west virginia department of environmental protection

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

Earl Ray Tomblin , Governor
Randy C. Huffman , Cabinet Secretary
www.dep.wv.gov

Thursday, August 11, 2016
WELL WORK PERMIT
Horizontal 6A / Horizontal 6A Well - 1

ANTERO RESOURCES CORPORATION
1615 WYNKOOP STREET

DENVER, CO 80202

Re: Permit approval for OWENS UNIT 1H
47-095-02366-00-00

This well work permit 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 any additional specific 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 of 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.

Per 35 CSR 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- 0450.

James A. Martin
Chief

Operator's Well Number: OWENS UNIT 1H
Farm Name: WEIGLE, EDWIN C.
U.S. WELL NUMBER: 47-095-02366-00-00
Horizontal 6A / Horizontal 6A Well - 1
Date Issued: 8/11/2016

API Number: 95-02366

PERMIT CONDITIONS

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

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. The operator shall provide to the Office of Oil and Gas the dates of each of the following within 30 days of their occurrence: completion of construction of the well pad, commencement of drilling, cessation of drilling, completion of any other permitted well work, and completion of the well. Such notice shall be provided by sending an email to DEPOOGNotify@wv.gov.

WW-6B
(04/15)

API NO. 47- 095 - 02364
OPERATOR WELL NO. Owens Unit 1H
Well Pad Name: Weigle East Pad

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

1) Well Operator: Antero Resources Corporat | 494507062 | 095 - Tyler | Ellsworth | Shirley 7.5'
Operator ID | County | District | Quadrangle

2) Operator's Well Number: Owens Unit 1H Well Pad Name: Weigle East Pad

3) Farm Name/Surface Owner: Edwin C. Weigle Public Road Access: CR 18/14

4) Elevation, current ground: 812' Elevation, proposed post-construction: 812'

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

6) Existing Pad: Yes or No Yes

7) Proposed Target Formation(s), Depth(s), Anticipated Thickness and Expected Pressure(s):
Marcellus Shale: 6500' TVD, Anticipated Thickness- 55 feet, Associated Pressure- 2800#

8) Proposed Total Vertical Depth: 6500' TVD

9) Formation at Total Vertical Depth: Marcellus Shale

10) Proposed Total Measured Depth: 15400' MD

11) Proposed Horizontal Leg Length: 8168'

12) Approximate Fresh Water Strata Depths: 194', 366'

13) Method to Determine Fresh Water Depths: Scardina Unit 1H (API# 47-095-02169) on same pad.

14) Approximate Saltwater Depths: 1931', 1136'

15) Approximate Coal Seam Depths: 1380', 1461'

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: ____

WW-6B
(04/15)

API NO. 47- 095 - 02366
OPERATOR WELL NO. Owens Unit 1H
Well Pad Name: Weigle East 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#	440'	440'*see #19	CTS, 611 Cu. Ft.
Coal	9-5/8"	New	J-55	36#	2450'	2450'	CTS, 998 Cu. Ft.
Intermediate							
Production	5-1/2"	New	P-110	20#	15400'	15400'	CTS, 3843 Cu. Ft
Tubing	2-3/8"	New	N-80	4.7#		7100'	
Liners							

JS 6/2/16 DMH 6/2/16

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	30"	24"	0.438"	1530	50	Class A	1.18
Fresh Water	13-3/8"	17-1/2"	0.38"/0.33"	2730/1730	1000	Class A	1.18
Coal	9-5/8"	12-1/4"	0.352"	3520	1500	Class A	1.18
Intermediate							
Production	5-1/2"	8-3/4" & 8-1/2"	0.361"	12,630	2500	Lead-H/POZ & Tail -H	H/POZ-1.44 & H-1.8
Tubing	2-3/8"	4.778"	0.19"	11,200			
Liners							

PACKERS

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

WW-6B
(10/14)

API NO. 47- 095 - 02366
OPERATOR WELL NO. Owens Unit 1H
Well Pad Name: Weigle East Pad

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

Drill, perforate, fracture a new horizontal shallow well and complete Marcellus Shale.
*Antero will be air drilling the fresh water string which makes it difficult to determine when freshwater is encountered, therefore we have built in a buffer for the casing setting depth which helps to ensure that all fresh water zones are covered.

JS 6/2/16 DAH 6/2/16

20) Describe fracturing/stimulating methods in detail, including anticipated max pressure and max rate:

Antero plans to pump Slickwater into the Marcellus Shale formation in order to ready the well for production. The fluid will be comprised of approximately 99 percent water and sand, with less than 1 percent special-purpose additives as shown in the attached "List of Anticipated Additives Used for Fracturing or Stimulating Well."

Anticipated Max Pressure - 9300 lbs
Anticipated Max Rate - 80 bpm

21) Total Area to be disturbed, including roads, stockpile area, pits, etc., (acres): 22.17 existing acres

22) Area to be disturbed for well pad only, less access road (acres): 3.22 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:

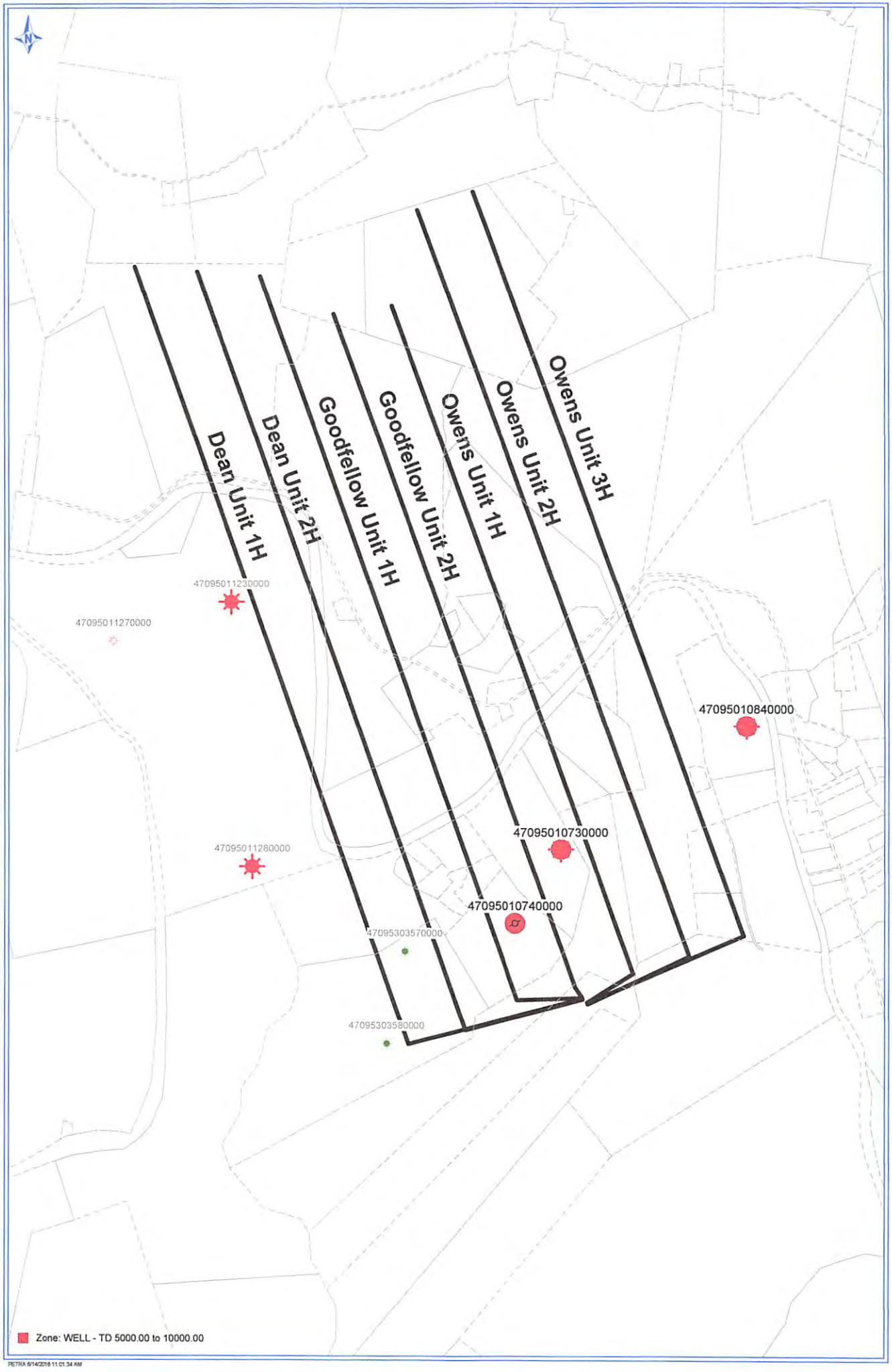
Conductor: no additives, Class A cement.
Surface: Class A cement with 2-3% calcium chloride and 1/4 lb of flake
Intermediate: Class A cement with 1/4 lb of flake, 5 gallons of clay treat
Production: Lead cement- 50/50 Class H/Poz + 1.5% salt + 1% C-45 + 0.5% C-16a + 0.2% C-12 + 0.45% C-20 + 0.05% C-51
Production: Tail cement- Class H + 45 PPS Calcium Carbonate + 1.0% FL-160 + 0.2% ACGB-47 + 0.05% ACSA-51 + 0.2% ACR-20

25) Proposed borehole conditioning procedures:

Conductor: blowhole clean with air, run casing, 10 bbls fresh water.
Surface: blowhole clean with air, trip to conductor shoe, trip to bottom, blowhole clean with air, trip out, run casing, circulate pipe capacity + 40 bbls fresh water followed by 25 bbls bentonite mud, 10 bbls fresh water spacer.
Intermediate: blowhole clean with air, trip to surface casing shoe, trip to bottom, blowhole clean with air, trip out, run casing, circulate 40 bbls brine water followed by 10 bbls fresh water and 25 bbls bentonite mud, pump 10 bbls fresh water.
Production: circulate with 14 lb/gal NaCl mud, trip to middle of lateral, circulate, pump high viscosity sweep, trip to base of curve, pump high viscosity sweep, trip to top of curve, trip to bottom, circulate, pump high viscosity sweep, trip out, run casing, circulate 10 bbls fresh water, pump 48 bbls barite pill, pump 10 bbls fresh water followed by 48 bbls mud flush and 10 bbls water.

*Note: Attach additional sheets as needed.

								http://www.wvgs.wvnet.edu/oginfo/pipeline/pipeline2.asp?txtsearchapi=		
UWI (APINum)	Well Name	Well Number	Operator	Hist Oper	TD	ELEV_KB	TD(sstvd)	Perfs	HYPERLINK	
47095010840000	WADE NORMAN	1FC18	FRENCH CREEK DEV	FRENCH CREEK DEV	5990	710	-5280	3409'-3481' (Speechley), 5606' (Rhinstreet)	**WVGES**	5606' reported as MRCL on WVGES, but too shallow.
47095010740000	FULKS LORETTA J	FC17	FRENCH CREEK DEV	FRENCH CREEK DEV	5990	745	-5245	No perf data	**WVGES**	
47095010730000	FULKS LORETTA J	FC16	FRENCH CREEK DEV	FRENCH CREEK DEV	5230	803	-4427	4633'-4671' (Benson)	WVGES	
47095011280000	GRUMRINE CHARLES & JOHN	3	DAC ENERGY LLC	DRILLING APPALACHIAN	3025	1015	-2010	1932'-2149' (Big Injun)	WVGES	
47095011270000	CRUMRINE SUSAN	2	DAC ENERGY LLC	DRILLING APPALACHIAN	2840	873	-1967	2166' (Weir), 2798'-2810' (Gordon)	WVGES	
47095011230000	CRUMRINE SUSAN	1	DAC ENERGY LLC	DRILLING APPALACHIAN	1928	750	-1178	1815'-1854' (Big Injun)	WVGES	
47095303570000	E A SMITH	1	RAAD SUPPLY COMPANY	RAAD SUPPLY COMPANY	1796	741	-1055	1780'-1786' (Big Injun)	WVGES	
47095303580000	E A SMITH	2	RAAD SUPPLY COMPANY	RAAD SUPPLY COMPANY	1808	764	-1044	1792'-1798' (Big Injun)	WVGES	


Dean Unit 1H
Dean Unit 2H
Goodfellow Unit 1H
Goodfellow Unit 2H
Owens Unit 1H
Owens Unit 2H
Owens Unit 3H
47095011230000
47095011270000
47095011280000
47095010840000
47095010730000
47095010740000
47095303570000
47095303580000
Zone: WELL - TD 5000.00 to 10000.00
PETRA 6/14/2016 11:01:34 AM

WW-9
(2/15)

API Number 47 - 095 - 02366
Operator's Well No. Owens Unit 1H

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

FLUIDS/ CUTTINGS DISPOSAL & RECLAMATION PLAN

Operator Name Antero Resources Corporation OP Code 494507062

Watershed (HUC 10) Outlet Middle Island Creek Quadrangle Shirley 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 6/2/16 6/2/16

Proposed Disposal Method For Treated Pit Wastes:

- ____ Land Application
- ■ Underground Injection (UIC Permit Number *UIC Permit # will be provided on Form WR-34)
- ■ 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 Northwestern Landfill Permit #SWF-1025/ WV0109410

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), Northwestern Landfill (Permit # SWF-1025/WV0109410)

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

KARA QUACKENBUSH
NOTARY PUBLIC
STATE OF COLORADO
NOTARY ID 20144028297
MY COMMISSION EXPIRES JULY 21, 2018

Subscribed and sworn before me this 18 day of May, 20 16

Kara Quackenbush Notary Public

My commission expires JULY 21, 2018

95-02366

Form WW-9

Operator's Well No. Owens Unit 1H

Antero Resources Corporation

Proposed Revegetation Treatment: Acres Disturbed 22.17 existing acres Prevegetation pH _____

Lime 2-3 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

Well Pad Construction (3.22) + Tank Pad Construction (1.90) + Auxiliary Pad Construction (1.46) + Access Road Construction (3.38) + Topsoil Stockpile (1.67) + Additional Clearing (10.54)= 22.17 Existing Acres

Seed Mixtures

Temporary		Permanent	
Seed Type	lbs/acre	Seed Type	lbs/acre
See attached Table 2, 3 & 4 for additional seed type (Weigle East Pad Design Page D5)		See attached Table 2, 3 & 4 for additional seed type (Weigle East Pad Design Page D5)	
*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: 6/2/16

Field Reviewed? (X) Yes ( ) No

95-02366

Form WW-9 Additives Attachment

SURFACE INTERVAL

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

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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95-023666

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

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WV Department of
Environmental Protection

95-023666

911 ADDRESS
441 Lemasters Rd.
Middlebourne, WV 26149

Well Site Safety Plan
Antero Resources

DMH 6/2/16 SS 6/2/16

Well Name: **Hawkeye Unit 1H, Hawkeye Unit 2H, Hawkeye Unit 3H, Scardina Unit 1H, Scardina Unit 2H, Scardina Unit 3H, Scardina Unit 4H, Dean Unit 1H, Dean Unit 2H, Goodfellow Unit 1H, Goodfellow Unit 2H, Owens Unit 1H, Owens Unit 2H, Owens Unit 3H**

Pad Location: **WEIGLE EAST PAD**
Tyler County/Ellsworth District

GPS Coordinates: Lat 39°27'58.60"/Long -80°51'09.51" (NAD83)

Driving Directions:

Main Access:
From US Route 50, turn onto WV Route 18 (towards West Union). Follow WV Route 18 North for 22.8 miles. Turn Left onto County Route 18/7 (Lemasters Bridge Road). Follow County Route 18/7 for .3 miles. Turn Right onto County Route 18/4. Follow County Route 18/4 for .1 miles. The site entrance will be on the left (South) side of the road.

Temporary Access:
From US Route 50, turn onto WV Route 18 North (towards West Union). Follow WV Route 18 North for 17.8 miles. Turn Left onto County Route 46 (Klondike Ridge). Follow County Route 46 for 2 miles. Turn Right onto County Route 46/1. Follow County Route 46/1 for .3 miles. The temporary site entrance will be on the Right (North) side of the road. (Near the existing Pierpoint Site Entrance).

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

95-02366

WW-6A1

Operator's Well Number Owens Unit 1H

INFORMATION SUPPLIED UNDER WEST VIRGINIA CODE
Chapter 22, Article 6A, Section 5(a)(5)
IN LIEU OF FILING LEASE(S) AND OTHER CONTINUING CONTRACT(S)

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

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

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

Grantor, lessor, etc.	Grantee, lessee, etc.	Royalty	Book/Page
Kathy Ann Seago Lease			
Kathy Ann Seago, as a beneficiary of the Estate of Edwin C. Weigle, deceased	Antero Resources Appalachian Corporation	1/8	0402/0448
Antero Resources Appalachian Corporation	**Antero Resources Corporation**	**Name Change**	**Exhibit 1**
Richard L. Seago, et ux Lease			
Richard L. Seago, et ux	Antero Resources Appalachian Corporation	1/8+	0403/0733
Antero Resources Appalachian Corporation	**Antero Resources Corporation**	**Name Change**	**Exhibit 1**
Loretta Fulks Lease			
Loretta J. Fulks	Spartan Exploration Co.	1/8	0361/0529
Spartan Exploration Co.	Tenaska Resources, LLC	Merger	0375/0158
Tenaska Resources, LLC	Chesapeake Appalachia, LLC	Assignment	0399/0670
Chesapeake Appalachia, LLC	Statoil USA Onshore Properties, Inc.	Assignment	0423/0152
Statoil USA Onshore Properties, Inc.	**Antero Resources Corporation**	**Assignment**	**0441/0523**
Eric Huggins Lease			
Eric Huggins	PetroEdge Energy, LLC	1/8	0395/0502
PetroEdge Energy, LLC	Statoil USA Onshore Properties, Inc.	Assignment	0406/0147
Statoil USA Onshore Properties, Inc.	**Antero Resources Corporation**	**Agreement**	**0527/0358**
Middle Island Creek Lease			
West Virginia Division of Natural Resources	**Antero Resources Corporation**	**1/8+**	**0483/0269**
Tyler County Fair Association, Inc. Lease			
Tyler County Fair Association, Inc.	Antero Resources Appalachian Corporation	1/8+	0424/0521
Antero Resources Appalachian Corporation	**Antero Resources Corporation**	**Name Change**	**Exhibit 1**
Eugene R. Smith Lease			
Eugene R. Smith	**Antero Resources Corporation**	**1/8+**	**0449/0828**
Eugene R. Smith Lease			
Eugene R. Smith	**Antero Resources Corporation**	**1/8+**	**0449/0823**
Eugene R. Smith Lease			
Eugene R. Smith	**Antero Resources Corporation**	**1/8+**	**0449/0823**
Kathy A. Keating Lease			
Kathy A. Keating	**Antero Resources Corporation**	**1/8+**	**0438/0438**

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

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

95-02364

WW-6A1
(5/13)

Operator's Well No. Owens Unit 1H

INFORMATION SUPPLIED UNDER WEST VIRGINIA CODE
Chapter 22, Article 6A, Section 5(a)(5)
IN LIEU OF FILING LEASE(S) AND OTHER CONTINUING CONTRACT(S)

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

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

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

Lease Name or Number	Grantor, Lessor, etc.	Grantee, Lessee, etc.	Royalty	Book/Page
Ridgetop Capital II Lease	Ridgetop Capital II LP	Antero Resources Corporation	1/8+	0487/0204

***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 Vice President of Production

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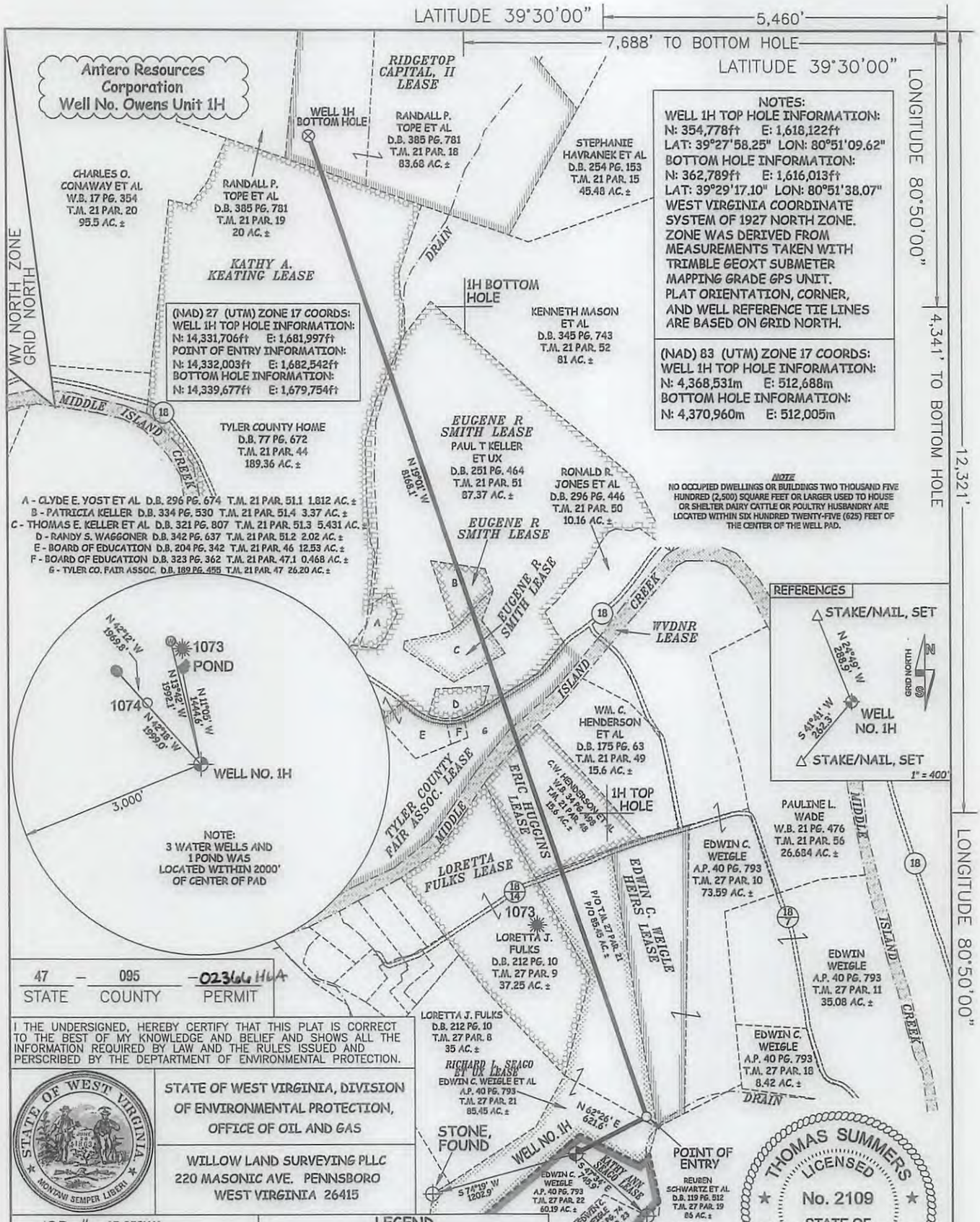


47	095	023666 HGA
STATE	COUNTY	PERMIT

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 # 15-052WA
DRAWING # OWENS1HR1
SCALE 1" = 1000'
MINIMUM DEGREE OF ACCURACY SUBMETER
PROVEN SOURCE OF ELEV. SUBMETER MAPPING GRADE GPS

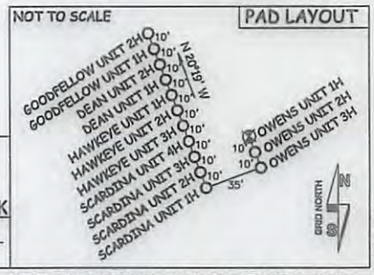
STATE OF WEST VIRGINIA
DEPARTMENT OF ENERGY
DIVISION OF OIL AND GAS

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

THOMAS SUMMERS P.S. 2109

DATE 05/03/16
OPERATOR'S WELL# OWENS UNIT #1H

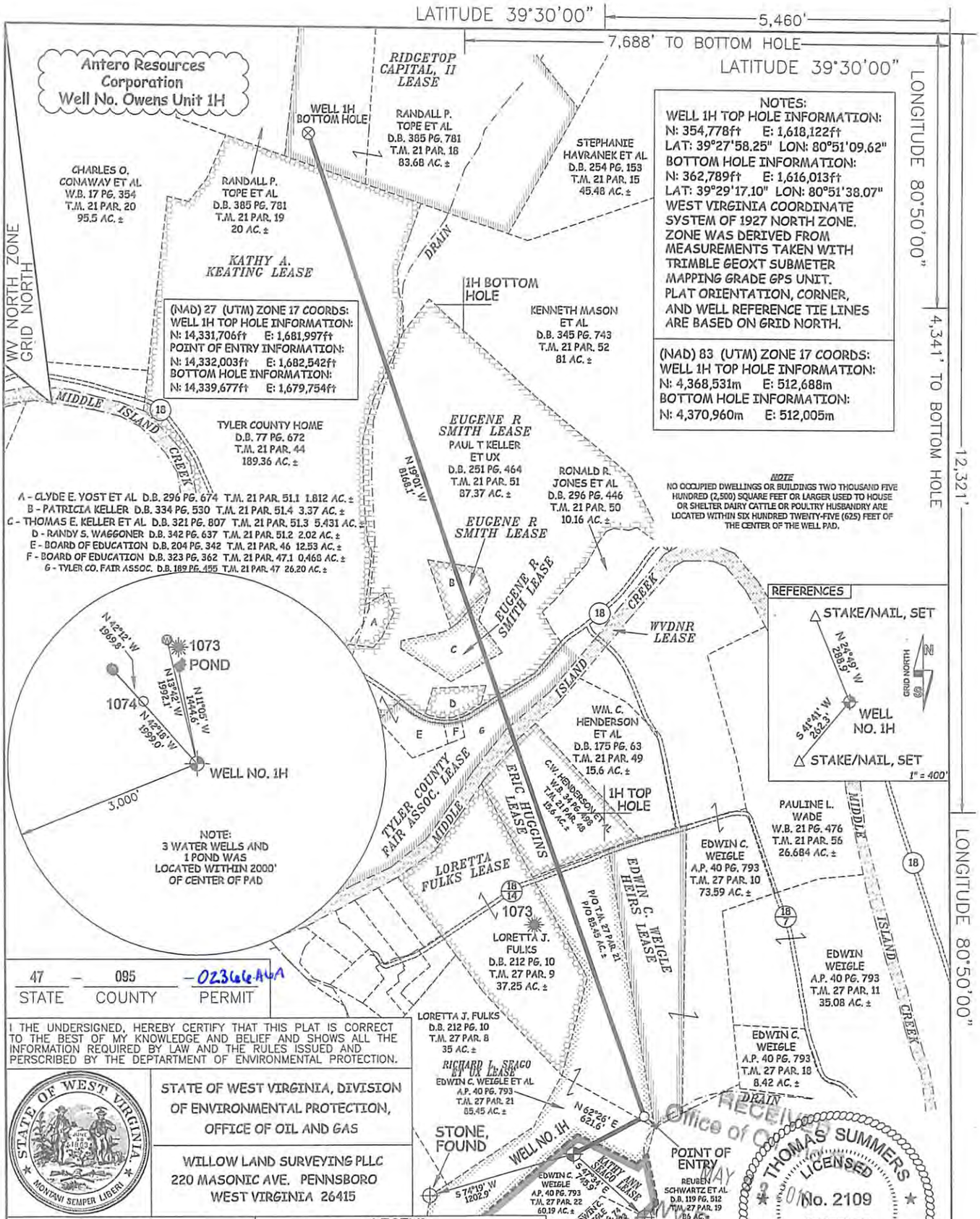
NOT TO SCALE — PAD LAYOUT



WELL TYPE: OIL ___ GAS X LIQUID INJECTION ___ WASTE DISPOSAL ___
(IF "GAS") PRODUCTION X STORAGE ___ DEEP ___ SHALLOW X
LOCATION: ELEVATION 811' ORIGINAL - 812' AS-BUILT WATERSHED OUTLET MIDDLE ISLAND CREEK
QUADRANGLE SHIRLEY 7.5' DISTRICT ELLSWORTH COUNTY TYLER
SURFACE OWNER EDWIN C. WEIGLE ACREAGE 60.19 ACRES +/-
OIL & GAS ROYALTY OWNER KATHY ANN SEAGO; RICHARD L. SEAGO ET UX; ERIC HUGGINS; WVDNR; TYLER COUNTY FAIR ASSOC.; EUGENE R. SMITH; EUGENE R. SMITH; EUGENE R. SMITH; KATHY A. KEATING; RIDGETOP CAPITAL II LEASE ACREAGE 129.2 AC.±; 74.2 AC.±; 17.2 AC±; 34 AC±; 26.665 AC±; 87.37 AC.±; 5.431 AC±; 3.37 AC±; 190.07 AC±; 83.68 AC±
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 6,500' TVD 15,400' 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

FORM WW-6

COUNTY NAME PERMIT



47	095	02366-AUA
STATE	COUNTY	PERMIT

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

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THOMAS SUMMERS LICENSED No. 2109 STATE OF WEST VIRGINIA PROFESSIONAL SURVEYOR

JOB # 15-052WA
DRAWING # OWENS1HR1
SCALE 1" = 1000'
MINIMUM DEGREE OF ACCURACY SUBMETER
PROVEN SOURCE OF ELEV. SUBMETER MAPPING GRADE GPS

THOMAS SUMMERS P.S. 2109

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

DATE 05/03/16
OPERATOR'S WELL# OWENS UNIT #1H

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

NOT TO SCALE — PAD LAYOUT
GOODFELLOW UNIT 2H
GOODFELLOW UNIT 1H
DEAN UNIT 2H
DEAN UNIT 1H
HAWKEYE UNIT 1H
HAWKEYE UNIT 2H
HAWKEYE UNIT 3H
HAWKEYE UNIT 4H
SCARDINA UNIT 3H
SCARDINA UNIT 2H
SCARDINA UNIT 1H
N 20°19' W
OWENS UNIT 1H
OWENS UNIT 2H
OWENS UNIT 3H
10' 10' 35'
HURON GRID

WELL TYPE: OIL ___ GAS X LIQUID INJECTION ___ WASTE DISPOSAL ___
(IF "GAS") PRODUCTION X STORAGE ___ DEEP ___ SHALLOW X
LOCATION: ELEVATION 811' ORIGINAL - 812' AS-BUILT WATERSHED OUTLET MIDDLE ISLAND CREEK
QUADRANGLE SHIRLEY 7.5' DISTRICT ELLSWORTH COUNTY TYLER
SURFACE OWNER EDWIN C. WEIGLE ACREAGE 60.19 ACRES +/-
OIL & GAS ROYALTY OWNER KATHY ANN SEAGO; RICHARD L. SEAGO ET UX; ERIC HUGGINS; WVDNR; TYLER COUNTY FAIR ASSOC.; EUGENE R. SMITH; EUGENE R. SMITH; EUGENE R. SMITH; KATHY A. KEATING; RIDGETOP CAPITAL II LEASE ACREAGE 129.2 AC.±; 74.2 AC.±; 17.2 AC±; 34 AC±; 26.665 AC±; 87.37 AC.±; 5.431 AC±; 3.37 AC±; 190.07 AC±; 83.68 AC±
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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

95-02366

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
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: For 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.

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95-023660

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

May 18, 2016

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

RE: Owens Unit 1H
Quadrangle: Shirley 7.5'
Tyler County/Ellsworth District, West Virginia

Mr. Martin:

Antero Resources Corporation (Antero) is submitting the following application for a new well work permit for the Owens Unit 1H 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 Owens Unit 1H horizontal lateral will drill through including any and all roads crossed under as identified on the attached survey plat.

Sincerely,

Kenneth Vaughn
Senior Landman

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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: 05/18/2016

API No. 47- 095 - 02364
Operator's Well No. Owens Unit 1H
Well Pad Name: Existing Weigle East 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:	512,688m
County:	Tyler		Northing:	4,368,531m
District:	Ellsworth	Public Road Access:		CR 18/14
Quadrangle:	Shirley 7.5'	Generally used farm name:		Edwin C. Weigle
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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WW-6AC
(1/12)

95-02366

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

KARA QUACKENBUSH
NOTARY PUBLIC
STATE OF COLORADO
NOTARY ID 20144028297
MY COMMISSION EXPIRES JULY 21, 2018

Subscribed and sworn before me this 18 day of May 2016.

Kara Quackenbush, Notary Public

My Commission Expires July 21, 2018

Oil and Gas Privacy Notice:

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

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Environmental Protection

WW-6A
(9-13)

API NO. 47- 095 - 02364
OPERATOR WELL NO. Owens Unit 1H
Well Pad Name: Existing Weigle East 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.**

Date of Notice: 5/19/2016 **Date Permit Application Filed:** 5/19/2016

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: 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: Loretta Fulks (1 pond)
Address: 633 Lemasters Road
Middlebourne, WV 26149

* 3 water wells are identified but are located greater than 1500'

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

*Please attach additional forms if necessary

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WV Department of Environmental Protection

WW-6A
(8-13)

API NO. 47- 095 - 02366
OPERATOR WELL NO. Owens Unit 1H
Well Pad Name: Existing Weigle East 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.

Well Location Restrictions

Pursuant to W. Va. Code § 22-6A-12, Wells may not be drilled within two hundred fifty feet measured horizontally from any existing water well or developed spring used for human or domestic animal consumption. The center of well pads may not be located within six hundred twenty-five feet of an occupied dwelling structure, or a building two thousand five hundred square feet or larger used to house or shelter dairy cattle or poultry husbandry. This limitation is applicable to those wells, developed springs, dwellings or agricultural buildings that existed on the date a notice to the surface owner of planned entry for surveying or staking as provided in section ten of this article or a notice of intent to drill a horizontal well as provided in subsection (b), section sixteen of this article was provided, whichever occurs first, and to any dwelling under construction prior to that date. This limitation may be waived by written consent of the surface owner transmitted to the department and recorded in the real property records maintained by the clerk of the county commission for the county in which such property is located. Furthermore, the well operator may be granted a variance by the secretary from these distance restrictions upon submission of a plan which identifies the sufficient measures, facilities or practices to be employed during well site construction, drilling and operations. The variance, if granted, shall include terms and conditions the department requires to ensure the safety and protection of affected persons and property. The terms and conditions may include insurance, bonding and indemnification, as well as technical requirements. (b) No well pad may be prepared or well drilled within one hundred feet measured horizontally from any perennial stream, natural or artificial lake, pond or reservoir, or a wetland, or within three hundred feet of a naturally reproducing trout stream. No well pad may be located within one thousand feet of a surface or ground water intake of a public water supply. The distance from the public water supply as identified by the department shall be measured as follows: (1) For a surface water intake on a lake or reservoir, the distance shall be measured from the boundary of the lake or reservoir. (2) For a surface water intake on a flowing stream, the distance shall be measured from a semicircular radius extending upstream of the surface water intake. (3) For a groundwater source, the distance shall be measured from the wellhead or spring. The department may, in its discretion, waive these distance restrictions upon submission of a plan identifying sufficient measures, facilities or practices to be employed during well site construction, drilling and operations to protect the waters of the state. A waiver, if granted, shall impose any permit conditions as the secretary considers necessary. (c) Notwithstanding the foregoing provisions of this section, nothing contained in this section prevents an operator from conducting the activities permitted or authorized by a Clean Water Act Section 404 permit or other approval from the United States Army Corps of Engineers within any waters of the state or within the restricted areas referenced in this section. (d) The well location restrictions set forth in this section shall not apply to any well on a multi-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, 2017, 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 emissions

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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 - 02366
OPERATOR WELL NO. Owens Unit 1H
Well Pad Name: Existing Weigle East 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 effective;
(3) Damage would occur to publicly owned lands or resources; or
(4) The proposed well work fails to protect fresh water sources or supplies.

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

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

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WW-6A
(8-13)

API NO. 47- 095 - 0236U
OPERATOR WELL NO. Owens Unit 1H
Well Pad Name: Existing Weigle East 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.

KARA QUACKENBUSH
NOTARY PUBLIC
STATE OF COLORADO
NOTARY ID 20144028297
MY COMMISSION EXPIRES JULY 21, 2018

Subscribed and sworn before me this 19 day of May 2016.

Notary Public

My Commission Expires July 21, 2018

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WV Department of
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95-02366

WW-6A Notice of Application Attachment (WEIGLE EAST PAD):

List of Surface Owner(s) with Proposed Disturbance associated with Weigle East 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.

Located on TM 27/PCL 21 & 22 – Heirs of Edwin C. Weigle

Owner: Kathy Ann Seago & Richard L. Seago
Address: 1018 Frew Circle
Middlebourne, WV 26149

Owner: Steven C. Weigle, II
Address: 6473 Middle Island Road
Middlebourne, WV 26149

Owner: Brian M. Weigle
Address: 4789 Middle Island Road
Middlebourne, WV 26149

Owner: Michelle S. Forester
Address: 970 McElroy Creek Rd.
Alma, WV 26320

Located on TM 27/PCL 8

Owner: Loretta J. Fulks
Address: 633 Lemasters Road
Middlebourne, WV 26149

ROAD AND/OR OTHER DISTURBANCE –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.

Located on TM 27/PCL 10 &22 – Heirs of Edwin C. Weigle

Owner: Kathy Ann Seago & Richard L. Seago
Address: 1018 Frew Circle
Middlebourne, WV 26149

Owner: Steven C. Weigle, II
Address: 6473 Middle Island Road
Middlebourne, WV 26149

Owner: Brian M. Weigle
Address: 4789 Middle Island Road
Middlebourne, WV 26149

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95-023666

Owner: Michelle S. Forester
Address: 970 McElroy Creek Rd.
Alma, WV 26320

Located on TM 27/PCL 9

Owner: Loretta J. Fulks
Address: 633 Lemasters Road
Middlebourne, WV 26149

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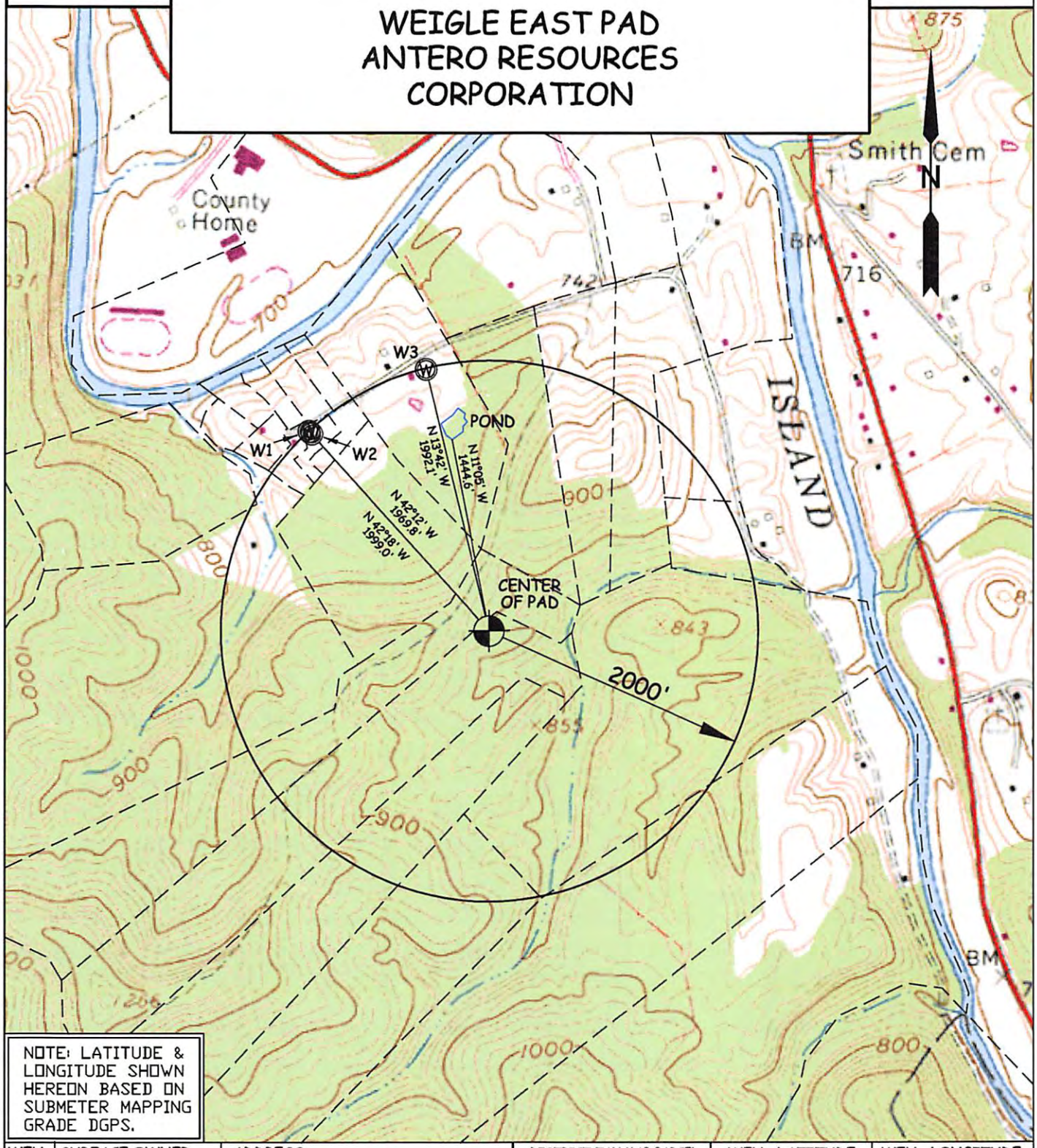
95-02366

FORM WW-9

PAGE OF

WEIGLE EAST PAD
ANTERO RESOURCES CORPORATION



NOTE: LATITUDE & LONGITUDE SHOWN HEREON BASED ON SUBMETER MAPPING GRADE DGPS.

WELL	SURFACE OWNER	ADDRESS	DISTRICT-TAX MAP-PARCEL	WELL LATITUDE	WELL LONGITUDE
W1	JEANIE PYLES	P.O. BOX 445 MIDDLEBOURNE, WV 26149	2-27-7.3	0° 58' 56.78"	128° 56' 06.46"
W2	JEANIE PYLES	P.O. BOX 445 MIDDLEBOURNE, WV 26149	2-27-7.3	0° 58' 56.59"	128° 56' 06.68"
W3	LORETTA FULKS	633 Lemasters Road, Middlebourne, WV 26149	2-27-9	0° 59' 01.32"	128° 56' 15.08"

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

TOPO SECTION(S) OF : SHIRLEY 7.5' QUAD.

JOB #: 13-038WA

DATE: 02/07/14

DRAWN BY: C.A.S.

FILE: WEIGLEEASTPADWW

SCALE : 1-INCH = 1000-FEET

0' 1000' 2000' 3000'

95-02364

WW-6A3
(1/12)

Operator Well No. Owens Unit 1H

Multiple Wells on the Weigle East 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: 10/20/2013 **Date of Planned Entry:** 10/27/2013

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: PLEASE SEE ATTACHMENT
Address:

Name:
Address:

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:	39.466278, -80.852642
County:	Tyler	Public Road Access:	CR 18/14
District:	Ellsworth	Watershed:	Gorrell Run - Middle Island Creek
Quadrangle:	Shirley 7.5'	Generally used farm name:	Brian Weigle, Kathy Ann Seago, Michelle S. Forester, Richard L. Seago, and Steven C. V

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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WV Department of
Environmental Protection

95-02366

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

Surface Owners:

Owner: Richard L. Seago
Address: 1018 Frew Circle
Middlebourne, WV 26149

Owner: Brian M. Weigle
Address: HC 69 Box 40B
Middlebourne, WV 26149

Owner: Steven C. Weigle II
Address: HC 69 Box 63
Middlebourne, WV 26149

Owner: Michelle S. Forester
Address: 970 McElroy Road
Alma, WV 26320

Owner: Kathy Ann Seago
Address: 1018 Frew Circle
Middlebourne, WV 26149

Owner: Kathy Ann Seago
Address: HC 69 Box 53AA
Middlebourne, WV 26149

Mineral Owners:

Owner: Richard L. Seago
Address: HC 69 Box 53AA
Middlebourne, WV 26149

Owner: Richard L. Seago
Address: 1018 Frew Circle
Middlebourne, WV 26149

Owner: Brian M. Weigle
Address: HC 69 Box 40B
Middlebourne, WV 26149

Owner: Steven C. Weigle II
Address: HC 69 Box 63
Middlebourne, WV 26149

Owner: Steven C. Weigle II
Address: HC 69 Box 53AA
Middlebourne, WV 26149

Owner: Loretta J. Fulks
Address: 633 Lemasters Road
Middlebourne, WV 26149

Owner: Loretta J. Fulks
Address: HC 69 Box 37
Middlebourne, WV 26149

Owner: Michelle S. Forester
Address: 970 McElroy Road
Alma, WV 26320

Owner: Kathy Ann Seago
Address: 1018 Frew Circle
Middlebourne, WV 26149

Owner: Kathy Ann Seago
Address: HC 69 Box 53AA
Middlebourne, WV 26149

Owner: James H. Dean
Address: 1671 Bay View Drive
Sarasota, FL 34241

Owner: Stephanie McGowan
Address: 4675 Redbay Way
Sarasota, FL 34241

Owner: Robert C. Dean
Address: 6701 South Gator Boulevard
Sarasota, FL 34241

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95-02366

WW-6A5
(1/12)

Operator Well No. Owens Unit 1H

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: 05/19/2016 **Date Permit Application Filed:** 05/19/2016

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

☒ CERTIFIED MAIL RETURN RECEIPT REQUESTED ☐ HAND DELIVERY

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

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

Name: PLEASE SEE ATTACHMENT
Address:

Name:
Address:

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:	512,688m
County:	Tyler		Northing:	4,368,531m
District:	Ellsworth	Public Road Access:		CR 18/14
Quadrangle:	Shirley 7.5'	Generally used farm name:		Edwin C. Weigle
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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Environmental Protection

95-02364

WW-6A5 Notice of Planned Operations Attachment (WEIGLE EAST PAD):

List of Surface Owner(s) with Proposed Disturbance associated with Weigle East Well Pad:

Located on TM 27/PCL 21 & 22 – Heirs of Edwin C. Weigle

Owner: Kathy Ann Seago & Richard L. Seago
Address: 1018 Frew Circle
Middlebourne, WV 26149

Owner: Steven C. Weigle, II
Address: 6473 Middle Island Road
Middlebourne, WV 26149

Owner: Brian M. Weigle
Address: 4789 Middle Island Road
Middlebourne, WV 26149

Owner: Michelle S. Forester
Address: 970 McElroy Creek Rd.
Alma, WV 26320

Located on TM 27/PCL 8

Owner: Loretta J. Fulks
Address: 633 Lemasters Road
Middlebourne, WV 26149

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95-02366

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

Reissued February 18, 2016

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 Weigle East Pad, Tyler County
Owens Unit 1H Well site

Dear Mr. Martin,

This well site will be accessed from a DOH permit #06-2014-0052 which has been issued to Antero Resources Corporation for access to the State Road for a well site located off of Tyler County Route 18/14 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

95-02366

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
Solvent Naphtha, petroleum, heavy aliph	64742-96-7
Soybean Oil, Me ester	67784-80-9
Copolymer of Maleic and Acrylic Acid	52255-49-9
DETA phosphonate	15827-60-8
Hexamthylene Triamine Penta	34690-00-1
Phosphino Carboxylic acid polymer	71050-62-9
Hexamethylene Diamine Tetra	23605-75-5
2-Propenoic acid, polymer with 2 propenamide	9003-06-9
Hexamethylene diamine penta (methylene phosphonic acid)	23605-74-5
Diethylene Glycol	111-46-6
Methenamine	100-97-0
Polyethylene polyamine	68603-67-8
Coco amine	61791-14-8
2-Propyn-1-olcompound with methyloxirane	38172-91-7

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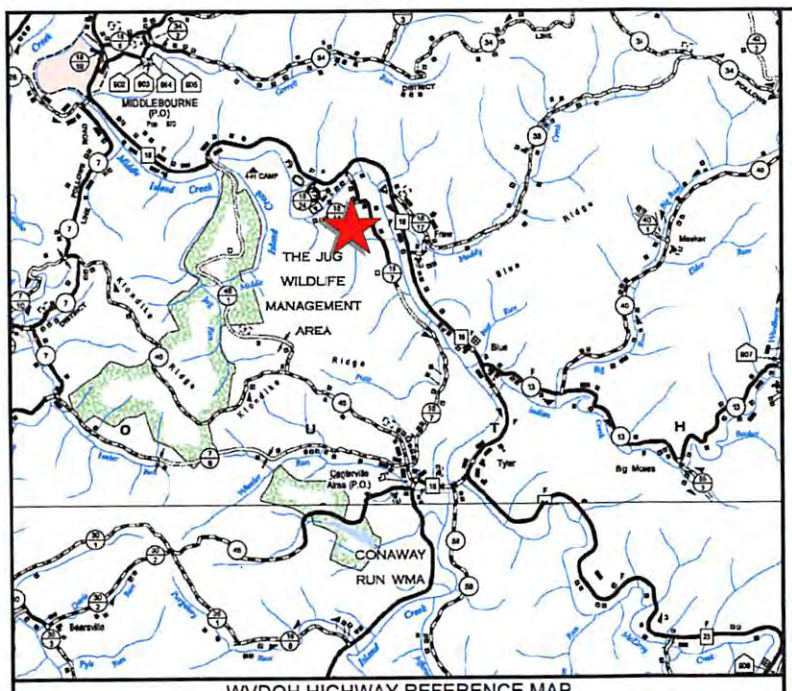


WVDOH HIGHWAY REFERENCE MAP
1 inch = 1 mile

FINAL DESIGN: ISSUE

ANTERO RE

WEIGLE EA

PAD MODIF

ELLSWORTH DISTRICT, TYLER

SHIRLEY 7.5 MINUTE

APPROVED
WVDEP OOG
Modification
11 / 30 / 2015

GENERAL DESCRIPTION

WEIGLE EAST PAD MODIFICATION

PROJECT CONTACTS

OPERATOR:

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

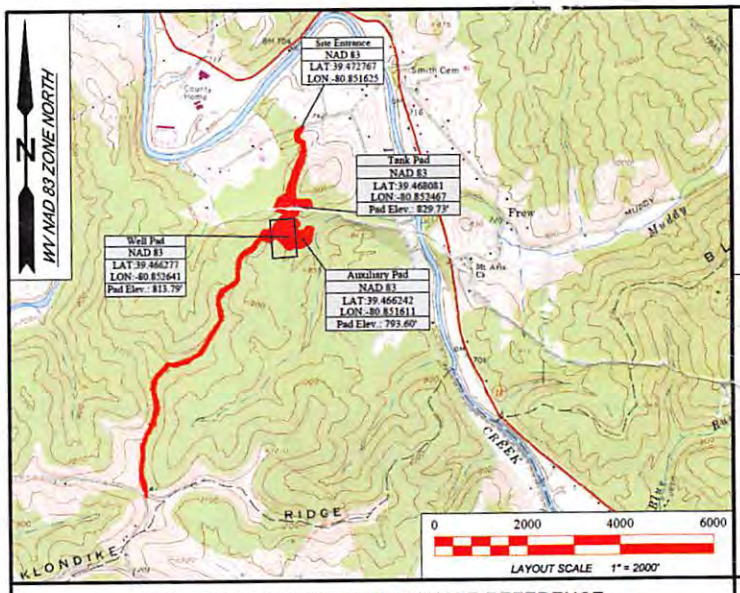
PROJECT COORDINATOR :

ROBERT WIRKS
DESIGN MANAGER
PHONE: (304) 842-4100
CELL: (304) 627-7405
FAX: (304) 842-4102
EMAIL: rwirks@anteroresources.com

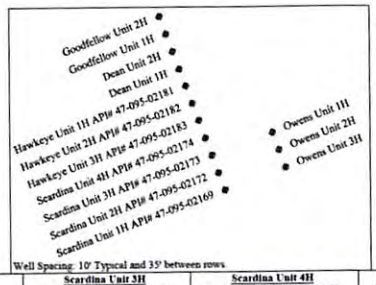
CONSTRUCTION COORDINATOR :

ELI WAGNER
ENVIRONMENTAL ENGINEER
PHONE: (304) 842-4068
CELL:(304) 476-9770
FAX: (304) 842-4102
EMAIL: ewagner@anteroresources.com

JOHN KAWCAK
OPERATIONS SUPERINTENDENT
CELL:(817) 368-1553
FAX: (304) 842-4102
EMAIL: jkawcak@anteroresources.com



SHIRLEY 7.5 MINUTE QUADRANGLE REFERENCE



WELL LOCATION RESTRICTIONS

ALL PAD AND FRACTURE PIT CONSTRUCTION COMPLIES WITH THE FOLLOWING RESTRICTIONS.

*250' FROM AN EXISTING WELL OR DEVELOPED SPRING USED FOR HUMAN OR DOMESTIC ANIMALS.

*625' FROM AN OCCUPIED DWELLING OR BARN GREATER THAN 2,500 SF USED FOR POULTRY OR DAIRY MEASURED FROM THE CENTER OF THE PAD.

*100' FROM THE EDGE OF DISTURBANCE TO WETLANDS, PERENNIAL STREAMS, NATURAL OR ARTIFICIAL LA POND OR RESERVOIR.

*300' FROM THE EDGE OF DISTURBANCE TO A NATURALLY REPRODUCING TROUT STREAM.

*1,000' OF A SURFACE OR GROUND WATER INTAKE TO A PUBLIC WATER SUPPLY.

(WELL LOCATION RESTRICTIONS OF WV CODE 22-6A-12)

Scardina Unit 1H	Scardina Unit 2H	Scardina Unit 3H	Scardina Unit 4H	Hawkeye Unit 3H	Hawkeye Unit 2H	Hawkeye Unit 1H
WV-N NAD 83 N: 354782.26	WV-N NAD 83 N: 354791.63	WV-N NAD 83 N: 354801.01	WV-N NAD 83 N: 354810.39	WV-N NAD 83 N: 354819.77	WV-N NAD 83 N: 354829.15	WV-N NAD 83 N: 354838.52
WV-N NAD 83 E: 1586655.48	WV-N NAD 83 E: 1586652.01	WV-N NAD 83 E: 1586648.54	WV-N NAD 83 E: 1586645.07	WV-N NAD 83 E: 1586641.60	WV-N NAD 83 E: 1586638.12	WV-N NAD 83 E: 1586634.65
WV-N NAD 27 N: 354747.32	WV-N NAD 27 N: 354756.70	WV-N NAD 27 N: 354766.08	WV-N NAD 27 N: 354775.46	WV-N NAD 27 N: 354784.83	WV-N NAD 27 N: 354794.21	WV-N NAD 27 N: 354803.59
WV-N NAD 27 E: 1618096.61	WV-N NAD 27 E: 1618093.14	WV-N NAD 27 E: 1618089.67	WV-N NAD 27 E: 1618086.20	WV-N NAD 27 E: 1618082.72	WV-N NAD 27 E: 1618079.25	WV-N NAD 27 E: 1618075.78
Lat. NAD 83: 39.466175	Lat. NAD 83: 39.466201	Lat. NAD 83: 39.466226	Lat. NAD 83: 39.466252	Lat. NAD 83: 39.466277	Lat. NAD 83: 39.466303	Lat. NAD 83: 39.466329
Lon. NAD 83: -80.852590	Lon. NAD 83: -80.852603	Lon. NAD 83: -80.852616	Lon. NAD 83: -80.852629	Lon. NAD 83: -80.852641	Lon. NAD 83: -80.852654	Lon. NAD 83: -80.852667
Lat. NAD 27: 39.466096	Lat. NAD 27: 39.466122	Lat. NAD 27: 39.466147	Lat. NAD 27: 39.466173	Lat. NAD 27: 39.466198	Lat. NAD 27: 39.466224	Lat. NAD 27: 39.466250
Lon. NAD 27: -80.852762	Lon. NAD 27: -80.852775	Lon. NAD 27: -80.852788	Lon. NAD 27: -80.852801	Lon. NAD 27: -80.852813	Lon. NAD 27: -80.852826	Lon. NAD 27: -80.852839
UTM 17 NAD 83 (m) N: 4368520.96	UTM 17 NAD 83 (m) N: 4368523.80	UTM 17 NAD 83 (m) N: 4368526.64	UTM 17 NAD 83 (m) N: 4368529.48	UTM 17 NAD 83 (m) N: 4368532.32	UTM 17 NAD 83 (m) N: 4368535.16	UTM 17 NAD 83 (m) N: 4368538.00
UTM 17 NAD 83 (m) E: 512680.29	UTM 17 NAD 83 (m) E: 512679.18	UTM 17 NAD 83 (m) E: 512678.07	UTM 17 NAD 83 (m) E: 512676.97	UTM 17 NAD 83 (m) E: 512675.86	UTM 17 NAD 83 (m) E: 512674.76	UTM 17 NAD 83 (m) E: 512673.65

Dean Unit 1H	Dean Unit 2H	Goodfellow Unit 1H	Goodfellow Unit 2H	Owens Unit 1H	Owens Unit 2H	Owens Unit 3H
WV-N NAD 83 N: 354847.90	WV-N NAD 83 N: 354857.28	WV-N NAD 83 N: 354866.66	WV-N NAD 83 N: 354876.03	WV-N NAD 83 N: 354813.16	WV-N NAD 83 N: 354803.79	WV-N NAD 83 N: 354794.41
WV-N NAD 83 E: 1586631.18	WV-N NAD 83 E: 1586627.71	WV-N NAD 83 E: 1586624.24	WV-N NAD 83 E: 1586620.76	WV-N NAD 83 E: 1586681.36	WV-N NAD 83 E: 1586684.83	WV-N NAD 83 E: 1586688.31
WV-N NAD 27 N: 354812.97	WV-N NAD 27 N: 354822.35	WV-N NAD 27 N: 354831.73	WV-N NAD 27 N: 354841.10	WV-N NAD 27 N: 354778.23	WV-N NAD 27 N: 354768.85	WV-N NAD 27 N: 354759.47
WV-N NAD 27 E: 1618072.31	WV-N NAD 27 E: 1618068.84	WV-N NAD 27 E: 1618065.36	WV-N NAD 27 E: 1618061.89	WV-N NAD 27 E: 1618122.49	WV-N NAD 27 E: 1618125.96	WV-N NAD 27 E: 1618129.43
Lat. NAD 83: 39.466354	Lat. NAD 83: 39.466380	Lat. NAD 83: 39.466405	Lat. NAD 83: 39.466431	Lat. NAD 83: 39.466261	Lat. NAD 83: 39.466235	Lat. NAD 83: 39.466210
Lon. NAD 83: -80.852680	Lon. NAD 83: -80.852693	Lon. NAD 83: -80.852705	Lon. NAD 83: -80.852718	Lon. NAD 83: -80.852500	Lon. NAD 83: -80.852487	Lon. NAD 83: -80.852475
Lat. NAD 27: 39.466275	Lat. NAD 27: 39.466301	Lat. NAD 27: 39.466326	Lat. NAD 27: 39.466352	Lat. NAD 27: 39.466182	Lat. NAD 27: 39.466156	Lat. NAD 27: 39.466131
Lon. NAD 27: -80.852852	Lon. NAD 27: -80.852865	Lon. NAD 27: -80.852877	Lon. NAD 27: -80.852890	Lon. NAD 27: -80.852672	Lon. NAD 27: -80.852659	Lon. NAD 27: -80.852647
UTM 17 NAD 83 (m) N: 4368540.84	UTM 17 NAD 83 (m) N: 4368543.68	UTM 17 NAD 83 (m) N: 4368546.52	UTM 17 NAD 83 (m) N: 4368549.36	UTM 17 NAD 83 (m) N: 4368530.51	UTM 17 NAD 83 (m) N: 4368527.67	UTM 17 NAD 83 (m) N: 4368524.83
UTM 17 NAD 83 (m) E: 512672.55	UTM 17 NAD 83 (m) E: 512671.44	UTM 17 NAD 83 (m) E: 512670.34	UTM 17 NAD 83 (m) E: 512669.23	UTM 17 NAD 83 (m) E: 512688.01	UTM 17 NAD 83 (m) E: 512689.12	UTM 17 NAD 83 (m) E: 512690.22

95-02366

FOR PERMITTING
SOURCES
AST SITE
ICATION

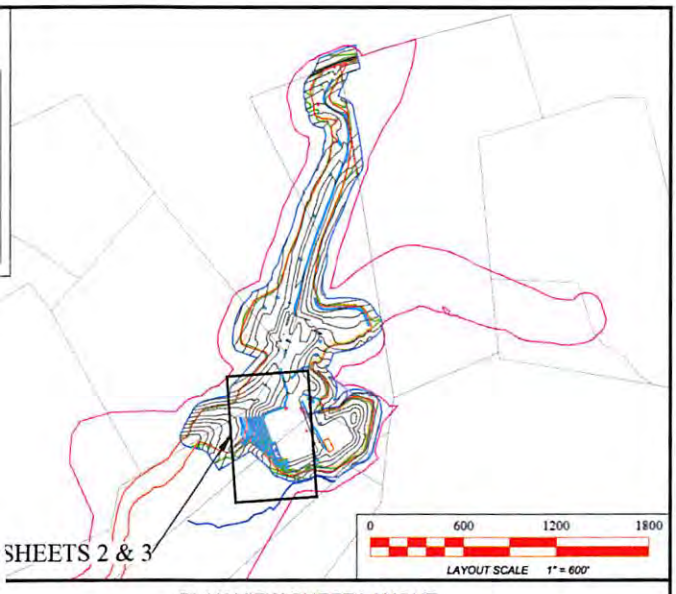
COUNTY, WEST VIRGINIA
QUAD MAP

WV COUNTY REFERENCE MAP

Kelly Surveying
P.O. Box 254
Dailey, WV 26259
(304)338-6985

REVISIONS

DATE	
10/16/2015	Design.



PLAN VIEW SHEET LAYOUT

ENGINEER / SURVEYOR

KELLY SURVEYING PLLC.
P.O.BOX 254
DAILEY, WV 26259
PHONE: (304) 338-6985
FAX: (304) 304-338-6081

PROJECT MANAGER

JOHN P. SEE PE 6051
KENNETH KELLY PSSU 973
KIRK WAGNER EIT

GEOTECHNICAL:

GEOTECHNICAL INVESTIGATION AS PROVIDED BY KLEINFELDER DATED OCTOBER 4, 2013

ENVIRONMENTAL:

WETLAND DELINEATIONS AS PROVIDED BY ALLSTAR ECOLOGY DATED MAY 24, 2013

TOPOGRAPHIC INFORMATION:

THE TOPOGRAPHIC INFORMATION SHOWN HEREIN IS BASED ON AERIAL PHOTOGRAPHY BY BLUE MOUNTAIN AERIAL MAPPING, BURTON, WV

NO.	INDEX TO SHEETS
COVER	COVER
N1	GENERAL NOTES
N2	EROSION & SEDIMENT CONTROL NOTES
N3	GENERAL CONSTRUCTION NOTES
D1	EROSION & SEDIMENT CONTROL DETAILS
D2	EROSION & SEDIMENT CONTROL DETAILS
D3	TYPICAL DETAILS
D4	TYPICAL DETAILS
D5	REVEGETATION CHARTS
1	EXISTING SITE PLAN OVERVIEW
2	EXISTING SITE PLAN VIEW
3	PAD MODIFICATION DESIGN PLAN VIEW
4	SECTIONS SHEET
5	SCHEDULE OF QUANTITIES AND VOLUMES
6	WELL OFFSET DIMENSIONS
7	SITE RECLAMATION

Floodplain Conditions	
Do site construction activities take place in a floodplain:	NO
Permit needed from county floodplain coordinator:	NO
Flood Hazard Zone	NO
HEC-RAS Study completed:	N/A
Floodplain shown on drawings:	N/A
FIRM Map Number(s) for site:	54095C0175C
Acreages of construction in floodplain:	N/A

RECEIVED
Office of Oil and Gas
MAY 2 2 2015
WV Department of
Environmental Protection

THIS DOCUMENT PREPARED FOR ANTERO RESOURCES CORPORATION

COVER SHEET
WEIGLE EAST SITE
PAD MODIFICATION
ELLSWORTH DISTRICT
TYLER COUNTY, WEST VIRGINIA

JOHN P. SEE REGISTERED 006051 STATE OF WEST VIRGINIA PROFESSIONAL ENGINEER

Design Certification

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 35CSR8

All Plans, Sheets, and/or Reference Diagrams included in this design constitutes a complete set of plans. A complete set of plans is necessary to construct the site in accordance with the design.

John P. See RPE 6051 Date: 10/16/2015
Kelly Surveying PLLC
COA: OM232-00

MISS UTILITY OF WEST VIRGINIA
1-800-245-4848
West Virginia State Law Section XIV: Chapter 24-C requires that you call two business days before you dig in the state of West Virginia.
IT'S THE LAW

811 Know what's below. Call before you dig.

Date: 10/16/2015
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Page COVER