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

December 03, 2013

ANTERO RESOURCES APPALACHIAN CORPORATION
1625 17TH STREET, SUITE 300
DENVER, CO 80202

Re: Permit Modification Approval for API Number 1706210 , Well #: GAINER UNIT 1H
Extended lateral

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,

for

Gene Smith
Regulatory/Compliance Manager
Office of Oil and Gas

ANTERO
RESOURCES

Antero Resources
1625 17th Street
Denver, Colorado 80202
Office 303.357.7310
Fax 303.357.7315

September 11, 2013

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

Ms. Laura Cooper:

Antero Resources Corporation (Antero) would like to submit the following permit modifications for two approved wells on the existing Plaugher North Pad. We are requesting to extend the horizontal laterals which will change the bottom hole locations of the Gainer Unit 1H (API# 47-017-06210) and Gainer Unit 2H (API# 47-017-06226).

Attached you will find the following documents:

- REVISED Form WW-6B, which shows the revised MD and Production Casing/Cement program
- REVISED Form WW-6A1, which shows the leases 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) 357-7323.

Thank you in advance for your consideration.

Sincerely,

Ashlie Mihalcin
Permit Representative
Antero Resources Corporation

Enclosures

Received
2 0 2013
Office of Oil and Gas
WV Dept. of Environmental Protection

API# 47-017-06210 PERMIT MODIFICATION

WW - 6B
(3/13)

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

1) Well Operator:	Antero Resources Corporation	494488557	033-Harrison	Union	Big Isaac
		Operator ID	County	District	Quadrangle

2) Operator's Well Number: Gainer Unit 1H Well Pad Name: Existing Plaugher North Pad

3 Elevation, current ground: ~1382' Elevation, proposed post-construction: 1364'

4) Well Type: (a) Gas ■ Oil _____ Underground Storage _____

Other _____

(b) If Gas: Shallow ■ Deep _____

Horizontal ■

5) Existing Pad? Yes or No: Yes

6) Proposed Target Formation(s), Depth(s), Anticipated Thicknesses and Associated Pressure(s):

Marcellus Shale: 7600' TVD, Anticipated Thickness- 50 Feet, Associated Pressure- 3200#

7) Proposed Total Vertical Depth: 7600' TVD

8) Formation at Total Vertical Depth: Marcellus Shale

9) Proposed Total Measured Depth: 16,300' MD

10) Approximate Fresh Water Strata Depths: 133'

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

12) Approximate Saltwater Depths: 781', 1867', 2097'

13) Approximate Coal Seam Depths: 641', 1109', 1633'

14) Approximate Depth to Possible Void (coal mine, karst, other): None anticipated

15) Does proposed well location contain coal seams directly overlying or adjacent to an active mine? If so, indicate name and depth of mine: No

16) Describe proposed well work: Drill, perforate, fracture a new horizontal shallow well and complete Marcellus Shale

17) Describe fracturing/stimulating methods in detail:

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."

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WV Dept. of Environmental Protection

18) Total area to be disturbed, including roads, stockpile area, pits, etc, (acres): 22.79 acres (existing)

19) Area to be disturbed for well pad only, less access road (acres): 3.74 acres (existing)

WW - 6B
(3/13)

20) **CASING AND TUBING PROGRAM**

TYPE	Size	New or Used	Grade	Weight per ft.	FOOTAGE: For Drilling	INTERVALS: Left in Well	CEMENT: Fill -up (Cu. Ft.)
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#	300'	300'	CTS, 417 Cu. Ft.
Coal	9-5/8"	New	J-55	36#	2520'	2520'	CTS, 1026 Cu. Ft.
Intermediate							
Production	5-1/2"	New	P-110	20#	16300'	16300'	4090 Cu. Ft.
Tubing	2-3/8"	New	N-80	4.7#		7200'	
Liners							

TYPE	Size	Wellbore Diameter	Wall Thickness	Burst Pressure	Cement Type	Cement Yield
Conductor	20"	24"	0.438"	1530	Class A	1.18
Fresh Water	13-3/8"	17-1/2"	0.38"/0.33"	2730/1730	Class A	1.18
Coal	9-5/8"	12-1/4"	0.352"	3520	Class A	1.18
Intermediate						
Production	5-1/2"	8-3/4" & 8-1/2"	0.361"	12630	Lead-H/POZ & Tail - H	H/POZ-1.44 & H-1.8
Tubing	2-3/8"	4.778"	0.19"	11200		
Liners						

PACKERS

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

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WW - 6B
(3/13)

21) 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.

22) Describe all cement additives associated with each cement type.

Conductor: no additives, Class A cement.

Surface: Class A cement with 2% calcium and 1/4 lb flake, 5 gallons of clay treat

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

23) 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.

Received
SEP 20
Office of Oil and Gas
WV Dept. of Environmental Protection

WW-6A1

Operator's Well Number Gainer Unit 1H

API# 47-017-06210 PERMIT MODIFICATION

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
C. E. Plaugher et al Lease DAD1988			
C. E. Plaugher, et al	Chesterfield Energy Corporation	1/8	0135/0398
Chesterfield Energy Corporation	Dominion Appalachian Development, Inc.	Merger	Unrecorded Document
Dominion Appalachian Development, Inc.	Dominion Appalachian Development, LLC	Certificate of Conversion	Exhibit 2
Dominion E&P Inc., DTI, Inc. & DAD, LLC	Antero Resources Appalachian Corporation	*Partial Assignment of Oil and Gas Leases	0230/0113
Antero Resources Appalachian Corporation	**Antero Resources Corporation**	**Name Change**	**Exhibit 1**
C. E. Plaugher et ux et al Lease DAD1906			
C. E. Plaugher, et ux, et al	Chesterfield Energy Corporation	1/8	0135/0394
Chesterfield Energy Corporation	Dominion Appalachian Development, Inc.	Merger	Unrecorded Document
Dominion Appalachian Development, Inc.	Dominion Appalachian Development, LLC	Certificate of Conversion	Exhibit 2
Dominion E&P Inc., DTI, Inc. & DAD, LLC	Antero Resources Appalachian Corporation	*Partial Assignment of Oil and Gas Leases	0230/0113
Antero Resources Appalachian Corporation	**Antero Resources Corporation**	**Name Change**	**Exhibit 1**
M. T. Williams et ux et al Lease 003636			
M. T. Williams, et ux, et al	The South Penn Oil Company	Flat Rate	0015/0416
Dominion E&P Inc., DTI, Inc. & DAD, LLC	Antero Resources Appalachian Corporation	*Partial Assignment of Oil and Gas Leases	0230/0113
The South Penn Oil Company	Hope Natural Gas Company	Assignment	0022/0292
Hope Natural Gas Company	Consolidated Gas Supply Corporation	Merger	DB 0143/0345
Consolidated Gas Supply Corporation	Consolidated Gas Transmission Corporation	Assignment	0135/0583
Consolidated Gas Transmission Corporation	CNG Transmission Corporation	Certificate of Authority	AOI 0051/0795
CNG Transmission Corporation	Dominion Transmission, Inc.	Certificate of Authority	AOI 0058/0362
Dominion E&P Inc., DTI, Inc. & DAD, LLC	Antero Resources Appalachian Corporation	*Partial Assignment of Oil and Gas Leases	0230/0113
Antero Resources Appalachian Corporation	**Antero Resources Corporation**	**Name Change**	**Exhibit 1**
Mary M. Welch Lease 21396			
Mary M. Welch	Bluestone Energy Partners	1/8	0239/0726
Bluestone Energy Partners	Antero Resources Bluestone, LLC, a wholly owned subsidiary of Antero Resources Appalachian Corporation	Merger	0035/1236
Antero Resources Appalachian Corporation	**Antero Resources Corporation**	**Name Change**	**Exhibit 1**

Received
SEP 20 2013
Office of Oil and Gas
WV Dept. 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. Gainer 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
Ruby Sadler et at Lease				
	Ruby Sadler	Clarence W. Mutschelknaus	1/8	0129/0811
	Clarence W. Mutschelknaus	Bluestone Energy Partners	Assignment	0250/0651
	Bluestone Energy Partners	Antero Resources Bluestone, LLC, a wholly owned subsidiary of Antero Resources Appalachian Corporation	Merger	0035/1236
	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.**

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.

Received
WV Dept. of Environmental Protection
Office of Oil and Gas

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

47-017-06210
MOD

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 — Contact Name
   (303) 357-7310 — Phone Number

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

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

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

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

Received
2 0 2013
Office of Oil and Gas
WV Dept. of Environmental Protection

WV032 - 04/16/2013 Wolters Kluwer Online

47-017-06210
MOD

WW-60
(7-01)

DATE: September 11, 20 13
OPERATOR'S
WELL NO. Gainer Unit 1H

API NO: 47- 017 06210
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 Colorado

County of Denver

I, Tim Rady (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: [signature]

Taken, subscribed and sworn to before me this 11 day of Sept, 20 13.

[signature]
Notary Public

My Commission expires: 11/9/2016

Received
SEP 20 2013
WV Dept. of Environmental Protection
Office of Oil and Gas

LISA BOTTINELLI
Notary Public
State of Colorado
Notary ID 20124072365
My Commission Expires Nov 9, 2016

17-06910 MOD

RECEIVED
Office of Oil and Gas
DEC 03 2013
WV Department of
Environmental Protection

Lease Assignments and Interest of Chesterfeld Energy Corporation

n. [**NOTE:** By unrecorded document Chesterfield Energy Corporation merged wit and into Dominion Appalachian Development, Inc.]

17-06210

PETRA 2/11/2013 3:39:31 PM

Antero Resources Corporation

Appalachian Basin

Gainer Unit 1H

Doddridge County

0 2,000 4,000
FEET

REMARKS
QUADRANGLE: SALEM
WATERSHED: BUFFALO CALF FORK
DISTRICT: GREENBRIER

Received
Office of Oil & Gas
FEB 20 2013

February 11, 2013

Antero Resources
Well No. Gainer Unit 1H
Antero Resources Corporation

2,914' to Bottom Hole
7,377' to Top Hole
LATITUDE 39 - 17 - 30
LONGITUDE 80 - 35 - 00
7,535' to Top Hole
15,414' to Bottom Hole

Carolyn N. Plaugher WB 45/151 99 Acres
47-017-1723
47-017-1170
See Top Hole Detail
Proposed Well No. Gainer Unit 1H
S 18°53' W 1247.1'
C.E. Plaugher, et al Lease DAD1988
Thurman R. Cox, et ux 229/76 58.6 Acre Well (No #)
Clarence W. Mutschelknaus, et ux Lease
Well (No #)
47-017-3518
2 Water Wells
47-017-1539
L1 L2 L3 L4
5/8" Rebar
Thurman R. Cox, et ux 274/301 1.64 Acre
William P. Saviers, Jr. 230/21 133.76 Acre
47-017-3338
47-017-3466
47-017-0892
Carolyn N. Plaugher WB 45/151 328.92 Acres
David Gillis 196/182 101.69 Ac.
Top Hole 7.5' Spot
24" Hickory
5/8" Rebar
47-017-3339
Charles J. Dennison, Trustee for the C.O. Dennison Estate, et al Lease 21203
Buffalo Calf Fork
Randall R. Plaugher, et ux 262/675 1.08 Acres
S 36°00' E 8279.3'
Walter V. Davidson & Leonard J. Davidson 140/554 83.61 Acres
Carolyn N. Plaugher WB 45/151 328.92 Acres
47-017-3476
3-Way Fence Post Cor.
C.E. Plaugher, et ux, et al Lease DAD1906
Richard E. & Wilma J. Marsden 229/54 386 Acres
M.T. Williams, et ux, et al Lease 003636
47-017-1807
14" Cherry
Mary M. Welch Lease 21396
47-017-3426
Bottom Hole 7.5' Spot
Melanie Bailey, Douglas Bailey, Hassel Bailey 261/279 144.05 Ac.
Melanie Bailey, et al 261/279 10.47 Ac.
Stonepile
Fen Post
I. Pin
47-017-3394
Ronnie Perkins, et ux 173/259 40.2 Acres
Gainer Unit 1H Bottom Hole
Ruby Sadler, et al Lease
222/221 1.31 Ac.
GRID NORTH

Notes: It appears 2 water wells were found within 2000' of proposed well. No occupied dwellings or 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.
47-017-5858
47-017-5817
47-017-3186
3000'
Proposed Well No. Gainer Unit 1H
Well (No tag)
47-017-3518
2 Water Wells
47-017-1380
47-017-1336
47-017-1723
Well (No tag)
47-017-1170
47-017-1539
47-017-3517
47-017-1395
47-017-0775
(3) Gas Wells. See Wellhead Layout
47-017-3338
47-017-1171
47-017-3466
47-017-0554
47-017-0892
47-017-3341
Scale: 1" = 2000'

Top Hole Detail
Clarence W. Mutschelknaus, et ux Lease
7'±
33'±
Proposed Well No. Gainer Unit 1H
C.E. Plaugher, et al Lease DAD1988

Well Location References
Scale: 1" = 200'
Proposed Well No. Gainer Unit 1H
AZ50° 190'
AZ288° 250'
18" Poplar
8" Oak
Plaugher North Drill Pad

Detail Not to Scale
N 44°12' W 10.0'
Proposed Gainer Unit 1H (47-017-6210)
Gainer Unit 2H (47-017-6226)
Irons Unit 1H (47-017-6245)
TBD-1
TBD-2
TBD-3
10.0'

(-⊙-) Denotes Location of Well on United States Topographic Maps

KENNETH J. PLUM LICENSED No. 2216 STATE OF WEST VIRGINIA PROFESSIONAL SURVEYOR SEAL

Notes:
West Virginia Coordinate System of 1927, North Zone based upon Differential GPS Measurements.
Well No. Gainer Unit 1H Top Hole coordinates are
N: 282,654.22' Latitude: 39°16'14.63"
E: 1,686,012.60' Longitude: 80°36'32.64"
Bottom Hole coordinates are
N: 274,776.09' Latitude: 39°14'57.31"
E: 1,690,475.62' Longitude: 80°35'34.68"
UTM Zone 17, NAD 1983
Top Hole Coordinates: N: 4,346,903.199m E: 533,737.583m
Bottom Hole Coordinates: N: 4,344,525.793m E: 535,137.253m
Plat orientation and corner and well references are based upon the grid north meridian.
Well location references are based upon the magnetic meridian.

	Bearing	Dist.
L1	N 04°47' W	1329.6'
L2	N 49°15' W	280.7'
L3	N 67°08' W	836.8'
L4	S 84°39' W	1306.2'

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

ALLEGHENY SURVEYS, INC.

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, P.S. 2216

FILE NO: 42-30-G-13
DRAWING NO: 42-13 Gainer 1H Well Plat
SCALE: 1" = 1000'
MINIMUM DEGREE OF ACCURACY: Submeter
PROVEN SOURCE OF ELEVATION: WVDOT, Bridgeport, WV

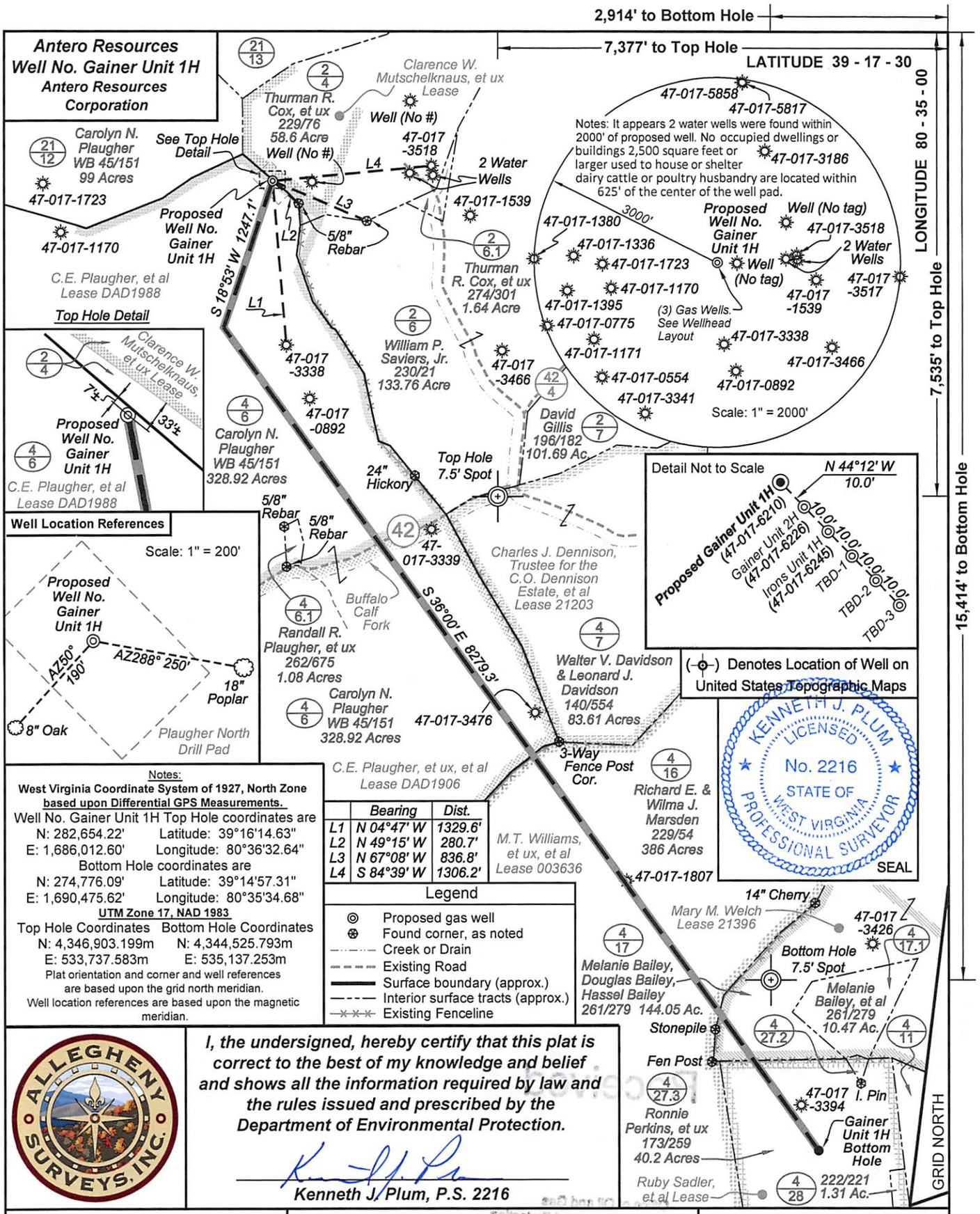
STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
OIL AND GAS DIVISION

DATE: September 5 2013
OPERATOR'S WELL NO. Gainer Unit 1H
API WELL NO MOD
47 - 017 - 06210H 6A
STATE COUNTY PERMIT

WELL TYPE: ☐ OIL ☒ GAS ☐ LIQUID INJECTION ☐ WASTE DISPOSAL
(IF GAS) PRODUCTION: ☐ STORAGE ☐ DEEP ☒ SHALLOW
LOCATION: ELEVATION: 1364' WATERSHED: Buffalo Calf Fork QUADRANGLE: Salem
DISTRICT: Greenbrier COUNTY: Doddridge
SURFACE OWNER: Carolyn N. Plaugher ACREAGE: 328.92
ROYALTY OWNER: C.E. Plaugher, et al; C.E. Plaugher, et ux, et al; Mary M. Welch; Ruby Sadler, et al; M.T. Williams, et ux, et al LEASE NO: DAD1988; DAD1906; 003636; 21396 ACREAGE: 165; 165; 376.78; 51; 90
PROPOSED WORK: ☒ DRILL ☐ CONVERT ☐ DRILL DEEPER ☒ FRACTURE OR STIMULATE ☐ PLUG OFF OLD FORMATION
☒ PERFORATE NEW FORMATION ☒ OTHER PHYSICAL CHANGE IN WELL (SPECIFY) Modification - BHL
☐ PLUG AND ABANDON ☐ CLEAN OUT AND REPLUG TARGET FORMATION: Marcellus Shale ESTIMATED DEPTH: 7,600' TVD 16,300' MD

WELL OPERATOR: Antero Resources Corporation
ADDRESS: 1625 17th Street, Denver, CO 80202
DESIGNATED AGENT: Dianna Stamper - CT Corporation System
ADDRESS: 5400 D Big Tyler Road, Charleston, WV 25313

Antero Resources
Well No. Gainer Unit 1H
Antero Resources Corporation



Notes:
West Virginia Coordinate System of 1927, North Zone based upon Differential GPS Measurements.
Well No. Gainer Unit 1H Top Hole coordinates are
N: 282,654.22' Latitude: 39°16'14.63"
E: 1,686,012.60' Longitude: 80°36'32.64"
Bottom Hole coordinates are
N: 274,776.09' Latitude: 39°14'57.31"
E: 1,690,475.62' Longitude: 80°35'34.68"
UTM Zone 17, NAD 1983

Top Hole Coordinates	Bottom Hole Coordinates
N: 4,346,903.199m	N: 4,344,525.793m
E: 533,737.583m	E: 535,137.253m

Plat orientation and corner and well references are based upon the grid north meridian.
Well location references are based upon the magnetic meridian.

	Bearing	Dist.
L1	N 04°47' W	1329.6'
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L3	N 67°08' W	836.8'
L4	S 84°39' W	1306.2'

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

ALLEGHENY SURVEYS, INC.

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, P.S. 2216

FILE NO: 42-30-G-13
DRAWING NO: 42-13 Gainer 1H Well Plat
SCALE: 1" = 1000'
MINIMUM DEGREE OF ACCURACY: Submeter
PROVEN SOURCE OF ELEVATION: WVDOT, Bridgeport, WV

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

DATE: September 5 2013
OPERATOR'S WELL NO. Gainer Unit 1H
API WELL NO MOD
47 - 017 - 06210
STATE COUNTY PERMIT

WELL TYPE: ☐ OIL ☒ GAS ☐ LIQUID INJECTION ☐ WASTE DISPOSAL
(IF GAS) PRODUCTION: ☐ STORAGE ☐ DEEP ☒ SHALLOW
LOCATION: ELEVATION: 1364' WATERSHED: Buffalo Calf Fork QUADRANGLE: Salem
DISTRICT: Greenbrier COUNTY: Doddridge
SURFACE OWNER: Carolyn N. Plaugher ACREAGE: 328.92
ROYALTY OWNER: C.E. Plaugher, et al; C.E. Plaugher, et ux, et al; Mary M. Welch; Ruby Sadler, et al; M.T. Williams, et ux, et al LEASE NO: DAD1988; DAD1906; 003636; 21396 ACREAGE: 165; 165; 376.78; 51; 90
PROPOSED WORK: ☒ DRILL ☐ CONVERT ☐ DRILL DEEPER ☒ FRACTURE OR STIMULATE ☐ PLUG OFF OLD FORMATION
☒ PERFORATE NEW FORMATION ☒ OTHER PHYSICAL CHANGE IN WELL (SPECIFY) Modification - BHL
☐ PLUG AND ABANDON ☐ CLEAN OUT AND REPLUG TARGET FORMATION: Marcellus Shale ESTIMATED DEPTH: 7,600' TVD 16,300' MD

WELL OPERATOR: Antero Resources Corporation DESIGNATED AGENT: Dianna Stamper - CT Corporation System
ADDRESS: 1625 17th Street ADDRESS: 5400 D Big Tyler Road
Denver, CO 80202 Charleston, WV 25313