



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

PERMIT MODIFICATION APPROVAL
Horizontal 6A / Horizontal 6A Well - 1

ANTERO RESOURCES CORPORATION
1615 WYNKOOP STREET

DENVER, CO 80202

Re: Permit Modification Approval for TINKER UNIT 2H
47-095-02287-00-00

Lateral Extension

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: TINKER UNIT 2H
Farm Name: RITCHIE PETROLEUM INC
U.S. WELL NUMBER: 47-095-02287-00-00
Horizontal 6A / Horizontal 6A Well - 1
Date Issued: 9/14/2016

Promoting a healthy environment.

09/16/2016



June 8, 2016

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. Taylor Brewer
601 57th Street
Charleston, WV 25304

Mr. Brewer:

Antero Resources Corporation (Antero) would like to submit the following permit modification for one approved well on the Terry Snider Pad. We are requesting to revise the horizontal lateral length which will change the bottom hole location of the Tinker Unit 2H (API# 47-095-02287). Please note that the Measured Depth has not changed; therefore, the Production Casing/Cement program on the revised Form WW-6B will remain the same.

Attached you will find the following documents:

- REVISED Form WW-6B, which shows the revised lateral length program
- REVISED Form WW-6A1, which shows the new lease we will be drilling into
- REVISED Mylar Plat, which shows the new bottom hole location

If you have any questions please feel free to contact me at (303) 357-6820.

Thank you in advance for your consideration.

Sincerely,

A handwritten signature in blue ink that reads "natalie komp".

Natalie Komp
Permitting Agent
Antero Resources Corporation

Enclosures

RECEIVED
Office of Oil and Gas
JUN 09 2016
WV Department of
Environmental Protection

47095022 : NCR

09/16/2016

WW-6B
(04/15)

API NO. 47- 095 - 02287

OPERATOR WELL NO. Tinker Unit 2H

Well Pad Name: Existing Terry Snider Pad

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

1) Well Operator: Antero Resources Corp. 494507062 095 - Tyler Meade Pennsboro 7.5'
Operator ID County District Quadrangle

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

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

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

5) Well Type (a) Gas Oil Underground Storage

Other

(b) If Gas Shallow Deep

Horizontal

4709502207 M61

6) Existing Pad: Yes or No Yes

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

8) Proposed Total Vertical Depth: 6700'

9) Formation at Total Vertical Depth: Marcellus Shale

10) Proposed Total Measured Depth: 16800'

11) Proposed Horizontal Leg Length: 8539'

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

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

14) Approximate Saltwater Depths: 1968'

15) Approximate Coal Seam Depths: None identified

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

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

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

RECEIVED
Office of Oil and Gas
JUN 09 2016
WV Department of
Environmental Protection

WW-6B
(04/15)

PERMIT MODIFICATION AP# 47-095-02287
 API NO. 47- 095 - 02287
 OPERATOR WELL NO. Tinker Unit 2H
 Well Pad Name: Existing Terry Snider Pad

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#	40'	40'	CTS, 38 Cu. Ft.
Fresh Water	13-3/8"	New	J-55/H-40	54.5#/48#	430' *see #19	430'	CTS, 597 Cu. Ft.
Coal	9-5/8"	New	J-55	36#	2525'	2525'	CTS, 1028 Cu. Ft.
Intermediate							
Production	5-1/2"	New	P-110	20#	16800'	16800'	4205 Cu. Ft.
Tubing	2-3/8"	New	N-80	4.7#		7100'	
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	Long-HPOZ & Tall-H	H/POZ-1.44 & H-1.8
Tubing	2-3/8"	4.778"	0.19"	11200			
Liners							

PACKERS

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

4709502287 M80
 RECEIVED
 Office of Oil and Gas
 JUN 09 2016
 WV Department of
 Environmental Protection

WW-6B
(10/14)

API NO. 47-095 - 02287
OPERATOR WELL NO. Tinker Unit 2H
Well Pad Name: Existing Terry Snider 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.

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

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

Max Pressure - 9300 lbs
Max Rate - 80 bpm

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

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

23) Describe centralizer placement for each casing string:

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

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

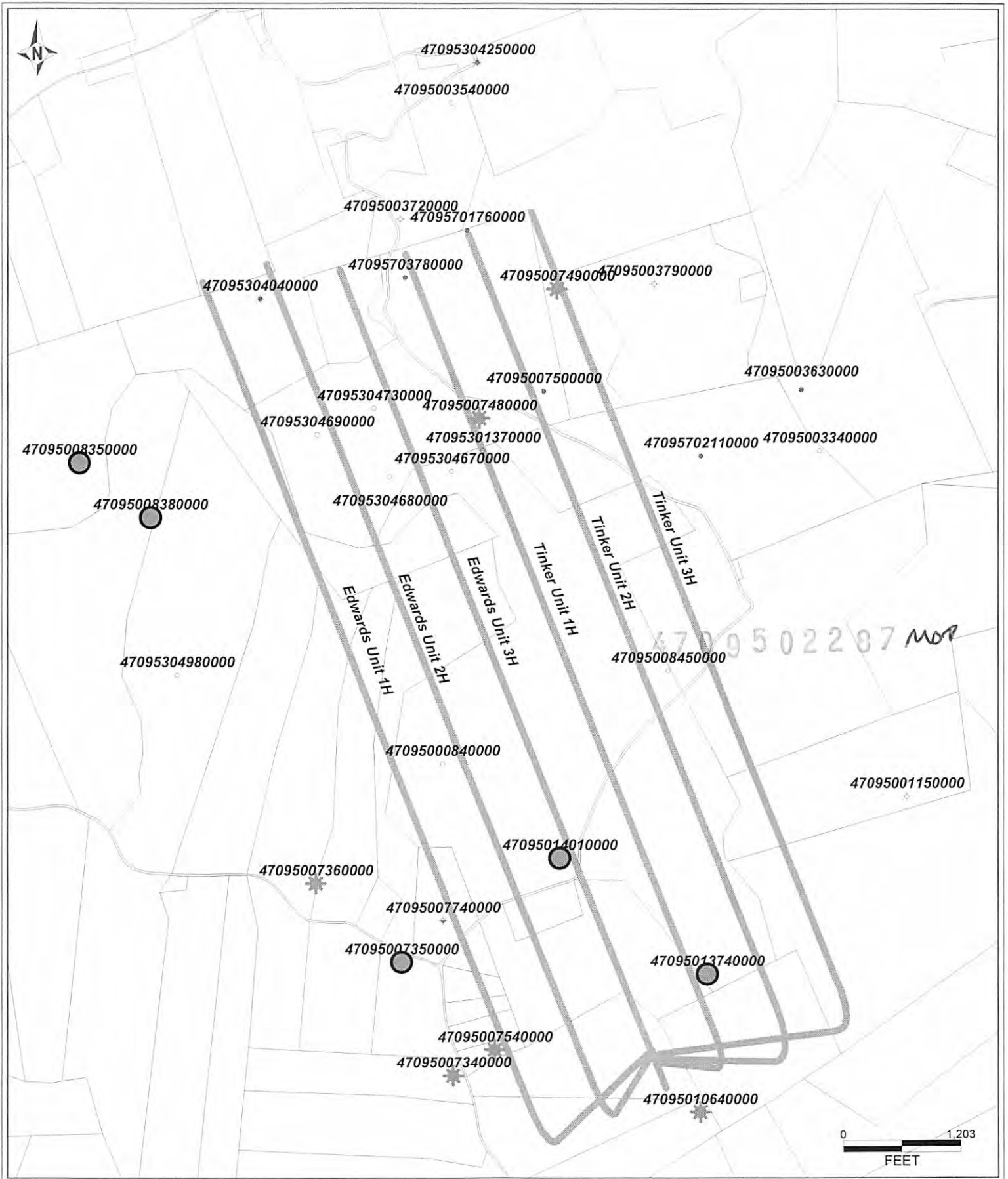
Conductor: no additives, Class A cement.
Surface: Class A cement with 2-3% calcium chloride and 1/4 lb of flake.
Intermediate: Class A Cement with 1/4 lb of flake, 5 gallons of clay treat.
Production: Lead cement - 50/50 Class H/Poz + 1/5% salt + 1% C-45 + 0.5% C-16a + 0.2% C-12 + 0.45% C-20 + 0.5% C51.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

25) Proposed borehole conditioning procedures:

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

RECEIVED
Office of Oil and Gas
JUN 09 2016
WV Department of Environmental Protection

*Note: Attach additional sheets as needed.



EDWARDS-TINKER UNIT (TERRY SNIDER PAD) - AREA OF REVIEW 35-8-5.11 PAGE 2

Well ID (API#)	Well Name	Well Number	Operator	Well Dept	TD (ELEV GA)	TD (HSTYD)	Perforated Interval (Shallowest - Deepest)	Perforated Formations	Productive Formations (not per FD)
#77960071550000	DILLON C S & W H	2	DUPRE ROGER C OIL CO	SECURITY GAS INC	6533	798	-5135A, 2007 - 4, 819	Zone 7m, Ordinary	Wair, Twp, Warren, Berea/L, Huron, Benson
#77960081550000	RIGGS ET AL	1	DUPRE ROGER C OIL CO	SECURITY GAS INC	5283	1267	-4918, 3, 296 - 4, 296	Line/embankment Bar/L Huron	None
#77960081800000	RIGGS ET AL	4	DUPRE ROGER C OIL CO	SECURITY GAS INC	5126	1033	-4096 NA	None reported on WVGES	N/A
#12950117400000	HILL PALAZZA	1	CONSOIL GAS COMPANY	CHESTERFIELD EN COMP	5033	895	-4140, 4, 790 - 4, 802	Benson	Wair, Twp, Warren, Berea/L, Huron
#12950114010000	HILL PALAZZA	2	DUPRE ROGER C OIL CO	CHESTERFIELD EN COMP	4827	812	-4075, 2, 150 - 4, 726	Wair, Twp, Warren, Benson	Berea/L, Huron, Zone
#12950084500000	LOWTHER A & HEARS	1	N & W PETROLEUM	N & W PETROLEUM	9441	837	-2408	N/A	N/A
#12950075000000	WARNER & TRINER	POE2	LANCHO OIL & GAS	NVDC W J INC	3550	965	-7185	N/A	N/A
#12950071600000	DILLON CLINTON S & VIRGINIA H	3	DUPRE ROGER C OIL CO	SECURITY GAS INC	3500	867	-2633	N/A	N/A
#12950071600000	DILLON CLINTON S & VIRGINIA H	5	DUPRE ROGER C OIL CO	SECURITY GAS INC	3493	905	-2186	N/A	N/A
#12950071740000	CLINTON/DILLON	4	DUPRE ROGER C OIL CO	SECURITY GAS INC	3470	830	-2640	N/A	N/A
#12950071800000	WARNER & TRINER	1	LANCHO OIL & GAS	NVDC W J INC	3440	871	-2444	N/A	N/A
#12950071800000	WARNER & TRINER J & WILSON C W	POE1	NVDC W J INC	NVDC W J INC	3400	1046	-2934	N/A	N/A
#12950071800000	DILLON CLINTON S & VIRGINIA H	1	DUPRE ROGER C OIL CO	SECURITY GAS INC	3358	871	-2154	N/A	N/A
#12950031400000	BLANCHE STEWART	1	UNKNOWN	UNKNOWN	2893	1096	-1795	N/A	N/A
#12950031400000	M HAMILTON	1	WEBBER J E	WEBBER J E	2889	847	-1422	N/A	N/A
#12950031760000	TAMA MASTERS	1	CARTER OIL COMPANY	CARTER OIL COMPANY	2130	1096	-1940	N/A	N/A
#12950040000000	WALTER B	11	SOUTH PERSOL FEICKER	SOUTH PERSOL FEICKER	2125	940	-1355	N/A	N/A
#12950031780000	MOSES JOHNSON	1	CARTER OIL COMPANY	CARTER OIL COMPANY	2101	1087	-1518	N/A	N/A
#12950031700000	BLANCHE STEWART	2	UNKNOWN	UNKNOWN	2094	1044	-1530	N/A	N/A
#12950030680000	GRACE & A B LOWTHER	1	LOWTHER A B & G E	LOWTHER A B & G E	2024	975	-1251	N/A	N/A
#12950031700000	CONCEIL ANCHON	2	UNKNOWN	UNKNOWN	1978	877	-1274	N/A	N/A
#12950042500000	W BULLMAN	8	SOUTH PERSOL FEICKER	SOUTH PERSOL FEICKER	1951	937	-1328	N/A	N/A
#12950031100000	J L POE	1	CARTER OIL COMPANY	CARTER OIL COMPANY	1941	895	-1349	N/A	N/A
#12950044900000	J L POE	10	WOODYARD E S	WOODYARD E S	1754	1119	-1511	N/A	N/A
#12950044900000	J L POE	11	WOODYARD E S	WOODYARD E S	1552	1031	-1378	N/A	N/A
#12950018300000	M HAMILTON	4	WEBBER J E	WEBBER J E	1090	954	-1310	N/A	N/A
#12950046800000	J L POE	6	WOODYARD E S	WOODYARD E S	1081	943	-1310	N/A	N/A
#12950047000000	J L POE	10	WOODYARD E S	WOODYARD E S	875	999	-76	N/A	N/A
#12950049000000	MOSBY SMITH	21	SOUTH PERSOL FEICKER	SOUTH PERSOL FEICKER	1042	961	-77	N/A	N/A
#12950018700000	J L POE	22	HOPK CONSTR & REFG	HOPK CONSTR & REFG	1033	971	-47	N/A	N/A
#12950011500000	MCCULLOUGH HEIRS	1	BROADWATER R J & J A	BROADWATER R J & J A	922	845	-77	N/A	N/A

API = reasonably expected to penetrate a depth that could be within range of fracture propagation
 AP1 = not reasonably expected to penetrate a depth that could be within range of fracture propagation; therefore no additional details (perforated formation and producing zones) are required as outlined in 35CRR-5.12
 **All reported data is correct to the best of our knowledge with the resources available

4709502207 MSB

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>Ashford Broadwater Lease</u>			
Ashford Broadwater	South Penn Oil Company	Flate Rate	0030/0139
South Penn Oil Company	Carter Oil Company	Assignment	0030/0357
Carter Oil Company	Hope Construction and Refining Company	Assignment	0097/0332
Hope Construction and Refining Company	Hope Natural Gas Company	Confirmatory Deed	0119/0576
Hope Natural Gas Company	Consolidation Gas Supply Corporation	Confirmatory Deed	0169/0026
Consolidation Gas Supply Corporation	Consolidation Gas Transmission Corporation	Assignment	0249/0287
Consolidation Gas Transmission Corporation	CNG Development Company	Assignment	0253/0057
CNG Development Company	CNG Producing Company	Merger	Harrison County 1131/1015
CNG Producing Company	Dominion Exploration & Production, Inc.	Name Change	Exhibit 2
Dominion Exploration & Production, Inc.	CNX Gas Company, LLC	Affidavit of Name Changes and Mergers	0384/0191
CNX Gas Company, LLC	Antero Resources Corporation	Assignment	0501/0434
<u>Terry L. Snider Lease (TM 13-19)</u>			
Terry L. Snider	Antero Resources Appalachian Corporation	1/8+	0389/0217
Antero Resources Appalachian Corporation	Antero Resources Corporation	Name Change	Exhibit 1
<u>Terry L. Snider Lease (TM 13-20)</u>			
Terry L. Snider	Antero Resources Appalachian Corporation	1/8+	0388/0601
Antero Resources Appalachian Corporation	Antero Resources Corporation	Name Change	Exhibit 1
<u>Robert A. Lowther Lease</u>			
The Robert A. Lowther Irrevocable Trust dated June 25, 2012, by Robert A. Lowther and Curtis T. Tallman, acting as Trustees	Antero Resources Corporation	1/8+	0464/0584
<u>Carla Warner Tinker Lease</u>			
Carle Warner Tinker	Antero Resources Corporation	1/8+	0467/0629
<u>Beryle Garnett Mayfield Lease</u>			
Beryle Garnett Mayfield	Antero Resources Appalachian Corporation	1/8+	0421/0731
Antero Resources Appalachian Corporation	Antero Resources Corporation	Name Change	Exhibit 1

47095000- MDT

RECEIVED

Office of Oil and Gas

JUN 09 2016

WV Department of Environmental Protection

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

CONTINUED ON NEXT PAGE

WW-6A1
(5/13)

Operator's Well No. Tinker 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)**

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
David A. Bill Lease	David A. Bill	Antero Resources Corporation	1/8+	0470/0274

*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**

470 95 022 87 M60

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 JUN 09 2016
 By: Kevin Kilstrom
 Its: Senior VP of Production

Office of Oil and Gas
WV Department of Environmental Protection

**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.wvsos.com
E-mail: business@wvsos.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:

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) 367-7310
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: *Alvyn A. Schopp* Date: June 10, 2013

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

Office of Oil and Gas

JUN 09 2013
Revised 4/13

State of West Virginia



Certificate

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

originals of an application by

CNG PRODUCING COMPANY

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

4700502287 MOD

AMENDED CERTIFICATE OF AUTHORITY

to transact business in West Virginia under the name of

DOMINION EXPLORATION & PRODUCTION, INC.

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



*Given under my hand and the
Great Seal of the State of*

West Virginia on
Office of Oil and Gas

May 10, 2000

JUN 09 2016

Ken Hechler
Secretary of State
Department of
Environmental Protection

Secretary of State
09/16/2016

WW-60
(7-01)

DATE: June 8, 20 16
OPERATOR'S
WELL NO. Tinker Unit 2H

API NO: 47- 095 02287
State County Permit No.

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

A F F I D A V I T

State of West Virginia
County of Tyler

4709502287 MOP

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

Signed: _____

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

Taken, subscribed and sworn to before me this 8th day of June, 20 16.

Notary Public
Office of Oil and Gas

My Commission expires: July 18, 2018

RECEIVED
JUN 09 2016
WV Department of
Environmental Protection

09/16/2016

LATITUDE 39°22'30"

1,644'

3,571' TO BOTTOM HOLE

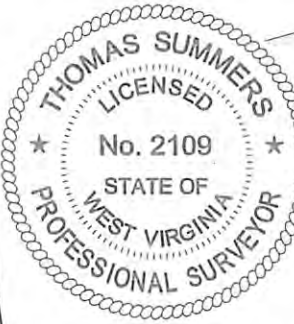
LATITUDE 39°25'00"

2,560'

LONGITUDE 80°57'30"

9,312' TO BOTTOM HOLE

Antero Resources Corporation
Well No. Tinker Unit 2H
A.P.I. 47-095-02287



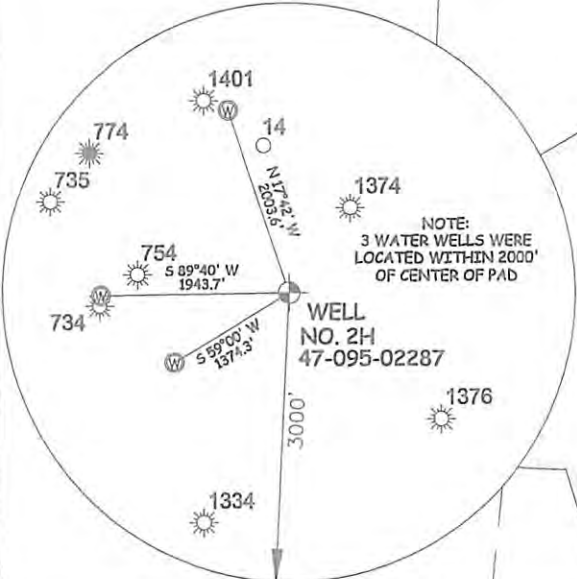
NOTES:
WELL 2H TOP HOLE INFORMATION:
N: 319,506ft E: 1,586,071ft
LAT: 39°22'04.70" LON: 80°57'50.93"
BOTTOM HOLE INFORMATION:
N: 327,961ft E: 1,584,281ft
LAT: 39°23'27.97" LON: 80°58'15.49"
2H TOP
WEST VIRGINIA COORDINATE HOLE
SYSTEM OF 1927 NORTH ZONE.
ZONE WAS DERIVED FROM
MEASUREMENTS TAKEN WITH
TRIMBLE 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 2H TOP HOLE INFORMATION:
N: 4,357,622m E: 503,103m
BOTTOM HOLE INFORMATION:
N: 4,360,188m E: 502,515m

(NAD) 27 (UTM) ZONE 17 COORDS:
WELL 2H TOP HOLE INFORMATION:
N: 14,295,916ft E: 1,650,549ft
POINT OF ENTRY INFORMATION:
N: 14,296,413ft E: 1,651,794ft
BOTTOM HOLE INFORMATION:
N: 14,304,337ft E: 1,648,619ft

PAD LAYOUT NOT TO SCALE

- 10' EDWARDS UNIT 1H
- 10' MARKLE UNIT 1H
- 10' EDWARDS UNIT 3H
- 10' MARKLE UNIT 2H
- 10' EDWARDS UNIT 2H
- 10' MARKLE UNIT 3H
- 10' TINKER UNIT 3H
- 10' DILLON UNIT 2H
- 10' TINKER UNIT 2H
- 10' DILLON UNIT 3H
- 10' TINKER UNIT 1H
- 10' DILLON UNIT 1H



NOTE:
3 WATER WELLS WERE
LOCATED WITHIN 2000'
OF CENTER OF PAD

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



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

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

JOB # 15-031WA
DRAWING # TINKER2HR3
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 +/-
X Existing Fence
⊕ Found monument, as noted

THOMAS SUMMERS P.S. 2109
DATE 06/02/16
OPERATOR'S WELL# TINKER UNIT #2H

REBAR FOUND
REBAR FOUND

ASHFORD BROADWATER LEASE

NOTE:
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.



WELL TYPE: OIL ___ GAS X LIQUID INJECTION ___ WASTE DISPOSAL ___ 47 - 095 - 02287
(IF "GAS") PRODUCTION ___ STORAGE ___ DEEP ___ SHALLOW X
LOCATION: ELEVATION 1,171' ORIGINAL - 1,147' AS-BUILT WATERSHED OUTLET MIDDLE ISLAND CREEK
QUADRANGLE PENNSBORO 7.5' - SHL. MIDDLEBOURNE 7.5' - BHL DISTRICT MEADE
SURFACE OWNER RITCHIE PETROLEUM INC. ACREAGE 30.92 ACRES +/-
OIL & GAS ROYALTY OWNER ASHFORD BROADWATER; TERRY L. SNIDER; ROBERT A. LOWTHER; CARLA WARNER TINKER; BERYLE GARNETT MAYFIELD; DAVID A. BILL LEASE ACREAGE 583.712 ACRES +/-; 67 ACRES +/-; 250 ACRES +/-; 25.125 AC +/-; 155.33 ACRES +/-; 71.79 ACRES +/-

PROPOSED WORK: DRILL ___ CONVERT X DRILL DEEPER ___ REDRILL ___ FRACTURE OR STIMULATE X
PLUG OFF OLD FORMATION ___ PERFORATE NEW FORMATION ___ OTHER PHYSICAL CHANGE IN WELL (SPECIFY) MOD BHL
TARGET FORMATION MARCELLUS PLUG & ABANDON CLEAN OUT & REPLUG
WELL OPERATOR ANTERO RESOURCES CORP. ESTIMATED DEPTH 6,700' TVD 16,800' MD
ADDRESS 1615 WYNKOOP STREET DENVER, CO 80202 DESIGNATED AGENT DIANNA STAMPER - CT CORPORATION SYSTEM ADDRESS 5400 D BIG TYLER ROAD CHARLESTON, WV 25313

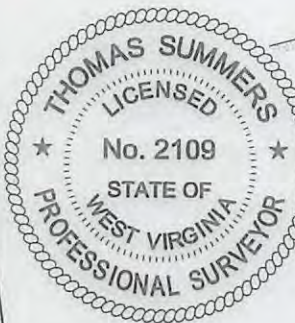
COUNTY NAME PERMIT

STATE DEPARTMENT OF ENVIRONMENTAL PROTECTION
COUNTY TYLER
09/16/2016

LATITUDE 39°22'30" 1,644'
 LATITUDE 39°25'00"

LONGITUDE 80°57'30"
 LONGITUDE 80°57'30"

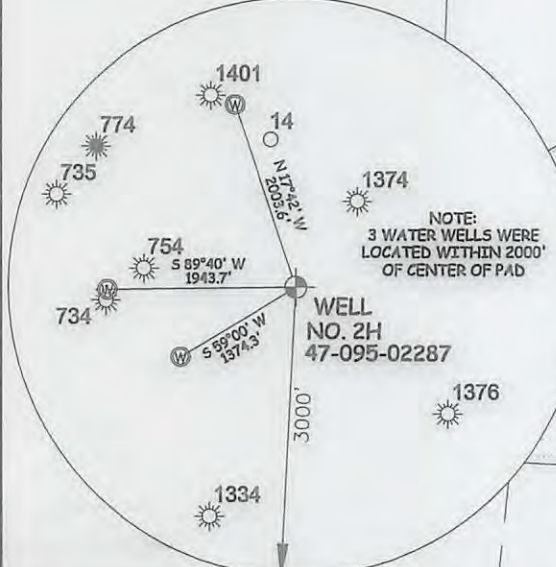
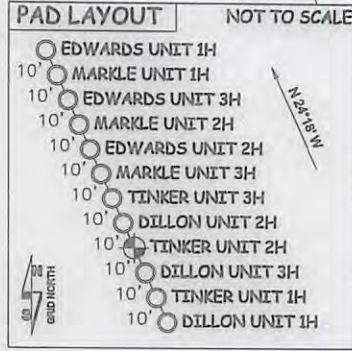
Antero Resources Corporation
 Well No. Tinker Unit 2H
 A.P.I. 47-095-02287



NOTES:
 WELL 2H TOP HOLE INFORMATION:
 N: 319,506ft E: 1,586,071ft
 LAT: 39°22'04.70" LON: 80°57'50.93"
 BOTTOM HOLE INFORMATION:
 N: 327,961ft E: 1,584,281ft
 LAT: 39°23'27.97" LON: 80°58'15.49"
 WEST VIRGINIA COORDINATE HOLE 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 2H TOP HOLE INFORMATION:
 N: 4,357,622m E: 503,103m
 BOTTOM HOLE INFORMATION:
 N: 4,360,188m E: 502,515m

(NAD) 27 (UTM) ZONE 17 COORDS:
 WELL 2H TOP HOLE INFORMATION:
 N: 14,295,916ft E: 1,650,549ft
 POINT OF ENTRY INFORMATION:
 N: 14,296,413ft E: 1,651,794ft
 BOTTOM HOLE INFORMATION:
 N: 14,304,337ft E: 1,648,619ft



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

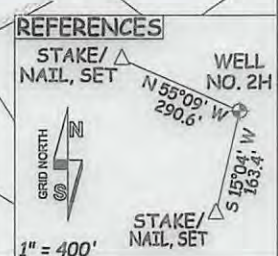


STATE OF WEST VIRGINIA, DIVISION OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS
 WILLOW LAND SURVEYING PLLC
 220 MASONIC AVE. PENNSBORO WEST VIRGINIA 26415

JOB # 15-031WA
 DRAWING # TINKER2HR3
 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 +/-
 X Existing Fence
 ⊕ Found monument, as noted
 THOMAS SUMMERS P.S. 2109
 DATE 06/02/16
 OPERATOR'S WELL # TINKER UNIT #2H

REBAR FOUND
 POINT OF ENTRY
 WELL NO. 2H 47-095-02287
 N 69°12' E 1341.2'
 N 85°11' W 1415.7'
 S 59°02' E 1047.0'



WELL TYPE: OIL GAS LIQUID INJECTION WASTE DISPOSAL 47 - 095 - 02287
 (IF "GAS") PRODUCTION STORAGE DEEP SHALLOW
 LOCATION: ELEVATION 1,171' ORIGINAL - 1,147' AS-BUILT WATERSHED OUTLET MIDDLE ISLAND CREEK STATE COUNTY PERMIT
 QUADRANGLE PENNSBORO 7.5' - SHL. MIDDLEBOURNE 7.5' - BHL DISTRICT MEADE COUNTY TYLER 09/16/2016
 SURFACE OWNER RITCHIE PETROLEUM INC. ACREAGE 30.92 ACRES +/-
 OIL & GAS ROYALTY OWNER ASHFORD BROADWATER; TERRY L. SNIDER; ROBERT A. LOWTHER; LEASE ACREAGE 583.712 ACRES +/-; 67 ACRES +/-; 250 ACRES +/-
 CARLA WARNER TINKER; BERYLE GARNETT MAYFIELD; DAVID A. BILL 25.125 AC +/-; 155.33 ACRES +/-; 71.79 ACRES +/-
 PROPOSED WORK: DRILL CONVERT DRILL DEEPER REDRILL FRACTURE OR STIMULATE
 PLUG OFF OLD FORMATION PERFORATE NEW FORMATION OTHER PHYSICAL CHANGE IN WELL
 (SPECIFY) MOD BHL PLUG & ABANDON CLEAN OUT & REPLUG
 TARGET FORMATION MARCELLUS ESTIMATED DEPTH 6,700' TVD 16,800' 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