 2-4 Tons/acre or to correct to pH 6.5

Fertilizer type Hay or straw or Wood Fiber (will be used where needed)

Fertilizer amount 500 lbs/acre

Mulch 2-3 Tons/acre

4709502346

Access Road "A" (11.08) + Access Road "B" (2.29) + Existing Well Pad (6.64) + Associated Pit Reclamation (3.24) + Water Containment Pad (1.33) + Borrow Area & Existing Excess Material Stockpile (13.49) = 38.07 Acres with modification

Seed Mixtures

Temporary		Permanent	
Seed Type	lbs/acre	Seed Type	lbs/acre
Annual Ryegrass	40	Crownvetch	10 - 15
See attached Table IV-3 for additional seed type (Terry Snider Pad Design Page 20)		Tall Fescue	30
		See attached Table IV-4A for additional seed type (Terry Snider Pad Design Page 20)	
*or type of grass seed requested by surface owner		*or type of grass seed requested by surface owner	

Attach:
Drawing(s) of road, location, pit and proposed area for land application (unless engineered plans including this info have been provided)

Photocopied section of involved 7.5' topographic sheet.

Plan Approved by: _____

Comments: _____

Title: Oil + Gas Inspector Date: 3-17-16

Field Reviewed? (✓) Yes ( ) No

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Form WW-9 Additives Attachment

SURFACE INTERVAL

1. Fresh Water
2. Soap –Foamer AC
3. Air

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INTERMEDIATE INTERVAL

STIFF FOAM RECIPE:

1) 1 ppb Soda Ash / Sodium Carbonate-Alkalinity Control Agent
2) 1 ppb Conqor 404 (11.76 ppg) / Corrosion Inhibitor
3) 4 ppb KLA-Gard (9.17 ppg) / Amine Acid Complex-Shale Stabilizer
4) 1ppb Mil Pac R / Sodium Carboxymethylcellulose-Filtration Control Agent
5) 12 ppb KCL / Potassium Chloride-inorganic Salt
6) Fresh Water 80 bbls
7) Air

PRODUCTION INTERVAL

1. Alpha 1655
   Salt Inhibitor
2. Mil-Carb
   Calcium Carbonate
3. Cottonseed Hulls
   Cellulose-Cottonseed Pellets – LCM
4. Mil-Seal
   Vegetable, Cotton & Cellulose-Based Fiber Blend – LCM
5. Clay-Trol
   Amine Acid Complex – Shale Stabilizer
6. Xan-Plex
   Viscosifier For Water Based Muds
7. Mil-Pac (All Grades)
   Sodium Carboxymethylcellulose – Filtration Control Agent
8. New Drill
   Anionic Polyacrylamide Copolymer Emulsion – Shale Stabilizer
9. Caustic Soda
   Sodium Hydroxide – Alkalinity Control
10. Mil-Lime
    Calcium Hydroxide – Lime
11. LD-9
    Polyether Polyol – Drilling Fluid Defoamer
12. Mil Mica
    Hydro-Biotite Mica – LCM

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13. Escaid 110
    Drilling Fluild Solvent – Aliphatic Hydrocarbon
14. Ligco
    Highly Oxidized Leonardite – Filteration Control Agent
15. Super Sweep
    Polypropylene – Hole Cleaning Agent
16. Sulfatrol K
    Drilling Fluid Additive – Sulfonated Asphalt Residuum
17. Sodium Chloride, Anhydrous
    Inorganic Salt
18. D-D
    Drilling Detergent – Surfactant
19. Terra-Rate
    Organic Surfactant Blend
20. W.O. Defoam
    Alcohol-Based Defoamer
21. Perma-Lose HT
    Fluid Loss Reducer For Water-Based Muds
22. Xan-Plex D
    Polysaccharide Polymer – Drilling Fluid Viscosifier
23. Walnut Shells
    Ground Cellulosic Material – Ground Walnut Shells – LCM
24. Mil-Graphite
    Natural Graphite – LCM
25. Mil Bar
    Barite – Weighting Agent
26. X-Cide 102
    Biocide
27. Soda Ash
    Sodium Carbonate – Alkalinity Control Agent
28. Clay Trol
    Amine Acid complex – Shale Stabilizer
29. Sulfatrol
    Sulfonated Asphalt – Shale Control Additive
30. Xanvis
    Viscosifier For Water-Based Muds
31. Milstarch
    Starch – Fluid Loss Reducer For Water Based Muds
32. Mil-Lube
    Drilling Fluid Lubricant

4709034

911 Address
527 Conaway Run Road
Alma, WV 26320

Well Site Safety Plan
Antero Resources

4709502349

Well Name: **Dillon Unit 1H, Dillon Unit 2H, Dillon Unit 3H, Tinker Unit 1H, Tinker Unit 2H, Tinker Unit 3H, Markle Unit 1H, Markle Unit 2H, Markle Unit 3H, Edwards Unit 1H, Edwards Unit 2H, Edwards Unit 3H**

Pad Location: **TERRY SNIDER PAD**
~~Ritchie~~ Tyler County/Meade District

GPS Coordinates: Lat 39°22'05.52"/Long -80°57'50.57" (NAD83)

Driving Directions:

From the intersection of I-50 and WV 74 N/Pullman Drive near the town of Pennsboro, head north on Pullman Drive for 0.4 miles. Turn left onto East Myles Avenue/Old US 50 E for 0.6 miles. Turn right onto Grey Street for 0.1 miles. Slight left to stay on Grey Street for 0.1 miles. Sharp left onto East Penn Avenue for 0.1 miles. Take the 2nd right onto 1st Street for 446 feet. Slight right onto WV 74 N/Mountain Drive and continue to follow WV 74 N for 4.3 miles. Turn left onto County Road 4/Haddox Run for 3.9 miles. Slight right onto Co Rd 20/McKim Road for 0.3 miles. Lease road will be on the right.

EMERGENCY (24 HOUR) CONTACT 1-800-878-1373

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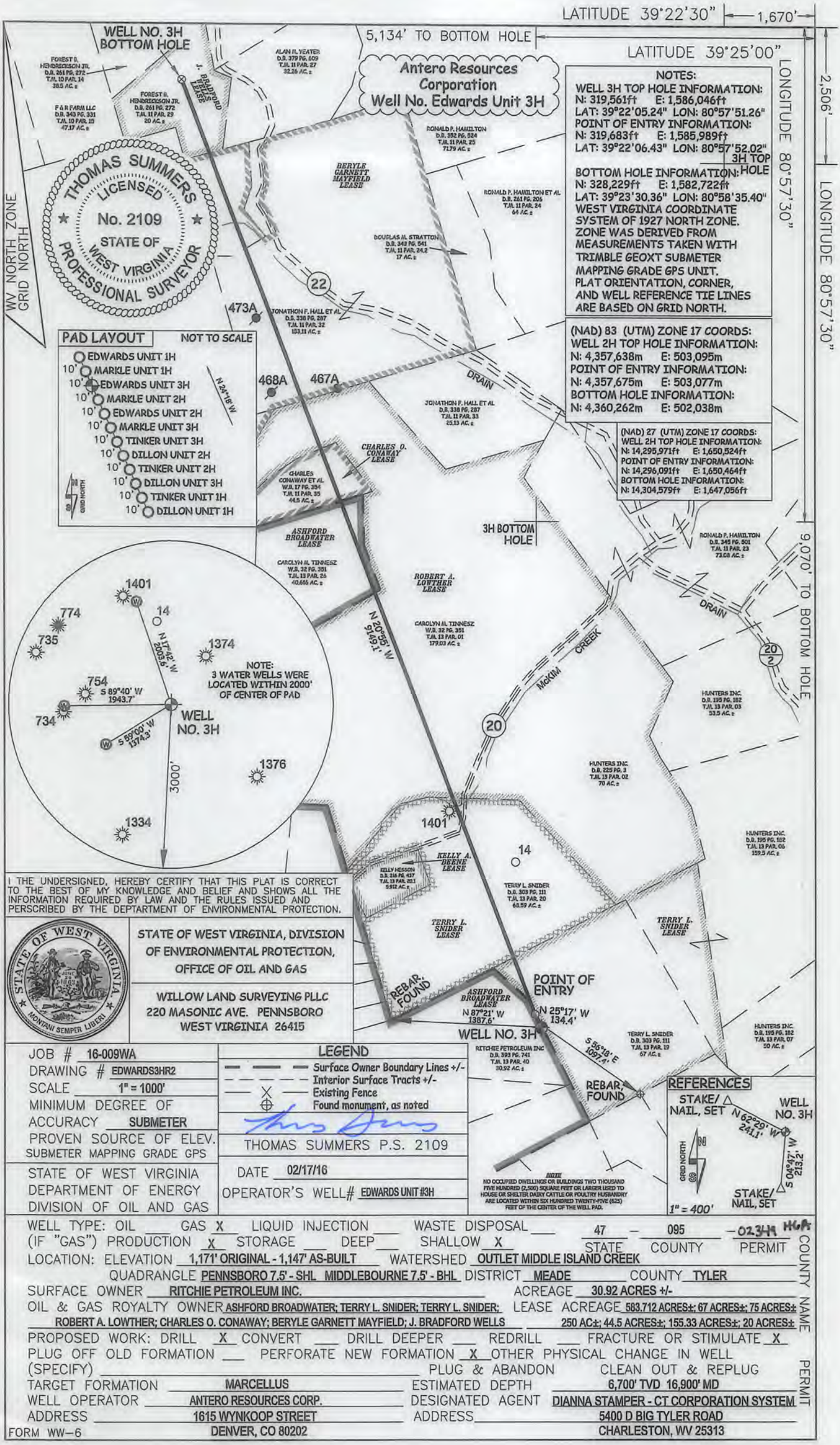
DMH
3-17-16



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 DEPTARTMENT 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

JOB # 16-009WA
DRAWING # EDWARDS3HR2
SCALE 1" = 1000'
MINIMUM DEGREE OF ACCURACY SUBMETER
PROVEN SOURCE OF ELEV. SUBMETER MAPPING GRADE GPS

STATE OF WEST VIRGINIA
DEPARTMENT OF ENERGY
DIVISION OF OIL AND GAS

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

THOMAS SUMMERS P.S. 2109

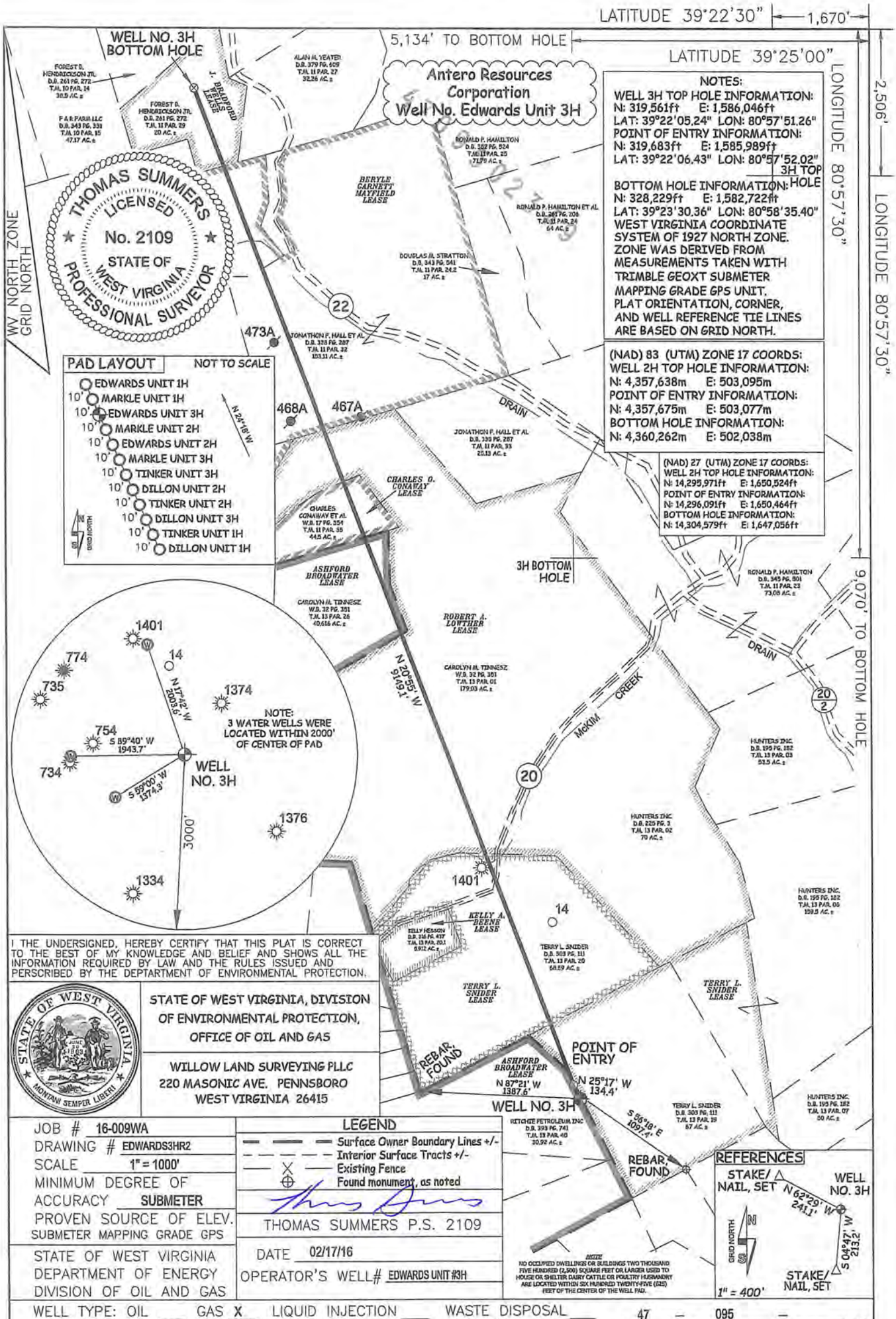
DATE 02/17/16
OPERATOR'S WELL# EDWARDS UNIT #3H

WELL TYPE: OIL ___ GAS X LIQUID INJECTION ___ WASTE DISPOSAL ___
(IF "GAS") PRODUCTION X STORAGE ___ DEEP ___ SHALLOW X
LOCATION: ELEVATION 1,171' ORIGINAL - 1,147' AS-BUILT WATERSHED OUTLET MIDDLE ISLAND CREEK
QUADRANGLE PENNSBORO 7.5' - SHL MIDDLEBOURNE 7.5' - BHL DISTRICT MEADE COUNTY TYLER
SURFACE OWNER RITCHIE PETROLEUM INC. ACREAGE 30.92 ACRES +/-
OIL & GAS ROYALTY OWNER ASHFORD BROADWATER; TERRY L. SNIDER; TERRY L. SNIDER; ROBERT A. LOWTHER; CHARLES O. CONAWAY; BERYLE GARNETT MAYFIELD; J. BRADFORD WELLS LEASE ACREAGE 583.712 ACRES±; 67 ACRES±; 75 ACRES±; 250 AC±; 44.5 ACRES±; 155.33 ACRES±; 20 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) ___ PLUG & ABANDON ___ CLEAN OUT & REPLUG ___
TARGET FORMATION MARCELLUS ESTIMATED DEPTH 6,700' TVD 16,900' MD
WELL OPERATOR ANTERO RESOURCES CORP. DESIGNATED AGENT DIANNA STAMPER - CT CORPORATION SYSTEM
ADDRESS 1615 WYNKOOP STREET ADDRESS 5400 D BIG TYLER ROAD
DENVER, CO 80202 CHARLESTON, WV 25313

47 - 095 - 02349 HGA
STATE COUNTY PERMIT

COUNTY NAME PERMIT

FORM WW-6



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 DEPTARTMENT 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

JOB # 16-009WA
DRAWING # EDWARDS3HR2
SCALE 1" = 1000'
MINIMUM DEGREE OF ACCURACY SUBMETER
PROVEN SOURCE OF ELEV. SUBMETER MAPPING GRADE GPS

STATE OF WEST VIRGINIA
DEPARTMENT OF ENERGY
DIVISION OF OIL AND GAS

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

THOMAS SUMMERS P.S. 2109

DATE 02/17/16
OPERATOR'S WELL# EDWARDS UNIT #3H

WELL TYPE: OIL ___ GAS X LIQUID INJECTION ___ WASTE DISPOSAL ___
(IF "GAS") PRODUCTION X STORAGE ___ DEEP ___ SHALLOW X
47 – 095 – ___
STATE COUNTY PERMIT
LOCATION: ELEVATION 1,171' ORIGINAL - 1,147' AS-BUILT WATERSHED OUTLET MIDDLE ISLAND CREEK
QUADRANGLE PENNSBORO 7.5' - SHL MIDDLEBOURNE 7.5' - BHL DISTRICT MEADE COUNTY TYLER
SURFACE OWNER RITCHIE PETROLEUM INC. ACREAGE 30.92 ACRES +/-
OIL & GAS ROYALTY OWNER ASHFORD BROADWATER; TERRY L. SNIDER; TERRY L. SNIDER; ROBERT A. LOWTHER; CHARLES O. CONAWAY; BERYLE GARNETT MAYFIELD; J. BRADFORD WELLS LEASE ACREAGE 583.712 ACRES±; 67 ACRES±; 75 ACRES±; 250 AC±; 44.5 ACRES±; 155.33 ACRES±; 20 ACRES±
PROPOSED WORK: DRILL X CONVERT ___ DRILL DEEPER ___ REDRILL ___ FRACTURE OR STIMULATE X
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WELL OPERATOR ANTERO RESOURCES CORP. DESIGNATED AGENT DIANNA STAMPER - CT CORPORATION SYSTEM
ADDRESS 1615 WYNKOOP STREET ADDRESS 5400 D BIG TYLER ROAD
DENVER, CO 80202 CHARLESTON, WV 25313

COUNTY NAME PERMIT

FORM WW-6

WW-6A1

Operator's Well Number Edwards Unit 3H

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 – 4708502740

(1) the tract of land is the same tract described in this Application, partly or wholly depicted in the accompanying plat, and described in the Construction and Reclamation Plan;

(2) the parties and recordation data (if recorded) for lease(s) or other continuing contract(s) by which the Applicant claims the right to extract, produce or market the oil or gas are as follows:

Grantor, lessor, etc.	Grantee, lessee, etc.	Royalty	Book/Page
Ashford Broadwater Lease			
Ashford Broadwater	South Penn Oil Company	Flate Rate	0030/0139
South Penn Oil Company	Carter Oil Company	Assignment	0030/0357
Carter Oil Company	Hope Construction and Refining Company	Assignment	0097/0332
Hope Construction and Refining Company	Hope Natural Gas Company	Confirmatory Deed	0119/0576
Hope Natural Gas Company	Consolidation Gas Supply Corporation	Confirmatory Deed	0169/0026
Consolidation Gas Supply Corporation	Consolidation Gas Transmission Corporation	Assignment	0249/0287
Consolidation Gas Transmission Corporation	CNG Development Company	Assignment	0253/0057
CNG Development Company	CNG Producing Company	Merger	Harrison County 1131/1015
CNG Producing Company	Dominion Exploration & Production, Inc.	Name Change	Exhibit 2
Dominion Exploration & Production, Inc.	CNX Gas Company, LLC	Affidavit of Name Changes and Mergers	0384/0191
CNX Gas Company, LLC	**Antero Resources Corporation**	**Assignment**	**0501/0434**
Terry L. Snider Lease (TM 13-19)			
Terry L. Snider	Antero Resources Appalachian Corporation	1/8+	0389/0217
Antero Resources Appalachian Corporation	**Antero Resources Corporation**	**Name Change**	**Exhibit 1**
Terry L. Snider Lease (TM 13-20)			
Terry L. Snider	Antero Resources Appalachian Corporation	1/8+	0388/0601
Antero Resources Appalachian Corporation	**Antero Resources Corporation**	**Name Change**	**Exhibit 1**
Robert A. Lowther Lease			
The Robert A. Lowther Irrevocable Trust dated June 25, 2012, by Robert A. Lowther and Curtis T. Tallman, acting as Trustees	**Antero Resources Corporation**	**1/8+**	**0464/0584**
Charles O. Conaway Lease			
Charles O. Conaway	Antero Resources Appalachian Corporation	1/8+	0401/0163
Antero Resources Appalachian Corporation	**Antero Resources Corporation**	**Name Change**	**Exhibit 1**
Beryle Garnett Mayfield Lease			
Beryle Garnett Mayfield	Antero Resources Appalachian Corporation	1/8+	0421/0731
Antero Resources Appalachian Corporation	**Antero Resources Corporation**	**Name Change**	**Exhibit 1**

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Office of Oil and Gas
MAR 04 2016
WV Department of Environmental Protection

***Partial Assignments to Antero Resources Corporation include 100% rights to extract, produce and market the oil and gas from the Marcellus and any other formations completed with this well.**

****CONTINUED ON NEXT PAGE****

WW-6A1
(5/13)

Operator's Well No. Edward Unit 3H

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;

4709502349

(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
J. Bradford Wells Lease	J. Bradford Wells	Antero Resources Corporation	1/8+	0480/0621

*Partial Assignments to Antero Resources Corporation include 100% rights to extract, produce and market the oil and gas from the Marcellus and any other formations completed with this well.

Acknowledgement of Possible Permitting/Approval
In Addition to the Office of Oil and Gas

The permit applicant for the proposed well work addressed in this application hereby acknowledges the possibility of the need for permits and/or approvals from local, state, or federal entities in addition to the DEP, Office of Oil and Gas, including but not limited to the following:

- WV Division of Water and Waste Management
- WV Division of Natural Resources WV Division of Highways
- U.S. Army Corps of Engineers
- U.S. Fish and Wildlife Service
- County Floodplain Coordinator

The applicant further acknowledges that any Office of Oil and Gas permit in no way overrides, replaces, or nullifies the need for other permits/approvals that may be necessary and further affirms that all needed permits/approvals should be acquired from the appropriate authority before the affected activity is initiated.

Well Operator: Antero Resources Corporation
By: Kevin Kilstrom
Its: Senior VP of Production

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MAR 04 2016
WV Department of
Environmental Protection

FORM WW-6A1
EXHIBIT 1

FILED

JUN 10 2013

IN THE OFFICE OF SECRETARY OF STATE

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

Penney Barker, Manager
Corporations Division
Tel: (304)558-8000
Fax: (304)558-8381
Website: www.wvsos.com
E-mail: business@wvsos.com
Office Hours: Monday – Friday
8:30 a.m. – 5:00 p.m. ET

FILE ONE ORIGINAL
(Two if you want a filed stamped copy returned to you)
FEE: $25.00

APPLICATION FOR AMENDED CERTIFICATE OF AUTHORITY

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

1. Name under which the corporation was authorized to transact business in WV: Antero Resources Appalachian Corporation 4709502349

2. Date Certificate of Authority was issued in West Virginia: 6/25/2008

3. Corporate name has been changed to: Antero Resources Corporation
(Attach one Certified Copy of Name Change as filed in home State of incorporation.)

4. Name the corporation elects to use in WV: Antero Resources Corporation
(due to home state name not being available)

5. Other amendments:
(attach additional pages if necessary)

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

Alvyn A. Schopp — (303) 357-7310
Contact Name — Phone Number

7. Signature information (See below *Important Legal Notice Regarding Signature):

Print Name of Signer: Alvyn A. Schopp — Title/Capacity: Authorized Person

Signature: [signature] — Date: June 10, 2013

*Important Legal Notice Regarding Signature: Per West Virginia Code §31D-1-129, Penalty for signing false document. Any person who signs a document he or she knows is false in any material respect and knows that the document is to be delivered to the secretary of state for filing is guilty of a misdemeanor and, upon conviction thereof, shall be fined not more than one thousand dollars or confined in the county or regional jail not more than one year, or both.

WV013 - 04/16/2013 Wolters Kluwer Online

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WV Department of
Environmental Protection

FORM WW-6A1
EXHIBIT 2

State of West Virginia

0950234

Certificate

I, Ken Hechler, Secretary of State of the State of West Virginia, hereby certify that

riginals of an application by

CNG PRODUCING COMPANY

for an amended certificate of authority to transact business in West Virginia are filed in my office, as required by the provisions of Chapter 31, Article 1, Sections 57 and 59 of the West Virginia Code and conform to law. Therefore, I issue this

AMENDED CERTIFICATE OF AUTHORITY

to transact business in West Virginia under the name of

DOMINION EXPLORATION & PRODUCTION, INC.

and I attach to this certificate a duplicate original of the application.

Given under my hand and the Great Seal of the State of West Virginia on

May 10, 2000

Secretary of State

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Office of Oil and Gas
MAR 04 2016
WV Department of
Environmental Protection

WW-60
(7-01)

DATE: February 23, 20 16
OPERATOR'S
WELL NO. Edwards Unit 3H

API NO: 47- 085
State County Permit No.

STATE OF WEST VIRGINIA
OFFICE OF OIL AND GAS
DEPARTMENT OF ENVIRONMENTAL PROTECTION

4709502349

A F F I D A V I T

State of West Virginia

County of Ritchie

I, Tom Kuhn (the designated owner or operator, or authorized representative thereof), after being duly sworn, do declare that the undersigned is authorized by the owner of the working interest in the well permit application to which this affidavit is attached to state that (he, she, or it) shall tender to the owner of the oil and gas in place not less than one-eighth of the total amount paid to or received by or allowed to the owner of the working interest at the wellhead for the oil or gas so extracted, produced, or marketed before deducting the amount to be paid or set aside for the owner of the oil or gas in place, or all such oil or gas to be extracted, produced, or marketed from the well. West Virginia Code 22-6-8(e).

Signed: _____

Taken, subscribed and sworn to before me this 24th day of February, 20 16.

NATALIE KOMP
NOTARY PUBLIC
STATE OF COLORADO
NOTARY ID # 20144028170
MY COMMISSION EXPIRES JULY 18, 2018

_____
Notary Public

My Commission expires: July 18, 2018

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Office of Oil and Gas
MAR 04 2016
WV Department of
Environmental Protection

Xing

Antero Resources
1615 Wynkoop Street
Denver, CO 80202
Office 303.357.7310
Fax 303.357.7315

February 22, 2016

West Virginia Department of Environmental Protection
Chief, Office of Oil and Gas
Attn: Mr. James Martin
601 57th Street SE
Charleston, WV 25304

4709502343

RE: Edwards Unit 3H
Quadrangle: Pennsboro 7.5'
Tyler County/Meade District, West Virginia

Mr. Martin:

Antero Resources Corporation (Antero) is submitting the following application for a new well work permit for the Edwards Unit 3H horizontal shallow well. As an authorized representative, I certify that Antero has the right to extract, produce or market the oil or gas for all leases through which the Edwards Unit 3H horizontal lateral will drill through including any and all roads crossed under as identified on the attached survey plat.

Sincerely,

Tom Kuhn
Landman

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MAR 04 2016
WV Department of
Environmental Protection

WW-6AC
(1/12)

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

Date of Notice Certification: 03/02/2016

API No. 47- 095 4709502349
Operator's Well No. Edwards Unit 3H
Well Pad Name: Existing Terry Snider Pad

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:	West Virginia	UTM NAD 83 Easting:	503095m
County:	Tyler	Northing:	4357638m
District:	Meade	Public Road Access:	CR 20
Quadrangle:	Pennsboro 7.5'	Generally used farm name:	Ritchie Petroleum, Inc.
Watershed:	Outlet Middle Island Creek		

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.

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: *PLEASE CHECK ALL THAT APPLY	OOG OFFICE USE ONLY
☐ 1. NOTICE OF SEISMIC ACTIVITY or ☒ NOTICE NOT REQUIRED BECAUSE NO SEISMIC ACTIVITY WAS CONDUCTED	☐ RECEIVED/ NOT REQUIRED
☒ 2. NOTICE OF ENTRY FOR PLAT SURVEY or ☐ NO PLAT SURVEY WAS CONDUCTED	☐ RECEIVED
☐ 3. NOTICE OF INTENT TO DRILL or ☒ NOTICE NOT REQUIRED BECAUSE NOTICE OF ENTRY FOR PLAT SURVEY WAS CONDUCTED or ☐ WRITTEN WAIVER BY SURFACE OWNER (PLEASE ATTACH)	☐ RECEIVED/ NOT REQUIRED
☒ 4. NOTICE OF PLANNED OPERATION	☐ RECEIVED
☒ 5. PUBLIC NOTICE	☐ RECEIVED
☒ 6. NOTICE OF APPLICATION	☐ RECEIVED

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.

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Office of Oil and Gas
MAR 04 2016
WV Department of
Environmental Protection

WW-6AC
(1/12)

4709502349

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:	Antero Resources Corporation	Address:	1615 Wynkoop Street
By:	Kevin Kilstrom		Denver, CO 80202
Its:	Senior VP of Production	Facsimile:	303-357-7315
Telephone:	(303) 357-7310	Email:	asteele@anteroresources.com

NOTARY SEAL
NATALIE KOMP
NOTARY PUBLIC
STATE OF COLORADO
NOTARY ID # 20144028170
MY COMMISSION EXPIRES JULY 18, 2018

Subscribed and sworn before me this 2nd day of March 2016

Notary Public

My Commission Expires July 18, 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 depprivacyofficer@wv.gov.

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Office of Oil and Gas
MAR 04 2016
WV Department of
Environmental Protection

WW-6A
(9-13)

API NO. 47- 095 -
OPERATOR WELL NO. Edwards Unit 3H
Well Pad Name: Existing Terry Snider Pad

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.**

4709502349

Date of Notice: 3/2/2016 **Date Permit Application Filed:** 3/2/2016

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: PLEASE SEE ATTACHMENT
Address:

Name:
Address:

☑ SURFACE OWNER(s) (Road and/or Other Disturbance)
Name: PLEASE SEE ATTACHMENT
Address:

Name:
Address:

☐ 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: Gary L. Denning, et al
Address: 2890 Haddox Run Rd.
Pennsboro, WV 26415

*NOTE: 2 water wells were identified but are located greater than 1500' from subject pad location

☐ OPERATOR OF ANY NATURAL GAS STORAGE FIELD
Name:
Address:

*Please attach additional forms if necessary

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Office of Oil and Gas
MAR 04 2016
WV Department of
Environmental Protection

WW-6A
(8-13)

API NO. 47- 095 -
OPERATOR WELL NO. Edwards Unit 3H
Well Pad Name: Existing Terry Snider Pad

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 57th Street, SE, Charleston, WV 25304 (304-926-0450) or by visiting www.dep.wv.gov/oil-and-gas/pages/default.aspx.

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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 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

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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 57th St. SE
Charleston, WV 25304
(304) 926-0450

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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.**

WW-6A
(8-13)

API NO. 47- 095 -
OPERATOR WELL NO. Edwards Unit 3H
Well Pad Name: Existing Terry Snider Pad

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 effecti
(3) Damage would occur to publicly owned lands or resources; or
(4) The proposed well work fails to protect fresh water sources or supplies.

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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.

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WW-6A
(8-13)

API NO. 47- 095 -
OPERATOR WELL NO. Edwards Unit 3H
Well Pad Name: Existing Terry Snider Pad

Notice is hereby given by:

Well Operator: Antero Resources Corporation
Telephone: (303) 357-7310
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.

NATALIE KOMP
NOTARY PUBLIC
STATE OF COLORADO
NOTARY ID # 20144028170
MY COMMISSION EXPIRES JULY 18, 2018

Subscribed and sworn before me this 2nd day of March 2016.

Natalie Komp Notary Public

My Commission Expires July 18, 2018

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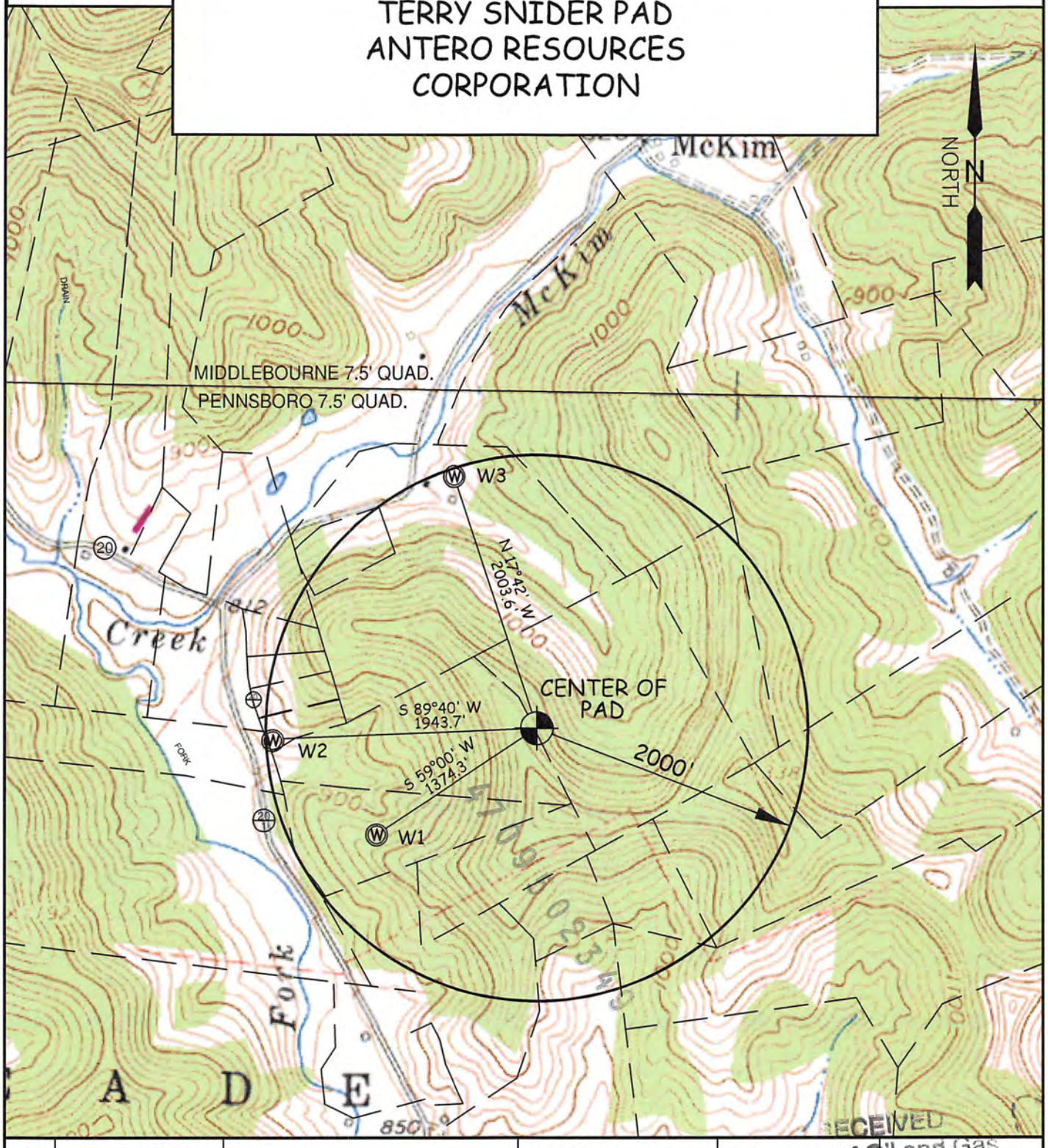
FORM WW-9

PAGE OF

TERRY SNIDER PAD
ANTERO RESOURCES CORPORATION



WELL	SURFACE OWNER	ADDRESS	DISTRICT-TAX MAP-PARCEL	WELL LATITUDE	WELL LONGITUDE
W1	GARY L. DENNING ET AL	2890 Haddox Run Road, Pennsboro, WV 26415	6-13-41	39° 21' 57.69"	80° 58' 05.89"
W2	FRANK & MARY ROSE (LIFE)	862 HADDOX RUN RD. PENNSBORO, WV 26415	6-13-36	39° 22' 04.45"	80° 58' 15.79"
W3	TERRY L. SNIDER	P.O. BOX 545 PENNSBORO, WV 26415	6-13-20	39° 22' 23.64"	80° 57' 59.20"

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

TOPO SECTION(S) OF :

PENNSBORO 7.5' QUAD. & MIDDLEBOURNE 7.5' QUAD.

SCALE : 1-INCH = 1000 FEET

0' 1000' 2000' 3000'

DATE: 06/22/15

DRAWN BY: D.L.P.

WW-6A Notice of Application Attachment (TERRY SNIDER PAD):

List of Surface Owner(s) with Proposed Disturbance associated with Terry Snider Well Pad:

WELL PAD – All owners were notified of all well work permit applications, and have executed signed Surface Use Agreements with Antero Resources Corporation.

TM 13 PCL 19
Owner: Terry L. Snider
Address: P.O. Box 545
Pennsboro, WV 26415

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TM 13 PCL 40
Owner: Ritchie Petroleum, Inc.
Address: P.O. Box 545
Pennsboro, WV 26415

ROAD AND/OR OTHER DISTURBANCE – All owners have executed signed Surface Use and/or Road Agreements with Antero Resources Corporation. However, they were only notified if their tracts were overlying the oil and gas leasehold being developed by the proposed well work.

TM 13 PCL 19 & 20
Owner: Terry L. Snider
Address: P.O. Box 545
Pennsboro, WV 26415

TM 13 PCL 40
Owner: Ritchie Petroleum, Inc.
Address: P.O. Box 545
Pennsboro, WV 26415

TM 13 PCL 20.1
Owner: Jarret W. Shepherd
Address: P.O. Box 24
Pennsboro, WV 26415

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WW-6A3
(1/12)

Operator Well No. Edwards Unit 3H

Multiple Wells on the Terry Snider Pad

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS
NOTICE OF ENTRY FOR PLAT SURVEY

Notice Time Requirement: Notice shall be provided at least **SEVEN (7)** days but no more than **FORTY-FIVE (45)** days prior to entry

Date of Notice: 8/17/2012 **Date of Planned Entry:** 8/28/2012

Delivery method pursuant to West Virginia Code § 22-6A-10a

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

Pursuant to West Virginia Code § 22-6A-10(a), Prior to filing a permit application, the operator shall provide notice of planned entry on to the surface tract to conduct any plat surveys required pursuant to this article. Such notice shall be provided at least seven days but no more than forty-five days prior to such entry to: (1) The surface owner of such tract; (2) to any owner or lessee of coal seams beneath such tract that has filed a declaration pursuant to section thirty-six, article six, chapter twenty-two of this code; and (3) any owner of minerals underlying such tract in the county tax records. The notice shall include a statement that copies of the state Erosion and Sediment Control Manual and the statutes and rules related to oil and gas exploration and production may be obtained from the Secretary, which statement shall include contact information, including the address for a web page on the Secretary's web site, to enable the surface owner to obtain copies from the secretary.

Notice is hereby provided to:

☒ SURFACE OWNER(s)
Name: Terry L. Snider,Palmer & Irene Hill c/ Terry L. Snider
Address: PO Box 545
Pennsboro, WV 26415
Name: Alan Dor Nogle, et al c/o Alan & Kimberly Nogle
Address: PO Box 1337
Pennsboro, OH 44203
Name:
Address:

☐ COAL OWNER OR LESSEE
Name: NO DECLARATIONS ON RECORD WITH COUNTY
Address:

☒ MINERAL OWNER(s)
Name: PLEASE SEE ATTACHMENT
Address:

*please attach additional forms if necessary

Notice is hereby given:
Pursuant to West Virginia Code § 22-6A-10(a), notice is hereby given that the undersigned well operator is planning entry to conduct a plat survey on the tract of land as follows:

State:	West Virginia	Approx. Latitude & Longitude:	39.3686300, -80.9644331
County:	Tyler	Public Road Access:	CR 20
District:	Meade	Watershed:	Middle Ohio North
Quadrangle:	Pennsboro 7.5'	Generally used farm name:	Snider, Terry L.

Copies of the state Erosion and Sediment Control Manual and the statutes and rules related to oil and gas exploration and production may be obtained from the Secretary, at the WV Department of Environmental Protection headquarters, located at 601 57th Street, SE, Charleston, WV 25304 (304-926-0450). Copies of such documents or additional information related to horizontal drilling may be obtained from the Secretary by visiting www.dep.wv.gov/oil-and-gas/pages/default.aspx.

Notice is hereby given by:

Well Operator:	Antero Resources Corporation	Address:	1615 Wynkoop Street
Telephone:	(303) 357- 7310		Denver, CO 80202
Email:	asteele@anteroresources.com	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.

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WW-6A3 Notice of Entry For Plat Survey Attachment:

Mineral Owners:

Owner: Ed Broome Inc.
Address: 4622 WV Hwy 5 E
Glenville, WV 26351

Owner: James Clevenger
Address: Rt 6 Box 650
Clarksburg, WV 26301

Owner: Whittle Corp.
Address: HC 68 Box 14
Smithville, WV 26178

Owner: Robert N. & Genevieve T. Clevenger
Address: Rt 1 Box 52 A Halls Rd
Collier, WV 26035

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WW-6A5
(1/12)

Operator Well No. Edwards Unit 3H

STATE OF WEST VIRGINIA
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: 03/02/2016 **Date Permit Application Filed:** 03/02/2016

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

☒ CERTIFIED MAIL RETURN RECEIPT REQUESTED ☐ HAND DELIVERY

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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: Terry Snider	Name: Ritchie Petroleum, Inc.
Address: PO Box 545	Address: PO Box 545
Pennsboro, WV 26415	Pennsboro, WV 26415

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:	West Virginia	UTM NAD 83 Easting:	503095m
County:	Tyler	Northing:	4357638m
District:	Meade	Public Road Access:	CR 20
Quadrangle:	Pennsboro 7.5'	Generally used farm name:	Ritchie Petroleum, Inc.
Watershed:	Outlet Middle Island Creek		

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 57th Street, SE, Charleston, WV 25304 (304-926-0450) or by visiting www.dep.wv.gov/oil-and-gas/pages/default.aspx.

Well Operator:	Antero Resources Corporation	Address:	1615 Wynkoop Street
Telephone:	(303) 357-7310		Denver, CO 80202
Email:	asteele@anteroresources.com	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.

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WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
Division of Highways
1900 Kanawha Boulevard East • Building Five • Room 110
Charleston, West Virginia 25305-0430 • (304) 558-3505

Earl Ray Tomblin
Governor

Paul A. Mattox, Jr., P. E.
Secretary of Transportation/
Commissioner of Highways

February 22, 2016

4709502349

James A. Martin, Chief
Office of Oil and Gas
Department of Environmental Protection
601 57th Street, SE
Charleston, WV 25304

Subject: DOH Permit for the Terry Snider Pad, Tyler County
Edwards Unit 3H Well site

Dear Mr. Martin,

This well site will be accessed from a DOH permit #06-2013-0110 which has been issued to Antero Resources Corporation for access to the State Road for a well site located off of Tyler Route 20 SLS.

The operator has signed a STATEWIDE OIL AND GAS ROAD MAINTENANCE BONDING AGREEMENT and provided the required Bond. This operator is currently in compliance with the DOH OIL AND GAS POLICY dated January 3, 2012.

Very Truly Yours,

Gary K. Clayton

Gary K. Clayton, P.E.
Regional Maintenance Engineer
Central Office O&G Coordinator

Cc: Natalie Komp
Antero Resources Corporation
CH, OM, D-6
File

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List of Anticipated Additives Used for Fracturing or Stimulating Well

Additives	Chemical Abstract Service Number (CAS #)
Fresh Water	7732-18-5
2 Phosphobutane 1,2,4 tricarboxylic acid	37971-36-1
Ammonium Persulfate	7727-54-0
Anionic copolymer	proprietary
Anionic polymer	proprietary
BTEX Free Hydrotreated Heavy Naphtha	64742-48-9
Cellulase enzyme	(Proprietary)
Demulsifier Base	(Proprietary)
Ethoxylated alcohol blend	Mixture
Ethoxylated Nonylphenol	68412-54-4
Ethoxylated oleylamine	26635-93-8
Ethylene Glycol	107-21-1
Glycol Ethers	111-76-2
guar gum	9000-30-0
Hydrogen Chloride	7647-01-0
Hydrotreated light distillates, non-aromatic, BTEX free	64742-47-8
Isopropyl alcohol	67-63-0
liquid, 2,2-dibromo-3-nitrilopropionamide	10222-01-2
Microparticle	proprietary
Petroleum Distillates (BTEX Below Detect)	64742-47-8
Polyacrylamide	57-55-6
Propargyl Alcohol	107-19-7
Propylene Glycol	57-55-6
Quartz	14808-60-7
Sillica, crystalline quartz	7631-86-9
Sodium Chloride	7647-14-5
Sodium Hydroxide	1310-73-2
Sugar	57-50-1
Surfactant	68439-51-0
Suspending agent (solid)	14808-60-7
Tar bases, quinoline derivs, benzyl chloride-quaternized	72480-70-7

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TERRY SNIDER WELL PAD & WATER CONTAINMENT PAD

AS-BUILT AND EROSION & SEDIMENT CONTROL IMPROVEMENT PLAN

MEADE DISTRICT, TYLER COUNTY, WEST VIRGINIA
McKIM CREEK WATERSHED

APPROVED
WVDEP OOG
Modification
3/17/2016

LOCATION COORDINATES:
ACCESS ROAD ENTRANCE
LATITUDE: 39.372897 LONGITUDE: -80.967070 (NAD 83)
N 4358158.08 E 502836.46 (UTM ZONE 17 METERS)

CENTER OF TANK
LATITUDE: 39.367071 LONGITUDE: -80.966214 (NAD 83)
N 4357845.56 E 502910.31 (UTM ZONE 17 METERS)

CENTROID OF PAD
LATITUDE: 39.368216 LONGITUDE: -80.964052 (NAD 83)
N 4357639.70 E 503096.62 (UTM ZONE 17 METERS)

GENERAL DESCRIPTION:
THE ACCESS ROAD(S), WATER CONTAINMENT PAD, AND WELL PAD ARE BEING CONSTRUCTED/UPGRADED TO AID IN THE DEVELOPMENT OF INDIVIDUAL MARCELLUS SHALE GAS WELLS.

FLOODPLAIN NOTES:
THE PROPOSED SITE IS LOCATED WITHIN FEMA FLOOD ZONE "X" PER FEMA FLOOD MAP #54095C0275C.

MISS UTILITY STATEMENT:
ANTERO RESOURCES CORPORATION WILL NOTIFY MISS UTILITY OF WEST VIRGINIA FOR THE LOCATING OF UTILITIES PRIOR TO THE START OF CONSTRUCTION FOR THIS PROJECT.

ENTRANCE PERMIT:
ANTERO RESOURCES CORPORATION WILL OBTAIN AN ENCROACHMENT PERMIT (FORM MM-109) FROM THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS, PRIOR TO COMMENCEMENT OF CONSTRUCTION ACTIVITIES.

ENVIRONMENTAL NOTES:
STREAM AND WETLAND DELINEATIONS WERE PERFORMED IN MARCH, 2012 – MARCH, 2014, & FEBRUARY, 2016 BY ALLSTAR ECOLOGY TO REVIEW THE SITE FOR WATERS AND WETLANDS THAT ARE MOST LIKELY WITHIN THE REGULATORY PURVIEW OF THE U.S. ARMY CORPS OF ENGINEERS (USACE) AND/OR THE WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION (WVDEP). THE FEBRUARY 26, 2016 REPORT WAS PREPARED BY ALLSTAR ECOLOGY AND SUMMARIZES THE RESULTS OF THE FIELD DELINEATION. THE MAP DOES NOT, IN ANY WAY, REPRESENT A JURISDICTIONAL DETERMINATION OF THE LANDWARD LIMITS OF WATERS AND WETLANDS WHICH MAY BE REGULATED BY THE USACE OR THE WVDEP.
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GEOTECHNICAL NOTES:
A SUBSURFACE INVESTIGATION OF THE PROPOSED SITE WAS PERFORMED BY PENNSYLVANIA SOIL & ROCK, INC. ON JULY 9, 2015 & JULY 29, 2015. THE REPORTS PREPARED BY PENNSYLVANIA SOIL & ROCK, INC. DATED JULY 13, 2015, SEPTEMBER 3, 2015, & FEBRUARY 23, 2016, REFLECTS THE RESULTS OF THE SUBSURFACE INVESTIGATION. THE INFORMATION AND RECOMMENDATIONS CONTAINED IN THESE REPORTS WERE USED IN THE PREPARATION OF THESE PLANS. PLEASE REFER TO THE SUBSURFACE INVESTIGATION REPORTS BY PENNSYLVANIA SOIL & ROCK, INC. FOR ADDITIONAL INFORMATION, AS NEEDED.

PROJECT CONTACTS:

OPERATOR:
ANTERO RESOURCES CORPORATION
535 WHITE OAKS BLVD.
BRIDGEPORT, WV 26330
PHONE: (304) 842-4100
FAX: (304) 842-4102

ELI WAGONER – ENVIRONMENTAL ENGINEER
OFFICE: (304) 842-4068 CELL: (304) 476-9770

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RESTRICTIONS NOTES:
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THESE PLANS WERE CREATED TO BE PLOTTED ON 22"X34" (ANSI D) PAPER. HALF SCALE DRAWINGS ARE ON 11"X17" (ANSI B) PAPER.
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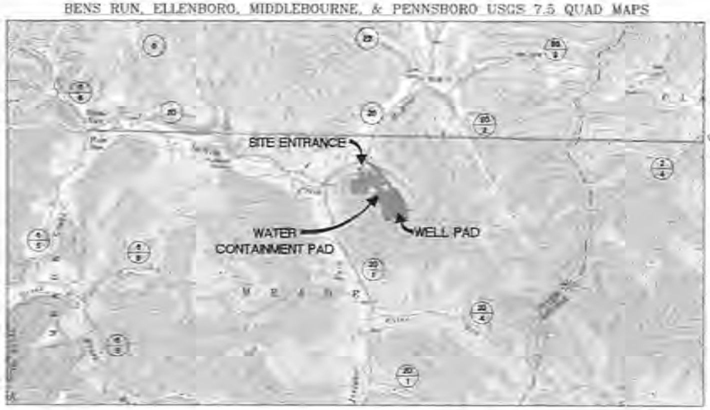
BENS RUN, ELLENBORO, MIDDLEBOURNE, & PENNSBORO USGS 7.5 QUAD MAPS



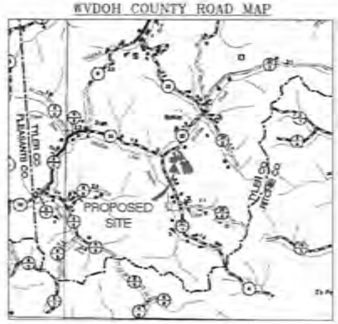
SCALE: 1" = 2000'

WEST VIRGINIA STATE PLANE COORDINATE SYSTEM
NORTH ZONE, NAD83
ELEVATION BASED ON NAVD88
ESTABLISHED BY SURVEY GRADE GPS & OPUS
POST-PROCESSING

WEST VIRGINIA COUNTY MAP

(NOT TO SCALE)

WVDOH COUNTY ROAD MAP



SCALE: 1" = 5000'

AS-BUILT CERTIFICATIONS:
THE DRAWINGS, CONSTRUCTION NOTES, AND REFERENCE DIAGRAMS ATTACHED HERETO HAVE BEEN PREPARED IN ACCORDANCE WITH THE WEST VIRGINIA CODE OF STATE RULES, DIVISION OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS CRS 35-8.

MISS Utility of West Virginia
1-800-245-4848
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TERRY SNIDER LIMITS OF DISTURBANCE AREA (AC)			
Total Site (Navitus)	**Permitted**	**Modification**	**Total**
Ex. Access Road "A" (2,580')	6.53	2.55	11.06
Ex. Access Road "B" (697')	2.17	0.12	2.29
Ex. Well Pad	6.64	0.00	6.64
Associated Pit Reclamation	3.24	0.00	3.24
Water Containment Pad	1.33	0.00	1.33
Borrow Area & Ex. Excess Material Stockpile	13.49	0.00	13.49
Total Affected Area	**35.40**	**2.67**	**38.07**
Total Wooded Acres Disturbed	1.87	2.3	4.17
Impacts to Jarret W. Shepherd TM 13-29.1			
Borrow Area & Ex. Excess Material Stockpile	0.33	0.00	0.33
Total Affected Area	**0.33**	**0.00**	**0.33**
Total Wooded Acres Disturbed	0.09	0.0	0.09
Impacts to Terry L. Snider TM 13-25			
Ex. Access Road "A" (1,295')	3.24	0.00	3.24
Ex. Access Road "B" (349')	1.05	0.00	1.05
Associated Pit Reclamation	0.45	0.00	0.45
Water Containment Pad	1.33	0.00	1.33
Borrow Area & Ex. Excess Material Stockpile	13.16	0.00	13.16
Total Affected Area	**19.23**	**0.00**	**19.23**
Total Wooded Acres Disturbed	1.63	0.0	1.63
Impacts to Terry L. Snider TM 13-19			
Ex. Access Road "A" (1,285')	5.25	2.55	7.80
Ex. Access Road "B" (348')	1.12	0.12	1.24
Ex. Well Pad	2.95	0.00	2.95
Associated Pit Reclamation	1.72	0.00	1.72
Total Affected Area	**11.04**	**2.67**	**13.71**
Total Wooded Acres Disturbed	0.08	2.3	2.38
Impacts to Ritchie Petroleum Corporation TM 13-40			
Ex. Access Road "A"	0.04	0.00	0.04
Ex. Well Pad	3.69	0.00	3.69
Associated Pit Reclamation	1.07	0.00	1.07
Total Affected Area	**4.80**	**0.00**	**4.80**
Total Wooded Acres Disturbed	0.07	0.0	0.07

Proposed Well Name	WV North NAD 27	WV North NAD 83	UTM (METERS) Zone 17	NAD 83 Lat. & Long
Dillon Unit 3H	N 319497.17 E 1590075.08	N 319531.19 E 1558534.05	N 4357618.78 E 503104.18	LAT 39-22-04.8850 LONG -80-57-50.2717
Tinker Unit 2H	N 319506.29 E 1590070.98	N 319540.32 E 1558529.94	N 4357621.54 E 503102.85	LAT 39-22-04.9844 LONG -80-57-50.3260
Dillon Unit 2H	N 319515.40 E 1590066.85	N 319549.42 E 1558525.82	N 4357624.29 E 503101.56	LAT 39-22-05.0738 LONG -80-57-50.3802
Tinker Unit 3H	N 319524.52 E 1590062.74	N 319558.53 E 1558521.71	N 4357627.05 E 503100.26	LAT 39-22-05.1633 LONG -80-57-50.4345
Markle Unit 3H	N 319533.63 E 1590058.62	N 319567.66 E 1558517.60	N 4357629.80 E 503098.96	LAT 39-22-05.2527 LONG -80-57-50.4889
Edwards Unit 2H	N 319542.74 E 1590054.51	N 319576.78 E 1558513.48	N 4357632.56 E 503097.66	LAT 39-22-05.3420 LONG -80-57-50.5430
Markle Unit 2H	N 319551.86 E 1590050.40	N 319585.87 E 1558509.37	N 4357635.31 E 503096.36	LAT 39-22-05.4314 LONG -80-57-50.5973
Edwards Unit 3H	N 319560.97 E 1590046.28	N 319594.98 E 1558505.25	N 4357638.07 E 503095.06	LAT 39-22-05.5208 LONG -80-57-50.6516
Well Pad Elevation	1,346.5			

NAVITUS ENERGY ENGINEERING
Telephone: (888) 662-4185 | www.NavitusEng.com

DATE	REVISION
09/10/2015	UPDATED ADDITIONAL SLIDE AREAS
11/23/2015	ADD PRODUCTION PAD & ROAD
12/30/2015	REVISED WELL PAD & SLIDE AREAS
01/07/2016	REVISED BENCH GRADING
02/23/2016	SLIDE #6 & #7 REPAIR
02/26/2016	REVISED PER STREAM & WETLAND DELINEATION

Antero

THIS DOCUMENT WAS PREPARED FOR ANTERO RESOURCES CORPORATION

COVER SHEET
TERRY SNIDER
WELL PAD & WATER CONTAINMENT PAD
MEADE DISTRICT
TYLER COUNTY, WEST VIRGINIA

02/26/2016

DATE: 06/03/2015
SCALE: AS SHOWN
SHEET 1 OF 26

TER CONTAINMENT PAD
N & SEDIMENT
MENT PLAN
, WEST VIRGINIA
SHED

NSBORO USGS 7.5 QUAD MAPS

WEST VIRGINIA STATE PLANE COORDINATE SYSTEM
NORTH ZONE, NAD83
ELEVATION BASED ON NAVD88
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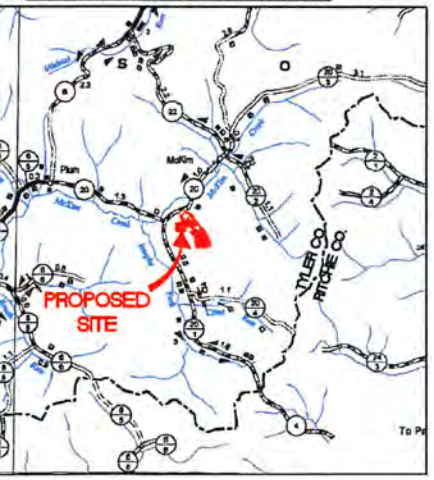
WVDOH COUNTY ROAD MAP



5000 0 5000
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4709502349

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Well Pad Elevation	1,146.5			

DmH
3-17-16

NAVITUS
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02/26/2016	REVISED PER STREAM & WETLAND DELINEATION

Antero Resources

THIS DOCUMENT WAS PREPARED FOR: ANTERO RESOURCES CORPORATION

COVER SHEET

TERRY SNIDER
WELL PAD & WATER CONTAINMENT PAD
MEADE DISTRICT
TYLER COUNTY, WEST VIRGINIA

CHRIS B. KUMP
REGISTERED
19578
STATE OF
WEST VIRGINIA
PROFESSIONAL ENGINEER
02/26/2016

DATE: 06/03/2015
SCALE: AS SHOWN
SHEET 1 OF 26

TERRY SNIDER WELL PAD & WA

AS-BUILT AND EROSIO

CONTROL IMPROVE

MEADE DISTRICT, TYLER COUNT

McKIM CREEK WATER

LOCATION COORDINATES:

ACCESS ROAD ENTRANCE
LATITUDE: 39.372887 LONGITUDE: -80.967070 (NAD 83)
N 4358158.08 E 502836.46 (UTM ZONE 17 METERS)

CENTER OF TANK
LATITUDE: 39.367071 LONGITUDE: -80.966214 (NAD 83)
N 4357845.58 E 502910.33 (UTM ZONE 17 METERS)

CENTROID OF PAD
LATITUDE: 39.368215 LONGITUDE: -80.964052 (NAD 83)
N 4357639.70 E 503096.62 (UTM ZONE 17 METERS)

GENERAL DESCRIPTION:

THE ACCESS ROAD(S), WATER CONTAINMENT PAD, AND WELL PAD ARE BEING CONSTRUCTED/UPGRADED TO AID IN THE DEVELOPMENT OF INDIVIDUAL MARCELLUS SHALE GAS WELLS.

FLOODPLAIN NOTES:

THE PROPOSED SITE IS LOCATED WITHIN FEMA FLOOD ZONE "X" PER FEMA FLOOD MAP #54095C0275C.

MISS UTILITY STATEMENT:

ANTERO RESOURCES CORPORATION WILL NOTIFY MISS UTILITY OF WEST VIRGINIA FOR THE LOCATING OF UTILITIES PRIOR TO THE START OF CONSTRUCTION FOR THIS PROJECT.

ENTRANCE PERMIT:

ANTERO RESOURCES CORPORATION WILL OBTAIN AN ENCROACHMENT PERMIT (FORM MM-109) FROM THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS, PRIOR TO COMMENCEMENT OF CONSTRUCTION ACTIVITIES.

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535 WHITE OAKS BLVD.
BRIDGEPORT, WV 26330
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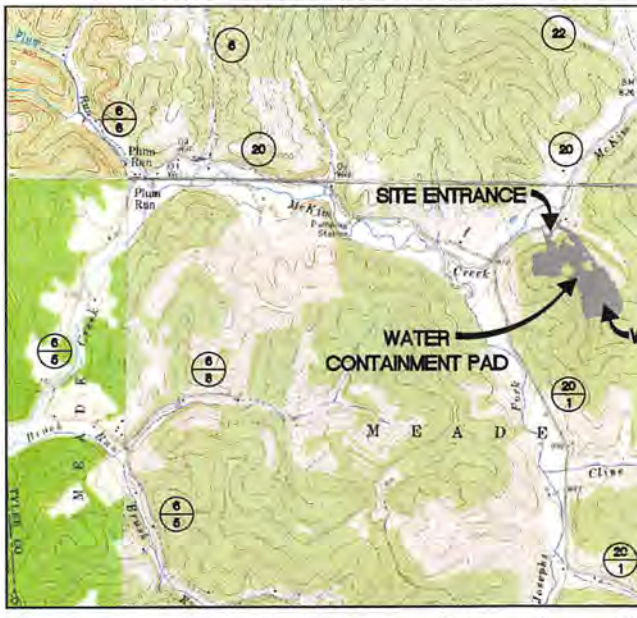
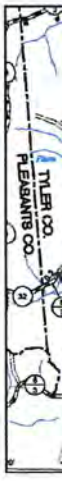
BENS RUN, ELLENBORO, MIDDLEBOURNE, & PEN



WEST VIRGINIA COUNTY MAP

(NOT TO SCALE)



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Received
Office of Oil & Gas
MAR 18 2016

AS-BUILT CERTIFICATIONS:

THE DRAWINGS, CONSTRUCTION NOTES, AND REFERENCE DIAGRAMS ATTACHED HERETO HAVE BEEN PREPARED IN ACCORDANCE WITH THE WEST VIRGINIA CODE OF STATE RULES, DIVISION OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS CRS 35-8.