



west virginia department of environmental protection

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

Jim Justice, Governor  
Austin Caperton, Cabinet Secretary  
[www.dep.wv.gov](http://www.dep.wv.gov)

PERMIT MODIFICATION APPROVAL  
Horizontal 6A / New Drill

ANTERO RESOURCES CORPORATION  
1615 WYNKOOP STREET

DENVER, CO 80202

Re: Permit Modification Approval for MICHELS UNIT 2H  
47-017-06812-00-00

Extend horizontal lateral length

ANTERO RESOURCES CORPORATION

The Office of Oil and Gas has reviewed the attached permit modification for the above referenced permit. The attached modification has been approved and well work may begin. Please be reminded that the oil and gas inspector is to be notified twenty-four (24) hours before permitted well work is commenced.

If there are any questions, please feel free to contact me at (304) 926-0450.

James A. Martin  
Chief

Operator's Well Number: MICHELS UNIT 2H  
Farm Name: ANTERO RESOURCES CORPORATION  
U.S. WELL NUMBER: 47-017-06812-00-00  
Horizontal 6A / New Drill  
Date Issued: 8/4/2017

Promoting a healthy environment.

08/04/2017



June 9, 2017

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

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

Mr. Stansberry:

Antero Resources Corporation (Antero) would like to submit the following permit modification for one approved well on the Addie Pad. We are requesting to extend the horizontal lateral length which will change the bottom hole location of the Michels Unit 2H (API# 47-017-06812).

Attached you will find the following documents:

- REVISED Form WW-6B, which shows the revised lateral length, Measured Depth and Production Casing/Cement program
- REVISED Form WW-6A1, which shows the new leases we will be drilling into
- REVISED Mylar Plats, which shows the new bottom hole location
- Area of Review showing 500' around the well bore

If you have any questions please feel free to contact me at (303) 357-6759.

Thank you in advance for your consideration.

Sincerely,

A handwritten signature in blue ink that reads "Samantha Klaas". The signature is fluid and cursive, with the first name being more prominent.

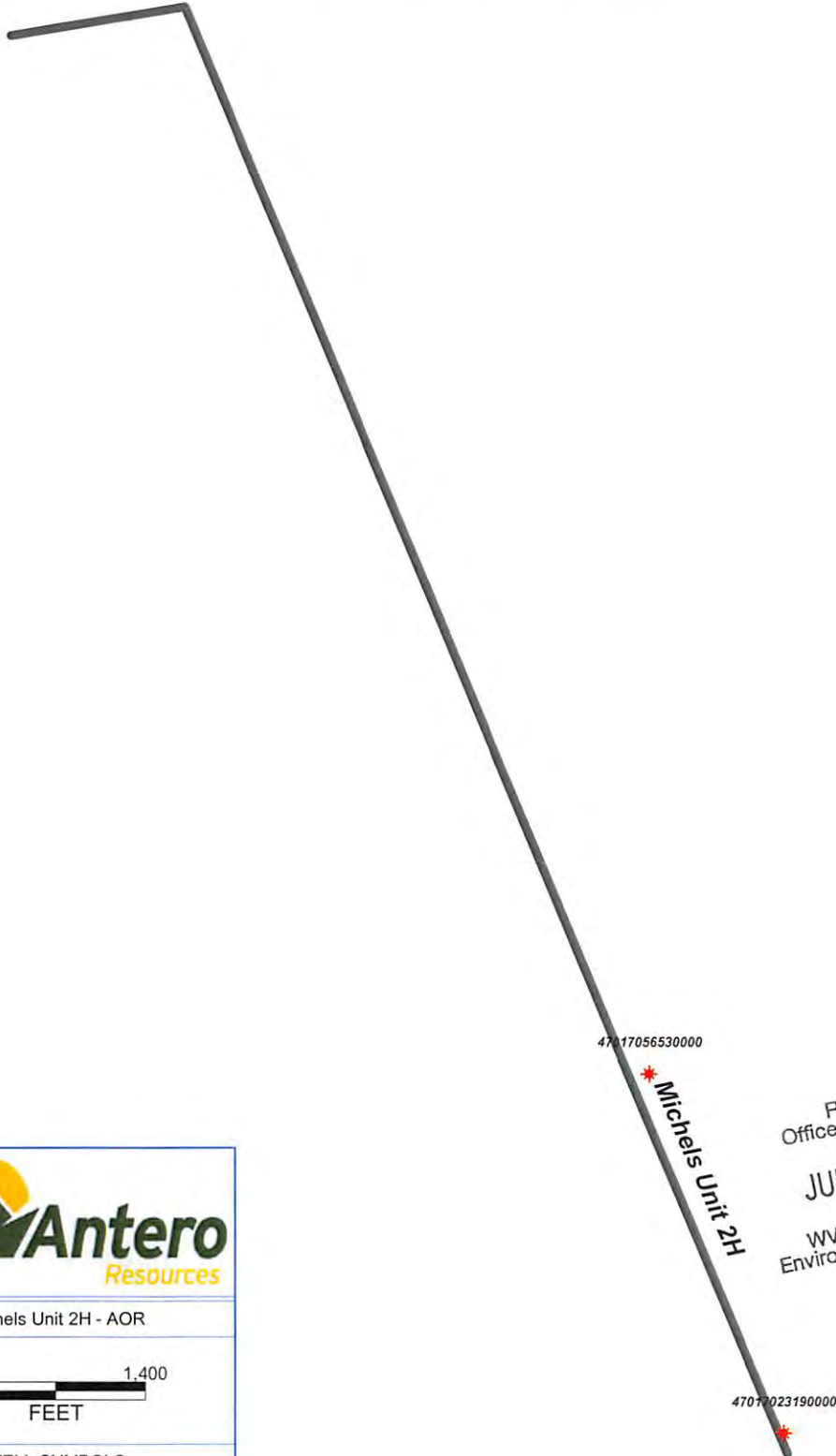
Samantha Klaas  
Permitting Agent  
Antero Resources Corporation

Enclosures

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08/04/2017

PERMIT MODIFICATION API# 47-017-06812



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Michels Unit 2H - AOR



WELL SYMBOLS  
Gas Well



June 5, 2017

**PERMIT MODIFICATION API #47-017-06812**

UWI (API Num)	Well Name	Well Number	Operator	Historical Operator	Approx distance to well (ft)
47017056530000	STEWART BEULAH	1	KEY OIL COMPANY	KEY OIL COMPANY	164
47017023190000	BETTY JANE LANGFITT	1	RUBIN RESOURCES	KEY OIL INCORPORATED	35

TD	ELEV_GR	TD (SSTVD)	Perforated Interval (shallowest, deepest)	Perforated Formation(s)	Producible Formation(s) not perf'd
5178	798	-4380	3105-5079	Warren, Riley, Benson, Alexander	Big Injun, Weir, Gordon, Balltown, Bradford
5241	864	-4377	5080-5146	Alexander	Big Injun, Weir, Warren, Gordon, Balltown, Bradford, Riley, Benson

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

1) Well Operator: Antero Resources Corporation 494507062 017- Doddridge West Union West Union 7.5'  
Operator ID County District Quadrangle

2) Operator's Well Number: Michels Unit 2H Well Pad Name: Addie Pad

3) Farm Name/Surface Owner: Antero Resources Corporation Public Road Access: WV 18

4) Elevation, current ground: 890' Elevation, proposed post-construction: 890'

5) Well Type (a) Gas  Oil \_\_\_\_\_ Underground Storage \_\_\_\_\_  
Other \_\_\_\_\_

(b) If Gas Shallow  Deep \_\_\_\_\_  
Horizontal

6) Existing Pad: Yes or No Yes

7) Proposed Target Formation(s), Depth(s), Anticipated Thickness and Expected Pressure(s):  
Marcellus Shale: 6900' TVD, Anticipated Thickness- 60 feet, Associated Pressure- 3100#

8) Proposed Total Vertical Depth: 6900' TVD

9) Formation at Total Vertical Depth: Marcellus

10) Proposed Total Measured Depth: 19400' MD

11) Proposed Horizontal Leg Length: 12198'

12) Approximate Fresh Water Strata Depths: 59', 175', 345'

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

14) Approximate Saltwater Depths: 650'

15) Approximate Coal Seam Depths: 516'

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

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

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

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WW-6B  
(04/15)

**PERMIT MODIFICATION API# 47-017-06812**  
 API NO. 47- 017 - 06812  
 OPERATOR WELL NO. Michels Unit 2H  
 Well Pad Name: Addie Pad

18) **CASING AND TUBING PROGRAM**

<b>TYPE</b>	<u>Size (in)</u>	<u>New or Used</u>	<u>Grade</u>	<u>Weight per ft. (lb/ft)</u>	<u>FOOTAGE: For Drilling (ft)</u>	<u>INTERVALS: Left in Well (ft)</u>	<u>CEMENT: Fill-up (Cu. Ft.)/CTS</u>
Conductor	20"	New	H-40	94#	40'	40'	CTS, 38 Cu. Ft.
Fresh Water	13-3/8"	New	J-55	54.5#	400' *See #19	400' *See #19	CTS, 556 Cu. Ft.
Coal	9-5/8"	New	J-55	36#	2500'	2500'	CTS, 1018 Cu. Ft.
Intermediate							
Production	5-1/2"	New	P-110	23#	19400'	19400'	4927 Cu. Ft.
Tubing	2-3/8"	New	N-80	4.7#		7100'	
Liners							

<b>TYPE</b>	<u>Size (in)</u>	<u>Wellbore Diameter (in)</u>	<u>Wall Thickness (in)</u>	<u>Burst Pressure (psi)</u>	<u>Anticipated Max. Internal Pressure (psi)</u>	<u>Cement Type</u>	<u>Cement Yield (cu. ft./k)</u>
Conductor	20"	24"	0.438"	1530	50	Class A	~1.18
Fresh Water	13-3/8"	17-1/2"	0.38"	2730	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"	0.415"	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			RECEIVED Office of Oil and Gas <b>JUN 12 2017</b> WV Department of Environmental Protection
Sizes:	N/A			
Depths Set:	N/A			

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

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

\*Antero will be air drilling the fresh water string which makes it difficult to determine when freshwater is encountered, therefore we have built in a buffer for the casing setting depth which helps to ensure that all fresh water zones are covered.

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

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

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

21) Total Area to be disturbed, including roads, stockpile area, pits, etc., (acres): 17.35 acres

22) Area to be disturbed for well pad only, less access road (acres): 6.99 acres

23) Describe centralizer placement for each casing string:

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

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

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

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25) Proposed borehole conditioning procedures:

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

\*Note: Attach additional sheets as needed.



Operator's Well Number Michels Unit 2H

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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)

JUN 12 2017

WV Department of  
Environmental Protection

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

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

Grantor, lessor, etc.	Grantee, lessee, etc.	Royalty	Book/Page
<b><u>J.C. Smith, Agent for Jacob Smith Estate Lease</u></b>			
J.C. Smith, Agent for Jacob Smith Estate	W.H. Mossor	1/8	0063/0250
W.H. Mossor	Term Energy Corporation	Assignment and Bill of Sale	0116/0519
Term Energy Corporation	Antero Resources Appalachian Corporation	*Partial Assignment of Oil & Gas Leases	DB 0271/0199
Antero Resources Appalachian Corporation	Antero Resources Corporation	Name Change	Exhibit 1
<b><u>Joseph B. Hammond Lease</u></b>			
Joseph B. Hammond	Antero Resources Appalachian Corporation	1/8+	0257/0274
Antero Resources Appalachian Corporation	Antero Resources Corporation	Name Change	Exhibit 1
<b><u>Joseph Freeman, et ux Lease</u></b>			
Joseph Freeman, et ux	G.H. Trainer	1/8	0027/0233
G.H. Trainer & J.E. Trainer	W.W. Hepburn	Assignment	0034/0244
W.W. Hepburn	Eastern Petroleum Company	Assignment	0034/0256
Eastern Petroleum Company	Clifton Oil & Gas Company	Assignment	0041/0431
Clifton Oil & Gas Company	Quaker State Refining Corporation	Assignment	0056/0165
Quaker State Refining Corporation	QSE&P, Inc.	Assignment	0159/0474
QSE&P, Inc.	The Quaker State 1989 – 1 Drilling Fund LP	Assignment	0160/0200
The Quaker State 1989 – 1 Drilling Fund LP	Belden & Blake Corporation	Assignment	0175/0466
Belden & Blake Corporation	Peake Energy, Inc.	Assignment	0181/0567
Peake Energy, Inc.	North Coast Energy Eastern, Inc.	Name Change	0249/0343
North Coast Energy Eastern, Inc.	EXCO-North Coast Energy Eastern, Inc.	Name Change	0277/0068
EXCO North Coast Energy Eastern, Inc.	EXCO Resources WV, Inc.	Name Change	Exhibit 2
EXCO Resources WV, Inc.	EXCO Resources WV, LLC.	Name Change	Exhibit 3
EXCO Resources WV, LLC.	EXCO Production Company WV, LLC	Merger	Exhibit 4
EXCO Production Company WV, LLC	Antero Resources Appalachian Corporation	Assignment	0285/0084
Antero Resources Appalachian Corporation	Antero Resources Corporation	Name Change	Exhibit 1
<b><u>Champion Agate Co., Inc. Lease (D)</u></b>			
Champion Agate Co., Inc.	Antero Resources Appalachian Corporation	1/8+	0286/0250
Antero Resources Appalachian Corporation	Antero Resources Corporation	Name Change	Exhibit 1
<b><u>Champion Agate Co., Inc. Lease (B)</u></b>			
Champion Agate Co., Inc.	Antero Resources Appalachian Corporation	1/8+	0257/0274
Antero Resources Appalachian Corporation	Antero Resources Corporation	Name Change	Exhibit 1

\*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\*\***

08/04/2017



**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)**

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

Grantor, lessor, etc.	Grantee, lessee, etc.	Royalty	Book/Page
<b><u>Dorothy A. Piggott, AIF, et al Lease</u></b>			
Dorothy A. Piggott, AIF, et al Antero Resources Appalachian Corporation	Antero Resources Appalachian Corporation Antero Resources Corporation	1/8 Name Change	0267/0191 Exhibit 1
<b><u>Andrew Lett, et ux Lease (C)</u></b>			
Andrew Lett, et ux Antero Resources Appalachian Corporation	Antero Resources Appalachian Corporation Antero Resources Corporation	1/8+ Name Change	0277/0561 Exhibit 1
<b><u>WVDNR Lease (Middle Island Creek)</u></b>			
WV Division of Natural resources	Antero Resources Corporation	1/8+	0416/0455
<b><u>Ida F. Ford Lease (8-7-6, 8-7-13)</u></b>			
Ida F. Ford Ford Development Company Antero Resources Appalachian Corporation	Ford Development Company Antero Resources Appalachian Corporation Antero Resources Corporation	1/8 Assignment Name Change	0063/0459 0277/0482 Exhibit 1
<b><u>S.M. Montgomery, et ux Lease</u></b>			
S.M. Montgomery, et ux Paul B. Davis, Charter D. Stinespring and G.W. Hill Trio Oil & Gas Company, Inc. Antero Resources Appalachian Corporation	Paul B. Davis, Charter D. Stinespring and G.W. Hill Trio Oil & Gas Company, Inc. Antero Resources Appalachian Corporation Antero Resources Corporation	1/8 Assignment Assignment Name Change	0065/0015 0065/0374 0279/0630 Exhibit 1
<b><u>Beulah Stewart Lease</u></b>			
Beulah Stewart Key Oil Company	Key Oil Company Antero Resources Corporation	1/8 Assignment	0219/0175 0276/0526
<b><u>Nelson Bruffy Lease</u></b>			
Nelson Bruffy Antero Resources Appalachian Corporation	Antero Resources Appalachian Corporation Antero Resources Corporation	1/8 Name Change	0262/0180 Exhibit 1

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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.

WW-6A1  
(5/13)

Operator's Well No. Michels Unit 2H

**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)**

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

Lease Name or Number	Grantor, Lessor, etc.	Grantee, Lessee, etc.	Royalty	Book/Page
<b>E</b> Claude L. Smith, et ux Lease				
	Claude Smith et ux	Key Oil Co	1/8	104/704
	Key Oil Co	XOIL Drilling Partners LP	Assignment	105/566
	XOIL Drilling Partners LP	XPLOR Corp	Assignment	146/649
	XPLOR Corp	Venus Exploration Inc	Merger	Exhibit 5
	Venus Exploration Inc	Allegheny Interests Inc	Assignment	184/512
	Allegheny Interests Inc	Rubin Resources Inc	Assignment	187/685
	Rubin Resources Inc	Petro Edge Energy LLC	Assignment	230/666
	Petro Edge Energy LLC	Statoil USA Onshore Properties	Assignment	285/71
	Statoil USA Onshore Properties	EQT	Assignment	428/356
	EQT	Antero Resources Corporation	Assignment	385/268

\*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

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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.

WV Department of Environmental Protection

Well Operator: Antero Resources Corporation  
By: Kevin Kilstrom  
Its: Senior Vice President - Production

1706812 MOD

FORM WW-6A1  
EXHIBIT 1

FILED

JUN 10 2013

Penney Barker, Manager  
 IN THE OFFICE OF  
 SECRETARY OF STATE  
 Tel: (304)558-8000  
 Fax: (304)558-8381  
 Website: www.wv.gov  
 B-mail: busines@wv.gov

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

AMENDED CERTIFICATE  
 OF AUTHORITY  
 APPLICATION FOR



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

FILE ONE ORIGINAL  
 (We'll return a filed  
 stamped copy to you)  
 FEE: \$25.00

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

1. Name under which the corporation was authorized to transact business in WV: Antero Resources Appalachia 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.)  
 Alwyn A. Schopp  
 (303) 967-7310

Contact Name: Alwyn A. Schopp  
 Phone Number: (303) 967-7310

7. Signature information (See below "Important Legal Notice Regarding Signatures")

Print Name of Signer: Alwyn A. Schopp  
 Title/Capacity: Authorized Person  
 Signature: *[Handwritten Signature]*  
 Date: June 10, 2013  
 WV Department of Environmental Protection

**Important Legal Notice Regarding Signatures:** For West Virginia Code §33B-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.



FORM WW-6A1  
EXHIBIT 2

# State of West Virginia



## Certificate

*I, Natalie E. Tennant, Secretary of State of the State of West Virginia, hereby certify that*

an Amended Certificate of Authority of

**EXCO - NORTH COAST ENERGY EASTERN, INC.**

was filed in my office as required by the provisions of the West Virginia Code and was found to conform to law.

Therefore I issue this

### CERTIFICATE OF AMENDMENT TO THE CERTIFICATE OF AUTHORITY

changing the name of the corporation to

**EXCO RESOURCES (WV), INC.**

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*Given under my hand and the Great Seal of the State of West Virginia on this day of December 2, 2009*

*Natalie E. Tennant*

Secretary of State



FORM WW-6A1  
EXHIBIT 3

# State of West Virginia



## Certificate

*I, Natalie E. Tennant, Secretary of State of the State of West Virginia, hereby certify that*

**EXCO RESOURCES (WV), INC.**  
*(A Delaware Corporation)*

*filed Articles of Conversion in my office as required by the provisions of the West Virginia Code and was found to conform to law.*

*Therefore, I issue this*

### CERTIFICATE OF CONVERSION

*Converting the corporation to:*

**EXCO RESOURCES (WV), LLC**  
*(A Delaware Limited Liability Company)*

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JUN 12 2017  
WV Department of  
Environmental Protection



*Given under my hand and the Great Seal of the State of West Virginia on*  
July 7, 2010

*Natalie E. Tennant*

*Secretary of State*

# State of West Virginia



## Certificate

*I, Natalie E. Tennant, Secretary of State of the State of West Virginia, hereby certify that*

by the provisions of the West Virginia Code, Articles of Merger were received and filed  
MERGING EXCO RSOURCES (PA), LLC, A QUALIFIED TX ORGANIZATION WITH EXCO RESOURCES (WV), LLC, A QUALIFIED TX ORGANIZATION, AS SURVIVORS AND CREATING THE FOLLOWING NON-QUALIFIED TX ORGANIZATIONS: BG NATURAL GAS PRODUCTION COMPANY (PA), LLC, APPALACHIA MIDSTREAM, LLC, EXCO RSOURCES (XA), LLC, BG NATURAL GAS PRODUCTION COMPANY (WV), LLC AND EXCO PRODUCTION COMPANY (PA), LLC. IN THE MERGER EXCO RESOURCES (WV), LLC CHANGED ITS NAME TO EXCO PRODUCTION COMPANY (WV), LLC.

Therefore, I hereby issue this

### CERTIFICATE OF MERGER

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JUN 12 2017  
WV Department of  
Environmental Protection



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

July 1, 2010

*Natalie E. Tennant*

Secretary of State

08/04/2017



# State of West Virginia



## Certificate

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

the following and attached is a true and exact copy of the articles of merger of VENUS EXPLORATION, INC. a non-qualified Delaware corporation and XPLOR CORPORATION a qualified Delaware corporation.

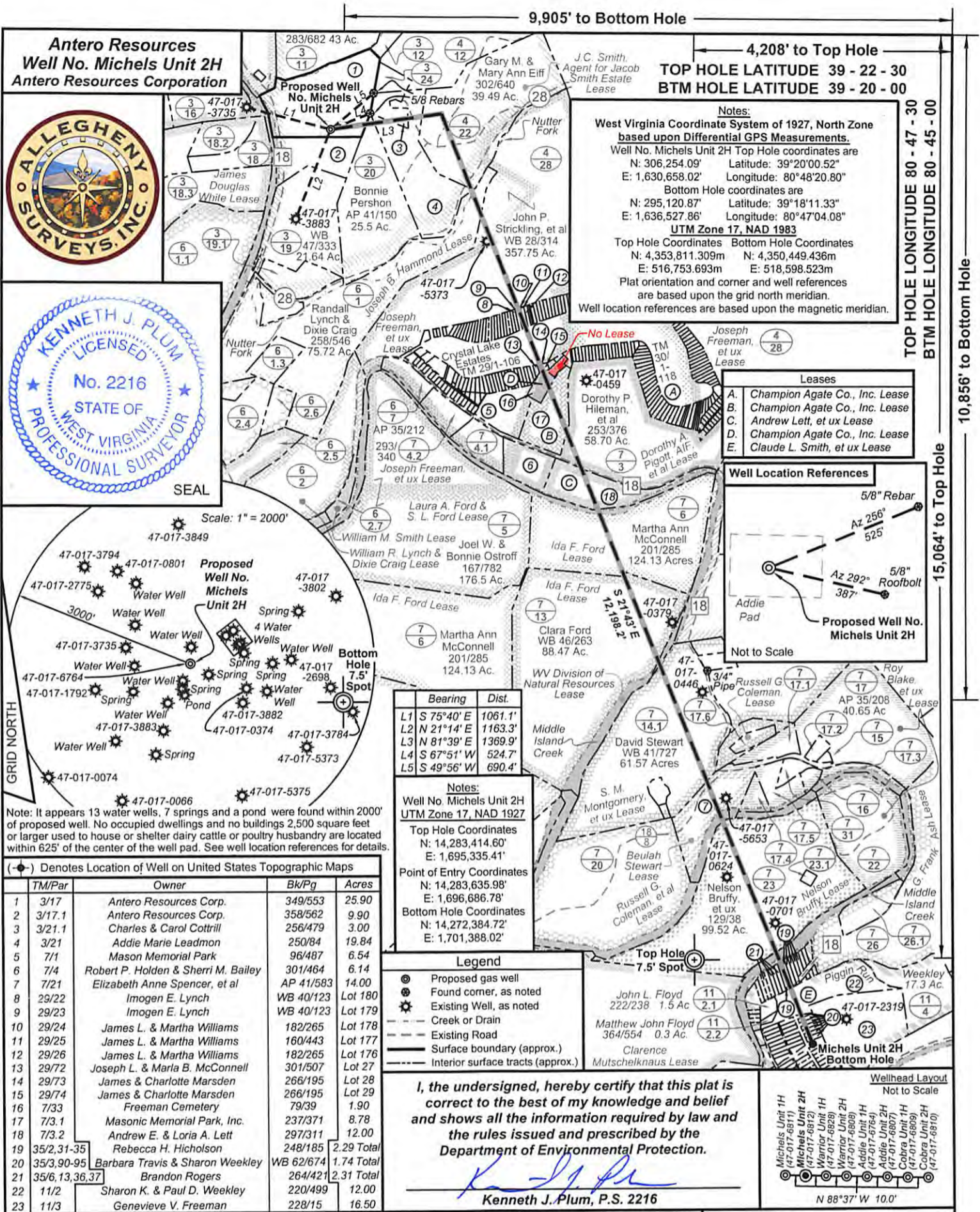
Therefore I hereby issue this CERTIFICATE OF MERGER, merging VENUS EXPLORATION, INC. with and into XPLOR CORPORATION, the survivor which then changed its name to VENUS EXPLORATION, INC.

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Office of Oil and Gas  
JUN 12 2017  
WV Department of  
Environmental Protection



*Given under my hand and the  
Great Seal of the State of  
West Virginia on this  
Eighteenth day of  
July 19 97*  
*Ken Hechler*  
Secretary of State





Note: It appears 13 water wells, 7 springs and a pond were found within 2000' of proposed well. No occupied dwellings and no buildings 2,500 square feet or larger used to house or shelter dairy cattle or poultry husbandry are located within 625' of the center of the well pad. See well location references for details.

Denotes Location of Well on United States Topographic Maps

TM/Par	Owner	Bk/Pg	Acres
1 3/17	Antero Resources Corp.	349/553	25.90
2 3/17.1	Antero Resources Corp.	358/562	9.90
3 3/21.1	Charles & Carol Cottrill	256/479	3.00
4 3/21	Addie Marie Leadmon	250/84	19.84
5 7/1	Mason Memorial Park	96/487	6.54
6 7/4	Robert P. Holden & Sherri M. Bailey	301/464	6.14
7 7/21	Elizabeth Anne Spencer, et al	AP 41/583	14.00
8 29/22	Imogen E. Lynch	WB 40/123	Lot 180
9 29/23	Imogen E. Lynch	WB 40/123	Lot 179
10 29/24	James L. & Martha Williams	182/265	Lot 178
11 29/25	James L. & Martha Williams	160/443	Lot 177
12 29/26	James L. & Martha Williams	182/265	Lot 176
13 29/72	Joseph L. & Marla B. McConnell	301/507	Lot 27
14 29/73	James & Charlotte Marsden	266/195	Lot 28
15 29/74	James & Charlotte Marsden	266/195	Lot 29
16 7/33	Freeman Cemetery	79/39	1.90
17 7/3.1	Masonic Memorial Park, Inc.	237/371	8.78
18 7/3.2	Andrew E. & Loria A. Lett	297/311	12.00
19 35/2,31-35	Rebecca H. Hicholson	248/185	2.29 Total
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23 11/3	Genevieve V. Freeman	228/15	16.50

Bearing	Dist.
L1 S 75°40' E	1061.1'
L2 N 21°14' E	1163.3'
L3 N 81°39' E	1369.9'
L4 S 67°51' W	524.7'
L5 S 49°56' W	690.4'

Notes:  
Well No. Michels Unit 2H  
UTM Zone 17, NAD 1927  
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N: 14,283,414.60'  
E: 1,695,335.41'  
Point of Entry Coordinates  
N: 14,283,635.98'  
E: 1,696,686.78'  
Bottom Hole Coordinates  
N: 14,272,384.72'  
E: 1,701,388.02'

- Legend
- Proposed gas well
  - Found corner, as noted
  - Existing Well, as noted
  - Creek or Drain
  - Existing Road
  - Surface boundary (approx.)
  - Interior surface tracts (approx.)

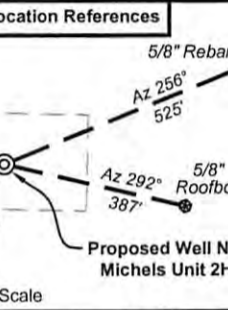
I, the undersigned, hereby certify that this plat is correct to the best of my knowledge and belief and shows all the information required by law and the rules issued and prescribed by the Department of Environmental Protection.

*Kenneth J. Plum*  
Kenneth J. Plum, P.S. 2216

TOP HOLE LATITUDE 39 - 22 - 30  
BTM HOLE LATITUDE 39 - 20 - 00

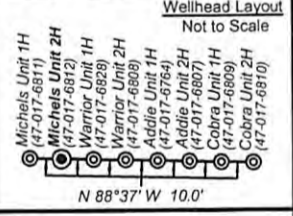
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Well No. Michels Unit 2H Top Hole coordinates are  
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Plat orientation and corner and well references are based upon the grid north meridian.  
Well location references are based upon the magnetic meridian.

- Leases
- A. Champion Agate Co., Inc. Lease
  - B. Champion Agate Co., Inc. Lease
  - C. Andrew Lett, et ux Lease
  - D. Champion Agate Co., Inc. Lease
  - E. Claude L. Smith, et ux Lease



Well Location References

5/8" Rebar  
Az 256° 525'  
Az 292° 387'  
Proposed Well No. Michels Unit 2H  
Not to Scale



FILE NO: 53-30-WU-15  
DRAWING NO: Michels 2H Well Plat  
SCALE: 1" = 1500'  
MINIMUM DEGREE OF ACCURACY: Submeter  
PROVEN SOURCE OF ELEVATION: WVDOT, Harrisville, WV

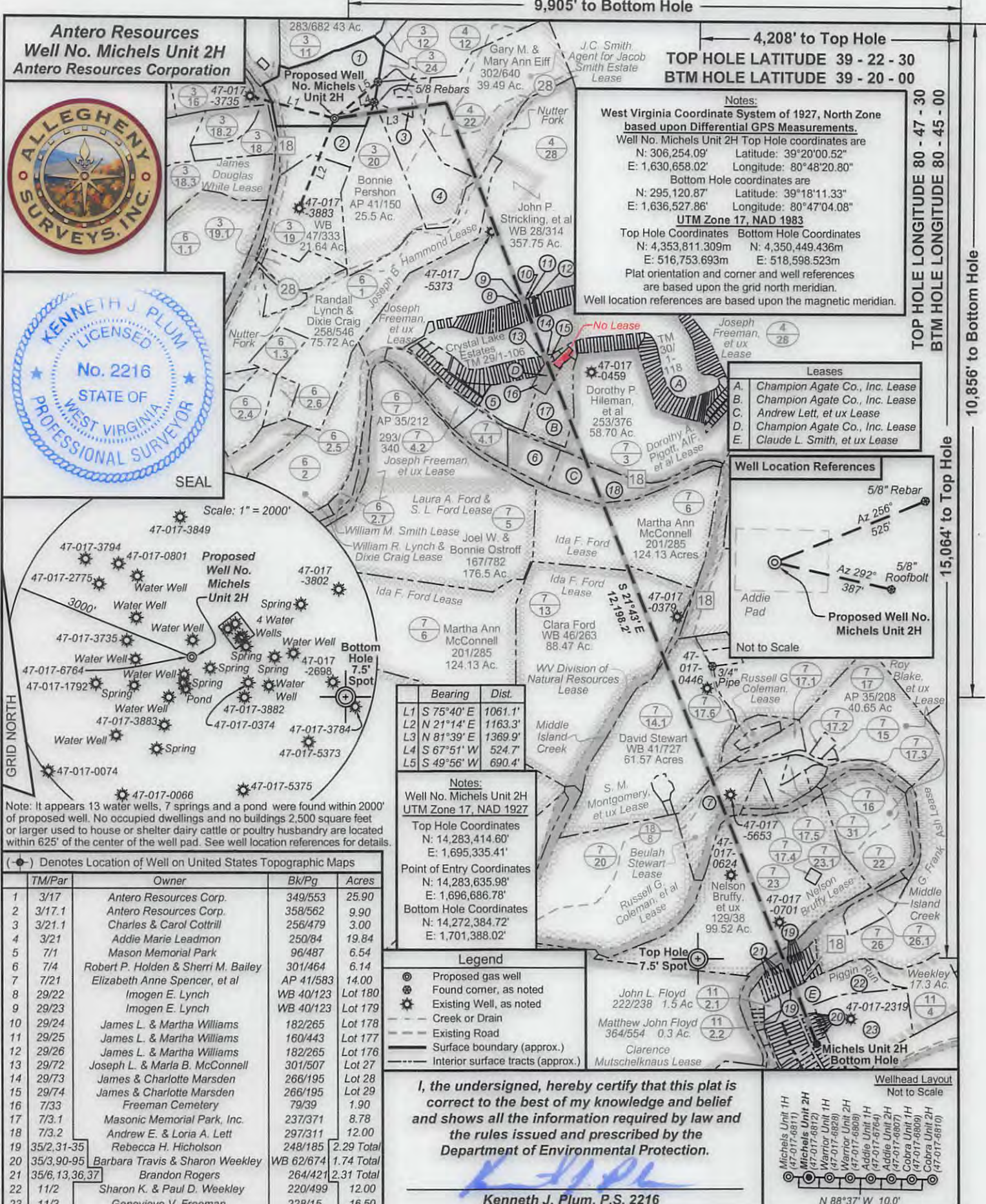
STATE OF WEST VIRGINIA  
DEPARTMENT OF ENVIRONMENTAL PROTECTION  
OIL AND GAS DIVISION

DATE: May 17 20 17  
OPERATOR'S WELL NO. Michels Unit 2H  
API WELL NO 47-017-06812  
STATE COUNTY PERMIT

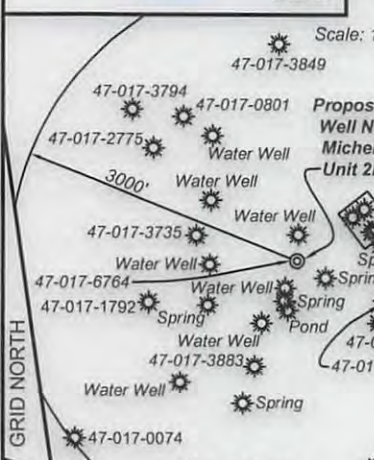
WELL TYPE:  OIL  GAS  LIQUID INJECTION  WASTE DISPOSAL  
(IF GAS) PRODUCTION:  STORAGE  DEEP  SHALLOW  
LOCATION: ELEVATION: Proposed 890' Existing 895' WATERSHED: Headwaters Middle Island Creek QUADRANGLE: West Union  
DISTRICT: West Union COUNTY: Doddridge  
SURFACE OWNER: Antero Resources Corp. COUNTY: Doddridge  
ROYALTY OWNER: J.C. Smith, Agent for Jacob Smith Estate; Ida F. Ford (2); Joseph B. Hammond; LEASE NO: ACREAGE: 58.70; 112; 82.21  
PROPOSED WORK:  DRILL  CONVERT  DRILL DEEPER  FRACTURE OR STIMULATE  PLUG OFF OLD FORMATION  
 PERFORATE NEW FORMATION  OTHER PHYSICAL CHANGE IN WELL (SPECIFY) Modify Bottom Hole Location  
 PLUG AND ABANDON  CLEAN OUT AND REPLUG TARGET FORMATION: Marcellus Shale ESTIMATED DEPTH: 19,400' MD

WELL OPERATOR: Antero Resources Corporation DESIGNATED AGENT: Dianna Stamper - CT Corporation System  
ADDRESS: 1615 Wynkoop Street ADDRESS: 5400 D Big Tyler Road  
Denver, CO 80202 Charleston, WV 25313





**Antero Resources**  
Well No. Michels Unit 2H  
Antero Resources Corporation



Note: It appears 13 water wells, 7 springs and a pond were found within 2000' of proposed well. No occupied dwellings and no buildings 2,500 square feet or larger used to house or shelter dairy cattle or poultry husbandry are located within 625' of the center of the well pad. See well location references for details.

(●) Denotes Location of Well on United States Topographic Maps

TM/Par	Owner	Bk/Pg	Acres
1 3/17	Antero Resources Corp.	349/553	25.90
2 3/17.1	Antero Resources Corp.	358/562	9.90
3 3/21.1	Charles & Carol Cottrill	256/479	3.00
4 3/21	Addie Marie Leadmon	250/84	19.84
5 7/1	Mason Memorial Park	96/487	6.54
6 7/4	Robert P. Holden & Sherri M. Bailey	301/464	6.14
7 7/21	Elizabeth Anne Spencer, et al	AP 41/583	14.00
8 29/22	Imogen E. Lynch	WB 40/123	Lot 180
9 29/23	Imogen E. Lynch	WB 40/123	Lot 179
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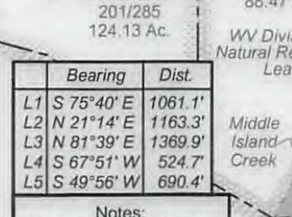
9,905' to Bottom Hole

4,208' to Top Hole

TOP HOLE LATITUDE 39 - 22 - 30  
BTM HOLE LATITUDE 39 - 20 - 00

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**Wellhead Layout**  
Not to Scale

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DRAWING NO: Michels 2H Well Plat  
SCALE: 1" = 1500'  
MINIMUM DEGREE OF ACCURACY: Submeter  
PROVEN SOURCE OF ELEVATION: WVDOT, Harrisville, WV

DATE: May 17 20 17

OPERATOR'S WELL NO. Michels Unit 2H

API WELL NO 47 - 017 - 06812

STATE COUNTY PERMIT

WELL TYPE:  OIL  GAS  LIQUID INJECTION  WASTE DISPOSAL  
(IF GAS) PRODUCTION:  STORAGE  DEEP  SHALLOW  
Proposed 890'  
Existing 895'

LOCATION: ELEVATION: WATERSHED: Headwaters Middle Island Creek QUADRANGLE: West Union  
DISTRICT: West Union COUNTY: Doddridge  
SURFACE OWNER: Antero Resources Corp. BEULAH STEWART, NELSON BRUFFY, CHAMPION AGATE CO., INC. (2) ACREAGE: 25.9  
ROYALTY OWNER: J.C. Smith, Agent for Jacob Smith Estate; Ida F. Ford (2); Joseph B. Hammond; LEASE NO: ACREAGE: 58.70; 112; 82.21

PROPOSED WORK:  DRILL  CONVERT  DRILL DEEPER  FRACTURE OR STIMULATE  PLUG OFF OLD FORMATION  
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08/04/2017