



west virginia department of environmental protection

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

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

PERMIT MODIFICATION APPROVAL

June 08, 2015

ANTERO RESOURCES CORPORATION
1615 WYNKOOP STREET
DENVER, CO 80202

Re: Permit Modification Approval for API Number 8510206, Well #: LEFT FORK UNIT 4H

Extend Lateral, correct TVD

Oil and Gas Operator:

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

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

Sincerely,

A handwritten signature in blue ink that reads "Gene Smith".

Gene Smith
Assistant Chief of Permitting
Office of Oil and Gas

Promoting a healthy environment.

06/12/2015



June 4, 2015

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

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

Ms. Hankins:

Antero Resources Corporation (Antero) would like to submit the following permit modifications for three approved wells on the Lockhart Heirs West pad. We are requesting to extend the horizontal laterals, which will change the bottom hole locations of the Left Fork Unit 1H (API# 47-085-10204), Left Fork Unit 3H (API# 47-085-10205), and Left Fork Unit 4H (API# 47-085-10206).

Attached you will find the following documents:

- REVISED Form WW-6B, which shows the revised lateral lengths and updated depths
- REVISED Form WW-6A1, which shows additional leases we will be drilling into
- REVISED Mylar Plat, which shows the new bottom hole locations

If you have any questions please feel free to contact me at (303) 357-7230.

Thank you in advance for your consideration.

Sincerely,

A handwritten signature in cursive script that reads "Megan C. Darling".

Megan Darling
Permitting Agent
Antero Resources Corporation

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Office of Oil and Gas
JUN 06 2015
WV Department of
Environmental Protection

Enclosures

06/12/2015

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

1) Well Operator: Antero Resources Corp.

<u>494488557</u>	<u>085 - Ritchie</u>	<u>Union</u>	<u>Pullman 7.5'</u>
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Operator ID County District Quadrangle

2) Operator's Well Number: Left Fork Unit 4H Well Pad Name: Lockhart Heirs West Pad

3) Farm Name/Surface Owner: O'Neill Family Trust et al Public Road Access: CR 9

4) Elevation, current ground: 1,039' Elevation, proposed post-construction: 1,021'

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

(b) If Gas Shallow Deep
Horizontal

6) Existing Pad: Yes or No No

7) Proposed Target Formation(s), Depth(s), Anticipated Thickness and Expected Pressure(s):
Marcellus Shale: 6,700' TVD, Anticipated Thickness- 50 feet, Associated Pressure- 3,000#

8) Proposed Total Vertical Depth: 6,700'

9) Formation at Total Vertical Depth: Marcellus Shale

10) Proposed Total Measured Depth: 19,200'

11) Proposed Horizontal Leg Length: 11,039'

12) Approximate Fresh Water Strata Depths: 12', 52', 124', 258'

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

14) Approximate Saltwater Depths: 1712', 2040'

15) Approximate Coal Seam Depths: None Identified

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

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

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

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18)

CASING AND TUBING PROGRAM

TYPE	<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#	105'	105'	CTS, 101 Cu. Ft.
Fresh Water	13-3/8"	New	J-55/H-40	54.5#/48#	310'	310'	CTS, 431 Cu. Ft.
Coal	9-5/8"	New	J-55	36#	2405'	2405'	CTS, 979 Cu. Ft.
Intermediate							
Production	5-1/2"	New	P-110	20#	19,200'	19,200'	4,901 Cu. Ft.
Tubing	2-3/8"	New	N-80	4.7#		7200'	
Liners							

TYPE	<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"/0.33"	2730/1730	1000	Class A	1.18
Coal	9-5/8"	12-1/4"	0.352"	3520	1500	Class A	1.18
Intermediate							
Production	5-1/2"	8-3/4" & 8-1/2"	0.361"	12630	2500	Lead-HPDZ & Tail - H	H/POZ-1.44 & H-1.8
Tubing	2-3/8"	4.778"	0.19"	11200			
Liners							

PACKERS

Kind:	N/A				RECEIVED Office of Oil and Gas JUN 06 2015
Sizes:	N/A				
Depths Set:	N/A				

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

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

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): 19.30 Acres

22) Area to be disturbed for well pad only, less access road (acres): 6.54 Acres

23) Describe centralizer placement for each casing string:

Conductor: no centralizers

Surface Casing: one centralizer 10' above the float shoe, one on the insert float collar and one every 4th joint spaced up the hole to surface.

Intermediate Casing: one centralizer above float joint, one centralizer 5' above float collar and one every 4th collar to surface.

Production Casing: one centralizer at shoe joint and one every 3 joints to top of cement in intermediate casing.

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

Conductor: no additives, Class A cement.

Surface: Class A cement with 2-3% calcium chloride and 1/4 lb of flake.

Intermediate: Class A Cement with 1/4 lb of flake, 5 gallons of clay treat.

Production: Lead cement - 50/50 Class H/Poz + 1/5% salt + 1% C-45 + 0.5% C-16a + 0.2% C-12 + 0.45% C-20 + 0.5% C51.

Production: Tail cement - Class H + 45 PPS Calcium Carbonate + 1.0% FL-160 + 0.2% ACGB-47 + 0.05% ACSA-51

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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.

WV Department of
Environmental Protection

*Note: Attach additional sheets as needed.

LATITUDE 39°12'30"

3,261'

LATITUDE 39°15'00"

LONGITUDE 80°55'00"

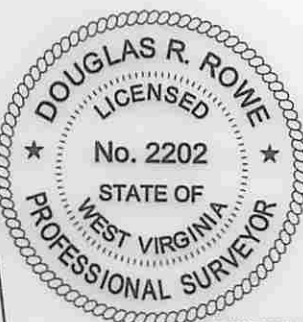
6,862'

10,936' TO BOTTOM HOLE

COUNTY NAME

PERMIT

Antero Resources Corporation
Well No. Left Fork Unit 4H



WELL NO. 4H
BOTTOM HOLE

5,078' TO BOTTOM HOLE

NOTES:
WELL 4H TOP HOLE INFORMATION:
N: 254,346ft E: 1,595,208ft
LAT: 39°11'22.18" LON: 80°55'41.42"
BOTTOM HOLE INFORMATION:
N: 265,475ft E: 1,593,566ft
LAT: 39°13'11.91" LON: 80°56'04.52"
WEST VIRGINIA COORDINATE SYSTEM OF 1927 NORTH ZONE. ZONE WAS DERIVED FROM MEASUREMENTS TAKEN WITH TRIMBLE GEOXT SUBMETER MAPPING GRADE GPS UNIT. PLAT ORIENTATION, CORNER, AND WELL REFERENCE TIE LINES ARE BASED ON GRID NORTH.

(NAD) 83 (UTM) ZONE 17 COORDS:
WELL 4H TOP HOLE INFORMATION:
N: 4,337,817m E: 506,218m
BOTTOM HOLE INFORMATION:
N: 4,341,199m E: 505,661m

NO OCCUPIED DWELLINGS OR BUILDINGS TWO THOUSAND FIVE HUNDRED (2,500) SQUARE FEET OR LARGER USED TO HOUSE OR SHELTER DAIRY CATTLE OR POULTRY HUSBANDRY ARE LOCATED WITHIN SIX HUNDRED TWENTY-FIVE (625) FEET OF THE CENTER OF THE WELL PAD.

WV NORTH ZONE
GRID NORTH

TERRY LEE RICHARDS
D.B. 184 PG. 507
T.M. 40 PAR. 09
50 AC. ±

TERRY LEE RICHARDS
D.B. 184 PG. 507
T.M. 40 PAR. 09
50 AC. ±

BERNARD W. RICHARDS
ET AL LEASE
ROGER D. RICHARDS
D.B. 242 PG. 319
T.M. 40 PAR. 10
103.56 AC. ±

CHERYL HUNTING ET UX LEASE
ROBERT F. HUGH ET AL
D.B. 237 PG. 426
T.M. 40 PAR. 06
84.5 AC. ±

DUANE RIGGS
D.B. 274 PG. 39
T.M. 40 PAR. 20
19.9 AC. ±

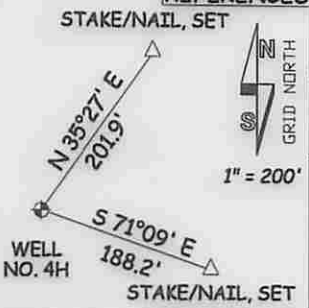
RACHIE F. JONES
ET AL LEASE
DUANE RIGGS
D.B. 274 PG. 39
T.M. 40 PAR. 20
38.69 AC. ±

J.B. ELLIOTT
ET UX LEASE
THOMAS ELLIOTT
W.B. 22 PG. 69
T.M. 40 PAR. 21
69.36 AC. ±

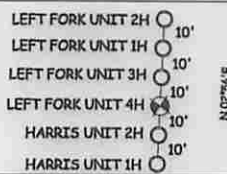
JULIE SATRE
D.B. 242 PG. 162
T.M. 40 PAR. 22
119.9 AC. ±

4H TOP HOLE

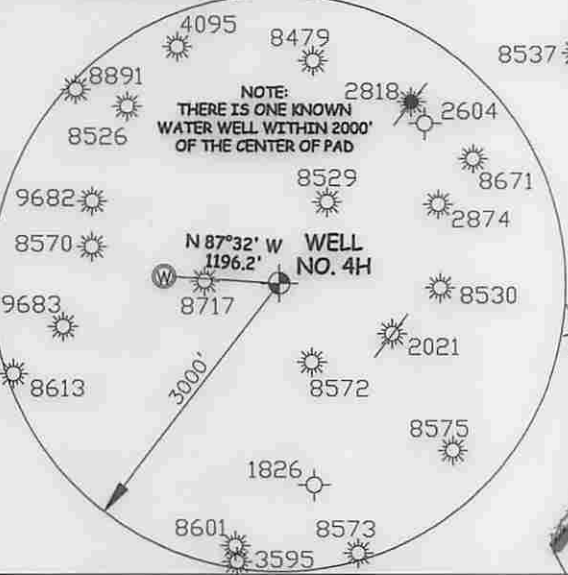
REFERENCES



PAD LAYOUT
NOT TO SCALE



JOB # 12-045
DRAWING # LEFTFORKUNIT4H1
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
X Found monument, as noted
DOUGLAS R. ROWE P.S. 2202



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

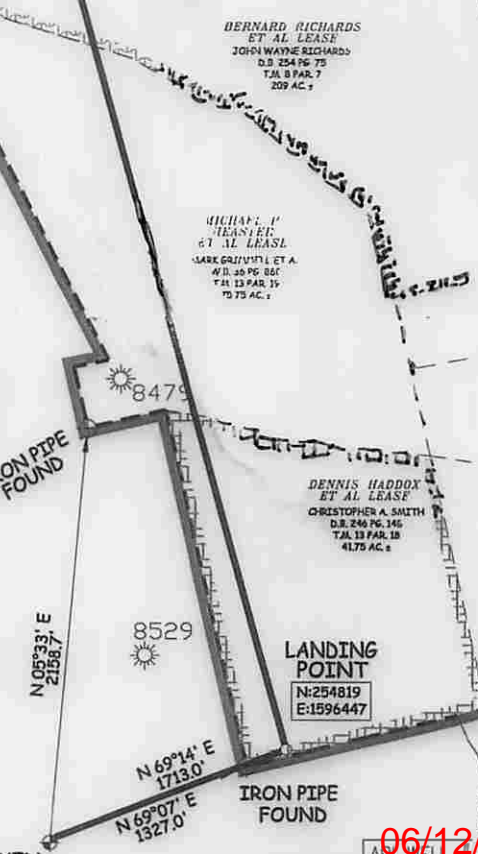


STATE OF WEST VIRGINIA, DIVISION OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS
WILLOW LAND SURVEYING PLLC
266 HUSHERS RUN RD PENNSBORO WEST VIRGINIA 26415

DATE 03/12/15
OPERATOR'S WELL# LEFT FORK UNIT #4H

WELL TYPE: OIL ___ GAS X LIQUID INJECTION ___ WASTE DISPOSAL ___
(IF "GAS") PRODUCTION X STORAGE ___ DEEP ___ SHALLOW X
LOCATION: ORIGINAL GROUND ELEV. 1,039' PROPOSED ELEV. 1021'
WATERSHED SOUTH FORK HUGHES RIVER
QUADRANGLE PULLMAN 7.5' DISTRICT UNION COUNTY RITCHIE
SURFACE OWNER O'NEILL FAMILY TRUST ET AL ACREAGE 300.45 ACRES +/-
LEASE ACREAGE 517.83 ACRES; 41.75 ACRES; 234.5 ACRES; 214 ACRES; 100 ACRES; 70 ACRES; 114 ACRES; 141.29 ACRES; 141.29 ACRES

PROPOSED WORK: DRILL X CONVERT ___ DRILL DEEPER ___ REDRILL ___ FRACTURE OR STIMULATE X
PLUG OFF OLD FORMATION ___ PERFORATE NEW FORMATION X OTHER PHYSICAL CHANGE IN WELL
(SPECIFY) Permit Modification - BHC PLUG & ABANDON CLEAN OUT & REPLUG
TARGET FORMATION MARCELLUS ESTIMATED DEPTH 6,700' TVD 19,200' MD
WELL OPERATOR ANTERO RESOURCES CORP. DESIGNATED AGENT DIANNA STAMPER
ADDRESS 1615 WYNKOOP STREET ADDRESS CT CORPORATION SYSTEM
DENVER, CO 80202 CHARLESTON, WV 25313



STATE COUNTY PERMIT NAME
47 -- 085 -- 10206

06/12/2015

LATITUDE 39°12'30" 3,261'

LATITUDE 39°15'00"

LONGITUDE 80°55'00"

6,862'

10,936' TO BOTTOM HOLE

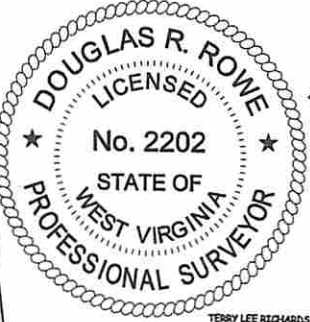
Antero Resources Corporation
Well No. Left Fork Unit 4H

WELL NO. 4H
BOTTOM HOLE

NOTE:
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WV NORTH ZONE
GRID NORTH

TERRY LEE RICHARDS
D.B. 194 PG. 507
T.M. 40 PAR. 05
50 AC. ±

CHERYL HUNTING ET UX LEASE
ROBERT P. PUGH ET AL
D.B. 237 PG. 425
T.M. 40 PAR. 06
86.5 AC. ±

BERNARD W. RICHARDS ET AL LEASE
ROGER D. RICHARDS
D.B. 242 PG. 317
T.M. 40 PAR. 10
103.56 AC. ±

TERRY LEE RICHARDS
D.B. 194 PG. 507
T.M. 40 PAR. 05
50 AC. ±

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D.B. 274 PG. 39
T.M. 40 PAR. 20
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W.B. 22 PG. 69
T.M. 40 PAR. 21
69.36 AC. ±

RACHIE E. JONES ET AL LEASE
DUANE RIGGS
D.B. 274 PG. 39
T.M. 40 PAR. 20
19.9 AC. ±

W. G. BURCAN ET AL LEASE
JOHN CAMPBELL
D.B. 171 PG. 662
T.M. 8 PAR. 3
126.23 AC. ±

KEVIN U. WRIGHT
W.B. 38 PG. 535
T.M. 8 PAR. 4
71 AC. ±

FRED MCKINNEY ET AL
D.B. 290 PG. 879
T.M. 09 PAR. 05
91.416 AC. ±

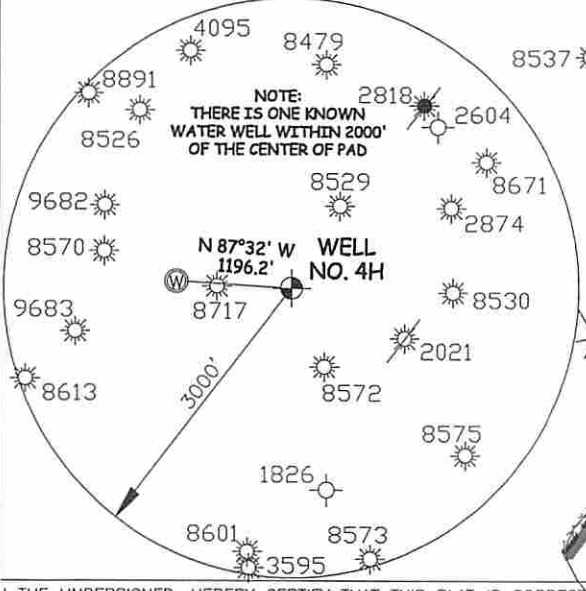
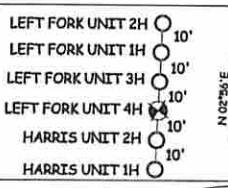
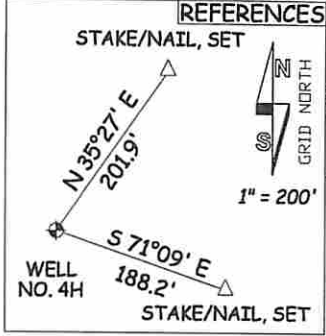
BERNARD RICHARDS ET AL LEASE
JOHN WAYNE RICHARDS
D.B. 254 PG. 75
T.M. 8 PAR. 7
209 AC. ±

MICHAEL P. HEASTER ET AL LEASE
MARK GRIMMELL ET AL
W.B. 35 PG. 858
T.M. 13 PAR. 19
75.75 AC. ±

DENNIS HADDOX ET AL LEASE
CHRISTOPHER A. SMITH
D.B. 246 PG. 148
T.M. 13 PAR. 18
41.75 AC. ±

O'NEILL FAMILY TRUST
D.B. 300 PG. 901
T.M. 13 PAR. 17
58.32 AC. ±

O'NEILL FAMILY TRUST
D.B. 300 PG. 901
T.M. 13 PAR. 23
300.45 AC. ±



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WELL OPERATOR ANTERO RESOURCES CORP. DESIGNATED AGENT DIANNA STAMPER
ADDRESS 1615 WYNKOOP STREET ADDRESS 5400 D BIG TYLER ROAD
FORM WW-6 DENVER, CO 80202 CHARLESTON, WV 25313

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WV Department of Environmental Protection
JOB LEFT FORK UNIT #4H R1
DRAWING # LEFT FORK UNIT #4H R1
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
X Found monument, as noted
DOUGLAS R. ROWE P.S. 2202

06/12/2015

API WELL # 47 - 085 - 10206
STATE COUNTY PERMIT NAME

API #47-085-10206 PERMIT MODIFICATION

Operator's Well Number Left Fork Unit 4H

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
<u>O'Neill Family Trust et al Lease</u>			
Daniel J. O'Neill, Trustee for the O'Neill Family Trust, et al Key Oil Company	Key Oil company	1/8	0252/1053
Antero Resources Appalachian Corporation	Antero Resources Appalachian Corp.	*Partial Assignment of Oil & Gas Leases	0253/0747
	Antero Resources Corporation	Name Change	Exhibit 1
<u>Dennis Haddox et al Lease</u>			
Dennis Haddox Allstate Energy Corp.	Allstate Energy Corp. Antero Resources Corporation	1/8	0129/0455
		*Partial Assignment of Oil & Gas Leases	0280/0668
<u>Michael P. Heaster et al Lease</u>			
Michael Heaster, et al Key Oil Company	Key Oil Company Antero Resources Appalachian Corporation	1/8	0223/0667
Antero Resources Appalachian Corporation	Antero Resources Corporation	*Partial Assignment of Oil & Gas Leases	0253/0747
		Name Change	Exhibit 1
<u>Bernard Richards et al Lease</u>			
Bernard Richards & Fredia L. Richards P.D. Farr II Ferrell Prior Elaine Davis Ritchie Petroleum Corporation, Inc. Ed. Broome, Inc. Antero Resources Appalachian Corporation	P.D. Farr II Ferrell Prior Elaine Davis Ritchie Petroleum Corporation, Inc. Ed. Broome, Inc. Antero Resources Appalachian Corporation Antero Resources Corporation	1/8	0121/0261
		Assignment	0121/0533
		Assignment	0121/0553
		Assignment	0228/0232
		Assignment	0230/0307
		Assignment	0255/0578
		Name Change	Exhibit 1
<u>I.S. Hall et al Lease</u>			
I.S. Hall, et ux T.F. Daly Carnegie Production Company EQT Production Company	T.F. Daly Carnegie Production Company EQT Production Company Antero Resources Appalachian Corporation	1/8	0031/0511
		Assignment	0228/0859
		Name change	Exhibit 2
Antero Resources Appalachian Corporation	Antero Resources Corporation	*Partial Assignment of Oil & Gas Leases	0264/0477
		Name Change	Exhibit 1
<u>W.G. Burgan et al Lease</u>			
W.G. Burgan, et al Key Oil Company	Key Oil Company Antero Resources Appalachian Corporation	1/8	0224/0649
Antero Resources Appalachian Corporation	Antero Resources Corporation	*Partial Assignment of Oil & Gas Leases	0253/0747
		Name Change	Exhibit 1

RECEIVED
Office of Oil and Gas
0224/0649
JUN 06 2015
0253/0747

WV Department of
Environmental Protection

API #47-085-10206 PERMIT MODIFICATION

Operator's Well Number Left Fork Unit 4H

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
J.B. Elliott et ux Lease			
J.B. Elliott, et ux	Carnegie Natural Gas Company	1/8	0041/0184
Carnegie Natural Gas company	Carnegie Production Company	Assignment & Bill of Sale	0228/0859
Carnegie Production Company	EQT Production Company	Name Change	Exhibit 2
EQT Production Company	Antero Resources Appalachian Corporation	Assignment	0267/0477
Antero Resources Appalachian Corporation	Antero Resources Corporation	Name Change	Exhibit 1
Bernard W. Richards et al Lease			
Bernard W. Richards & Fredia Richards	Warren R. Haught	1/8	0127/0483
Warren R. Haught	Rainbow 10, 11, 12, 1980 LTD	Assignment	0144/0028
Rainbow 10, 11, 12, 1980 LTD	Mountain V Oil & Gas, Inc.	Assignment	0243/0876
Mountain V Oil & Gas, Inc.	Robert Matthey, Jr.	Assignment	0243/0911
Robert Matthey, Jr.	Genesis Exploration & Production Company, LLC	Assignment	0244/1079
Genesis Exploration & Production Company, LLC	Antero Resources Appalachian Corporation	Assignment	0260/1028
Antero Resources Appalachian Corporation	Antero Resources Corporation	Name Change	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.

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

API # 47-085-10206 PERMIT MODIFICATION

WW-6A1
(5/13)

Operator's Well No. Left Fork Unit 4H

**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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Lease Name or Number	Grantor, Lessor, etc.	Grantee, Lessee, etc.	Royalty	Book/Page
Cheryl Hunding et ux Lease	Cheryl G. Hunding, et vir Eastern American Energy Corporation	Eastern American Energy Corporation Energy Corporation of America	1/8 Confirmatory Deed & Assignment	0196/0765 0306/0836
	Energy Corporation of America	Antero Resources Corporation	Assignment	0257/0377

*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.

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

FORM WW-6A1
EXHIBIT 1

FILED

JUN 10 2013

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.wvscos.com
E-mail: business@wvscos.com

APPLICATION FOR
AMENDED CERTIFICATE
OF AUTHORITY

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

**** 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:

- Name under which the corporation was authorized to transact business in WV: Antero Resources Appalachian Corporation
- Date Certificate of Authority was issued in West Virginia: 6/26/2008
- Corporate name has been changed to: Antero Resources Corporation
(Attach one Certified Copy of Name Change as filed in home State of Incorporation.)
- Name the corporation elects to use in WV: Antero Resources Corporation
(due to home state name not being available)
- Other amendments: _____
(attach additional pages if necessary)
- 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) 367-7310
Contact Name Phone Number
- Signature information (See below *Important Legal Notice Regarding Signature*):
Print Name of Signer: Alwyn A. Schopp Title/Capacity: Authorized Person
Signature: [Handwritten Signature] Date: June 10, 2013

***Important Legal Notice Regarding Signature:** Per West Virginia Code 531D-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 CF-4

Issued by the Office of the Secretary of State

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WV013 - 04/6/2013 Webbs Klammer Office

WV Department of
Environmental Protection 06/12/2015

State of West Virginia



Certificate

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

EQT PRODUCTION COMPANY

has filed a "Certificate of Registration of Trade Name" in my office according to the provisions of Chapter 47 of the West Virginia Code and was found to conform to law.

Therefore, I hereby issue this

CERTIFICATE OF REGISTRATION OF TRADE NAME

authorizing it to transact business in West Virginia under the assumed name of

CARNEGIE PRODUCTION COMPANY

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*Given under my hand and the
Great Seal of the State of
West Virginia on this day of
April 9, 2009*

Natalie E. Tennant

Secretary of State